PRELIMINARY DRAFT

PHASE II RFI/RI REPORT
903 PAD, MOUND AND EAST TRENCHES AREA
OPERABLE UNIT NO. 2

VOLUME 3

SECTION 4.0
Figures

U.S. Department of Energy
Rocky Flats Plant
Golden, Colorado

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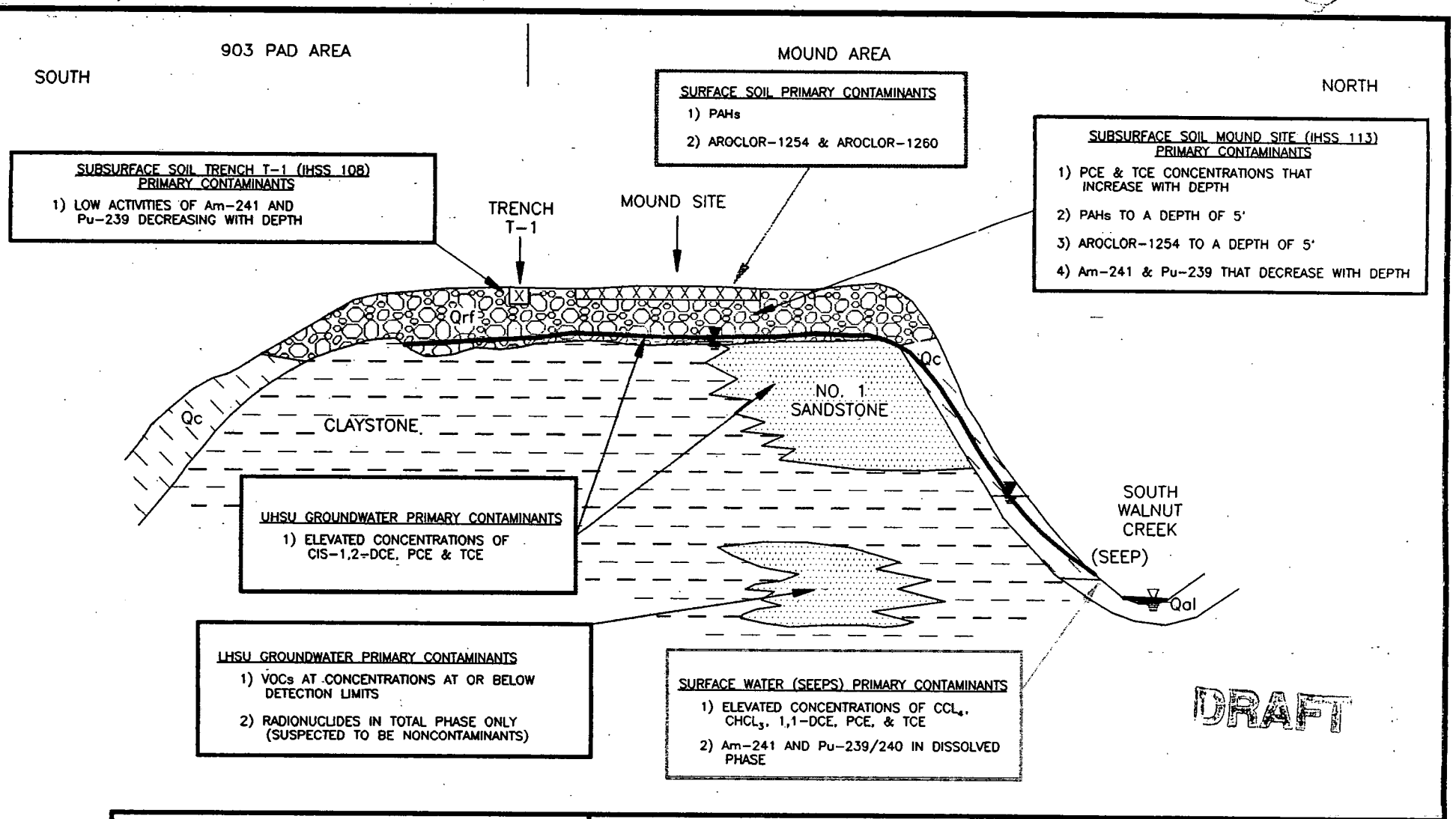
ADMIN RECORD

December 1993

1/157



EXPLANATION

- SURFACE SOIL
- SUBSURFACE SOIL
- UHSU GROUNDWATER
- LHSU GROUNDWATER
- SURFACE WATER (SEEP)

EXPLANATION

- SANDSTONE
- COLLUVIUM
- CLAYSTONE
- IHSS BOUNDARY
- Qrf-ROCKY FLATS ALLUVIUM
- GROUNDWATER SURFACE
- CREEK WATER SURFACE

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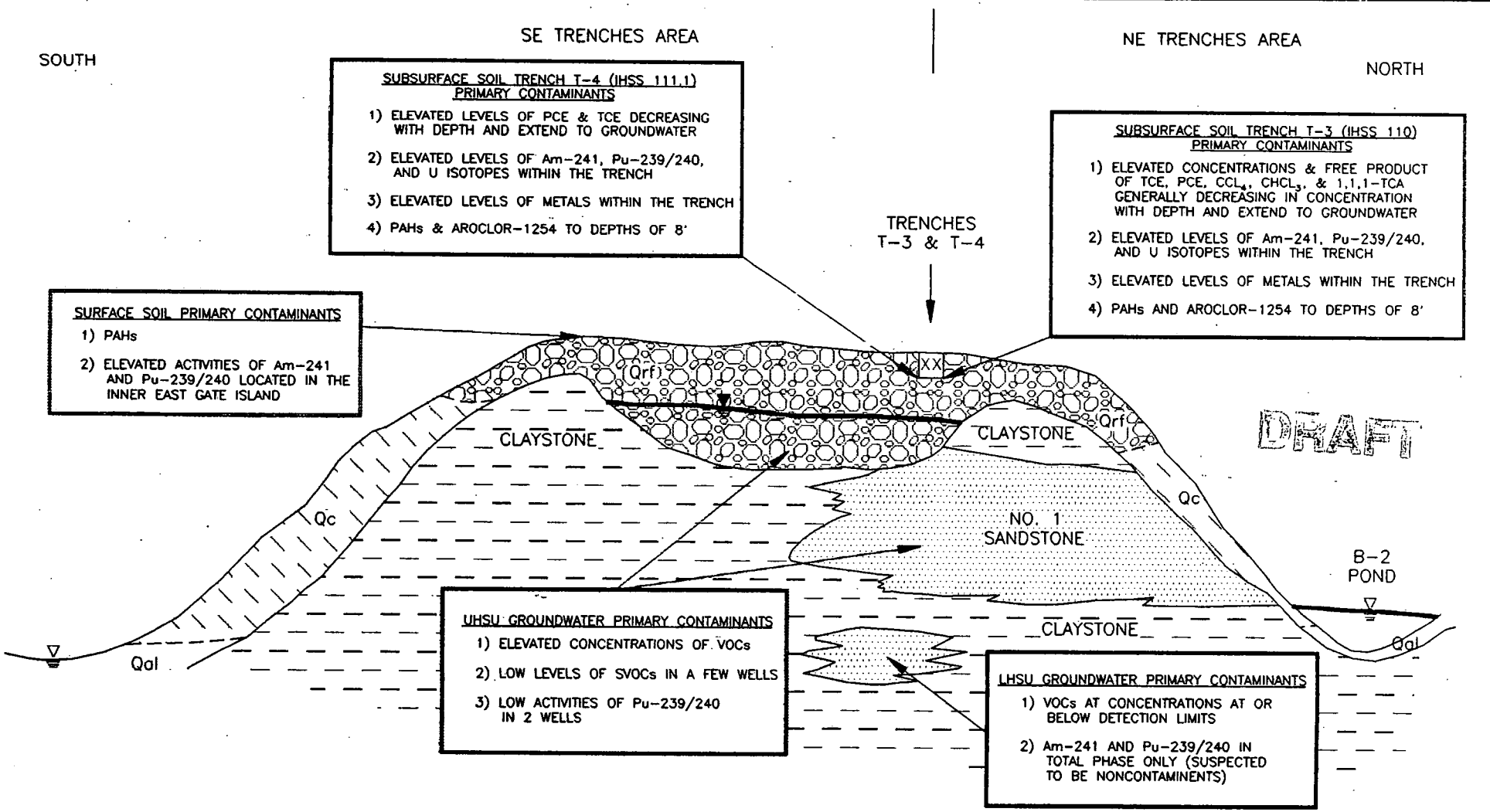
PHASE II RFI/RI REPORT

