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

Vicinity Property

Completion Report

Remedial Actions
Contractor
for the
Uranium Mill Tailings
Remedial Actions
Project

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

VICINITY PROPERTY COMPLETION REPORT

AT

RF-480

RAILROAD RIGHT-OF-WAY
SOUTH OF THE OLD RIFLE SITE
RIFLE, CO

MAY 28, 1997

FOR

URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT OFFICE
ALBUQUERQUE OPERATIONS OFFICE
U.S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NM

BY

MK-FERGUSON COMPANY

AND

RUST FEDERAL SERVICES, INC.

MK-Ferguson Company has been granted authorization to perform remedial action under the Uranium Mill Tailings Radiation Control Act of 1978, Public Law 95-604. Remedial action was done in accordance to the EPA Standards for Cleanup of Lands and Buildings Contaminated with Residual Radioactive Material from Inactive Uranium Processing Sites, 40 CFR 192.12, 192.20-2.

TABLE OF CONTENTS

Section

LIST OF FIGURES

Figures

LIST OF TABLES

Table

PROPERTY NUMBER:	RF-480
PROPERTY ADDRESS:	RAILROAD RIGHT-OF-WAY SOUTH OF HIGHWAY 6 WEST RIFLE, COLORADO 81650
PROPERTY OWNER:	D&RGW RAILROAD CO. P.O. BOX 5482 DENVER, CO.
PROPERTY CATEGORY:	COMMERCIAL
REMEDIAL ACTION CONTRACTOR:	MK-FERGUSON COMPANY
CONSTRUCTION SUBCONTRACTOR:	GREEN INTERNATIONAL INC.
RADIOLOGICAL CONTRACTOR:	RUST FEDERAL SERVICES, INC.
REA APPROVED:	N/A
REMEDIAL ACTION STARTED:	MAY, 1994
REMEDIAL ACTION COMPLETED:	SEPTEMBER, 1994
VOLUME OF MATERIAL REMOVED:	OUTDOOR: 16,678 cy INDOOR: N/A

1.0 SUMMARY

Remedial action was completed on Vicinity Property RF-480. A total of 16,678 cubic yards of soil was removed from the property. Radiological surveys conducted following removal of contaminated material, but before property restoration, demonstrate that the property has been cleaned up to the EPA standards, with the application of supplemental standards. This completion report recommends that DOE review the radiological data provided for the property and award final certification.

2.0 OPERATION SUMMARY

2.1 Remedial Action Plan

The basic remedial action on this property was performed according to the Remedial Action Plan for Rifle, Colorado. A total of 16,678 cubic yards of soil was removed from the property. An estimate of the amount of material to be removed from this property was not made since the remedial action was performed in conjunction with the Old Rifle Site Remedial Action Plan.

2.2 Previously Unidentified Contamination

No new areas of contamination were identified during remedial action on property RF-480.

An area of contamination was discovered south of the railroad tracks at the west end of the property during remediation of adjacent property RF-510. The area was excavated and verified during remedial action of RF-510. Verification data for the area falling within the railroad right-of-way are presented in this report.

2.3 Unanticipated Items During Remedial Action

No unanticipated items occurred during remedial action on this property.

2.4 Application of Supplemental Standards

Per agreement, supplemental standards have been applied to residual radioactive material left in place along the railroad tracks. No remediation was performed within 15 feet of the centerline of the main tracks and railroad track and ties were not replaced. These conditions, including the application of supplemental standards, were pre-approved by the State, the DOE, and the NRC via their concurrence with the Remedial Action Plan for the Rifle Site. After completion of the RSA, but prior to remedial action, an MCI fiber optic telecommunications line was buried within the railroad right-of-way north of the tracks. Supplemental standards have also been applied to critical areas around the fiber optic cable and around the bases of eleven utility poles which support railroad operations. Appendix B, Supplemental Standards Recommendation, serves as documentation of the application of supplemental standards to the remaining areas of contamination and their current radiological conditions.

3.0 VERIFICATION SUMMARY

3.1 Radiological Survey Data

All survey data were acquired according to approved procedures.

3.1.1 Pre-Remedial Action Survey

The results of the survey defining the contaminated area requiring remedial action are presented on Drawing RFL-PS-10-0708.

3.1.2 Pre-Restoration Survey

Exterior:

After removal of contamination, and prior to backfilling, a soil sample survey was conducted in the excavated areas. Soil samples were aliquoted from 160 verification grids and analyzed by gamma spectroscopy with the Opposed Crystal System in accordance with Health Physics Procedure OP-003-1 and IN-001-2. The radium concentration in these soil samples range from 0.5 to 13.3 pCi/g, as summarized in Table 3.1.

Drawings RF-480-020 through 022 show the actual areas of excavation.

These results confirm that exterior contamination, with the application of supplemental standards, has been reduced to levels below the EPA standards for radium in soil. Background for the Rifle, Colorado, locale is 1.2 pCi/g Ra-226. The data presented include background.

Interior: There are no structures on this property.

3.2 Recommendation for Certification

3.2.1 Exterior:

Areas of contamination contiguous to the Old Rifle Site were identified and removed. Soil samples after excavation and prior to backfilling indicate that the limits of 5 pCi/g above background in the surface 15 cm and 15 pCi/g above background in any 15 cm layer below the surface are not exceeded. Based on this information, we recommend the exterior of this vicinity property be certified to be in compliance with EPA standards, with the application of supplemental standards, for the UMTRA Project.

3.2.2 Interior:

There are no structures on this property.

4.0 REFERENCES

4.1 Remedial Action Plan and Site Design for Stabilization of the Inactive Uranium Mill Tailings Sites At Rifle, Colorado; U.S. Department of Energy, UMTRAP, February, 1992.

4.2 The Vicinity Property Remedial Action Agreement for Property RF-480; MK-Ferguson Company; Albuquerque, New Mexico; April, 1994.

4.3 Health Physics Procedures; Rust Federal Services, Inc., for MK-Ferguson Company, Remedial Action Contractor; Albuquerque, New Mexico; October, 1993.

4.4 Vicinity Properties Management and Implementation Manual; UMTRAP, U.S. Department of Energy; Albuquerque, New Mexico; August, 1986.

4.5 Title 40, Code of Federal Regulations, Part 192.12-23; U.S. Environmental Protection Agency; Washington, D.C.; July, 1983.

TABLE 3.1
VERIFICATION SOIL SAMPLE SURVEY
PROPERTY RF-480

LOCATION/SAMPLE ID	SAMPLE DEPTH (cm)	RA-226 CONC. (pCi/g)
ORF-SV-D-40-25	>15	2.6
ORF-SV-D-41-20	>15	1.4
ORF-SV-D-41-21	>15	1.8
ORF-SV-D-41-22	>15	1.4
ORF-SV-D-41-23	>15	1.7
ORF-SV-D-41-24	>15	3.7
ORF-SV-D-41-25	>15	3.0
ORF-SV-D-42-15	>15	1.4
ORF-SV-D-42-16	>15	3.1
ORF-SV-D-42-17	>15	3.7
ORF-SV-D-42-18	>15	2.7
ORF-SV-D-42-19	>15	2.9
ORF-SV-D-42-20	>15	2.7
ORF-SV-D-42-21	>15	2.8
ORF-SV-D-42-22	>15	3.4
ORF-SV-D-42-23	>15	7.8
ORF-SV-D-42-24	>15	5.4
ORF-SV-E-28-25	>15	6.5
ORF-SV-E-31-23	>15	6.6
ORF-SV-E-31-24	>15	2.8
ORF-SV-E-31-25	>15	1.8
ORF-SV-E-32-17	>15	1.5
ORF-SV-E-32-18	>15	1.6
ORF-SV-E-32-19	>15	2.2

TABLE 3.1
VERIFICATION SOIL SAMPLE SURVEY
PROPERTY RF-480

LOCATION/SAMPLE ID	SAMPLE DEPTH (cm)	RA-226 CONC. (pCi/g)
ORF-SV-E-32-20	>15	2.0
ORF-SV-E-32-21	>15	2.2
ORF-SV-E-32-22	>15	2.8
ORF-SV-E-32-23	>15	1.3
ORF-SV-E-32-24	>15	1.2
ORF-SV-E-32-25	>15	1.4
ORF-SV-E-33-12	>15	0.7
ORF-SV-E-33-13	>15	1.3
ORF-SV-E-33-14	>15	1.6
ORF-SV-E-33-15	>15	1.7
ORF-SV-E-33-16	>15	9.5
ORF-SV-E-33-17	>15	3.3
ORF-SV-E-33-18	>15	1.1
ORF-SV-E-34-06	>15	1.9
ORF-SV-E-34-07	>15	2.3
ORF-SV-E-34-08	>15	1.2
ORF-SV-E-34-09	>15	1.7
ORF-SV-E-34-10	>15	1.5
ORF-SV-E-34-11	>15	1.6
ORF-SV-E-34-12	>15	3.1
ORF-SV-E-34-13	>15	1.3
ORF-SV-E-34-14	>15	0.5
ORF-SV-E-35-01	>15	1.4
ORF-SV-E-35-02	>15	0.8

TABLE 3.1
VERIFICATION SOIL SAMPLE SURVEY
PROPERTY RF-480

LOCATION/SAMPLE ID	SAMPLE DEPTH (cm)	RA-226 CONC. (pCi/g)
ORF-SV-E-35-03	>15	1.6
ORF-SV-E-35-04	>15	1.7
ORF-SV-E-35-05	>15	1.0
ORF-SV-E-35-06	>15	0.9
ORF-SV-E-35-07	>15	1.4
ORF-SV-E-35-08	>15	5.0
ORF-SV-E-36-09	>15	1.3
ORF-SV-E-36-10	>15	6.1
ORF-SV-E-36-11	>15	2.7
ORF-SV-E-36-12	>15	2.9
ORF-SV-E-36-13	>15	1.4
ORF-SV-E-36-14	>15	1.2
ORF-SV-E-36-15	>15	13.3
ORF-SV-E-36-16	>15	3.2
ORF-SV-E-37-04	>15	9.9
ORF-SV-E-37-05	>15	7.9
ORF-SV-E-37-06	>15	2.8
ORF-SV-E-37-07	>15	8.7
ORF-SV-E-37-08	>15	3.3
ORF-SV-E-37-09	>15	6.6
ORF-SV-E-37-10	>15	12.3
ORF-SV-E-37-11	>15	4.9
ORF-SV-E-37-12	>15	6.9
ORF-SV-E-38-01	>15	6.0

TABLE 3.1
VERIFICATION SOIL SAMPLE SURVEY
PROPERTY RF-480

LOCATION/SAMPLE ID	SAMPLE DEPTH (cm)	RA-226 CONC. (pCi/g)
ORF-SV-E-38-02	>15	5.5
ORF-SV-E-38-03	>15	2.9
ORF-SV-E-38-04	>15	3.0
ORF-SV-E-38-05	>15	2.6
ORF-SV-E-38-06	>15	5.2
ORF-SV-E-38-07	>15	1.7
ORF-SV-E-39-01	>15	2.2
ORF-SV-E-39-02	>15	1.6
ORF-SV-F-22-19	>15	1.0
ORF-SV-F-22-20	>15	1.6
ORF-SV-F-22-21	>15	2.6
ORF-SV-F-22-22	>15	1.6
ORF-SV-F-22-23	>15	1.5
ORF-SV-F-22-24	>15	1.0
ORF-SV-F-22-25	>15	1.5
ORF-SV-F-23-14	>15	0.6
ORF-SV-F-23-15	>15	2.5
ORF-SV-F-23-16	>15	1.4
ORF-SV-F-23-17	>15	1.4
ORF-SV-F-23-18	>15	1.6
ORF-SV-F-23-19	>15	1.5
ORF-SV-F-23-20	>15	1.9
ORF-SV-F-23-21	>15	1.3
ORF-SV-F-23-22	>15	1.8

TABLE 3.1
VERIFICATION SOIL SAMPLE SURVEY
PROPERTY RF-480

LOCATION/SAMPLE ID	SAMPLE DEPTH (cm)	RA-226 CONC. (pCi/g)
ORF-SV-F-23-23	>15	0.6
ORF-SV-F-24-08	>15	1.2
ORF-SV-F-24-09	>15	8.0
ORF-SV-F-24-10	>15	4.8
ORF-SV-F-24-11	>15	1.9
ORF-SV-F-24-12	>15	1.5
ORF-SV-F-24-13	>15	1.8
ORF-SV-F-24-14	>15	4.5
ORF-SV-F-24-16	>15	4.9
ORF-SV-F-24-17	>15	1.5
ORF-SV-F-24-18	>15	4.4
ORF-SV-F-29-01	>15	3.8
ORF-SV-F-29-02	>15	3.4
ORF-SV-F-29-03	>15	4.5
ORF-SV-F-29-04	>15	3.8
ORF-SV-G-03-02	>15	1.0
ORF-SV-G-03-03	>15	1.6
ORF-SV-G-03-04	>15	2.6
ORF-SV-G-03-05	>15	1.6
ORF-SV-G-03-10	>15	0.9
ORF-SV-G-04-01	>15	6.2
ORF-SV-G-04-02	>15	2.6
ORF-SV-G-04-03	>15	2.2
ORF-SV-G-04-04	>15	1.3

TABLE 3.1
VERIFICATION SOIL SAMPLE SURVEY
PROPERTY RF-480

LOCATION/SAMPLE ID	SAMPLE DEPTH (cm)	RA-226 CONC. (pCi/g)
ORF-SV-G-04-05	>15	1.4
ORF-SV-G-04-06	>15	2.3
ORF-SV-G-04-07	>15	1.5
ORF-SV-G-04-08	>15	1.4
ORF-SV-G-04-09	>15	1.1
ORF-SV-G-04-10	>15	2.2
ORF-SV-G-05-01	>15	0.9
ORF-SV-G-05-02	>15	2.2
ORF-SV-G-05-03	>15	2.4
ORF-SV-G-05-04	>15	1.5
ORF-SV-G-05-05	>15	1.0
ORF-SV-G-05-06	>15	2.0
ORF-SV-G-05-07	>15	2.5
ORF-SV-G-05-08	>15	1.6
ORF-SV-G-05-09	>15	2.3
ORF-SV-G-06-01	>15	1.7
ORF-SV-G-06-02	>15	1.5
ORF-SV-G-06-03	>15	1.9
ORF-SV-G-06-04	>15	2.5
ORF-SV-G-06-05	>15	1.7
GRID #1 RFL-SV-5902	>15	3.1
GRID #2 RFL-SV-5920	>15	3.3
GRID #3 RFL-SV-5916	>15	4.1
GRID #4 RFL-SV-5895	>15	5.1

TABLE 3.1
VERIFICATION SOIL SAMPLI; SURVEY
PROPERTY RF-480

LOCATION/SAMPLE ID	SAMPLE DEPTH (cm)	RA-226 CONC. (pCi/g)
GRID #5 RFL-SV-5926	>15	4.1
GRID #6 RFL-SV-5906	>15	9.3
GRID #7 RFL-SV-5899	>15	7.2
GRID #8 RFL-SV-5934	>15	5.9
GRID #9 RFL-SV-5910	>15	9.4
GRID #10 RFL-SV-5928	>15	8.5
GRID #11 RFL-SV-5950	>15	3.7
GRID #12 RFL-SV-5930	>15	3.8
GRID #13 RFL-SV-5953	>15	2.7
GRID #14 RFL-SV-5948	>15	3.9
GRID #16 RFL-SV-5894	>15	2.0
GRID #17 RFL-SV-5924	>15	6.1
GRID #18 RFL-SV-5918	>15	4.2
GRID #19 RFL-SV-5893	>15	3.4
GRID #20 RFL-SV-5944	>15	2.2
GRID #21 RFL-SV-5954	>15	2.8

Note that the area of excavation south of the railroad tracks, represented by Grids 1 through 21, was excavated with vicinity property RF-510 and has a separate verification grid system.

TABLE 3.2
SUPPLEMENTAL STANDARDS
DOSE RATE SURVEY
PROPERTY RF-480

BOREHOLE ID #	LOCATION	UREM/HR
45	N25554 E58307	10
43	N25501 E58371	10
44	N25529 E58371	10
42	N25475 E58440	10
47	N25504 E58440	10
41	N25448 E58512	10
48	N25478 E58512	10
40	N25427 E58583	10
50	N25464 E58583	10
39	N25408 E58647	10
52	N25433 E58647	10
38	N25390 E58729	10
53	N25417 E58729	10
37	N25378 E58803	10
54	N25412 E58803	15
36	N25365 E58875	10
57	N25401 E58875	10
35	N25352 E58948	15
59	N25385 E58948	10
34	N25350 E58993	15
33	N25350 E59062	15
32	N25348 E59150	20
31	N25358 E59236	20
30	N25371 E59319	10

TABLE 3.2
SUPPLEMENTAL STANDARDS
DOSE RATE SURVEY
PROPERTY RF-480

BOREHOLE ID #	LOCATION	UREM/HR
29	N25382 E59387	10
28	N25396 E59460	10
27	N25418 E59541	10
26	N25434 E59615	10
25	N25449 E59688	20
81	N25463 E59770	25
82	N25479 E59846	20
22	N25502 E59923	20
21	N25517 E59991	40
20	N25535 E60075	60
19	N25549 E60153	45
18	N25570 E60224	45
17	N25586 E60290	85
16	N25599 E60363	30
15	N25620 E60446	40
14	N25642 E60532	30
13	N25656 E60599	53
12	N25676 E60675	90
11	N25690 E60746	85
10	N25705 E60814	110
9	N25733 E60929	121
8	N25746 E61003	200
7	N25764 E61077	132
6	N25776 E61136	50

TABLE 3.2
SUPPLEMENTAL STANDARDS
DOSE RATE SURVEY
PROPERTY RF-480

BOREHOLE ID #	LOCATION	UREM/HR
95	N25794 E61224	35
1	N25816 E61362	35
61	N25865 E61362	20
99	N25836 E61436	30
62	N25876 E61436	20
101	N25867 E61512	25
63	N25889 E61512	10
103	N25874 E61583	20
64	N25901 E61583	10
104	N25888 E61657	25
65	N25924 E61657	20
105	N25916 E61729	20
66	N25943 E61729	15
107	N25919 E61801	15
67	N25964 E61801	10
108	N25974 E61873	10
68	N25988 E61873	10
109	N25995 E61945	15
69	N26020 E61945	10
110	N26026 E62018	15
70	N26046 E62018	10
N/A	N25348 E59204	11
N/A	N25348 E59198	11

TABLE 3.2
SUPPLEMENTAL STANDARDS
DOSE RATE SURVEY
PROPERTY RF-480

BOREHOLE ID #	LOCATION	UREM/HR
N/A	N25348 E59188	9
N/A	N25344 E59188	9

TABLE 3.3
SUPPLEMENTAL STANDARDS
OUTDOOR GAMMA AND BOREHOLE SURVEY
PROPERTY RF-480

BOREHOLE ID#	LOCATION	CONTAM. DEPTH	MICRO R/HR
1	N25816 E61362	0-18"	48
2	N25826 E61362	SURFACE	24
3	N25816 E61297	0-30"	77
4	N25804 E61297	0-48"	45
5	N25799 E61224	0-30"	42
6	N25776 E61136	0-24"	123
7	N25764 E61077	0-42"	255
8	N25746 E61003	0-48"+	326
9	N25733 E60929	0-48"	333
10	N25705 E60814	0-48"	56
11	N25690 E60746	0-24"	162
12	N25676 E60675	0-30"	207
13	N25656 E60599	0-30"	123
14	N25642 E60532	0-18"	81
15	N25620 E60446	0-30"	97
16	N25599 E60363	0-48"	53
17	N25586 E60290	0-30"	103
18	N25570 E60224	0-18"	76
19	N25549 E60153	0-18"	105
20	N25535 E60075	0-12"	68
21	N25517 E59991	0-18"	44
22	N25502 E59923	0-12"	45

TABLE 3.3
SUPPLEMENTAL STANDARDS
OUTDOOR GAMMA AND BOREHOLE SURVEY
PROPERTY RF-480

BOREHOLE ID#	LOCATION	CONTAM. DEPTH	MICRO R/HR
23	N25484 E59846	0-18"	33
24	N25468 E59770	0-12"	38
25	N25449 E59688	NONE	17
26	N25434 E59615	NONE	17
27	N25418 E59541	12-18"	18
28	N25396 E59460	NONE	13
29	N25382 E59387	NONE	15
30	N25371 E59319	NONE	14
31	N25358 E59236	SURFACE	20
32	N25348 E59150	SURFACE	24
33	N25350 E59062	SURFACE	24
34	N25350 E58993	SURFACE	28
35	N25352 E58948	SURFACE	21
36	N25365 E58875	NONE	16
37	N25378 E58803	NONE	16
38	N25390 E58729	NONE	16
39	N25408 E58647	NONE	16
40	N25427 E58583	NONE	16
41	N25448 E58512	0-30"	21
42	N25475 E58440	0-30"	21
43	N25501 E58371	NONE	16
44	N25529 E58371	NONE	17
45	N25554 E58307	NONE	17

TABLE 3.3
SUPPLEMENTAL STANDARDS
OUTDOOR GAMMA AND BOREHOLE SURVEY
PROPERTY RF-480

BOREHOLE ID#	LOCATION	CONTAM. DEPTH	MICRO R/HR
46	N25542 E58371	NONE	17
47	N25504 E58440	NONE	17
48	N25478 E58512	NONE	15
49	N25456 E58583	NONE	17
50	N25464 E58583	24-36"	18
51	N25479 E58583	NONE	15
52	N25433 E58647	NONE	17
53	N25417 E58729	NONE	16
54	N25412 E58803	NONE	17
55	N25417 E58803	NONE	15
56	N25391 E58875	NONE	16
57	N25401 E58875	12-18"	17
58	N25415 E58875	12-18"	16
59	N25385 E58948	24-30"	18
60	N25855 E61362	0-36"	32
61	N25865 E61362	0-30"	32
62	N25876 E61436	SURFACE	19
63	N25889 E61512	0-30"	20
64	N25901 E61583	18-48"	19
65	N25924 E61657	0-36"	25
66	N25943 E61729	NONE	17
67	N25964 E61801	NONE	18
68	N25988 E61873	NONE	16

TABLE 3.3
SUPPLEMENTAL STANDARDS
OUTDOOR GAMMA AND BOREHOLE SURVEY
PROPERTY RF-480

BOREHOLE ID#	LOCATION	CONTAM. DEPTH	MICRO R/HR
69	N26020 E61945	NONE	17
70	N26046 E62018	NONE	15
71	N25464 E58573	NONE	18
72	N25464 E58593	NONE	18
73	N25425 E58875	NONE	15
74	N25415 E58885	NONE	16
75	N25415 E58870	NONE	16
76	N25401 E58885	NONE	16
77	N25385 E58935	NONE	16
78	N25358 E59245	NONE	17
79	N25429 E59615	NONE	14
80	N25444 E59688	SURFACE	21
81	N25463 E59770	0-24"	50
82	N25479 E59846	0-18"	38
83	N25497 E59923	SURFACE	25
84	N25512 E59991	0-24"	51
Pp	N25530 E60075	0-24"	34
85	N25544 E60153	0-36"	41
86	N25565 E60224	0-24"	63
Mm	N25581 E60290	0-36"	80
87	N25594 E60363	0-48"	42
88	N25615 E60446	0-36"	78
89	N25635 E60599	0-36"	79

TABLE 3.3
SUPPLEMENTAL STANDARDS
OUTDOOR GAMMA AND BOREHOLE SURVEY
PROPERTY RF-480

BOREHOLE ID#	LOCATION	CONTAM. DEPTH	MICRO R/HR
90	N25671 E60675	0-36"	120
91	N25685 E60746	0-36"	118
92	N25728 E60814	0-54"	171
93	N25725 E60929	0-30"	85
94	N25758 E61077	0-42"	151
95	N25794 E61224	0-18"	45
96	N25799 E61297	0-66"	31
97	N25812 E61362	SURFACE	29
98	N25846 E61436	0-18"	44
99	N25836 E61436	0-36"	46
100	N25826 E61436	0-36"	38
101	N25867 E61512	SURFACE	27
102	N25857 E61512	0-42"	25
103	N25874 E61583	SURFACE	25
104	N25888 E61657	0-18"	43
105	N25916 E61729	0-18"	43
106	N25937 E61801	NONE	18
107	N25919 E61801	SURFACE	25
108	N25974 E61873	12-36"	19
109	N25995 E61945	0-18"	25
110	N26026 E62018	NONE	19
111	N25395 E58948	NONE	16
112	N25401 E58870	NONE	18

TABLE 3.3
SUPPLEMENTAL STANDARDS
OUTDOOR GAMMA AND BOREHOLE SURVEY
PROPERTY RF-480

BOREHOLE ID#	LOCATION	CONTAM. DEPTH	MICRO R/HR
113	N25775 E61300	NONE	15
114	N25785 E61362	NONE	17
115	N25817 E61436	0-36"	45
116	N25844 E61512	0-30"	34
117	N25860 E61583	0-36"	27
118	N25853 E61657	NONE	15
119	N25905 E61729	6-30"	19
120	N25934 E61873	NONE	17
121	N25942 E61950	NONE	15
122	N25959 E62017	NONE	13
* 1A	N25348 E59198	30-66"	N/A

* Note that at Borehole #1a, 30 inches of excavation had occurred before drilling began. Clean backfill was placed over the area. No surface gamma rate is available.

Exposure rates were calculated by the computer using the following formula:
Micro R/hr = CPTM * .006 + 6.11

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
RFL-SS-8271	BH #3/N25816 E61297	0-2	14.6
RFL-SS-8272	BH #3/N25816 E61297	2-4	16.9
RFL-SS-8273	BH #2/N25826 E61362	0-2	10.5
RFL-SS-8317	BH #5/N25799 E61224	0-2	140.4
RFL-SS-8318	BH #5/N25799 E61224	2-4	178.5
RFL-SS-8319	BH #6/N25776 E61136	0-2	52.7
RFL-SS-8320	BH #6/N25776 E61136	2-4	58.3
RFL-SS-8321	BH #6/N25776 E61136	4-6	96.1
RFL-SS-8322	BH #6/N25776 E61136	6-8	1.8
ORF-SS-4219	N25813 E61128	0-1	17.3
ORF-SS-4220	N25813 E61128	1-2	72.8
ORF-SS-4221	N25813 E61128	2-3	72.5
RFL-SS-8323	BH #7/N25764 E61077	0-2	340.1
RFL-SS-8324	BH #7/N25764 E61077	2-4	227.3
RFL-SS-8325	BH #7/N25764 E61077	4-6	1.6
RFL-SS-8326	BH #7/N25764 E61077	6-8	1.3
ORF-SS-4197	N25780 E61055	0-1	203.9
ORF-SS-4198	N25780 E61055	1-2	26.3
ORF-SS-4199	N25780 E61055	2-3	30.1
ORF-SS-4200	N25780 E61055	3-4	58.8
RFL-SS-8327	BH #8/N25746 E61003	0-2	2.0
RFL-SS-8328	BH #8/N25746 E61003	2-4	386.9
RFL-SS-8329	BH #8/N25746 E61003	4-6	110.9

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
RFL-SS-8330	BH #8/N25746 E61003	6-8	182.8
ORF-SS-4201	N25783 E60985	0-1	44.8
ORF-SS-4202	N25783 E60985	1-2	63.0
ORF-SS-4203	N25783 E60985	2-3	90.1
ORF-SS-4204	N25783 E60985	3-4	56.3
ORF-SS-4205	N25783 E60985	4-5	41.8
ORF-SS-4206	N25783 E60985	5-6	52.9
ORF-SS-4213	N25783 E60985	6-7	221.5
RFL-SS-8331	BH #9/N25733 E60929	0-2	23.0
RFL-SS-8332	BH #9/N25733 E60929	2-4	2.2
ORF-SS-4214	N25762 E60898	0-1	20.5
ORF-SS-4215	N25762 E60898	1-2	112.3
ORF-SS-4216	N25762 E60898	2-3	29.7
ORF-SS-4217	N25762 E60898	3-4	20.1
ORF-SS-4218	N25762 E60898	4-5	204.3
RFL-SS-8333	BH #10/N25705 E60814	0-2	93.6
RFL-SS-8334	BH #10/N25705 E60814	2-4	276.7
RFL-SS-8335	BH #10/N25705 E60814	4-6	16.1
RFL-SS-8336	BH #10/N25705 E60814	6-8	1.1
RFL-SS-8337	BH #10/N25705 E60814	8-10	0.7
RFL-SS-8338	BH #10/N25705 E60814	10-12	1.7
ORF-SS-4207	N25742 E60804	0-1	14.6
ORF-SS-4208	N25742 E60804	1-2	98.7

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
ORF-SS-4209	N25742 E60804	2-3	233.8
ORF-SS-4210	N25742 E60804	3-4	76.5
ORF-SS-4211	N25742 E60804	4-5	116.0
ORF-SS-4212	N25742 E60804	5-6	43.0
RFL-SS-8215	BH #11/N25690 E60746	0-2	181.9
RFL-SS-8216	BH #11/N25690 E60746	2-4	119.3
RFL-SS-8217	BH #11/N25690 E60746	4-6	106.6
RFL-SS-8218	BH #11/N25690 E60746	6-8	32.8
RFL-SS-8219	BH #11/N25690 E60746	8-10	1.8
ORF-SS-4095	N25729 E60736	0-1	1.4
ORF-SS-4191	N25729 E60736	1-2	7.7
ORF-SS-4192	N25729 E60736	2-3	116.6
ORF-SS-4096	N25729 E60736	3-4	166.9
ORF-SS-4097	N25729 E60736	4-5	130.1
ORF-SS-4193	N25729 E60736	5-6	121.3
ORF-SS-4098	N25729 E60736	6-7	170.9
ORF-SS-4099	N25729 E60736	7-8	446.4
RFL-SS-8220	BH #12/N25676 E60675	0-2	20.9
RFL-SS-8221	BH #12/N25676 E60675	2-4	162.1
RFL-SS-8222	BH #12/N25676 E60675	4-6	45.7
ORF-SS-4100	N25707 E60668	0-1	24.6
ORF-SS-4194	N25707 E60668	1-2	17.8
ORF-SS-4195	N25707 E60668	2-3	9.6

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
ORF-SS-4196	N25707 E60668	3-4	35.4
ORF-SS-4101	N25707 E60668	4-5	12.4
ORF-SS-4102	N25707 E60668	5-6	115.6
RFL-SS-8223	BH #13/N25656 E60599	0-2	39.0
RFL-SS-8224	BH #13/N25656 E60599	2-4	57.5
RFL-SS-8225	BH #13/N25656 E60599	4-6	58.8
ORF-SS-4111	N25673 E60589	0-1	37.3
ORF-SS-4104	N25673 E60589	1-2	24.1
ORF-SS-4112	N25673 E60589	2-3	47.5
ORF-SS-4087	N25673 E60589	3-4	47.8
ORF-SS-4088	N25673 E60589	4-5	34.9
ORF-SS-4089	N25673 E60589	5-6	43.9
RFL-SS-8226	BH #14/N25642 E60532	0-2	72.9
RFL-SS-8227	BH #14/N25642 E60532	2-4	65.2
RFL-SS-8228	BH #14/N25642 E60532	4-6	54.2
ORF-SS-4103	N25675 E60523	0-1	2.4
ORF-SS-4177	N25675 E60523	1-2	21.1
ORF-SS-4178	N25675 E60523	2-3	47.6
ORF-SS-4179	N25675 E60523	3-4	32.4
ORF-SS-4180	N25675 E60523	4-5	11.0
RFL-SS-8229	BH #15/N25620 E60446	0-2	50.8
RFL-SS-8230	BH #15/N25620 E60446	2-4	40.5
*ORF-SS-4173	N25657 E60436	0-1	5.7

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
ORF-SS-4094	N25657 E60436	1-2	14.0
ORF-SS-4174	N25657 E60436	2-3	15.1
ORF-SS-4175	N25657 E60436	3-4	40.8
ORF-SS-4176	N25657 E60436	4-5	228.5
RFL-SS-8231	BH #16/N25599 E60363	0-2	29.9
RFL-SS-8232	BH #16/N25599 E60363	2-4	12.5
RFL-SS-8233	BH #16/N25599 E60363	4-6	21.4
RFL-SS-8234	BH #16/N25599 E60363	6-8	21.3
RFL-SS-8235	BH #16/N25599 E60363	8-10	1.8
ORF-SS-4160	N25637 E60348	0-1	2.0
ORF-SS-4161	N25637 E60348	1-2	3.0
ORF-SS-4162	N25637 E60348	2-3	10.1
ORF-SS-4121	N25637 E60348	3-4	10.6
ORF-SS-4091	N25637 E60348	4-5	48.2
ORF-SS-4163	N25637 E60348	5-6	6.4
ORF-SS-4169	N25637 E60348	6-7	317.2
RFL-SS-8236	BH #17/N25586 E60290	0-2	473.9
RFL-SS-8237	BH #17/N25585 E60290	2-4	121.8
ORF-SS-4170	N25619 E60282	0-1	12.5
ORF-SS-4171	N25619 E60282	1-2	8.6
ORF-SS-4172	N25619 E60282	2-3	4.4
ORF-SS-4093	N25619 E60282	3-4	18.2
RFL-SS-8238	BH #18/N25570 E60224	0-2	65.6

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
RFL-SS-8239	BH #18/N25570 E60224	2-4	286.7
RFL-SS-8240	BH #18/N25570 E60224	4-6	174.5
ORF-SS-4090	N25602 E60216	0-1	1.5
*ORF-SS-4125	N25602 E60216	1-2	1.4
ORF-SS-4126	N25602 E60216	2-3	0.9
ORF-SS-4158	N25602 E60216	3-4	2.5
ORF-SS-4159	N25602 E60216	4-5	21.1
ORF-SS-4092	N25602 E60216	5-6	2.8
RFL-SS-8241	BH #19/N25549 E60153	0-2	59.0
RFL-SS-8242	BH #19/N25549 E60153	2-4	55.6
ORF-SS-4118	N25585 E60143	0-1	5.8
ORF-SS-4119	N25585 E60143	1-2	1.7
ORF-SS-4120	N25585 E60143	2-3	1.9
ORF-SS-4117	N25585 E60143	3-4	6.9
ORF-SS-4122	N25585 E60143	4-5	2.5
RFL-SS-8196	BH #20/N25535 E60075	0-2	106.1
RFL-SS-8197	BH #20/N25535 E60075	2-4	287.4
ORF-SS-4105	N25571 E60064	0-1	140.9
ORF-SS-4106	N25571 E60064	1-2	199.8
ORF-SS-4107	N25571 E60064	2-3	7.0
ORF-SS-4108	N25571 E60064	3-4	44.5
ORF-SS-4109	N25571 E60064	4-5	5.2
ORF-SS-4110	N25571 E60064	5-6	7.0

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
RFL-S[illegible]98	BH #21/N25517 E59991	0-2	119.2
RFL-SS-8199	BH #21/N25517 E59991	2-4	288.7
ORF-SS-4028	N25550 E59984	0-1	4.1
ORF-SS-4029	N25550 E59984	1-2	5.8
ORF-SS-4030	N25550 E59984	2-3	4.6
ORF-SS-4032	N25550 E59984	3-4	2.5
ORF-SS-4031	N25550 E59984	4-5	1.3
ORF-SS-4033	N25550 E59984	5-6	4.3
ORF-SS-4034	N25550 E59984	6-7	15.9
RFL-SS-8200	BH #22/N25502 E59923	0-2	26.5
RFL-SS-8201	BH #22/N25502 E59923	2-4	25.6
RFL-SS-8202	BH #22/N25502 E59923	4-6	17.7
ORF-SS-4051	N25535 E59912	0-1	13.2
ORF-SS-4052	N25535 E59912	1-2	1.7
ORF-SS-4053	N25535 E59912	2-3	49.6
ORF-SS-4054	N25535 E59912	3-4	3.9
ORF-SS-4055	N25535 E59912	4-5	1.8
ORF-SS-4056	N25535 E59912	5-6	4.4
ORF-SS-4060	N25535 E59912	6-7	11.9
RFL-SS-8203	BH #23/N25484 E59846	0-2	29.2
RFL-SS-8204	BH #23/N25484 E59846	2-4	53.8
RFL-SS-8205	BH #23/N25484 E59846	4-6	9.8
RFL-SS-8206	BH #23/N25484 E59846	6-8	9.4

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
ORF-SS-4020	N25518 E59836	0-1	1.6
ORF-SS-4022	N25518 E59836	1-2	2.2
ORF-SS-4023	N25518 E59836	2-3	2.3
ORF-SS-4024	N25518 E59836	3-4	4.0
ORF-SS-4025	N25518 E59836	4-5	2.7
ORF-SS-4027	N25518 E59836	5-6	2.7
ORF-SS-4026	N25518 E59836	6-7	16.8
RFL-SS-8207	BH #81/N25463 E59770	0-2	9.9
RFL-SS-8208	BH #81/N25463 E59770	2-4	8.9
ORF-SS-4082	N25499 E59762	0-1	1.4
ORF-SS-4083	N25499 E59762	1-2	2.3
ORF-SS-4084	N25499 E59762	2-3	4.8
ORF-SS-4085	N25499 E59762	3-4	5.0
ORF-SS-4086	N25499 E59762	4-5	15.3
RFL-SS-8209	BH #25/N25449 E59688	0-2	9.0
RFL-SS-8210	BH #25/N25449 E59688	2-4	20.9
ORF-SS-4072	N25479 E59674	0-1	3.9
ORF-SS-4073	N25479 E59674	1-2	5.0
ORF-SS-4074	N25479 E59674	2-3	6.7
ORF-SS-4075	N25479 E59674	3-4	358.3
ORF-SS-4076	N25479 E59674	4-5	31.1
ORF-SS-4077	N25464 E59608	0-1	2.5
ORF-SS-4078	N25464 E59608	1-2	1.7

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
ORF-SS-4079	N25464 E59608	2-3	2.9
ORF-SS-4080	N25464 E59608	3-4	1.6
ORF-SS-4081	N25464 E59608	4-5	2.0
RFL-SS-8211	BH #27/N25418 E59541	0-2	3.1
RFL-SS-8212	BH #27/N25418 E59541	2-4	6.9
RFL-SS-8213	BH #27/N25418 E59541	4-6	7.4
RFL-SS-8214	BH #27/N25418 E59541	6-8	1.8
ORF-SS-4067	N25447 E59537	0-1	1.4
ORF-SS-4068	N25447 E59537	1-2	4.1
ORF-SS-4069	N25447 E59537	2-3	10.8
ORF-SS-4070	N25447 E59537	3-4	3.9
ORF-SS-4071	N25447 E59537	4-5	55.6
ORF-SS-4035	N25428 E59456	0-1	1.5
ORF-SS-4036	N25428 E59456	1-2	7.2
ORF-SS-4042	N25428 E59456	2-3	0.9
ORF-SS-4043	N25428 E59456	3-4	1.9
ORF-SS-4044	N25428 E59456	4-5	40.0
ORF-SS-4045	N25411 E59382	0-1	3.5
ORF-SS-4048	N25411 E59382	1-2	4.1
ORF-SS-4049	N25411 E59382	2-3	2.1
ORF-SS-4050	N25411 E59382	3-4	16.4
ORF-SS-4000	N25401 E59307	0-1	26.0
ORF-SS-4001	N25401 E59307	1-2	17.5

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

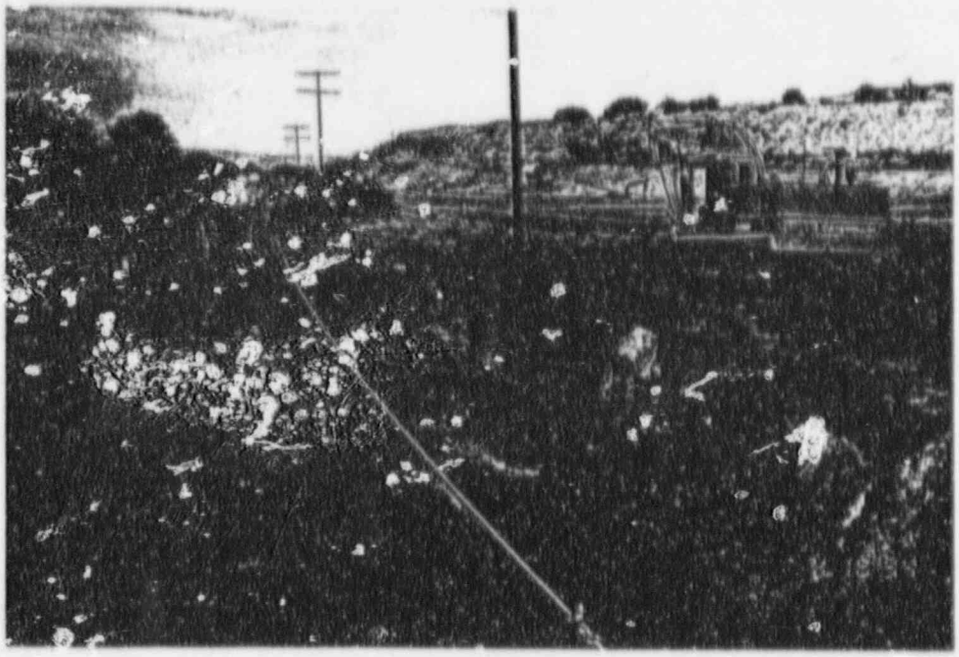
SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
ORF-SS-4002	N25401 E59307	2-3	75.2
ORF-SS-4003	N25401 E59307	3-4	13.5
ORF-SS-4004	N25401 E59307	4-5	14.2
ORF-SS-3969	N25394 E59235	0-1	786.9
ORF-SS-3996	N25394 E59235	1-2	64.5
ORF-SS-3997	N25394 E59235	2-3	4.2
ORF-SS-3998	N25394 E59235	3-4	4.3
ORF-SS-3999	N25394 E59235	4-5	14.1
ORF-SS-3989	N25392 E59156	0-1	8.4
ORF-SS-3990	N25392 E59156	1-2	16.5
ORF-SS-3991	N25392 E59156	2-3	35.1
ORF-SS-3992	N25392 E59156	3-4	77.9
ORF-SS-3993	N25392 E59156	4-5	71.8
ORF-SS-3994	N25392 E59156	5-6	384.3
ORF-SS-3995	N25392 E59156	6-7	29.6
ORF-SS-3971	N25392 E59156	7-8	6.9
ORF-SS-3966	N25391 E58997	0-1	4.5
ORF-SS-3978	N25391 E58997	1-2	5.2
ORF-SS-3970	N25391 E58997	2-3	3.6
ORF-SS-3965	N25391 E58997	3-4	1.9
ORF-SS-3979	N25391 E58997	4-5	6.4
ORF-SS-3980	N25391 E58997	5-6	7.3
ORF-SS-3981	N25391 E58997	6-7	4.0

TABLE 3.4
SUPPLEMENTAL STANDARDS
SOIL SAMPLE SURVEY
PROPERTY RF-480

SAMPLE ID #	LOCATION	DEPTH (FT.)	FINAL RA-226 CONC. (pCi/g)
ORF-SS-3977	N25391 E59058	0-1	5.5
ORF-SS-3983	N25391 E59058	1-2	5.9
ORF-SS-3984	N25391 E59058	2-3	7.3
ORF-SS-3985	N25391 E59058	3-4	10.0
ORF-SS-3986	N25391 E59058	4-5	3.2
ORF-SS-3987	N25391 E59058	5-6	2.4
ORF-SS-3968	N25395 E58951	0-1	2.2
ORF-SS-3973	N25395 E58951	1-2	1.9
ORF-SS-3964	N25395 E58951	2-3	1.7
ORF-SS-3967	N25395 E58951	3-4	2.3
ORF-SS-3974	N25395 E58951	4-5	1.6
ORF-SS-3975	N25395 E58951	5-6	1.1
ORF-SS-3963	N25395 E58951	6-7	1.1
ORF-SS-3982	N25395 E58951	7-8	6.5
ORF-SS-3976	N25395 E58951	8-9	3.1
*RFL-SS-7513	BH #1A/N25348 E59198	4-5	9056.0

* NOTES: Soil samples ORF-SS-4173 and ORF-SS-4125 are not depicted on drawings RF-480-030 and -031.

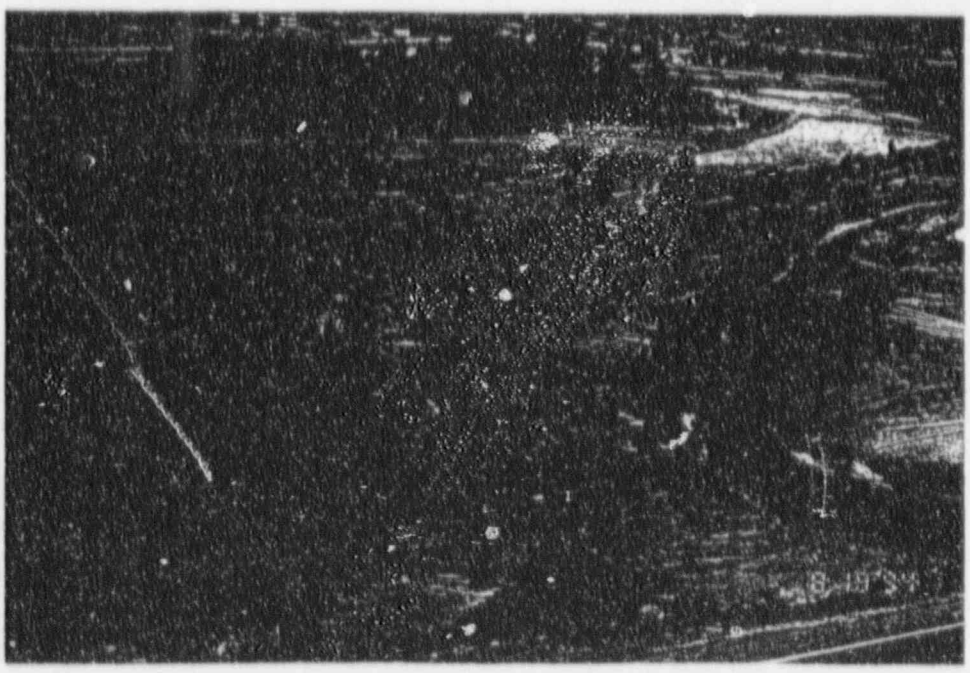
The final Ra-226 concentration is estimated for soil sample RFL-SS-7513.



Looking West along railroad track during excavation.

Looking West during excavation.

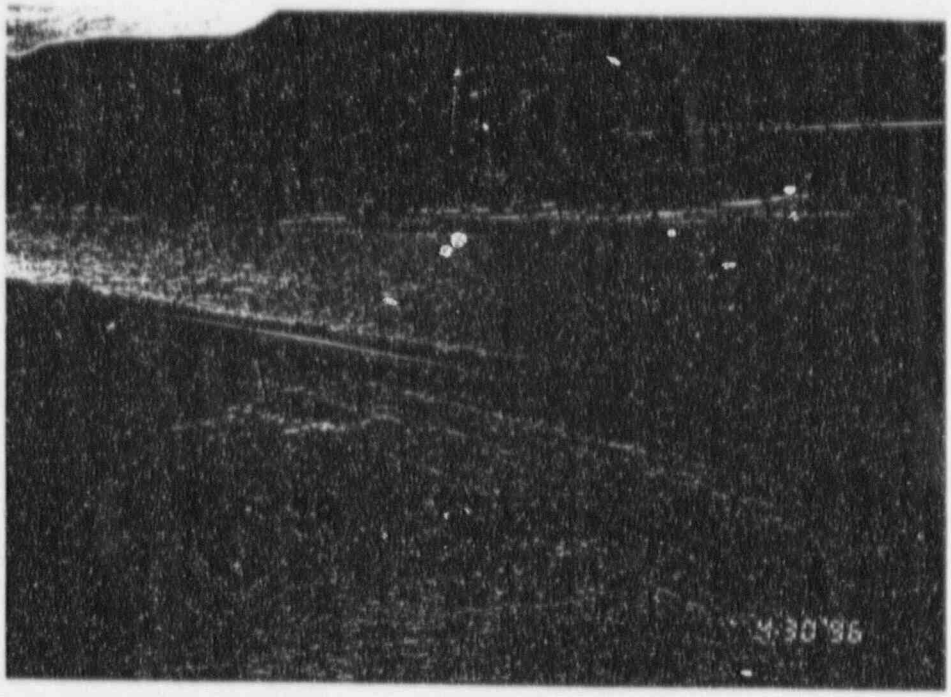
Looking East during excavation.



Looking Southwest during excavation.

Looking East at remaining contaminates around poles.

Looking East on South side of railroad track during excavation of (RF-480/RF-510).

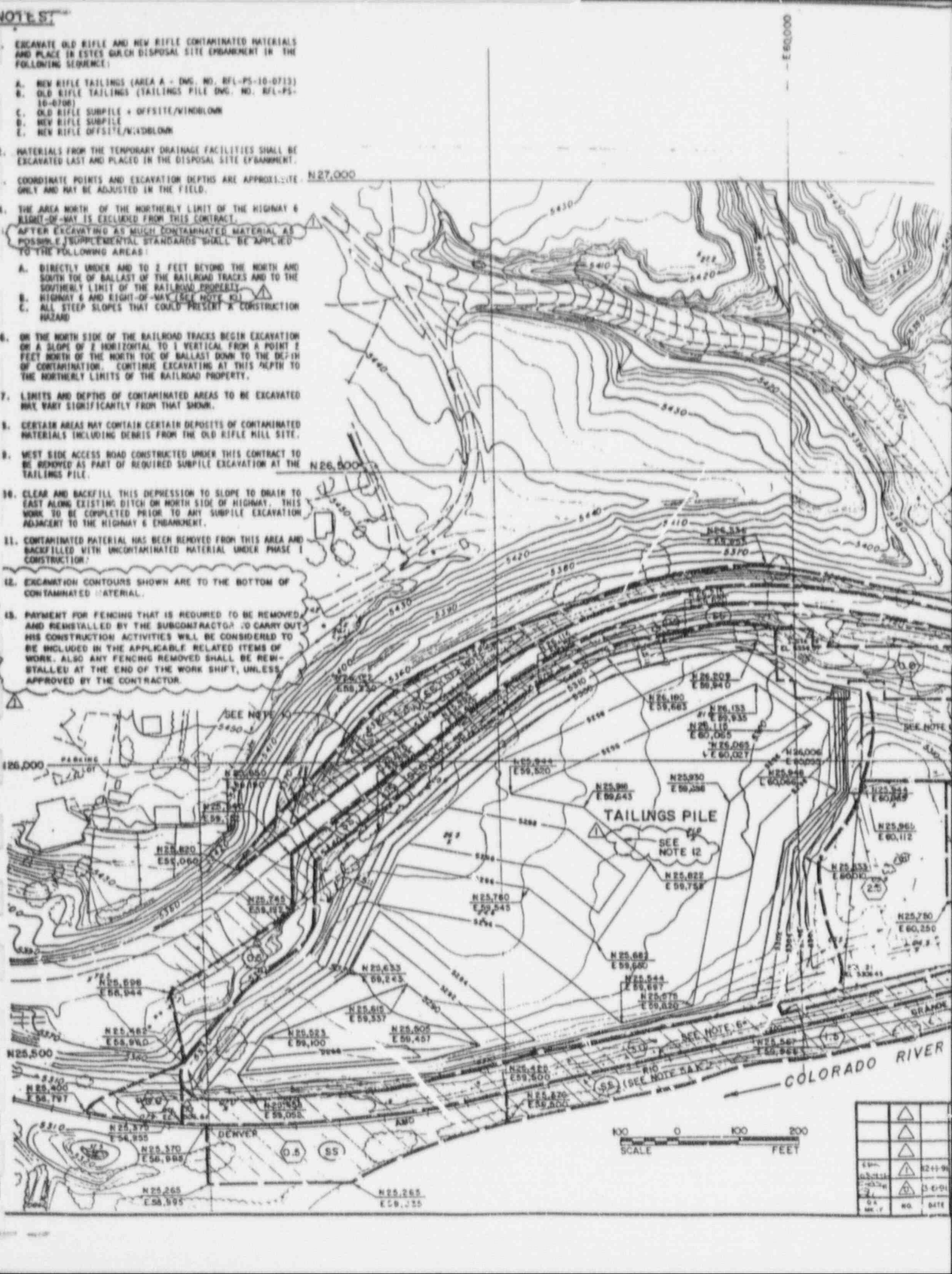


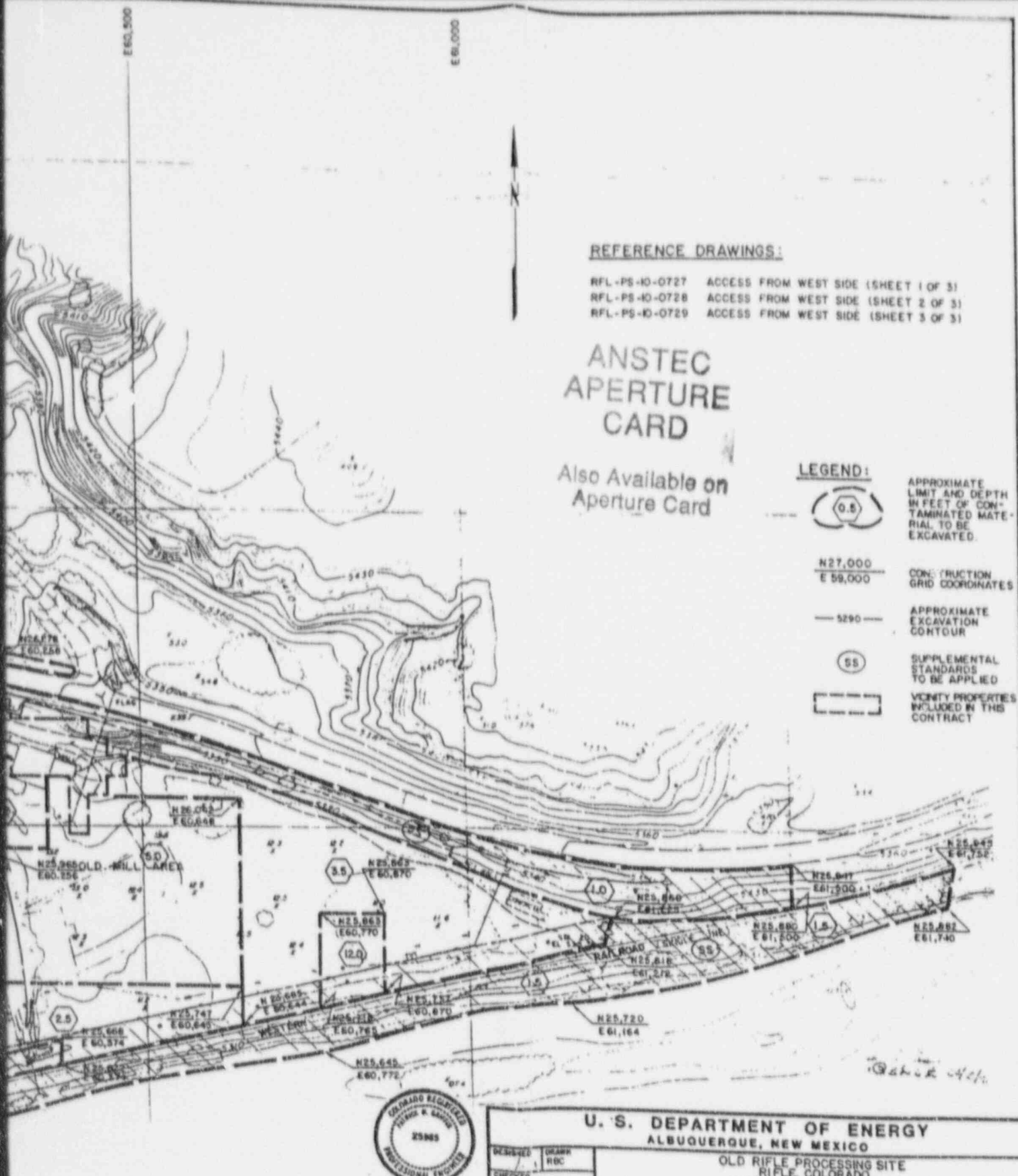
Looking Southeast after Remedial Action.

Looking East after Remedial Action.

NOTES:

1. EXCAVATE OLD RIFLE AND NEW RIFLE CONTAMINATED MATERIALS AND PLACE IN ESTES GULCH DISPOSAL SITE EMBANKMENT IN THE FOLLOWING SEQUENCE:
   A. NEW RIFLE TAILINGS (AREA A - DWG. NO. RFL-PS-10-0713)
   B. OLD RIFLE TAILINGS (TAILINGS PILE DWG. NO. RFL-PS-10-0706)
   C. OLD RIFLE SUBPILE + OFFSITE/WINDBLOWN
   D. NEW RIFLE SUBPILE
   E. NEW RIFLE OFFSITE/WINDBLOWN
2. MATERIALS FROM THE TEMPORARY DRAINAGE FACILITIES SHALL BE EXCAVATED LAST AND PLACED IN THE DISPOSAL SITE EMBANKMENT.
3. COORDINATE POINTS AND EXCAVATION DEPTHS ARE APPROXIMATE ONLY AND MAY BE ADJUSTED IN THE FIELD.
4. THE AREA NORTH OF THE NORTHERLY LIMIT OF THE HIGHWAY 6 RIGHT-OF-WAY IS EXCLUDED FROM THIS CONTRACT.
5. AFTER EXCAVATING AS MUCH CONTAMINATED MATERIAL AS POSSIBLE, SUPPLEMENTAL STANDARDS SHALL BE APPLIED TO THE FOLLOWING AREAS:
   A. DIRECTLY UNDER AND TO 2 FEET BEYOND THE NORTH AND SOUTH TOE OF BALLAST OF THE RAILROAD TRACKS AND TO THE SOUTHERLY LIMIT OF THE RAILROAD PROPERTY.
   B. HIGHWAY 6 AND RIGHT-OF-WAY (SEE NOTE K1)
   C. ALL STEEP SLOPES THAT COULD PRESENT A CONSTRUCTION HAZARD
6. ON THE NORTH SIDE OF THE RAILROAD TRACKS BEGIN EXCAVATION ON A SLOPE OF 2 HORIZONTAL TO 1 VERTICAL FROM A POINT 2 FEET NORTH OF THE NORTH TOE OF BALLAST DOWN TO THE DEPTH OF CONTAMINATION. CONTINUE EXCAVATING AT THIS DEPTH TO THE NORTHERLY LIMITS OF THE RAILROAD PROPERTY.
7. LIMITS AND DEPTHS OF CONTAMINATED AREAS TO BE EXCAVATED MAY VARY SIGNIFICANTLY FROM THAT SHOWN.
8. CERTAIN AREAS MAY CONTAIN CERTAIN DEPOSITS OF CONTAMINATED MATERIALS INCLUDING DEBRIS FROM THE OLD RIFLE MILL SITE.
9. WEST SIDE ACCESS ROAD CONSTRUCTED UNDER THIS CONTRACT TO BE REMOVED AS PART OF REQUIRED SUBPILE EXCAVATION AT THE TAILINGS PILE.
10. CLEAR AND BACKFILL THIS DEPRESSION TO SLOPE TO DRAIN TO EAST ALONG EXISTING DITCH ON NORTH SIDE OF HIGHWAY. THIS WORK TO BE COMPLETED PRIOR TO ANY SUBPILE EXCAVATION ADJACENT TO THE HIGHWAY 6 EMBANKMENT.
11. CONTAMINATED MATERIAL HAS BEEN REMOVED FROM THIS AREA AND BACKFILLED WITH UNCONTAMINATED MATERIAL UNDER PHASE I CONSTRUCTION.
12. EXCAVATION CONTOURS SHOWN ARE TO THE BOTTOM OF CONTAMINATED MATERIAL.
13. PAYMENT FOR FENCING THAT IS REQUIRED TO BE REMOVED AND REINSTALLED BY THE SUBCONTRACTOR TO CARRY OUT HIS CONSTRUCTION ACTIVITIES WILL BE CONSIDERED TO BE INCLUDED IN THE APPLICABLE RELATED ITEMS OF WORK. ALSO ANY FENCING REMOVED SHALL BE REINSTALLED AT THE END OF THE WORK SHIFT, UNLESS APPROVED BY THE CONTRACTOR.