SUMMARY OF THE NATURE AND EXTENT OF PRIMARY CONTAMINANTS IN THE MOUND AREA

FIGURE ES4-2 OCTOBER 1993

0U2RI318 1=1



EXPLANATION

- SURFACE SOIL
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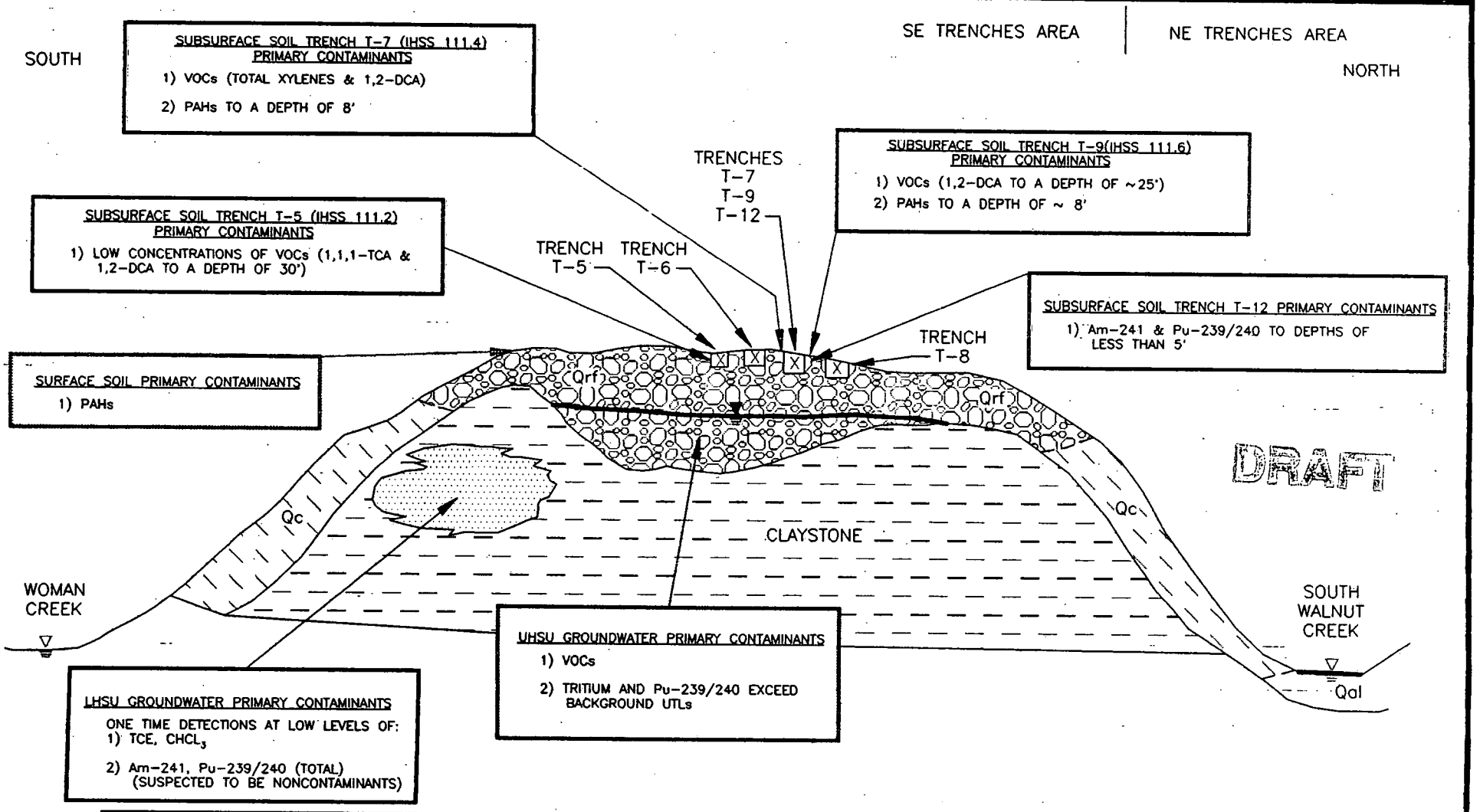
SUMMARY OF THE NATURE AND EXTENT OF PRIMARY CONTAMINANTS IN NE TRENCHES AREA

FIGURE ES4-3 OCTOBER 1993

OU2RI319 1=1



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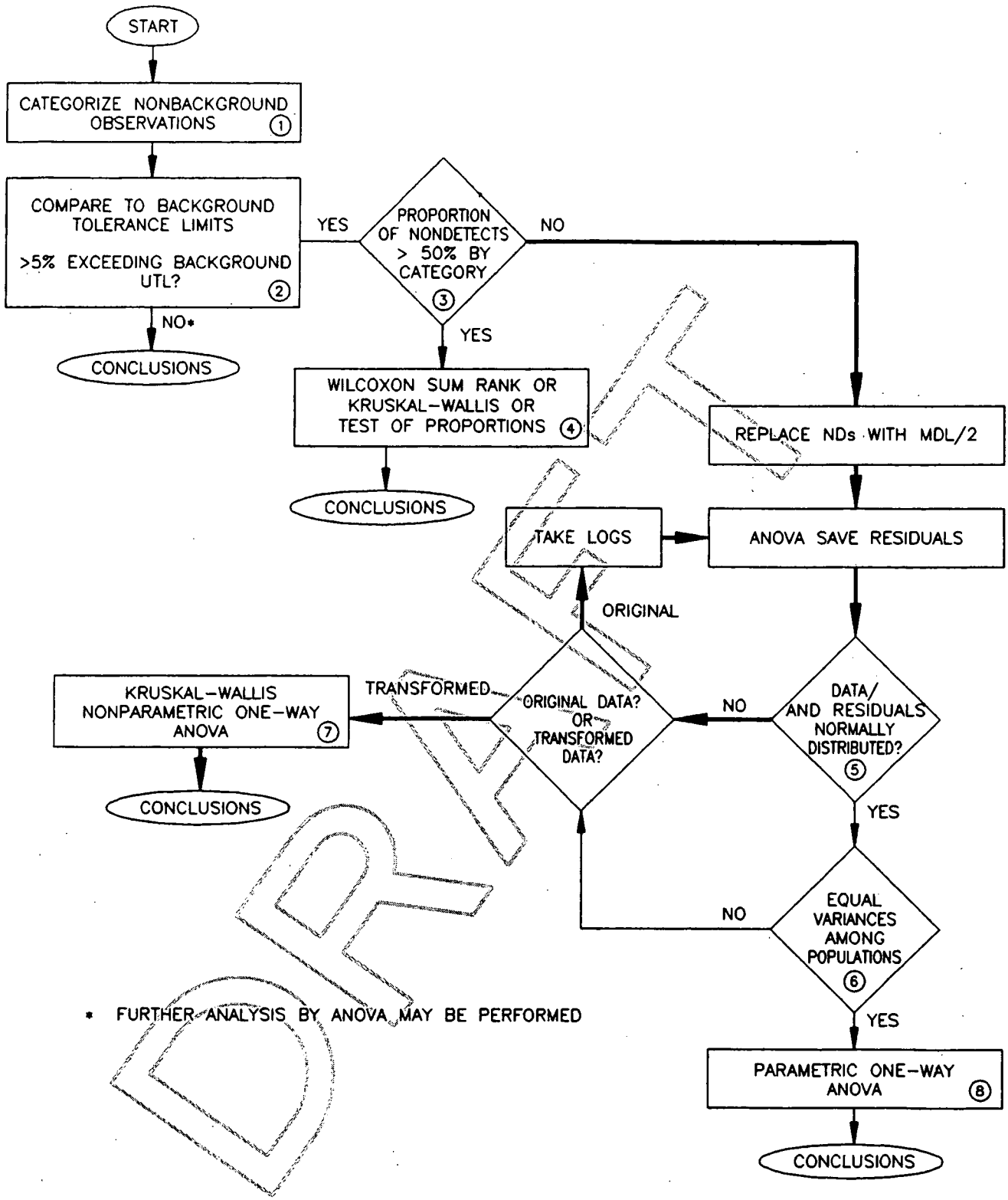
SUMMARY OF THE NATURE AND EXTENT OF PRIMARY CONTAMINANTS IN SE TRENCHES AREA