U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

OLD RIFLE PROCESSING SITE
RIFLE, COLORADO
PHASE II CONSTRUCTION

EXCAVATION SEQUENCE AND TAILINGS EXCAVATION PLAN

DESIGNED	DRAWN RBC
CHECKED	
INSPECTED	
RECOMMENDED	
APPROVED	DATE 4/9/97

DOE PROJECT ENGINEER — DATE

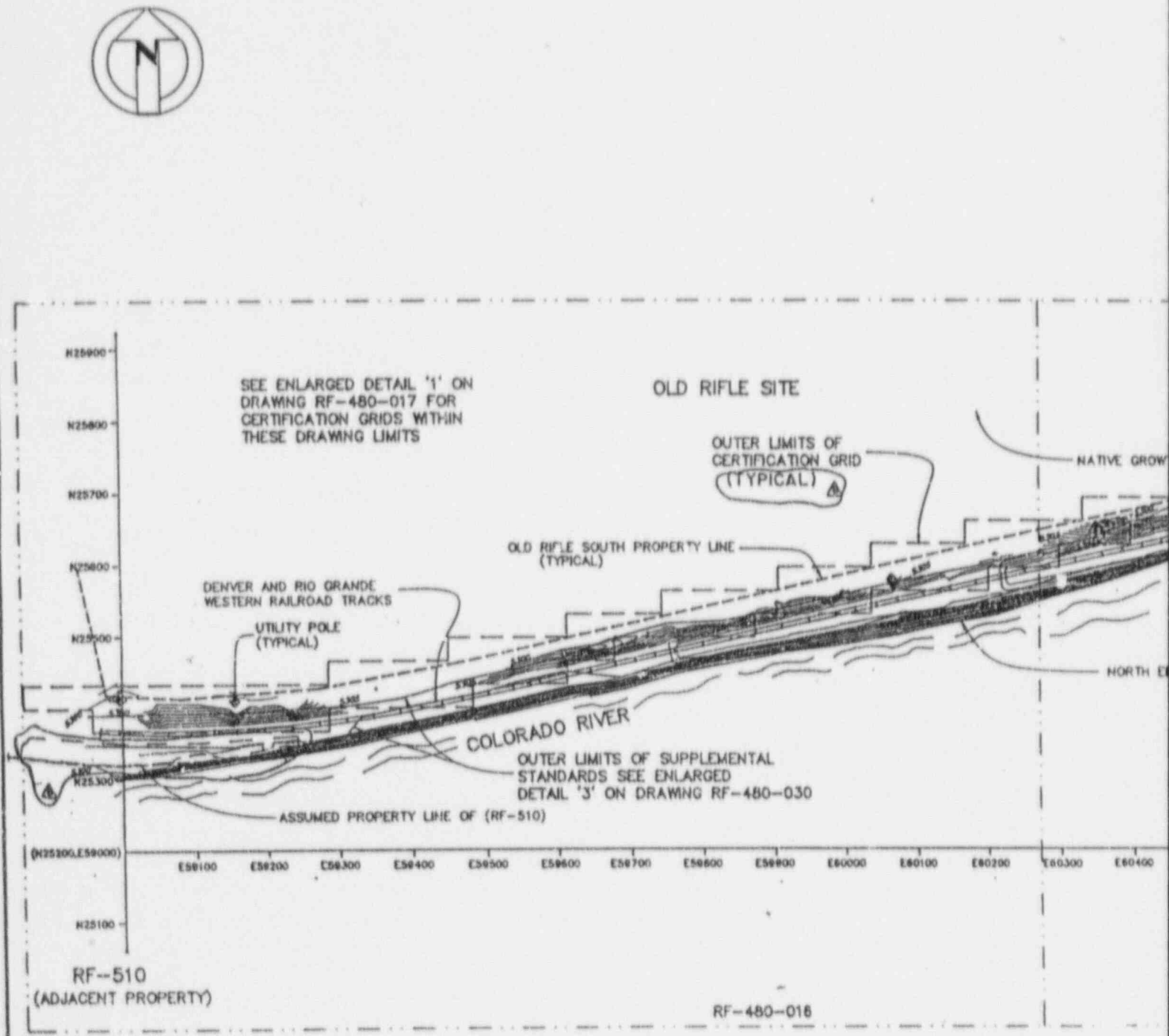
MORRISON-KNUDSEN ENGINEERS, INC.
UMTRA PROJECT

PROJECT NO. DE-AC04-83AL18796

DRAWING NO. RFL-PS-10-0708 REV. 1

REVISIONS	BY	CK	E&D MGR.	CHIEF ENG.	QA MGR.	DOE APP.
ADDED NOTE 12 & 13 AND CHANGED NOTE 5						
ISSUED FOR CONSTRUCTION	---	---	---	---	---	---

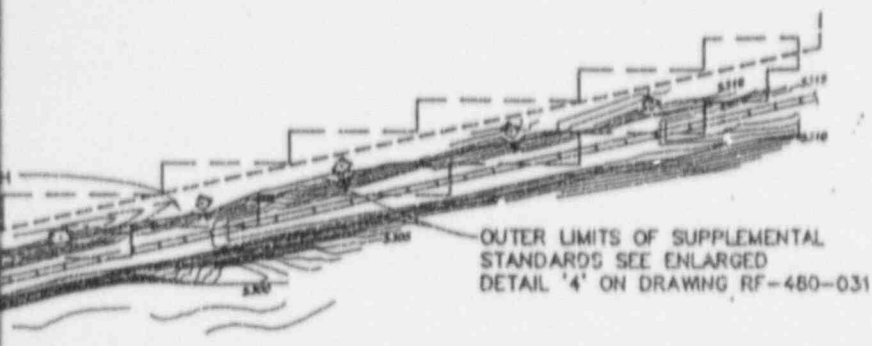
9709190137-01


N
SEE ENLARGED DETAIL '1' ON DRAWING RF-480-017 FOR CERTIFICATION GRIDS WITHIN THESE DRAWING LIMITS
OLD RIFLE SITE
OUTER LIMITS OF CERTIFICATION GRID (TYPICAL)
NATIVE GROW
OLD RIFLE SOUTH PROPERTY LINE (TYPICAL)
DENVER AND RIO GRANDE WESTERN RAILROAD TRACKS
UTILITY POLE (TYPICAL)
NORTH E
COLORADO RIVER
OUTER LIMITS OF SUPPLEMENTAL STANDARDS SEE ENLARGED DETAIL '3' ON DRAWING RF-480-030
ASSUMED PROPERTY LINE OF (RF-510)
N25900
N25800
N25700
N25600
N25500
N25300
N25100
(N25300,E59000)
E59100
E59200
E59300
E59400
E59500
E59600
E59700
E59800
E59900
E60000
E60100
E60200
E60300
E60400
RF--510
(ADJACENT PROPERTY)
RF-480-016
0
50
100
200
300 FEET
SCALE

REFERENCE DRAWING LIMITS

RF-480-017

REFERENCE DRAWING NO.



OUTER LIMITS OF SUPPLEMENTAL STANDARDS SEE ENLARGED DETAIL '4' ON DRAWING RF-480-031

SEE ENLARGED DETAIL '2' ON DRAWING RF-480-017 FOR CERTIFICATION GRIDS WITHIN THESE DRAWING LIMITS

GE OF WATER COLORADO RIVER

E60500 E60600 E60700 E60800 E60900 E61000 E61100 E61200 E61300

RF-480-017

NO.	REVISIONS	DRAWN BY	CHECKED BY	APPROVAL LOE	APPROVAL DOE	PROJ ENG	APPROVAL DOE
	REMOVED NOTES ADDED CERTIFICATION SOUTH OF TRACKS	PGC					
	ISSUE FOR CERTIFICATION SURVEY	JWH					

U. S. DEPARTMENT OF ENERGY

ALBUQUERQUE, NEW MEXICO

DESIGNED | DRAWN JWH

CHECKED

REVIEWED

RECOMMENDED

APPROVED NR DATE

DOE PROJECT MANAGER NR DATE

DOE PROJECT ENGINEER NR DATE

CERTIFICATION RADIOLOGICAL PLAN RF-480

RIFLE, COLORADO

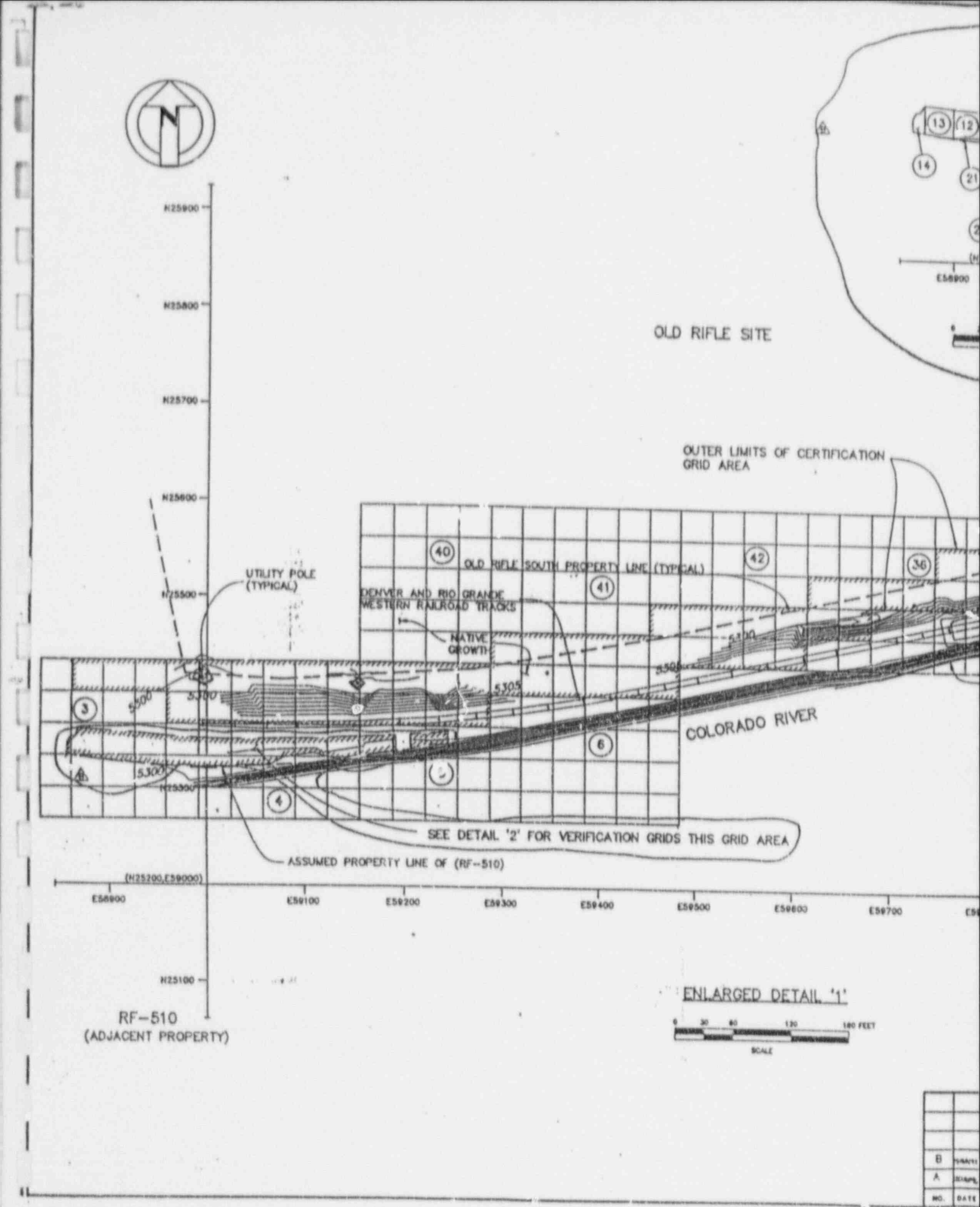
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

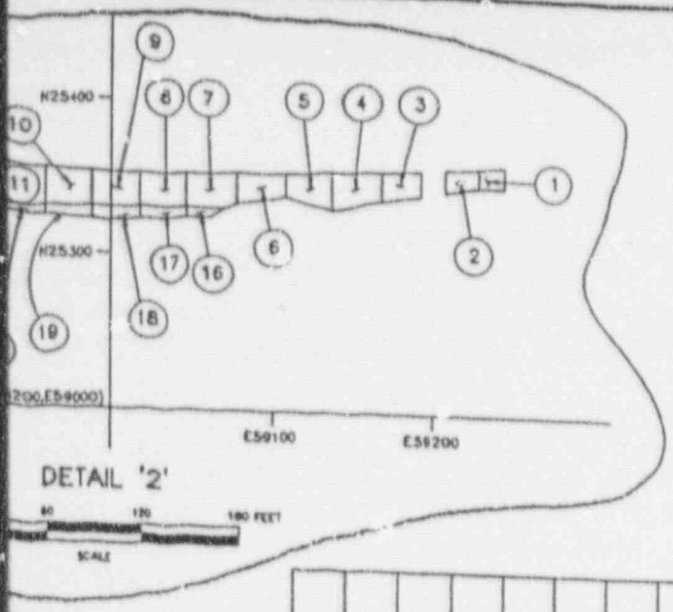
MORRISON KNUDSEN

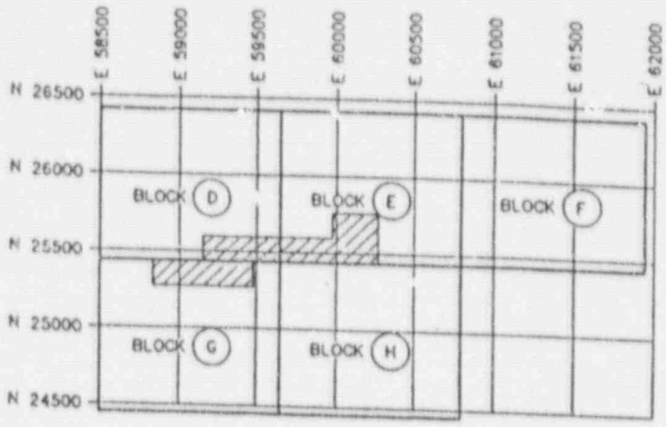
PROJECT NO. DE-AC04-83AL18796

DRAWING NO. RF-480-015 REV. B

4709190137-02


N
N25900
N25800
N25700
N25600
N25500
N25400
N25300
N25100
OLD RIFLE SITE
OUTER LIMITS OF CERTIFICATION GRID AREA
UTILITY POLE (TYPICAL)
OLD RIFLE SOUTH PROPERTY LINE (TYPICAL)
DENVER AND RIO GRANDE WESTERN RAILROAD TRACKS
NATIVE GROWTH
COLORADO RIVER
5300
5305
SEE DETAIL '2' FOR VERIFICATION GRIDS THIS GRID AREA
ASSUMED PROPERTY LINE OF (RF-510)
(N25200,E59000)
E58900
E59100
E59200
E59300
E59400
E59500
E59600
E59700
RF-510
(ADJACENT PROPERTY)
ENLARGED DETAIL '1'
0 30 60 120 180 FEET
SCALE
B
A
NO.
DATE

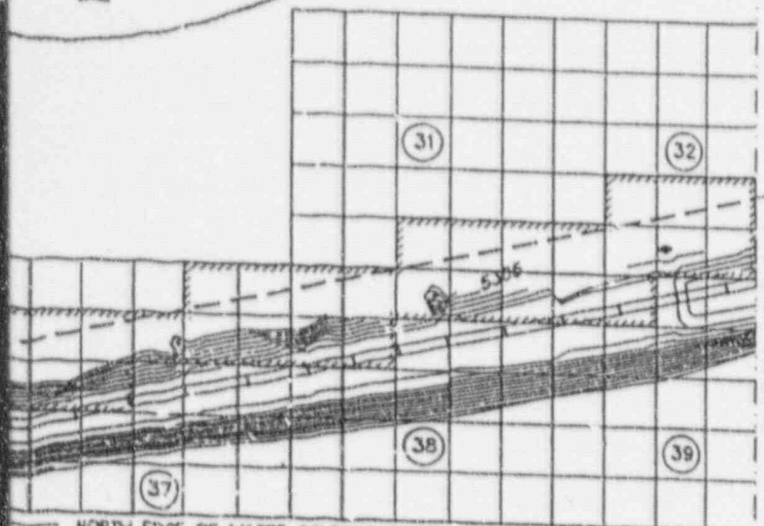




KEY MAP

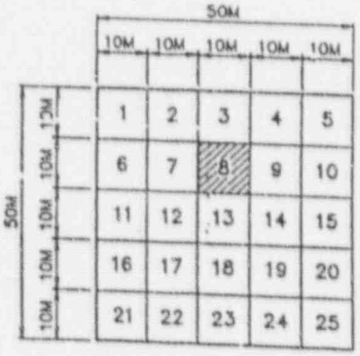
NOTES:

1. SEE DRAWING RF-480-015 FOR OVERALL CERTIFICATION GRID LOCATION AND GENERAL NOTES.



MATCH LINE 1-1
(SEE DRAWING RF-480-017)

LEGEND



50M X 50M GRID

SAMPLE GRID NO.
E-37-8

E - BLOCK NO. (SEE KEY MAP ABOVE)

37 - 50M X 50M GRID

8 - 10M X 10M SUBGRID

E58900 E60000 E60100 E60200

SCALE

REVISIONS	DRAWN BY	CHECKED	APPROVED LOE	APPROVED DOE	PROJ ENG	APPROVED DOE
ADDED CERTIFICATION GRID AREA SOUTH OF TRACKS	PGC					
ADDED DETAIL '2'						
ISSUE FOR CERTIFICATION SURVEY	JWH					

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED JWH
CHECKED
REVIEWED
RECOMMENDED
APPROVED NR DATE

CERTIFICATION RADIOLOGICAL PLAN
RF-480

RIFLE, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

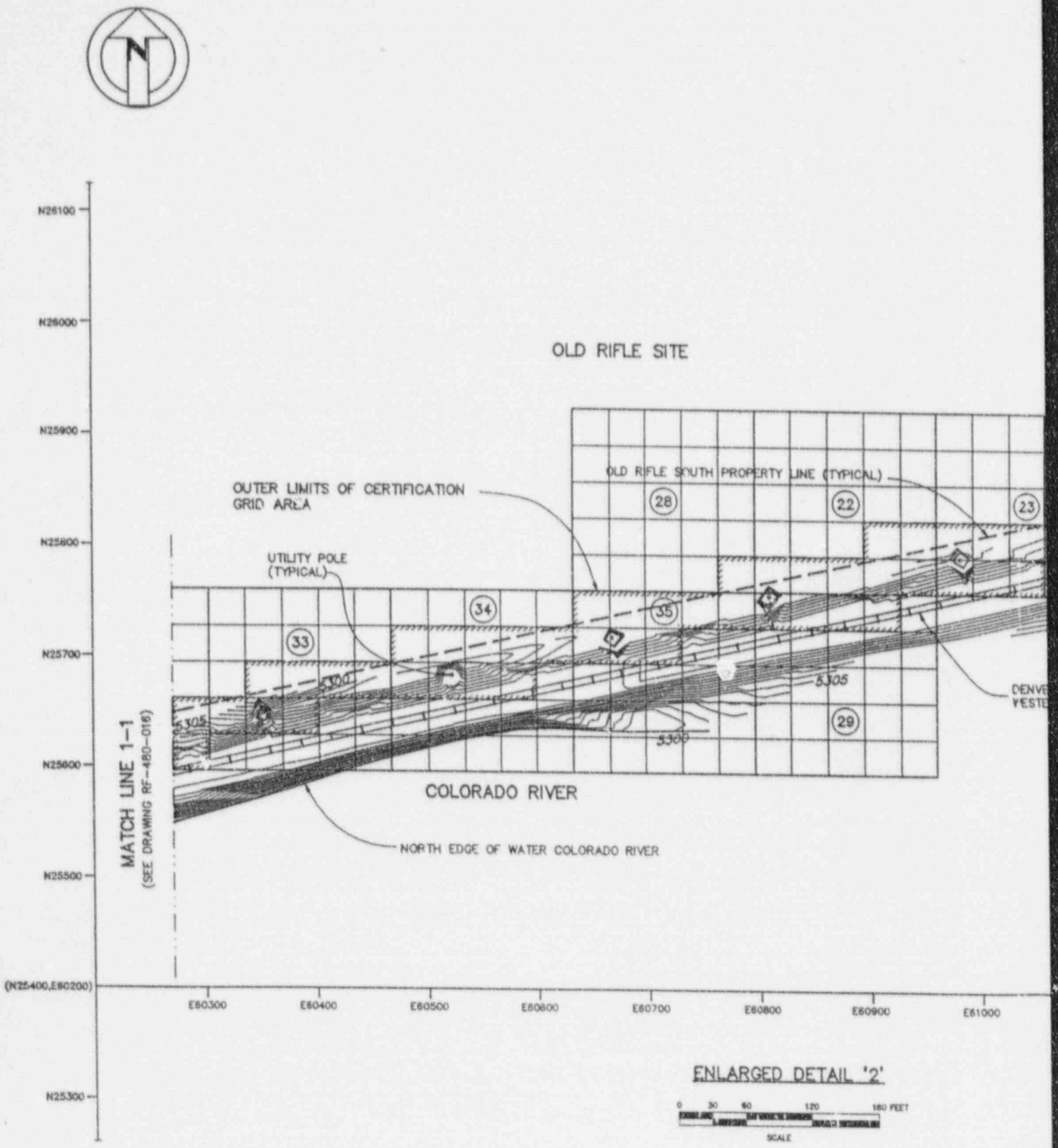
DOE PROJECT MANAGER NR DATE
DOE PROJECT ENGINEER NR DATE

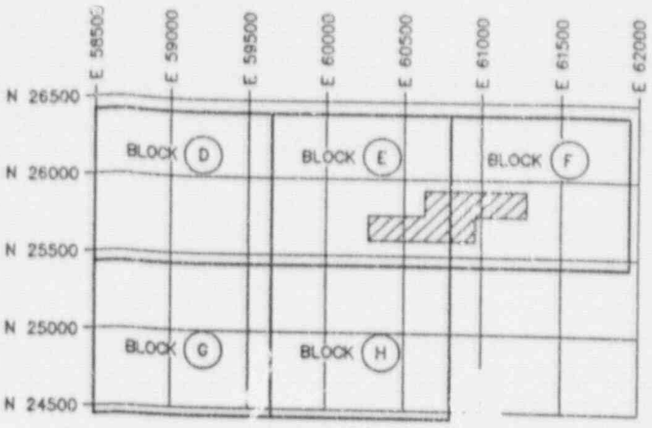
MORRISON KNUDSEN

PROJECT NO. DE-AC04-83AL18796

DRAWING NO. RF-480-016 REV B

9709190137-03

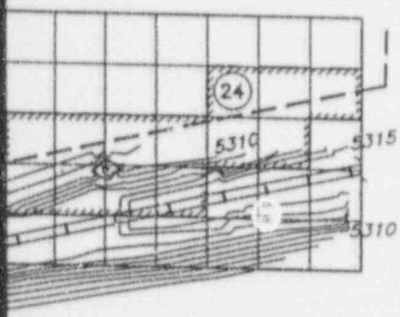

N
N26100
N26000
N25900
N25800
N25700
N25600
N25500
(N25400,E80200)
N25300
OLD RIFLE SITE
OUTER LIMITS OF CERTIFICATION GRID AREA
OLD RIFLE SOUTH PROPERTY LINE (TYPICAL)
UTILITY POLE (TYPICAL)
28
22
23
34
35
33
29
5300
5305
MATCH LINE 1-1
(SEE DRAWING RF-480-016)
COLORADO RIVER
NORTH EDGE OF WATER COLORADO RIVER
E80300
E80400
E80500
E80600
E80700
E80800
E80900
E81000
ENLARGED DETAIL '2'
0 30 60 120 180 FEET
SCALE



KEY MAP

NOTES:

1. SEE DRAWING RF-480-015 FOR OVERALL CERTIFICATION GRID LOCATION AND GENERAL NOTES.



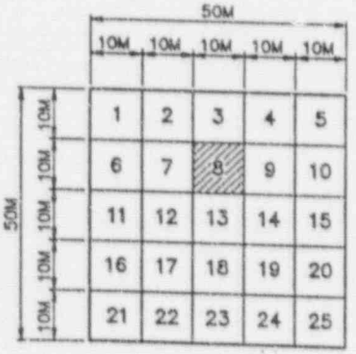
R AND RIO GRANDE
RN RAILROAD TRACKS

E61100 E61200 E61300 E61400

ANSTEC APERTURE CARD

Also Available on Aperture Card

LEGEND



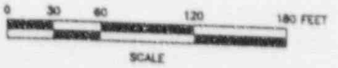
50M X 50M GRID

SAMPLE GRID NO.
E-34-8

E - BLOCK NO. (SEE KEY MAP ABOVE)

34 - 50M X 50M GRID

8 - 10M X 10M SUBGRID



NO.	REVISIONS	DRAWN BY	CHECKED BY	APPROV. LOE	APPROV. DH	PROJ. ENG	APPROV. DOE
	ISSUE FOR CERTIFICATION SURVEY	JWH					

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

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

CERTIFICTION RADIOLOGICAL PLAN
RF-480

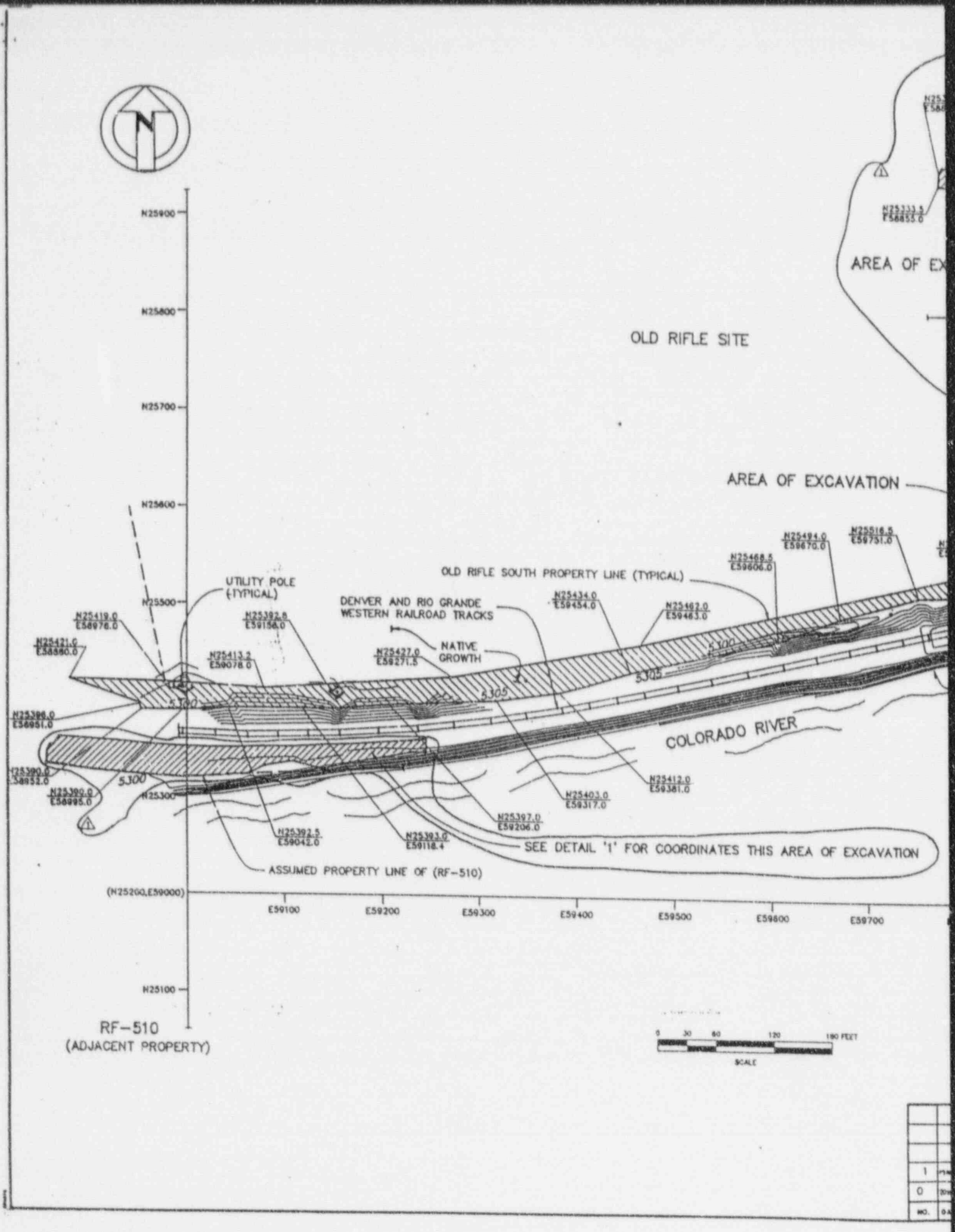
RIFLE, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

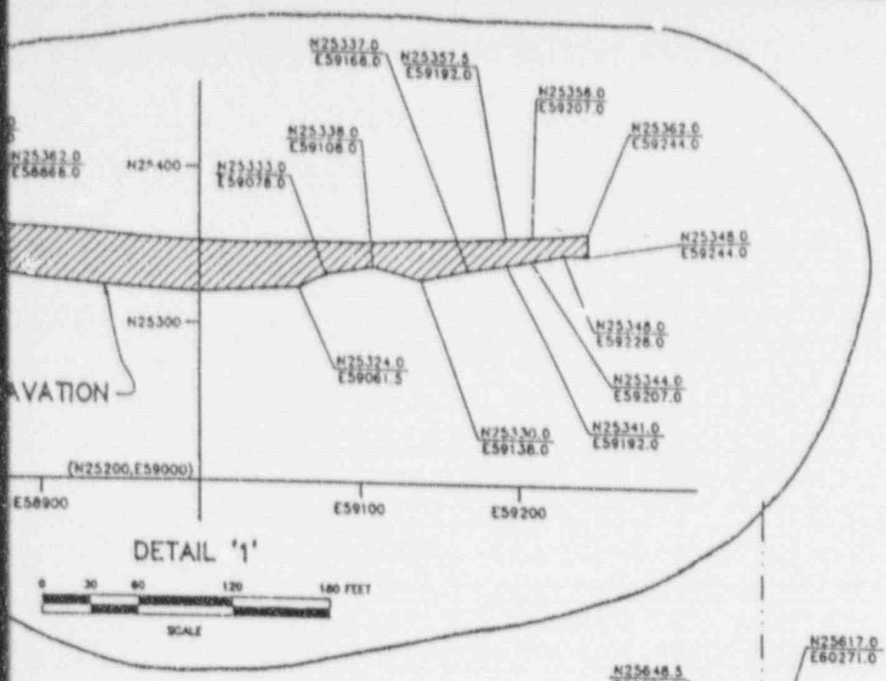
MORRISON KNUDSEN

PROJECT NO. DE-AC04-83AL18796

DRAWING NO. RF-480-017 REV. A

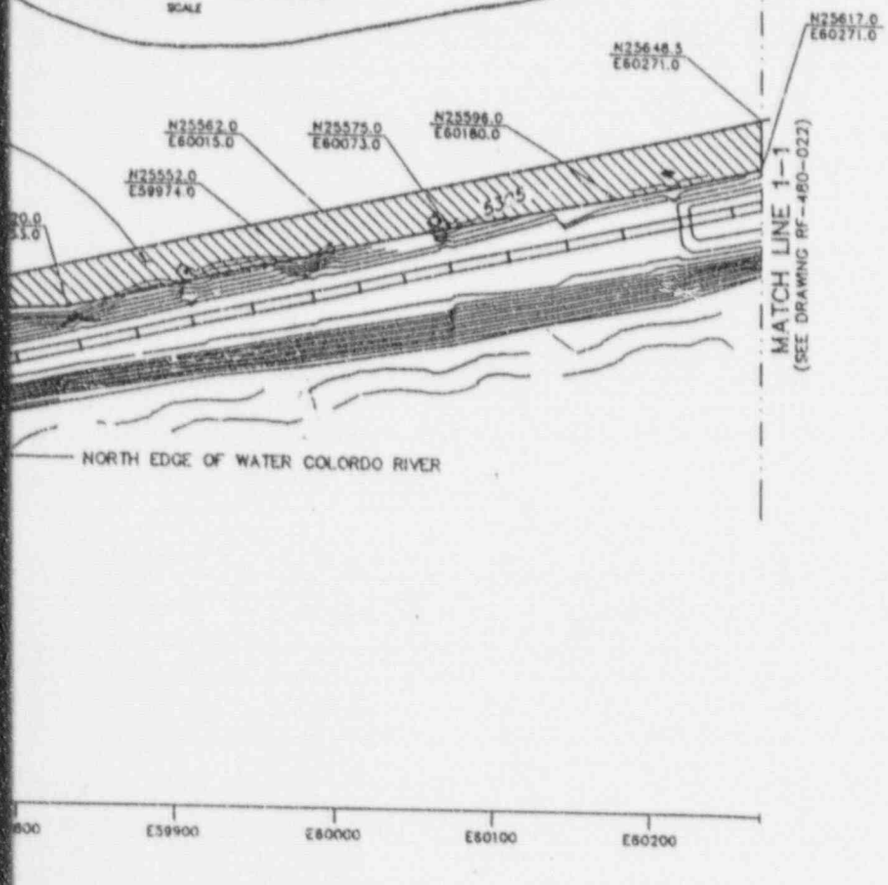
9709190137-04


N
N25900
N25800
N25700
N25600
N25500
N25400
N25300
N25100
OLD RIFLE SITE
AREA OF EX
AREA OF EXCAVATION
OLD RIFLE SOUTH PROPERTY LINE (TYPICAL)
UTILITY POLE (TYPICAL)
DENVER AND RIO GRANDE WESTERN RAILROAD TRACKS
NATIVE GROWTH
COLORADO RIVER
5300
5305
5310
N25419.0 E58976.0
N25421.0 E58860.0
N25396.0 E58951.0
N25390.0 E58852.0
N25399.0 E58995.0
N25392.6 E59156.0
N25413.2 E59078.0
N25427.0 E59271.5
N25434.0 E59454.0
N25462.0 E59463.0
N25468.5 E59606.0
N25494.0 E59670.0
N25516.5 E59751.0
N25412.0 E59381.0
N25403.0 E59317.0
N25397.0 E59206.0
N25393.0 E59118.4
N25392.5 E59042.0
SEE DETAIL '1' FOR COORDINATES THIS AREA OF EXCAVATION
ASSUMED PROPERTY LINE OF (RF-510)
(N25200,E59000)
E59100
E59200
E59300
E59400
E59500
E59600
E59700
RF-510
(ADJACENT PROPERTY)
0 30 60 120 180 FEET
SCALE
1
0
NO.



DETAIL '1'

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
- —x—x—x—x— FENCE LINE
- ⊕ METER
- ⊗ VALVE
- ○ PROPERTY PIN
- ● POWER POLE

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

NOTES:

1. SEE DRAWING RF-480-020 FOR GENERAL NOTES AND OVERALL SITE ORIENTATION.

AS-BUILT DRAWING

REVISIONS	DRAWN BY	CHECKED BY	APPROVAL LOE	APPROVAL DH	PROJ ENG	APPROVAL DOE
ADDED AREA OF EXCAVATION SOUTH OF TRACKS ADDED DETAIL '1'	PGC	PGC	PGC	ddd	ddd	—
AS-BUILT DRAWING	JWH		ddd	ddd	ddd	—

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED BY JWH
CHECKED
SUPERVISED
RECOMMENDED
APPROVED NR DATE

EXCAVATION AND RESTORATION PLAN
RF-480

RIFLE, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

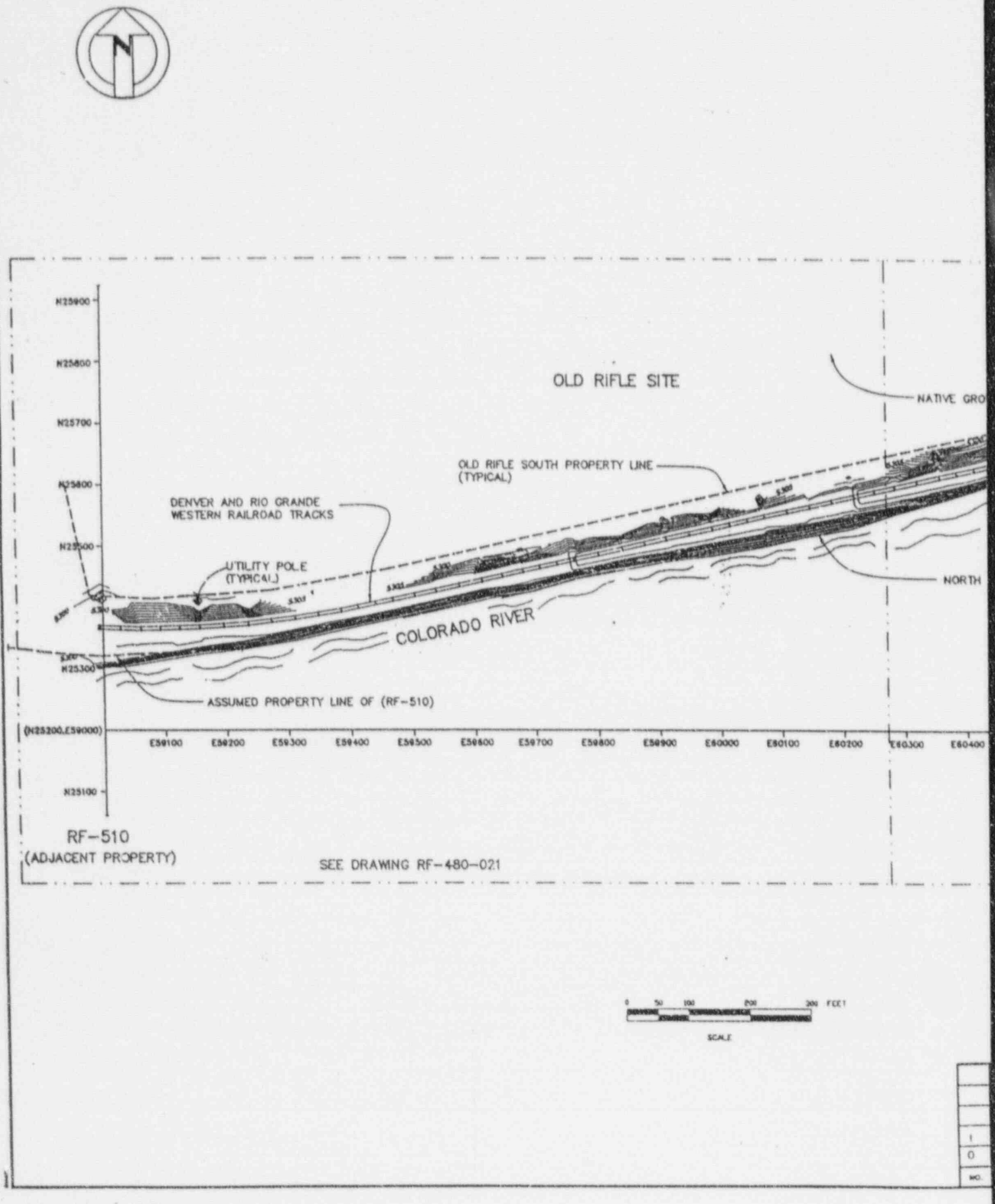
DOE PROJECT MANAGER NR DATE
DOE PROJECT ENGINEER NR DATE

MORRISON KNUDSEN

PROJECT NO. DE-AC04-83AL18796

DRAWING NO. RF-480-021 REV 1

9709190137-05

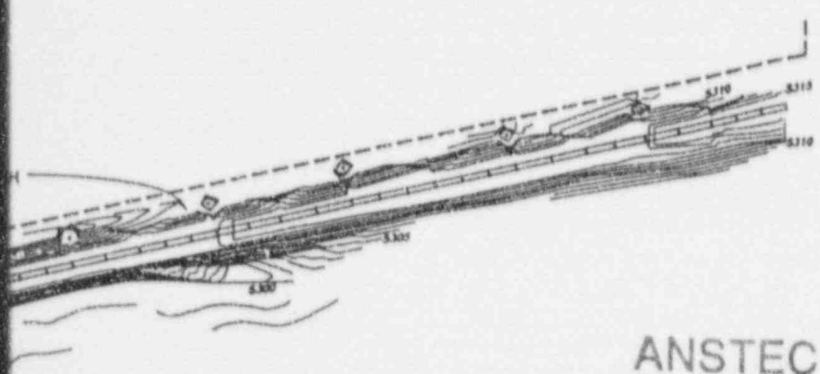

N25900
N25800
N25700
N25600
N25500
N25400
N25300
N25200
N25100
OLD RIFLE SITE
NATIVE GRO
OLD RIFLE SOUTH PROPERTY LINE
(TYPICAL)
DENVER AND RIO GRANDE
WESTERN RAILROAD TRACKS
UTILITY POLE
(TYPICAL)
NORTH
COLORADO RIVER
ASSUMED PROPERTY LINE OF (RF-510)
(N25200,E59000)
E59100
E59200
E59300
E59400
E59500
E59600
E59700
E59800
E59900
E60000
E60100
E60200
E60300
E60400
RF-510
(ADJACENT PROPERTY)
SEE DRAWING RF-480-021
0
50
100
200
200 FEET
SCALE

LEGEND

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

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

REFERENCE DRAWING LIMITS



GE OF WATER COLORADO RIVER

ANSTEC APERTURE CARD

Also Available on Aperture Card

E80500 E80600 E80700 E80800 E80900 E81000 E81100 E81200 E81300

SEE DRAWING RF-480-022

NOTES:

1. THE LATEST REVISION OF THE FOLLOWING TECHNICAL SPECIFICATIONS APPLY TO THE REMEDIAL ACTION WORK REQUIRED FOR PROPERTY NO. RF-480:

   SECTION 02110
   CLEARING AND GRUBBING

   SECTION 02130
   CONTAMINATED MATERIAL REMOVAL

   SECTION 02200
   EXCAVATION AND BACKFILL

   SECTION 02480
   LANDSCAPING

2. UTILITY LOCATIONS ARE FOR REFERENCE ONLY. SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ACTUAL LOCATIONS OF UTILITIES PRIOR TO START OF CONSTRUCTION.

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

4. EXCAVATE AREA TO THE LIMITS INDICATED ON DRAWING RF-480-021 AND RF-480-022 TO AN AVERAGE DEPTH OF 17 INCHES. CONTRACTOR'S REPRESENTATIVE TO RESURVEY AREA BEFORE BACKFILLING. IF FURTHER CONTAMINATION IS FOUND, EXCAVATE IN 6 INCH INCREMENTS AS DIRECTED BY CONTRACTOR'S REPRESENTATIVE.

5. BACKFILL BERM AREAS WITH MATERIAL SIMILAR TO THAT REMOVED AS DEMONSTRATED TO THE CONTRACTOR'S REPRESENTATIVE BY COMPARATIVE SIEVE ANALYSIS. ALL OTHER AREAS SHALL BE BACKFILLED WITH COMPACTED COMMON FILL AND TOPPED WITH NATIVE SEED, MULCH, AND FERTILIZER. GRADE TO MATCH EXISTING CONTOURS AND ELEVATIONS.

6. THE AREA OF CONTAMINATION LOCATED SOUTH OF RAILROAD TRACK WAS EXCAVATED DURING REMEDIATION OF VICINITY PROPERTY RF-510.

AS-BUILT DRAWING

NO.	REVISIONS	DRAWN BY	CHECKED BY	APPROVED QSE	APPROVED DOE	PROJ ENG	APPROVED DOE
1	REVISED NOTE 6, 4	PGC	PGC	RK	DOE	DOE	–
0	AS-BUILT DRAWING	JWH	JWH	DOE	DOE	DOE	–

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED JWH | DRAWN JWH
CHECKED
REVIEWED
RECOMMENDED

EXCAVATION AND RESTORATION KEY PLAN RF-480

RIFLE, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

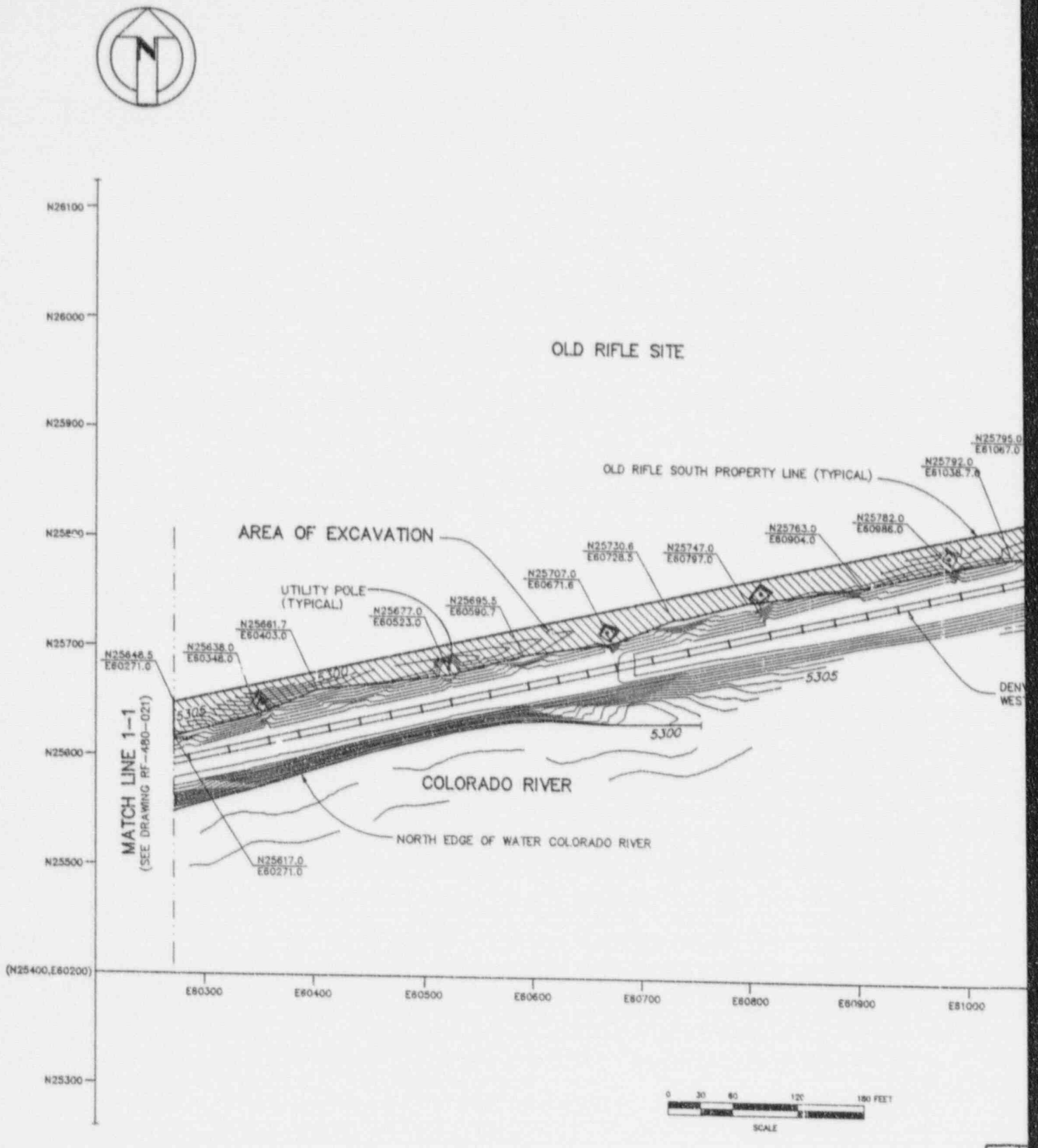
APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
NR		NR		NR	

MORRISON KNUDSEN

PROJECT NO. DE-AC04-83AL18796

DRAWING NO. RF-480-020 REV. 1

9709190137-06


N
N26100
N26000
N25900
N25800
N25700
N25600
N25500
N25300
(N25400,E60200)
E60300
E60400
E60500
E60600
E60700
E60800
E60900
E61000
OLD RIFLE SITE
OLD RIFLE SOUTH PROPERTY LINE (TYPICAL)
AREA OF EXCAVATION
UTILITY POLE (TYPICAL)
N25795.0 E61067.0
N25792.0 E61038.7
N25782.0 E60986.0
N25763.0 E60904.0
N25747.0 E60797.0
N25730.6 E60728.5
N25707.0 E60671.6
N25695.5 E60590.7
N25677.0 E60523.0
N25661.7 E60403.0
N25638.0 E60348.0
N25646.5 E60271.0
5300
5305
5305
5300
MATCH LINE 1-1
(SEE DRAWING RF-480-021)
COLORADO RIVER
NORTH EDGE OF WATER COLORADO RIVER
N25617.0 E60271.0
0 30 60 120 180 FEET
SCALE

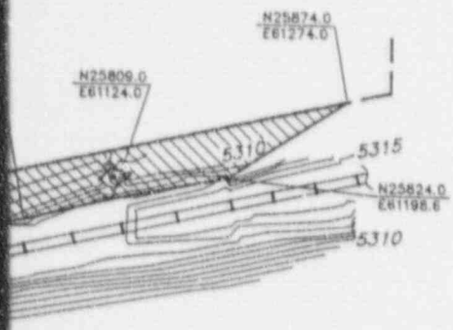
LEGEND

——— 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
—x—x—x—x—	FENCE LINE
⊕	METER
⊗	VALVE
○	PROPERTY PIN
●	POWER POLE

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

NOTES:

1. SEE DRAWING RF-480-020 FOR GENERAL NOTES AND OVERALL SITE ORIENTATION.



R AND RIO GRANDE
RN RAILROAD TRACKS

9709190137-07

E61100 E61200 E61300 E61400

AS-BUILT DRAWING

	AS-BUILT DRAWING	JWH					—
	REVISIONS	DRAWN BY	CHECKED BY	APPROVAL LDE	APPROVAL DH	PROJ ENG	APPROVAL DOE

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED DRAWN JWH
CHECKED
RECOMMENDED
APPROVED NR DATE

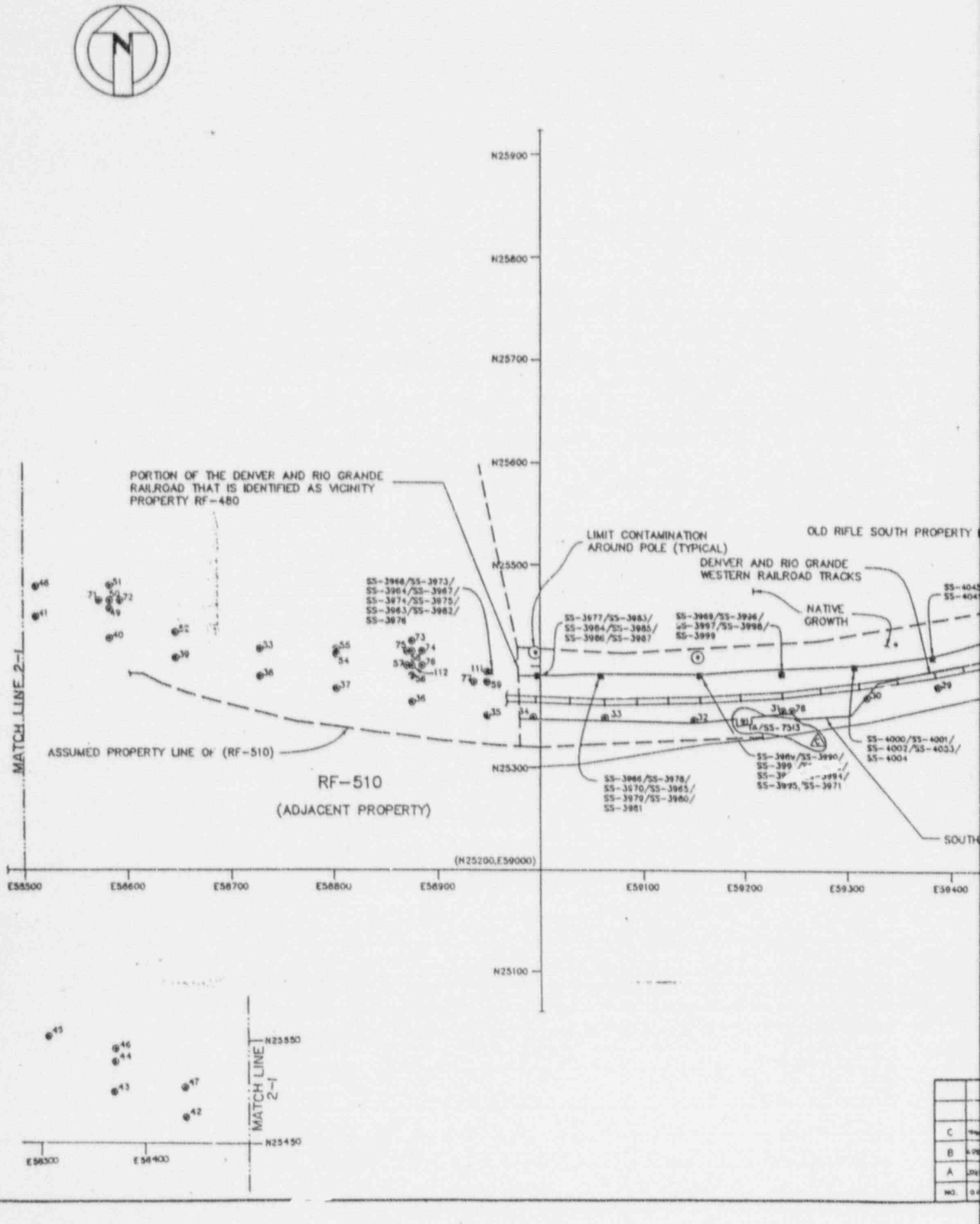
EXCAVATION RESTORATION PLAN
RF-480

RIFLE, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

DOE PROJECT MANAGER NR DATE
DOE PROJECT ENGINEER NR DATE

MORRISON KNUDSEN

PROJECT NO. DE-AC04-83AL18796
DRAWING NO. RF-480-022 REV 0


N
N25900
N25800
N25700
N25600
N25500
N25300
N25100
PORTION OF THE DENVER AND RIO GRANDE RAILROAD THAT IS IDENTIFIED AS VICINITY PROPERTY RF-480
LIMIT CONTAMINATION AROUND POLE (TYPICAL)
OLD RIFLE SOUTH PROPERTY
DENVER AND RIO GRANDE WESTERN RAILROAD TRACKS
NATIVE GROWTH
SS-3966/SS-3973/ SS-3964/SS-3967/ SS-3974/SS-3975/ SS-3963/SS-3982/ SS-3976
SS-3977/SS-3983/ SS-3984/SS-3985/ SS-3986/SS-3987
SS-3969/SS-3936/ SS-3997/SS-3998/ SS-3999
SS-4000/SS-4001/ SS-4002/SS-4003/ SS-4004
SS-3966/SS-3978/ SS-3970/SS-3965/ SS-3979/SS-3980/ SS-3981
MATCH LINE 2-1
ASSUMED PROPERTY LINE OF (RF-510)
RF-510
(ADJACENT PROPERTY)
(N25200,E59000)
E58500
E58600
E58700
E58800
E58900
E59100
E59200
E59300
E59400
N25550
N25450
E58500
E58400
MATCH LINE 2-1

LEGEND

- ● 22 — BOREHOLE DESIGNATION
- ● 19/SS-8241 — BOREHOLE AND SOIL SAMPLE DESIGNATION
- ■ SS-4118 — SOIL SAMPLE DESIGNATION

ESTIMATED DEPTH OF CONTAMINATION

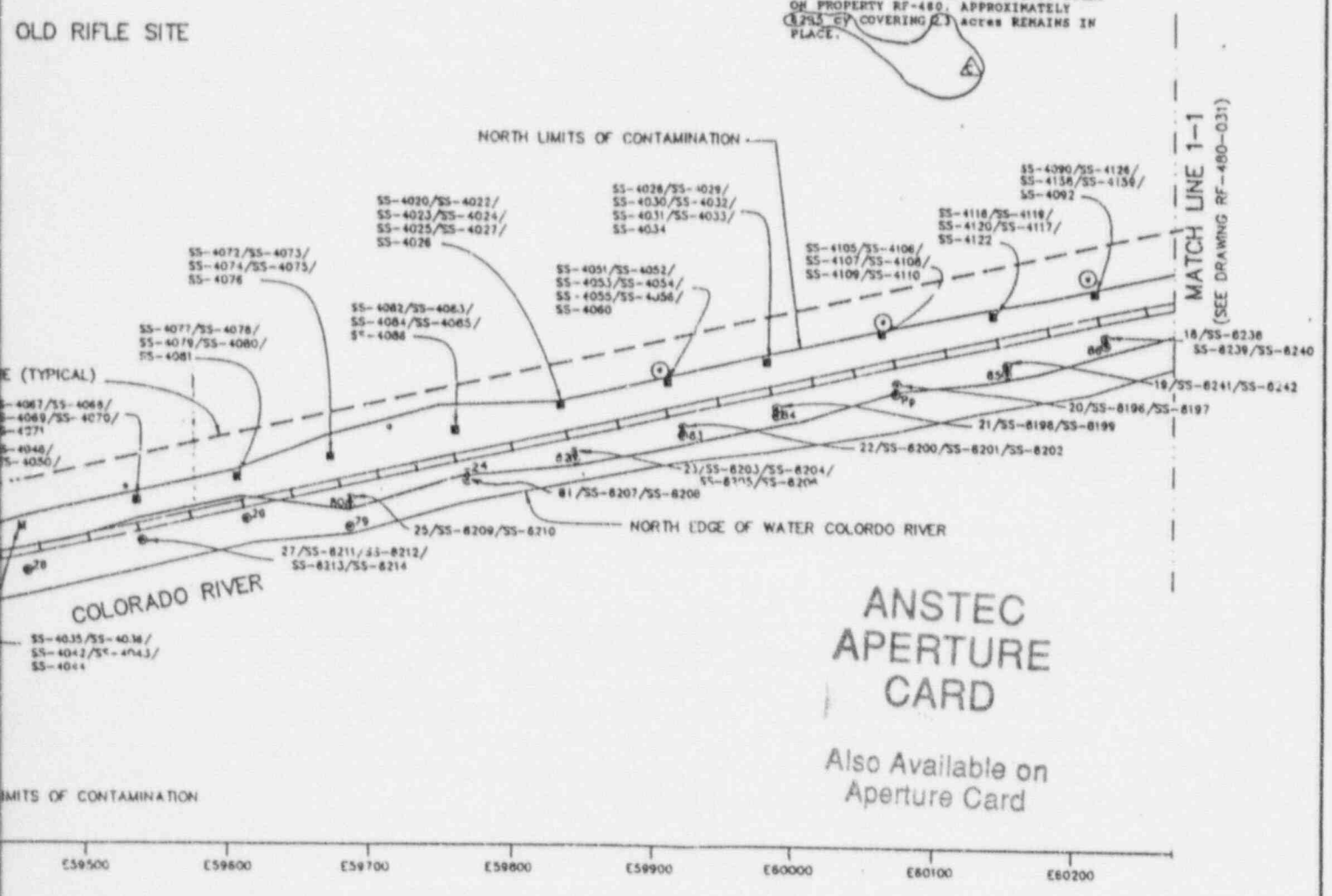
0 TO 102 INCHES IN TRACK BED

0 TO 78 INCHES IN UTILITY POLE BASES

NOTES:

1.

2. SUPPLEMENTAL STANDARDS IN ACCORDANCE WITH 40 CFR 192.21(k)(1)(ii) SHALL APPLY TO LOW LEVEL RADIOACTIVE MATERIAL TO REMAIN IN PLACE UNDER MAIN LINE TRACK AND AROUND THE BASES OF UTILITY POLES ON PROPERTY RF-480. APPROXIMATELY (8,295 CY COVERING 2.1) acres REMAINS IN PLACE.



ENLARGED DETAIL '3'

0 30 60 120 180 FEET

SCALE

REVISIONS	DRAWN BY	CHECKED BY	APPROVAL LOE	APPROVAL BH	PROJ. ENG	APPROVAL DOE
REVISED NOTE 2 CY, ACRES, ADDED(a) REMOVED NOTE 1, ADDED 16/SS-7513, REV SEE'S LIMIT	PGC					
ADD Pp, 42-47, AND MOVE SS-8207 AND SS-8208	PHC					
ISSUE FOR SUPPLEMENTAL STANDARDS	JWH					

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED JWH | DRAWN | CHECKED | REVIEWED | RECOMMENDED

SUPPLEMENTAL STANDARDS SURVEY DATA
RF-480
RIFLE, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

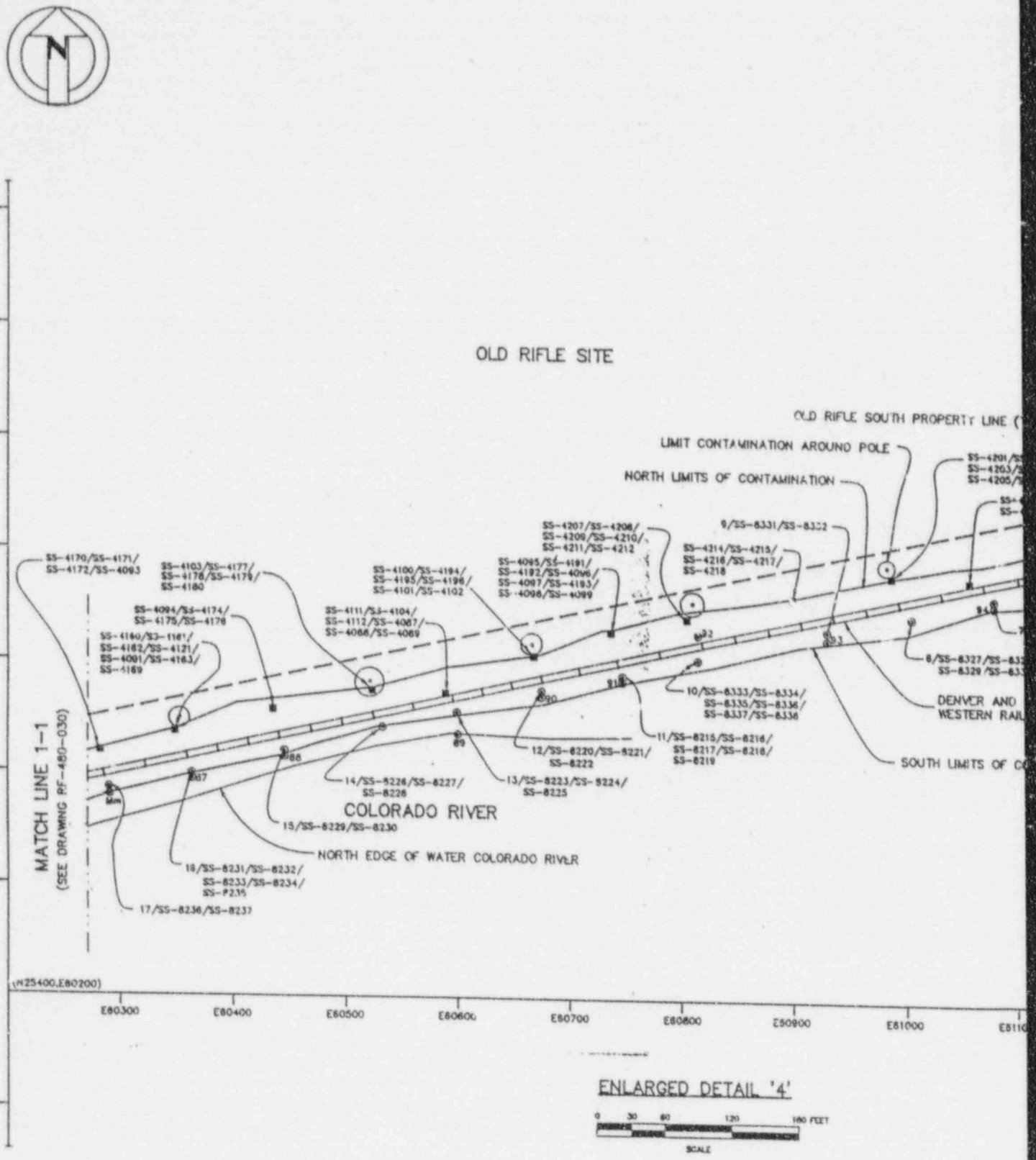
APPROVED	DATE	DOE PROJECT MANAGER	DATE	DOE PROJECT ENGINEER	DATE
NR		NR		NR	

MORRISON KNUDSEN

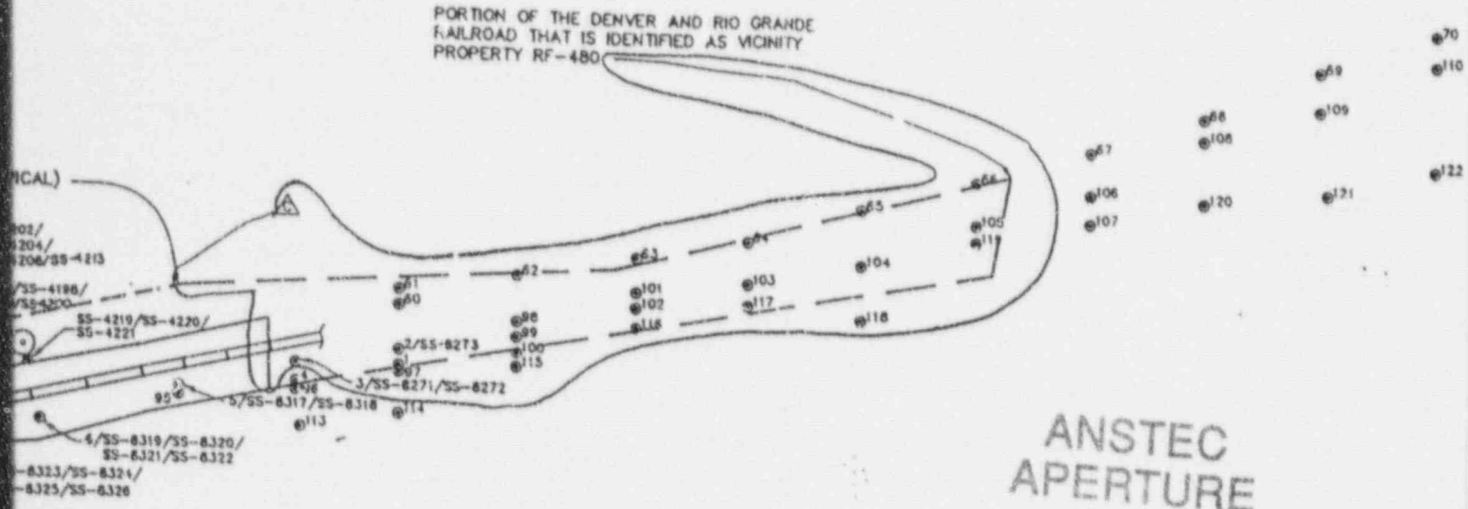
PROJECT NO. DE-AC04-83AL18796

DRAWING NO. RF-480-030 REV. C

9709190137-08


N
N26100
N26000
N25900
N25800
N25700
N25600
N25500
N25400
N25300
OLD RIFLE SITE
OLD RIFLE SOUTH PROPERTY LINE
LIMIT CONTAMINATION AROUND POLE
NORTH LIMITS OF CONTAMINATION
SS-4170/SS-4171/
SS-4172/SS-4093
SS-4103/SS-4177/
SS-4178/SS-4179/
SS-4180
SS-4094/SS-4174/
SS-4175/SS-4176
SS-4160/SS-4161/
SS-4162/SS-4121/
SS-4091/SS-4163/
SS-4169
SS-4100/SS-4194/
SS-4195/SS-4196/
SS-4101/SS-4102
SS-4111/SS-4104/
SS-4112/SS-4087/
SS-4088/SS-4089
SS-4085/SS-4191/
SS-4192/SS-4096/
SS-4097/SS-4193/
SS-4098/SS-4099
SS-4207/SS-4208/
SS-4209/SS-4210/
SS-4211/SS-4212
SS-4214/SS-4215/
SS-4216/SS-4217/
SS-4218
9/SS-8331/SS-8332
10/SS-8333/SS-8334/
SS-8335/SS-8336/
SS-8337/SS-8338
11/SS-8215/SS-8216/
SS-8217/SS-8218/
SS-8219
12/SS-8220/SS-8221/
SS-8222
13/SS-8223/SS-8224/
SS-8225
14/SS-8226/SS-8227/
SS-8228
15/SS-8229/SS-8230
16/SS-8231/SS-8232/
SS-8233/SS-8234/
SS-8235
17/SS-8236/SS-8237
COLORADO RIVER
NORTH EDGE OF WATER COLORADO RIVER
DENVER AND
WESTERN RAIL
SOUTH LIMITS OF C
MATCH LINE 1-1
(SEE DRAWING RF-480-030)
(N25400,E80200)
E80300
E80400
E80500
E80600
E80700
E80800
E80900
E81000
E811
ENLARGED DETAIL '4'
0 30 60 120 180 FEET
SCALE

NO.	DATE
C	
B	
A	



NOTES:

1. SEE DRAWING RF-480-030 FOR BOREHOLE DESIGNATION, SOIL SAMPLE DESIGNATION, AND BOREHOLE/SOIL SAMPLE DESIGNATION.
2. SEE DRAWING RF-480-030 FOR GENERAL NOTES.

9709190137-09

E61200 E61300 E61400 E61500 E61600 E61700 E61800 E61900 E62000

REVISIONS	DRAWN BY	CHECKED BY	APPROVAL LOE	APPROVAL DH	PROJ ENG	APPROVAL DOE
EVISED PROPERTY BOUNDARY	PGC					
0 Mm, SS-8273, SS-4213, SS-4200, AND 89	PHC					
SSUE FOR SUPPLEMENTAL STANDARDS	JWH					

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

DESIGNED JWH | DRAWN JWH | CHECKED | REVIEWED | RECOMMENDED

SUPPLEMENTAL STANDARDS SURVEY DATA RF-480

RIFLE, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

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

MORRISON KNUDSEN

PROJECT NO. DE-AC04-83AL18796

DRAWING NO. RF-480-031 REV. C

APPENDIX A

RADIOLOGICAL SURVEY DATA

SITE NAME RIFLE, CO

OCS SAMPLE LOG FOR INFORMATION ONLY

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
							A					
	D-40-21					N						
9-12-94	ORF-SV			458	1369	775.0	595	2.3	1.3		PW	
10-13-94	D-40-22	9-9-94	9-13-94	462	2184	602.9	566	3.9	1.1	✓	WW	
10-10-94	ORF-SV			428	860.3	585.5	561	1.5	1.0		WW	
11-2-94	D-40-23	10-7-94	10-12-94	586	723.0	871.1	489	1.5	1.8	✓	WW	
10-10-94	ORF-SV			530	808.9	765.8	550	1.5	1.4		WW	
11-3-94	D-40-24	10-7-94	10-12-94	578	1012	804.1	476	2.1	1.7	✓	WW	
10-10-94	ORF-SV			430	693.5	917.5	495	1.4	1.9		WW	QC Sample Ra-226 = 2.1 ± 0.4 Th-230 = 1.8 ± 0.4
11-3-94	D-40-25	10-7-94	10-12-94	476	1134	655.4	431	2.0	1.5	✓	WW	48
							A					
						N						

Site Correction Factor = 1.8

HP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: Robert K Stencil
Site HP Manager

1

ITE NAME Rifle Co.

OCS SAMPLE LOG

FOR INFORMATION ONLY

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-15-94	ORF-SV			576	700.0	1063	621	1.1	1.7		SS	
10/14/94	D-41-11 ✓	9-14-94	9/16/94	560	819.6	1034	582	1.4	1.8	✓	WW	
9-15-94	ORF-SV			578	2257	1034	617	3.7	1.7		SS	
10/14/94	D 41-12 ✓	9-14-94	9/16/94	462	3455	961.2	584	~~3.7~~ 5.9	1.6	✓	WW	
9-15-94	ORF-SV			580	1023	966.8	587	1.7	1.6		SS	
10-17-94	D 41-13 ✓	9-14-94	9-16-94	472	1366	1119	548	2.5	2.0	✓	WW	
9-15-94	ORF-SV			582	1040	689.2	565	1.8	1.2		SS	
10-17-94	D 41-14 ✓	9-14-94	9-16-94	574	1424	871.1	527	2.7	1.7	✓	WW	
9-16-94	ORF-SV			510	1219	1130	590	2.1	1.9		PV	
10-17-94	D-41-15 ✓	9-14-94	9-17-94	560	1149	928.5	540	2.1	1.7	✓	WW	
9-16-94	ORF-SV			512	311.5	918.9	609	0.51	1.5		PV	
10-17-94	D-41-16 ✓	9-14-94	9-17-94	460	703.0	952.5	565	1.2	1.7	✓	WW	
9-16-94	ORF-SV			514	230.7	1101	563	0.41	2.0		PV	
10-17-94	D-41-17 ✓	9-14-94	9-17-94	562	829.8	650.9	523	1.4	1.2	✓	WW	
9-16-94	ORF-SV			516	693.2	1283	547	~~0.79~~ 1.3	2.3		ES	
10-17-94	D-41-18 ✓	9-14-94	9-17-94	458	1065	812.7	496	2.1	1.6	✓	WW	
9-16-94	ORF-SV ✓	9-14-94		518	785.8	1063	574	1.4	1.9		ES	
10-17-94	D-41-19		9-17-94	474	1745	1022	525	3.3	1.9	✓	WW	
9-16-94	ORF-SV ✓	9-14-94		520	672.2	861.5	560	1.2	1.5		ES	
10-17-94	D-41-20		9-17-94	462	698.2	1040	512	1.4	2.0	✓	WW	480

e Correction Factor = 1.8

Correction Factor (if applicable) = 1.8

urt Time = 500 Sec., unless otherwise noted

REVIEWED BY: Site HP Manager

F5-IN-001-1, Rev.1

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME RIFLE, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10-10-94	ORF-SV	10-7-94	10-12-94	532	981.9	679.6	616	1.6	1.1		WW	
11-3-94	D-41-21			478	985.0	908.8	533	1.8	1.7	✓	WW	480
10-10-94	ORF-SV	10-7-94	10-12-94	432	728.4	742.8	557	1.3	1.3		WW	
11-2-94	D-41-22			588	679.3	966.8	478	1.4	2.0	✓	WW	480
10-10-94	ORF-SV	10-7-94	10-12-94	534	883.3	1024	612	1.4	1.7		WW	
11-2-94	D-41-23			489	877.8	1127	529	1.7	2.1	✓	WW	480
10-10-94	ORF-SV	10-7-94	10-12-94	434	1698	1057	635	2.7	1.7		WW	
11-3-94	D-41-24			580	2072	1273	556	3.7	2.3	✓	WW	480
10-10-94	ORF-SV	10-7-94	10-12-94	536	1224	986.0	647	1.9	1.5		WW	QC Sample Ra-226= 4.1±0.5 Th-230= 0.9±0.3
11-2-94	D-41-25			486	1716	1258	573	3.0	2.2	✓	WW	480
							A					
							N					

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

REVIEWED BY: Robert R Tarnell
Site HP Manager

F5-IN-001-1, Rev.1

OCS SAMPLE LOG

SITE NAME Rifle-Co

FOR INFORMATION ONLY

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-19-94	ORF-SV			578	655.3	928.5	558	1.2	1.7		[illegible]	
10-21-94	D-42-11 ✓	9-17-94	9-20-94	430	1598	873.8	498	3.2	1.8	✓	WW	
9-19-94	ORF-SV			580	1139	1005	725	1.6	1.4		[illegible]	
10-18-94	D-42-12 ✓	9-17-94	9-20-94	582	1916	851.9	659	2.9	1.3	✓	WW	
9/19/94	ORF-SV			582	363.6	842.4	555	0.66	1.5		WW	
10-21-94	D-42-13	9/17/94	9-20-94	532	970.5	938.1	495	2.0	1.9	✓	WW	
9/19/94	ORF-SV			584	2145	966.8	672	3.2	1.4		WW	
10/18/94	D-42-14	9/17/94	9-20-94	498	2595	1005	611	4.2	1.6	✓	WW	
9/19/94	ORF-SV			586	859.1	660.5	688	1.2	0.96		WW	480
10/18/94	D-42-15	9/17/94	9-20-94	584	912.8	823.2	659	1.4	1.3	✓	WW	
9/19/94	ORF-SV			588	973.6	1091	478	2.0	2.3		WW	QC 480 Ra-226 = 3.1±0.5
10/18/94	D-42-16	9/17/94	9-20-94	4000	1428	1031	467	3.1	2.2	✓	WW	Th-230 = 2.0±0.4
9/19/94	ORF-SV ✓			590	1270	918.9	508	2.5	1.8		WW	
10/18/94	D-42-17	9/17/94	9-20-94	586	1846	775.4	497	3.7	1.6	✓	WW	480
9/19/94	ORF-SV ✓			592	1142	1149	530	2.2	2.2		WW	
10-21-94	D-42-18	9/17/94	9-20-94	432	1351	1232	508	2.7	2.4	✓	WW	480
	ORF-SV											
	D-42-19					A						
	ORF-SV											
	D-42-20					N						

Tl Correction Factor = 1.8

Pb Correction Factor (if applicable) = 1.8

Count Time = 500 Sec, unless otherwise noted

REVIEWED BY: Robert R Tenwil
Site HP Manager

F5-IN-001-1, Rev.1

11

A MORRISON ... JSEN COMPANY

OCS SAMPLE LOG

QA ORIGINAL

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL	OCS # 20 DAY	Bi-214 pCi INITIAL	Bi-214 pCi 20 DAY	Tl-208 pCi INITIAL	Tl-208 pCi 20 DAY	MASS (grams) WET	MASS (grams) DRY	Ra-226 pCi/g INITIAL/CORR.	Ra-226 pCi/g 20 DAY	Th-232 pCi/g INITIAL	Th-232 pCi/g 20 DAY	DEPTH <15cm	DEPTH >15cm	TECH INITIAL	TECH 20 DAY	COMMENTS
9/19/94	ORF-SV ✓ ①	9/17/94	9-20-94	594		1829		1053		756		2.4		1.4				WW		1st partial
10-21-94	D-42-19			534		2056		1130		707		2.9		1.6		✓		WW		
9/19/94	ORF-SV ✓			596		1303		880.7		690		1.9		1.3				WW		1st partial
10/21/94	D-42-20 ①	9/17/94	9-20-94	538		1634		698.8		614		2.7		1.1		✓		WW		Passed Leak Test
9/19/94	ORF-SV ✓			598		981.9		679.6		531		1.8		1.3				WW		1st partial -
10/21/94	D-42-21 ①	9/17/94	9-20-94	438		1460		1031		521		2.8		2.0		✓		WW		
10-10-94	ORF-SV ! ①			538		1454		899.8		711		2.0		1.3				WW		partial
11-3-94	D-42-22	10-7-94	10-12-94	584		2287		842.4		677		3.4		1.2		✓		WW		
10-10-94	ORF-SV ✓ ①			438		3206		803.9		604		5.3		1.3				WW		partial
11-3-94	D-42-23	10/7/94	10-12-94	586		4483		871.1		575		7.8		1.5		✓		WW		
10-10-94	ORF-SV ✓ ①			440		2242		760.2		612		3		1.2				WW		partial
11-3-94	D-42-24	10/7/94	10-12-94	486		3091		655.4		577		5.4		1.1		✓		WW		
10-10-94	ORF-SV ✓			546		2173		1063		640		3.4		1.7				WW		partial
11-3-94	D-42-25	10/7/94	10-12-94	588		3105		890.2		615		5.0		1.4		✓		WW		
										A										
								N												

ite Correction Factor = 1.8

'P Correction Factor (if applicable) = 1.8

:ount Time = 500 SEC., unless otherwise noted

REVIEWED BY: RF
Site HP Manager

A MORRISON KNUDSEN COMPANY

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME Rifle, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
11-1-94	ORF-SV ✓			566	572.2	861.5	728	0.79	1.2		MW	
11-23-94	E-28-21 ✓	10-31-94	11-2-94	504	744.4	871.1	707	1.1	1.2	✓	PV	
10/18/94	ORF-SV ✓			416	718.9	917.5	676	1.1	1.4		PV	
11-10-94	E-28-22	10/14/94	10-17-94	502	807.7	641.3	655	1.2	0.98	✓	PV	
10-11-94	ORF-SV ✓			464	1186	672.9	630	1.9	1.1		MW	
11-2-94	E-28-23	10-11-94	10-12-94	576	1324	880.7	616	2.1	1.4	✓	PV	
10-11-94	ORF-SV ✓			466	4068	847.6	750	5.4	1.1		MW	
11-2-94	E-28-24	10-11-94	10-12-94	482	5958	1084	654	9.1	1.7	✓	MW	
10-11-94	ORF-SV ✓			568	2429	938.1	633	3.8	1.5		MW	QC 480 Ra-226 = 8.1 ± 0.7
11-2-94	E-28-25	10-11-94	10-12-94	478	4070	803.9	630	6.5	1.3	✓	PV	Th-230 = 1.0 ± 0.3

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____ Site HP Manager

F5-IN-001-1, Rev.1

A MC NUDSEN COMPANY

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME Rifle Co.

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-20-94	ORF-SV			556	704.1	909.4	556	1.3	1.6		[illegible]	
10-20-94	E-31-21	9-20-94	9-21-94	556	586.4	926.8	518	1.1	1.9	✓	PV	
9-20-94	ORF-SV			558	846.5	794.5	546	1.6	1.5		[illegible]	
10-20-94	E-31-22	9-20-94	9-21-94	458	792.8	751.5	503	1.6	1.5	✓	PV	
9/29/94	ORF-SV			440	2813	812.7	571	4.9	1.4		WW	
10/24/94	E-31-23	9/29/94	10/3/94	516	3612	775.4	545	6.6	1.4	✓	RA	480
10/13/94	ORF-SV			418	1299	725.3	606	2.1	1.2		WW	
11-10-94	E-31-24	10/13/94	10-17-94	400	1652	769.0	593	2.8	1.3	✓	PV	480
10/14/94	ORF-SV			520	374.2	679.6	525	0.71	1.3		WW	QC 480
11-10-94	E-31-25	10/13/94	10-17-94	500	922.9	545.6	511	1.8	1.1	✓	PV	Ra-226=1.0±0.3 Th-230=1.3±0.4
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Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 Sec., unless otherwise noted

REVIEWED BY: RT
Site HP Manager

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FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME Rifle, Co

COUNT DATE INITIAL / 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL / 20 DAY	Bi-214 pCi INITIAL / 20 DAY	Tl-208 pCi INITIAL / 20 DAY	MASS (grams) WET / DRY	Ra-226 pCi/g INITIAL/CORR. / 20 DAY	Th-232 pCi/g INITIAL / 20 DAY	DEPTH <15cm / >15cm	TECH INITIAL / 20 DAY	COMMENTS
10-31-94	ORF-SV-	10-28-94	11-1-94	424	946.9	978.7	618	1.5	1.6		WW	Leak Tested - passed
11-22-94	E-32-11			446	1126	847.6	563	2.0	1.5	✓	PV	
10-31-94	ORF-SV-	10-28-94	11-1-94	528	859.1	660.5	589	1.5	1.1		WW	
11-22-94	E-32-12			546	923.4	660.5	555	1.7	1.2	✓	PV	
10-31-94	ORF-SV-	10-28-94	11-1-94	426	552.9	906.8	549	1.0	1.7		WW	
11-22-94	E-32-13			558	276.6	871.1	516	0.53	1.7	✓	WW	
10-31-94	ORF-SV-	10-28-94	11-1-94	530	789.1	469.0	569	1.4	0.82		PV	
11-22-94	E-32-14			456	735.6	891.3	522	1.4	1.7	✓	WW	
10-31-94	ORF-SV-	10-28-94	11-1-94	428	975.5	803.9	567	1.7	1.4		PV	
11-22-94	E-32-15			560	815.1	966.8	516	1.6	1.9	✓	WW	
10-31-94	ORF-SV	10-28-94	11-1-94	430	838.0	830.1	575	1.5	1.4		WW	
11-22-94	E-32-16			458	1659	908.8	536	3.1	1.7	✓	WW	
10-31-94	ORF-SV	10-28-94	11-1-94	532	930.4	765.8	593	1.6	1.3		WW	480
11-22-94	E-32-17			562	828.8	957.2	554	1.5	1.7	✓	WW	
10-31-94	ORF-SV	10-28-94	11-1-94	432	519.5	891.3	578	0.90	1.5		WW	480
11-22-94	E-32-18			460	877.0	908.8	541	1.6	1.7	✓	WW	
10-31-94	ORF-SV	10-28-94	11-1-94	534	714.5	851.9	535	1.3	1.6		WW	480
11-22-94	E-32-19			564	1088	765.8	494	2.2	1.6	✓	WW	
10-31-94	ORF-SV	10-28-94	11-1-94	438	378.9	1162	546	0.69	2.1		WW	480
11-22-94	E-32-20			462	981.0	1075	502	2.0	2.1	✓	WW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____ Site HP Manager

F5-IN-001-1, Rev.1

12 9

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10-31-94	ORF-SV ✓	10-28-94	11-1-94	540	1213	612.6	550	2.2	1.1		WW	470
11-22-94	E-32-21			546	1174	880.7	523	2.2	1.7	✓	WW	
10-31-94	ORF-SV ✓	10-28-94	11-1-94	542	1058	746.6	560	1.9	1.3		WW	QC Sample 470
11-22-94	E-32-22			464	1483	795.2	523	2.8	1.5	✓	WW	Ra-226= 2.5±0.4 Th-230= 2.5±0.5

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____ Site HP Manager

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10-31-94	ORF-SV-J			436	512.4	952.5	582	0.88	1.6		PV	Partial 480
11-22-94	E-32-24	10-28-94	11-1-94	516	631.3	890.2	531	1.2	1.7	✓	PV	
10-31-94	ORF-SV-J			538	845.5	564.8	527	1.6	1.1		PV	Partial 480
11-22-94	E-32-25	10-28-94	11-1-94	418	676.8	873.8	479	1.4	1.8	✓	PV	
10-31-94	ORF-SV J			440	620.3	952.5	568	1.1	1.7		MW	Partial - 480
11-22-94	E-32-23	10-28-94	11-1-94	416	661.7	1337	524	1.3	2.6	✓	PV	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____ Site HP Manager

F5-IN-001-1, Rev.1

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OCS SAMPLE LOG

SITE NAME RIFLE, CO

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COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
11-1-94	ORF-SV- ✓			468	788.0	908.8	627	1.3	1.4		WW	
11-23-94	E-33-11	10-31-94	11-2-94	410	749.9	908.8	574	1.3	1.6	✓	PV	
11-1-94	ORF-SV-✓			572	625.1	689.2	565	1.1	1.2		WW	
11-23-94	E-33-12	10-31-94	11-2-94	510	369.6	717.9	529	0.70	1.4	✓	PV	480
11-18-94	ORF-SV ✓			586	526.4	1139	705	0.75	1.6		WW	
12-13-94	E-33-13	11-18-94	11-19-94	422	844.4	970.0	662	1.3	1.5	✓	PV	480
11-2-94	ORF-SV- ✓			546	472.9	765.8	530	0.89	1.4		PV	
11-28-94	E-33-14	11-1-94	11-3-94	440	814.2	777.7	501	1.6	1.6	✓	WW	480
11-2-94	ORF-SV- ✓			446	668.8	1066	556	1.2	1.9		PV	QC 480 Ra-226 = 1.5±0.3
11-28-94	E-33-15	11-1-94	11-3-94	556	859.6	7754	513	1.7	1.5	✓	WW	Th-230 = 1.2±0.3

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC unless otherwise noted

REVIEWED BY: _____ Site HP Manager

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
11-1-94	ORF-SV j.	10-31-94	11-2-94	470	3305	978.7	600	5.5	1.6		WW	Partial 480
11-23-94	E-33-16			414	5250	1057	553	9.5	1.9	✓	PV	
11-1-94	ORF-SV j.	10-31-94	11-2-94	574	1286	737.1	603	2.1	1.2		WW	partial 480
11-23-94	E-33-17			514	1807	727.5	553	3.3	1.3	✓	PV	
11-18-94	ORF-SV j.	11-18-94	11-19-94	584	186.0	966.8	716	0.26	1.4		WW	partial 480
12-13-94	E-33-18			464	713.3	646.6	641	1.1	1.0	✓	RwC	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____ Site HP Manager

OCS SAMPLE LOG

SITE NAME RIFLE, Co

FOR INFORMATION

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
11-7-94	ORF-SV-			418	1053	821.4	778	1.4	1.1		PW	
11-28-94	E-34-01	11-4-94	11-8-94	564	1632	1101	723	2.3	1.5	✓	WW	
11-7-94	ORF-SV-			534	1500	1158	707	2.1	1.6		PW	
11-28-94	E-34-02	11-4-94	11-8-94	566	2707	813.6	653	4.1	1.2	✓	WW	
11-2-94	ORF-SV-			550	500.5	1072	587	0.85	1.8		PW	
11-28-94	E-34-03	11-1-94	11-3-94	512	932.2	899.8	566	1.6	1.6	✓	WW	
11-2-94	ORF-SV			452	922.2	1127	545	1.7	2.1		WW	
11-28-94	E-34-04	11-1-94	11-3-94	526	818.2	907.4	509	0.92	1.8	✓	WW	
11-1-94	ORF-SV			472	795.9	1136	610	1.3	1.9		WW	
11-23-94	E-34-05	10-31-94	11-2-94	412	991.3	699.1	574	1.7	1.2	✓	PW	
11-2-94	ORF-SV			552	715.8	871.1	575	1.2	1.5		WW	
11-28-94	E-34-06	11-1-94	11-3-94	424	1029	900.0	554	1.9	1.6	✓	WW	480
11-2-94	ORF-SV			554	664.5	851.9	604	1.1	1.4		WW	
11-28-94	E-34-07	11-1-94	11-3-94	514	1330 551.9	1072 107.8	585	2.3 0.23	1.8	✓	WW	480
11-2-94	ORF-SV			454	689.5	1084	531	1.3	2.0		WW	QC 480
11-28-94	E-34-08	11-1-94	11-3-94	530 400	594.0	1082	511	1.2	2.1	✓	WW	Ra-226: 1.4±0.4 Th-230: 7.0±0.7
11-2-94	ORF-SV			556	553.3	899.8	506	1.1	1.8		WW	480
11-28-94	E-34-09	11-1-94	11-3-94	400	824.5 824.5	961.2	480	1.7	2.0	✓	WW	
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Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

REVIEWED BY: RT
Site HP Manager

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME RIFIE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
11-1-94	ORF-SV			576	795.5	1101	588	1.4	1.9		WW	Partial
11-23-94	E-34-10 ✓	10-31-94	11-2-94	416	807.1	1258	551	1.5	2.3	✓	PV	480
11-2-94	ORF-SV			456	963.5	1092	556	1.7	2.0		WW	Partial
11-28-94	E-34-11 ✓	11-1-94	11-3-94	428	860.3	865.1	527	1.6	1.6	✓	WW	480
11-2-94	ORF-SV			558	1106	717.9	526	2.1	1.4		WW	Partial
11-28-94	E-34-12 ✓	11-1-94	11-3-94	502	1551	1168	50	3.1	2.3	✓	WW	480
11-2-94	ORF-SV			458	659.3	1031	567	1.2	1.8		WW	Partial
11-28-94	E-34-13 ✓	11-1-94	11-3-94	504	691.1	928.5	551	1.3	1.7	✓	WW	480
11-2-94	ORF-SV-			460	409.1	795.2	539	0.76	1.5		PV	Partial
11-28-94	E-34-14 ✓	11-1-94	11-3-94	540	276.5	823.2	529	0.52	1.6	✓	WW	480
11-16-94	ORF-SV-			502	624.9	1331	556	1.1	2.4		PV	Partial
12-14-94	E-34-15	11-15-94	11-17-94	~~519~~ 504	~~900.0~~ 691.1	~~1168~~ 928.5	~~510~~ 551	1.6	2.3	✓	RMC	480

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

REVIEWED BY: _____ Site HP Manager

A MORRISON KNUDSEN COMPANY

OCS SAMPLE LOG

QA ORIGINAL

SITE NAME RIFIE CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
11/1/94	ORF-SV			474	706.2	847.6	542	1.3	1.6		MW	QC Ra-226 = 0.8±0.3
11-23-94	E-35-01 ✓	10/31/94	11-2-94	512	710.3	574.3	502	1.4	1.1	✓	PV	Th-230 = 2.0±0.4
10/13/94	ORF-SV ✓			5002	594.8	986.0	625	0.95	1.6		[illegible]	
11-10-94	E-35-02	10/14/94	10-19-94	444	451.2	838.9	586	0.77	1.4	✓	MW	
10-11-94	ORF-SV ✓			468	508.4	978.7	555	0.92	1.8		MW	
11-2-94	E-35-03	10-11-94	10-12-94	578	793.8	861.5	508	1.6	1.7	✓	PV	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.3

Count Time = 500 SEC. unless otherwise noted

REVIEWED BY: [signature] Site HP Manager

F5-IN-001-1, Rev.1

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10/11/94	ORF-SV1	10/11/94		570	665.7	976.4	530	1.3	1.8		MW	Partial
11-2-94	E-35-04		10-12-94	470	839.6	987.4	496	1.7	2.0	✓	PV	480
10/11/94	ORF-SV1	10/11/94		470	1529	1022	545	2.8	1.9		MW	partial
11-2-94	E-35-08		10-12-94	570	2598	794.5	518	5.0	1.5	✓	PV	480
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							N					

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____
Site HP Manager

A MORRISON JDSEN COMPANY

FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME Rifle, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10-4-94	ORF-SV			450	252.6	961.2	621	0.41	1.5		WRW	partial
10-28-94	E-35-05 ✓	10-4-94	10-7-94	402	554.5	856.4	539	1.0	1.6	✓	WRW	480
11-1-94	ORF-SV			578	856.0	1043	557	1.5	1.9		WRW	partial
11-23-94	E-35-06 ✓	10-31-94	11-2-94	516	456.9	1063	523	0.87	2.0	✓	PW	480
11-1-94	ORF-SV			476	601.3	742.8	542	1.1	1.4		WRW	partial -
11-23-94	E-35-07 ✓	10-31-94	11-2-94	418	635.5	908.8	449	1.4	2.0	✓	PW	480

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____ Site HP Manager

OCS SAMPLE LOG

FOR INFORMATION ONLY

ITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-19-94	ORF-SV- ✓			500	1849	823.2	606	3.1	1.4		PW	
10/18/94	E-36-1	9-17-94	9/20/94	4004	3428	943.7	557	6.2	1.7	✓	B	
9-19-94	ORF-SV- ✓			502	717.0	995.5	598	1.2	1.7		PW	
10-18-94	E-36-2	9-17-94	9-20-94	492	472.6	1005	568	0.83	1.8	✓	WW	
9-19-94	ORF-SV- ✓			504	655.9	938.1	527	1.2	1.8		PW	
10/18/94	E-36-3	9-17-94	9/20/94	590	820.6	727.5	511	1.6	1.4	✓	B	
9-19-94	ORF-SV- ✓			506	752.2	880.7	633	1.2	1.4		PW	
10-21-94	E-36-4	9-17-94	9-20-94	522	467.3	1110	616	0.76	1.8	✓	WW	
9-19-94	ORF-SV- ✓			514	753.6	794.5	601	1.3	1.3		PW	
10-21-94	E-36-5	9-17-94	9-20-94	422	6161.7	1127	594	1.1	1.9	✓	WW	
9-19-94	ORF-SV- ✓			516	747.9	708.4	575	1.3	1.2		PW	
10-21-94	E-36-6	9-17-94	9-20-94	524	519.5	928.5	539	0.96	1.7	✓	W	
9-19-94	ORF-SV- ✓			518	886.1	851.9	590	1.5	1.4		PW	
10-18-94	E-36-7	9-17-94	9-20-94	578	846.5	794.5	545	1.6	1.5	✓	WW	
9-19-94	ORF-SV- ✓			520	1125	899.8	556	2.0	1.6		PW	
10-18-94	E-36-8	9-17-94	9-20-94	494	1269	1022	508	2.5	2.0	✓	WW	
9-19-94	ORF-SV- ✓			534	579.2	966.8	526	1.1	1.8		PW	
10/18/94	E-36-9	9-17-94	9/20/94	4002	623.6	1057	498	1.3	2.1	✓	B	480
9-19-94	ORF-SV- ✓			536	1865	1053	511	3.6 ~~3.6~~	2.1		~~PW~~	
10-21-94	E-36-10	9-17-94	9-20-94	424	3072	1075	504	6.1	2.1	✓	PW	480

te Correction Factor = 1.8

P Correction Factor (if applicable) = 1.8

ount Time = 500 Sec., unless otherwise noted

REVIEWED BY: _____
Site HP Manager

SITE NAME Rifle CB.

OCS SAMPLE LOG

FOR INFORMATION ONLY

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-19-94	ORF-SV-			538	804.8	918.9	621	1.3	1.5		SE	
10-21-94	E-36-11	9-17-94	9-20-94	426	1555	821.4	574	2.7	1.4	✓	WW	480
9-19-94	ORF-SV			546	744.4	871.1	495	1.5	1.8		SE	
10/18/94	E-36-12	9-17-94	9/20/94	592	1348	698.8	462	2.9	1.5	✓	SE	480
9-19-94	ORF-SV-			548	218.6	918.9	564	0.39	1.6		PW	QC Ra-226 = 1.3 ± 0.4 480
10/18/94	E-36-13	9-17-94	9/20/94	588	754.2	804.1	525	1.4	1.5	✓	SE	Th-230 = 1.5 ± 0.4
	~~ORF-SV-~~						A					
	E-36-14					N						
	ORF-SV											
	E-36-15											
11-16-94	ORF-SV			568	2333	890.2	585	4.0	1.5		WW	2-partials Combine
12-14-94	E-36-16	11-16-94	11-17-94	510	1824	976.4	578	3.2	1.7	✓	DMC	480
							A					
						N						

Site Correction Factor = 1.8

HP Correction Factor (if applicable) = 1.8

Count Time = 500 Sec, unless otherwise noted

REVIEWED BY: _____
Site HP Manager

ES-IN-001-1, Rev.1

A MORRISON OSEN COMPANY

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-19-94	ORF-SV- ✓			550	639.9	804.1	509	1.3	1.6		PV	Partial
10/18/94	E-36-14 ①	9-17-94	9/20/94	4008	593.4	795.2	481	1.2	1.2	✓	E	
9-19-94	ORF-SV ✓			552	4084	1206	516	7.9	2.3		SB	PARTIAL Leak Tes Good
10-21-94	E-36-15 ②	9-17-94	9-20-94	434 4466	6456	1040	486	13.3	2.1	✓	WW	
9-19-94	ORF-SV			556	13817	1043	584	23.9	1.8		SB	PARTIAL Transferred to SS Book
~~10 21-94~~	~~E-36-16~~ ③	9-17-94	9-20-94	536	18205	1445	563	32.3	2.6	✓	WW	
10-10-94	ORF-SV			446	2022	1127	632	3.2	1.8		WW	partial
11-3-94	~~E-36-18~~ 16	10-7-94	10-12-94	404	2445	1206	537	4.9	2.2	✓	PV	
10-10-94	ORF-SV			548	1897	1005	616	3.1	1.6		WW	partial
11-3-94	E-36-17	10-7-94	10-12-94	488	2514	891.3	529	4.8	1.7	✓	WW	
10-10-94	ORF-SV			448	1769	1075	604	2.9	1.8		WW	partial
11-3-94	E-36-18	10-7-94	10-12-94	590	2497	986.0	517	4.8	1.9	✓	WW	
10-10-94	ORF-SV			550	1068	1120	595	1.8	1.9		WW	partial
11-3-94	E-36-19	10-7-94	10-12-94	490	2096	891.3	527	4.0	1.7	✓	WW	
10-10-94	ORF-SV			450	1830	1049	635	2.9	1.7		WW	partial
11-4-94	E-36-20	10-7-94	10-12-94	500	2908	1043	549	5.3	1.9	✓	PV	
10-10-94	ORF-SV			552	1699	813.6	616	2.8	1.3		WW	partial
11-3-94	E-36-21	10-7-94	10-12-94	504	2445	957.2	523	4.7	1.8	✓	PV	
						A						
					N							

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____ Site HP Manager

OCS SAMPLE LOG

SITE NAME Rifle, Co.

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-19-94	ORF-SV			558	2634	1015	629	4.2	1.6		SB	
10/18/94	E-37-1 ✓	9-17-94	9/20/94	594	4007	1130	619	6.5	1.8	✓	SB	
9-20-94	ORF-SV			560	1907	832.8	596	3.2	1.4		SB	
10-20-94	E-37-2 ✓	9-20-94	9-21-94	558	2159	957.2	574	3.8	1.7	✓	PV	
9-20-94	ORF-SV			562	1439	7754	520	2.8	1.5		SB	
10-20-94	E-37-3 ✓	9-20-94	9-21-94	548	1330	1177	476	2.8	2.5	✓	WW	480
9-20-94	ORF-SV ✓			566	3809	938.1	503	7.6	1.9		SB	
10-20-94	E-37-4	9-20-94	9-21-94	448	4735	1057	477	9.9	2.2	✓	WW	480
9-20-94	ORF-SV ✓			568	2604	8322	569	4.7	1.5		SB	
10-20-94	E-37-5	9-20-94	9-21-94	524	4348	765.8	550	7.9	1.4	✓	PV	480
9-19-94	ORF-SV- ✓			564	1161	1005	627	1.9	1.6		SB	QC 480
10/18/94	E-37-6	9-17-94	9/20/94	4007	1712	935.0	620	2.8 5.4 decay	1.5	✓	SB	Ra-226 = 2.9±0.5 Th-230 = 2.3±0.4
							A					
							N					

Site Correction Factor = 1.8

HP Correction Factor (if applicable) = 1.8

Count Time = 500 Sec., unless otherwise noted

REVIEWED BY: [signature] Site HP Manager

A MO KNUDSEN COMPANY

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9/20/94	ORF-SV ①	9/20/94	9/21/94	570	3783	1082	645	5.9	1.7		WW	Partial
10/20/94	E-37-7			550	5517	1359	636	8.7	2.1	✓	WW	480
9/20/94	ORF-SV ①	9/20/94	9/21/94	572	1922	832.8	619	3.1	1.3		WW	Partial
10/20/94	E-37-8			452	2042	1136	611	3.3	1.9	✓	WW	480
9/20/94	ORF-SV ①	9/20/94	9-21-94	574	2471	1034	493	5.0	2.1		WW	Partial
10-20-94	E-37-9			554	3134	1110	476	6.6	2.3	✓	PV	480
9/20/94	ORF-SV ①	9/20/94	9-21-94	594	4181	727.5	476	8.8	1.5		WW	partial
10-20-94	E-37-10			454	5604	1110	454	12.3	2.4	✓	PV	480
10/10/94	ORF-SV	10/7/94	10-12-94	452	1830	1119	627	2.9	1.8		WW	partial
11-3-94	E-37-11			406	2653	1154	536	4.9	2.2	✓	PV	480
10/10/94	ORF-SV	10/7/94	10-12-94	554	2121	1139	578	3.7	2.0		WW	partial
11-4-94	E-37-12			400	3441	873.8	497	6.9	1.8	✓	PV	480
10/10/94	ORF-SV	10/7/94	10-12-94	454	1664	1180	583	2.9	2.0		WW	partial
11-4-94	E-37-13			502	2538	966.8	500	5.1	1.9	✓	PV	480
10/10/94	ORF-SV	10/7/94	10-12-94	556	1809	1187	699	2.6	1.7		WW	partial
11-4-94	E-37-14			504	2568	1206	602	4.3	2.0	✓	PV	480
10/10/94	ORF-SV	10/7/94	10-1294	456	1802	943.7	635	2.8	1.5		WW	partial
11-3-94	E-37-15			506	1811	1216	539	3.4	2.3	✓	PV	480
							A					
						N						

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____

Site HP Manager

RUDSEN COMPANY

Canal Federal Environmental Services, Inc.

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME RIFLE Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9/20/94	ORF-SV ✓	9/20/94	9/21/94	576	2080	957.2	575	3.6	1.7		WRW	QC 480 Ra-226 = 6.3 ± 0.7 Th-230 = 6.0 ± 0.7
10/20/94	E-38-01			450	3356	847.6	555	6.0	1.5	✓	WRW	
~~9/20/94~~	~~ORF-SV~~											
	~~E-38-02~~ WRW 10/94											

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

REVIEWED BY: _____ Site HP Manager

A MAY. KNUDSEN COMPANY

OCS SAMPLE LOG

FOR DECONTAMINATION ONLY

SITE NAME Rifle Co.

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9/20/94	ORF-SV-E	9/20/94	9-21-94	578	1125	1005	505	2.2	2.0		WW	Partial
10-20-94	38-02 ①			426	2654	882.6	480	5.5	1.8	✓	PV	480
9/20/94	ORF-SV- ①	9/20/94	9/21/94	580	972.?	756.2	530	1.8	1.4		WW	Partial
10/20/94	E-38-03			460	1461	900.1	506	2.9	1.8	✓	WW	480
9/20/94	ORF-SV	9/20/94	9/21/94	582	988.1	880.7	565	1.7	1.6		WW	Partial-
10/20/94	E-38-04 ①			560	1642	1043	544	3.0	1.9	✓	WW	480
9/20/94	ORF-SV	9/20/94	9/21/94	584	1552	765.8	564	2.8	1.4		WW	Partial
10/20/94	E-38-05 ①			552	1401	957.2	546	2.6	1.8	✓	WW	480
9/20/94	ORF-SV	9/20/94	9-21-94	586	1248	918.9	487	2.6	1.9		WW	Partial
10-20-94	E-38-06 ①			526	2476	899.8	475	5.2	1.9	✓	PV	480
9/20/94	ORF-SV	9/20/94	9-21-94	588	434.1	612.6	510	0.85	1.2		WW	Partial-
10-20-94	E-38-07 ①			562	851.3	650.9	499	1.7	1.3	✓	PV	480
~~9/20/94~~ 10/10/94	ORF-SV	10/7/94	10-12-94	458	2045	1040	619	3.3	1.7		WW	partial
~~10/20~~ 11-4-94 PV	E-38-08			402	2787	672.9	585	4.8	1.2	✓	PV	480
10/10/94	ORF-SV	10/7/94	10-12-94	558	2627	909.4	608	4.3	1.5		WW	partial-
11-4-94	E-38-09			506	3623	1043	572	6.3	1.8	✓	PV	480
10/10/94	ORF-SV	10/7/94	10-11-94	460	3052	856.4	585	5.2	1.5		WW	partial
11-1-94	E-38-10			536	4233	1082	554	7.6	2.0	✓	PV	480
						K						
						N						

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____ Site HP Manager

A MO... NUDSEN COMPANY

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FOR INFORMATION

OCS SAMPLE LOG

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9/20/94	ORF-SV√ ①	9/20/94	9-21-94	590	821.7	957.2	545	1.5	1.8		WRW	Partial 480
10-20-94	E-39-01			462	1176	1057	533	2.2	2.0	✓	[illegible]	
9/20/94	ORF-SV √ ①	9/20/94	9/21/94	592	829.1	746.6	462	1.8	1.6		WRW	Partial 480
10/20/94	E-39-02			472	700.6	856.4	446	1.6	1.9	✓	WRW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

REVIEWED BY: [signature]
Site HP Manager

2

A MOFA... RUDSEN COMPANY

OCS SAMPLE LOG FOR INFORMATION ONLY

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL	OCS # 20 DAY	Bi-214 pCi INITIAL	Bi-214 pCi 20 DAY	Tl-208 pCi INITIAL	Tl-208 pCi 20 DAY	MASS (grams) WET	MASS (grams) DRY	Ra-226 pCi/g INITIAL/CORR.	Ra-226 pCi/g 20 DAY	Th-232 pCi/g INITIAL	Th-232 pCi/g 20 DAY	DEPTH ≤15cm	DEPTH >15cm	TECH INITIAL	TECH 20 DAY	COMMENTS
10-3-94	ORF-SV-F			424		280.8		620.4		680		0.41		0.91				SS		
10/25/94	22-11	9-30-94	10/4/94	514		484.3		1015		643		7.5		1.6		✓		WW		
10-3-94	ORF-SV-F			524		964.6		957.2		685		1.4		1.4				SS		
10/25/94	22-12	9-30-94	10/4/94	414		2128		760.2		628		3.4		1.2		✓		WW		
9/21/94	ORF-SV	9/21/94	9/23/94	432		761.8		760.2		700		1.1		1.1				WW		
10/11/94	F-22-13			412		959.6		769.0		643		1.5		1.2		✓		WW		
9/21/94	ORF-SV	9/21/94	9/23/94	556		1096		1321		627		1.7		2.1				WW		
10/12/94	F-22-14			586		1484		1350		568		2.6		2.4		✓		WW		LEAK TEST PASS
9/21/94	ORF-SV	9/21/94	9/23/94	434		831.7		830.1		533		1.6		1.6				WW		
10/12/94	F-22-15			480		914.1		1022		487		1.9		2.1		✓		WW		
10-3-94	ORF-SV-F			428		1638		821.4		709		2.3		1.2				SS		
10/25/94	22-16	9-30-94	10/4/94	516		2299		1024		676		3.4		1.5		✓		WW		
10-3-94	ORF SV-F			530		429		947.7		693		2.1		1.4				SS		
10/25/94	22-17	9-30-94	10/4/94	416		1968		891.3		652		3.0		1.4		✓		WW		
9/21/94	ORF-SV	9/21/94	9/23/94	558		560.3		1005		646		0.87		1.6				WW		
10/12/94	F-22-18			588		577.8		1053		603		0.96		1.7		✓		WW		
9/21/94	ORF-SV	9/21/94	9-23-94	436		981.8		943.7		659		1.5		1.4				WW		
10-12-94	F-22-19			510		600.4		1177		630		0.95		1.9		✓		PW		480
9/21/94	ORF-SV	9/21/94	9/23/94	560		665.4		650.9		605		1.1		1.1				WW		
10/11/94	F-22-20			512		932.8		909.4		591		1.6		1.5		✓		WW		480

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

REVIEWED BY: [signature] Site HP Manager

A MOLTEN KNUDSEN COMPANY

FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9/21/94	ORF-SV ①	9/21/94	9-23-94	438	693.5	917.5	612	1.1	1.5		WKW	partial 480
10-13-94	F-22-23			406	864.2	699.1	596	1.5	1.2	✓	PV	
9/21/94	ORF-SV ①	9/21/94	9-23-94	562	363.3	1053	566	0.64	1.9	✓	WKW	partial 480
10-14-94	F-22-24			514	570.9	842.4	551	1.0	1.5	✓	PV	
9/21/94	ORF-SV ①	9/21/94	9-23-94	440	381.3	838.9	543	0.70	1.5		WKW	partial 480
10-13-94	F-22-25			506	865.6	823.2	525	1.5	1.6	✓	PV	
10-3-94	ORF SV-F	9-30-94	10/4/94	430	1160	943.7	602	1.9	1.6		SS	480
10/25/94	22-21			425	1346	961.2	527	2.6	1.8	✓	WKW	Part.

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____
Site HP Manager

A MORRISON KNUDSEN COMPANY

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME Rifle Co.

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
							A					
						N						
10-3-94	ORF-SV-F ✓			532	835.8	1063	653	1.3	1.6		83	QC 480
10/25/94	22-22	9-30-94	10/4/94	518	964.0	947.7	600	1.6	1.6	✓	WW	Ra-226 = 1.1 ± 0.3 Th-230 = 1.9 ± 0.4
							A					
						N						

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 sec., unless otherwise noted

REVIEWED BY: _____ Site HP Manager

MORRISON HUDSEN COMPANY — Oak Ridge Federal Environmental Services, Inc.

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9/21/94	ORF-SV	9/21/94	9-23-94	448	639.5	742.8	549	1.2	1.4		WRW	
10-11-94	F-23-11			518	856.8	947.7	507	1.7	1.9	✓	PV	
9/21/94	ORF-SV	9/21/94	9/23/94	572	380.3	986.0	513	0.74	1.9		WRW	
10/12/94	F-23-12			484	811.8	821.4	458	1.8	1.8	✓	WRW	
9/21/94	ORF-SV	9/21/94	9-23-94	450	527.4	629.2	483	1.1	1.3		WRW	
10-13-94	F-23-13			400	493.3	672.9	450	1.1	1.5	✓	PV	480
9/21/94	ORF-SV	9/21/94	9-23-94	574	557.6	536.1	453	1.2	1.2		WRW	
10-11-94	F-23-14			420	253.4	970.0	420	0.60	2.3	✓	PV	480
9/21/94	ORF-SV	9/21/94	9-23-94	452	904.0	716.5	483	1.9	1.5		WRW	
10-11-94	F-23-15			520	1155	804.1	460	2.5	1.7	✓	PV	480
9/21/94	ORF-SV	9/21/94	9-23-94	576	774.3	890.2	705	1.1	1.3		WRW	
10-13-94	F-23-16			500	954.0	1120	689	1.4	1.6	✓	PV	480
9/21/94	ORF-SV	9/21/94	9-23-94	454	722.1	812.7	514	1.4	1.6		WRW	QC 480 Ra-226 = 1.6 ± 0.9
10-13-94	F-23-17			402	703.0	812.7	497	1.4	1.6	✓	PV	Th-230 = 2.3 ± 0.4
9/21/94	ORF-SV	9/21/94	9-23-94	578	494.3	765.8	507	0.97	1.5		WRW	
10-11-94	F-23-18		~~10-11-94~~	522	778.9	851.9	492	1.6	1.7	✓	PV	480
							A					
							N					

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

REVIEWED BY: [signature] Site HP Manager

F5-IN-001-1, Rev.1

12

MK-F A MORRIS USON COMPANY V 'OSEN COMPANY

CWM Federal Environmental . ices, Inc.

FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9/21/94	ORF-SV ①	9/21/94		596	1367	986.0	498	2.7	2.0		MW	Partial
10-11-94	F-24-18		9-23-94	530	2099	928.5	482	4.4	1.9	✓	PV	480

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

REVIEWED BY: _____ Site HP Manager

MK A MC KNUDSEN COMPANY — MK KNUDSEN COMPANY

CWM Federal Environmental Services, Inc.

OCS SAMPLE LOG

QA ORIGINAL

SITE NAME RIFLE, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9/21/94	ORF-SV ✓	9/21/94		466	620.4	882.6	523	1.2	1.7		MW	
10-12-94	F-24-11		9-23-94	528	967.3	890.2	503	1.9	1.8	✓	PV	
9/21/94	ORF-SV ✓	9/21/94		590	512.5	823.2	539	0.95	1.5		MW	QC
10-13-94	F-24-12		9-23-94	502	782.8	804.1	525	1.5	1.5	✓	PV	Ra-226 = 1.4 ± 0.4 Th-230 = 1.1 ± 0.3

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

REVIEWED BY: _____
Site HP Manager

MK-FLOR SON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Services, Inc.

FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10-10-94	ORF-SV-			462	4135	1031	643	6.4	1.6		PW	Partial 450
11-1-94	F-23-25	10-7-94	10-11-94	438	4779	1049	615	7.8	1.7	✓	PW	
10-10-94	ORF-SV-1			560	951	842.4	586	3.3	1.4		PW	Partial 450
11-1-94	F-23-24	10-7-94	10-11-94	534	3495	947.7	557	6.3	1.7	✓	PW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____
Site HP Manager

MK[illegible] A MORR KNUDSEN COMPANY

CWM Federal Environmental [illegible]vices, Inc.

FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME Rifle, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9/21/94	ORF-SV	9/21/94	9/23/94	584	2609	746.6	567	4.6	1.3		[illegible]	Partial
10/13/94	F-24-6 ①			412	3610	908.8	555	6.5	1.6	✓	[illegible]	
9/21/94	ORF-SV	9/21/94	9-23-94	462	628.3	1250	492	1.3	2.5		[illegible]	Partial
10-11-94	F-24-7 ①			524	1059	871.1	471	2.2	1.8	✓	[illegible]	
9/21/94	ORF-SV	9/21/94	9-23-94	586	1046	890.2	535	2.0	1.7		[illegible]	Partial
10-11-94	F-24-8 ①			430	599.7	1285	521	1.2	2.5	✓	[illegible]	480
9/21/94	ORF-SV	9/21/94	9-23-94	464	2890	891.3	560	5.2	1.6		[illegible]	Partial
10-11-94	F-24-9 ①			426	4428	1101	553	8.0	2.0	✓	[illegible]	480
9/21/94	ORF-SV	9/21/94	9/23/94	588	1617	976.4	568	2.8	1.7		[illegible]	Partial
10/13/94	F-24-10 ①			512	2655	1110	558	4.8	2.0	✓	[illegible]	480
9/21/94	ORF-SV	9/21/94	9-23-94	468	715.7	812.7	559	1.3	1.5		[illegible]	Partial
10-11-94	F-24-13 ①			526	991.4	823.2	546	1.8	1.5	✓	[illegible]	480
9/21/94	ORF-SV	9/21/94	9-23-94	592	1876	689.2	499	3.8	1.4		[illegible]	Partial
10-11-94	F-24-14 ①			532	2167	871.1	486	4.5	1.8	✓	[illegible]	480
9/21/94	ORF-SV	9/21/94	9-23-94	470	916.7	856.4	514	1.8	1.7		[illegible]	Partial
10-11-94	F-24-15 ①			432	1285	917.5	501	2.6	1.8	✓	[illegible]	480
9/21/94	ORF-SV	9/21/94	9/23/94	594	1322	737.1	468	2.8	1.6		[illegible]	Partial
10/12/94	F-24-16 ①			414	2219	777.1	450	4.9	1.7	✓	[illegible]	480
9/21/94	ORF-SV	9/21/94	9-23-94	472	566.4	847.6	514	1.1	1.6		[illegible]	Partial
10-14-94	F-24-17 ①			428	737.9	917.5	504	1.5	1.8	✓	[illegible]	480

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

REVIEWED BY: [signature]
Site HP Manager

9/11

MORRISON KNUDSEN COMPANY

FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME RIFLE, Co

COUNT DATE INITIAL / 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL / 20 DAY	Bi-214 pCi INITIAL / 20 DAY	Tl-208 pCi INITIAL / 20 DAY	MASS (grams) WET / DRY	Ra-226 pCi/g INITIAL/CORR. / 20 DAY	Th-232 pCi/g INITIAL / 20 DAY	DEPTH <15cm / >15cm	TECH INITIAL / 20 DAY	COMMENTS
9/21/94	ORF-SV ①	9/21/94	9-23-94	564	834.8	832.8	495	1.7	1.7		WRW	Partial
10-11-94	F-23-3			414	634.7	1110	457	1.4	2.4	✓	PV	
9/21/94	ORF-SV ①	9/21/94	9-23-94	442	467.9	952.5	496	0.94	1.9		WRW	Partial
10-13-94	F-23-4			408	684.7	751.5	464	1.5	1.6	✓	PV	Wk Test Pass
9/21/94	ORF-SV ⑪	9/21/94	9-23-94	570	465.5	976.4	508	0.92	1.9		WRW	Partial
10-11-94	F-23-10			416	472.6	1145	488	0.97	2.3	✓	PV	
~~9/21/94~~	~~ORF-SV~~			~~448~~	~~639.5~~	~~742.8~~	~~549~~	~~1.2~~	~~1.4~~		~~WRW~~	~~Partial~~ - WRW 9/21/94
	~~F-23-11~~ ① WRW 9/21/94	9/21/94								✓		
9/21/94	ORF-SV ①	9/21/94	9-23-94	456	492.5	803.9	491	1.0	1.6		WRW	Partial -
10-14-94	F-23-19			516	725.0	794.5	478	1.5	1.7	✓	PV	480
9/21/94	ORF-SV ①	9/21/94	9-23-94	580	493.1	918.9	478	1.0	1.9		WRW	Partial
10-13-94	F-23-20			508	858.2	861.5	458	1.9	1.9	✓	PV	480
9/21/94	ORF-SV ①	9/21/94	9-23-94	458	317.7	1049	573	0.55	1.8		WRW	Partial -
10-13-94	F-23-21			410	732.4	856.4	563	1.3	1.5	✓	PV	480
9/21/94	ORF-SV ①	9/21/94	9-23-94	582	452.7	784.9	448	1.0	1.8		WRW	Partial
10-13-94	F-23-22			510	757.7	641.3	410	1.8	1.6	✓	PV	480
9/21/94	ORF-SV ①	9/21/94	9-23-94	460	620.4	812.7	559	1.1	1.5		WRW	Partial
10-14-94	F-23-23			424	309.8	961.2	522	0.59	1.8	✓	PV	480
10-3-94	ORF-SV-F			534	822.5	756.2	645	1.3	1.2		SB	
10/25/94	23-2	9-30-94	10/4/94	526	782.3	1225	544	1.4	2.3	-	WRW	PARTIAL

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: RJ
Site HP Manager

MK-F. A MORRIS ISON COMPANY AUDSEN COMPANY

CWM Federal Environmental Serv. , Inc.

FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi/g INITIAL 20 DAY	Tl-208 pCi/g INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10-10-94	ORF-SV-			464	941.5	1092	576	1.6	1.9		PW	Partial
11-1-94	F-29-1	10-7-94	10-11-94	440	1957	900.1	511	3.8	1.8	✓	WW	480
10-10-94	ORF-SV-			562	1139	1110	618	1.8	1.8		PW	Partial
11-1-94	F-29-2	10-7-94	10-11-94	538	1858	947.7	549	3.4	1.7	✓	PW	480
10-10-94	ORF-SV			468	1319	1084	613	2.2	1.8		WW	Partial-
11-1-94	F-29-03	10-7-94	10-11-94	540	2432	976.4	539	4.5	1.8	✓	WW	480
10-10-94	ORF-SV			566	1298	804.1	583	2.2	1.4		WW	Partial
11-1-94	F-29-04	10-7-94	10-11-94	542	1970	1024	513	3.8	2.0	✓	WW	480

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

REVIEWED BY: [signature] Site HP Manager

F5-IN-001-1, Rev.1

4

MK-FER SUN COMPANY
A MORRISON JUDSEN COMPANY

CWM Federal Environmental Servi[illegible], Inc.

OCS SAMPLE LOG

SITE NAME GRAND JCT., CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
2-27-97	ORF-SV-G-3-2	2-26-97	2-27-97	8	882.14		747.33	1.18		715	ROC	>6" @ 24"
3-25-97					616.73		646.6	.95			ROC	
2-27-97	ORF-SV-G-3-4	2-26-97	2-27-97	8	1439.2		666.31	2.16		715	ROC	>6" @ 2'
3-25-97					1538.7		596.09	2.58			ROC	
2-27-97	ORF-SV-G-~~03~~ 03-03 ROC 2-27-97	2-26-97	2-27-97	8	729.08		699.05	1.04		715	ROC	>6" @ 24"
3-25-97					992.93		641.9	1.55			ROC	
		N/A										

Site Correction Factor = 2

VP Correction Factor (if applicable) = N/A

Count Time = 500 sec., unless otherwise noted

REVIEWED BY: _____
Site HP Manager

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MK IGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Se ...s, Inc.

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10-10-94	ORF-SV-J			408	676.8	943.7	752	0.90	1.3		PV	Partial
11-4-94	G-3-05	10-7-94	10-12-94	404	1006	865.1	644	1.6	1.3	✓	PV	
10-10-94	ORF-SV-J			508	795.7	890.2	756	1.1	1.2		PV	Partial
11-3-94	G-3-10	10-7-94	10-12-94	408	586.2	1276	644	0.91	2.0	✓	PV	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____
Site HP Manager

2

A MORRISON KNUDSEN COMPANY

FOR INFORMATION ONLY

OCS SAMPLE LOG

TE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
7-12-94	ORF-SV-✓			558	2202	1072	563	3.9	1.9		PW	Partial
7/13/94	G-4-1 ①	9-9-94	9/13/94	562	3365	1034	543	6.2	1.9	✓	WW	480
7-10-94	ORF-SV-✓			500	598.0	1034	575	1.0	1.8		PW	Partial
7-4-94	G-4-05	10-7-94	10-12-94	508	685.7	1063	501	1.4	2.1	✓	PW	480
7-10-94	ORF-SV-✓			402	598.1	777.7	570	1.0	1.4		PW	Partial
7-3-94	G-4-07	10-7-94	10-12-94	505	762.7	823.2	501	1.5	1.6	✓	PW	480
7-10-94	ORF-SV-✓			502	472.8	871.1	585	0.81	1.5		PW	Partial
7-3-94	G-4-08	10-7-94	10-12-94	410	709.0	1.66	507	1.4	2.1	✓	PW	480
7-10-94	ORF-SV-✓			404	656.9	935.0	609	1.1	1.5		PW	Partial
7-4-94	G-4-09	10-7-94	10-12-94	510	590.2	1024	535	1.1	1.9	✓	PW	480
7-10-94	ORF-SV-✓			510	758.2	756.2	558	1.4	1.4		PW	Partial
7-4-94	G-4-06	10-7-94	10-12-94	406	1051	725.3	469	2.12	1.5	✓	PW	480
7-10-94	ORF-SV ✓			412	721.3	734.0	555	1.3	1.3		WW	Partial
7-3-94	G-4-10 ①	10-7-94	10-12-94	510	1018	784.9	471	2.2	1.7	✓	PW	480
~~7-10-94~~	~~ORF-SV~~ 7-5-94											
	G-4 7-5-94						A					
						N						

Correction Factor = 1.8

Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____
Site HP Manager

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10

...K-F... A MORRISON ... N COMPANY ... U.S. ... Federal ... Services, Inc.

OCS SAMPLE LOG

SITE NAME RIFLE, CO

FOR INFORMATION ONLY

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/ORR 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
	ORF-SV-					A						
	G-4-01					N						
7-12-94	ORF-SV-			460	1080	1010	537	2.0	1.9		AV	
10-13-94	G-4-02	9-9-94	9-13-94	564	1391	1024	529	2.6	1.9	✓	WW	480
2-10-94	ORF-SV-			410	815.8	725.3	620	1.3	1.2		AV	
1-3-94	G-4-03	10-7-94	10-12-94	582	1227	708.4	547	2.2	1.3	✓	WW	480
10-10-94	ORF-SV-			400	634.7	760.2	606	1.0	1.3		AV	QC Ra-226 = 1.9 ± 0.4 480
11-3-94	G-4-04	10-7-94	10-12-94	482	671.2	882.6	530	1.3	1.7	✓	WW	Th-230 = 1.6 ± 0.4
							A					
						N						

Correction Factor = 1.8

Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: RF

Site HP Manager

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MK-F... SUN COMPANY
A MORRISON KNUDSEN COMPANY

...CWM... Federa... Environ...ental ...

OCS SAMPLE LOG

FOR INFORMATION ONLY

SITE NAME RIFLE, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10/14/94	ORF-SV	10/14/94		538	458.6	765.8	584	0.79	1.3		WW	
11-10-94	G-5-01 ✓		10-17-94	402	548.1	716.5	581	0.94	1.2	✓	PV	480
10-10-94	ORF-SV j	10-7-94	10-12-94	516	416.6	1101	570	0.73	1.9		WW	
11-2-94	G-5-02			590	1063	717.9	489	2.2	1.5	✓	WW	480
10-10-94	ORF-SV j	10-7-94	10-12-94	416	644.2	725.3	625	1.0	1.2		WW	
11-3-94	G-5-03			484	4346	620.4	559	2.4	1.1	✓	WW	480
10-10-94	ORF-SV J	10-7-94	10-12-94	518	306.2	1053	579	0.53	1.8		WW	QC 480
11-4-94	G-5-04			512	743.1	851.9	508	1.5	1.7	✓	PV	Ra-226 = 1.6 ± 0.4 Th-230 = 2.9 ± 0.5

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

REVIEWED BY: _____
Site HP Manager

MK [illegible] MORRISON COMPANY
MORRISON COMPANY

CWM Federal Environmental Services, Inc.

FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
10-10-94	ORF-SV-			504	556.5	947.7	587	~~0.95~~	~~1.6~~		~~PV~~	Partial
11-4-94	G-5-01	~~10-7-94~~	~~10-12-94~~	408	711.7	838.9	512	1.4	1.6	✓	PV	480
10-10-94	ORF-SV (1)			512	719.1	813.6	584	1.2	1.4		WW	partial
11-3-94	G-5-05	10-7-94	10-12-94	412	532.2	1171	511	1.0	2.3	✓	PV	480
10-10-94	ORF-SV (1)			418	496.5	777.7	554	0.90	1.4		WW	partial
11-3-94	G-5-06	10-7-94	10-12-94	512	961.6	804.1	475	2.0	1.7	✓	PV	480
10-10-94	ORF-SV (1)			520	779.8	650.9	568	1.4	1.1		WW	partial
11-3-94	G-5-07	10-7-94	10-12-94	400	1191	865.1	485	2.5	1.8	✓	PV	480
10-10-94	ORF-SV (1)			420	792.8	961.2	597	1.3	1.6		WW	partial
11-4-94	G-5-08	10-7-94	10-12-94	514	822.9	976.4	512	1.6	1.9	✓	WW	480
10-10-94	ORF-SV (1)			522	898.0	708.4	588	1.5	1.2		WW	partial
11-4-94	G-5-09	10-7-94	10-12-94	410	1172	585.5	504	2.3	1.2	✓	WW	480
							A					
						N						

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

REVIEWED BY: [signature] Site HP Manager

FOR INFORMATION ONLY

OCS SAMPLE LOG

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL / 20 DAY	Bi-214 pCi INITIAL / 20 DAY	Tl-208 pCi INITIAL / 20 DAY	MASS (grams) WET / DRY	Ra-226 pCi/g INITIAL/CORR. / 20 DAY	Th-232 pCi/g INITIAL / 20 DAY	DEPTH ≤15cm / >15cm	TECH INITIAL / 20 DAY	COMMENTS
10-10-94	ORF-SV ①	10-7-94	10-12-94	422	957.2	672.9	599	1.6	1.1		[illegible]	partial
11-3-94	G-6-01 ✓			500	873.5	1091	516	1.7	2.1	✓	PV	480
10-10-94	ORF-SV ①	10-7-94	10-12-94	524	526.1	813.6	591	0.89	1.4		WW	partial
11-4-94	G-6-02 ✓			516	749.5	947.7	503	1.5	1.9	✓	WW	480
10-10-94	ORF-SV ①	10-7-94	10-12-94	424	785.6	812.7	542	1.4	1.5		WW	partial
11-3-94	G-6-03 ✓			402	900.0	1092	466	1.9	2.3	✓	PV	480
10-10-94	ORF-SV ①	10-7-94	10-12-94	526	650.2	851.9	521	1.[illegible]	1.6		WW	partial
11-4-94	G-6-04 ✓			412	1130	751.5	448	2.5	1.7	✓	WW	480
10-10-94	ORF-SV ①	10-7-94	10-12-94	426	506.0	952.5	543	0.93	1.8		WW	partial
11-3-94	G-6-05 ✓			502	788.[illegible]	1101	457	1.7	2.4	✓	PV	480

Site Correction Factor = 1.8

HP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

REVIEWED BY: [signature] Site HP Manager

AREA "J"

RF-510 / RF-480.

SOIL VERIFICATION DATA

GRID I.D.	COORDINATES	SAMPLE NO. (RFL-SV-)	APPROX. Depth	Ra-266 (pCi/g) CONCENTRATION INITIAL	FINAL	COMMENTS	Date sampled
1	N25348,E59228;N25360,E59228; N25362,E59224;E59224,N25348;	5902	0.50	2.00	3.10	RF-480	2/8/95
2	N25344,E59207;N25358.5,E59207; N25360,E59228;N25348,E59228	5920	0.50	2.00	3.30	RF-480	2/8/95
3	N25337,E59168;N25357,E59168; N25357.5,E59192;N25341,E59192;	5916	0.50	3.80	4.10	RF-480	2/8/95
4	N25330,E59138;N25355,E59138; N25356,E59168;N25337,E59168;	5895	0.50	4.30	5.10	RF-480	2/8/95
5	N25330,E59138;N25355,E59138; N25355,E59138;N25330,E59138;	5926	0.50	3.00	4.10	RF-480	2/8/95
6	N25333,E59078;N25353,E59078; N25353,E59108;N25338,E59108;	5906	0.50	6.50	9.30	RF-480	2/8/95
7	N25220,E59048;N25352,E59048; N25353,E59078;N25330,E59078;	5899	0.50	4.70	7.20	RF-480	2/8/95
8	N25330,E59018;N25352,E59018; N25352,E59048;N25330,E59048;	5934	0.50	5.40	5.90	RF-480	2/8/95
9	N25330,E58988;N25352,E58988; N25352,E59018;N25330,E59018;	5910	0.50	7.30	9.40	RF-480	2/8/95
10	N25330,E58958;N25355,E58958; N25353,E58988;N25330,E58988;	5928	0.50	1.67	8.50	RF-480	2/8/95
11	N25330,E58928;N25358,E58928; N25355,E58958;N25330,E58958;	5950	0.50	2.70	3.70	RF-480	2/8/95
12	N25330,E58898;N25[illegible]E58898; N25358,E58928;N25330,E58928;	5930	0.50	1.90	3.80	RF-480	2/8/95
13	N25330,E58868;N25362,E5[illegible] N25360,E58898;N25330,E5[illegible]	5923	0.50	2.70	2.70	RF-480	2/8/95
14	N25330,58855;N25347,E58865; N25363,E58859;N25353,E58863; N25362,E58868;N25330,E58868;	5948	0.50	3.30	3.90	RF-480/ RF-510	2/8/95
15	N25317,E59048;N25330,E59048; N25330,E59078;N25333,E59078;	5938	0.50	3.00	5.00	RF-480/RF-510	2/8/95
16	N25309,E59018,N25330,E59018; N25330,E59048;N25317,E59048;	5894	0.50	1.30	2.00	RF-480/RF-510	2/8/95
17	N25307,E58988;N25330,E58988; N25330,59018;N25309,59018;	5924	0.50	3.60	6.10	RF-480/RF-510	2/8/95
18	N25300,E58958;N25330,E58958; N25300,E58988;N25307,E58988;	5918	0.50	3.70	4.20	RF-480/RF-510	2/8/95
19	N25300,E58928;	5893	0.50	2.70	3.40	RF-480/RF-510	2/8/95
20	N25300,E58898;	5944	0.50	1.30	2.20	RF-480/RF-510	2/8/95
21	N25300,E58868;	5954	0.50	1.70	2.80	RF-480/RF-510	2/8/95
22	N25300,E58838;	5901	0.50	1.90	2.20	RF-480/RF-510	2/8/95
23	N25300,E58808;N25321.5,E5880 N25314,E58838;N25300,E58838;	5958	0.00	2.00	3.10	RF-510 Not Excavated; Verified Clean RF-510	
24	N25300,E58778;N25330,E58778; N25321.5,E58038;N25300,E58088;	5959	0.25 → 0.00	2.16 → 0.84	1.00	RF-510	

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

John Ha
Dave Ball

INTER-OFICE CORESPONDENCE

DATE:	July 17, 1996		
TO:	J.V. Innis	FROM:	D.L. Lewis
LOCATION:	Albuquerque	LOCATION:	Rifle, CO
SUBJECT:	RF-480 Completion Report		

Attached are the remaining portions of the completion report for RF-480. The Supplemental Standard and Photograph sections were sent to you on May 28, 1996.

Two data items in the May 28, 1996, IOC are incorrect. The average width of contamination was 42 feet, excluding utility poles, and the total area is about 2.3 acres.

Please contact R. Fencil or me, if you have any questions.

DL/pk

File: RF-480 w/attachments
4.4 w/out attachments

MK-FERGUSON CO.
ALBUQUERQUE
JUL 19 1996
RECEIVED

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

INTER-OFFICE CORRESPONDENCE

DATE: May 28, 1996

TO: J.V. Innis

FROM: D.L.Lewis

LOCATION: Albuquerque, NM

LOCATION: Rifle, CO

SUBJECT: Supplemental Standard Package for RF-480

Vicinity property RF-480 consists of an estimated 8300 cubic yards of contaminated material beneath the D&RG Railroad bed and around the bases of several utility pole between the Colorado River and the Old Rifle processing site. The limits of the vicinity property are shown on the attached drawing sheets 1 through 8 of 8. Cocrdinates are shown on the drawings.

The length of contamination is approximately 2400 feet long and the average width is approximately 225 feet excluding the utility pole bases. Total area is approximately 13 acres.

Depth of contamination varies from 0 to 8.5 feet in the railroad bed and from 0 to 6.5 feet at the utility pole bases. See attached cross sections A through EE.

Test holes were drilled with a 4-inch diameter auger at 75-foot intervals along the railroad. Bore hole locations are shown on the drawings and cross sections. Results of each boring log are attached to the specific cross section. OCS sample logs are also attached.

Photos of the area are attached.

The cost of complete remedial action on this property would be unreasonably high relative to the long term benefits and the R.R.M. do not pose a clear present or future hazard. It is very unlikely buildings will be erected or that people will spend long periods of time on the property.

A material quantity takeoff is also attached. If a detailed cost estimate is desired, please have the Cleveland office provide one.

Please contact Bob Fencil or me if you have any questions.

DH/DL/sh

File: RF-408 w/attachment
4.4 w/o attachment

DOSE RATE LOG

SITE: ORF-PROCESS - SUPPLEMENTAL STANDARDS RF480 DATE: 5-19-95
INST. MODEL: BICRON SERIAL NO.: 13845M
BACKGROUND 3 FT. 14 µrem/h SURVEYOR: K. COSGROVE

LOCATION (ATTACH MAP OF AREA IF NECESSARY)	3 Ft. Dose Rate (µrem/h)	3 Ft. Net Dose Rate (µrem/h)	AREA AVERAGE (µrem/h)	1 Ft. Dose Rate (µrem/h)
BOREHOLE I.D.#				
#45 NN2	10	-4		15
#43 mm	10	-4		10
#44 mm2	10	-4		15
#42 LL	10	-4		15
#47 LL2	10	-4	-4	10
#41 KK	10	-4		10
#48 KK2	10	-4		10
#40 JJ	10	-4		15
#50 JJ3	10	-4		10
#39 II	10	-4		10
#52 II2	10	-4	-4	15
#38 HH	10	-4		10
#53 HH2	10	-4		10
#37 GG	10	-4		10
#54 GG2	15	1		10
#36 FF	10	-4		15
#57 FF3	10	-4	-3	10
		N		
		A		

Reviewed By: James Stadelman Date: 5-19-95

A MORRISON KNUDSEN COMPANY

DOSE RATE LOG

SITE: ORF-PROCESS - SUPPLEMENTAL STANDARDS RF480 DATE: 5.19.95
INST. MODEL: BICRON SERIAL NO.: B845M
BACKGROUND 3 FT. 14 µrem/h SURVEYOR: K. OSBORNE

LOCATION (ATTACH MAP OF AREA IF NECESSARY)		3 Ft. Dose Rate (µrem/h)	3 Ft. Net Dose Rate (µrem/h)	AREA AVERAGE (µrem/h)	1 Ft. Dose Rate (µrem/h)
BOREHOLE I.D. #					
#35	EE	15	1		15
#59	EE2	10	-4		10
#34	DD	15	1		15
#33	CC	15	1	-.25	15
#32	BB	20	6		20
#31	AA	20	6		20
#30	Z	10	-4	3	10
#29	Y	10	-4		10
#28	X	10	-4		10
#27	W	10	-4	-.67	15
#26	V	10	-4		10
#25	U	20	6		25
#81	Tt	25	14	5	35
#82	Ss	20	6		30
#22	R	20	6		25
#21	Q	40	26	13	35
#20	P	60	46		80
#19	O	45	31		50
#18	N	45	31	36	50

Reviewed By: Ric Clemons Date: 5-22-95

DOSE RATE LOG

SITE: ORF-PROCESS - SUPPLEMENTAL STANDARDS RF480 DATE: 5.19.95
INST. MODEL: BICRON SERIAL NO.: 13845M
BACKGROUND 3 FT. 14 µrem/h SURVEYOR: K. COSGROVE

LOCATION (ATTACH MAP OF AREA IF NECESSARY)	3 Ft. Dose Rate (µrem/h)	3 Ft. Net Dose Rate (µrem/h)	AREA AVERAGE (µrem/h)	1 Ft. Dose Rate (µrem/h)
BOREHOLE I.D. #				
#17 M	85	71		90
#16 L	30	16		35
#15 K	40	26	38	50
#14 J	30	16		35
#13 I	53	39		65
#12 H	90	76	44	120
#11 G	85	71		100
#10 F	110	96		150
#9 E	121	107	91	154
#8 D	200	186		275
#7 C	132	118		165
#6 B	50	36	113	50
#95 Aa	35	21		35
#1 -A1a	35	21		35
#61 -A3	20	6		20
#99 -B1a	30	16		30
#62 -B2	20	6	14	20
	N	A		

Reviewed By: Art Clemons Date: 5-22-95

DOSE RATE LOG

SITE: ORF-PROCESS - SUPPLEMENTAL STANDARDS RE480 DATE: 5-19-95
INST. MODEL: DICRON SERIAL NO.: B845M
BACKGROUND 3 FT. 14 µrem/h SURVEYOR: K. COSGROVE

LOCATION (ATTACH MAP OF AREA IF NECESSARY)	3 Ft. Dose Rate (µrem/h)	3 Ft. Net Dose Rate (µrem/h)	AREA AVERAGE (µrem/h)	1 Ft. Dose Rate (µrem/h)
BOREHOLE I.D.#	REC S-445			
#101 -C1	25	11		30
#63 -C2	10	-4		15
#103 -D1	20	6		20
#64 -D2	10	-4		15
#104 -E1	25	11		30
#65 -E2	20	6	4	15
#105 -F1	20	6		25
#66 -F2	15	1		10
#107 -G1a	15	1		15
#67 -G2	10	-4		10
#108 -H1	10	-4		10
#68 -H2	10	-4	-.67	10
#109 -I1	15	1		15
#69 -I2	10	-4		10
#110 -J1	15	1		10
#70 -J2	10	-4	-2	10
		N		
		A		

Reviewed By: [signature] Date: 5-22-95

MORRISON KNUDSEN

ATTACHMENT #4

BOREHOLE LOG

COPY

LOGGING CREW: B. Hiel, K. Cosgrove, K. Courville, N/A

SHEET 1 OF ~~20~~ 35 KLL 5-12-95 PAGE 1

DATE: 1-6-95

PROPERTY ID: RF-480

INSTRUMENT ID NO. ESP-1 #2591 W/SPA-3 #43

AREA: Supplemental Standard area South of AR @ ORF.

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.

BH #1

HOLE ID: -A1a
TIME DRILLED: N/A
TIME LOGGED: N/A
SOIL TYPE: RR Ballast

DEPTH	COUNTS/.1MIN
SURFACE	6910
0"	6710
6"	9100
12"	5640
18"	3600
24"	3030
30"	2990
36"	2680
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #2

HOLE ID: -A1
TIME DRILLED: N/A
TIME LOGGED: N/A
SOIL TYPE: RR Ballast

DEPTH	COUNTS/.1MIN
SURFACE	2930
0"	2750
6"	2630
12"	2690
18"	2480
24"	2270
30"	2270
36"	1970
42"	
48"	
54"	
60"	N
66"	A
72"	
78"	
84"	
90"	
96"	

BH #3

HOLE ID: -A
TIME DRILLED: N/A
TIME LOGGED: N/A
SOIL TYPE: RR Ballast

DEPTH	COUNTS/.1MIN
SURFACE	11800
0"	15700
6"	23700
12"	21600
18"	6850
24"	4530
30"	3590
36"	3560
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #4

HOLE ID: -Aa
TIME DRILLED: N/A
TIME LOGGED: N/A
SOIL TYPE: RR Ballast

DEPTH	COUNTS/.1MIN
SURFACE	6400
0"	7440
6"	12100
12"	19050
18"	18300
24"	13400
30"	9680
36"	6000
42"	5970
48"	A.R.
54"	
60"	
66"	N
72"	A
78"	
84"	
90"	
96"	

REMARKS: AR = Auger Refusal

-A1a) N 25816 E 61362 BH #1

-A1) N 25826 E 61362 BH #2

-A) N 25816 E 61297 BH #3

-Aa) N 25804 E 61297 BH #4

BOREHOLE LOG

COPY

LOGGING CREW: Bill K. Cosgrove
K. Conville
N/A

SHEET 1a OF 30 PAGE 2
DATE: 1-6-95

PROPERTY ID: RF-490

INSTRUMENT ID NO. ESP-1 # 2591 W/SPA-3 #43

AREA: Supplemented Standard area South of RR@ ORF

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.

BH #5

HOLE ID: A	HOLE ID:	HOLE ID:	HOLE ID:
TIME DRILLED: N/A	TIME DRILLED:	TIME DRILLED:	TIME DRILLED:
TIME LOGGED:	TIME LOGGED:	TIME LOGGED:	TIME LOGGED:
SOIL TYPE: RR Ballast	SOIL TYPE:	SOIL TYPE:	SOIL TYPE:

DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	5950	SURFACE		SURFACE		SURFACE	
0"	9440	0"		0"		0"	
6"	14500	6"		6"		6"	
12"	9320	12"		12"		12"	
18"	5760	18"		18"		18"	
24"	4490	24"		24"		24"	
30"	4040	30"	N	30"		30"	
36"	AR	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: AR = Auger refusal

A) N 25799 E 61224 BH #5

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. Cosgrove, K. Cowell, R. Hill, N/A

SHEET 2 OF 31/30 PAGE 3

DATE: 1-6-95

PROPERTY ID: RF-480

INSTRUMENT ID NO. ESP-1 #2591 W/ SPA-3 #43

AREA: Supplemental Standard area South of R.R. @ ORF.

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.

BH #6

HOLE ID: B
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR Ballast

DEPTH	COUNTS/.1MIN
SURFACE	19500
0"	16900
6"	25900
12"	17400
18"	11700
24"	A.R.
30"	
36"	
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #7

HOLE ID: C
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR Ballast

DEPTH	COUNTS/.1MIN
SURFACE	44500
0"	49800
6"	78300
12"	39200
18"	11800
24"	6000
30"	5210
36"	5620
42"	A.R.
48"	
54"	
60"	N
66"	
72"	
78"	
84"	
90"	
96"	

BH #8

HOLE ID: D
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR Ballast

DEPTH	COUNTS/.1MIN
SURFACE	53300
0"	47600
6"	84100
12"	45900
18"	15300
24"	9750
30"	7480
36"	6680
42"	7180
48"	6530
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #9

HOLE ID: E
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR Ballast

DEPTH	COUNTS/.1MIN
SURFACE	54500
0"	56200
6"	97000
12"	57700
18"	21200
24"	10600
30"	6640
36"	6250
42"	5660
48"	A.R.
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

REMARKS: AR = Auger Refusal

B) N 25776 E 61136 BH #6

C) N 25764 E 61077 BH #7

D) N 25746 E 61003 BH #8

E) N 25733 E 60929 BH #9

MORRISON KNUDSEN

BOREHOLE LOG

COPY

LOGGING CREW: K. Connville, K. Cosgrove, S. Hill

SHEET 3 OF 30 PAGE 4

DATE: 1-6-95

PROPERTY ID: RF-480

INSTRUMENT ID NO. ESP-1 #2591 W/SOA-3 #43

AREA: Supplemental Standard Area South of RR @ ORF.

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.

BH #10		BH #11		BH #12		BH #13	
HOLE ID: F		HOLE ID: G		HOLE ID: H		HOLE ID: I	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
TIME LOGGED:		TIME LOGGED:		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE: RR Ballast		SOIL TYPE: RR Ballast		SOIL TYPE: RR Ballast		SOIL TYPE: RR Ballast	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	35800	SURFACE	26000	SURFACE	33400	SURFACE	19400
0"	46800	0"	37100	0"	41500	0"	18700
6"	96500	6"	45000	6"	58600	6"	23300
12"	73300	12"	16200	12"	26100	12"	16200
18"	27300	18"	6580	18"	9050	18"	10700
24"	14900	24"	4070	24"	5370	24"	5710
30"	12300	30"	4250	30"	4200	30"	4010
36"	8580	36"	A.R.	36"	3990	36"	3360
42"	8030	42"		42"		42"	3190
48"	8300	48"		48"		48"	2960
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"		66" N		66"	
72"		72"		72"	A	72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS: AR = Auger Refusal

F) N 25765 E 60814 BH #10

G) N 25690 E 60746 BH #11

H) N 25676 E 60675 BH #12

I) N 25656 E 60599 BH #13

MORRISON KNUDSEN

BOREHOLE LOG

COPY

LOGGING CREW: K. Conville, K. Cosgrove, B. Hill

SHEET 5 OF 31 (30) PAGE 6

DATE: 1-6-95

PROPERTY ID: RF-480

INSTRUMENT ID NO. ESP-1 #2591 W/SPA-3 #43

AREA: Supplemental Standard area South of RR & ORF.

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.

BH #18		BH #19		BH #20		BH #21	
HOLE ID: N		HOLE ID: O		HOLE ID: P		HOLE ID: Q	
TIME DRILLED:		TIME DRILLED:		TIME DRILLED:		TIME DRILLED:	
TIME LOGGED: N/A		TIME LOGGED: N/A		TIME LOGGED: N/A		TIME LOGGED: N/A	
SOIL TYPE: RR Ballast		SOIL TYPE: RR Ballast		SOIL TYPE: RR Ballast		SOIL TYPE: RR Ballast	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	11700	SURFACE	16500	SURFACE	10300	SURFACE	6350
0"	10000	0"	13300	0"	12500	0"	7760
6"	10160	6"	12900	6"	8940	6"	10900
12"	6990	12"	6330	12"	4180	12"	6330
18"	4060	18"	2420	18"	3720	18"	3720
24"	3240	24"	2600	24"	3550	24"	3220
30"	2680	30"	A.R.	30"	3380	30"	3150
36"	3040	36"		36"	3340	36"	3100
42"		42"		42"		42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"	N	60"		60"	
66"		66"		66"		66"	
72"		72"	A	72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS: AR = Auger Refusal

N) N25570 E60224 BH #18

O) N25549 E60153 BH #19

P) N25535 E60075 BH #20

Q) N25517 E59991 BH #21

MORRISON KNUDSEN

BOREHOLE LOG

COPY

LOGGING CREW: K. CHURVILLE
G. BOGDEN
K. COSGROVE

SHEET 7 OF ~~30~~ 31 PAGE 8
DATE: 1-11-95
PROPERTY ID: RF-480
AREA: SUPPLEMENTAL STANDARDS AREA SOUTH OF RR @ ORF

INSTRUMENT ID NO. ESP-1 #1692 SPA-3 #35

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.

BH #26

HOLE ID: V
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR BALAST

DEPTH	COUNTS/.1MIN
SURFACE	~~1240~~ 1730
0"	2040
6"	2900
12"	3560
18"	3200
24"	2840
30"	2750
36"	AR
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #27

HOLE ID: W
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR BALAST

DEPTH	COUNTS/.1MIN
SURFACE	1980
0"	2190
6"	3870
12"	5060
18"	3380
24"	2920
30"	2870
36"	AR
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #28

HOLE ID: X
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR BALAST

DEPTH	COUNTS/.1MIN
SURFACE	1200
0"	1250
6"	1360
12"	1650
18"	1780
24"	AR
30"	
36"	
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #29

HOLE ID: U
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR BALAST

DEPTH	COUNTS/.1MIN
SURFACE	1530
0"	1560
6"	2090
12"	2420
18"	2760
24"	AR
30"	
36"	
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

REMARKS: AR = AUGER REFUSAL

V) N 25434 E 59615 BH #26

W) N 25418 E 59541 BH #27

X) N 25396 E 59460 BH #28

U) N 25382 E 59387 BH #29

MORRISON KNUDSEN

BOREHOLE LOG

COPY

LOGGING CREW: K. Courville
P. Hill
K. Casarone

SHEET 8 OF ~~30~~ 31 PAGE 9
DATE: 1-11-95
PROPERTY ID: RF-480
AREA: Supplemental Standard Area South of RR @ ORF

INSTRUMENT ID NO. ESP-1 # 1692 SPA-3 # 35

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.

BH #30		BH #31		BH #32		BH #33	
HOLE ID: Z		HOLE ID: AA		HOLE ID: BB		HOLE ID: CC	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
TIME LOGGED:		TIME LOGGED:		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE: RR Ballast		SOIL TYPE: RR Ballast		SOIL TYPE: RR Ballast		SOIL TYPE: RR Ballast	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	1240	SURFACE	2310	SURFACE	3050	SURFACE	2940
0"	1450	0"	2290	0"	3220	0"	2780
6"	1570	6"	2900	6"	3850	6"	3070
12"	1750	12"	3070	12"	3680	12"	3100
18"	1620	18"	3030	18"	3200	18"	2710
24"	1590	24"	2540	24"	2450	24"	2290
30"	1550	30"	2540	30"	2250	30"	2310
36"	1770	36"	AR	36"	AR	36"	AR
42"		42"		42"		42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"	N	66"		66"	
72"		72"		72"		72"	
78"		78"	A	78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS: AR = Auger Refusal

Z) N 25371 E 59319 BH #30

AA) N 25358 E 59236 BH #31

BB) N 25348 E 59150 BH #32

CC) N 25350 E 59062 BH #33

BOREHOLE LOG

COPY

BURVILLE
GDEN
.SGROVE
L #1692 SPA-3 #35

SHEET 9 OF ~~30~~ 31 PAGE 10
DATE: 1-11-95
PROPERTY ID: RF-480
AREA: SUPPLEMENTAL STANDARD AREA SOUTH OF RR @ ORF

ARE 4"DIA. UNLESS OTHERWISE NOTED.
USUAL CONDITIONS, SUCH AS THE PRESENCE OF WATER IN BOREHOLES AND
NG TYPE AND THICKNESS IF USED, CONCRETE CORES AND THICKNESS,
NS, UTILITIES, ETC., IN THE REMARKS SECTION.

BH # 35

HOLE ID: EE
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR BALAST

DEPTH	COUNTS/.1MIN
SURFACE	2480
0"	2340
6"	2820
12"	2960
18"	2800
24"	2670
30"	2540
36"	2420
42"	
48"	
54"	
60"	
66"	N
72"	A
78"	
84"	
90"	
96"	

BH # 36

HOLE ID: FF
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR BALAST

DEPTH	COUNTS/.1MIN
SURFACE	1660
0"	1850
6"	2260
12"	3060
18"	3000
24"	2790
30"	2720
36"	2630
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH # 37

HOLE ID: GG
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR BALAST

DEPTH	COUNTS/.1MIN
SURFACE	1670
0"	1960
6"	2710
12"	4320
18"	3300
24"	2960
30"	2500
36"	2390
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

ER REFUSAL

E 58993 BH #34

E 58948 BH #35

E 58875 BH #36

E 58803 BH #37

OF ~~30~~ 31 PAGE 11
1-95
F-480
ENTAL STANDARD AREA
F RR @ ORF

TER IN BOREHOLES AND
S AND THICKNESS,

BH # 41

HOLE ID: KK
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE: RR BALAST

DEPTH	COUNTS/.1MIN
SURFACE	2430
0"	2620
6"	3370
12"	4140
18"	4550
24"	4570
30"	3730
36"	3300
42"	3380
48"	3500
54"	3500
60" A	3250
66"	
72"	
78"	
84"	
90"	
96"	

KRUGSEN

BOREHOLE LOG

LOGGING CREW: K. COURVILLE
K. CSGROVE

SHEET 11 OF ~~30~~ 31 PAGE 12
DATE: 1-12-95
PROPERTY ID: RF-480
INSTRUMENT ID NO. ESP-1 #1692 SPA-3 #35
AREA: SUPPLEMENTAL STANDARD AREA SOUTH OF RR @ ORF

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.

BH #42		BH #43					
HOLE ID: 2L		HOLE ID: MM		HOLE ID:		HOLE ID:	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
TIME LOGGED:		TIME LOGGED:		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST		SOIL TYPE:		SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	2430	SURFACE	1710	SURFACE		SURFACE	
0"	2620	0"	1890	0"		0"	
6"	3370	6"	1970	6"		6"	
12"	4140	12"	2400	12"		12"	
18"	4550	18"	2540	18"		18"	
24"	4570	24"	2640	24"		24"	
30"	3730	30"	2630	30"		30"	
36"	3300	36"	2530	36"		36"	
42"	3380	42"		42"		42"	
48"	3500	48"		48"	N/A	48"	
54"	3500	54"		54"		54"	
60"	3250	60"		60"		60"	
66"	N/A	66"		66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS: BOREHOLE # MM IS THE LAST HOLE DRILLED TO THE "WEST" ON THE SOUTH SIDE OF THE RR.

2L) N25475 E58440 BH #42

MM) N25501 E58371 BH #43

BOREHOLE LOG

LOGGING CREW: K. COURVILLE
K. COSGROVE

SHEET 13 OF 31/30 PAGE 14
DATE: 1-12-95
PROPERTY ID: 12F 480
AREA: SUPPLEMENTAL STANDARD AREA NORTH OF RR@CRF

INSTRUMENT ID NO. ESP-1 # 1692 SPA-3 # 35

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.

BH #47		BH #48		BH #49		BH #50	
HOLE ID: LL-2		HOLE ID: KK-2		HOLE ID: JJ-2		HOLE ID: JJ-3	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
TIME LOGGED:		TIME LOGGED:		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	1750	SURFACE	1520	SURFACE	1860	SURFACE	1930
0"	1910	0"	1740	0"	2060	0"	2000
6"	2170	6"	1980	6"	2460	6"	2110
12"	2950	12"	2880	12"	3090	12"	3100
18"	2860	18"	3060	18"	2910	18"	3780
24"	2640	24"	2600	24"	2590	24"	6120
30"	2480	30"	2530	30"	2240	30"	6220
36"	2340	36"	2320	36"	2290	36"	GROUND WATER *
42"		42"	2110	42"	2240	42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"	N	66"		66"	
72"		72"	A	72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS: * WEREN'T ABLE TO DO A SECOND FLIGHT BECAUSE OF WATER.

LL-2) N25504 E58440 BH#47

KK-2) N25478 E58512 BH#48

JJ-2) N25456 E58583 BH#49

JJ-3) N25464 E58583 BH#50

BOREHOLE LOG

LOGGING CREW: K. COURVILLE
K. COSGROVE

SHEET 14 OF ~~30~~ 31 PAGE 15
DATE: 1-12-95

PROPERTY ID: RF 480

INSTRUMENT ID NO. ESP-1 # 1692 SPA-3 # 35

AREA: SUPPLEMENTAL STANDARD AREA NORTH OF RR @ ORF

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.

BH # 51		BH # 52		BH # 53		BH # 54	
HOLE ID: JJ-4		HOLE ID: II-2		HOLE ID: HH-2		HOLE ID: GG-2	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
TIME LOGGED:		TIME LOGGED:		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	1500	SURFACE	1760	SURFACE	1610	SURFACE	1790
0"	1500	0"	1740	0"	1670	0"	1750
6"	1900	6"	2020	6"	1960	6"	2200
12"	2170	12"	2290	12"	2250	12"	2970
18"	2540	18"	2260	18"	2200	18"	2730
24"	2710	24"	2480	24"	2670	24"	2690
30"	2690	30"	2450	30"	2690	30"	2730
36"	2730	36"	2110	36"	2660	36"	2740
42"	2400	42"		42"		42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"	N	66"		66"	
72"		72"	A	72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS: JJ-4) N 25479 E 58583 BH # 51

II-2) N 25433 E 58647 BH # 52

HH-2) N 25417 E 58729 BH # 53

GG-2) N 25412 E 58803 BH # 54

KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COURVILLE
K. COSGROVE

SHEET 15 OF ~~30~~ 31 PAGE 16
DATE: 1-12-95 ELL 5-22-95

PROPERTY ID: RF 480

INSTRUMENT ID NO. ESP-1 # 1718 SPA-3 #42

AREA: SUPPLEMENTAL STANDARD AREA NORTH OF RR @ ORF

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.

BH #55		BH #56		BH #57		BH #58	
HOLE ID: GG-3		HOLE ID: FF-2		HOLE ID: FF-3		HOLE ID: FF-4	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
TIME LOGGED:		TIME LOGGED:		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	1540	SURFACE	1650	SURFACE	1880	SURFACE	1640
0"	1580	0"	1710	0"	1990	0"	2700
6"	2000	6"	2030	6"	2650	6"	3830
12"	2270	12"	2430	12"	4510	12"	4600
18"	2800	18"	2390	18"	4070	18"	3310
24"	2810	24"	2370	24"	AR	24"	2740
30"	2810	30"	2370	30"		30"	2600
36"	2730	36"	AR	36"		36"	2540
42"		42"		42"		42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"	N	60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		78"	A	78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

STOPPED AT THE BASE OF THE HILL

REMARKS: AR = AUGER REFUSAL

GG-3) N 25417 E 58803 BH #55

FF-2) N 25391 E 58875 BH #56

FF-3) N 25401 E 58875 BH #57

FF-4) N 25415 E 58875 BH #58

BOREHOLE LOG

SHEET 16 OF ~~30~~ 31 PAGE 17
DATE: 1-12-95
PROPERTY ID: RF 480
A-3 # 42 AREA: SUPPLEMENTAL STANDARD AREA NORTH OF RR @ ORF

OTHERWISE NOTED.
NS, SUCH AS THE PRESENCE OF WATER IN BOREHOLES AND
ICKNESS IF USED, CONCRETE CORES AND THICKNESS,
C., IN THE REMARKS SECTION.

	BH # 61		BH # 62	
2	HOLE ID: ✓-A3		HOLE ID: ✓-B2	
N/A	TIME DRILLED: N/A		TIME DRILLED: N/A	
BALAST	TIME LOGGED: N/A		TIME LOGGED: N/A	
	SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST	
TS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MI'
50	SURFACE	4330	SURFACE	2200
70	0"	7540	0"	2010
0	6"	10400	6"	1800
40	12"	10700	12"	2260
00	18"	9390	18"	2180
00	24"	8040	24"	1970
0	30"	AR	30"	AR
40	36"		36"	
30	42"	STOPPED AT THE BASE OF THE HILL.	42"	STOPPED AT THE BASE OF THE HILL.
60	48"		48"	
	54"		54"	
	60"		60"	
N	66"		66"	
	72"		72"	
A	78"		78"	
	84"		84"	
	90"		90"	
	96"		96"	

USAL
E EDGE OF EXCAVATION.
T THE EAST SIDE of old Rifle
TRACKS.
#59 -A3) N25865 E61362 BH#61
#60 -B2) N25876 E61436 BH#62

SHEET 17 OF ~~30~~ 31 PAGE 18
DATE: 1-13-95
PROPERTY ID: RF 480
EA: Supplement Al Standard Area North of RR @ ORF

D.
ESENCE OF WATER IN BOREHOLES AND
ONCRETE CORES AND THICKNESS,
SECTION.

	BH # 65		BH # 66	
	✓-E2		HOLE ID: ✓-F2	
	LLED: N/A		TIME DRILLED: N/A	
	GGED: N/A		TIME LOGGED: N/A	
	E: RR BALAST		SOIL TYPE: RR BALAST	
	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	
	3210	SURFACE	1860	
	3690	0"	2020	
	5750	6"	2030	
	8250	12"	2710	
	9250	18"	3200	
	6820	24"	3790	
	5830	30"	3850	
	AR	36"	AR	
		42"		
	STOPPED AT THE BASE OF ROCK FACE	48"		
		54"		
		60"		
		66"	N	
		72"		
		78"	A	
		84"		
		90"		
		96"		

BOREHOLE LOG

LOGGING CREW: L. Camille
G. Bogden

SHEET 18 OF 31 PAGE 19
KPL 5.22.95

DATE: 1-13-95

PROPERTY ID: RF 480

INSTRUMENT ID NO. ESP-1 # 1718 SPH-3 # 42

AREA: Supplemental Standard Area
North of RR @ ORF

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.

BH #67		BH #68		BH #69		BH #70	
HOLE ID: -G2		HOLE ID: -H2		HOLE ID: -I2		HOLE ID: -J2	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
TIME LOGGED:		TIME LOGGED:		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST		SOIL TYPE: RR BALAST	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	1930	SURFACE	1680	SURFACE	1730	SURFACE	1540
0"	2010	0"	1690	0"	1880	0"	1710
6"	2170	6"	2030	6"	1970	6"	1770
12"	2250	12"	2310	12"	2150	12"	2020
18"	2580	18"	2450	18"	2450	18"	2120
24"	2930	24"	2700	24"	3270	24"	2570
30"	3000	30"	2870	30"	4310	30"	2800
36"	2980	36"	2730	36"	4240	36"	3110
42"		42"		42"	4290	42"	3600
48"		48"		48"	3870	48"	3240
54"		54"		54"		54"	
60"		60"		60"		60"	
66"		66"		66"		66"	
72"		72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS: BoreHole # -J2 IS THE LAST HOLE DRILLED TO THE "EAST" ON THE NORTH SIDE OF THE RR.

-G2) N25964 E61801 BH #67

-H2) N25988 E61873 BH #68

-I2) N26020 E61945 BH #69

-J2) N26046 E62018 BH #70

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COSGROVE, D. WALKER, B. DeWOLFE, E. DUBELLETTE

SHEET 19 OF ~~30~~ 31 PAGE 20

DATE: 5-10-95

PROPERTY ID: VP-479 ~~5-10-95~~ 5-11-95

INSTRUMENT ID NO. ESP-1 #1687 SPA-3 #40

AREA: SPS SOUTH OF RR TRACK

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.

BH #71		BH #72		BH #73		BH #74	
HOLE ID: JJ5		HOLE ID: JJ6		HOLE ID: FF5		HOLE ID: FF6	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
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	1900	SURFACE	2030	SURFACE	1550	SURFACE	1680
0"	1810	0"	2060	0"	1340	0"	1770
6"	2180	6"	2640	6"	1400	6"	2440
12"	2780	12"	2860	12"	1520	12"	3470
18"	2630	18"	2920	18"	1560	18"	2940
24"	2820	24"	2900	24"	1570	24"	2970
30"	3170	30"	2790	30"	1580	30"	2910
36"	3410	36"	3100	36"	1620	36"	3000
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"	

N/A

REMARKS:

JJ5 - N 25464 E 58573 BH #71

JJ6 - N 26464 E 58593 BH #72

FF5 - N 25425 E 58875 BH # 73

FF6 - N 25413 E 58885 BH #74

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COSGROVE, D. WELKER, B. DeWOLFE, E. OUELLETTE

SHEET 20 OF ~~30~~ 31 PAGE 21

DATE: 5-10-95

PROPERTY ID: VP-479

INSTRUMENT ID NO. ESP-1 #1687 / SPA-3 #40

AREA: SOUTH OF RR TRACK

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.

BH #75		BH #76		BH #77		BH #78	
HOLE ID: FF1		HOLE ID: FF8		HOLE ID: EE3		HOLE ID: AAa	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
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	1650	SURFACE	1720	SURFACE	1600	SURFACE	1810
0"	1670	0"	1830	0"	1800	0"	1830
6"	1590	6"	2820	6"	2150	6"	2420
12"	2020	12"	3580	12"	2750	12"	2960
18"	3270	18"	2880	18"	3010	18"	2730
24"	3750	24"	2690	24"	3140	24"	2380
30"	4010	30"	2470	30"	3970	30"	2260
36"	3490	36"	2550	36"	3820	36"	2280
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: ~~N25415~~ N 25415

FF1 ~~E7511~~ E 58870 BH #75

FF8 N 25401 E 58885 BH #76

EE3 N 25385 E 58935 BH #77

AAa N 25358 E 59245 BH #78

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COSGROVE, D. WERKER, B. DeWOLFE, E. OUELLETTE

SHEET 5/23/95 3 21 OF 5/23/95 A 31 PAGE 22

DATE: 5-10-95

PROPERTY ID: VP-479

INSTRUMENT ID NO. ESP-1 #1687 SPA-3 #40

AREA: SOUTH OF RR TRACK

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.

BH #79		BH #80		BH #81		BH #82	
HOLE ID:	Vv	HOLE ID:	Vu	HOLE ID:	Tt	HOLE ID:	Ss
TIME DRILLED:	N/A	TIME DRILLED:	N/A	TIME DRILLED:	N/A	TIME DRILLED:	N/A
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	1250	SURFACE	2550	SURFACE	7290	SURFACE	5230
0"	1200	0"	1880	0"	5970	0"	5220
6"	1290	6"	2190	6"	7430	6"	5880
12"	1540	12"	2660	12"	5480	12"	4460
18"	1700	18"	3080	18"	4400	18"	3690
24"	1750	24"	2850	24"	4290	24"	3360
30"	1830	30"	2690	30"	4220	30"	3350
36"	1970	36"	2600	36"	AR	36"	3200
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:

Vv - N 25424 E 5965 BH #79

Vu - N 25444 E 59688 BH #80

Tt - N 25463 E 59770 BH #81

Ss - N 25479 (KBC 5-11-95) E 59846 BH #82

AR = AUGER REFUSAL

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COSGROVE, D. WELKER, B. DELWOLFE, E. DUELLETTE

SHEET 4-22 OF 4-31 (HEC 3-3245) PAGE 23

DATE: 5-10-95

PROPERTY ID: VP-479

INSTRUMENT ID NO. ESP-1 #1687 / SPA-3 #40

AREA: SPS SOUTH OF RR TRACK

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.

BH #83		BH #84				BH #85	
HOLE ID: Rr		HOLE ID: Qq		HOLE ID: Pp		HOLE ID: Oo	
TIME DRILLED:		TIME DRILLED:		TIME DRILLED:		TIME DRILLED:	
TIME LOGGED: N/A		TIME LOGGED: N/A		TIME LOGGED: N/A		TIME LOGGED: N/A	
SOIL TYPE:		SOIL TYPE:		SOIL TYPE:		SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	3040	SURFACE	7490	SURFACE	11650	SURFACE	5780
0"	2810	0"	5160	0"	5630	0"	4700
6"	3960	6"	4550	6"	5220	6"	4690
12"	4110	12"	5180	12"	4980	12"	5120
18"	4160	18"	4830	18"	4460	18"	5400
24"	4040	24"	4160	24"	4070	24"	5020
30"	3700	30"	3500	30"	3510	30"	4640
36"	3750	36"	3370	36"	3310	36"	4320
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"	

N

REMARKS:

Rr - N 25491 E 59923 BH #83

Qq - N 25512 E 59991 BH #84

Pp - N 25530 E 60075

Oo - N 25544 E 60153 BH #85

AR = AUGER REFUSAL

MORRISON KNUDSEN

BOREHOLE LOG

KBC 5-22-95 31

LOGGING CREW: K. COSGROVE, D. WELKER, B. DeJOLIE, E. OUELLETTE

SHEET 5 23 OF ~~#30~~ PAGE 24

DATE: 5-10-95

PROPERTY ID: VP-479

INSTRUMENT ID NO. ESP-1 # 1687 / SPA-3 # 40

AREA: SPS SOUTH OF RR TRACK

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.

BH # 86

HOLE ID: Nn
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE:

DEPTH	COUNTS/.1MIN
SURFACE	9400
0"	9310
6"	9500
12"	7770
18"	4900
24"	3580
30"	3550
36"	AR
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

HOLE ID: Mm
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE:

DEPTH	COUNTS/.1MIN
SURFACE	12,300
0"	11,900
6"	11,600
12"	11,400
18"	8610
24"	7970
30"	7750
36"	AR
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH # 87

HOLE ID: Ll
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE:

DEPTH	COUNTS/.1MIN
SURFACE	5930
0"	6350
6"	9900
12"	15,000
18"	9480
24"	7710
30"	5920
36"	5290
42"	4450
48"	4290
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH # 88

HOLE ID: Kk
TIME DRILLED: N/A
TIME LOGGED:
SOIL TYPE:

DEPTH	COUNTS/.1MIN
SURFACE	11,900
0"	9210
6"	11,100
12"	10,400
18"	8770
24"	7420
30"	5720
36"	4320
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

REMARKS:

~~N 25581 25565 Ll 5404~~

Nn - N 25565 E 60224 BH # 86

Mm - N 25581 E 60290

Ll - N 25554 E 60363 BH # 87

Kk - N 25615 E 60446 BH # 88

AR = AUGER REFUSAL

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: K COSGROVE, D. WERKER, B. DEWOLFE, E. ALLETTE

INSTRUMENT ID NO. ESP-1 #187 / SPA-3 #40

SHEET ~~6~~ 24 OF ~~H~~ 31 PAGE 25 (KEC 5-22-95)

DATE: ~~5-9-95~~ 5-10-95 / 5-11-95

PROPERTY ID: VP-479

AREA: SPS SOUTH OF RR TRACK

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.

BH #89		BH #90		BH #91		BH #92	
HOLE ID:	Ii	HOLE ID:	Hh	HOLE ID:	Gg	HOLE ID:	Ff
TIME DRILLED:	N/A	TIME DRILLED:	N/A	TIME DRILLED:	N/A	TIME DRILLED:	N/A
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	12,000	SURFACE	19,000	SURFACE	18,700	SURFACE	27,500
0"	8740	0"	13,500	0"	19,300	0"	41,500
6"	8090	6"	13,100	6"	24,300	6"	57,300
12"	8120	12"	13,200	12"	21,500	12"	26,900
18"	6330	18"	10,300	18"	11,900	18"	14,000
24"	5150	24"	7700	24"	7450	24"	8920
30"	5040	30"	4620	30"	6190	30"	5830
36"	4300	36"	4370	36"	4110	36"	5450
42"		42"		42"	3880	42"	5550
48"		48"		48"		48"	7280
54"		54"		54"		54"	AR
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:

Ii – N 25635, E 60599 BH #89

Hh – N 25671, E 60675 BH #90

Gg – N 25685, E 60746 BH #91

Ff – N 25728, E 60814 BH #92

AR = AUGER REFUSAL

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COSGROVE B. DeWOLFE
J. CHAPMAN E. OUELLETTE
N/A

INSTRUMENT ID NO. ESP-1 # 1664 / SPA-3 # 26

KEC 5-12-95

SHEET 725 OF ~~430~~ 31 PAGE 26

DATE: 5-11-95

PROPERTY ID: UP-479

AREA: SPS SOUTH OF RR TRACKS

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.

BH #93		BH #94		BH #95		BH # 96	
HOLE ID: Ee		HOLE ID: Cc		HOLE ID: Aa		HOLE ID: -Aa1	
TIME DRILLED:		TIME DRILLED:		TIME DRILLED:		TIME DRILLED:	
TIME LOGGED: N/A		TIME LOGGED: N/A		TIME LOGGED: N/A		TIME LOGGED: N/A	
SOIL TYPE:		SOIL TYPE:		SOIL TYPE:		SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	13100	SURFACE	24100	SURFACE	6540	SURFACE	4100
0"	12300	0"	14300	0"	5430	0"	3730
6"	15300	6"	11500	6"	5380	6"	4190
12"	13400	12"	10800	12"	5180	12"	5030
18"	6740	18"	9490	18"	4220	18"	6030
24"	4700	24"	7340	24"	3320	24"	7150
30"	4350	30"	6240	30"	2870	30"	9760
36"	4350	36"	5420	36"	3000	36"	13400
42"		42"	AR	42"		42"	10500
48"		48"		48"		48"	7710
54"		54"		54"		54"	8650
60"		60"		60"		60"	8410
66"	N	66"	N	66"	N	66"	7930
72"	A	72"	A	72"	A	72"	
78"		78"		78"		78"	N
84"		84"		84"		84"	A
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:

Ee - N 25725 E 60929 BH #93

Cc - N 25758 E 61077 BH #94

Aa - N 25794 E 61224 BH #95

-Aa1 - N ~~25810~~ 25799 Bad 5-11-95 E 61297 BH # 96

AR - AUGER REFUSAL

KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COSGROVE B. DeWOLFE
J. CHAPMAN E. OUELLETTE
N/A

SHEET 26 OF ~~36~~ 31 PAGE 27

DATE: 5-11-95

PROPERTY ID: VP 479

INSTRUMENT ID NO. ESP-1" 166A / SPA-3" 26

AREA: SPS SOUTH OF RR TRACKS

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.

BH # 97		BH # 98		BH # 99		BH # 100	
HOLE ID: -A1b		HOLE ID: -B1		HOLE ID: -B1a		HOLE ID: -B1b	
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	3880	SURFACE	~~5880~~ 6290	SURFACE	6630	SURFACE	5270
0"	3860	0"	5630	0"	5690	0"	5820
6"	3700	6"	7480	6"	8570	6"	9500
12"	3390	12"	6180	12"	10000	12"	13,900
18"	3330	18"	3650	18"	6330	18"	15,700
24"	3480	24"	2520	24"	5110	24"	17,600
30"	3720	30"	2060	30"	4770	30"	15,900
36"	3590	36"	1820	36"	3980	36"	AR
42"		42"		42"	2440	42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"	N	66"	N	66"	N	66"	N
72"	A	72"	A	72"	A	72"	A
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:

-A1b N 25812 E 61362 BH # 97

-B1 N 25846 E 61436 BH # 98

-B1a N 25836 E 1436 BH # 99

-B1b N 25826 E 61436 BH # 100

AR - AUGER REFUSAL

KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COSGROVE, J. CHAPMAN, B. DeWOLFE, E. OLLETTE

SHEET 9 27 OF ~~34~~ 31 PAGE 28

DATE: 5-11-95

PROPERTY ID: VP479

INSTRUMENT ID NO. ESP-1 #1664 / SPA-3 #26

AREA: SP3 - SOUTH OF RR TRACK

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.

BH #101		BH #102		BH #103		BH #104	
HOLE ID: -C1		HOLE ID: -C1a		HOLE ID: -D1		HOLE ID: -E1	
TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A		TIME DRILLED: N/A	
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	3510	SURFACE	3180	SURFACE	3200	SURFACE	5430 6190
0"	3330	0"	3140	0"	2800	0"	6240 5430
6"	3780	6"	4010	6"	3360	6"	5020 6240
12"	3610	12"	4940	12"	3210	12"	4070 5020
18"	3010	18"	6780	18"	2500	18"	3440 4070
24"	2820	24"	8340	24"	2170	24"	3310 3440
30"	2590	30"	7950	30"	2120	30"	3310
36"	2490	36"	7820	36"	2110	36"	3090
42"		42"	AR	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"	

N/A

N/A

N/A

REMARKS:

-C1 N 25867 E 61572 BH #101

-C1a N ~~25851~~ 25857 Bad 5-11-95 E 61572 BH #102

-D1 N 25874 E 61583 BH #103

-E1 N 25888 E 61557 BH #104

AR = AUGER REFUSAL

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COSGROVE B. DeWOLFE
J. CHAPMAN E. OUELLETTE
N/A

SHEET ~~28~~ 28 OF ~~30~~ 31 PAGE 29

DATE: 5-11-95

PROPERTY ID: VP-479

INSTRUMENT ID NO. GSP-1 # 164 / SPA-3 # 26

AREA: SPS SOUTH OF RR TRACKS

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.

BH # 105		BH # 106		BH # 107		BH # 108	
HOLE ID: -F1		HOLE ID: -G1		HOLE ID: -G1a		HOLE ID: ~~-H2~~ -H1	
TIME DRILLED:		TIME DRILLED:		TIME DRILLED:		TIME DRILLED:	
TIME LOGGED:	N	TIME LOGGED:	N	TIME LOGGED:	N	TIME LOGGED:	N
SOIL TYPE:	A	SOIL TYPE:	A	SOIL TYPE:	A	SOIL TYPE:	A
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	6220	SURFACE	1920	SURFACE	3090	SURFACE	2060
0"	4290	0"	1960	0"	2090	0"	2370
6"	5040	6"	2280	6"	2820	6"	3410
12"	4420	12"	2690	12"	3920	12"	4970
18"	3250	18"	2980	18"	3450	18"	7210
24"	2740	24"	2920	24"	3170	24"	5150
30"	2310	30"	AR	30"	2770	30"	4750
36"	2290	36"		36"	2460	36"	AR
42"		42"		42"		42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"	N	60"		60"	
66"	N	66"	A	66"	N	66"	N
72"	A	72"		72"	A	72"	A
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:

-F1 N 25916 E 61729 BH # 105

-G1 N 25937 E 61801 BH # 106

-G1a N 25919 E 61801 BH # 107

~~-H1~~ ~~N 26002~~ 25974 ~~E 61873~~ BH # 108

AR- AUGER REFUSAL

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: K. COSGROVE B. DeWOLFE
J. CHAPMAN E. OUELLETTE
N/A

SHEET #29 OF ~~#30~~ #31 PAGE 30

DATE: 5-11-95

PROPERTY ID: VP-479

INSTRUMENT ID NO. ESP-1 # 1664 / SPA-3 # 26

AREA: SPS- SOUTH OF RR TRACK

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.

BH #109 BH #110

HOLE ID: -I1		HOLE ID: -J1		HOLE ID:		HOLE ID:	
TIME DRILLED:		TIME DRILLED:		TIME DRILLED:		TIME DRILLED:	
TIME LOGGED: N		TIME LOGGED: N		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE: A		SOIL TYPE: A		SOIL TYPE:		SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	3150	SURFACE	2070	SURFACE		SURFACE	
0"	3220	0"	2020	0"		0"	
6"	4490	6"	2440	6"		6"	
12"	4860	12"	2980	12"		12"	
18"	4110	18"	3060	18"		18"	
24"	2960	24"	2640	24"		24"	
30"	2410	30"	2590	30"	N	30"	
36"	AR	36"	AR	36"	A	36"	
42"		42"		42"		42"	
48"		48"		48"		48"	
54"		54"		54"		54"	
60"		60"		60"		60"	
66"	N	66"	N	66"		66"	
72"	A	72"	A	72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS:

N 25993
I1 - E 61945 BH #109
N 26026
-J1 - E 62018 BH # 110

AR - AUGER REFUSAL

N/A

MORRISON KNUDSEN

BOREHOLE LOG

LOGGING CREW: E. Ouellette B. Dennie K. Cosgrove

SHEET 30 OF 31 PAGE 31

DATE: 5.22.95

PROPERTY ID: ORF SPS

INSTRUMENT ID NO. ES2-1 # 1687 SPA-3 # 40

AREA: North of PP Track

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.

BH #111 BH #112

HOLE ID: EE4		HOLE ID: FF9		HOLE ID:		HOLE ID:	
TIME DRILLED:		TIME DRILLED:		TIME DRILLED:		TIME DRILLED:	
TIME LOGGED: N		TIME LOGGED: N		TIME LOGGED:		TIME LOGGED:	
SOIL TYPE: F		SOIL TYPE: A		SOIL TYPE:		SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	1700	SURFACE	1910	SURFACE		SURFACE	
0"	1750	0"	1980	0"		0"	
6"	2100	6"	2250	6"		6"	
12"	2150	12"	2340	12"		12"	
18"	2250	18"	3000	18"		18"	
24"	2720	24"	3130	24"		24"	
30"	3010	30"	3170	30"		30"	
36"	3030	36"	3420	36"		36"	
42"		42"		42"		42"	
48"		48"	N	48"		48"	
54"		54"		54"		54"	
60"		60"		60"	A	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: EE4 - N 25395 E 58944 N 25401 BH # 111

FF9 - E 58870 BH # 112

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

RUST FEDERAL SERVICES INC.

BOREHOLE LOG

LOGGING CREW: A. Clemons
S. James

SHEET 1 OF 3 PAGE

DATE: 3-8-96

PROPERTY ID: VP 480

INSTRUMENT ID NO. EnP-1 / 1690 sPA-406467-31

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.

BH #113

BOREHOLE ID: -A6
COORD: N25775 E61300
SS or SC #'s/DEPTH:
NOTES: Edge of H2O 56' from center of RR

BH #114

BOREHOLE ID: -A
COORD: N25785
SS or SC #'s/DEPTH:
NOTES: Edge of H2O 56' from center of RR

BH #115

BOREHOLE ID: -B1C
COORD: N25817 E61436
SS or SC #'s/DEPTH:
NOTES: Edge of H2O 43' from center of RR

BH #116

BOREHOLE ID: -C1
COORD: N25844 E61542
SS or SC #'s/DEPTH:
NOTES: Edge of H2O 36' from center of RR

DEPTH	CPTM	DEPTH	CPTM	DEPTH	CPTM	DEPTH	CPTM
SURFACE	1540	SURFACE	1770	SURFACE	6470	SURFACE	4570
0"	1650	0"	1800	0"	7250	0"	4830
6"	1610	6"	1980	6"	10,200	6"	5780
12"	1780	12"	2460	12"	13,200	12"	6750
18"	2150	18"	2880	18"	14,600	18"	7210
24"	2100	24"	2550	24"	16,800	24"	7670
30"	WATER	30"	WATER	30"	16,200	30"	AR
36"		36"		36"	WATER	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: These Boreholes define the extent of contamination South of the R/R Tracks

REVIEWED BY: Ann Clemons DATE: 3-11-96

F2-VP-001-1

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

RUST FEDERAL SERVICES INC.

BOREHOLE LOG

LOGGING CREW: A. Clemons

S. James

INSTRUMENT ID NO.

SHEET 2 OF 3 PAGE 2

DATE: 3-8-96

PROPERTY ID: VP 480

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.

BH #117
BOREHOLE ID: - D1A
COORD: N25760 E61583
SS or SC #'s/DEPTH:
NOTES: Edge of H2O 28' from center of RR

DEPTH	CPTM
SURFACE	3440
0"	3150
6"	4210
12"	5780
18"	7950
24"	7950
30"	11,300
36"	AR
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #118
BOREHOLE ID: - E1A
COORD: N25853 E61657
SS or SC #'s/DEPTH:
NOTES: Edge of H2O 50' from center of RR

DEPTH	CPTM
SURFACE	1450
0"	1350
6"	1290
12"	1740
18"	WATER
24"	
30"	
36"	
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #119
BOREHOLE ID: - F1A
COORD: N25909 E61729
SS or SC #'s/DEPTH:
NOTES: Edge of H2O 25' from center of RR

DEPTH	CPTM
SURFACE	2060
0"	2110
6"	4800
12"	4710
18"	6180
24"	5710
30"	AR
36"	
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

BH #120
BOREHOLE ID: - H1A
COORD: N25934 E61873
SS or SC #'s/DEPTH:
NOTES: Edge of cliff 25' from center of RR

DEPTH	CPTM
SURFACE	1790
0"	1780
6"	2110
12"	2230
18"	2230
24"	2410
30"	2350
36"	AR
42"	
48"	
54"	
60"	
66"	
72"	
78"	
84"	
90"	
96"	

REMARKS: These Boreholes define the extent of contamination ~~to~~ at South of the R/R tracks

REVIEWED BY: A. Clemons

DATE: 3-11-96

F2-VP-001-1

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

RUST FEDERAL SERVICES INC.

BOREHOLE LOG

LOGGING CREW: A. Clemons

S. James

INSTRUMENT ID NO.

SHEET 3 OF 3 PAGE 3

DATE: 3-8-96

PROPERTY ID: VP 480

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.

BH #121 BOREHOLE ID: I-1A		BH #122 BOREHOLE ID: J-1A		BOREHOLE ID:		BOREHOLE ID:	
COORD: N25942 E61950		COORD: N25954 E62017		COORD:		COORD:	
SS or SC #'s/DEPTH:		SS or SC #'s/DEPTH:		SS or SC #'s/DEPTH:		SS or SC #'s/DEPTH:	
NOTES: Edge of H2O 70' From center of RR		NOTES: Edge of H2O 48 From center of RR		NOTES:		NOTES:	
DEPTH	CPTM	DEPTH	CPTM	DEPTH	CPTM	DEPTH	CPTM
SURFACE	1480	SURFACE	1210	SURFACE		SURFACE	
0"	1120	0"	1260	0"		0"	
6"	1330	6"	1440	6"		6"	
12"	1540	12"	1540	12"		12"	
18"	1700	18"	1580	18"		18"	
24"	WATER	24"	WATER	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: -I & -J were south of the Track where the Bank is @ 20' Higher than the Track. These Boreholes are the South-ern Limit of Contamination

REVIEWED BY: A. Clemons DATE: 3-11-96

F2-VP-001-1

A MOR... KNUDSEN COMPANY

CW... Federal Environmental Ser...

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-6-94	RFL-SE-3956			520	2459	966.8	422	5.8	2.3		[illegible]	3+55, 1+40
N A	VP500	9-6-94			N	A				✓	PU	
9-6-94	RFL-SE-3957			434	3760	983.9	531	7.1	1.9		[illegible]	3+55, 1+35
N A	VP500	9-6-94			N	A				✓		1480 Δ CPTM
9-6-94	RFL-SE-3958			534	2686	1034	397	6.8	2.4		[illegible]	E Bank S. END
N A	VP500	9-6-94			N	A				✓		1000 Δ CPTM
9-6-94	RFL-SE-3959			452	3405	888.2	304	11.2	2.9		[illegible]	Δ 1420 CPTM
N A	VP500	9-6-94			N	A				✓		2+95, 0+50
9-7-94	RFL-SE-3960			400	1922	1088	503	3.8	2.2	✓	[illegible]	SE CORNER
N A	VP500	9-7-94			N	A						COMPOSITE
9-7-94	RFL-SE-3961			410	380.1	966.5	521	0.73	1.9	✓	[illegible]	12' E. of SE CORNER
N A	VP500	9-7-94			N	A						
9-8-94	RFL-SE-3962			400	6841	1271	439	15.6	2.9		PU	4+35, 0+15 Lt.
N A	VP500	9-8-94			N	A				✓		
9-8-94	ORF-SS-3963			500	699.9	1168	586	1.2	2.0		PU	S/S
10-6-94	-1	9-7-94	9-10-94	438	629.1	1188	576	1.1	2.1	✓	PU	6'-7' Elev. 5299.4 N 25395 E 58951 EE
9-8-94	ORF-SS-3964			402	1153	1054	620	1.9	1.7		PU	S/S
10-7-94	-1	9-7-94	9-10-94	518	992.0	1034	574	1.7	1.8	✓	PU	2'-3' Elev. 5299.4 N 25395 E 58951 EE
9-8-94	ORF-SS-3965			502	1163	1254	594	2.0	2.1		PU	S/S
10-6-94	-2	9-7-94	9-10-94	538	1125	1007	579	1.9 2.0 Rev	1.7	✓	PU	3'-4' Elev. 5300 N 25391 E 58997 CC

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

COPY

REVIEWED BY: [signature] Site HP Manager

FS-IN-001.1 Rev 1

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Services, Inc.

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-8-94	ORF-SS-3966			404	1380	1036	625	2.2	1.7		PW	S/S 0'-1' Elev. 5300 N 25391 E 58997 CC
10-7-94	-2	9-7-94	9-10-94	418	2425	1162	535	4.5	2.2	✓	PW	
9-8-94	ORF-SS-3967			504	901.6	1130	613	1.5	1.8		PW	S/S 3'-4' Elev. 5299.4 N 25395 E 58951 EE
10-7-94	-1	9-7-94	9-10-94	420	1354	839.0	597	2.3	1.7	✓	PW	
9-8-94	ORF-SS-3968			406	1260	949.1	628	2.0	1.5		PW	S/S 0'-1' Elev. 5299.4 N 25395 E 58951 EE
10-7-94	-1	9-7-94	9-10-94	520	1327	1139	606	2.2	1.9	✓	PW	
9-8-94	ORF-SS-3969			506	28383	13037	635	[illegible]	20.5		PW	S/S 0'-1' Elev. 5302 N 25394 E 58935 AA
10-7-94	-5	9-7-94	9-10-94	422	42728	12819	543	786.9	23.6	✓	PW	
9-8-94	ORF-SS-3970			408	1893	1132	605	3.1	1.9		PW	S/S 2'-3' Elev. 5300 N 25391 E 58997 CC
10-7-94	-2	9-7-94	9-10-94	522	2111	1206	588	3.6	2.1	✓	PW	
9-8-94	ORF-SS-3971			508	4319	1292	661	6.5	2.0		PW	S/S 7'-8' Elev. 5300.4 N 25392 E 59156 BB
10-6-94	-4	9-7-94	9-10-94	440	4470	1215	647	6.9 7.0	1.9	✓	PW	
9-8-94	RFL-SE-3972			410	3811	1080	446	8.5	2.4		PW	4+00, 0+85 Lt.
N/A	-VP500	9-8-94				N/A				✓		
9-8-94	ORF-SS-3973			510	856.3	832.8	639	1.3	1.3		PW	S/S 1'-2' Elev. 5299.4 N 25395 E 58951 EE
10-7-94	-1	9-7-94	9-10-94	424	1040	812.7	548	1.9	1.5	✓	PW	
9-8-94	ORF-SS-3974			412	989.9	888.2	639	1.5	1.4		PW	S/S 4'-5' Elev. 5299.4 N 25395 E 58951 EE
10-6-94	-1	9-7-94	9-10-94	540	980.2	916.4	630	1.6	1.5	✓	PW	
9-8-94	ORF-SS-3975			512	728.7	957.2	598	1.2	1.6		PW	S/S 5'-6' Elev. 5299.4 N 25395 E 58951 EE
10-7-94	-1	9-7-94	9-10-94	524	642.3	947.7	587	1.1	1.6	✓	PW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

COPY

REVIEWED BY: [signature]
Site HP Manager

M[illegible]G[illegible]N C[illegible]PAN
A MOR[illegible] KNUDSEN COMPANY

CWM Federal Environmental S[illegible]vices, Inc.