FIGURE ES4-4 OCTOBER 1993

OU2RI320 1=1



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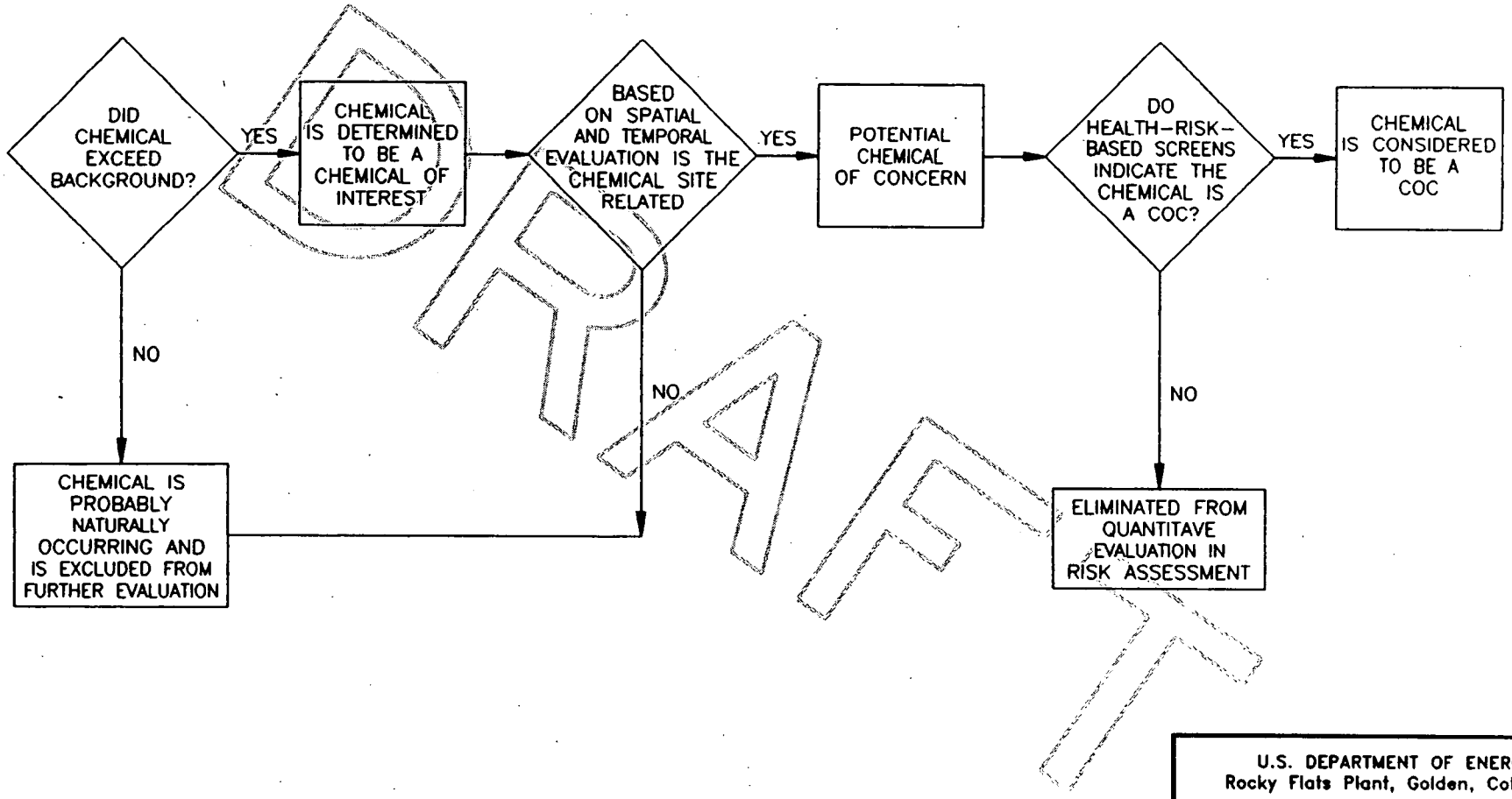
SELECTION OF STATISTICAL METHOD FOR COMPARISON OF BACKGROUND AND NONBACKGROUND POPULATIONS

FIGURE 4.1-1 OCTOBER 1993

OU2RI309 1=1



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DETERMINATION OF INORGANIC CHEMICALS OF INTEREST AND CHEMICALS OF CONCERN FLOW CHART

FIGURE 4.1-2 - OCTOBER 1993

OU2R429 1=1

ANALYTE ABBREVIATIONS

VOLATILE ORGANIC COMPOUNDS

1,1,1,2-PCA	1,1,1,2-TETRACHLOROETHANE
1,1,2,2-PCA	1,1,2,2-TETRACHLOROETHANE
1,1,1-TCA	1,1,1-TRICHLOROETHANE
1,1-DCA	1,1-DICHLOROETHANE
1,1-DCE	1,1-DICHLOROETHENE
1,2-DCA	1,2-DICHLOROETHANE
1,2-DCE	1,2-DICHLOROETHENE
CCL_4	CARBON TETRACHLORIDE
$CHCL_3$	CHLOROFORM
Cis-1,2-DCE	Cis-1,2-DICHLOROETHENE
PCE	TETRACHLOROETHENE
TCE	TRICHLOROETHENE

METALS AND OTHER COMPOUNDS

Al	ALUMINUM
As	ARSENIC
Ba	BARIUM
Cd	CADMIUM
CN	CYANIDE
Cr	CHROMIUM
Li	LITHIUM
Mn	MANGANESE
Ni	NICKEL
Pb	LEAD
Sb	ANTIMONY
Se	SELENIUM
Sn	TIN
Sr	STRONTIUM
Zn	ZINC

RADIONUCLIDES

Am-241	AMERICIUM-241
Cs-137	CESIUM-137
Pu-239	PLUTONIUM-239
Pu-239/240	PLUTONIUM-239/240
Ra-226	RADIUM-226
Ra-228	RADIUM-228
Sr-89,90	STRONTIUM-89,90
U-233,234	URANIUM-233,234
U-235	URANIUM-235
U-238	URANIUM-238

OTHER ABBREVIATIONS

(D) DISSOLVED (FILTERED SAMPLE)
(T) TOTAL (UNFILTERED SAMPLE)

LABORATORY QUALIFIERS

B = ORGANICS (VOLATILES, SEMIVOLATILES, PESTICIDES) INDICATES CHEMICAL WAS IN BOTH THE SAMPLE AND METHOD BLANK

B = INORGANIC (METALS & INORGANICS) DETECTED CONCENTRATION WAS LESS THAN CRQL

B = RADIONUCLIDES – THE ACTIVITY IN THE METHOD BLANK EXCEEDED THE MDA

C = PESTICIDE RESULT WHERE IDENTIFICATION WAS CONFIRMED BY GC/MS

C = RADIONUCLIDES INDICATED ELEVATED TDS

E = ORGANICS – CHEMICAL EXCEEDS CALIBRATION RANGE OF THE INSTRUMENT

E = INORGANIC – REPORTED VALUE IS ESTIMATED DUE TO INTERFERENCE

F = ALPHA SPECTROMETRY – FWHM EXCEEDED ACCEPTANCE LIMITS

D = ORGANICS – ANALYSIS WAS PERFORMED AT A DILUTION

J = ORGANICS – POSITIVELY IDENTIFIED – RESULT IS CONSIDERED TO BE ESTIMATED

J = INORGANICS & RADIONUCLIDES – ESTIMATED QUANTIFICATION

N = METALS – SPIKE RECOVERIES IN THE MATRIX SPIKE SAMPLE DID NOT MEET ADVISORY LIMITS

S = METALS – THE REPORTED VALUE WAS DETERMINED BY THE METHOD OF STANDARD ADDITION (MSA)

U = ALL ANALYSES – ANALYZED CHEMICAL WAS NOT DETECTED ABOVE THE SAMPLE QUANTITATION LIMIT

W = METALS – POST DIGESTION SPIKE DID NOT MEET CONTROL LIMITS

X = OPEN AND DEFINED BY LABORATORY

Y = RADIONUCLIDES – CHEMICAL YIELD EXCEEDED ACCEPTANCE LIMITS

* = METALS – MATRIX DUPLICATE ANALYSIS DO NOT MEET ADVISORY LIMITS

VALIDATION CODES AND QUALIFIERS

A = RESULT ACCEPTED WITH QUALIFICATIONS

AJ = RESULT ACCEPTED, BUT WAS ESTIMATED

J = ESTIMATED RESULT DUE TO OUTSIDE HOLDING TIME, IMPROPERLY PRESERVED, QUALITY CONTROL PARAMETER OUTSIDE CONTROL LIMIT

R = REJECTED RESULT

U = ALL ANALYSES – ANALYZED CHEMICAL WAS NOT DETECTED ABOVE THE SAMPLE QUANTITATION LIMIT

V = VALID RESULT

VA = VALID RESULT WITH QUALIFICATIONS

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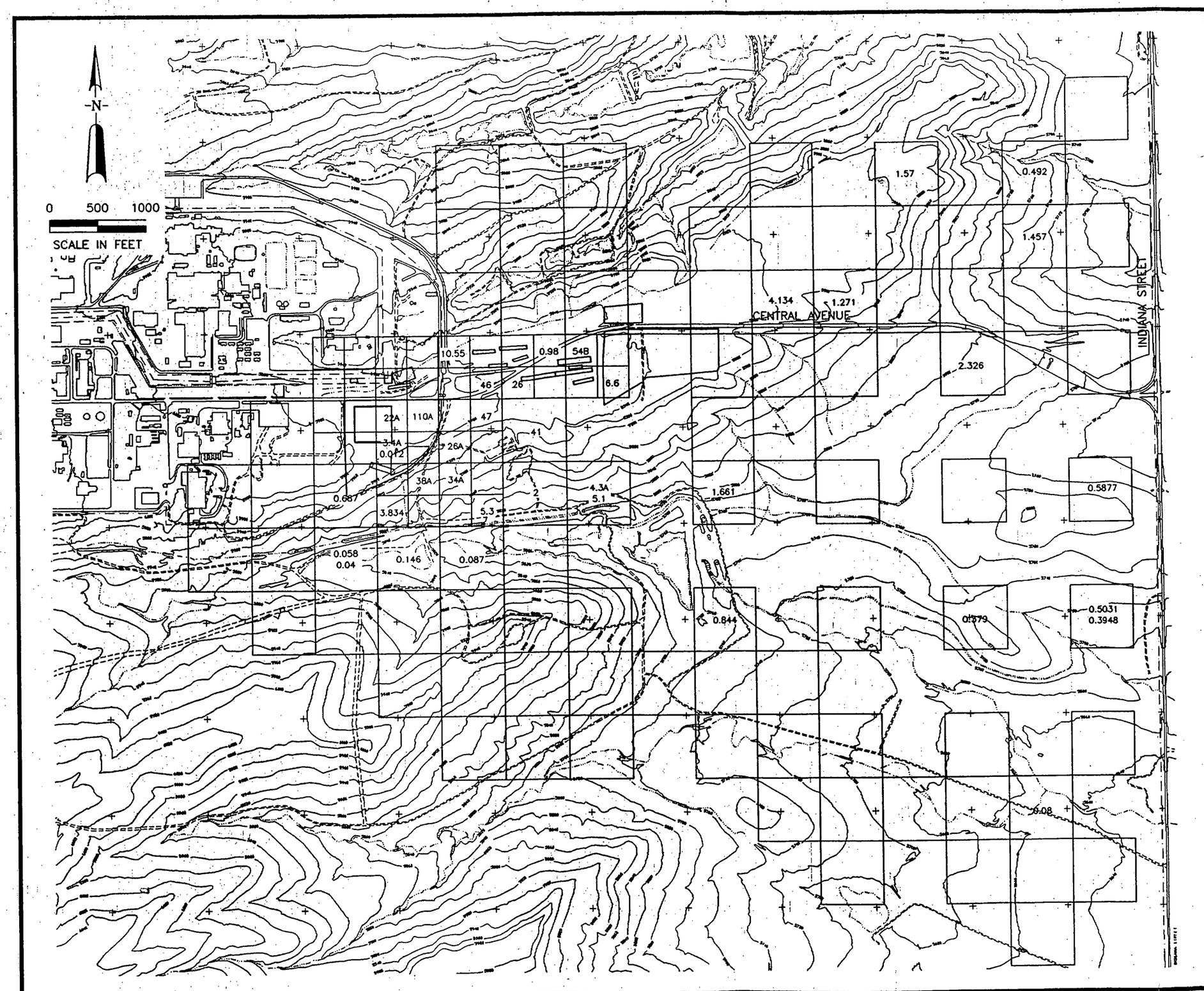
ANALYTE ABBREVIATIONS, LABORATORY AND VALIDATION QUALIFIERS

FIGURE 4.2-1 OCTOBER 1993



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EXPLANATION

4.3A	10-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN
38A	2.5-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN
☐	INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
SAMPLE PLOTS WITH TWO RESULTS INDICATE REAL AND DUPLICATE SAMPLES.

RADIONUCLIDE ACTIVITIES REPORTED IN pCi/g
LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1

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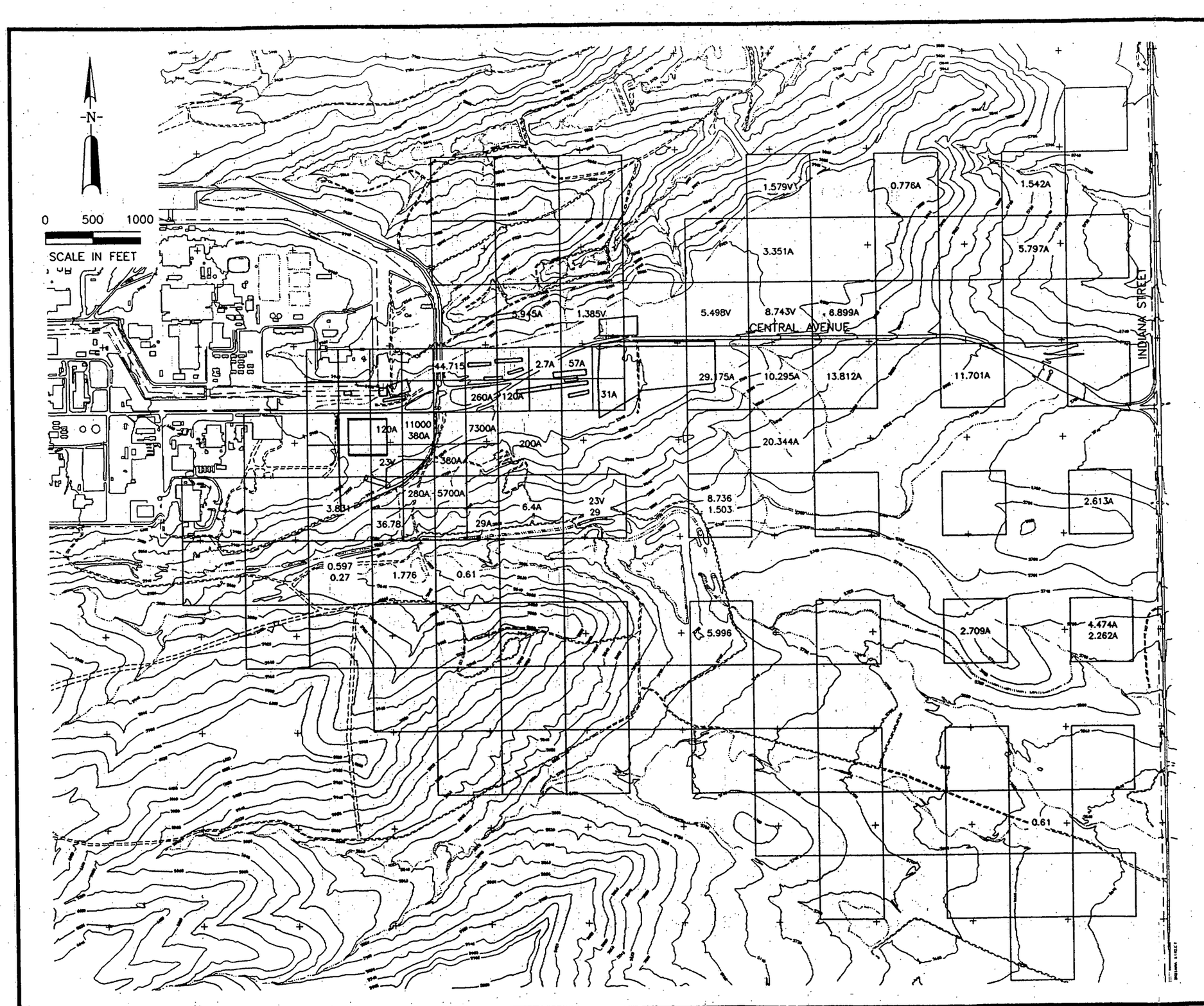
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