OCS SAMPLE LOG

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-8-94	ORF-SS-3976			414	1659	740.1	572	2.9	1.3		SS	8'-9' S/S Elev. 5299.4
10-6-94	-1	9-7-94	9-10-94	442	1735	971.1	562	3.1	1.7	✓	PV	N. 25395 E. 58951 EE
9-8-94	ORF-SS-3977			514	2249	1235	640	3.5	1.9		SS	0'-1' S/S Elev. 5300.9
10-7-94	-3	9-7-94	9-10-94	426	3109	1127	566	5.5	2.0	✓	PV	N. 25391 E. 59058 DD
9-8-94	ORF-SS-3978			416	1588	818.5	565	2.8	1.4		SS	1'-2' S/S Elev. 5300
~~10-7-94~~ 10-6-94	-2	9-7-94	9-10-94	526	2163	909.9	510	5.2	1.8	✓	PV	N. 25391 E. 58997 CC
9-8-94	ORF-SS-3979			516	3193	928.5	646	4.9	1.4		SS	4'-5' S/S N. 25341 Elev. 5300
10-6-94	-2	9-7-94	9-10-94	542	4064	1015	637	6.4	1.6	✓	PV	E. 58997 CC
9-8-94	ORF-SS-3980			418	3618	1036	633	5.7	1.6		SS	5'-6' S/S N. 25391
10-7-94	-2	9-7-94	9-10-94	428	4510	1031	620	7.3	1.7	✓	PV	E. 58997 Elev. 5300 CC
9-8-94	ORF-SS-3981			518	1299	938.1	647	2.0	1.4		SS	6'-7' S/S N. 25391 Elev. 5300
10-7-94	-2	9-7-94	9-10-94	538	2111	775.4	523	4.0	1.5	✓	PV	E. 58997 CC
9-8-94	ORF-SS-3982			422	2576	1297	615	4.2	2.1		SS	7'-8' S/S N. 25395 Elev. 5299.4
10-7-94	-1	9-7-94	9-10-94	430	3896	1119	602	6.5	1.9	✓	PV	E. 58951 EE
9-8-94	ORF-SS-3983			520	2223	957.2	580	3.8	1.7		SS	1'-2' S/S N. 25391 Elev. 5300.9
10-7-94	-3	9-7-94	9-10-94	530	3122	823.2	526	5.9	1.6	✓	PV	E. 59058 DD
9-8-94	ORF-SS-3984			424	2616	940.4	558	4.7	1.7		PV	S/S 2'-3' Elev. 5300.9
10-7-94	-3	9-7-94	9-10-94	550	3765	813.6	513	7.3	1.6	✓	PV	N 25391 E 59058 DD
9-8-94	ORF-SS-3985			522	4889	1063	635	7.7	1.7		PV	S/S 3'-4' Elev. 5300.9
10-6-94	-3	9-7-94	9-10-94	544	6139	1149	614	10.0	1.9	✓	PV	N 25391 E 59058 DD

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 Sec., unless otherwise noted

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Site HP Manager

SITE NAME RIFLE, CO

OCS SAMPLE LOG

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-8-94	ORF-SS-3986			426	1412	853.3	581	2.4	1.5		YV	S/S 4'-5' Elev. 5300.9
10-7-94	-3	9-7-94	9-10-94	432	1795	1014	557	3.2	1.8	✓	YV	N 25391 E 59058 DD
9-8-94	ORF-SS-3987			524	1200	1063	560	2.1	1.9		YV	S/S 5'-6' Elev. 5300.9
10-6-94	-3	9-7-94	9-10-94	444	1328	1258	550	2.4	2.3	✓	YV	N 25391 E 59058 DD
9-8-94	RFL-SE-3988			428	1722	931.7	493	3.5	1.9	✓	YV	Concrete Pad S.W. Corner of Bldg
N/A	-VP500	9-8-94				N/A						
9-8-94	~~RFL-[illegible]~~ ORF-SS-3989			526	3237	1043	668	4.8	1.6		YV	S/S 0'-1' Elev. 5300.4
10-7-94	-4	9-7-94	9-10-94	454	4826	935.0	54514	8.4	1.6	✓	YV	N 25392 E 59156 BB
9-8-94	ORF-SS-3990			430	6460	783.7	604	10.7	1.3		YV	S/S 1'-2'
10-7-94	-4	9-7-94	9-10-94	552	9542	1359	577	16.5	2.4	✓	YV	N.25392 Elev. 5300.9 E.59156 BB
9-8-94	ORF SS 3991			528	11094	1053	533	20.8	2.0		YV	S/S 2'-3'
10-7-94	-4	9-7-94	9-10-94	532	16597	1340	473	35.[illegible]	2.8	✓	YV	N.25392 Elev. 5300.4 E.59156 BB
9-8-94	ORF-SS-3992			432	28317	1820	564	50.3	3.2		SS	S/S 3'-4'
10-7-94	-4	9-7-94	9-10-94	434	40368	1643	518	77.9	3.2	✓	YV	N.25392 Elev. 5300.4 E.59156 BB
9-8-94	ORF-SS-3993			530	24583	1570	559	44.0	2.8		SS	S/S 4'-5'
10-7-94	-4	9-7-94	9-10-94	456	37970	1756	529	71.8	3.3	✓	YV	N.25392 Elev. 5300.4 E.59156 BB
9-8-94	ORF-SS-3994			434	150400	6008	602	249.8	10.0		YV	S/S 5'-6'
10-7-94	-4	9-7-94	9-10-94	554	220210	9716	573	384.3	MD 16.9	✓	YV	Elev. 5300.4 N 25392 E 59156 BB
9-8-94	ORF-SS-3995			532	13091	1091	598	21.9	1.8		YV	S/S 6'-7' Elev. 5300.4
10-7-94	-4	9-7-94	9-10-94	534	16692	1484	563	29.6	2.6	✓	YV	N 25392 E 59156 Leak Test OK BB

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 5' SEC., unless otherwise noted

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OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL	OCS # 20 DAY	Bi-214 pCi INITIAL	Bi-214 pCi 20 DAY	Tl-208 pCi INITIAL	Tl-208 pCi 20 DAY	MASS (grams) WET	MASS (grams) DRY	Pr-226 pCi/g INITIAL/CORR.	Pr-226 pCi/g 20 DAY	Th-232 pCi/g INITIAL	Th-232 pCi/g 20 DAY	DEPTH <15cm	DEPTH >15cm	TECH INITIAL	TECH 20 DAY	COMMENTS
9-8-94	ORF-SS-3996			436		3116.7		1411		640		48.7		2.2				PW		S/S Elev. 5302
10-7-94	-5	9-7-94	9-10-94	458		3627		2010		614		64.5		3.3		✓		PW		N 25394 E 59235 1'-2' AA
9-8-94	ORF-SS-3997			534		2129		947.7		610		3.5		1.6				PW		S/S Elev. 5302
10-7-94	-5	9-7-94	9-10-94	556		2536		1264		601		4.2		2.1		✓		PW		2'-3' N 25394 E 59235 AA
9-8-94	ORF-SS-3998			438		1932		1045		611		3.2		1.7				PW		S/S Elev. 5302
10-7-94	-5	9-7-94	9-10-94	436		2597		1022		601		4.3		1.7		✓		PW		3'-4' N 25394 E 59235 AA
9-8-94	ORF-SS-3999			536		7661		1024		658		11.0		1.6				PW		S/S Elev. 5302
10-7-94	-5	9-7-94	9-10-94	460		9114		1416		647		14.1		2.2		✓		PW		4'-5' N 25394 E 59235 AA
9-8-94	ORF-SS-4000			440		7693		923.0		436		17.6		2.1				PW		0'-1' Elev. 5302.1
10-7-94	-6	9-7-94	9-10-94	536		10923		1168		420		26.0		2.8		✓		PW		N 25401 E 59307 Z
9-8-94	ORF-SS-4001			538		2948		679.6		249		11.8		2.7				PW		S/S Elev. 5302.1
10-7-94	-6	9-7-94	9-10-94	448		4208		576.7		240		17.5		2.4		✓		PW		1'-2' N 25401 E 59307 Z
9-8-94	ORF-SS-4002			442		23775		1402		480		49.5		2.9				PW		S/S Elev. 5302.1
10-7-94	-6	9-7-94	9-10-94	558		35214		1895		468		75.2		4.0		✓		PW		2'-3' N 25401 E 59307 Z
9-8-94	ORF-SS-4003			540		5083		957.2		512		9.7		1.9				PW		S/S Elev. 5302.1
10-7-94	-6	9-7-94	9-10-94	546		6793		871.1		505		13.5		1.7		✓		PW		3'-4' N 25401 E 59307 Z
9-8-94	ORF-SS-4004			542		4855		871.1		494		9.8		1.8				PW		S/S Elev. 5302.1
10-7-94	-6	9-7-94	9-10-94	462		6951		961.2		488		14.2		2.0		✓		PW		4'-5' N 25401 E 59307 Z
9-8-94	RFL-SE-4005			444		4306		1193		430		10.0		2.8				PW		@12"-18"
N/K	-VP500	9-8-94						N/A								✓				3+75, 1+10 Lt.

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

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REVIEWED BY: Site HP Manager

F5-IN-001-1, Rev.1

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-9-94	RFL-SS-4016			510	2019	1015	402	5.0	2.5		PW	S/S Comp #4 Hosp. Hill Rd.
10-10-94	#4	9-8-94	9-10-94	568	4287	823.2	369	11.6	2.2	✓	WW	
9-9-94	RFL-SS-4017			410	1839	879.5	443	4.2	2.0		PW	S/S Comp #5 Hosp. Hill rd.
10-10-94	#5	9-8-94	9-10-94	470	3530	943.7	420	8.4	2.2	✓	WW	
9-9-94	RFL-SS-4018			512	1369	1130	518	2.6	2.2		PW	S/S Comp #6 Hosp. Hill rd.
10-10-94	#6	9-8-94	9-10-94	570	2140	890.2	485	4.4	1.8	✓	WW	
9-9-94	RFL-SS-4019			412	2028	966.5	653	3.1	1.5		PW	S/S Comp. #7 Hosp. Hill rd.
10-10-94	#7	9-8-94	9-10-94	472	3135	865.1	601	5.2	1.4	✓	WW	
9-9-94	ORF-SS-4020			517	728.1	947.7	648	1.1	1.5		PW	0'+1' Elev. 5301.2 S/S N 25518 E 59836 S
10-10-94	-13	9-8-94	9-10-94	572	852.8	995.5	524	1.6	1.9	✓	WW	
9-9-94	RFL-SE-4021			414	3875	1097	445	8.7	2.5		PW	3+25, 0+80 Lt.
N/A	-VP500	9-9-94			N	A				✓		
9-9-94	ORF-SS-4022			516	380.7	1206	643	0.59	1.9		PW	S/S 1'-2' Elev. 5301.2 N 25518 E 59836 S
10-10-94	-13	9-8-94	9-10-94	474	1147	1084	526	2.2	2.1	✓	WW	
9-9-94	ORF-SS-4023			416	797.4	853.3	488	1.6	1.7		PW	S/S 2'-3' Elev. 5301.2 N 25518 E 59836 S
10-6-94	-13	9-8-94	9-10-94	536	1013	938.1	446	2.3	2.1	✓	PW	
9-9-94	ORF-SS-4024			518	1222	851.9	398	3.1	2.1		PW	S/S 3'-4' Elev. 5301.2 N 25518 E 59836 S
10-6-94	-13	9-8-94	9-10-94	436	1564	987.4	390	4.0	2.5	✓	PW	
9-9-94	ORF-SS-4025			418	1121	766.3	556	2.0	1.4		PW	S/S 4'-5' Elev. 5301.2 N 25518 E 59836 S
10-10-94	-13	9-8-94	9-10-94	574	1441	1024	543	2.7	1.9	✓	WW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

COPY

REVIEWED BY: John K. Tonnel
Site HP Manager

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-9-94	ORFSS-4026			520	597.9	110.1	475	12.6	2.3		PV	S/S 6'-7' Elev. 5301.2
10-10-94	-13	9-8-94	9-10-94	476	782.8	97.0.0	467	16.8	2.1	✓	WW	N 25518 E 59836 S
9-9-94	ORFSS-4027			420	126.5	835.9	560	2.3	1.5		PV	S/S 5'-6' Elev. 5301.2
10-6-94	-13	9-8-94	9-10-94	534	147.5	996.0	547	2.7	1.8	✓	PV	N 25518 E 59836 S
9-9-94	ORF-SS-4028			522	137.6	804.1	572	2.4	1.4		PV	S/S 0'-1' Elev. 5302.1
10-10-94	-15	9-8-94	9-10-94	480	218.1	777.7	528	4.1	1.5	✓	WW	N 25550 E 59984 Q
9-9-94	ORF-SS-4029			422	184.9	748.8	529	3.5	1.4		PV	S/S 1'-2' Elev. 5302.1
10-10-94	-15	9-8-94	9-10-94	580	286.6	851.9	493	5.8	1.7	✓	WW	N 25550 E 59984 Q
9-9-94	ORF-SS-4030			524	186.0	976.4	576	3.2	1.7		PV	S/S 2'-3' Elev. 5302.1
10-10-94	-15	9-8-94	9-10-94	482	250.4	1049	543	4.6	1.9	✓	WW	N 25550 E 59984 Q
9-9-94	ORF-SS-4031			424	784.0	1036	654	1.2	1.6		PV	S/S 4'-5' Elev. 5302.1
10-10-94	-15	9-8-94	9-10-94	582	838.5	995.5	633	1.3	1.6	✓	WW	N 25550 E 59984 Q
9-9-94	ORF-SS-4032			526	1018	1110	600	1.7	1.9		PV	S/S 3'-4' Elev. 5302.1
10-7-94	-15	9-8-94	9-10-94	444	1432	935.0	581	2.5	1.6	✓	PV	N 25550 E 59984 Q
9-9-94	ORF-SS-4033			426	1015	696.6	323	3.1	2.2		PV	S/S 5'-6' Elev. 5302.1
10-6-94	-15	9-8-94	9-10-94	546	1343	737.1	314	4.3	2.3	✓	PV	N 25550 E 59984 Q
9-9-94	ORF-SS-4034			528	1421	986.0	517	12.4	1.9		PV	S/S 6'-7' Elev. 5302.1
10-7-94	-15	9-8-94	9-10-94	512	8097	918.9	508	15.9	1.8	✓	PV	N 25550 Lab Dup OK E 59984 Q
9-9-94	ORF-SS-4035			428	1128	801.1	567	1.1	1.4		SS	S/S 0'-1' Elev. 5302.2
10-10-94	-8	9-8-94	9-10-94	484	748.3	821.4	516	1.5	1.6	✓	WW	N. 25428 E. 59456 X

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

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A MORRISON KNUDSEN COMPANY

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OCS SAMPLE LOG

SITE NAME Rifle

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-9-94	RFL-SS-4036			530	3309	1063	636	5.2	1.7		SS	S/S +1'-2' Elev 5302.2 N 25428 E 59456 X
10-6-94	-8	9-8-94	9-10-94	446	4421	1031	614	7.2	1.7	✓	YW	
9-9-94	RFL-SE-4037			430	3171 N	888.2 A	498	6.4	1.8		SS	2+95, 0+92
N/A	VP 500	9-9-94								✓		
9-9-94	RFL-SE-4038			532	2872 N	1149 A	485	5.9	2.4		SS	@ 36"-40" 3+10, 0+90
N/A	VP500	9-9-94								✓		
9-9-94	RFL-SE-4039			432	3531 N	975.2 A	462	7.6	2.1		SS	@ 29"-30" 3+15, 0+80
N/A	VP500	9-9-94								✓		
9-9-94	RFL-SE-4040			534	4010 N	842.4 A	369	10.9	2.3		SS	3+05, 0+55
N/A	VP500	9-9-94								✓		
9-9-94	RFL-SS-4041			536	1816	966.8	631	2.9	1.5		SS	S/S Hospital Hill rd. Comp.
10-7-94	#8	9-9-94	9-10-94	450	2247	1022	595	3.8	1.7	✓	YW	
9-9-94	ORF-SS-4042	8 9-9-94		434	710.8	1080	625	1.1	1.7		YW	S/S 2'-3' Elev. 5302.2 N 25428 E 59456 X
10-10-94	-8	9-9-94	9-10-94	584	542.6	1168	600	0.90	1.9	✓	WW	
9-9-94	ORF-SS-4043	8 9-9-94		538	1092	1043	624	1.8	1.7		YW	S/S 3'-4' Elev. 5302.2 N 25428 E 59456 X
10-10-94	-8	9-9-94	9-10-94	486	1145	1057	610	1.9	1.7	✓	WW	
9-9-94	ORF-SS-4044	8 9-9-94		436	12983	1071	495	26.2	2.2		YW	S/S 4'-5' Elev. 5302.2 N 25428 E 59456 X
10-10-94	-8	9-9-94	9-10-94	586	9385	1445	485	40.0	3.0	✓	WW	
9-9-94	ORF-SS-4045			540	677.6	727.5	268	2.5	2.7		YW	S/S 0'-1' Elev. 5302.6 N 25411 E 59382 Y
10-10-94	-7	9-8-94	9-10-94	488	866.6	515.6	245	3.5	2.1	✓	WW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 Secs, unless otherwise noted

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REVIEWED BY: _____
Site HP Manager

F5-IN-001-1, Rev.1

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE / INITIAL / 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # / INITIAL / 20 DAY	Bi-214 pCi/g INITIAL / 20 DAY	Tl-208 pCi/g INITIAL / 20 DAY	MASS (grams) WET / DRY	Ra-226 pCi/g INITIAL/CORR. / 20 DAY	Th-232 pCi/g INITIAL / 20 DAY	DEPTH ≤15cm / >15cm	TECH INITIAL / 20 DAY	COMMENTS
9-9-94	RFL-SE-4046			542	3392	1331	459	7.4	2.9		PW	1390 Δ CPTM
N/A	-VP500	9-9-94	—		N	A				✓		2+97, 0+95
9-9-94	RFL-SE-4047			438	2177	1306	460	4.7	2.8		PW	Δ CPTM 1150
N/A	-VP500	9-9-94	—		N	A				✓		3+10, 1+05
9-9-94	ORF-SS-4048			544	1101	746.6	430	2.6	1.7		PW	S/S 1'-2' Elev. 5302.6
10-6-94	-7	9-8-94	9-10-94	43A	1720	812.7	418	4.1	1.9 2.0	✓	PW	N 25411 E 59382 Y
9-9-94	ORF-SS-4049			440	811.2	870.7	591	1.4	1.5		PW	S/S 2'-3' Elev. 5302.6
10-7-94	-7	9-8-94	9-10-94	44L	1191	1005	570	2.1	1.8	✓	PW	N 25411 E 59382 Y
9-9-94	ORF-SS-4050			546	4441	670.1	399	11.1	1.7		PW	S/S 3'-4' Elev. 5302.6
10-10-94	-7	9-8-94	9-10-94	588	6358	899.8	388	16.4	2.3	✓	WW	N 25411 E 59382 Y
9-9-94	ORF-SS-4051			442	4472	1210	563	7.9	2.1		PW	S/S 0'+1' Elev. 5302.7
10-10-94	-14	9-8-94	9-10-94	490	7045	882.6	532	13.2	1.7	✓	WW	N 25535 E 59912 R
9-9-94	ORF-SS-4052			548	1130	861.5	563	2.0	1.5		PW	S/S 1'-2' Elev. 5302.7
10-10-94	-14	9-8-94	9-10-94	590	908.0	1072	540	1.7	2.0	✓	WW	N 25535 E 59912 R
9-9-94	ORF-SS-4053			444	19922	1524	589	33.8	2.6		PW	S/S 2'-3' Elev. 5302.7
10-10-94	-14	9-8-94	9-10-94	492	28145	1538	567	49.6	2.7	✓	WW	N 25535 E 59912 R
9-9-94	ORF-SS-4054			550	1322	746.6	554	2.4	1.3		PW	S/S 3'-4' Elev. 5302.7
10-7-94	-14	9-8-94	9-10-94	548	2090	879.7	542	3.9	1.7	✓	PW	N 25535 LeakTest-OK
9-9-94	ORF-SS-4055			446	941.5	827.2	553	1.7	1.5		PW	E 59912 R S/S 4'-5' Elev. 5302.7
10-10-94	-14	9-8-94	9-10-94	592	961.3	1015	540	1.8	1.9	✓	WW	N 25535 E 59912 R

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

COPY

REVIEWED BY: Robert Ferrick
Site HP Manager

SITE NAME RIFLE, CO

OCS SAMPLE LOG

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-9-94	ORF-SS-4056			552	1819	899.8	494	3.7	1.8		PW	S/S 5'-6' Elev. 5302.7
10-10-94	-14	9-8-94	9-10-94	494	2140	821.4	482	4.4	1.7	✓	WW	N 25535 E 59912 R
9-9-94	RFL-SE-4057			448	3004	957.8	365	8.2	2.6		PW	1+90, 1+80
N/A	VP 500	9-9-94			N	A				✓		
9-9-94	RFL-SE-4058			554	4257	1015	469	9.1	2.2		PW	3+05, 1+45
N/A	-VP500	9-9-94			N	A				✓		
9-9-94	RFL-SE-4059			450	2770	862.0	323	8.6	2.7		PW	2+90, 0+50 1690 ΔCPTM
N/A	-VP500	9-9-94			N	A				✓		
9-9-94	ORF-SS-4060			556	3825	1177	533	7.2	2.2		PW	S/S 6'-7' Elev. 5302.7
10-10-94	-14	9-8-94	9-10-94	594	6180	1120	520	11.9	2.2	✓	WW	N 25535 E 59912 R
9-9-94	RFL-SS-4061			452	2474	992.6	721	3.4	1.4		PW	S/S
10-10-94		9-9-94	9-10-94	496	3866	925.0	697	5.5	1.3	✓	WW	hosp. hill rd. #10 @24"
9-9-94	RFL-SS-4062			558	1945	966.8	685	2.8	1.4		PW	S/S
10-10-94		9-9-94	9-10-94	596	2996	871.1	663	4.5	1.3	✓	WW	hosp. hill rd. #10 Comp.
9-9-94	RFL-SE-4063			454	3443	975.2	390	8.8	2.5		PW	Lilac 2
N/A	-VP 500	9-9-94			N	A				✓		
9-9-94	RFL-SE-4064			560	4233	1292	448	9.4	2.9		PW	Lilac 1
N/A	-VP500	9-9-94			N	A				✓		
9-9-94	RFL-SS-4065			456	4974 4974	940.4	608	8.2 0.82	1.5		PW	S/S
10-7-94	-	9-9-94	9-10-94	544	5423	1129	573	9.5	2.0	✓		Hosp. hill rd. #9 @20"

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

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REVIEWED BY: _____
Site HP Manager

SITE NAME RIFLE, CO

OCS SAMPLE LOG

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-9-94	RFL-SS-4066			562	1125	1005	646	1.7	1.6		PW	S/S hosp. hill rd.
10-7-94		9-9-94	9-10-94	452	1681	1014	622	2.7	1.6	✓	PW	#9 Comp.
9-10-94	ORF-SS-4067			400	472.4	827.2	513	0.92	1.6		PW	S/S 0'-1' Elev. 5302.8 N 25447 E 59537 W
10-12-94	-9	9-8-94	9-12-94	422	622.8	908.8	448	1.4	2.0	✓	PW	
9-10-94	ORF-SS-4068			500	1289	459.5	411	3.1	1.1		PW	S/S 1'-2' Elev. 5302.8 N 25447 E 59537 W
10-12-94	-9	9-8-94	9-12-94	554	1599	813.6	388	4.1	2.1	✓	PW	
9-10-94	ORF-SS-4069			402	2119	705.3	373	5.7	1.9		PW	S/S 2'-3' Elev. 5302.8 N 25447 E 59537 W
10-12-94	-9	9-8-94	9-12-94	454	3866	865.1	357	10.8	2.4	✓	WW	
9-10-94	ORF-SS-4070			502	1684	708.4	497	3.4	1.4		PW	S/S 3'-4' Elev. 5302.8 N 25447 E 59537 W
10-12-94	-9	9-8-94	9-12-94	528	1855	909.4	481	3.9	1.9	✓	PW	
9-10-94	ORF-SS-4071			404	13129	792.4	359	36.6	2.2		PW	S/S 4'-5' Elev. 5302.8 N 25447 E 59537 W
10-12-94	-9	9-8-94	9-12-94	562	19359	957.2	348	55.6	2.8	✓	WW	
9-10-94	ORF-SS-4072			504	1745	871.1	562	3.1	1.6		PW	S/S 0'-1' Elev 5303.3 N 25479 E 59674 U
10-12-94	-11	9-8-94	9-12-94	424	2069	1022	524	3.9	2.0	✓	PW	
9-10-94	ORF-SS-4073			406	1548	792.4	493	3.1	1.6		PW	S/S 1'-2' Elev. 5303.3 N 25479 E 59674 U
10-12-94	-11	9-8-94	9-12-94	530	2332	765.8	462	5.0	1.7	✓	PW	
9-10-94	ORF-SS-4074			506	1332	574.3	244	5.5	2.4		PW	S/S 2'-3' Elev. 5303.3 N 25479 E 59674 U
10-12-94	-11	9-8-94	9-12-94	456	1536	602.9	228	6.7	2.6	✓	WW	
9-10-94	ORF-SS-4075			408	136720	5756	511	267.6	11.3		PW	S/S 3'-4' Elev. 5303.3 N 25479 E 59674 U
10-12-94	-11	9-8-94	9-12-94	564	180600	7332	504	358.3	14.5	✓	PW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC, unless otherwise noted

COPY

REVIEWED BY: Robert Stencil
Site HP Manager

SITE NAME RIFLE, CO

OCS SAMPLE LOG

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-10-94	ORF-SS-4076			508	1065.9	1063	499	21.4	2.1		PW	S/S 4'-5' Elev. 5303.3 N 25479 E 59674 U
10-12-94	-11	9-8-94	9-12-94	458	1494.6	1320	481	31.1	2.7	✓	PW	
9-10-94	ORF-SS-4077			410	1077	766.3	566	1.9	1.4		PW	S/S 0'-1' Elev. 5303.6 N 25464 E 59608 V
10-12-94	-10	9-8-94	9-12-94	460	1323	917.5	536	2.5	1.7	✓	PW	
9-10-94	ORF-SS-4078			510	715.8	871.1	598	1.2	1.5		PW	S/S 1'-2' Elev. 5303.6 N 25464 E 59608 V
10-12-94	-10	9-8-94	9-12-94	566	967.7	1110	565	1.7	2.0	✓	PW	
9-10-94	ORF-SS-4079			412	1204	1054	583	2.1	1.8		PW	S/S 2'-3' Elev. 5303.6 N 25464 E 59608 V
10-12-94	-10	9-8-94	9-12-94	462	1630	1154	562	2.9	2.1	✓	PW	
9-10-94	ORF-SS-4080			512	970.9	622.2	502	1.9	1.2		PW	S/S 3'-4' Elev. 5303.6 N 25464 E 59608 V
10-12-94	-10	9-8-94	9-12-94	568	766.5	880.7	488	1.6	1.8	✓	PW	
9-10-94	ORF-SS-4081			414	924.8	862.0	586	1.6	1.5		PW	S/S 4'-5' Elev. 5303.6 N 25464 E 59608 V
10-12-94	-10	9-8-94	9-12-94	464	1134	1215	575	2.0	2.1	✓	PW	
9-10-94	ORF-SS-4082			514	536.2	1072	567	0.95	1.9		PW	S/S 0'-1' Elev. 5303.7 N 25499 E 59762 T
10-12-94	-12	9-8-94	9-12-94	570	715.1	966.8	503	1.4	1.9	✓	PW	
9-10-94	ORF-SS-4083			416	673.6	801.1	423	1.6	1.9		PW	S/S 1'-2' Elev. 5303.7 N 25499 E 59762 T
10-12-94	-12	9-8-94	9-12-94	466	888.9	690.3	382	2.3	1.8	✓	WW	
9-10-94	ORF-SS-4084			516	2057	938.1	547	3.8	1.7		PW	S/S 2'-3' Elev. 5303.7 N 25499 E 59762 T
10-12-94	-12	9-8-94	9-12-94	426	2489	952.5	521	4.8	1.8	✓	WW	
9-10-94	ORF-SS-4085			418	1373	740.1	460	3.0	1.6		PW	S/S 3'-4' Elev. 5303.7 N 25499 E 59762 T
10-12-94	-12	9-8-94	9-12-94	532	2231	871.1	442	5.0	2.0	✓	WW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

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Site HP Manager

F5-IN-001-1, Rev.1

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE / INITIAL / 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL / 20 DAY	Bi-214 pCi INITIAL / 20 DAY	Tl-208 pCi INITIAL / 20 DAY	MASS (grams) WET / DRY	Ra-226 pCi/g INITIAL/CORR. / 20 DAY	Th-232 pCi/g INITIAL / 20 DAY	DEPTH <15cm / >15cm	TECH INITIAL / 20 DAY	COMMENTS
9-10-94	ORF-SS-4086			518	5821	986.0	500	11.6	2.0		PW	S/S 4'-5' Elev. 5303.7
10-12-94	-12	9-8-94	9-12-94	488	7453	1024	488	15.3	2.1	✓	WRW	N 25499 E 59762 I
9-10-94	ORF-SS-4087			420	11849	896.9	427	~~3.2~~ 27.7	2.1		PW	S/S 3'-4' Elev. 5305.1
10-12-94	-23	9-8-94	9-12-94	534	19633	1197	411	47.8	2.9	✓	WRW	N 25673 E 60589 I
9-10-94	ORF-SS-4088			520	8570	1149	329	26.0	3.5		PW	S/S 4'-5' Elev. 5305.1
10-12-94	-23	9-8-94	9-12-94	428	11105	1223	318	34.9	3.8	✓	WRW	~~N 25693~~ E 60589 I
9-10-94	ORF-SS-4089			422	11209	992.6	509	22.0	2.0		PW	S/S 5'-6' Elev. 5305.1
10-12-94	-23	9-8-94	9-12-94	536	21011	1618	479	43.9	3.4	✓	WRW	~~N 25693~~ N25673 E 60589 I
9-10-94	ORF-SS-4090			522	731.4	890.2	602	1.2	1.5		PW	S/S 0'-1' Elev. 5305.2
10-12-94	-18	9-8-94	9-12-94	430	791.2	803.9	526	1.5	1.5	✓	WRW	N 25602 E 60216 N
9-10-94	ORF-SS-4091			424	7677	687.9	247	31.1	2.8		PW	S/S 4'-5' Elev. 5305.2
10-12-94	-20	9-8-94	9-12-94	540	11080	737.1	230	48.2	3.2	✓	WRW	N 25637 E 60348 L
9-10-94	ORF-SS-4092			~~534~~ 542	1377	1034	524	2.6	2.0		PW	S/S 5'-6' Elev. 5305.2
10-12-94	-18	9-8-94	9-12-94	574	1411	899.8	513	2.8	1.8	✓	WRW	N 25602 E 60216 N
9-10-94	ORF-SS-4093			426	6967	1167	548	12.7	2.1		PW	S/S 3'-4' Elev. 5306.2
10-12-94	-19	9-8-94	9-12-94	434	9784	1372	537	18.2	2.6	✓	WRW	N 25619 E 60282 M
9-10-94	ORF-SS-4094			526	2715	1158	378	7.2	3.1		PW	S/S 1'-2' Elev. 5306.3
10-12-94	-21	9-8-94	9-12-94	542	4869	861.5	347	14.0	2.5	✓	WRW	N 25657 E 60436 K
9-10-94	ORF-SS-4095			428	808.5	731.4	568	1.4	1.3		PW	S/S 0'-1' Elev. 5306.4
10-12-94	-25	9-8-94	9-12-94	436	766.5	1162	553	1.4	2.1	✓	WRW	N 25729 E 60736 G

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

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Site HP Manager

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE / INITIAL / 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL	OCS # 20 DAY	Bi-214 pCi INITIAL	Bi-214 pCi 20 DAY	Tl-208 pCi INITIAL	Tl-208 pCi 20 DAY	MASS (grams) WET	MASS (grams) DRY	Ra-226 pCi/g INITIAL/CORR.	Ra-226 pCi/g 20 DAY	Th-232 pCi/g INITIAL	Th-232 pCi/g 20 DAY	DEPTH <15cm	DEPTH >15cm	TECH INITIAL	TECH 20 DAY	COMMENTS
9-10-94	ORF SS-4096			528		47357		2479		530		89.4		4.7				YW		S/S 3'-4' Elev. 5306.4
10-12-94	-25	9-8-94	9-12-94		468		85474		3312		512		166.9		6.5		✓		WW	N 25729 E 60736 G
9-10-94	ORF-SS4097			430		40598		1289		504		80.6		2.6				YW		S/S 4'-5' Elev. 5306.4
10-12-94	-25	9-8-94	9-12-94		544		61806		2489		475		130.1		5.2		✓		WW	N 25729 E 60736 G
9-10-94	ORF-SS-4098			530		40034		2330 2220		389		102.9	103.0	5.7	5.7			YW		S/S 6'-7' Elev. 5306.4
10-12-94	-25	9-8-94	9-12-94		438		64253		3076		376		170.9		8.2		✓		WW	N 25729 E 60736 G
9-10-94	ORF-SS-4099			432		142160		5190		599		237.3		8.7				YW		S/S 7'-8' Elev. 5306.4
10-12-94	-25	9-8-94	9-12-94		576		264250		10826		592		446.4		18.3		✓		WW	N 25729 E 60736 G
9-10-94	ORF-SS-4100			532		6896		813.6		521		13.2		1.6				YW		S/S 0'-1' Elev. 5307.5
10-12-94	-24	9-8-94	9-12-94		546		10837		1273		440		24.6		2.9		✓		WW	N 25707 E 60668 H
9-10-94	ORF-SS-4101			434		4295		1219		546		7.9		2.2				YW		S/S 4'-5' Elev. 5307.5
10-12-94	-24	9-8-94	9-12-94		440		6595		1031		534		12.4		1.9		✓		WW	N 25707 E 60668 H
9-10-94	ORF-SS-4102			534		29419		1618		373		78.9		4.3				YW		S/S 5'-6' Elev. 5307.5
10-12-94	-24	9-8-94	9-12-94		470		41616		2639		360		115.6		7.3		✓		WW	N 25707 E 60668 H
9-10-94	ORF-SS-4103			436		623.6		1202		512		1.2		2.3				YW		S/S 0'-1' Elev. 5306.4
10-12-94	-22	9-8-94	9-12-94		578		1199		928.5		505		2.4		1.8		✓		WW	N 25675 E 60523 J
9-10-94	ORF-SS-4104			536		6203		813.6		481		12.9		1.7				YW		S/S 1'-2' Elev. 5305.1
10-12-94	-23	9-8-94	9-12-94		548		10255		909.4		426		24.1		2.1		✓		WW	N 25613 E 60589 I
9-10-94	ORF-SS-4105			438		40672		2429		567		71.7		4.3				YW		S/S 0'-1' Elev. 5305.5
10-12-94	-16	9-8-94	9-12-94		472		64529		3111		458		140.9		6.8		✓		WW	N 25571 E 60064 P

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

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Site HP Manager

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-10-94	ORF-SS-4106			538	599.0	247.0	537	111.6	4.6		PW	S/S 1'-2' Elev. 5303.5 N 25571 E 60064 P
10-12-94	-16	9-8-94	9-12-94	442	912.86	349.5	457	199.8	7.6	✓	WW	
9-10-94	ORF-SS-4107			440	231.7	73.1.4	369	6.3	2.0		PW	S/S 2'-3' Elev. 5303.5 N 25571 E 60064 P Leak Test OK
10-12-94	-16	9-8-94	9-12-94	550	248.3	670.1	353	7.0	1.9	✓	PW	
9-10-94	ORF-SS-4108			540	179.18	132.1	591	30.3	2.2		PW	S/S 3'-4' Elev. 5303.5 N 25571 E 60064 D
10-12-94	-16	9-8-94	9-12-94	580	248.53	164.6	568	44.5	2.9 3.0 ✓		WW	
9-10-94	ORF-SS-4109			442	155.1	931.7	495	3.1	1.9		PW	S/S 4'-5' Elev. 5303.5 N 25571 E 60064 P
10-12-94	-16	9-8-94	9-12-94	444	252.3	104.9	484	5.2	2.2	✓	PW	
9-10-94	ORF-SS-4110			542	123.0	756.2	319	3.9	2.4		PW	S/S 5'-6' Elev. 5303.5 N 25571 E 60064 P
10-12-94	-16	9-8-94	9-12-94	446	216.4	664.1	311	7.0	2.1	✓	PW	
9-10-94	ORF-SS-4111			444	899.0	1184	519	17.3	2.3		PW	S/S 0'-1' Elev. 5305.1 N 25673 E 60589 I
10-12-94	-23	9-8-94	9-12-94	552	1631.7	1331	437	37.3	3.0	✓	PW	
9-10-94	ORF-SS-4112			544	840	813.6	315	26.7	2.6		PW	S/S 2'-3' Elev. 5305.1 N 25673 E 60589 I
10-12-94	-23	9-8-94	9-12-94	448	1318.5	1066	290	47.5	3.7	✓	PW	
9-12-94	RFL-SE-4113			500	363.9	1503	464	7.8	3.2		PW	3+10, 1+40
N/A	-VP500	9-12-94				N				✓		
9-12-94	RFL-SE-4114			400	478.1	1088	415	11.5	2.6		PW	2+95, 1+55
N/A	-VP500	9-12-94				N				✓		
9-12-94	ORF-SS-4115			502	635.8	957.2	748	0.85	1.3		PW	Area E 30' N of middle haul rd.
10/13/94	*1	9-12-94	9/13/94	518	504.8	708.4	728	0.69	0.97	✓	WW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

COPY

REVIEWED BY: Site HP Manager

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL	OCS # 20 DAY	Bi-214 pCi INITIAL	Bi-214 pCi 20 DAY	Tl-208 pCi INITIAL	Tl-208 pCi 20 DAY	MASS (grams) WET	MASS (grams) DRY	Ra-226 pCi/g INITIAL/CORR.	Ra-226 pCi/g 20 DAY	Th-232 pCi/g INITIAL	Th-232 pCi/g 20 DAY	DEPTH <15cm	DEPTH >15cm	TECH INITIAL	TECH 20 DAY	COMMENTS
9-12-94	ORF-SS-4116			402		1010		714.0		582		1.7		1.2				PW		Area E
10/13/94	#2	9-12-94	9/13/94	464		465.5		576.7		566		0.82		1.0		✓		WW		35' N. of middle haul rd.
9-12-94	ORF-SS-4117			404		2550		696.6		480		5.3		1.5				PW		S/S 3'-4' Elev. 5305.2
10-13-94	-17	9-8-94	9-13-94	566		3256		1005		471		6.9		2.1		✓		PW		N 25585 E 60143 O
9-12-94	ORF-SS-4118			504		979.1		851.9		359		2.7		2.4				PW		S/S 0'-1' Elev. 5305.2
10-13-94	-17	9-8-94	9-13-94	466		1848		471.9		320		5.8		1.5		✓		PW		N 25585 E 60143 O
9-12-94	ORF-SS-4119			406		746.9		661.8		612		1.2		1.1				PW		S/S 1'-2' Elev. 5305.2
10-13-94	-17	9-8-94	9-13-94	468		992.9		996.2		582		1.7		1.7		✓		PW		N 25585 E 60143 O
9-12-94	ORF-SS-4120			506		626.6		1034		539		1.2		1.9				PW		S/S 2'-3' Elev. 5305.2
10-13-94	-17	9-8-94	9-13-94	568		1002		986.0		526		1.9		1.9		✓		PW		N 25585 E 60143 O
9-12-94	ORF-SS-4121			408		3927		1210		515		7.6		2.3				PW		S/S 3'-4' Elev. 5305.2
10-13-94	-20	9-8-94	9-13-94	470		5329		952.5		505		10.6		1.9		✓		PW		N 25637 E 60348 L
9-12-94	ORF-SS-4122			508		659.1		986.0		478		1.4		2.1				PW		S/S 4'-5' Elev. 5305.2
10-13-94	-17	9-8-94	9-13-94	570		1163		717.9		463		2.5		1.6		✓		PW		N 22[illegible] 25585 E 60143 O
9-12-94	RFL-SE-4123			410		4505		1028		372		12.1		2.8				PW		Lilac 3 @48"-54" 1610 à CPT
N/A	-VP 500	9-12-94						N		A						✓				
9-12-94	RFL-SE-4124			510		3581		1063		402		8.9		2.6				PW		3+00, 1+40
N/A	-VP500	9-12-94						N		A						✓				
9-12-94	ORF-SS-4125			412		739.3		740.1		506		1.5		1.5				PW		S/S 1'-2' Elev. 5305.2
10-13-94	-18	9-8-94	9-13-94	472		668.8		716.5		472		1.4		1.5		✓		PW		N 25602 E 60216 N

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

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OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-12-94	ORFSS-4126			512	488.8	1005	454	1.1	2.2		PW	S/S 2'-3' Elev. 5305.2 N 25602 E 60216 N
10-13-94	-18	9-8-94	9-13-94	572	405.1	928.5	439	0.92	2.1	✓	PW	
9-12-94 N A	RFL-SE-4127 -VP500	9-12-94		514	5371	1206 N A	432	12.4	2.8	✓	PW	S.W. Deck Composite
9-12-94 N A	RFL-SE-4128 -VP500	9-12-94		424	1851	1254 N A	534	3.5	2.3	✓	PW	1100 Δ CPTM 3+05, 1+35
9-12-94 N A	RFL-SE-4129 -VP500	9-12-94		528	17340	1225 N A	404	42.9	3.0	✓	PW	1960 Δ CPTM 3+00, 1+25
9-12-94 N A	RFL-SE-4130 -VP500	9-12-94		426	2481	1202 N A	476	5.2	2.5	✓	PW	NE Corner Grid 1
9-12-94 N A	RFL-SE-4131 -VP500	9-12-94		438	2729	1019 N A	482	5.7	2.1	✓	PW	2+80, 1+55 1020 Δ CPTM
9-12-94	RFL-SS-4132			474	4214	748.8	518	8.1	1.4		PW	4+55, 0+2R
10-13-94	-VP500	9-12-94	9-13-94	474	6483	777.7	499	13.0	1.6	✓	WW	
9-12-94	RFL-SS-4133			572	7214	871.1	508	14.2	1.7		PW	4+30, 0+6R
10-13-94	-VP500	9-12-94	9-13-94	574	12338	1369	493	25.0	2.8	✓	WW	
9-12-94	RFL-SS-4134			476	4616	862.0	474	9.8	1.8		PW	4+50, 0+24.
10-13-94	-VP500	9-12-94	9-13-94	576	7716	1101	455	17.0	2.4	✓	WW	
9-12-94	RFL-SS-4135			574	3571	1225	467	7.6	2.6		PW	3+95, 0+85 Lt.
10-13-94	-VP500	9-12-94	9-13-94	476	6398	1241	441	14.5	2.8	✓	WW	

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

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OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL	OCS # 20 DAY	Bi-214 pCi INITIAL	Bi-214 pCi 20 DAY	Tl-208 pCi INITIAL	Tl-208 pCi 20 DAY	MASS (grams) WET	MASS (grams) DRY	Ra-226 pCi/g INITIAL/CORR	Ra-226 pCi/g 20 DAY	Th-232 pCi/g INITIAL	Th-232 pCi/g 20 DAY	DEPTH <15cm	DEPTH >15cm	TECH INITIAL	TECH 20 DAY	COMMENTS
9-14-94	RFL-SS-4154			508		715.7		976.4		496		1.4		2.0				PV		
10-18-94	-VP500-Hole#5	9-13-94	9-15-94	440		1176		987.4		472		2.5		2.1		✓		WW		
9-14-94	RFL-SS-4155			510		732.4		1120		506		1.4		2.2				PV		
10-18-94	-VP500-Hole#6	9-13-94	9-15-94	526		1056		1043		481		2.2		2.2		✓		WW		
9-14-94	RFL-SS-~~4155~~ 4156			512		398.5		1043		578		0.69		1.8				PV		
10-18-94	-VP500-Hole#7	9-13-94	9-15-94	442		855.5		1162		543		1.6		2.1		✓		WW		
9-14-94	RFL-SS-4157			514		638.5		890.2		530		1.2		1.7				PV		
10-11-94	-VP500-Hole#8	9-13-94	9-15-94	540		778.0		1053		499		1.6		2.1		✓		PV		
9-14-94	ORF-SS-4158			516		624.2		890.2		503		1.2		1.8				PV		S/S 3'-4' Elev. 5305.2 N 25602 E 60216
10-11-94	~~VP500~~-18	9-~~13~~-8-94	9-15-94	442		1223		873.8		497		2.5		1.8		✓		WW		N
9-14-94	ORF-SS-4159			518		6550		1091		388		16.9		2.8				PV		S/S 4'-5' Elev. 5305.2 N 25602 E 60216
10-11-94	-18	9-8-94	9-15-94	438		8013		550.5		380		21.1		1.4		✓		PV		N
9-14-94	ORF-SS-4160			520		804.2		909.4		541		1.5		1.7				PV		S/S 0-1' Elev. 5305.2 N 25637 E 60348
10-18-94	-20	9-8-94	9-15-94	446		1000		935.0		500		2.0		1.9		✓		WW		L
9-14-94	ORF-SS-4161			522		1352		765.8		521		2.6		1.5				PV		S/S 1'-2' Elev. 5305.2 N 25637 E 60348
10-18-94	-20	9-8-94	9-15-94	532		1549		708.4		510		3.0		1.4		✓		WW		L
9-14-94	ORF-SS-4162			524		3072		938.1		451		6.8		2.1				PV		S/S 2'-3' Elev. 5305.2 N 25637 E 60348
10-18-94	-20	9-8-94	9-15-94	448		4307		891.3		427		10.1		2.1		✓		WW		L
9-14-94	ORF-SS-4163			526		2244		737.1		422		5.3		1.7				PV		S/S 5'-6' Elev. 5305.2 N 25637 E 60348
10-11-94	-20	9-8-94	9-15-94	542		2619		890.2		412		6.4		2.2		✓		WW		L

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

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Site HP Manager

A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Services, Inc.

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL / 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL / 20 DAY	Bi-214 pCi INITIAL / 20 DAY	Tl-208 pCi INITIAL / 20 DAY	MASS (grams) WET / DRY	Ra-226 pCi/g INITIAL/CORR. / 20 DAY	Th-232 pCi/g	DEPTH	TECH	COMMENTS
9-14-94	ORF-SS-4164			528	22174	1465	554	40.0	✓ OK		J	Area ~~end~~ E+D border
10-18-94	#1	9-14-94	9-15-94	534	538.9	1005	519	1.0	✓ OK		J	30' N from bottom ditch brown sand
9-14-94	ORF-SS-4165			530	11428	1560	590	19.4	✓ OK		J	Area E+D border
10-11-94	#2	9-14-94	9-15-94	544	740.1	1235	529	1.4	✓ OK		J	25' N of bottom of ditch black sand
9-14-94	ORF-SS-4166			532	3551	823.2	652	5.4			J	Area D+E border
10-11-94	#3	9-14-94	9-15-94	538	937.3	976.4	522	1.8		PU 12-3-94	J	25' N of bottom of ditch dark brown mud
9-13-94 N/A	ORF-SS-4167			446	9712	1167	831	11.7	1.4	N/A	PU	west sump hole
	#1	9-13-94			N	A						
9-13-94 N/A	ORF-SS-4168			558	11136	1149	754	14.8	1.5	N/A	PU	west sump hole
	#2	9-13-94			N	A						
9-14-94	ORF-SS-4169			534	153010	6490	624	245.2	10.4		PU	S/S 6'-7' Elev. 5306
10-18-94	-20	9-8-94	9-15-94	450	19660	672.0	620	317.2	1.1	✓	WW	N 25637 E 60348 L
9-14-94	ORF-SS-4170			536	4197	1072	495	8.5	2.2		PU	S/S 0-1' Elev. 5306.
10-11-94	-19	9-8-94	9-15-94	444	5402	699.1	431	12.5	1.6	✓	WW	N 25619 E 60282 M
9-14-94	ORF-SS-4171			538	1692	1043	427	4.0	2.4		PU	S/S 1'-2' Elev. 530
10-18-94	-19	9-8-94	9-15-94	536	3113	1120	361	8.6	3.1	✓	WW	N 25619 E 60282 M
9-14-94	ORF-SS-4172			540	1394	957.2	539	2.6	1.8		PU	S/S 2'-3' Elev. 5306
10-18-94	-19	9-8-94	9-15-94	452	2061	856.4	467	4.4	1.8	✓	WW	N 25619 E 60282 M
9-14-94	ORF-SS-4173			542	1192	1149	524	2.3	2.2		PU	S/S 0'-1' Elev. 5306
10-18-94	-21	9-8-94	9-15-94	538	2836	1043	501	5.7	2.1	✓	PU	N 25657 E 60436 K

e Correction Factor = 1.8

Correction Factor (if applicable) = 1.8

unt Time = 500 SEC., unless otherwise noted

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Site HP Manager

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Services, Inc.

OCS SAMPLE LOG

SITE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
9-14-94	ORF-SS-4174			544	3168	1082	387	8.2	2.8		SB	Elev 5603.3 5306.3 N. 25657 E. 60436 +2'-3' S/S K
10-11-94	21	9-8-94	9-15-94	546	5418	727.5	358	15.1	2.0	✓	PW	
9-14-94	ORF-SS-4175			546	7429	871.1	295	25.2	3.0		SB	Elev. 5306.3 N. 25657 E. 60436 +3'-4' S/S K
10-18-94	-21	9-8-94	9-15-94	454	11666	961.2	286	40.8	3.4	✓	PW	
9-14-94	ORF-SS-4176			548	91928	4250	574	160.2	7.4		SB	Elev. 5306.3 N. 25657 E. 60436 +4'-5' S/S K
10-18-94	21	9-8-94	9-15-94	456	130020	4159	569	228.5	7.3	✓	WW	
9-14-94	ORF-SS-4177			550	4775	737.1	323	14.8	2.3		SB	Elev. 5306.4 N. 25675 E. 60523 +1'-2' S/S J
10-11-94	22	9-8-94	9-15-94	446	6658	1031	316	21.1	3.3	✓	PW	
9-14-94	ORF-SS-4178			552	7296	813.6	275	26.5	3.0		SB	Elev. 5306.4 N. 25675 E. 60523 +2'-3' S/S J
10-11-94	22	9-8-94	9-15-94	448	12176	978.7	256	47.6	3.8	✓	WW	
9-14-94	ORF-SS-4179			554	5877	1072	294	20.0	3.6		PW	S/S 3'-4' Elev. 5306 N 25675 E 60523 J
10-18-94	-22	9-8-94	9-15-94	458	9102	1215	281	32.4	4.3	✓	WW	
9-14-94	ORF-SS-4180			556	3459	1158	533	6.5	2.2		SB	S/S +4'-5' Elev. 5306.4 N. 25675 E. 60523 J
10-18-94	22	9-8-94	9-15-94	540	5742	976.4	521	11.0	1.9	✓	WW	
9-15-94	ORF-SE-4181			516	2054	1206	471	4.4	2.6		SB	@ 18"-24" 1+83, 1+82.5 Composite
N A	VP 500	9-15-94			N	A				✓		
9-15-94	ORF-SS-4182			524	71057	3561	444	160.0	8.0		SB	AREA E Black Sandy Material
10-18-94	#1	9-15-94	9-15-94	542	78212	3216	386	202.6	8.3	✓	WW	
9-15-94	RFL-SE-4183			534	9157	1158	478	1.9	2.4		SB	3+35, 1+55
N A	VP500	9-15-94			N	A				✓		

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

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Site HP Manager

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CWM Federal Environmental Services, Inc

OCS SAMPLE LOG

SITE NAME Rifle Co.

COUNT DATE / INITIAL / 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # / INITIAL / 20 DAY	Bi-214 pCi INITIAL / 20 DAY	Tl-208 pCi INITIAL / 20 DAY	MASS (grams) WET / DRY	Ra-226 pCi/g INITIAL/CORR. / 20 DAY	Th-232 pCi/g INITIAL / 20 DAY	DEPTH <15cm / >15cm	TECH INITIAL / 20 DAY	COMMENTS
9-15-94	RFL-SE-4184			536	2073	957.2	534	3.9	1.8		SB	4+50, 0+00
N	VP500	9-15-94			N	A				✓		Composite
9-15-94	RFL-SE-4185			538	788.2	670.1	593	1.3	1.1		SB	4+30, 0+LR
N	VP500	9-15-94			N	A				✓		
9-16-94	ORF-SE-4186			500	468120	24409	675	693.5	36.2		PW	Area E
N	#4	9-15-94			N	A				✓		Middle Area SW of acc
9-16-94	ORF-SE-4187			502	205360	11056	783	262.3	14.1		PW	Area E
N	#5	9-15-94			N	A				✓		Middle Area SW of acce
9-16-94	ORF-SE-4188			504	792810	44731	573	1383.6 / 1,384 pCi/g	78.1		PW	Area E
N	#3	9-15-94			N	A				✓		middle Area SW of Acc
9-16-94	ORF-SE-4189			506	308180	17489	436	484.6	27.5		PW	Area E
N	#2	9-15-94			N	A				✓		Middle Area SW of Acce
9-16-94	ORF-SE-4190			508	385740	21624	756	510.2	28.6		PW	Area E
N	#1	9-15-94			N	A				✓		Middle Area SW of Ac
9-16-94	ORF-SS-4191			524	2127	918.9	393	5.4	2.3		SB	S/S +1'-2'
10-17-94	#25	9-8-94	9-17-94	444	2837	752.3	368	7.7	2.0	-	WW	Elev. 5304.4 N. 25729 E. 60736
9-16-94	ORF-SS-4192			526	33790	1876	470	71.9	4.0		SB	S/S +2'-3'
10-17-94	-25	9-8-94	9-17-94	544	52817	2671	453	116.6	5.9	✓	WW	Elev. 5306.4 N. 25724 E. 60736
9-16-94	ORF-SS-4193			528	30059	1675	436	68.9	3.8		SB	S/S +5'-6'
10-17-94	- 25	9-8-94	9-17-94	546	50722	2766	418	121.3	6.6	✓	WW	Elev. 5306.4 N. 25729 E. 60736

Site Correction Factor = 1.8

HP Correction Factor (if applicable) = 1.8

Count Time = 500 Sec., unless otherwise noted

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Site HP Manager

OCS SAMPLE LOG

E NAME Rifle Co.

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
16-94	ORF-SS-4194			530	6114	986.0	496	12.3	2.0		[illegible]	S/S +1'-2'
-17-94	-24	9-8-94	9-17-94	446	8557	1014 / 481	481	17.8	2.1	✓	WW	Elev. 5307.5 N 25707 E 60668 H
16-94	ORF-SS-4195			532	3420	689.2	496	6.9	1.4		[illegible]	S/S +2'-3'
-17-94	-24	9-8-94	9-17-94	548	4562	1082	476	9.6	2.3	-	WW	Elev. 5307.5 N 25707 E 60668 H
16-94	ORF-SS-4196			534	12029	1139	522	23.0	2.2		[illegible]	S/S +3'-4'
-17-94	-24	9-8-94	9/17/94	448	18176	1136	513	35.4	2.2	-	WW	Elev. 5307.5 N 25707 E 60668 H
16-94	ORF-SS-4197			536	4540	2623	388	127.7	6.8		PU	SS 0'-1'
-17-94	-29	9-9-94	9-17-94	450	16857	3111	377	203.9	8.3	✓	WW	Elev. 5309.2 N 25780 E 61055 C
16-94	ORF-SS-4198			538	6453	9285	385	16.8	2.4		PU	S/S 1'-2'
-17-94	-29	9-9-94	9-17-94	550	9873	1388	376	26.3	3.7	✓	WW	Elev. 5309.2 N 25780 E 61055 C
16-94	ORF-SS-4199			540	7660	909.4	480	16.0	1.9		PU	S/S 2'-3'
-17-94	-29	9-9-94	9-17-94	552	13606	1302	452	30.1	2.9	✓	WW	Elev. 5309.2 N 25780 E 61055 C
16-94	ORF-SS-4200			542	11298	1110	382	29.6	2.9		PU	S/S 3'-4'
-17-94	-29	9-9-94	9-17-94	452	19693	1258	335	58.8	3.8	✓	WW	Elev. 5309.2 N 25780 E 61055 C
7-94	ORF-SS-4201			500	13027	1417	445	29.3	3.2		PU	S/S 0'-1'
-19-94	-28	9-8-94	9-19-94	478	18990	1136	424	44.8	2.7	✓	WW	Elev. 5307.1 N 25[illegible] E [illegible]985 D
17-94	ORF-SS-4202			502	17349	1465	427	40.6	3.4		PU	S/S 1'-2'
-19-94	-28	9-8-94	9-19-94	580	25083	1551	398	63.0	3.9	✓	WW	Elev. 5307.1 N 25783 E 60985 D
17-94	ORF-SS-4203			504	21699	1522	403	53.8	3.8		PU	S/S 2'-3' Elev. 5307.1
-19-94	-28	9-8-94	9-19-94	480	33528	1608	372	90.1	4.3	✓	WW	N Elev. 25783 AGAIN E 60985 D

Correction Factor = 1.8

Correction Factor (if applicable) = 1.8

Count Time = 500 Sec., unless otherwise noted

COPY

REVIEWED BY: John K. Fancil
Site HP Manager

OCS SAMPLE LOG

TE NAME RIFLE, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL	OCS # 20 DAY	Bi-214 pCi INITIAL	Bi-214 pCi 20 DAY	Tl-208 pCi INITIAL	Tl-208 pCi 20 DAY	MASS (grams) WET	MASS (grams) DRY	Ra-226 pCi/g INITIAL/CORR.	Ra-226 pCi/g 20 DAY	Th-232 pCi/g INITIAL	Th-232 pCi/g 20 DAY	DEPTH ≤15cm	DEPTH >15cm	TECH INITIAL	TECH 20 DAY	COMMENTS
9-17-94	ORF-SS-4204			506		20065		1790		492		40.8		3.6				PW		S/S 3'-4' Elev. 5307.
9-19-94	-28	9-8-94	9-19-94	488		26510		1870		471		56.3		4.0		✓		B/PW		N 25783 E 60985 D
9-17-94	ORF-SS-4205			508		14011		1484		461		30.4		3.2				PW		S/S 4'-5' Elev. 5307.
9-19-94	-28	9-8-94	9-19-94	588		18481		1608		442		41.8		3.6		✓		B/PW		N 25783 E 60985 D
9-17-94	ORF-SS-4206			510		11283		986.0		348		32.4		2.8				PW		S/S 5'-6' Elev. 5307.
9-19-94	-28	9-8-94	9-19-94	490		17654		1477		334		52.9		4.4		✓		B/PW		N 25783 E 60985 D
9-17-94	ORF-SS-4207			512		3300		1024		435		7.6		2.4				PW		S/S 0'-1' Elev. 5307.
9-19-94	-26	9-8-94	9-19-94	590		5713		871.1		390		14.6		2.2		✓		B/PW		N 25742 E 60804 F
9-17-94	ORF-SS-4208			514		30220		1216		348		58.1		3.5				PW		S/S 1'-2' Elev. 5301.
9-20-94	-26	9-8-94	9-19-94	400		31003		1870		314		98.7		6.0		✓		PW		N 25742 E 60804 F
9-17-94	ORF-SS-4209			516		80159		3369		548		146.3		6.1				PW		S/S 2'-3' Elev. 5307.
9-20-94	-26	9-8-94	9-19-94	500		123700		5064		529		233.8		9.6		✓		PW		N 25742 E 60804 F PASS Leak Tes
9-17-94	ORF-SS-4210			518		18032		1417		481		37.5		2.9				PW		S/S 3'-4' Elev. 5307.
9-20-94	-26	9-8-94	9-19-94	402		33570		1590		439		76.5		3.6		✓		PW		N 25742 E 60804 F
9-17-94	ORF-SS-4211			520		21977		1398		369		59.6		3.8				PW		S/S 4'-5' Elev. 5307.
9-20-94	-26	9-8-94	9-19-94	502		37599		1848		324		116.0		5.7		✓		PW		N 25742 E 60804 F
9-17-94	ORF-SS-4212			522		11008		1264		363		30.3		3.5				PW		S/S 5'-6' Elev. 5307.
9-20-94	-26	9-8-94	9-19-94	404		14849		1582		345		43.0		4.6		✓		PW		N 25742 E 60804 F
9-17-94	ORF-SS-4213			524		57712		2958		407		141.8		7.3				PW		S/S 6'-7' Elev. 5307.
9-20-94	-28	9-8-94	9-19-94	504		86594		3915		391		221.5		10.0		✓		PW		N 25783 E 60985 D

Correction Factor = 1.8

Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

COPY

REVIEWED BY: Site HP Manager

FS-IN-001-1, Rev.1

OCS SAMPLE LOG

TE NAME RIFLE, CO

COUNT DATE INITIAL / 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL / 20 DAY	Bi-214 pCi INITIAL / 20 DAY	Tl-208 pCi INITIAL / 20 DAY	MASS (grams) WET / DRY	Ra-226 pCi/g INITIAL/CORR. / 20 DAY	Th-232 pCi/g INITIAL / 20 DAY	DEPTH <15cm / >15cm	TECH INITIAL / 20 DAY	COMMENTS
7-17-94	ORF-SS-4214			526	5112	1187	409	12.5	2.9		PV	S/S 0'-1' Elev. 5309.1 N 25762 E 60898 E
7-20-94	-27	9-8-94	9-19-94	406	7649	1302	373	20.5	3.5	✓	PV	
7-17-94	ORF-SS-4215			528	25464	1369	423	60.2	3.2		PV	S/S 1'-2' Elev. 5309.1 N 25762 E 60898 E
7-20-94	-27	9-8-94	9-19-94	506	43797	2278	390	112.3	5.8	✓	PV	
7-17-94	ORF-SS-4216			530	5258	689.2	301	17.5	2.3		PV	S/S 2'-3' Elev. 5309.1 N 25762 E 60898 E
7-20-94	-27	9-8-94	9-19-94	408	7812	856.4	263	29.7	3.3	✓	PV	
7-17-94	ORF-SS-4217			532	4295	1158	372	11.5	3.1		PV	S/S 3'-4' Elev. 5309.1 N 25762 E 60898 E
7-20-94	-27	9-8-94	9-19-94	508	7155	1158	356	20.1	3.3	✓	PV	
7-17-94	ORF-SS-4218			534	8246	3571	609	135.1	5.9		PV	S/S 4'-5' Elev. 5309.1 N 25762 E 60898 E
7-20-94	-27	9-8-94	9-19-94	410	12940	5007	597	204.3	8.4	✓	PV	
7-17-94	ORF-SS-4219			536	2618	670.1	285	9.2	2.4		PV	S/S 0'-1' Elev. 5313.0 N 25813 E 61128 B
7-20-94	-30	9-8-94	9-19-94	510	4347	966.8	251	17.3	3.9	✓	PV	
7-17-94	ORF-SS-4220			538	17243	1484	434	39.7	3.4		PV	S/S 1'-2' Elev. 5313.0 N 25813 E 61128 B
7-20-94	-30	9-8-94	9-19-94	412	29760	1617	409	72.8	4.0	✓	PV	
7-17-94	ORF-SS-4221			540	32020	1599	667	48.0	2.4		PV	S/S 2'-3' Elev. 5313.0 N 25813 E 61128 B
7-20-94	-30	9-8-94	9-19-94	512	46889	2747	647	72.5	4.2	✓	PV	
7-19-94	ORF-SE-4222			508	409.8	784.9	593	0.69	1.3		PV	1060 CPTM 3 of Hoe
N/A	#1	9-19-94	←			N/A				✓		
7-19-94	ORF-SE-4223			510	24119	1579	604	39.9	2.6		PV	3000 CPTM 3 of Hoe
N/A	#2	9-19-94	←			N/A				✓		

Correction Factor = 1.8

Correction Factor (if applicable) = 1.8

Count Time = 500 SEC., unless otherwise noted

COPY

REVIEWED BY: Robert K. Stencel
Site HP Manager

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

ATTACHMENT #7

CWM Federal Environmental Services, Inc.