AMERICIUM-241 ACTIVITY IN
OU-2 SURFACE SOILS
(RFP METHOD)

FIGURE 4.2-2 OCTOBER 1993

OU2RI321 1=1000



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EXPLANATION

200A — 10-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN

120A — 2.5-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN

INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
SAMPLE PLOTS WITH TWO RESULTS INDICATE REAL AND DUPLICATE SAMPLES.

RADIONUCLIDE ACTIVITIES REPORTED IN pCi/g
LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1

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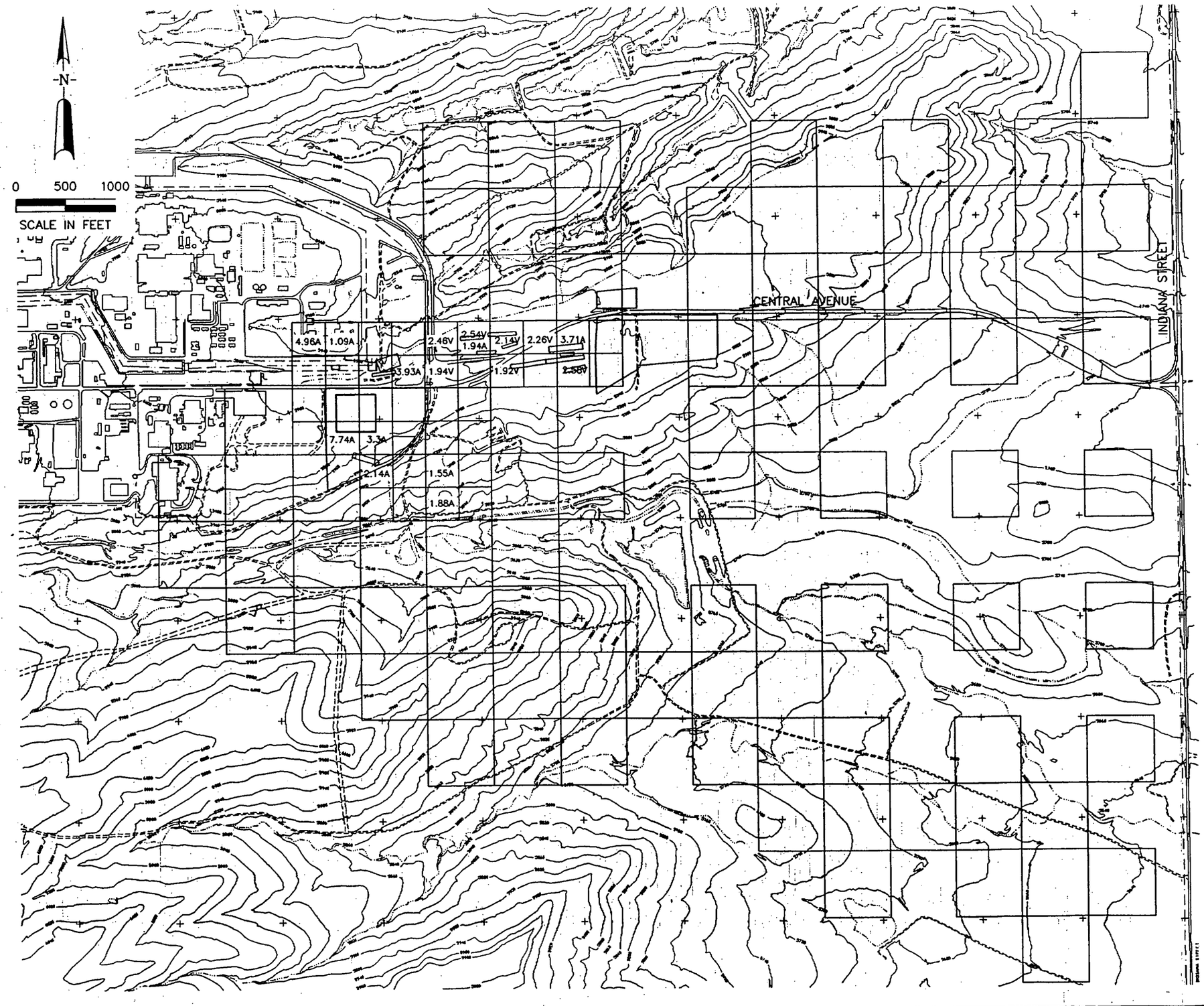
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

PLUTONIUM-239/240 ACTIVITY IN OU-2 SURFACE SOILS (RFP METHOD)

FIGURE 4.2-3 OCTOBER 1993

OU2Rt322 1=1000



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EXPLANATION

10-ACRE SAMPLING PLOT LOCATION

2.14V — 2.5-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN

INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
SAMPLE PLOTS WITH TWO RESULTS INDICATE REAL AND DUPLICATE SAMPLES.

RADIONUCLIDE ACTIVITIES REPORTED IN pCi/g
LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1