OCS SAMPLE LOG

SITE NAME RIFLE, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL	OCS # 20 DAY	Bi-214 pCi INITIAL	Bi-214 pCi 20 DAY	Tl-208 pCi INITIAL	Tl-208 pCi 20 DAY	MASS (grams) WET	MASS (grams) DRY	Ra-226 pCi/g INITIAL/CORR.	Ra-226 pCi/g 20 DAY	Th-232 pCi/g INITIAL	Th-232 pCi/g 20 DAY	DEPTH) <15cm	DEPTH >15cm	TECH INITIAL	TECH 20 DAY	COMMENTS
5-9-95	RFL-SS-8194	5-9-95		510		705.9		539.8		736 W		0.96 H		~~0.73~~			✓	WJW		TH-230 C/F
5-9-95	RFL-SS-8195	5-9-95		416		724.4		~~629.2~~		609		1.2		1.0			✓	WJW		TH-230 C/F
5-10-95	RFL-SS-~~89~~ 8196 KC 5-10-95			456		38232		1346		633		60.4		2.1				KC		0-2' SPS-P BH#20
5-31-95	VP 479-480	5-10-95	5-11-95	604		60705		2393		572		106.1		4.2		✓		KC		River BANK
5-10-95	RFL-SS-8197 KKC 5-4-95			554		54749		2381		429		127.6		5.6				KC		2'-4' SPS-P BH#20
5-31-95	VP 479-480	5-10-95	5-11-95	606		57379		3155		304		287.4		10.3		✓		KC		River Bank
5-10-95	RFL-SS-8198			458		35476		1442		550		64.5		2.6				KC		0-2' SPS-Q BH#21
5-31-95	VP 479-480	5-10-95	5-11-95	608		55212		2068		463		119.6		4.5		✓		KC		River BANK
5-10-95	RFL-SS-8199 KKC 5-4-95			556		58245		2092		356 KC 5-10-95		229.5 #1 213.6		5.9				KC		2'-4' SPS-Q BH#21
5-31-95	VP 479-480	5-10-95	5-11-95	610		86324		3320		299		288.7		11.1		✓		KC		River BANK
5-10-95	RFL-SS-8200			460		11122		1276		644		17.3		2.0				KC		0-2' SPS-R BH#22
5-31-95	VP 479-480	5-10-95	5-11-95	612		15480		1178		584		26.5		2.0		✓		KC		River BANK
5-10-95	RFL-SS-8201 KKC 5-4-95			558		13721		1224		656		20.9		1.9				KC		2'-4' SPS-R BH#22
5-31-95	VP 479-480	5-10-95	5-11-95	614		16185		1224		631		25.6		1.9		✓		KC		River BANK
5-10-95	RFL-SS-8202			462		9843		1110		763		12.9		1.5				KC		4'-6' SPS-R BH#22
5-31-95	VP 479-480	5-10-95	5-11-95	616		12436		1076		726		17.7		1.5		✓		KC		River BANK
~~5-10-95~~	RFL-SS-8203 KKC 5-4-95			560		14264		1147		690		20.7		1.7				KC		0-2' SPS-S
5-31-95	VP 479-480	5-10-95	5-11-95	520		18614		1118		638		29.2		1.8		✓		KC		River BANK BH#23

Site Correction Factor = 1.08

VP Correction Factor (if applicable) = 1.7

Count Time = 500 Sec., unless otherwise noted

COPY

REVIEWED BY: Robert K Stencel
Site HP Manager

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental S es, Inc.

OCS SAMPLE LOG

SITE NAME Rifle, CO

COUNT DATE INITIAL / 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL / 20 DAY	Bi-214 pCi INITIAL / 20 DAY	Tl-208 pCi INITIAL / 20 DAY	MASS (grams) WET / DRY	Ra-226 pCi/g INITIAL/CORR. / 20 DAY	Th-232 pCi/g INITIAL / 20 DAY	DEPTH ≤15cm / >15cm	TECH INITIAL / 20 DAY	COMMENTS
5-10-95	RFL-SS-8204			464	20817	1320	663	31.4	2.0	'	KC	2'-4' SPS-S
5-31-95	VP479 480	5-10-95	5-11-95	618	32197	1790	599	53.8	3.0	✓	KC	River BANK BH#2
5-10-95	RFL-SS-8205			562	6217	1051	811	7.7	1.3		KC	4'-6' SPS-S
5-31-95	VP479 480	5-10-95	5-11-95	620	7482	1002	766	9.8	1.3	✓	KC	River BANK BH#
5-10-95	RFL-SS-8206			466	5055	1014	693	7.93	1.65		KC	6'-8' SPS-S
5-31-95	VP479 480	5-10-95	5-11-95	422	6324	1267	674	9.4	1.9	✓	KC	River BANK BH#
5-10-95	RFL-SS-8207			564	3714	1060	629	5.9	1.7		KC	0-2' SPS-TE
5-31-95	VP479 480	5-10-95	5-11-95	522	5549	1060	559	9.9	1.9	✓	KC	River BANK BH#
5-10-95	RFL-SS-8208			468	4669	961.2	704	6.6	1.4		KC	2'-4' SPS-TE
5-31-95	VP479 480	5-10-95	5-11-95	622	5910	881.0	663	8.9	1.3	✓	KC	River BANK BH#
5-10-95	RFL-SS-8209			566	4190	790.4	637	6.6	1.2		KC	0-2' SPS-U
5-31-95	VP479 480	5-10-95	5-11-95	424	5111	1066	570	9.0	1.9	✓	KC	River BANK BH#2
5-10-95	RFL-SS-8210			470	5780	943.7	559	10.3	1.7		KC	2'-4' SPS-U
5-31-95	VP479 480	5-10-95	5-11-95	524	9399	867.5	449	20.9	1.9	✓	KC	River BANK BH#2
5-10-95	RFL-SS-8211			568	1674	1195	681	2.5	1.8		KC	0-2' SPS-U
5-31-95	VP479 480	5-10-95	5-11-95	624	1873	1029	604	3.1	1.7	✓	KC	River BANK BH#2
5-10-95	RFL-SS-8212			472	2953	1101	577	5.1	1.9		KC	2'-4' SPS-U
5-31-95	VP479 480	5-10-95	5-11-95	426	3555	1215	516	6.9	2.4	✓	OC	River BANK BH#2
5-10-95	RFL-SS-8213			570	3021	867.5	647	4.7	1.3		KC	4'-6' SPS-U
5-31-95	VP479 480	5-10-95	5-11-95	526	4334	1070	568	7.4	1.8	✓	OC	River BANK BH#

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.7

Count Time = 500 Sec., unless otherwise noted

COPY

REVIEWED BY: [signature] Site HP Manager

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Services, Inc.

OCS SAMPLE LOG

SITE NAME RFLATS, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL	Bi-214 pCi INITIAL	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
5-10-95	RFL-SS-8214 VP479 480	5-10-95	5-11-95	572	538.4	848.2	624	0.86	1.4		KC	6'-8' SPS-W
5-31-95				626	980.1	723.4	553	1.8	1.3	✓	DC	River BANK
5-11-95	RFL-SS-8215 480 VP479	5-10-95	5-14-95	400	50269	1503	551	91.2	2.7	✓	KC	0-2' SPS-G BH#11
6-3-95				436	86783	3321	477	181.9	7.0		WW	River BANK
5-11-95	RFL-SS-8216 480 VP479	5-10-95	5-14-95	500	40669	1641	591	68.8	3.1	✓	KC	2'-4' SPS-G BH#11
6-3-95				600	64179	2764	539	119.3	5.1 5.2	15	WW	River Bank
5-11-95	RFL-SS-8217 480 VP479	5-10-95	5-14-95	402	26101	1215	532	49.1	2.3	—	KC	4'-6' SPS-G BH#11
6-3-95				540	47855	2053	449	106.6	4.6		WW	River BANK
5-11-95	RFL-SS-8218 480 VP479	5-10-95	5-14-95	502	13318	1388	664	20.1	2.1	✓	KC	6'-8' SPS-G BH#11
6-3-95				438	20276	1521	619	32.8	2.5		WW	River BANK
5-11-95	RFL-SS-8219 480 VP479	5-10-95	5-14-95	404	524.3	803.9	653	0.80	1.2	✓	KC	8'-10' SPS-G BH#11
6-3-95				542	894.5	732.5	494	1.8	1.5	KC 5-11-95	WW	River BANK
5-11-95	RFL-SS-8220 480 VP479	5-10-95	5-14-95	504	9376	1089	622	15.1	1.8	✓	KC	0-2' SPS-H BH#12
6-3-95				440	12567	1022	600	20.9	1.7		WW	River BANK
5-11-95	RFL-SS-8221 480 VP479	5-10-95	5-14-95	406	51948	2071	596	87.2	3.5	✓	KC	2'-4' SPS-H BH#12
6-3-95				604	89811	3033	554	162.1	5.5		WW	River BANK
5-11-95	RFL-SS-8222 480 VP479	5-10-95	5-14-95	506	8262	751.8	318	26.0	2.4	✓	KC	4'-6' SPS-H BH#12
6-3-95				544	12787	1176	280	45.7	4.2		WW	River BANK
5-11-95	RFL-SS-8223 VP480 VP479	5-10-95	5-14-95	408	11322	1232	578	19.6	2.1	✓	KC	0-2' SPS-I BH#13
6-3-95				442	19915	1320	510	39.0	2.6		WW	River BANK

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.7

Count Time = 500 Sec., unless otherwise noted

COPY

REVIEWED BY: Site HP Manager

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Services, Inc.

OCS SAMPLE LOG

SITE NAME Rifle, CO

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
5-11-95	RFL-SS-8224 480 VP479	5-10-95	5-14-95	508	14837	1099	524	28.3	2.1	✓	KC	2'-4' SDS-I
6-3-95				606	26281	1465	457	57.5	3.2		WW	River Bank BH#13
5-11-95	RFL-SS-8225 480 VP479	5-10-95	5-14-95	410	17157	970.0	569	30.2	1.7	✓	KC	4'-6' SDS-I
6-3-95				546	29108	1860	495	58.8	3.8		WW	River Bank BH#13
5-11-95	RFL-SS-8226 480 VP479	5-10-95	5-14-95	510	19427	1157	506	38.4	2.3	✓	KC	0-2' SDS-I
6-3-95				444	32665	1765	448	72.9	3.9		WW	River Bank BH#14
5-11-95	RFL-SS-8227 480 VP479	5-10-95	5-14-95	412	19494	1302	504	38.7	2.6	✓	KC	2'-4' SDS-I
6-3-95				608	29661	1159	455	65.2	2.5		WW	River Bank BH#14
5-11-95	RFL-SS-8228 480 VP479	5-10-95	5-14-95	512	24768	1427	637	38.9	2.2	✓	KC	4'-6' SDS-I
6-3-95				548	33341	2034	615	54.2	3.3		WW	River Bank BH#14
5-11-95	RFL-SS-8229 480 VP479	5-10-95	5-14-95	414	10979	821.4	456	24.1	1.8	✓	KC	0-2' SDS-K ICC 5-11-95
6-3-95				446	19199	1066	378	50.8	2.8		WW	River Bank BH#15
5-11-95	RFL-SS-8230 480 VP479	5-10-95	5-14-95	514	9818	1359	497	19.8	2.7	✓	KC	2'-4' SDS-K BH#15
6-3-95				610	17317	1224	428	40.5	2.9		WW	River Bank
5-11-95	RFL-SS-8231 480 VP479	5-10-95	5-14-95	416	7119	786.5	433	16.4	1.8	✓	KC	0-2' SDS-L BH#16
6-3-95				550	11493	1301	384	29.9	3.4		WW	River Bank
5-11-95	RFL-SS-8232 480 VP479	5-10-95	5-14-95	516	4665	886.8	547	8.5	1.6	✓	KC	2'-4' SDS-L BH#16
6-3-95				448	6398	970.0	513	12.5	1.9		WW	River Bank
5-11-95	RFL-SS-8233 480 VP479	5-10-95	5-14-95	420	7275	891.3	564	12.9	1.6	✓	KC	4'-6' SDS-L BH#16
6-3-95				612	11445	1233	534	21.4	2.3		WW	River Bank

Site Correction Factor = 1.8

HP Correction Factor (if applicable) = 1.7

Count Time = 500 Secs, unless otherwise noted

COPY

REVIEWED BY: John R. Tomel
Site HP Manager

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Se[illegible]s, Inc.

OCS SAMPLE LOG

SITE NAME RIFLE, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/C RR 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
5-11-95	RFL-SS-8264 K-22-13	5-11-95		482	287.6	1066	632	0.46	1.7	✓	WDW	TH-230 C/F
5-11-95	RFL-SS-8265 K-22-14	5-11-95		582	452.6	713.3	708	0.64	1.0	✓	WDW	TH-230 C/F
5-11-95	RFL-SS-8266 K-22-15	5-11-95		484	553.7	707.8	747	0.74	0.95	✓	WDW	TH-230 C/F
5-11-95	RFL-SS-8267 K-23-01	5-11-95		584	551.5	828.9	733	0.75	1.1	✓	WDW	TH-230 C/F
5-11-95	RFL-SS-8268 K-23-06	5-11-95		486	594.2	734.0	720	0.83	1.0	✓	WDW	TH-230 C/F
5-11-95	RFL-SS-8269 K-23-11	5-11-95		586	338.7	838.6	737	0.46	1.1	✓	WDW	TH-230 C/F
5-11-95	RFL-SS-8270 ~~K-7~~ L-29-02	5-11-95		488	335.2	1031	454	0.74	2.3	✓	WDW	TH-230 C/F
5-11-95	RFL-SS-8271	5-11-95	5-14-95	588	3083	954.2	504	6.1	1.9	✓	WDW	Sup. STD. "-A" 0-2"
6-3-95	Vp 480 ~~479~~ RR			558	6031	1041	414	14.6	2-5		WDW	RIVER BANK. BH#3
5-11-95	RFL-SS-8272	5-11-95	5-14-95	490	4778	970.0	593	8.1	1.6	✓	WDW	Sup. STD. "-A" 2-4'
6-3-95	Vp 480 ~~479~~ RR			456	8250	786.5	488	16.9	1.6		WDW	RIVER BANK BH#3
5-11-95	RFL-SS-8273	5-11-95	5-14-95	590	3768	1128	673	5.6	1.7	✓	WDW	Sup. STD. "-A1" 0-2'
6-3-95	Vp 480 ~~479~~ RR			620	6025	1048	572	10.5	1.8		WDW	RIVER BANK BH#2

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.7

Count Time = 500 SEC. unless otherwise noted

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Site HP Manager

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Se , Inc.

OCS SAMPLE LOG

SITE NAME RIFLE, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
5-11-95	RFL-SS-8314			4032	1201	1119	700	1.7	1.6	✓	WM	Sup. STD. "-I" 4-6'
6-3-95	Vp 480/479 RR	5-11-95	5-14-95	488	902.4	1188	611	1.5	1.9		WM	Top of Rock
5-11-95	RFL-SS-8315			5032	1754	973.5	702	2.5	1.4	✓	WM	Sup. STD. "-I" 4-6'
6-3-95	Vp 480/479 RR	5-11-95	5-14-95	592	2626	1041	608	4.3	1.7		WM	River Bank
5-11-95	RFL-SS-8316			4034	4962	830.1	587	8.5	1.4	✓	WM	Sup. STD. "-I" 6-8'
6-3-95	Vp 480/479 RR	5-11-95	5-14-95	490	8075	1241	491	16.4	2.5		WM	River Bank
5-11-95	RFL-SS-8317			5034	36819	1793	515	71.5	3.5	✓	WM	Sup. STD. "A" 0-2'
6-3-95	Vp 480/479 RR	5-11-95	5-14-95	648/6628	59539	2244	424	140.4	5.3		WM	River Bank BH#5
5-11-95	RFL-SS-8318			4036	22472	996.2	370	60.7	2.7	✓	WM	Sup. STD. "A" 2-4'
6-3-95	Vp 480/479 RR	5-11-95	5-14-95	650	40526	1382	227	178.5	6.1		WM	River Bank BH#5
5-11-95	RFL-SS-8319			5036	11262	1002	468	24.1	2.1	✓	WM	Sup. STD. "B" 0-2'
6-3-95	Vp 480/479 RR	5-11-95	5-14-95	594	20071	1484	381	52.7	3.9		WM	River Bank BH#6
5-11-95	RFL-SS-8320			4038	16065	1258	553	29.1	2.3	✓	WM	Sup. STD. "B" 2-4'
6-3-95	Vp 480/479 RR	5-11-95	5-14-95	492	28347	1521	486	58.3	3.1		WM	BH#6
5-11-95	RFL-SS-8321			5038	28874	1494	600	48.1	2.5	✓	WM	Sup. STD. "B" 4-6'
6-3-95	Vp 480/479	5-11-95	5-14-95	652	47667	1827	496	96.1	3.7		WM	BH#6
5-12-95	RFL-SS-8322			4040	145.4	1180	513	0.28	2.3	✓	WM	Sup. STD. "B" 6-8'
6-3-95	Vp 480/479	5-11-95	5-14-95	596	761.5	896.4	422	1.8	2.1		WM	BH#6
5-12-95	RFL-SS-8323			5040	24730	1263	237	104.3	5.3	✓	WM	Sup. STD. "C" 0-2'
6-3-95	Vp 480/479	5-11-95	5-14-95	494	50677	1800	149	340.1	12.1		WM	River Bank BH#7

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.7

Count Time = 500 SEC., unless otherwise noted

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Site RP Manager

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Se , Inc.

OCS SAMPLE LOG

SITE NAME Rifle, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
5-12-95	RFL-SS-8324	5-11-95	5-14-95	4042	25591	1267	338	75.7	3.7	✓	WMJ	Sup. STD. "C"
6-3-95	VP 480 479 RR			654	4893	1910	212	227.3	9.0		WMJ	2-4' RIVER BANK BH#7
5-12-95	RFL-SS-8325	5-11-95	5-14-95	5042	604.6	636.2	529	1.1	1.2	✓	WMJ	Sup. STD. "C"
6-3-95	VP 480 479 RR			598	760.5	751.8	461	1.6	1.4		WMJ	4-6' RIVER BANK BH#7
5-12-95	RFL-SS-8326	5-11-95	5-14-95	4044	524.3	943.7	544	0.96	1.7	✓	WMJ	Sup. STD. "C"
6-3-95	VP 480 479 RR			496	493.3	255.5 327	377	1.3	1.8		WMJ	6-8' RIVER BANK BH#7
5-12-95	RFL-SS-8327	5-11-95	5-14-95	5044	522.5	819.3	529	0.99	1.5	✓	WMJ	Sup. STD. "D"
6-5-95	VP 480 479 RR			500	780.2	722.9	381	2.0	1.9		WMJ	0-2' RIVER BANK BH#8
5-12-95	RFL-SS-8328	5-11-95	5-14-95	4046	102470	3373	545	188.0	6.2	✓	WMJ	Sup. STD. "D"
6-5-95	VP 480 479 RR			400	179910	6493	465	386.9	14.0		WMJ	2-4' RIVER BANK BH#8
5-12-95	RFL-SS-8329	5-11-95	5-14-95	5046	29559	1783	546	54.1	3.3	✓	WMJ	Sup. STD. "D"
6-5-95	VP 480 479 RR			502	51680	2805	466	110.9	6.0		WMJ	4-6' RIVER BANK BH#8
5-12-95	RFL-SS-8330	5-11-95	5-14-95	4048	30362	1389	396	76.7	3.5	✓	WMJ	Sup. STD. "D"
6-5-95	VP 480 479 RR			402	58325	2324	319	182.8	7.3		WMJ	6-8' RIVER BANK BH#8
5-12-95	RFL-SS-8331	5-11-95	5-14-95	5048	9109	1022	686	13.3	1.5	✓	WMJ	Sup. STD. "E"
6-5-95	VP 480 479 RR			504	14129	1407	615	23.0	2.3		WMJ	0-2' RIVER BANK BH#9
5-12-95	RFL-SS-8332	5-11-95	5-14-95	4050	589.4	751.5	593	0.99	1.3	✓	WMJ	Sup. STD. "E"
6-5-95	VP 480 479 RR			404	862.7	611.7	395	2.2	1.5		WMJ	2-4' RIVER BANK BH#9
5-12-95	RFL-SS-8333	5-11-95	5-14-95	5050	36337	1947	688	52.8	2.8	✓	WMJ	Sup. STD. "F"
6-5-95	VP 480 479 RR			506	58577	2930	626	93.6	4.7		WMJ	0-2' RIVER BANK BH#10

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.7

Count Time = 500 SEC, unless otherwise noted

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Site HP Manager

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Se ., Inc.

OCS SAMPLE LOG

SITE NAME Rifle Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH <15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
5-12-95	RFL-SS-8334			4052	4889.7	1861	455	107.5	4.1	✓	WMW	Sup. STD. "F" 2-4'
6-5-95	Vp 480 479 RR	5-11-95	5-14-95	406	929.7	297.1	336	276.7	8.8		WMW	RIVER BANK BH# 10
5-12-95	RFL-SS-8335			5052	343.7	935.0	447	7.7	2.1	✓	WMW	Sup. STD. "F" 4-6'
6-5-95	Vp 470 479 RR.	5-11-95	5-14-95	408	579.6	838.9	359	16.1	2.3		WMW	RIVER BANK BH# 10
5-12-95	RFL-SS-8336			4054	500.4	891.3	561	0.89	1.6	✓	WMW	Sup. STD. "F" 6-8'
6-5-95	Vp 480 479 RR.	5-11-95	5-14-95	508	431.7	848.2	392	1.1	2.2		WMW	RIVER BANK BH# 10
5-12-95	RFL-SS-8337			5054	663.7	674.7	526	1.3	1.3	✓	WMW	Sup. STD. "F" 8-10'
6-5-95	Vp 480 479 RR	5-11-95	5-14-95	510	280.1	1060	399	0.70	2.7		WMW	RIVER BANK BH# 10
5-12-95	RFL-SS-8338			4056	502.0	838.9	537	0.93	1.6	✓	WMW	Sup. STD. "F" 10-12'
6-5-95	Vp 480 479 RR.	5-11-95	5-14-95	410	606.9	734.0	360	1.7	2.0		WMW	RIVER BANK BH# 10
5-15-95	RFL-SS-8339			458	257.4	943.7	629	0.41	1.5		KC	C/F
	J-14-8	5-15-95								✓		Th-230
5-15-95	RFL-SS-8340			558	939.4	645.8	743	1.3	0.87		KC	C/F
	J-14-9	5-15-95								✓		Th-230
5-15-95	RFL-SS-8341			460	1348	~~847.6~~	297 A	1.7	1.1		KC	C/F
	J-14-10	5-15-95								✓		Th-230
5-15-95	RFL-SS-8342			560	2403	6072	619	3.4	0.98		KC	C/F
	K-8-6	5-15-95								✓		Th-230
5-15-95	RFL-SS-8343			462	2033	910.0	680	3.0	1.4		KC	C/F
	K-8-7	5-15-95								✓		Th-230

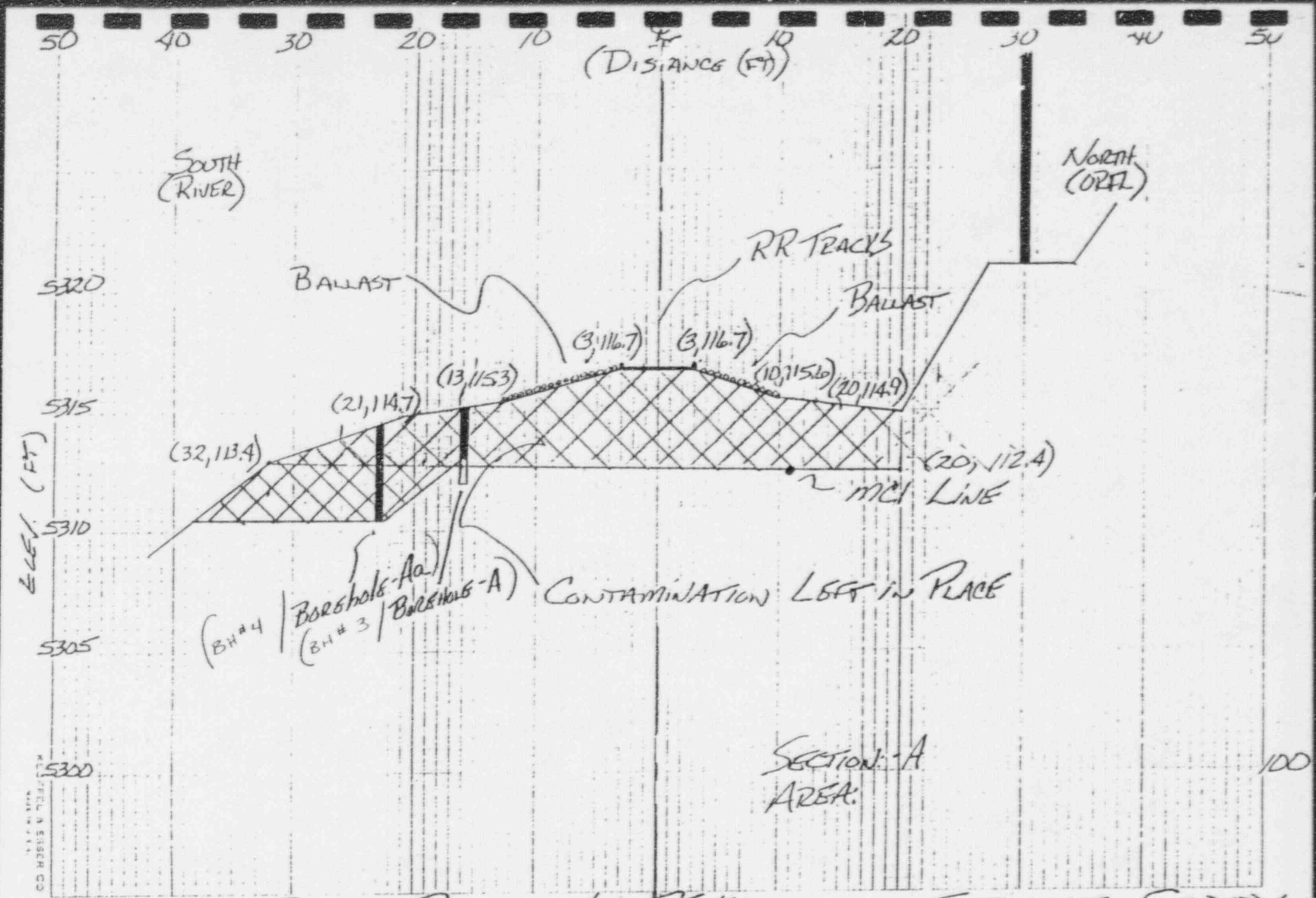
Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.7

For SEC ... unless otherwise noted

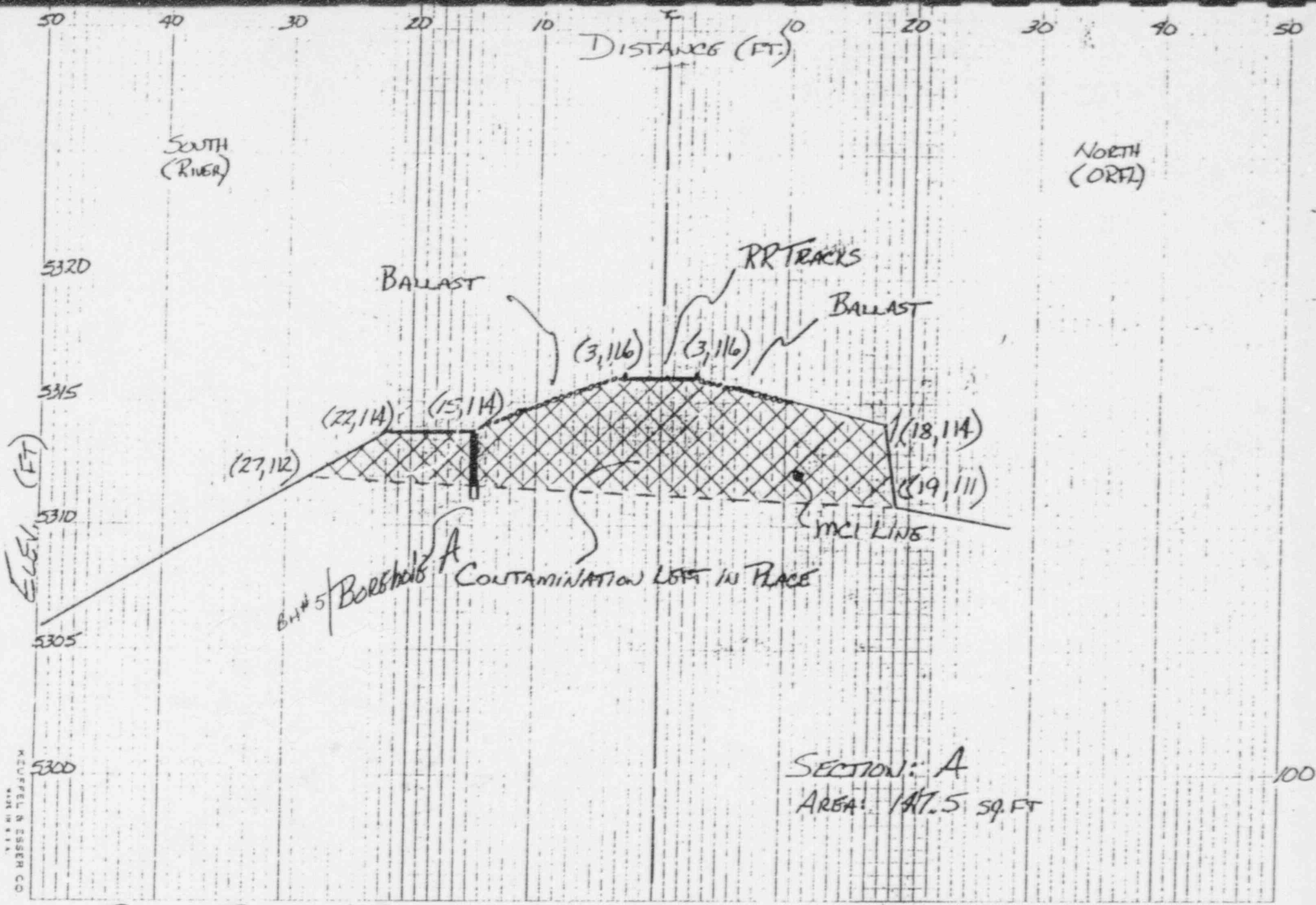
COPY

REVIEWED BY: [signature] Site HP Manager



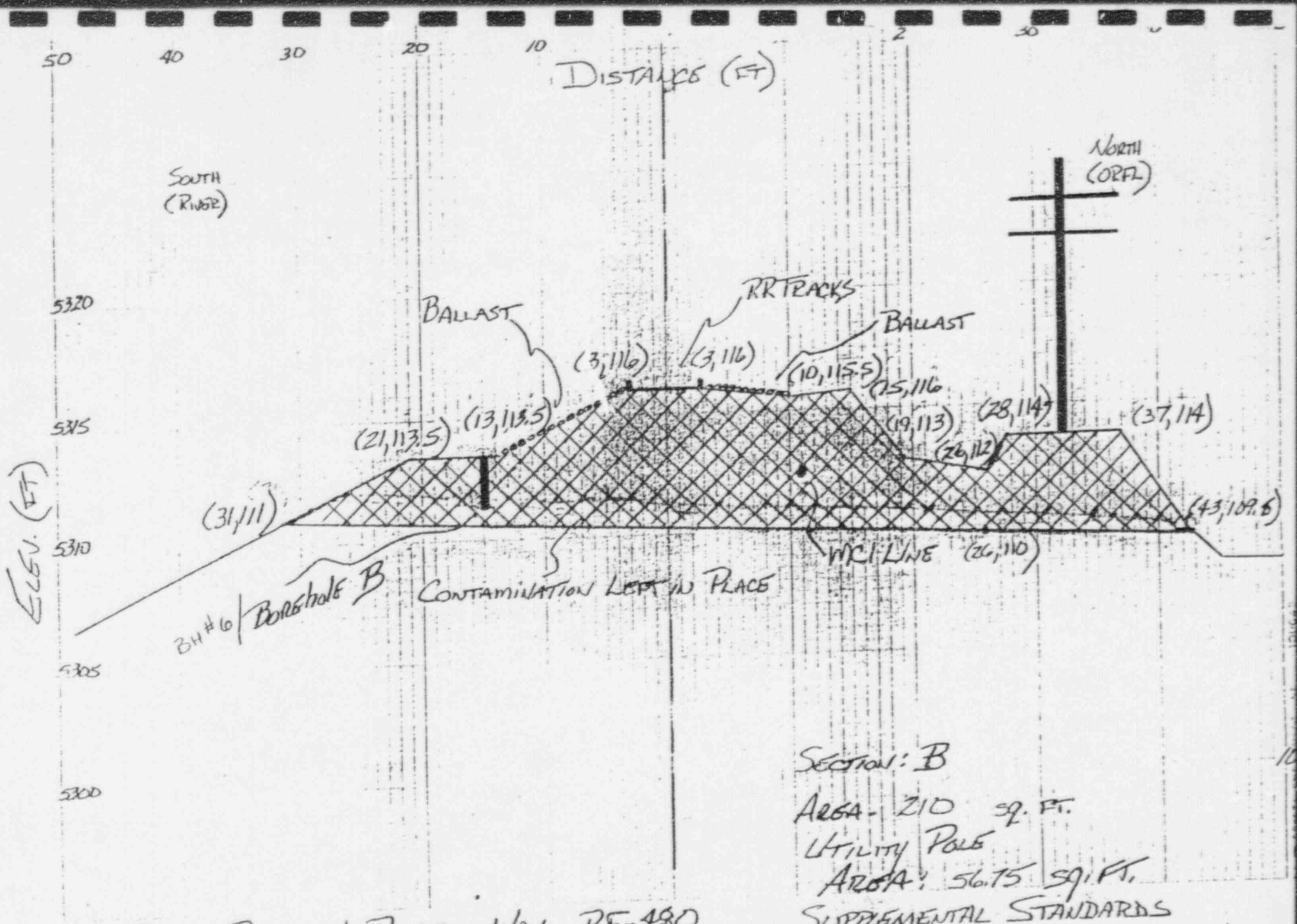
OLD RIFLE - RAILROAD RIGHT OF WAY - RF-480

SUPPLEMENTAL STANDARDS



OLD RIFLE - RAILROAD RIGHT OF WAY - RF-480

SUPPLEMENTAL STANDARDS



SECTION: B

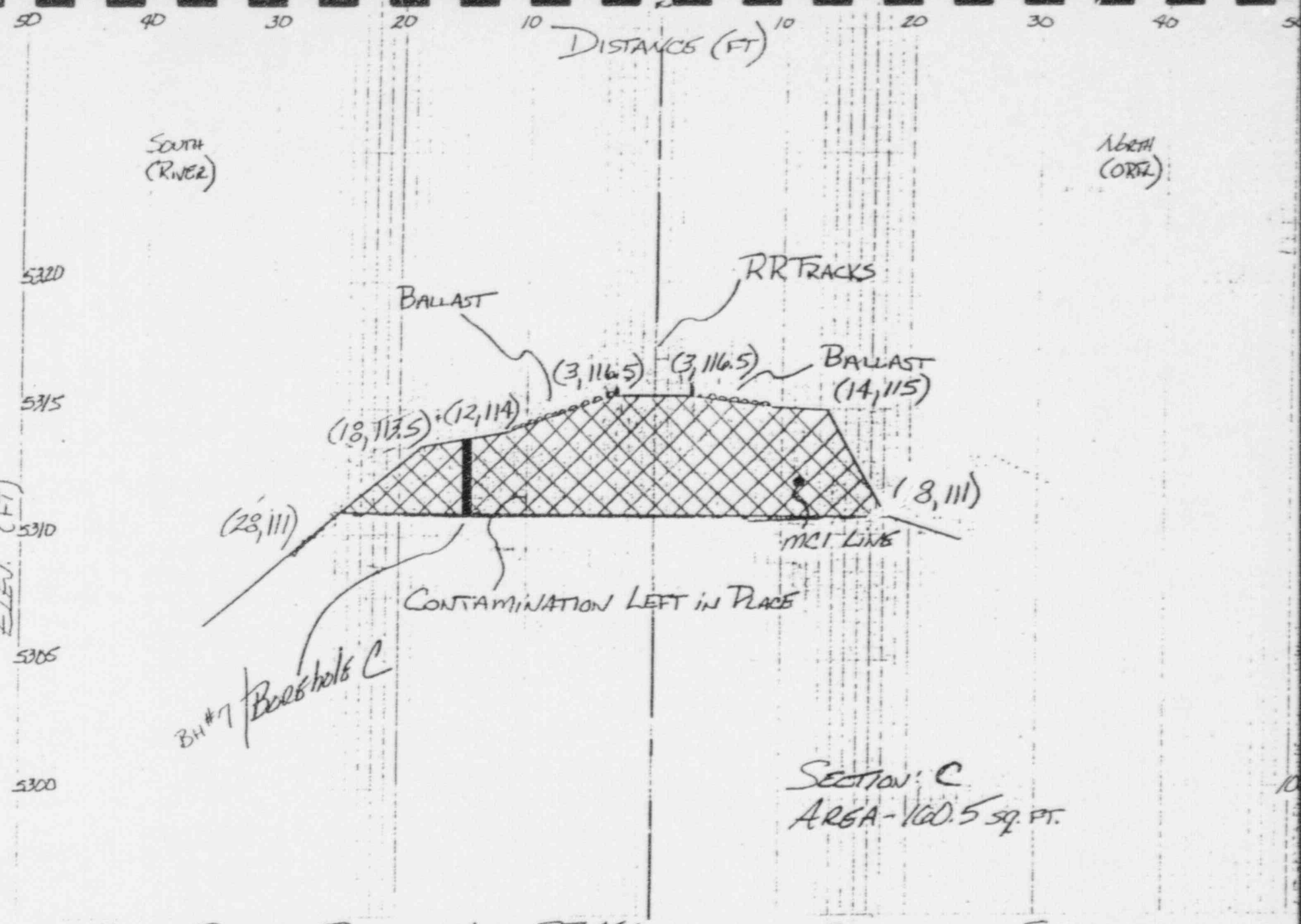
AREA - 210 SQ. FT.

UTILITY POLE

AREA: 56.75 SQ. FT.

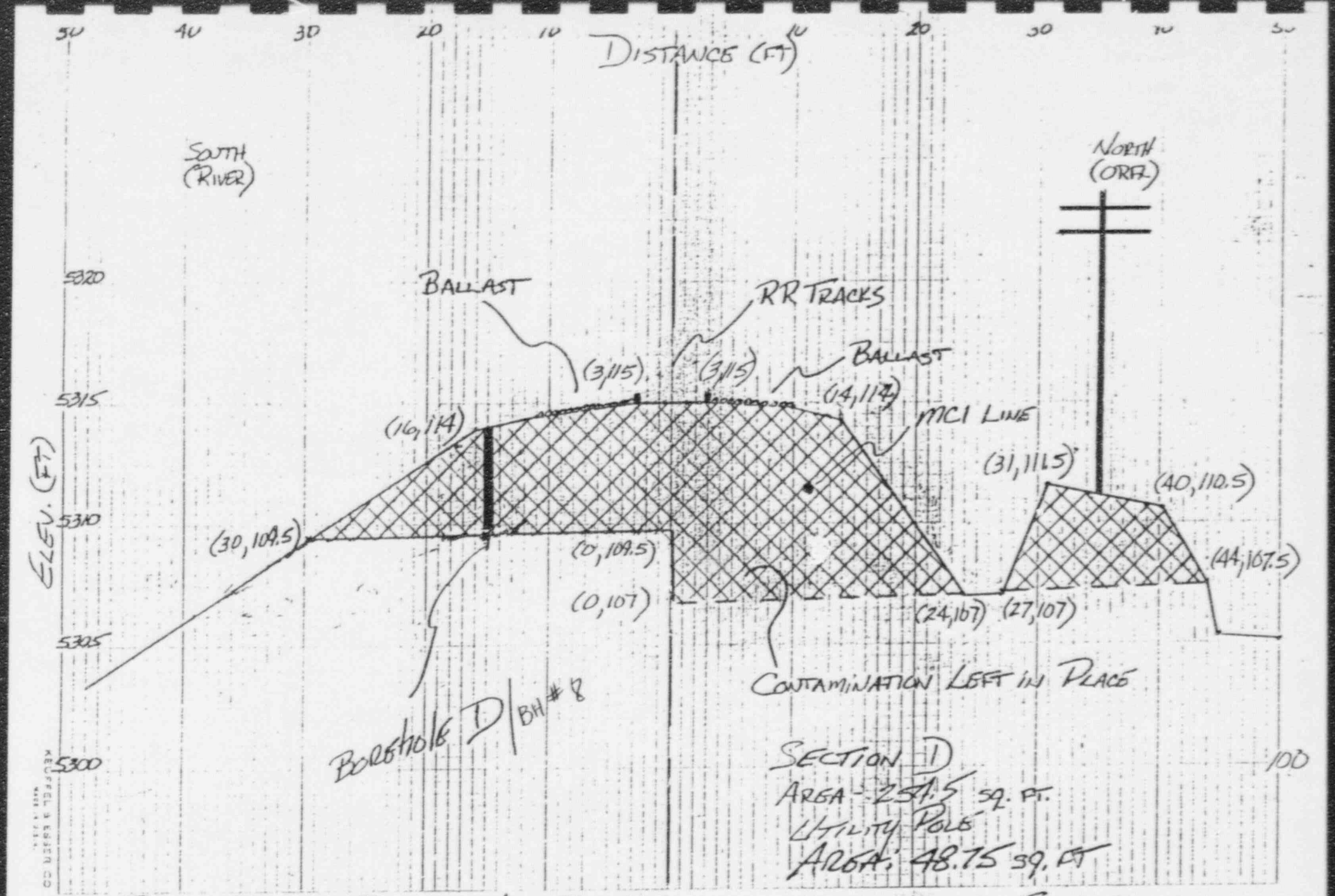
SUPPLEMENTAL STANDARDS

OLD RIFLE - RAILROAD RIGHT OF WAY - RF-480



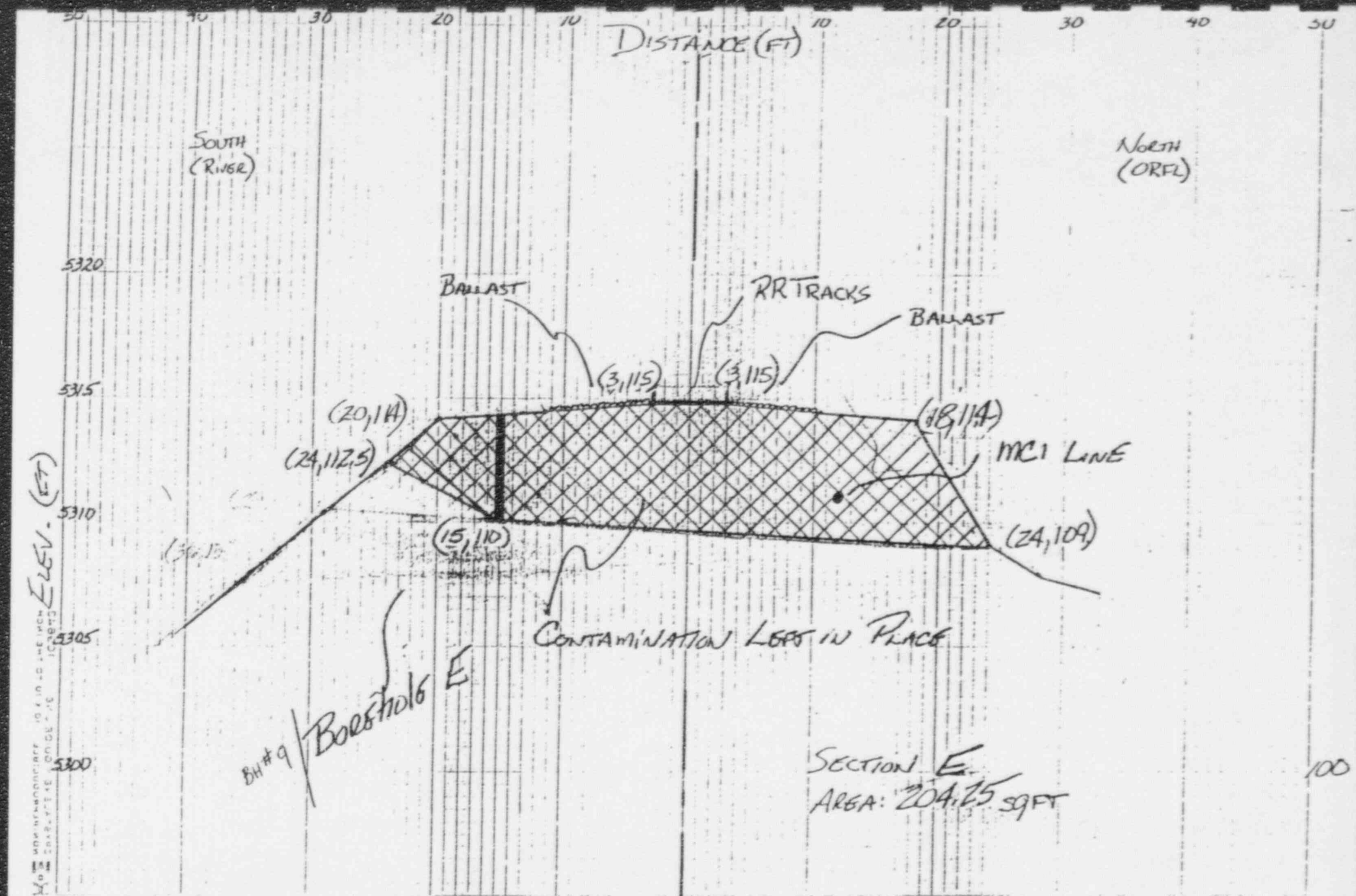
OLD RIFLE - RAILROAD RIGHT OF WAY - RF-480

SUPPLEMENTAL STANDARDS



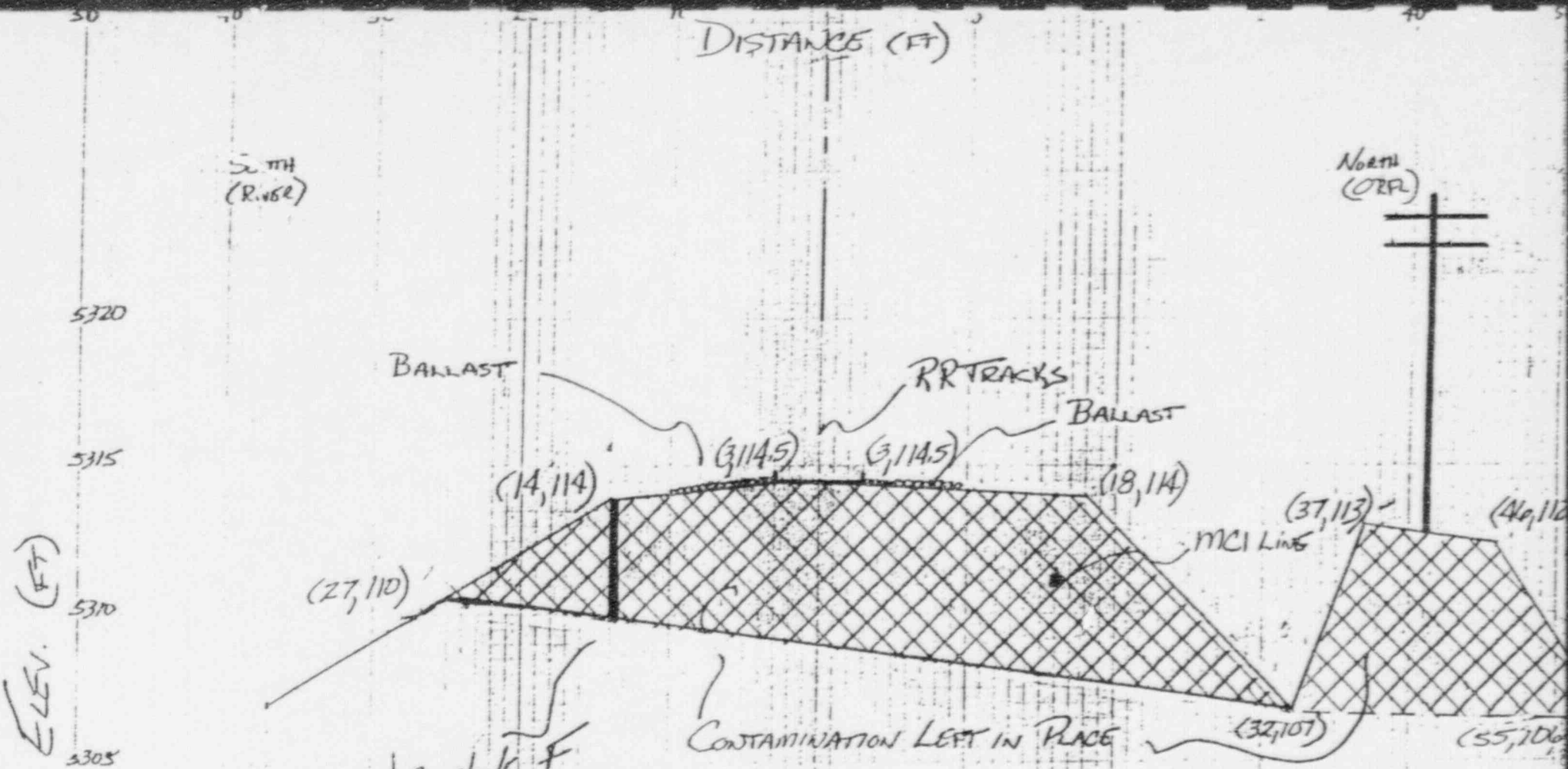
OLD RIFLE - RAILROAD RIGHT OF WAY - RF-480

SUPPLEMENTAL STANDARDS



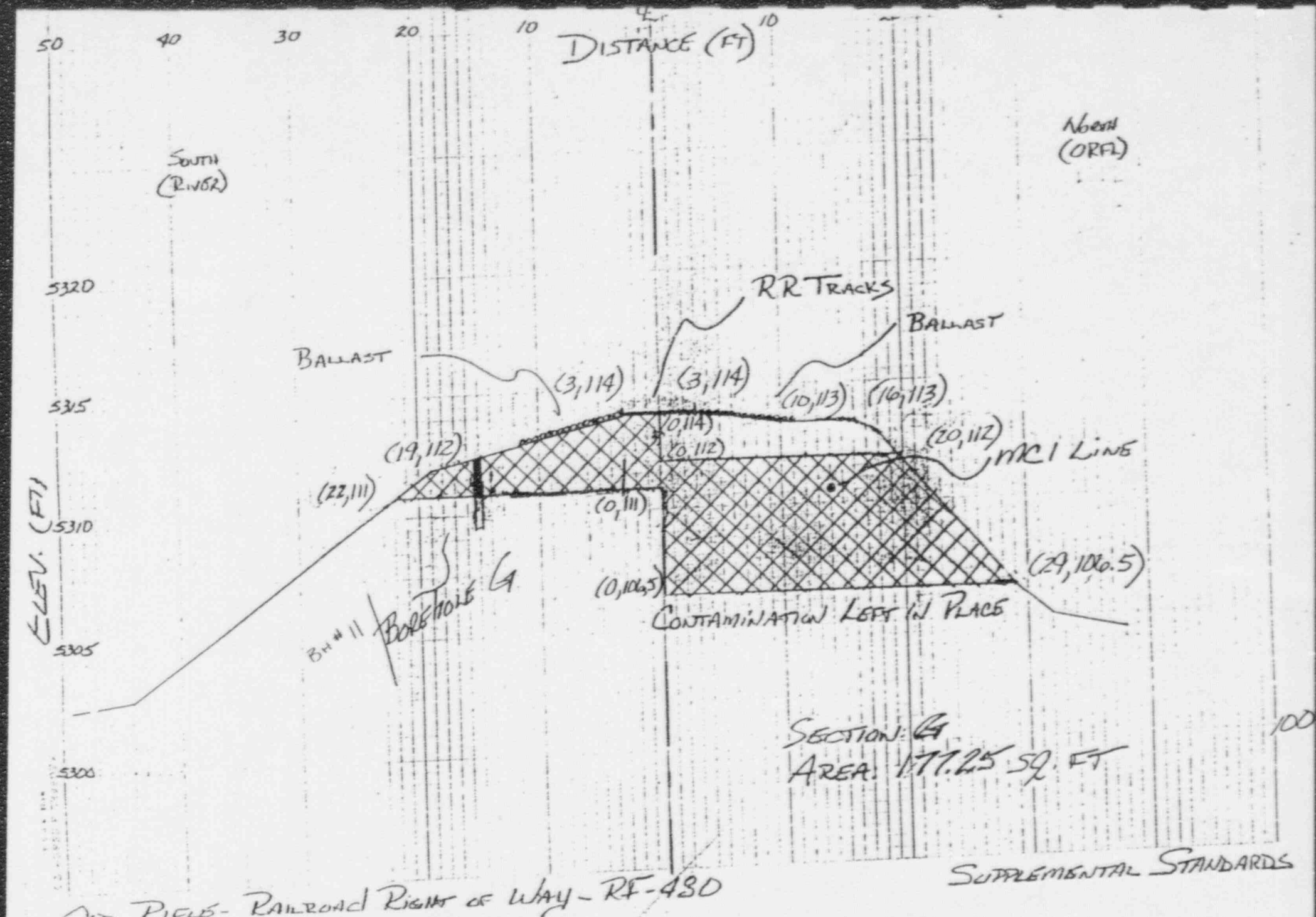
OLD RIFLE - RAILROAD RIGHT OF WAY - RI-480

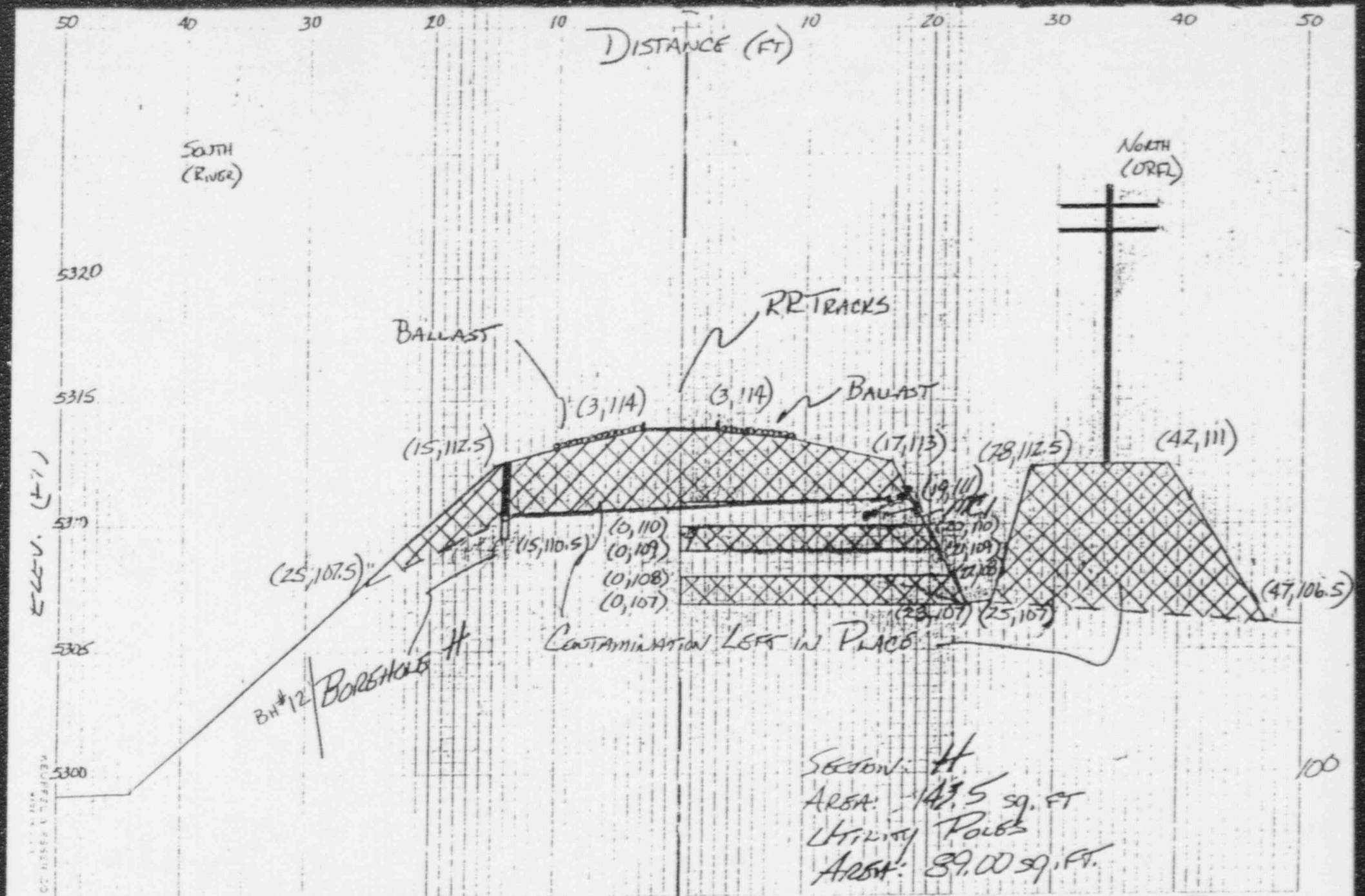
SUPPLEMENTAL STANDARDS



OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480

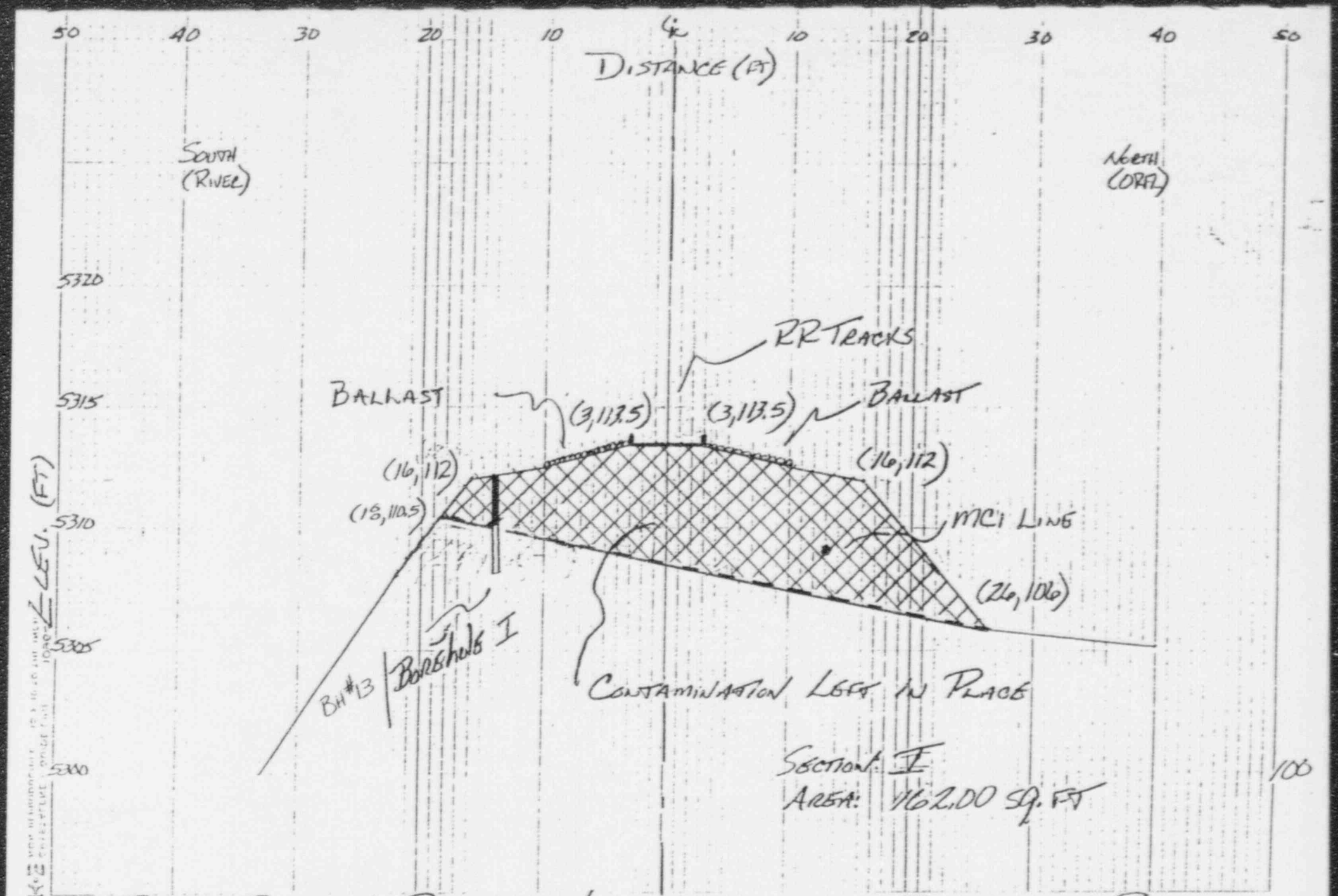
SUPPLEMENTAL STANDAR


50
40
30
20
10
℄
10
DISTANCE (FT)
SOUTH
(RIVER)
NORTH
(ORFL)
5320
5315
5310
5305
5300
ELEV. (FT)
RR TRACKS
BALLAST
BALLAST
(3,114)
(3,114)
(10,113)
(16,113)
(20,112)
(19,112)
(0,114)
(0,112)
(22,111)
(0,111)
(29,106.5)
(0,106.5)
MC1 LINE
BH # 11
BORE HOLE G
CONTAMINATION LEFT IN PLACE
SECTION: G
AREA: 177.25 SQ. FT
100
SUPPLEMENTAL STANDARDS
ODD PIECE - RAILROAD RIGHT OF WAY - RF-430



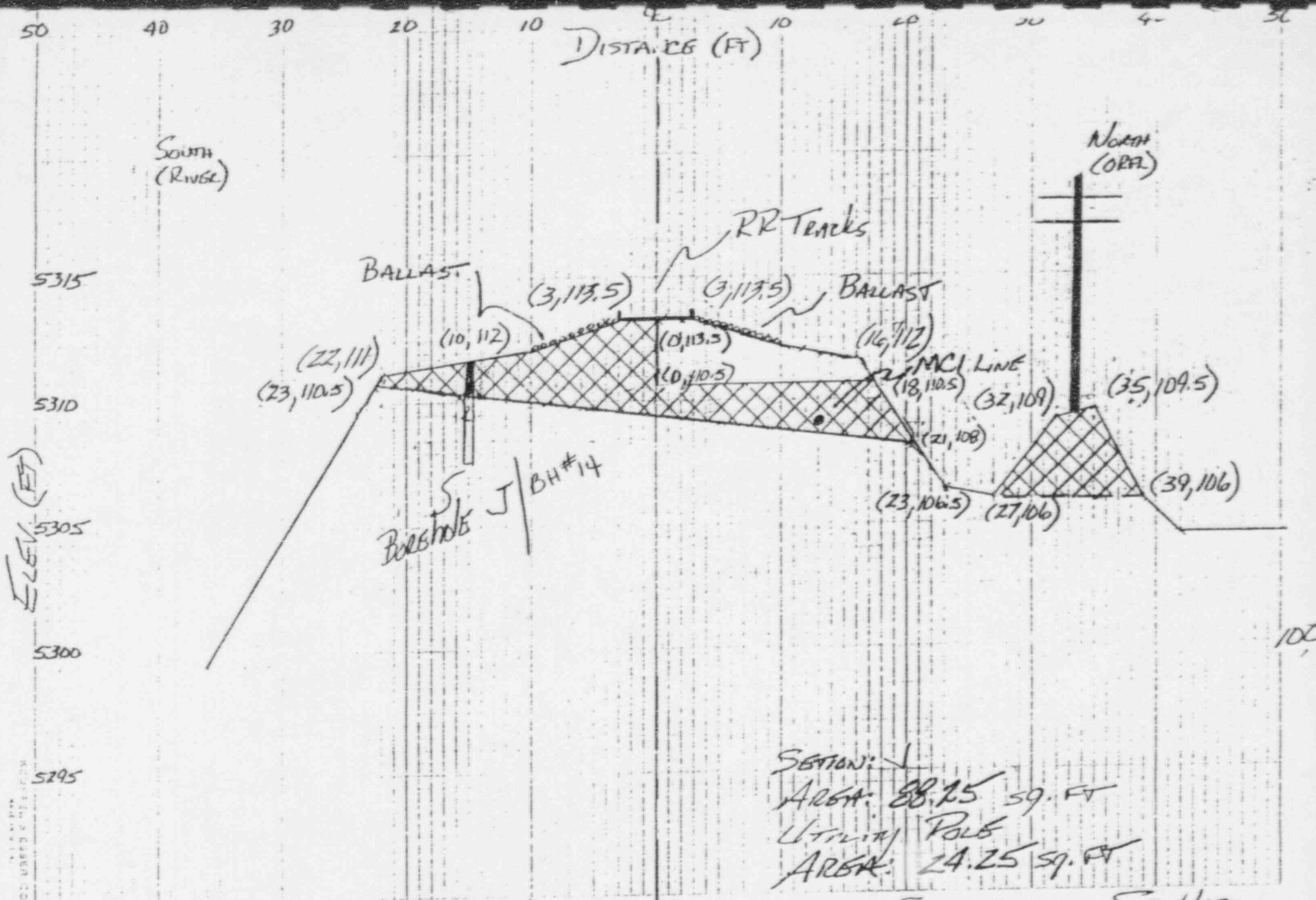
OLD RIFLE - RAILROAD RIGHT OF WAY - RF-480

SUPPLEMENTAL STANDARDS



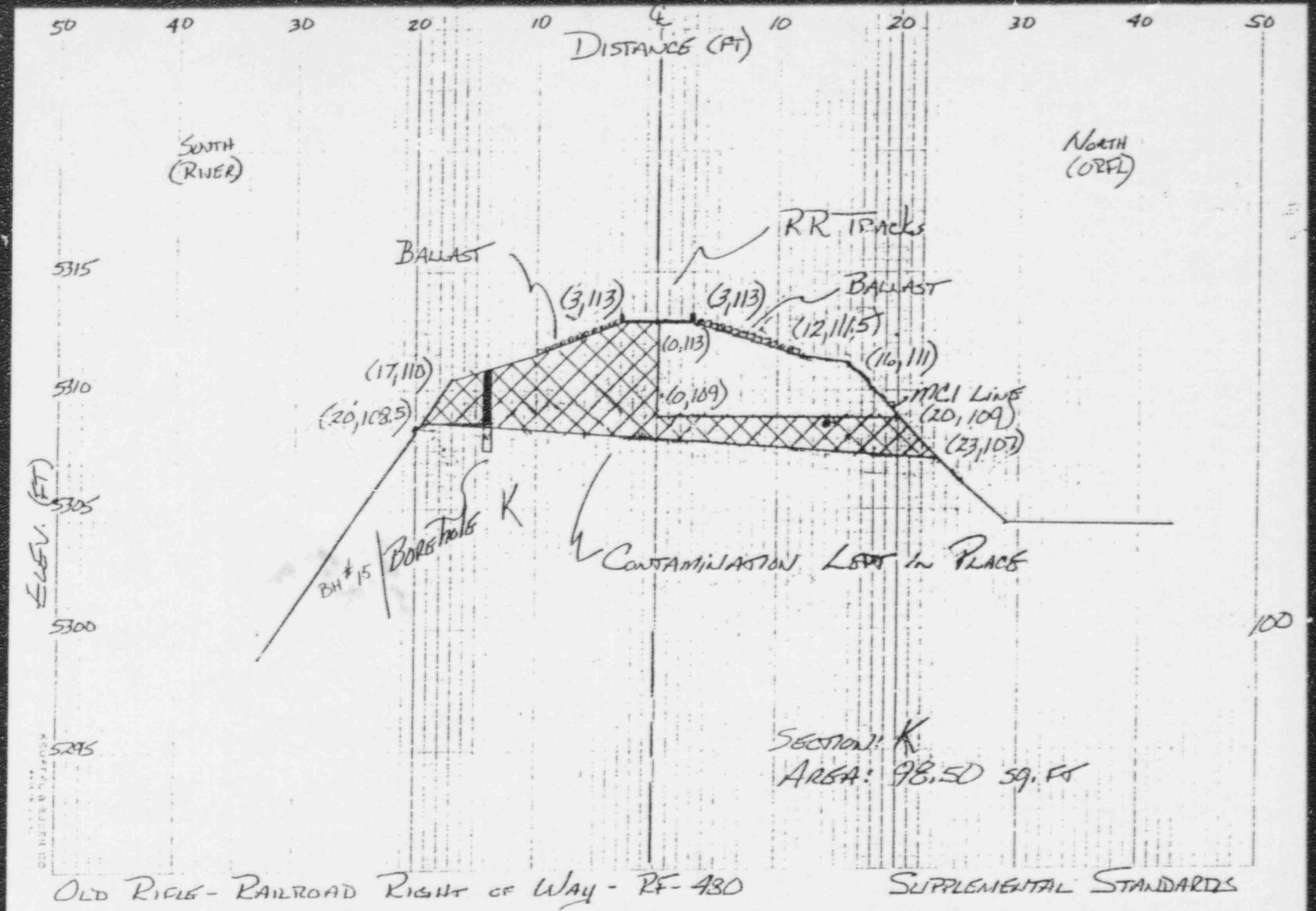
OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480

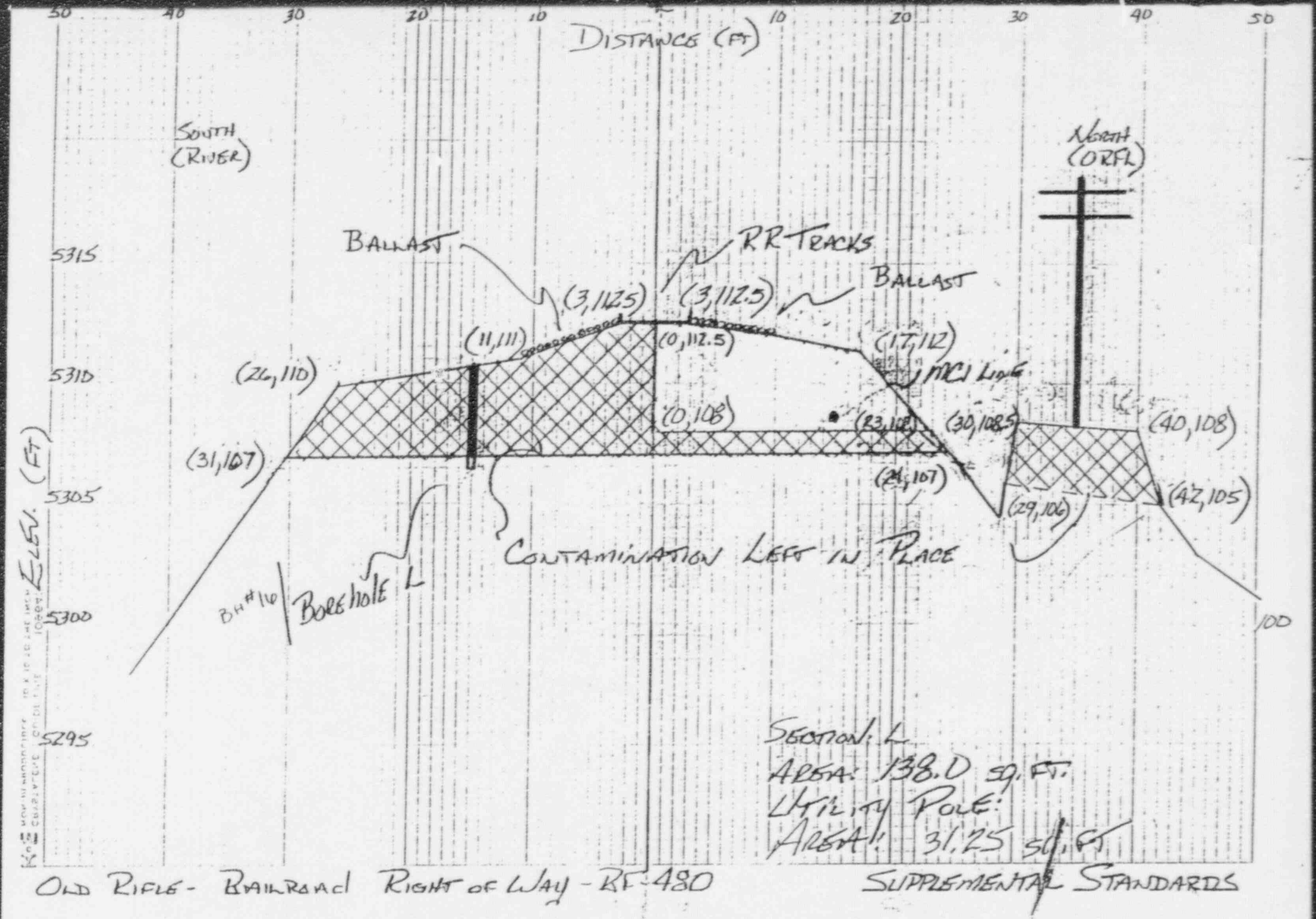
SUPPLEMENTAL STANDARDS



OLD RIFLE - RAILROAD RIGHT OF WAY - RF-480

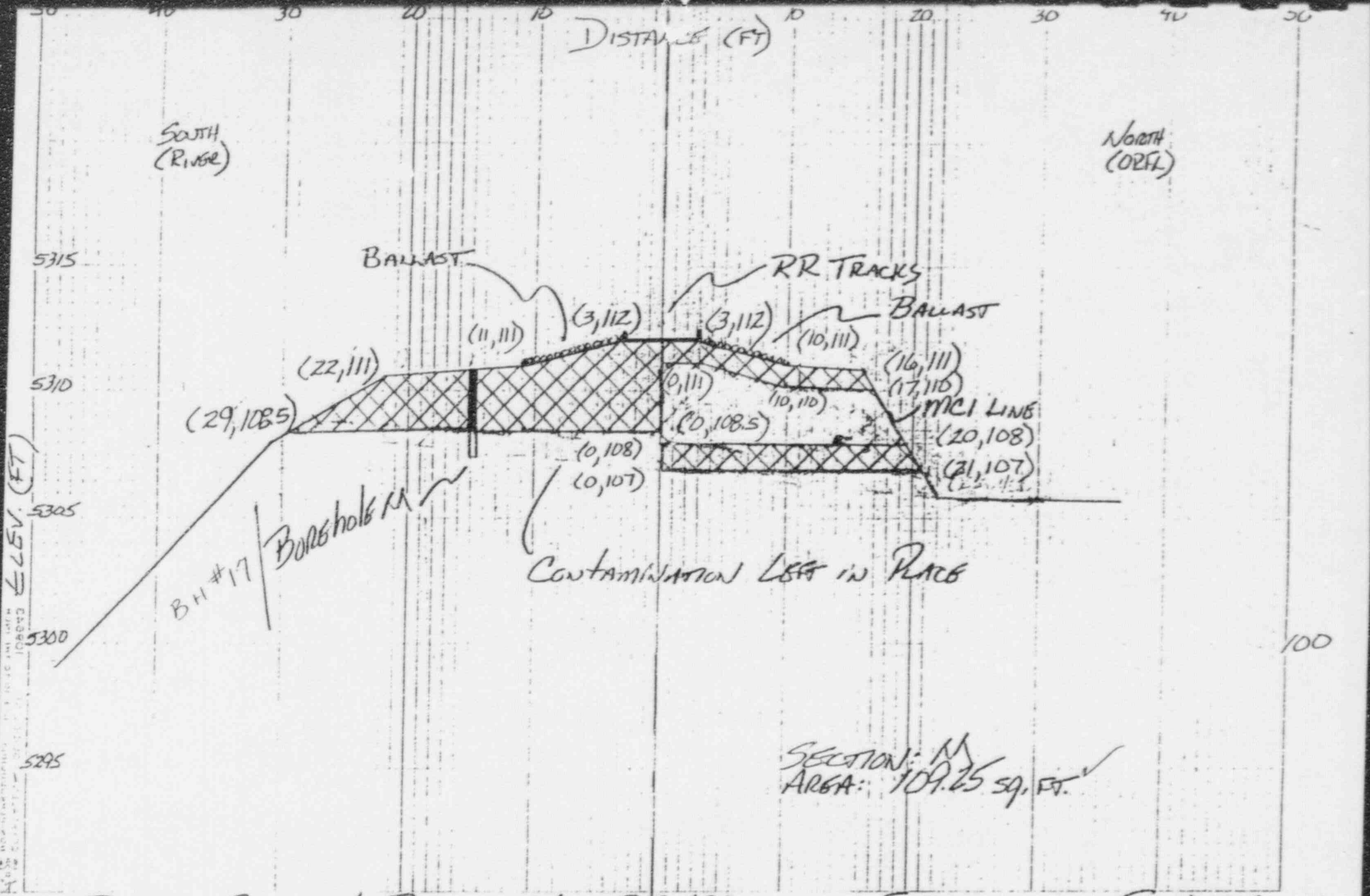
SUPPLEMENTAL STANDARD


50
40
30
20
10
℄
10
20
30
40
50
DISTANCE (FT)
SOUTH (RIVER)
NORTH (ORFL)
RR TRACKS
BALLAST
BALLAST
(3,113)
(3,113)
(12,111.5)
(0,113)
(16,111)
(17,110)
(0,109)
MCI LINE
(20,109)
(20,108.5)
(23,107)
5315
5310
5305
5300
5295
ELEV. (FT)
BH # 15 / BORE HOLE K
CONTAMINATION LEFT IN PLACE
100
SECTION: K
AREA: 98.50 SQ. FT
OLD RIGLE - RAILROAD RIGHT OF WAY - RF-430
SUPPLEMENTAL STANDARDS

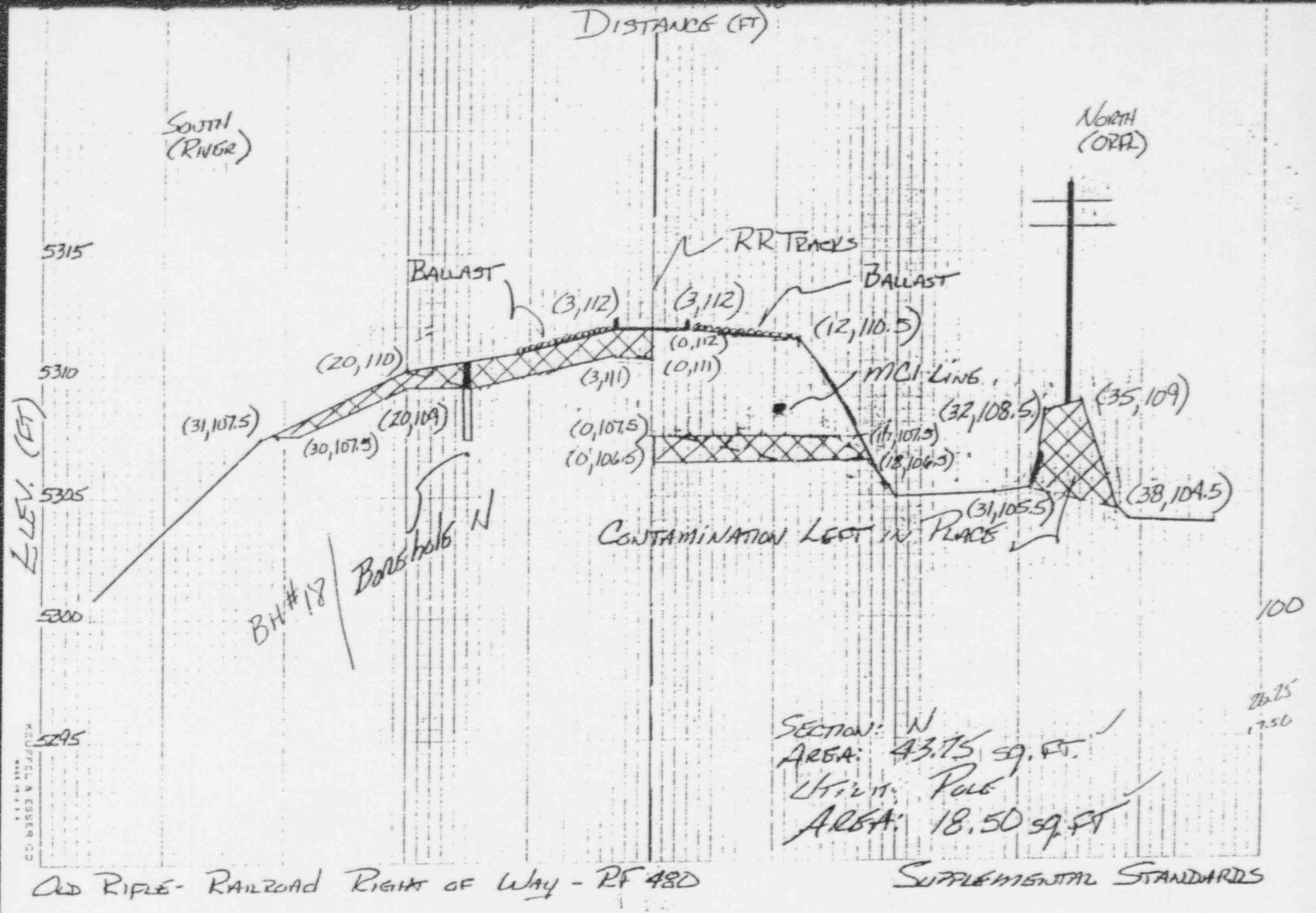


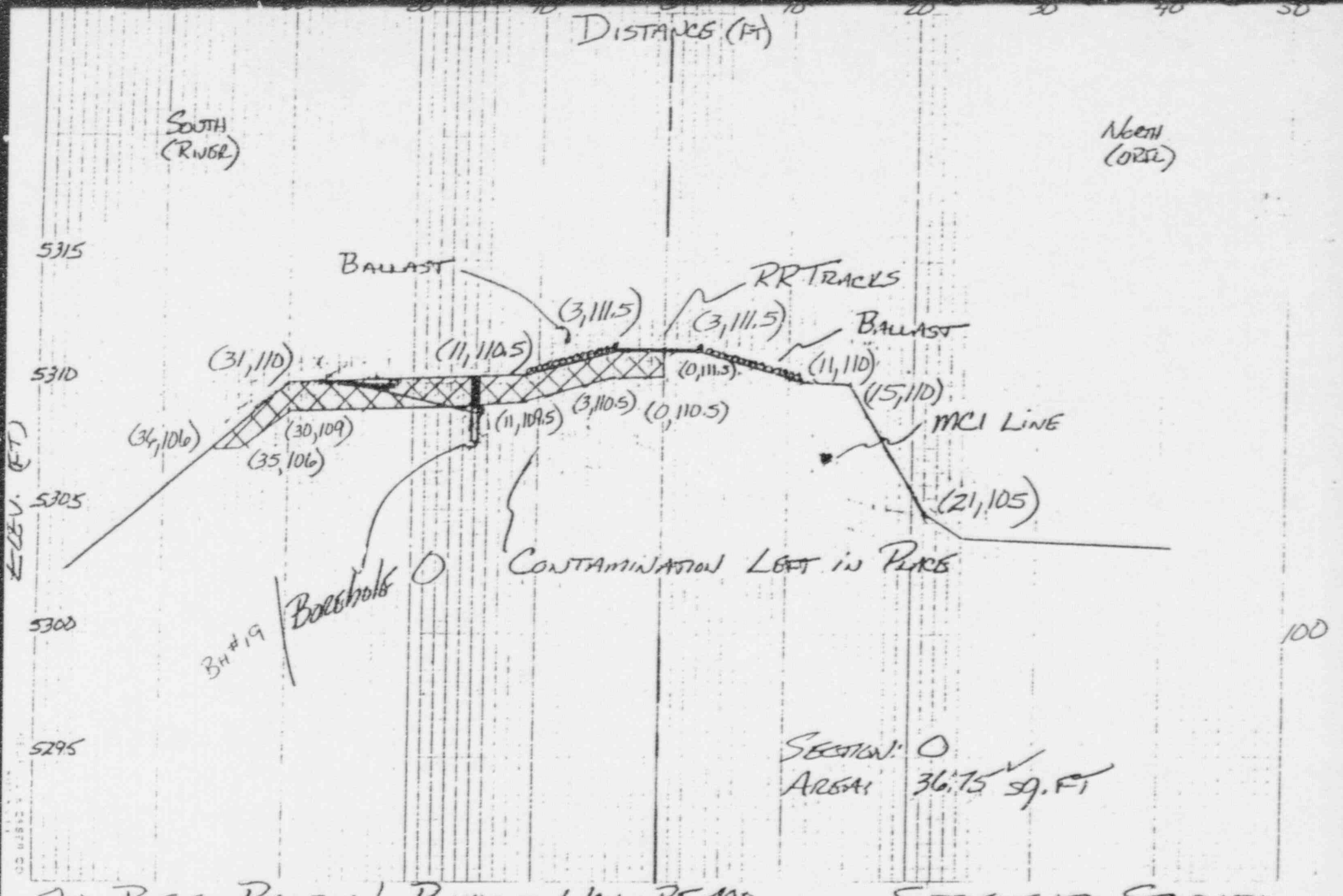
OLD RIFLE - RAILROAD RIGHT OF WAY - RF-480

SUPPLEMENTAL STANDARDS



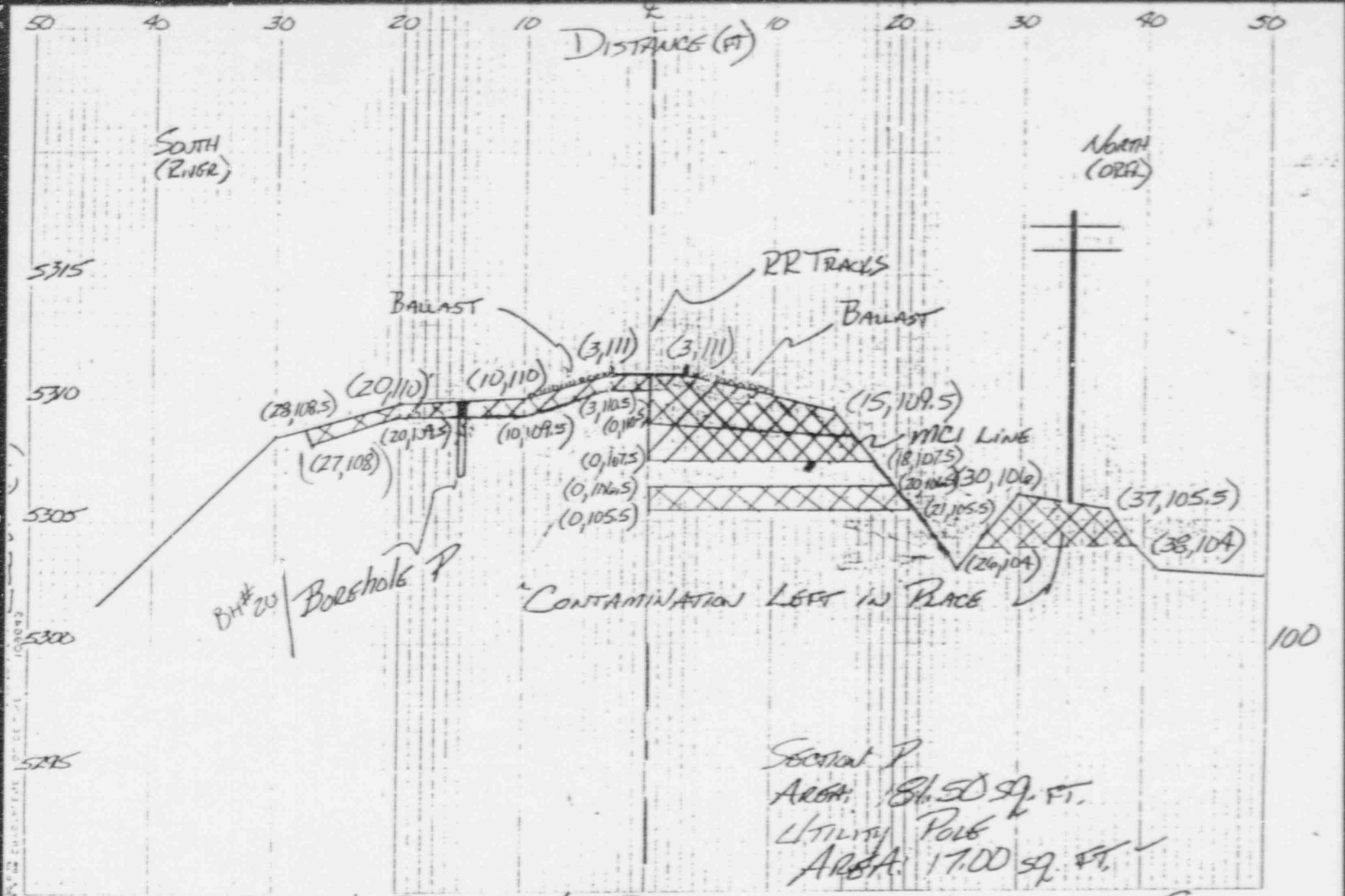
OLD RICE - RAILROAD RIGHT OF WAY - RF-480 SUPPLEMENTAL STANDARDS


DISTANCE (FT)
SOUTH (RIVER)
NORTH (ORR)
ELEV. (FT)
5315
5310
5305
5300
5295
RR TRACKS
BALLAST
BALLAST
(3,112)
(3,112)
(0,112)
(12,110.5)
(20,110)
(3,111)
(0,111)
MCI LINE
(31,107.5)
(30,107.5)
(20,109)
(0,107.5)
(0,106.5)
(11,107.5)
(18,106.5)
(32,108.5)
(35,109)
(38,104.5)
(31,105.5)
CONTAMINATION LEFT IN PLACE
BH #18 / BOREHOLE N
100
SECTION: N
AREA: 43.75 SQ. FT.
UTILITY POLE
AREA: 18.50 SQ. FT
OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480
SUPPLEMENTAL STANDARDS



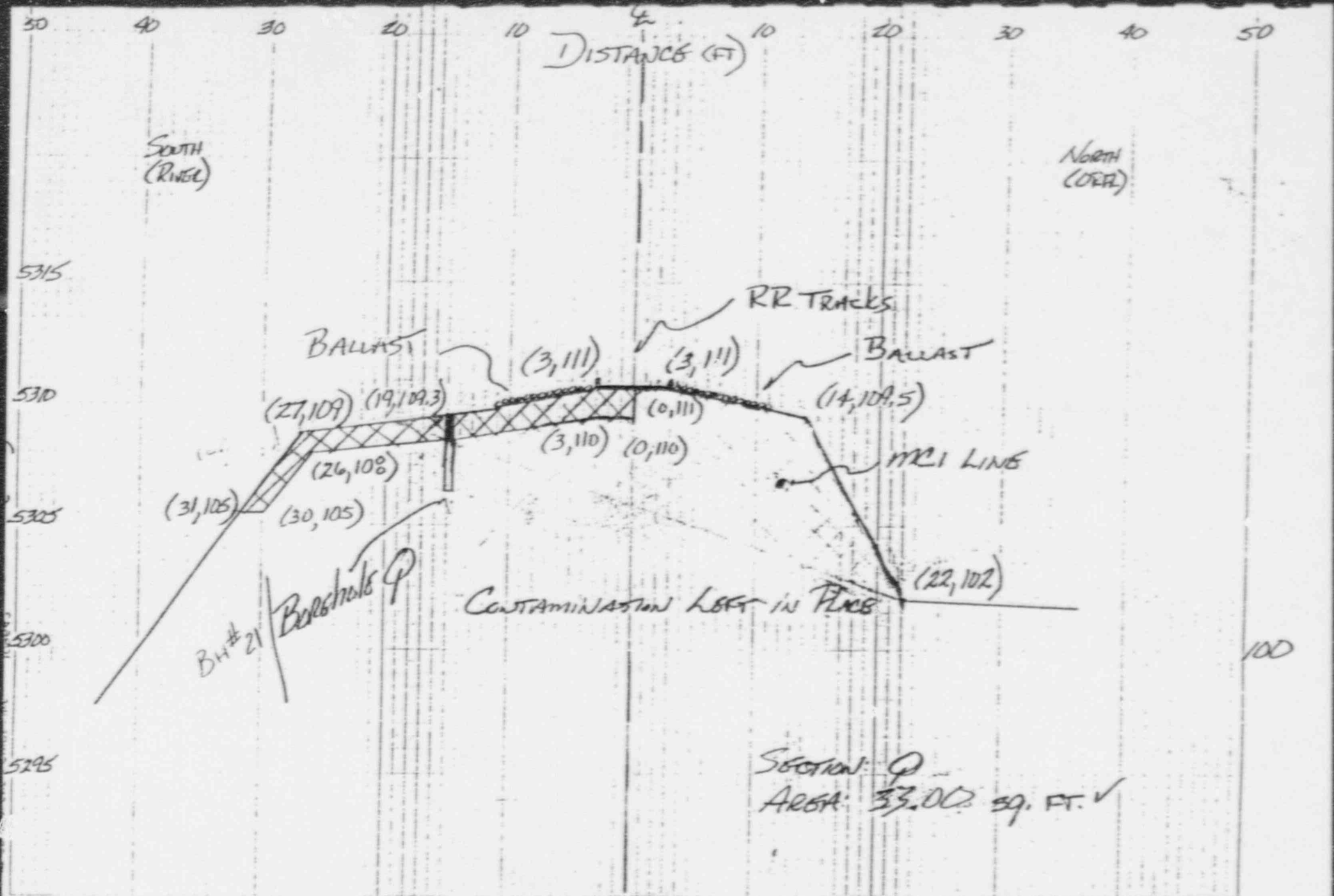
OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480

SUPPLEMENTAL STANDARDS



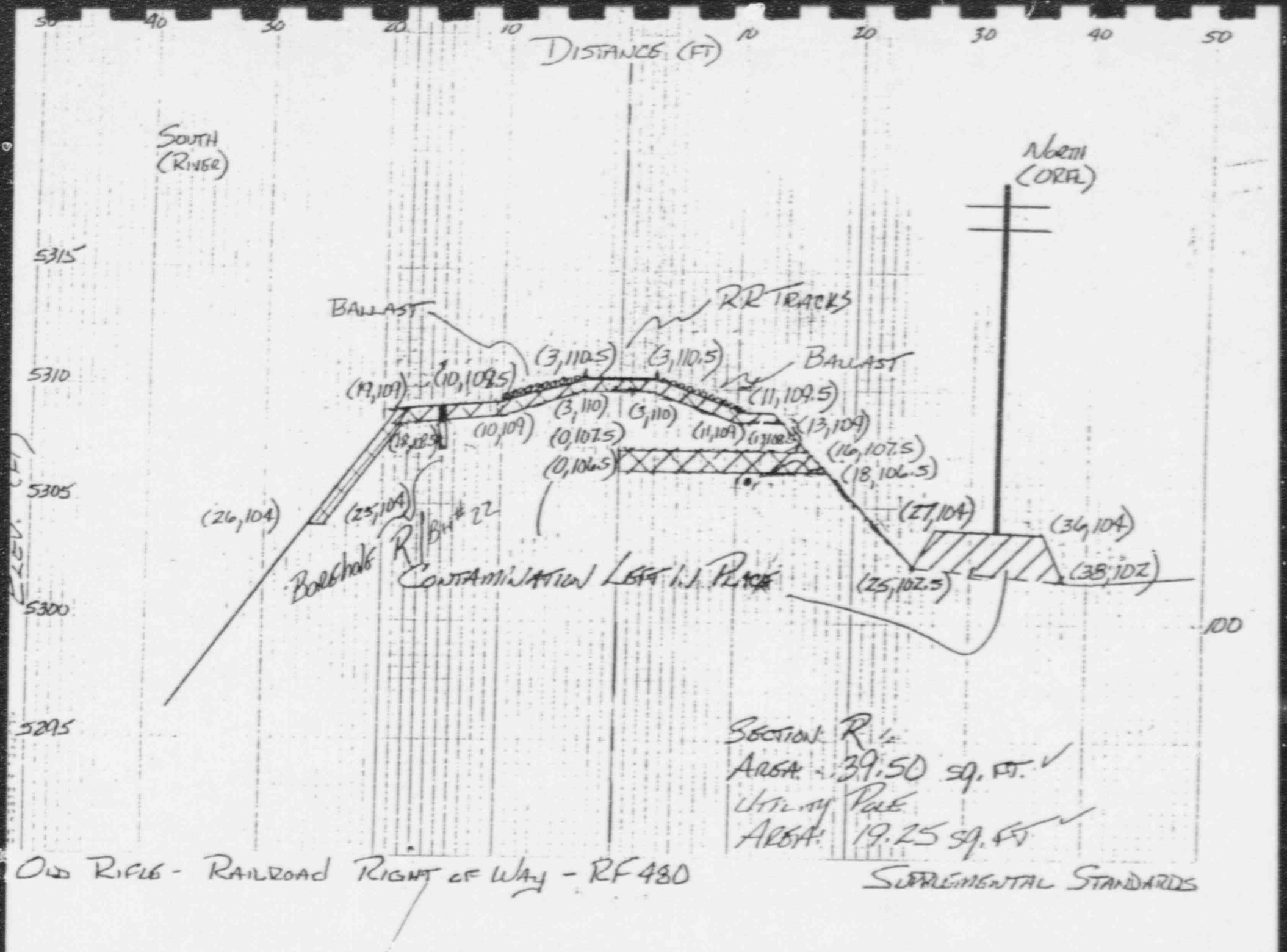
OLD RIFLE - RAILROAD RIGHT OF WAY - RF480

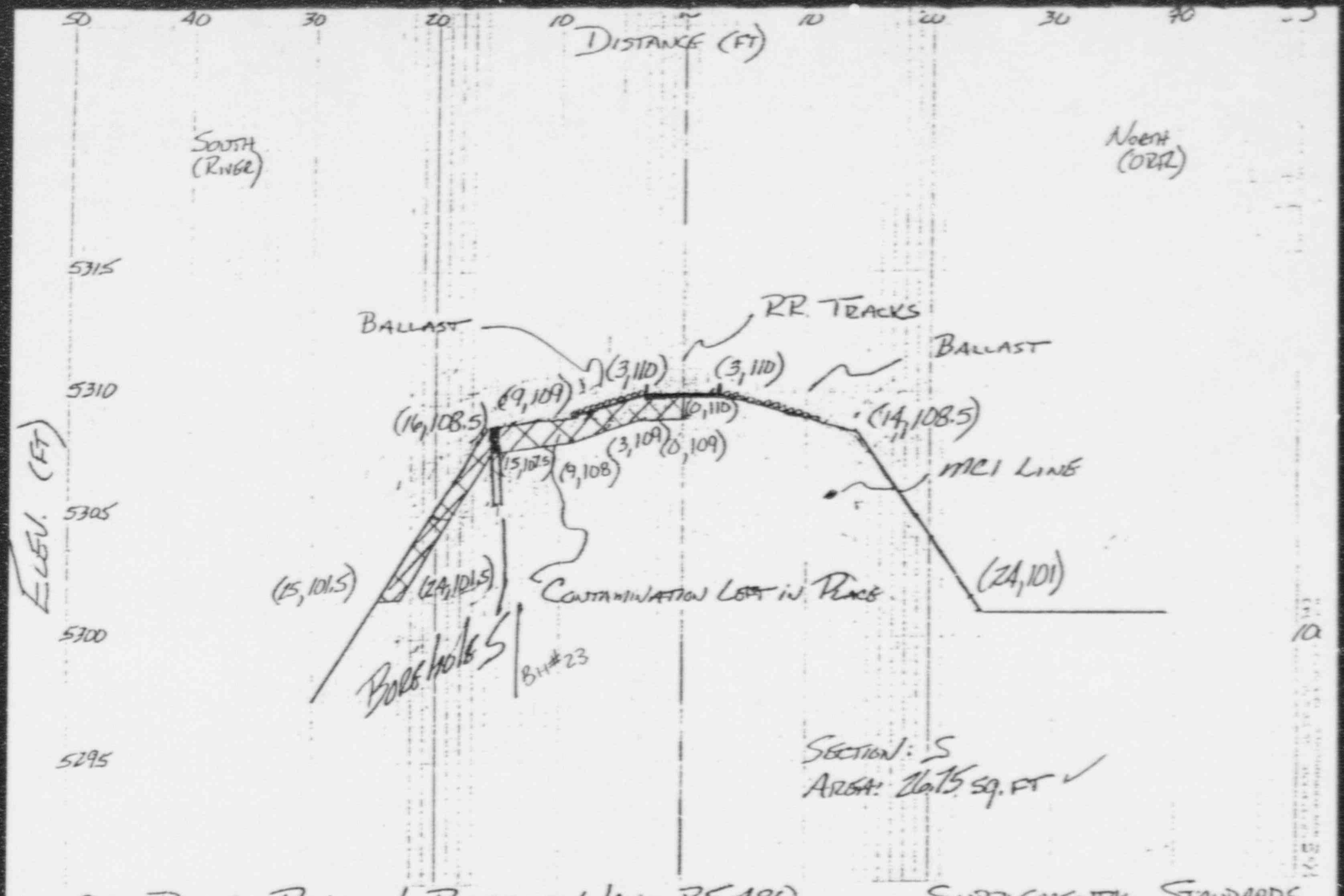
SUPPLEMENTAL STANDARDS



OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480

SUPPLEMENTAL STANDARDS


50 40 30 20 10 0 10 20 30 40 50
DISTANCE (FT)
SOUTH (RIVER)
NORTH (ORE)
5315
5310
5305
5300
5295
BALLAST
RR TRACKS
BALLAST
(3,110.5)
(3,110.5)
(19,104)
(10,108.5)
(11,109.5)
(3,110)
(3,110)
(13,109)
(18,108)
(10,109)
(11,109)
(0,107.5)
(16,107.5)
(0,106.5)
(18,106.5)
(26,104)
(25,104)
(27,104)
(36,104)
(25,102.5)
(38,102)
Borehole R Bh # 22
CONTAMINATION LEFT IN PLACE
100
SECTION R ½
AREA = 39.50 SQ. FT. ✓
UTILITY POLE
AREA: 19.25 SQ. FT ✓
OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480
SUPPLEMENTAL STANDARDS

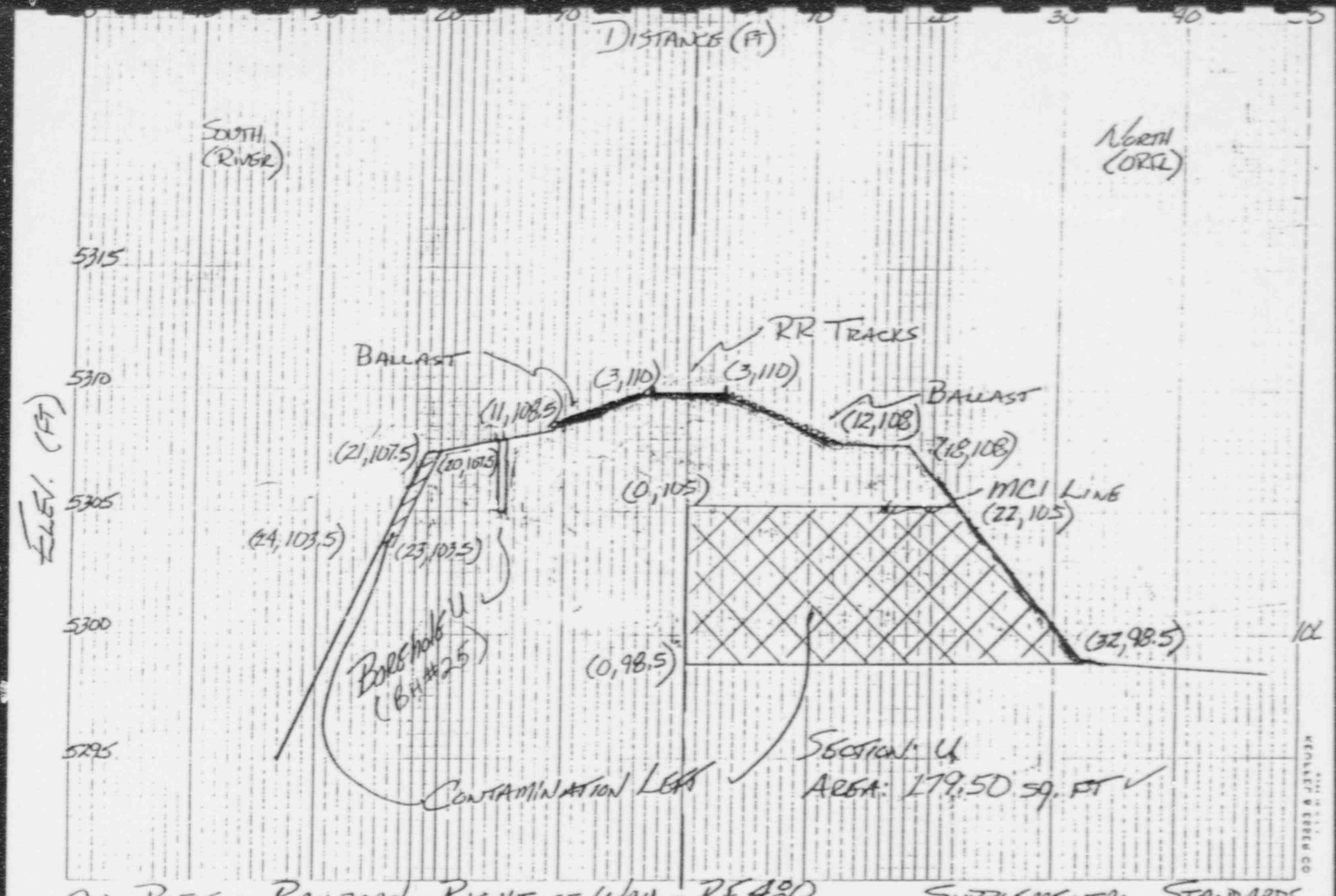


OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480

SUPPLEMENTAL STANDARDS

OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480

SUPPLEMENTAL STANDARDS



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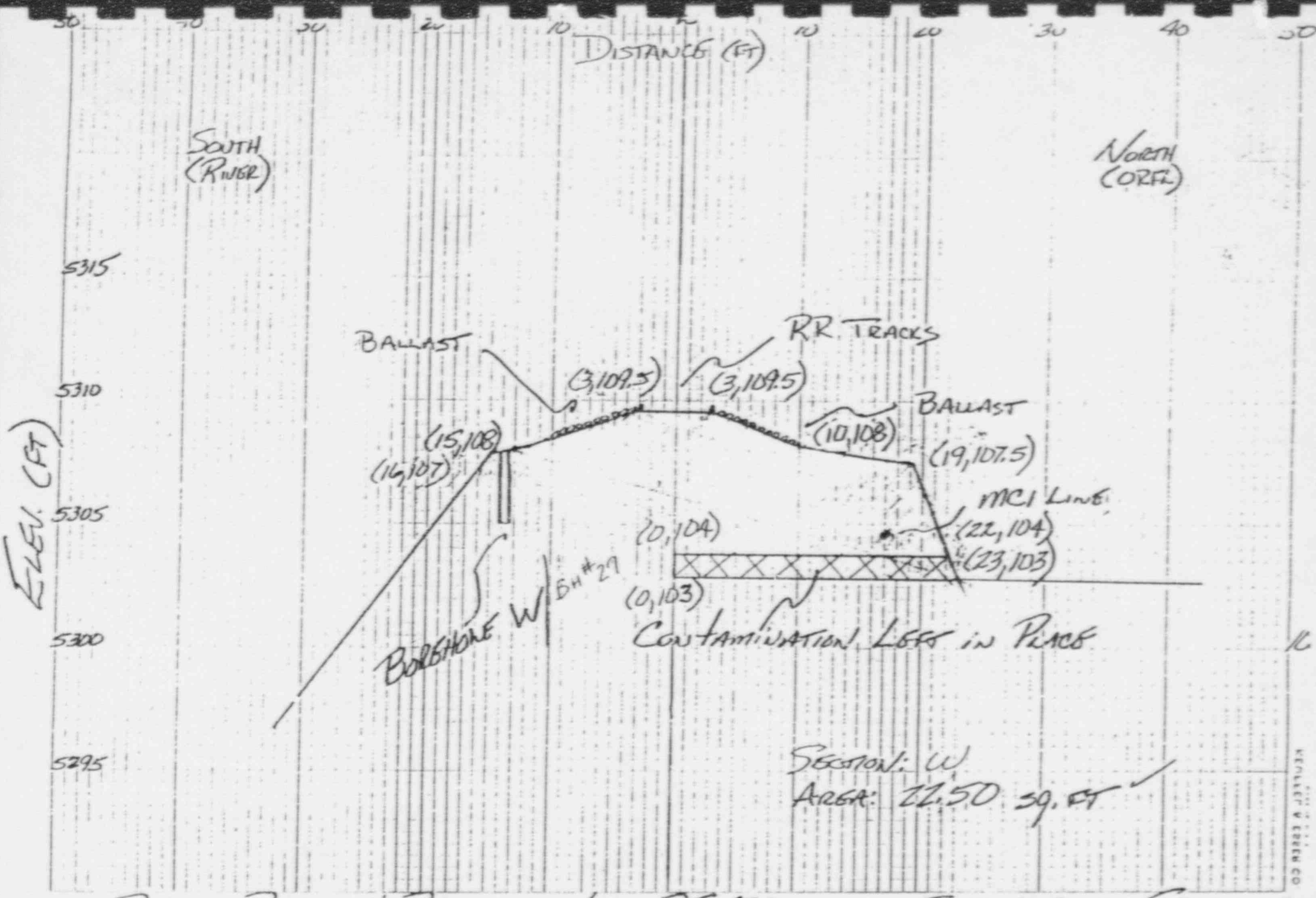
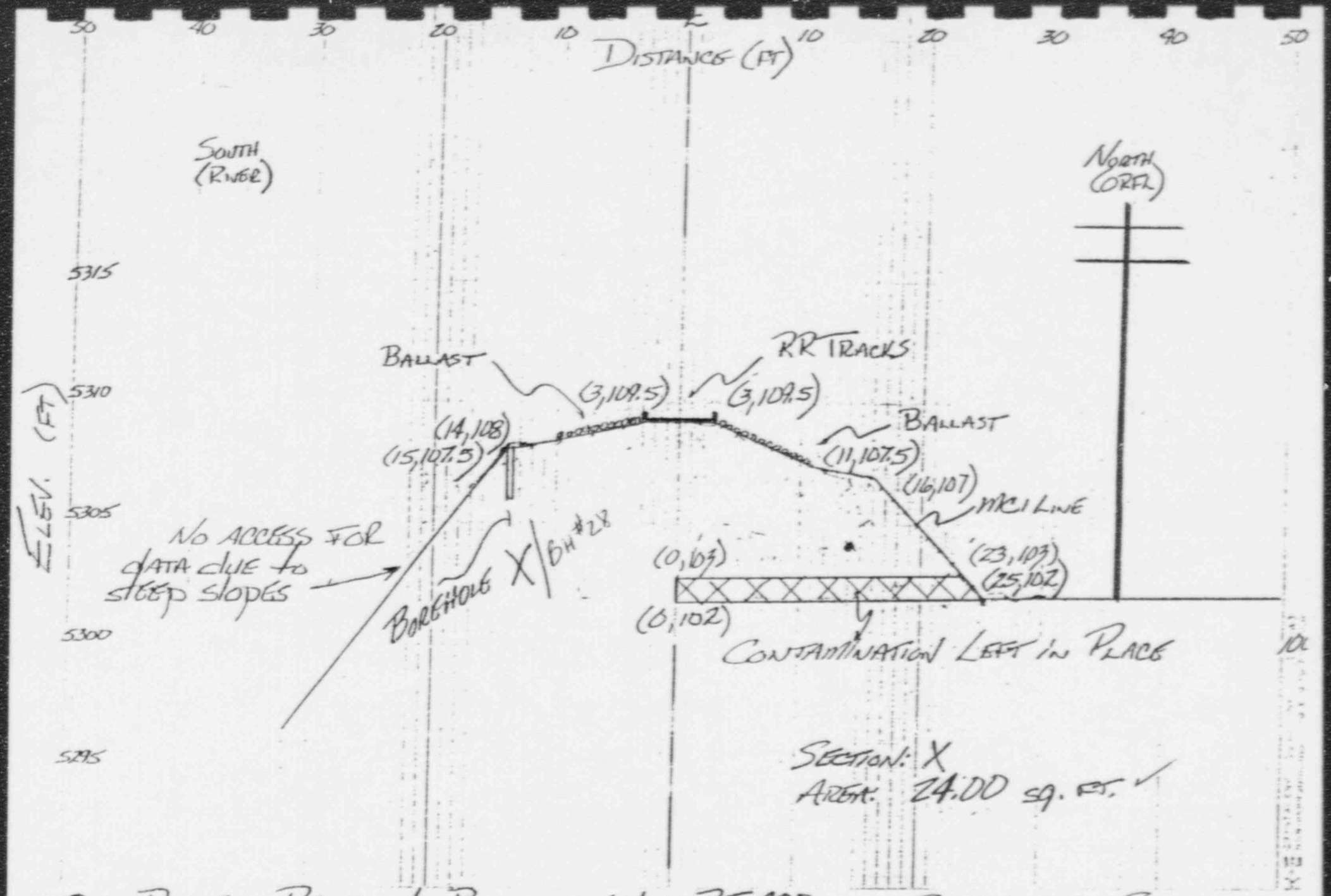
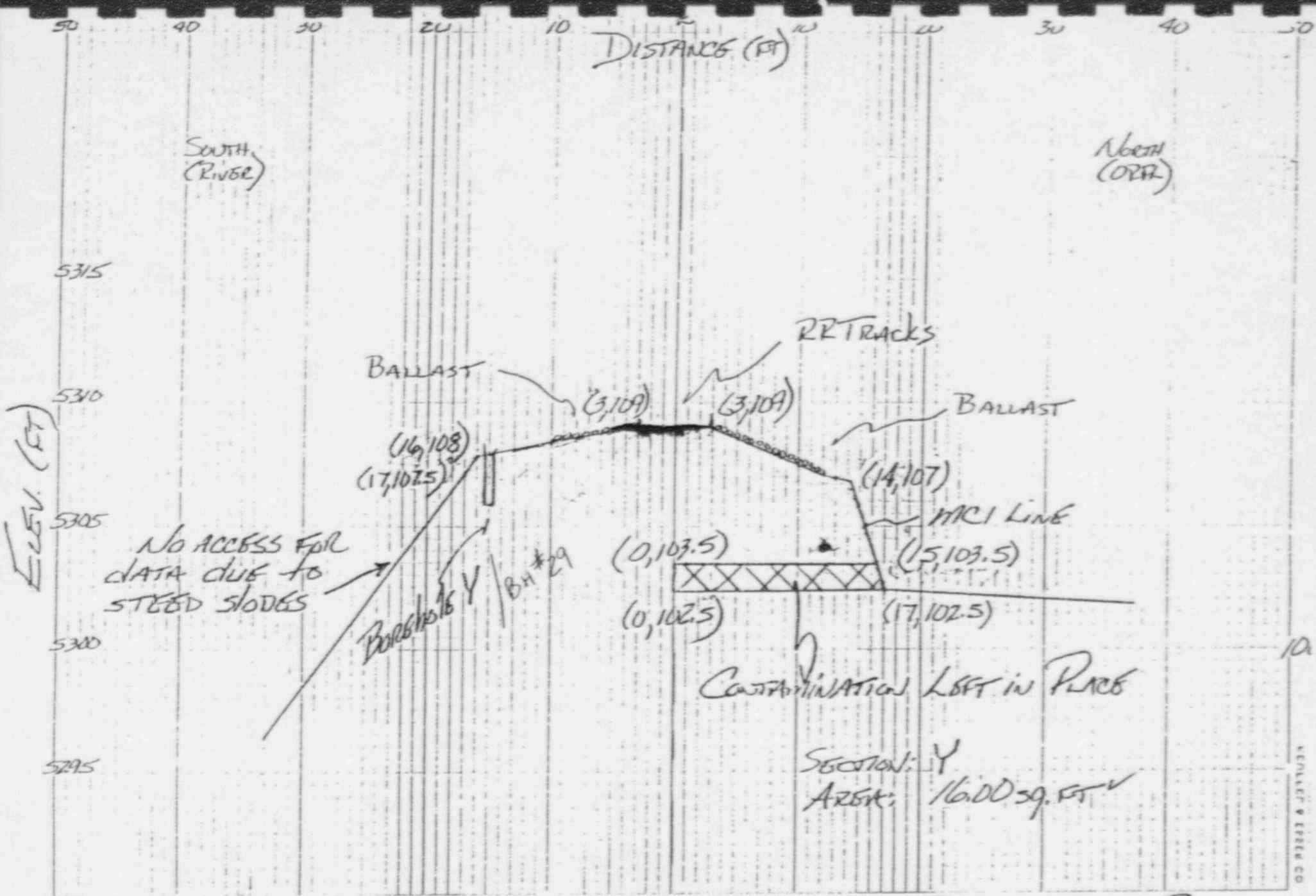
SUPPLEMENTAL STANDARDS