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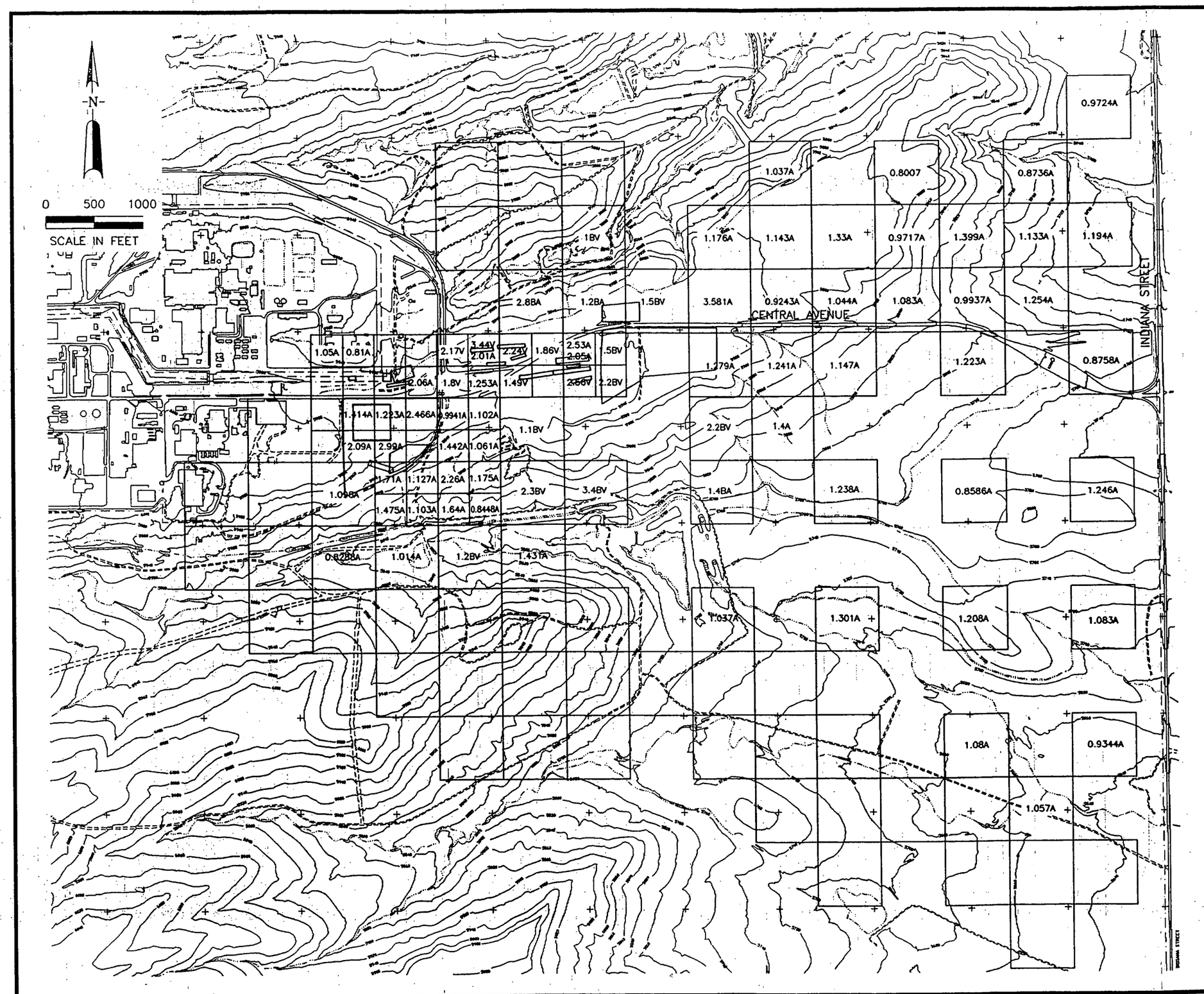
PHASE II RFI/RI REPORT

URANIUM-233,238,239 ACTIVITY
IN OU-2 SURFACE SOILS
(CDH METHOD)

FIGURE 4.2-4 OCTOBER 1993

OU2RI327 1=1000



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EXPLANATION

1.301A	10-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN
2.28V	2.5-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN
	INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
SAMPLE PLOTS WITH TWO RESULTS INDICATE REAL AND DUPLICATE SAMPLES.

RADIONUCLIDE ACTIVITIES REPORTED IN pCi/g
LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1

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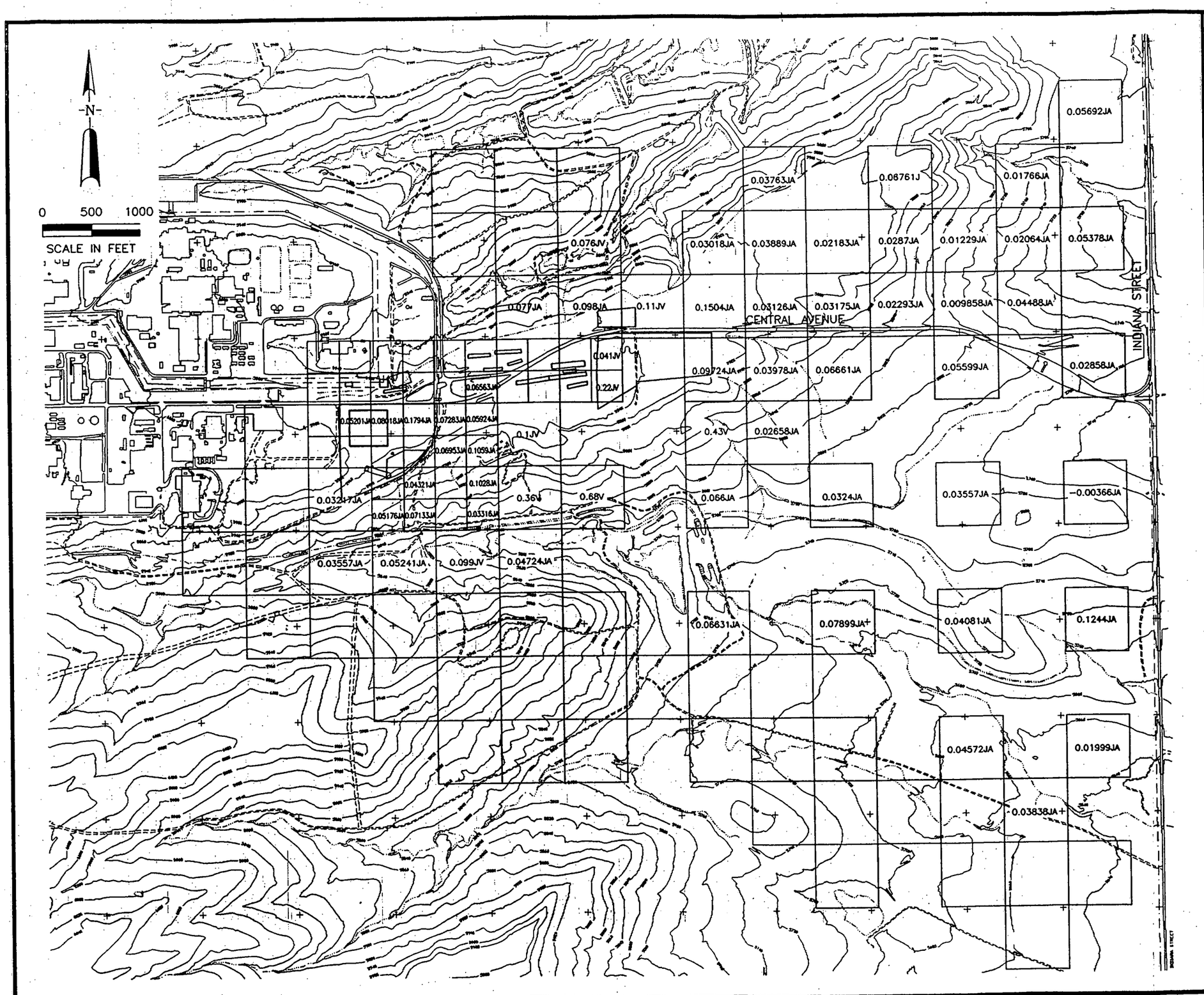
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

URANIUM-233,234 ACTIVITY
IN OU-2 SURFACE SOILS
(CDH METHOD)

FIGURE 4.2-5 OCTOBER 1993

OU2RI323 1=1000



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EXPLANATION

0.43V — 10-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN

0.22JV — 2.5-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN

INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
SAMPLE PLOTS WITH TWO RESULTS INDICATE REAL AND DUPLICATE SAMPLES.

RADIONUCLIDE ACTIVITIES REPORTED IN pCi/g
LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1

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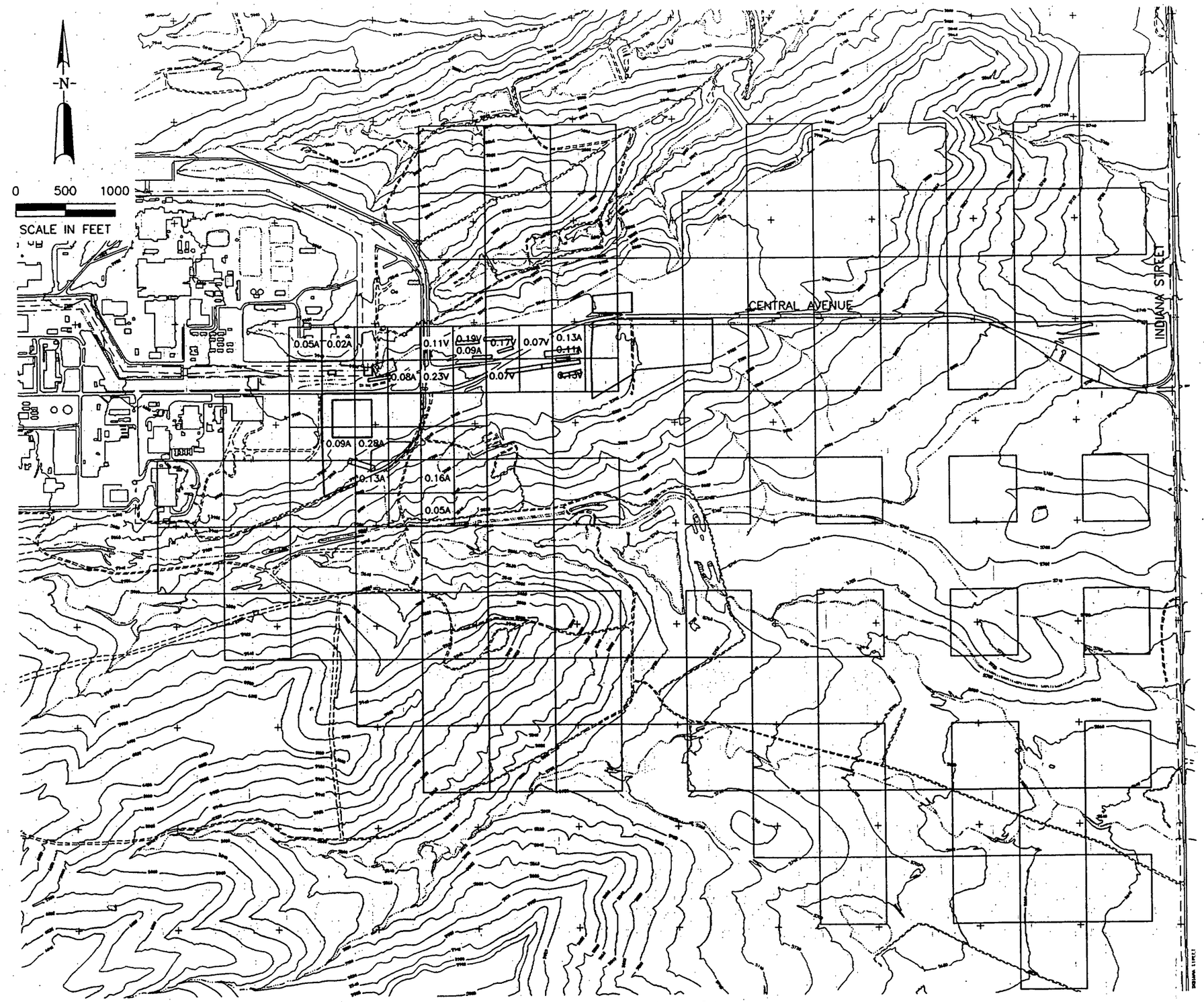
PHASE II RFI/RI REPORT

URANIUM-235
IN OU-2 SURFACE SOILS
(CDH METHOD)

FIGURE 4.2-6 OCTOBER 1993

OU2R325 1=1000



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EXPLANATION

10-ACRE SAMPLING PLOT LOCATION

0.13V — 2.5-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN

INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
SAMPLE PLOTS WITH TWO RESULTS INDICATE REAL AND DUPLICATE SAMPLES.

RADIONUCLIDE ACTIVITIES REPORTED IN pCi/g
LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1

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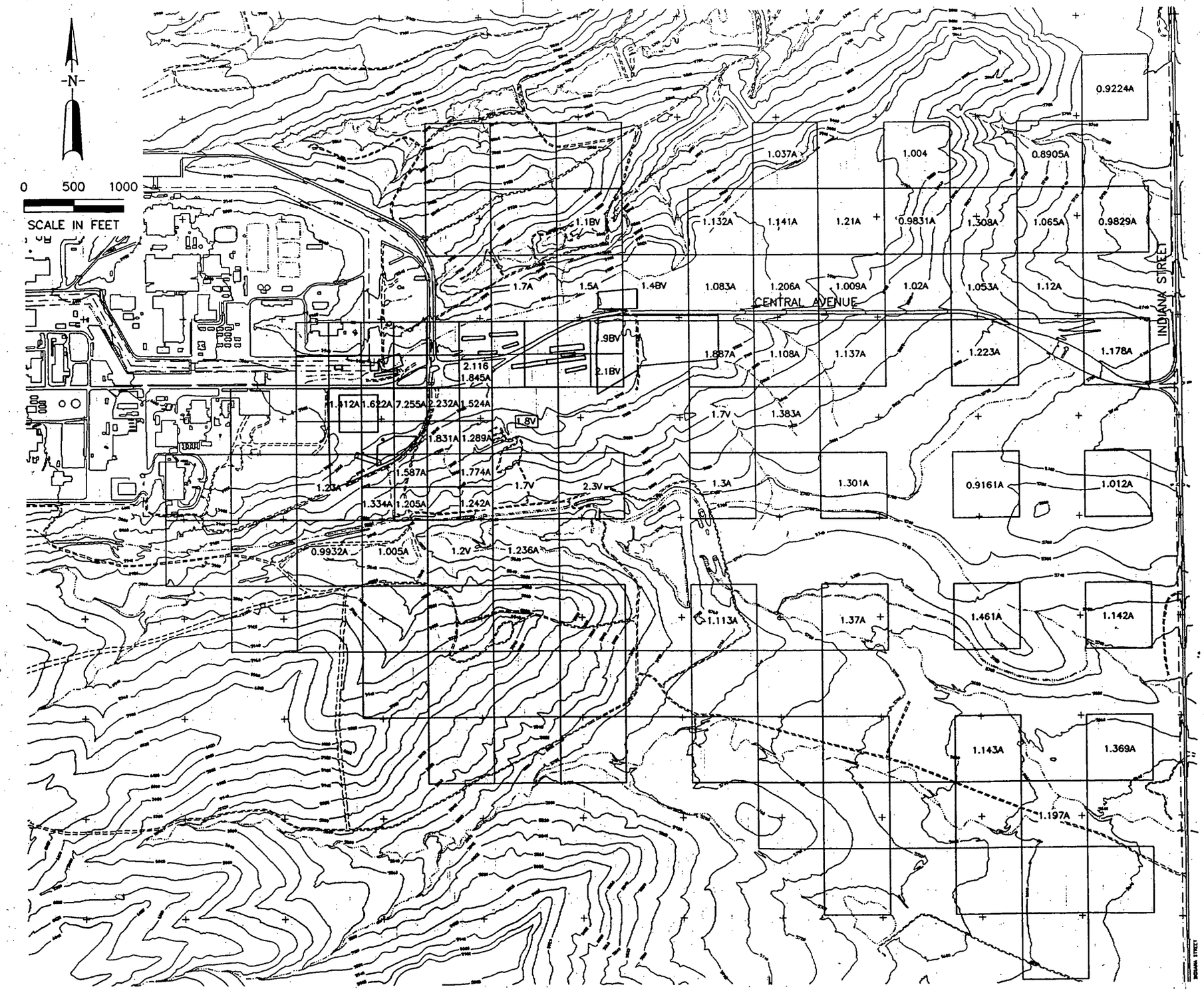
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

URANIUM-235,236
IN OU-2 SURFACE SOILS
(CDH METHOD)

FIGURE 4.2-7 OCTOBER 1993

OU2RI326 1=1000



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EXPLANATION

1.3A	10-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN
2.18V	2.5-ACRE SAMPLING PLOT LOCATION WITH ANALYTICAL RESULT AND QUALIFIER(S) SHOWN
☐	INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
SAMPLE PLOTS WITH TWO RESULTS INDICATE REAL AND DUPLICATE SAMPLES.