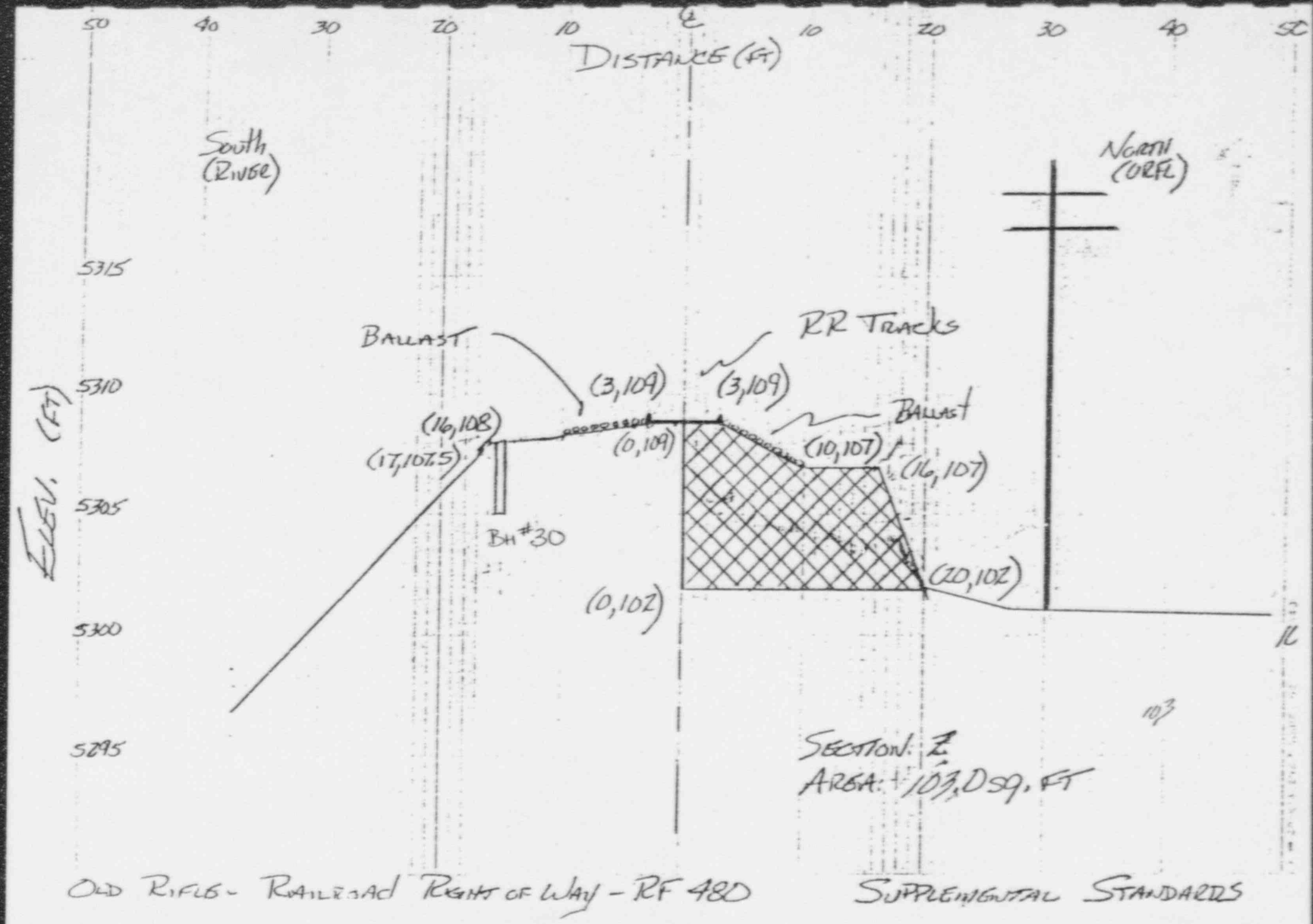
OLD RIFLE - RAILROAD RIGHTS OF WAY - RF 480 SUPPLEMENTAL STANDARDS



OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480 SUPPLEMENTAL STANDARDS

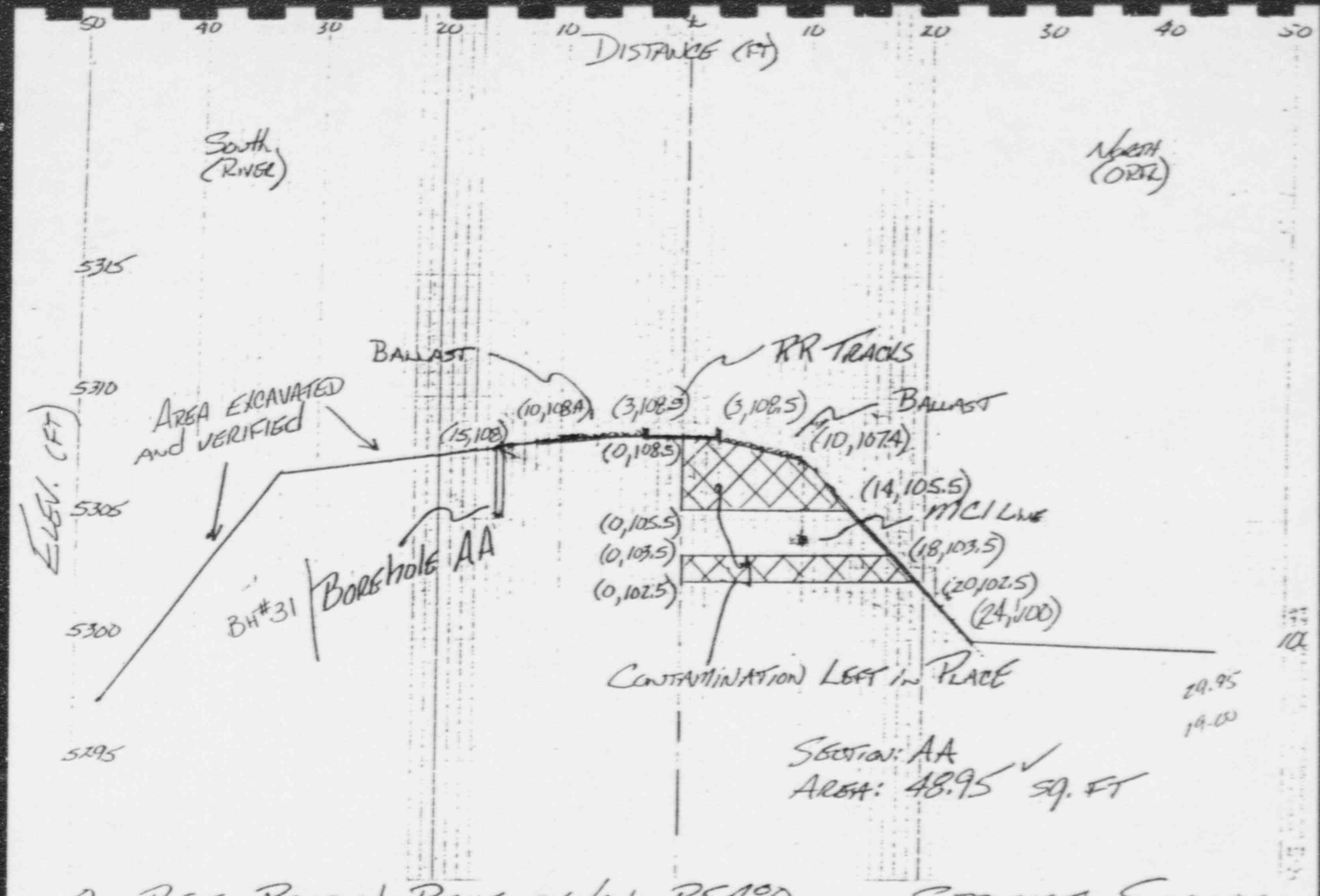


OLD RIFLE - RAILROAD RIGHT OF WAY - RF 420 SUPPLEMENTAL STANDARDS

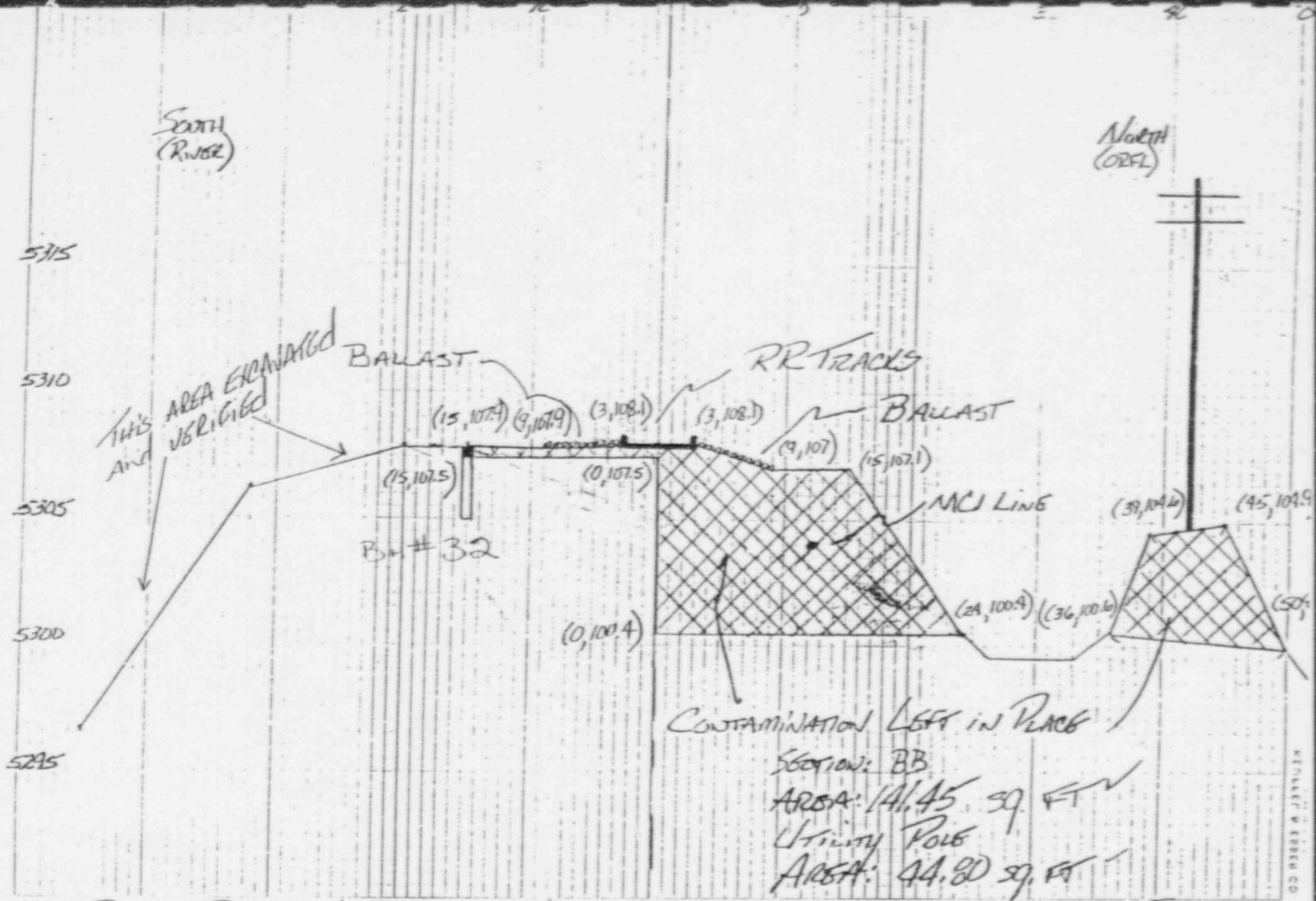


OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480

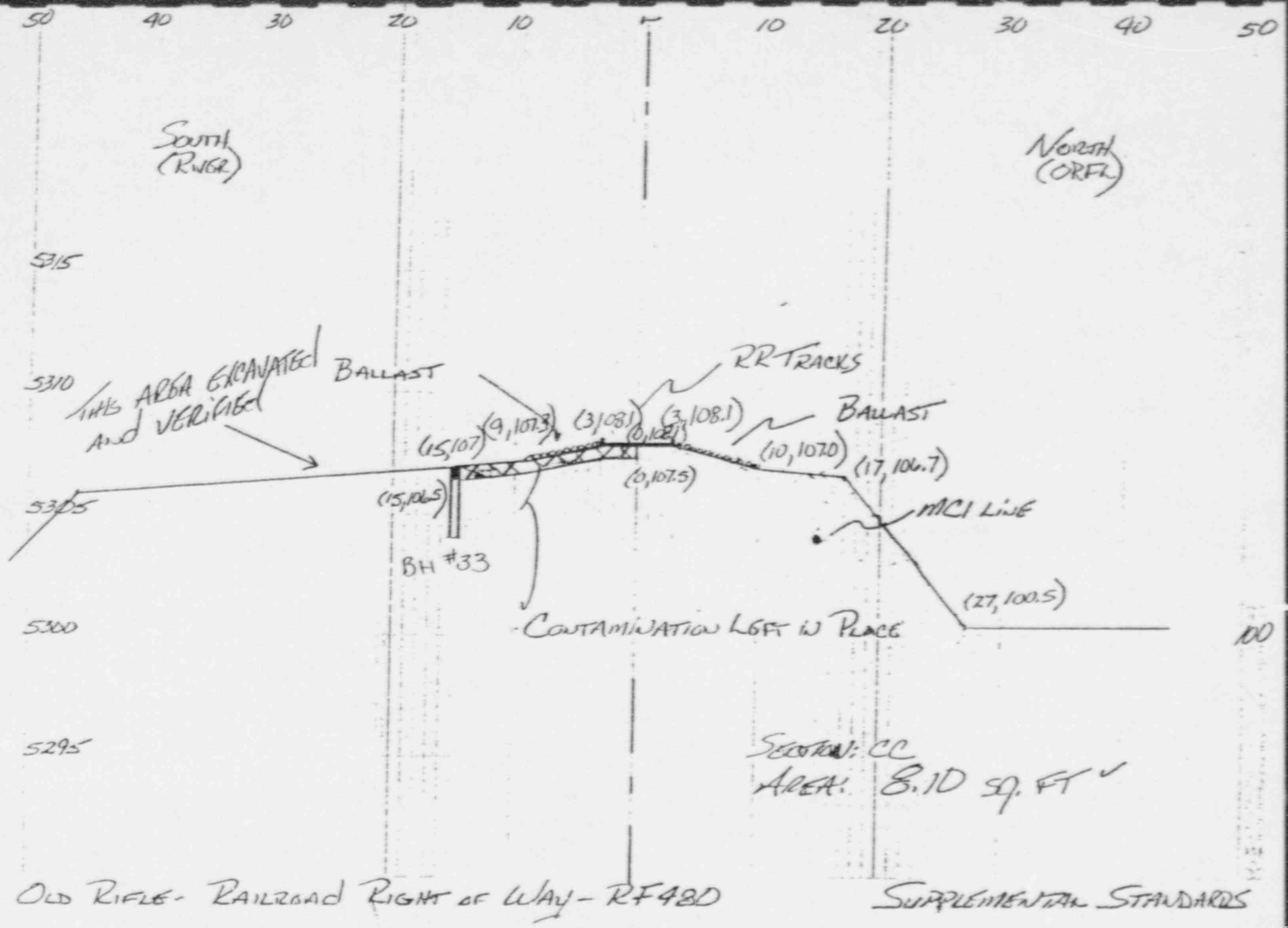
SUPPLEMENTAL STANDARDS



OLD RIFLE - RAILROAD RIGHT OF WAY - RF 490 SUPPLEMENTAL STANDARDS

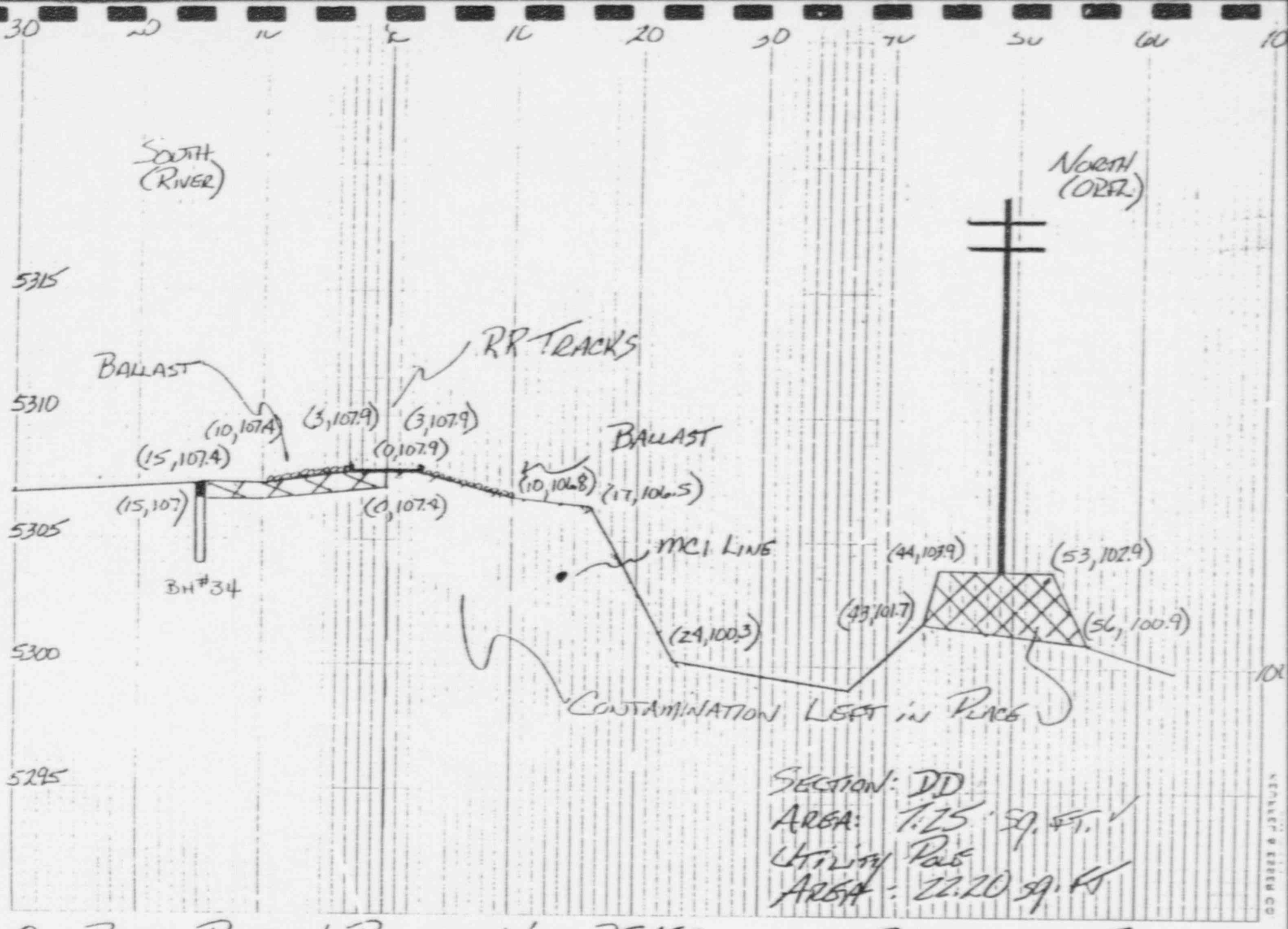


OLD RIFLE - RAILROAD RIGHT OF WAY - RF 480 SUPPLEMENTAL STANDARDS



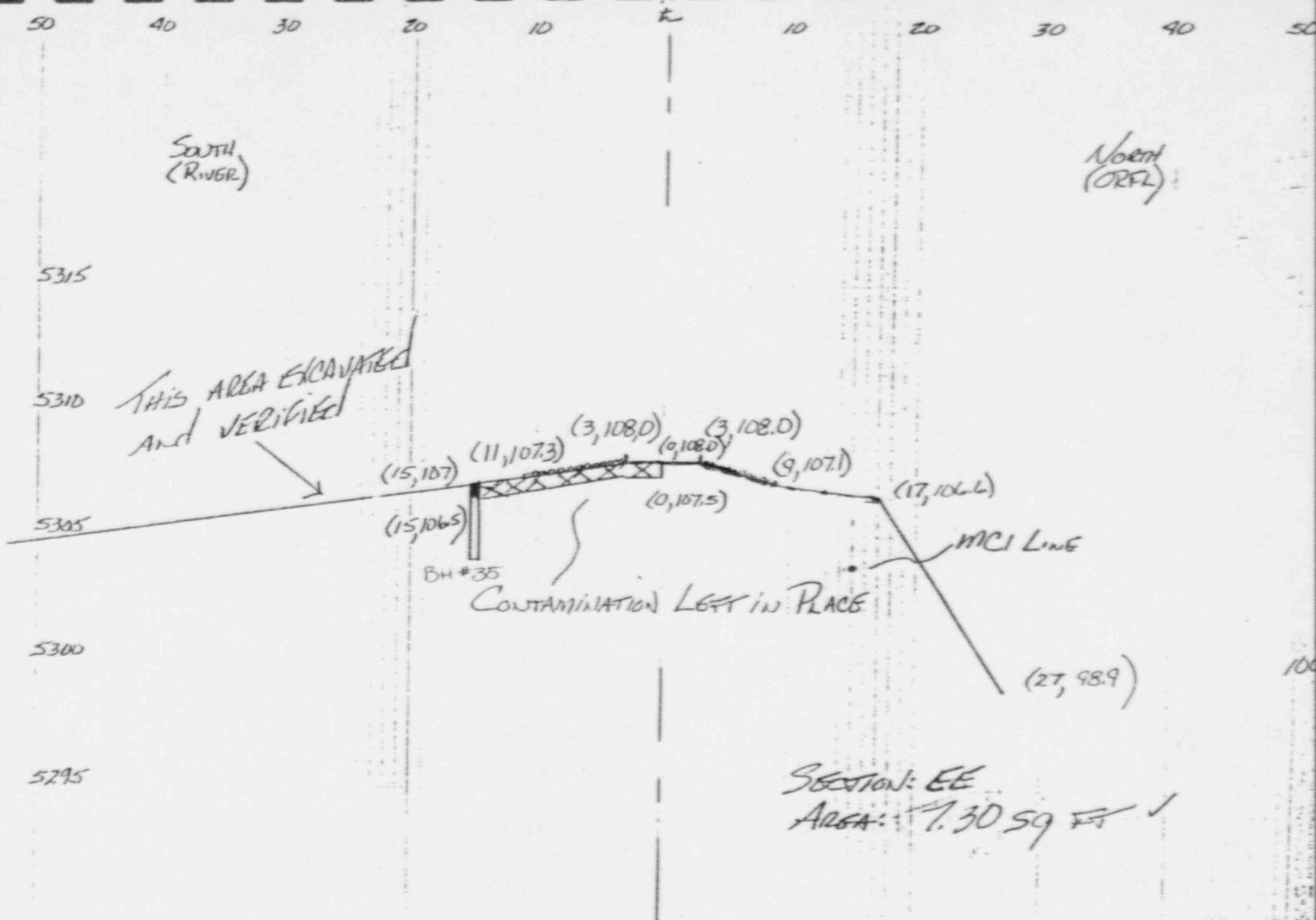
OLD RIFLE - RAILROAD RIGHT OF WAY - RF480

SUPPLEMENTAL STANDARDS



OLD RIFLE - RAILROAD RIGHT OF WAY - RF480

SUPPLEMENTAL STANDARDS


50
40
30
20
10
10
20
30
40
SOUTH (RIVER)
NORTH (ORFL)
5315
5310
5305
5300
5295
THIS AREA EXCAVATED AND VERIFIED
(15,107)
(11,107.3)
(3,108.0)
(0,108.0)
(3,108.0)
(9,107.1)
(17,106.6)
(0,107.5)
(15,106.5)
BH #35
CONTAMINATION LEFT IN PLACE
MCI LINE
(27, 98.9)
SECTION: EE
AREA: 1,730 SQ FT

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

CWM Federal Environmental Services, Inc.

Post backfill

DOSE RATE LOG

SITE: RFL-~~E3~~ II 4-17-96 RF-480 (5.36 acres) ~~RF-510~~

DATE: 4-17-96

INST. MODEL: BICRON

SERIAL NO.: B 194 D

BACKGROUND 3 FT. 7 μrem/h

SURVEYOR: Fenceli

LOCATION (ATTACH MAP OF AREA IF NECESSARY)	3 Ft. Dose Rate (μrem/h)	3 Ft. Net Dose Rate (μrem/h)	AREA AVERAGE (μrem/h)	1 Ft. Dose Rate (μrem/h)
E 59204, N25348	11	4	N/A	15 gross
E 59198, N25348	11	4		15 gross
E 59158, N25348	9	2		11 gross
E 59188, N25344	9	2		7 gross
N/A				

Reviewed By: [signature]

Date: 4-17-96

KNUDSEN

BOREHOLE LOG

LOGGING CREW: 4.26.96 J.R. Wrigley

SHEET _____ OF _____ PAGE _____

DATE: 4-26-96

PROPERTY ID: ~~RF-510~~ RF-480

INSTRUMENT ID NO. ESP1 2592
SPA-3 406467.22

AREA: Supplemental standards (Area 5-1 from RF-510)

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: 1A TIME DRILLED: N/A TIME LOGGED: N/A SOIL TYPE:		HOLE ID: 2A TIME DRILLED: N/A TIME LOGGED: N/A SOIL TYPE:		HOLE ID: 3A TIME DRILLED: N/A TIME LOGGED: N/A SOIL TYPE:		HOLE ID: TIME DRILLED: TIME LOGGED: SOIL TYPE:	
DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN	DEPTH	COUNTS/.1MIN
SURFACE	Excavated	SURFACE	Excavated	SURFACE	Excavated	SURFACE	
0"	30 inches	0"	6 inches	0"	6 inches	0"	
6"	before	6"	1540	6"	1590	6"	
12"	drilling	12"	1800	12"	1700	12"	
18"		18"	2490	18"	2120	18"	
24"		24"	2640	24"	2350	24"	N/A
30"	4350	30"	2640	30"	2510	30"	
36"	6790	36"	2660	36"	2560	36"	
42"	12,700	42"	2780	42"	2590	42"	
48"	24 700	48"	AR	48"	2530	48"	
54"	48,600	54"		54"	AR	54"	
60"	66,000	60"		60"		60"	
66"	Alarm @ 166	66"		66"		66"	
72"	AR	72"		72"		72"	
78"		78"		78"		78"	
84"		84"		84"		84"	
90"		90"		90"		90"	
96"		96"		96"		96"	

REMARKS: # 1A N25348, E59198 30" below grade prior to drilling
2A N25348, E59206 6" below grade prior to drilling
3A N25348, E59186 6" below grade prior to drilling

OCS SAMPLE LOG

RFS10 S.Std. Info.

SITE NAME Rifle, Co

COUNT DATE INITIAL 20 DAY	SAMPLE ID & LOCATION	DATE SAMPLED	DATE SEALED	OCS # INITIAL 20 DAY	Bi-214 pCi INITIAL 20 DAY	Tl-208 pCi INITIAL 20 DAY	MASS (grams) WET DRY	Ra-226 pCi/g INITIAL/CORR. 20 DAY	Th-232 pCi/g INITIAL 20 DAY	DEPTH ≤15cm >15cm	TECH INITIAL 20 DAY	COMMENTS
3-26-95	RFL-SS-7506 M-9-07	3-24-95		5000	490.2	877.1	482	1.0	1.8	✓	WDW	TH230 C/F
3-26-95	RFL-SS-7507 M-9-08	3-24-95		494	1117	891.3	523	2.1	1.7	✓	WDW	TH230
3-26-95	RFL-SS-7508 M-9-13	3-24-95		5002	1022	1109	479	2.1	2.3	✓	WDW	TH-230
3-26-95	RFL-SS-7509 M-9-18	3-24-95		496	737.2	769.0	457	1.6	1.7	✓	WDW	TH-230
3-26-95	RFL-SS-7510 M-16-03	3-24-95		498	521.1	629.2	465	1.1	1.4	✓	WDW	TH230
3-26-95	RFL-SS-7511 M-9-23	3-24-95		5004	664.7	914.6	535	1.2	1.8	✓	WDW	TH230
3-26-95	RFL-SS-7512 M-16-08	3-24-95		4004	617.2	1057	591	1.0	1.8	✓	WDW	TH-230
3/27/95	RFL-SS-7513	3/27/95		462	1811.0	6054 Est. =	341 503 Estimate	5D31 9056.0	162	✓	B	VP510 @ 51"-60" SS Info VP 480 N 25348 E 59198
3/29/95	RFL-SS-7514 CELL EXCAVATION #1	3-28-95		516	332430	151810	457	727.4	33.2	.	KRC	N 58025 E 53000 ELEV. 6105
3-29-95	RFL-SS-7515 CELL EXCAVATION #2	3-28-95		518	338030	154722	523	732.4	25.4		KRC	N 57915 E 52250 ELEV. 6103

Site Correction Factor = 1.8

VP Correction Factor (if applicable) = 1.8

Count Time = 500 SEC. unless otherwise noted

REVIEWED BY: RF Site HP Manager

FOR INFORMATION ONLY

FS IN-001-1, Rev.1

R.F. 490 (Supplementary standards Arch. 3.1 from RF-510)

MORRISON KNUDSEN CORPORATION

ITEM NO.

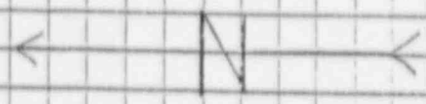
SHEET ____ OF ____ PAGE ____

JOB

FORM ENG 8-A/74

EST. BY

DATE



15' from Centerline of Railroad Tracks Boundry

Edge of excavation and top of river bank

Grid #1

N25358.5
E59207

Edge of excavation and top of river bank

2A

N25344
E59207

E5920

E5923

E59198

1A

N25357.5
E59192

N25341
E59192

E59192

Centerline of Railroad Tracks

2A

Grid #3

15'

N25325

APPENDIX B

SUPPLEMENTAL STANDARDS RECOMMENDATION

APPENDIX B

RECOMMENDATION FOR APPLICATION OF SUPPLEMENTAL STANDARDS

TABLE OF CONTENTS

TABLES

B.T1	Health Risk Analysis
B.T2	Cost Estimate For Alternative 1 Complete Remediation

DRAWINGS

Supplemental Standards Survey Data: RF-480-030 through 031

ATTACHMENTS

Vicinity Property No. RF-480 Remedial Action Agreement; Appendix B, Remedial Action Plan

EXHIBITS

Letter to Mike Kenyon, Regional Engineer, D&RGR, from MK-Ferguson; Proposed Agreement for Remediation of Vicinity Properties

Letter to MK-Ferguson from Kathleen M. Snead, D&RGR; Remedial Action Agreements

Letter to MK-Ferguson from the State of Colorado; Location 27966 - RF-480

Letter to MK-Ferguson from the Department of Energy

Telecon/Meeting Log with Robert Gutierrez, Road Master, Southern Pacific Railroad

Inter-office Correspondence from D. Charlton to VP file; RF-479, RF-480 Supplemental Standards

B.1 Applicable EPA Criteria

Supplemental Standards Recommendation is in accordance with the regulations set by the Environmental Protection Agency (EPA) in 40 CFR 192. The potential and applicable criteria as stated in 40 CFR 192.21 are as follows:

X a) Remedial action would pose a clear and present risk of injury to workers or to members of the public

____ b) Remedial action would directly cause excessive environmental harm

X c) The cost of remedial action at the vicinity site is unreasonably high relative to long-term benefits

____ d) The cost of remedial action for cleanup of a building is unreasonably high relative to benefits

____ e) There is no known remedial action

____ f) Radionuclides other than Radium-226 and its decay products are present

An "X" indicates the appropriate subsection(s) for this recommendation.

B.2 Introduction

This property is a portion of the Denver and Rio Grande Western Railroad south of and adjacent to the Old Rifle Uranium Mill site and north of the Colorado River. The property includes a section of the railroad mainline between Denver and Salt Lake City. This Supplemental Standards Recommendation pertains to areas south of the tracks, the railroad bed, around the bases of eleven utility poles which support railroad operations, and around critical areas of a buried MCI fiber optics line north of the tracks. The north side of this property was partially remediated with the Old Rifle site. An area of contamination south of the tracks was remediated with vicinity property RF-510. Drawings RF-480-030 and RF-480-031 depict the deposits of tailings in the areas for which supplemental standards have been applied. The contaminated area totals approximately 8267 cubic yards covering 2.3 acres.

B.2.1 Common Location and Legal Description

The supplemental standards application area is the Denver and Rio Grande Western Railroad bed south of and adjacent to the Old Rifle Uranium Mill site. The Colorado river abuts the property on the south side. Property RF-510 adjoins RF-480 in the southwest corner. The contaminated material encompasses a total area of 8267 cubic yards.

Legal Description

A legal description for this property is not available.

B.2.2 Major Physical Features

There are no structures on this property. A section of the Denver & Rio Grande Western Railroad mainline, between Denver and Salt Lake City, runs east to west on the property. The property is bordered by the Old Rifle Uranium Mill Site to the north and the Colorado River to the south. On the north side of the railroad tracks is an overhead telegraph line and a buried fiber optic telephone line owned by MCI.

B.2.3 Land Use

The land contains the railroad mainline between Denver and Salt Lake City, and an MCI telephone trunk line. It is used for rail transportation of goods/persons and MCI communication services. The property is not likely to be used for any other purpose in the future.

B.2.4 Owner's Input

Prior to remedial action, the owners of the D&RGW Railroad proposed conditions and requirements for remediation of properties adjacent to and including the railroad. These conditions, including the application of supplemental standards, were pre-approved by the State, the DOE, and the NRC via their concurrence with the Remedial Action Plan for the Rifle Site. MK-Ferguson proceeded with remedial action according to the approved RAP and in accordance with the owner's wishes. No remediation was performed within 15 feet of the centerline of the main tracks and railroad track and ties were not replaced. Refer to the Remedial Action Agreement for specific agreements between the D&RGW Railroad, MK-Ferguson, the State, and the DOE.

B.3 Radiological Data

Appendix A contains the radiological data that is relevant to this Supplemental Standards Recommendation. Appendix A consists of a soil verification data, post-backfill dose rate survey, borehole logs, OCS logs, field notes, and cross-sectional drawings of the supplemental standards area.

The radiological conditions within the Supplemental Standards Recommendation areas are summarized as follows:

a. Exposure rate range in contaminated area(s) - 9 to 200 μR/hr

b. Average exposure rate over the contaminated area(s) - 28 μR/hr

c. Range for Radium concentration in contaminated area(s) - 0.7 to 90[illegible] pCi/g

Background for the Rifle locale is 13 μR/h and 1.2 pCi/g Ra-226.

B.3.1 Health Risk Analysis

The analysis of health risks is presented in Table B.T1. Exposure potentials are compared with two criteria as follows:

a. Long-term exposures are examined based on an allowable exposure rate of 100 mrem per year above background (hereinafter referred to as 100 mrem dose).

b. Short-term unusual exposures are examined based on an allowable exposure rate of 500 mrem per year above background (hereinafter referred to as 500 mrem dose).

The maximum gamma dose rate at waist level recommended by the International Commission on Radiological Protection (ICRP 1977, 1978) in DOE Order 5400.5 (March, 1990) is 100 mrem. This is the dose limit for an individual member of the general public. Doses which exceed 100 mrem are acceptable when the higher exposures do not persist for long periods and when the average annual dose over an individual's lifetime is expected to be less than 100 mrem. The ICRP and the DOE suggest that dose rates be reduced to "as low as reasonably achievable", but also state that no annual dose shall exceed 500 mrem. The health risk analysis presented in this Recommendation for Supplemental Standards has compared the dose rates measured at waist level with the recommendations of the ICRP and DOE regarding waist level exposures.

The long-term exposure analysis considers three scenarios showing the following:

a. The required number of hours of continuous exposure to obtain the 100 mrem dose. This scenario is intended to model the exposure received by an individual residing on the site in the extreme case where no time away from the site is considered.

b. The hours per day of exposure during a continuous one year period required to receive the 100 mrem dose. This scenario is intended to represent a maximum allowable daily exposure by an individual who occupies the point where the high gamma reading occurs.

c. The hours per day of exposure during a one year period, utilizing week days only (260 days), required to receive the 100 mrem dose. This scenario models the potential exposure that could be received by an individual working in the area the indicated number of hours daily for one year.

The short-term unusual exposure analysis also considers three potential scenarios as follow:

a. The required number of hours of continuous exposure to obtain the 500 mrem dose. The intent of this scenario is to allow examination of the estimated time of continuous exposure required to receive the allowable dose.

b. The number of 48-hour temporary occupancy periods in one year necessary to receive a 500 mrem dose. This scenario represents the case where an individual occupies the site for repair work or other short-term purposes.

c. The number of 24-hour periods of exposure in one year necessary to receive a 500 mrem dose. This scenario considers emergency operations to perform repair work at the site.

The worst case scenario in the health risk analysis is based on minimum background and maximum dose rates recorded at waist level without consideration of the relative physical location of each. In every case, the scenarios presented above can be described as unlikely, but possible. The scenarios do not create a model of likely situations, but present data that can be used to evaluate the potential for a health hazard if this supplemental standards recommendation is approved.

The maximum known gamma exposure rate, 200 μR/h, occurring along the northeastern portion of the supplemental standards area is equal to the worst case scenario. The worst case scenario depicts occupation of a site for an average of 1.4 hours per day during a one year period (500 hours total) to receive the 100 mrem dose. Due to the remote location of this exposure rate, it is highly unlikely that an individual would occupy the site for 500 hours in a given year and reach this "long-term" dose.

The most likely situation where individuals would be exposed to the contaminated material is the future occupational scenario. Future maintenance and repair of railroad tracks and utilities will cause the contaminated material to be disturbed and workers to be exposed to elevated exposure rates. The nature of this work makes the "short-term, unusual" exposure analysis more appropriate than a long-term exposure analysis. Under the 200 μR/h worst case scenario, a worker would need to be in the proximity of the contaminated material for approximately 2,500 hours during a one-year period to receive a 500 mrem dose. This equates to approximately fifty-two (52) 48-hour repair scenarios. It is unlikely that an individual would spend this amount of time in the high gamma contaminated area in any given year.

B.4 Remediation Alternatives

Three alternatives are available for all properties. Each alternative may have several options. The evaluation of an alternative action in any area of tailings contamination logically includes consideration of the cost and health risk associated with the available choice. Three alternatives - Complete Remediation, Partial Remediation (Application of Supplemental Standards), or No Remediation (Application of Supplemental Standards) - are considered.

B.4.1 Alternative 1 - Complete Remediation (All Contaminated Material Remediated)

B.4.1.1 Work Description

The work required for this alternative is to excavate south of the railroad tracks, the railroad bed, around eleven utility poles, and around the buried MCI cable to the depth of contamination, verify, and backfill. A coffer dam would be constructed to prevent flooding during excavation. Shutting down the railroad would be required to reduce the risk of injury to workers and derailment of a train. Approximately 2320 feet of railroad track would be removed and replaced, along with the associated ballast. Excavation around the utility poles would require the removal and replacement of poles and associated telegraph/power lines.

This would require a substantial amount of work and monies comparable to the amount of benefits received from remediation. Damage to the stability of the railroad tracks in this area could further endanger railroad employees and passengers.

B.4.1.2 Health Risk Analysis

Health risks in the supplemental standards application area, due to tailings contamination, would be reduced to within the EPA standards.

B.4.1.3 Construction Parameters

Construction of this alternative consists of building a coffer dam to divert the river, shutting down the railroad line, and excavating the railroad bed and south of the tracks. Tracks found to have contamination under them would be removed. Hand excavation would be required around the buried fiber optics line. Telegraph/power lines and poles would be removed for excavation of contaminated material around the poles. Once verification is complete, restoration would include replacement of ballast, railroad bed, tracks, utility lines and poles, and removal of coffer dam to restore river bank. The property is restored to its original condition.

B.4.1.4 Engineering Data

No areas of contamination which exceed the EPA standards will remain in place. The estimated Subcontractor cost of remedial action work required for this alternative is estimated to be $748,740.00. This cost estimate does not include the loss of revenue D & RGW Railroad may incur. Given the nature and expense of fiber optics, excavation around the fiber optics line poses inherent risks that could cause costs to escalate above current estimates.

B.4.2 Alternative 2 - Partial Remediation (Supplemental Standards Application)

B.4.2.1 Work Description

The work involved in this alternative was performed and is described in the Completion Report for RF-480. Contaminated material was excavated to within 2 feet of the edge of ballast maintaining a 2 to 1 slope on the north side of the railroad. One area of contamination was excavated on the south side of the railroad. The railroad utility poles were excavated 2 feet in depth and 8 feet in diameter. If contamination levels were still above EPA Standards, supplemental standards were applied. Soil supporting eleven utility poles is still contaminated.

B.4.2.2 Health Risk Analysis

Health risks associated with the railroad bed and utility poles due to tailings contamination is summarized in Table B.T1. Contamination remains in place in the railroad embankment, around eleven utility poles, and around the buried fiber optic telephone cable north of the tracks.

B.4.2.3 Construction Parameters

The Construction Parameters were to excavate contaminated material north of the railroad tracks on a slope of 2 to 1 from a point 2 feet from the edge of ballast down to the depth of contamination and continue excavating north to the edge of the property.

B.4.2.4 Engineering Data

No areas of contamination which exceed the EPA standards remain in place beyond the north slope of the railroad bed. The amount of contamination exceeding EPA standards remaining in place is approximately 8295 cubic yards. The actual Subcontractor cost of remedial action work required for this alternative is $129,196.00.

B.4.3 Alternative 3 - No Remediation (Supplemental Standards Application)

B.4.3.1 Work Description

No work is required for this alternative.

B.4.3.2 Health Risk Analysis

The health risks associated with this alternative is not required since Alternative 2 was performed.

B.4.3.3 Construction Parameters

Construction is not required for this alternative.

B.4.3.4 Engineering Data

No cost is associated with this alternative. All areas of contamination which exceed the EPA standards will remain in place.

B.5 Summary

Partial Remediation with the application of supplemental standards was performed. A person would have to occupy the point of high gamma exposure for a continuous period of 500 hours to receive a 100 mrem dose. It is highly unlikely that an individual would be exposed for the amount of time necessary to exceed the recommended annual maximum dose of 100 mrem due both to the length of time required and the location of the exposure rates. A railroad work crew would have to spend 50 ten hour work days to exceed 100 mrem in one year.

Each alternative examined by this Recommendation can be summarized as follows:

Alternative I - Complete Remediation (All Contaminated Material Remediated)

Health Risk - Reduced to within EPA standards

Estimated Additional Construction Cost - $748,740.00

Approximate Volume of Contaminated Materials Removed - 24,975 cy

Approximate Volume of Contaminated Materials Remaining - 0 cy

Alternative 2 - Partial Remediation (Supplemental Standards Application)

Health Risk - See Table B.T1. Contamination remains in the railroad bed, south of the railroad tracks, around eleven utility poles, and around a buried MCI fiber optic cable.

Actual Construction Cost - $129,196.00

Approximate Volume of Contaminated Materials Removed - 16,678 cy

Approximate Volume of Contaminated Materials Remaining - 8,295 cy

Alternative 3 - No remediation (Supplemental Standards Application)

Not applicable since Alternative 2 has been performed.

B.6 Recommendations

Supplemental Standards (Partial Remediation) should be applied in accordance with 40 CFR 192.21, Criteria A and C (see Section B.1).

TABLE B.T1
HEALTH RISK ANALYSIS
PROPERTY RF-480

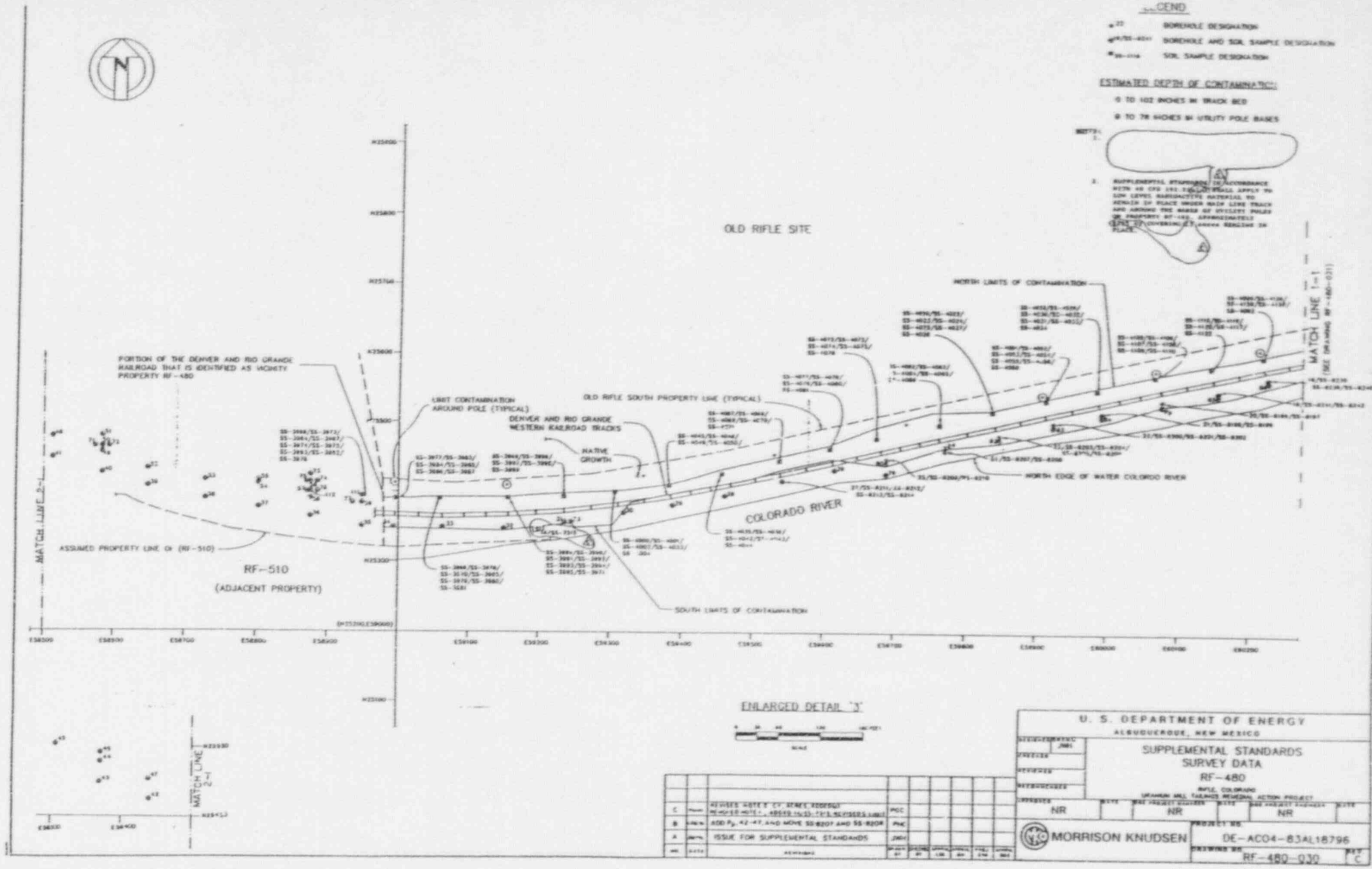
SCENARIO		RESULTS
100 mrem Dose		
A.	Required number of hours of continuous exposure to obtain the 100 mrem dose.	500 hours
B.	The hours per day of exposure during a continuous one year period required to receive the 100 mrem dose.	1.4 hours per day
C.	The hours per day of exposure during a one year period utilizing week days only (260 days) required to receive the 100 mrem dose.	1.9 hours per day
500 mrem Dose		
A.	The required number of hours of continuous exposure to obtain the 500 mrem dose.	2,500 hours
B.	The number of 48-hour temporary occupancy periods in one year necessary to receive a 500 mrem dose.	52
C.	The number of 24-hour periods of exposure in one year necessary to receive a 500 mrem dose.	104

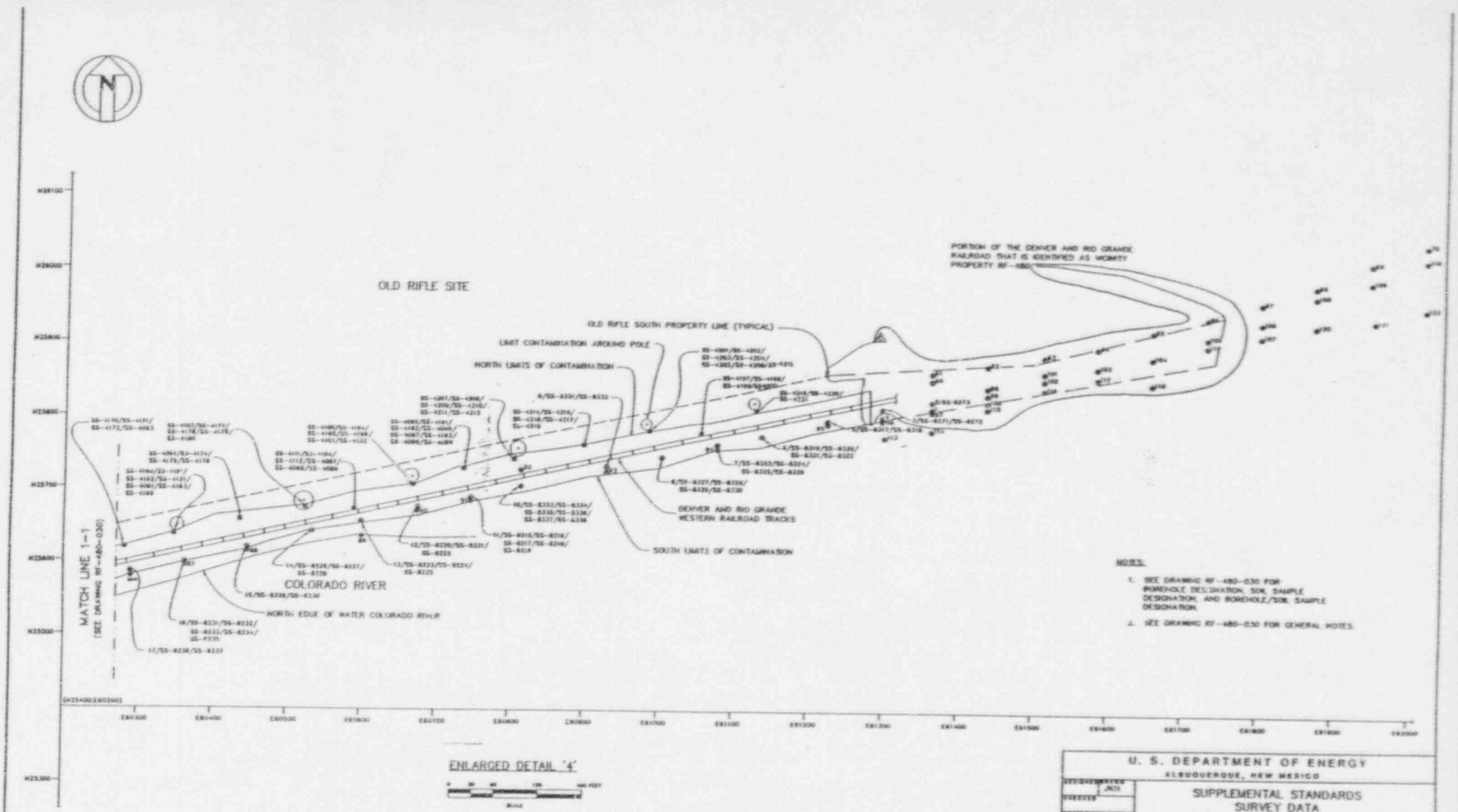
The results are figured from using the point of the highest gamma. A person would have to stand at the point continuously to achieve the dose given.

TABLE B.T2
COST ESTIMATE FOR ALTERNATIVE 1
COMPLETE REMEDIATION
PROPERTY RF-480

Activity No.	Activity	Unit Price	Quantity	Estimated Cost
1.0	Machine Excavation	15.04	8273.5 cy	124,433.00
1.1	Hand Excavation	80.54	21.5 cy	1,732.00
2.0	Common Fill	21.54	21.5 cy	463.00
3.0	Structural Backfill	24.03	8273.5 cy	198,812.00
480.1	Remove/Replace RR	40.20	2320.0 lf	93,264.00
480.2	Construct & Remove Coffer Dam (Common Fill)	26.25	5442.0 cy	142,853.00
480.3	Rip Rap	36.04	773.0 cy	27,859.00
480.4	Remove/Replace Utility Poles & Wires	9,579.00	ls	9,579.00

Subtotal	$ 598,995.00
5% Subcontractor's Contingency	29,950.00
20% Overhead & Profit	119,799.00
Total (Rounded)	$ 748,740.00


LEGEND
BOREHOLE DESIGNATION
BOREHOLE AND SOIL SAMPLE DESIGNATION
SOIL SAMPLE DESIGNATION
ESTIMATED DEPTH OF CONTAMINATION:
0 TO 102 INCHES IN TRACK BED
0 TO 78 INCHES IN UTILITY POLE BASES
OLD RIFLE SITE
NORTH LIMITS OF CONTAMINATION
MATCH LINE 1-1
(SEE DRAWING RF-480-031)
PORTION OF THE DENVER AND RIO GRANDE RAILROAD THAT IS IDENTIFIED AS MONITY PROPERTY RF-480
LIMIT CONTAMINATION AROUND POLE (TYPICAL)
DENVER AND RIO GRANDE WESTERN RAILROAD TRACKS
OLD RIFLE SOUTH PROPERTY LINE (TYPICAL)
NATIVE GROWTH
NORTH EDGE OF WATER COLORDO RIVER
COLORADO RIVER
ASSUMED PROPERTY LINE OF (RF-510)
RF-510
(ADJACENT PROPERTY)
SOUTH LIMITS OF CONTAMINATION
MATCH LINE 2-1
ENLARGED DETAIL "3"
U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO
SUPPLEMENTAL STANDARDS SURVEY DATA
RF-480
RIFLE, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT
MORRISON KNUDSEN
DE-AC04-83AL18796
RF-480-030
C



NOTES:

1. SEE DRAWING RF-480-030 FOR BOREHOLE DESIGNATION, SOIL SAMPLE DESIGNATION, AND BOREHOLE/SOIL SAMPLE DESIGNATION.
2. SEE DRAWING RF-480-030 FOR GENERAL NOTES.

ENLARGED DETAIL '4'

SCALE

C		REVISED PROPERTY BOUNDARY	PGC							
B		ADD SS-8273,SS-4215,SS-4200,AND RP	PHC							
A		ISSUE FOR SUPPLEMENTAL STANDARDS	JMH							

U. S. DEPARTMENT OF ENERGY
ALBUQUERQUE, NEW MEXICO

SUPPLEMENTAL STANDARDS
SURVEY DATA
RF-480
RIFLE, COLORADO
URANIUM MILL TAILINGS REMEDIAL ACTION PROJECT

APPROVED		DOE PROJECT MANAGER		DOE PROJECT COORDINATOR	
NR		NR		NR	

MORRISON KNUDSEN

PROJECT NO. DE-AC04-83AL18795

DRAWING NO. RF-480-031 REV. C

ATTACHMENTS

ORIGINAL

Vicinity Property No. RF-480
DOE Agreement No. DE-R004-94AL97407

APPENDIX B

VICINITY PROPERTY

REMEDIAL ACTION PLAN

PROPERTY: ADDRESS South of Old Rifle Site
Rifle, Colorado 81650

OWNER: NAME The Denver and Rio Grande Western
Railroad Company
P.O Box 5482
Denver, CO 80217

Surveys have shown that low-level radioactive contamination exists on this property. In order to meet criteria established for contaminated properties associated with the RIFLE Site, it will be necessary to remove contaminated soil and materials and, as may be required, such plantings and property improvements on the affected areas as shown in Appendix A. (NOTE: These are estimates based upon preliminary radiological surveys, and the exact amounts of property affected and the scope of work will be determined at the time of excavation).

Following removal of contaminated material and restoration of the property, the Department of Energy (DOE) will certify that the property meets applicable radiological criteria. Every effort will be made to restore the property as nearly as reasonably practical to its original condition. Efforts will be made to minimize disruptions and inconvenience to occupants.

On this property it is anticipated that the following improvements will be affected:

1. Native Growth
2. Fencing

The following sequence of operations is anticipated for Remedial Action on this property:

A. The railroad shall be given 30 days notice prior to the start of remediation.

B. The railroad shall provide a flagman while remediation is being performed.

C. Installation of safety/security fence, as needed, for protection of the public during the cleanup.

D. Removal of fence, as required, for excavation.

E. Installation and removal, by the railroad, of a temporary crossing to access contaminated material on the south side of the tracks. This crossing to remain in place for the duration of the material removal only.

E. Radiological measurements to mark contamination limits and guide the excavation, determining whether sufficient material has been removed.

F. Dust control measures, as needed, during excavation and loading to minimize airborne contamination.

G. Excavation of contaminated material shall be performed in accordance with the Drawings found in Appendix A.

H. Trucks will transport the contaminated materials from the vicinity property to the designated disposal site.

I. Vehicles and equipment will cross the railroad tracks only at designated crossings.

J. Remediation shall not be performed within 15 feet of the centerline on the track(s). Supplemental standards, in accordance with 40 CFR 192, shall be applied to this area.

K. Backfill and restoration of the excavated areas to their original conditions.

L. Replacement of fence to its original location, or replacement with new fencing if the original cannot be salvaged.

M. Removal of safety/security fence, as needed, at completion of work.

EXHIBITS

RF-103
FILE

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-UMTRA PROJECT
P.O. BOX 9136
ALBUQUERQUE, NEW MEXICO U.S.A. 87119

September 1, 1992

Mr. Mike Kenyon
Regional Engineer
Denver and Rio Grande Railroad
P.O. Box 5482
Denver, Colorado 80217

SUBJECT: UMTRA - Rifle, Co.
Proposed Agreement for Remediation of Vicinity Properties

Dear Mr. Kenyon:

Per our meeting on August 6, 1992, the following items are proposed conditions and requirements for the remediation of properties adjacent to the Denver and Rio Grande Railroad in Rifle, Colorado.

General Conditions:

1) The railroad will provide a flagman while remediation is being performed on all properties, except Vicinity Property (VP) No. RF-489 north of U.S. Hwy 50. The flagman and/or railroad representative will identify where all clean track and ties removed, if any, are to be placed.

2) The railroad requests that they be given 30 days notice prior to the start of remediation on any of these properties.

Vicinity Property RF-103 (Switching Yard):

1) Any remediation performed within 15 feet of centerline on the main track(s) will be done so at the discretion of MK-F Site Engineer and railroad's representative.

2) Remediation near the two main spur lines may include ballast areas up to the edge of the ties. The depth of excavation shall be limited so as to not damage the structural integrity of the tracks or ties.

3) On all secondary spur lines, MK-F subcontractor will remove track and ties in contaminated areas. If track or ties are found to be uncontaminated, they will be placed in a pre-designated area specified by railroad representative.

4) A temporary crossing will be installed at VP No. RF-103 to remove stockpiled contaminated material on the south side of the main tracks. This crossing is to remain in place only for the duration of material removal. The railroad will install

0502KZ

and remove the temporary crossing (strictly at cost) at MK-F's expense. MK-F will receive a cost estimate prior to the crossing installation.

East (Old) Rifle Site:

1) No remediation will be performed within 15 feet of centerline on the main track(s).

2) The subcontractor will clean and stockpile contaminated material on the south side of the main tracks. Temporary crossings will be installed on the southwest and southeast sides of the Old Rifle Site to remove stockpiled material from the south side of the main tracks. These crossings are to remain in place for the duration of material removal. The railroad will install and remove the temporary crossings (strictly at cost) at MK-F's expense. MK-F will receive a cost estimate prior to the crossings' installation.

West (New) Rifle Site:

1) No remediation will be performed within 15 feet of centerline on the main track(s).

Vicinity Property RF-489 (North of U.S. Hwy. 50):

1) MK-F's subcontractor will remove track and ties in contaminated areas only. If track or ties are found to be uncontaminated, they will be taken and placed at the pre-designated area at RF-103 specified by a railroad representative.

On all properties, railroad track and ties will not be replaced. Areas remediated will be backfilled with common fill to match existing elevations.

If you have any questions, or would like to discuss any of these issues, please contact the undersigned at 1-800-443-4379.

Sincerely,

MK-FERGUSON COMPANY

Robert A Pommerening

R. A. Pommerening
Vicinity Property Manager

RAP/rd
Enclosures:
cc: w/o enclosures:
P. Mann, DOE/UMTRA
S. Arp, DOE/UMTRA

bcc: w/enclosures:
R. S. Withee, Rifle
R. A. Pommerening
bcc: w/o enclosures:
C. R. Spencer
R. E. Cooney
D. A. Charlton
R. D'Arezzo
File
File-EDT

J. Hams, CDH

0502KZ

Southern Pacific Lines

THE DENVER AND RIO GRANDE WESTERN RAILROAD COMPANY
Law Department
P.O. Box 5482 • Denver, Colorado 80217
(303) 595-2336 • Fax (303) 595-2318

James P. Gatlin
General Attorney

March 30, 1994

Direct Dial
595-2335

VIA FEDERAL EXPRESS

David A. Charlton
Vicinity Property Manager
MK-Ferguson Company
P.O. Box 9136
Albuquerque, New Mexico 87119

Re: Rifle, Colorado Site
Remedial Action Agreements

Dear Mr. Charlton:

Enclosed in reference to the Rifle, Colorado site are the following Agreements:

Remedial Action Agreement (RAA) DE-R004-93AL74848, RF-103
Remedial Action Agreement (RAA) DE-R004-94AL97406, RF-477
Remedial Action Agreement (RAA) DE-R004-94AL97407, RF-480
Remedial Action Agreement (RAA) DE-R004-93AL94846, RF-489

These have already been signed by Mr. Glenn Michael, who is the Vice President of Operations of Southern Pacific, here in Denver. Please pass them on to the correct channels.

Thank you for your attention to this matter. If you have any questions, please feel free to call me.

Very truly yours,

/s/ Kathleen M. Snead

Kathleen M. Snead

KMS/skd

Enclosures

STATE OF COLORADO

COLORADO DEPARTMENT OF HEALTH
Dedicated to protecting and improving the health and environment of the people of Colorado
Grand Junction Regional Office
222 S. 6th Street, Rm. 232
Grand Junction, CO 81501-2768
FAX: (303) 248-7198

Roy Romer
Governor
Patricia A. Nolan, MD, MPH
Executive Director

April 19, 1994

Mr. David A. Charlton
MK-Ferguson Company
Remedial Actions
Contractor-UMTRA Project
P. O. Box 9136
Albuquerque, NM 87119

RE: Location 27966 - RF-480
South of Old Rifle Site, Rifle, CO 81650

Dear Mr. Charlton:

A review of the Vicinity Property Remedial Action Agreement for the noted location has been completed. Based upon the information provided, the basic design for remedial action is acceptable.

Should you require additional information regarding our review please contact Jim Hams in our Grand Junction office.

Sincerely,

G. A. Franz, III
Hazardous Materials and
Waste Management Division

GAF:ae

cc: Woody Woodworth, DOE-AL
Location File

Department of Energy
Albuquerque Operations Office
P. O. Box 5400
Albuquerque, New Mexico 87185-5400

APR 30 1994

Mr. David A. Charlton
UMTRA Project Vicnity Property Manager
MK-Ferguson Company
P.O. Box 9136
Albuquerque, NM 87119

Dear Mr. Charlton:

Enclosed are the signed and executed copies of Remedial Action Agreements RF-103 (DE-R004-93AL74848), RF-477 (DE-R004-94AL97406), and RF-480 (DE-R004-94AL97407), and RF-489 (DE-R004-93AL74846) for remediation of vicinity properties located at Rifle, Colorado under DOE Contract DE-AC04-83AL18796. Please ensure that our office is on distribution to receive a copy of these executed agreements.

If you have any questions, please call me at 845-6960.

Sincerely,

Melanie J. Thomas

Melanie J. Thomas
Contracting Officer
Programs and R&D Branch
Contracts and Procurement Division

Enclosure

cc w/o enclosure:
W. Woodworth, UMTRA
S. Arp, UMTRA
K. Landolt, OCC

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

TELECON/MEETING . . .

PERSON CONTACTED: ROBERT GUTIERREZ (ROAD MASTER) DATE: 4/6/95

AFFILIATION: SOUTHERN PACIFIC RAILROAD

SUBJECT: BOREHOLING BETWEEN RAILS

TELEPHONE: (303) 379-1370 INCOMING _____

OUTGOING 3:30 pm

SUMMARY OF DISCUSSION:

I CONTACTED MR. ROBERT GUTIERREZ TO DISCUSS BOREHOLING BETWEEN THE RAILS ON THE MAIN LINE TO CHARACTERIZE THE CONTAMINATION BEING LEFT FOR SUPPLEMENTAL STANDARDS. ROBERT ADVISED THAT THIS BOREHOLING WAS NOT PERMISSIBLE DUE TO SAFETY HAZARDS TO DRILLING PERSONNEL AND POSSIBLE DAMAGE TO THE RAIL LINE.

DISTRIBUTION:
1. FILE - RF-103
2. D. CHARLTON
3. BOB FENCIL
4. _____
5. _____
6. _____

Art ac
Jim —
Ken KRC

SIGNATURE: Scott B —

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY

INTER-OFFICE CORRESPONDENCE

DATE: January 4, 1995

TO: Note to File

FROM: D. Charlton DRC

LOCATION: Albuquerque

LOCATION: Albuquerque

SUBJECT: RF-479, RF-480 Supplemental Standards

First and foremost, all concurring parties, (DOE, CDPHE, NRC), have consented via the Old Rifle Site drawings and the RAP to the application of Supplemental Standards on RF-479 and RF-480. However, an inspection of the subject VPs was made by representatives of DOE (Sharon Arp), CDPHE (Bud Franz and Jim Hams), and MK-Ferguson Company/RUST (Dave Charlton, Bob Fencil, Nick Abraumiuk, Randy Withee, Scott Bunney, plus several other RUST and MK-F people), and MKES (Grant Cherrington) to assess the extent of remedial actions performed to date and to discuss whether additional excavation was necessary prior to the application of Supplemental Standards.

On RF-479, the south side of the property abutting the site had been remediated to the "angle of repose" and/or to the extent deemed safe, i.e., the roadway would collapse if additional material was removed from the slope. One notes that the final depth of excavation had not been reached in all of the eastern half of the Old Rifle Site. All persons attending the meeting agreed that when the depth of excavation was reached and given the planned restoration (backfill, etc.), Supplemental standards were applicable via 40 CFR 192.21.a and 192,21,c, i.e., public safety and "semi-permanent" location. One notes the same rationale will used on the north side of the roadway when excavation is performed there.

On RF-480 two items of interest were looked at and discussed. The first, material left under the tracks, was pretty straightforward. MK-F had caused excavation on the north side of the tracks to be performed to the extent deemed safe. I believe everyone agreed. The second item was material left around the poles supporting the railroad's power and communication lines. MK-F had caused excavation to the extent that the poles would remain erect and suggested the remaining material be left in place. It was stated that the railroad had a rig that ran on the tracks that would support the poles while the contaminated material was being removed. However, the railroad is reluctant to shut down this main East-West set of tracks for the length of time necessary to remove the material from around the poles and backfill. MK-F also stated the amount of material around the poles was small when compared to the material under the tracks, is contiguous to the deposit under the tracks, and would not significantly contribute to general public exposure.

It is my opinion that DOE agrees with MK-F's assessment of the necessary recommendation of Supplemental Standards, the work performed to date, additional excavation to be performed, restoration plans, and the application of Supplemental Standards. I also believe CDPHE (Bud Franz) agrees, both personally and

professionally, but he said a formal presentation is required before he will make a final judgment. He was reminded that the State had already agreed to Supplemental Standards as described above. He had no additional comment. At any rate, a recommendation for the application of Supplemental Standards will be made for both properties in accordance with the guidance found in the VPMIM when the supporting field data is available.

Although not in the original agenda, DOE, MK-F, and MKES personnel also took a look at RF-479/493 areas for which MK-F will recommend the application of Supplemental Standards. It consists of the vertical and very steep slopes along the Hwy ROW and adjacent VP on the north side of US 6/24. MK-F has removed contaminated material from the upper, non-vertical portions face of the slope, whether on RF-493 or RF-479 (the ROW) to the extent deemed safe (slope stability). MK-F does not anticipate removing any material from the vertical portions of the face. And finally, MK-F will cause excavation on the lower portions to be performed to the extent that slope stability or road bed stability (as on the south side of the highway) is not endangered. Mr. Cherrington suggested that radiological data from the vertical portion was necessary before Supplemental Standards could be addressed. I reminded everyone that several precedents had been set on DU-544/545 and DU-059 under very similar circumstances, i.e., no data was collected from the near-vertical and vertical portions of those VPs because of the risk to RUST employees, it was intuitively obvious that the environmental damage clause of 40 CFR 192 was applicable, and that the risk to the general public from an unstable slope was much greater than any health risk from the contamination. One notes Jim Hams of CDPHE suggested a 'vacuum-cleaner' rig could be used to remove most of the tailings from the upper, non-vertical slope. The idea will have to be more fully considered, but MK-F's opinion is that since most of the tailings there are entwined with the native growth, removal of the tailings would cause the plant life to die, and, ergo, slope stability degenerates. So Supplemental Standards are applicable.

Action Items:

1) Excavation of the roadway and Site is to be completed and restoration performed. At that time, the radiological data supporting a recommendation for Supplemental Standards will be collected and transmitted to the APO for incorporation into a formal recommendation.

2) Grant Cherrington (MKES) will investigate and report on slope stability questions north of the roadway and Supplemental Standards options

cc: S. Arp,DOE/UMTRA
G. Cherrington, MKES
B. Franz, CDPHE
J. Pape,DOE/UMTRA
R. Withee, RFL
S. Bunney, RFL
R. Cooney
J. Hams, CDPHE
C. Spencer
File - VP
D. Charlton
R. Fencil, RFL
R. Hindman
M. Thomson

11019VP

APPENDIX C

LEGAL DESCRIPTION

LEGAL DESCRIPTION

The property which is the subject of this Completion Report, the address of which is South of the Old Rifle Site, Rifle, Colorado, is more particularly described in the Garfield County Recorder's Office, as follows:

No legal description is available for the railroad right-of-way.

MK-FERGUSON COMPANY
A MORRISON KNUDSEN COMPANY
IJMTRA PROJECT OFFICE
P.O. BOX 9136
ALBUQUERQUE, NEW MEXICO 87119