RADIONUCLIDE ACTIVITIES REPORTED IN pCi/g
LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1

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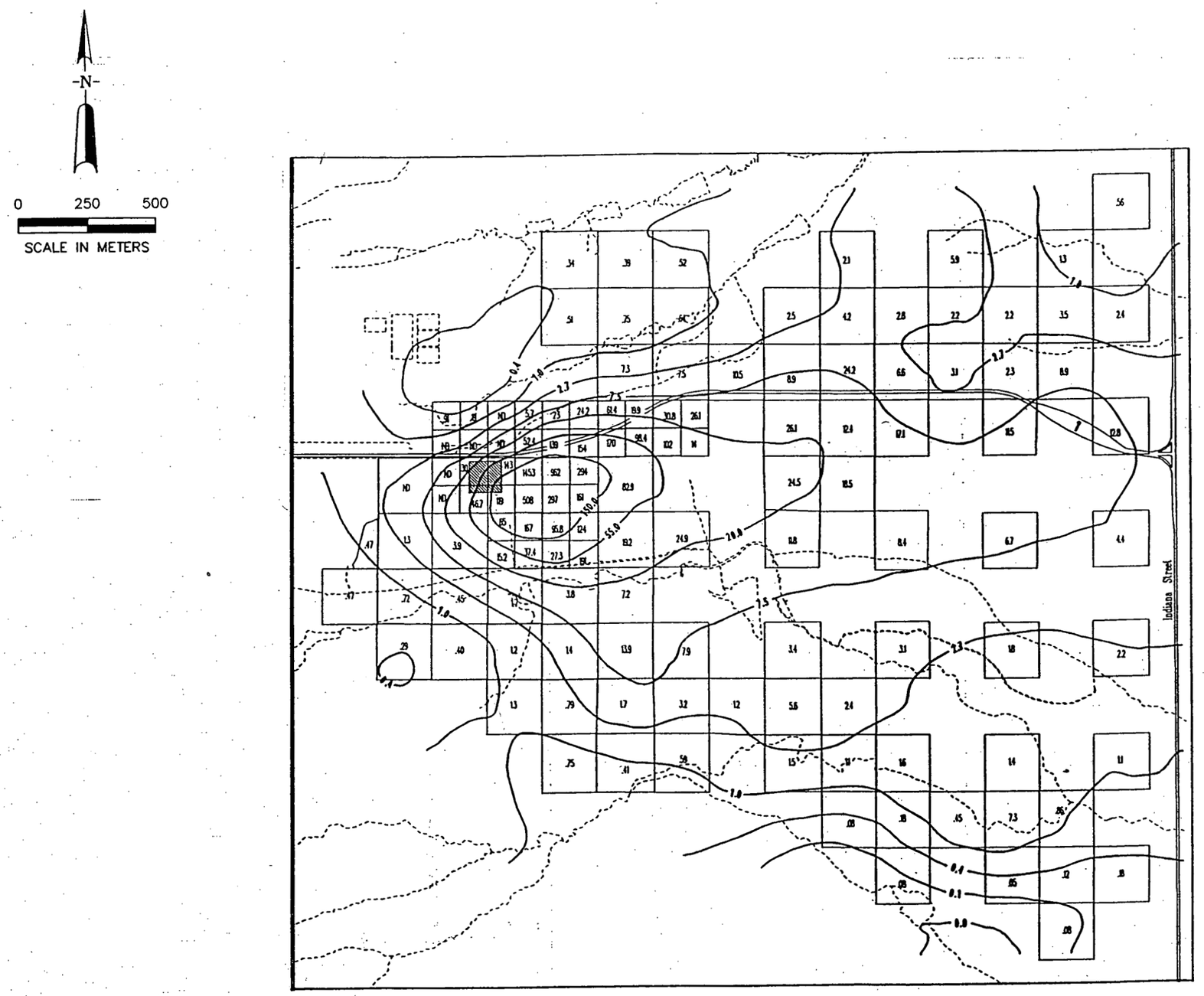
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

URANIUM-238
IN OU-2 SURFACE SOILS
(CDH METHOD)

FIGURE 4.2-8 OCTOBER 1993

OU2RI324 1=1000



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EXPLANATION

82.9 — SAMPLING PLOT WITH OBSERVED VALUE (IN pCi/g) IN THE CENTER

WATER FEATURE

20.0 — Pu-239/240 ISOPLETH USING ORDINARY KRIGING

903 PAD

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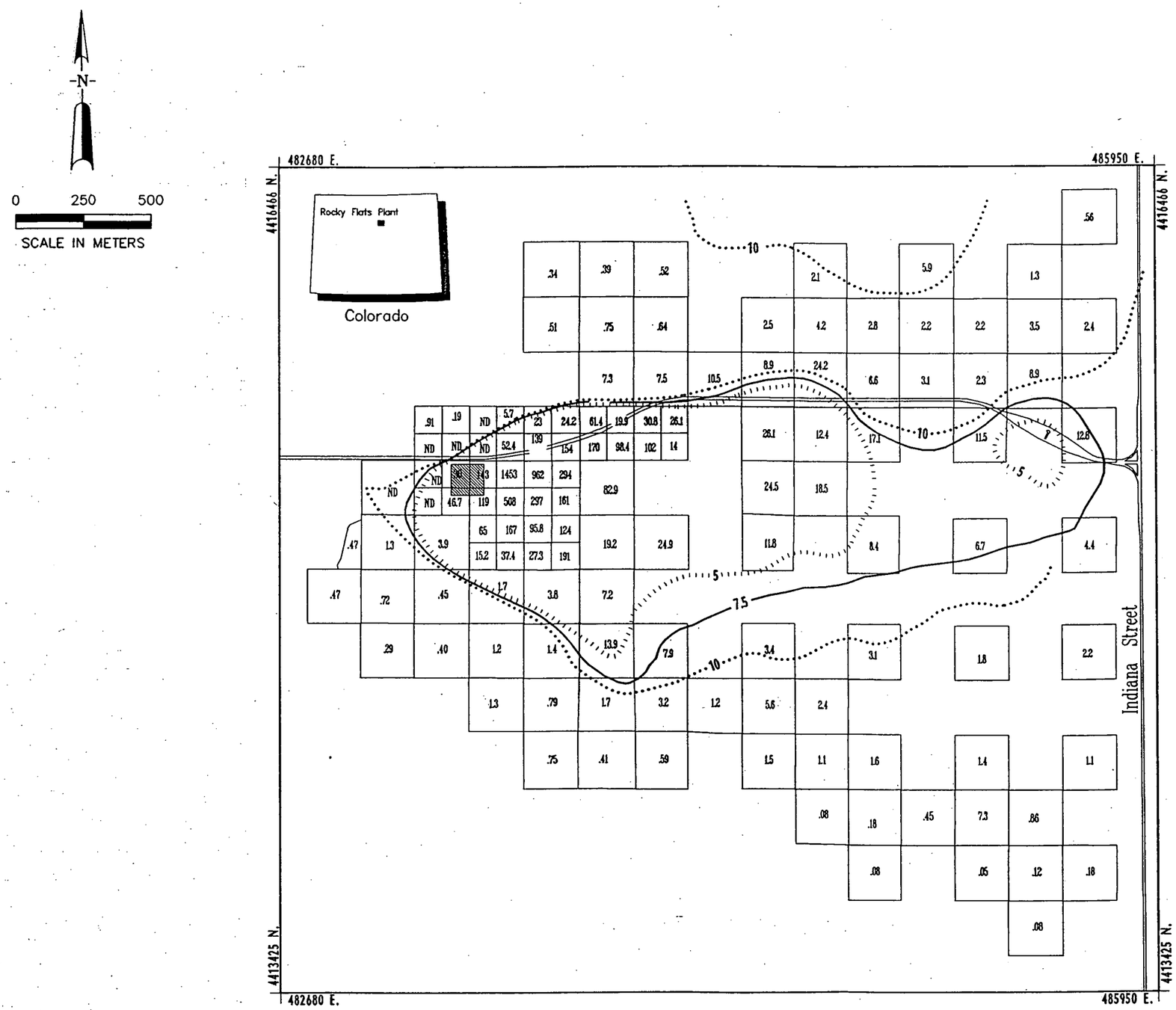
ISOPLETH MAP OF
PLUTONIUM-239/240
IN SOILS

FIGURE 4.2-9 OCTOBER 1993

OU2RI340 1=1



EXPLANATION

82.9 — SAMPLING PLOT WITH OBSERVED VALUE (IN pCi/g) IN THE CENTER

5 — 7.5 pCi/g CONTOUR OF Pu-239/240 WITH 90% EMPIRICAL CONFIDENCE LIMITS
7.5
10

903 PAD

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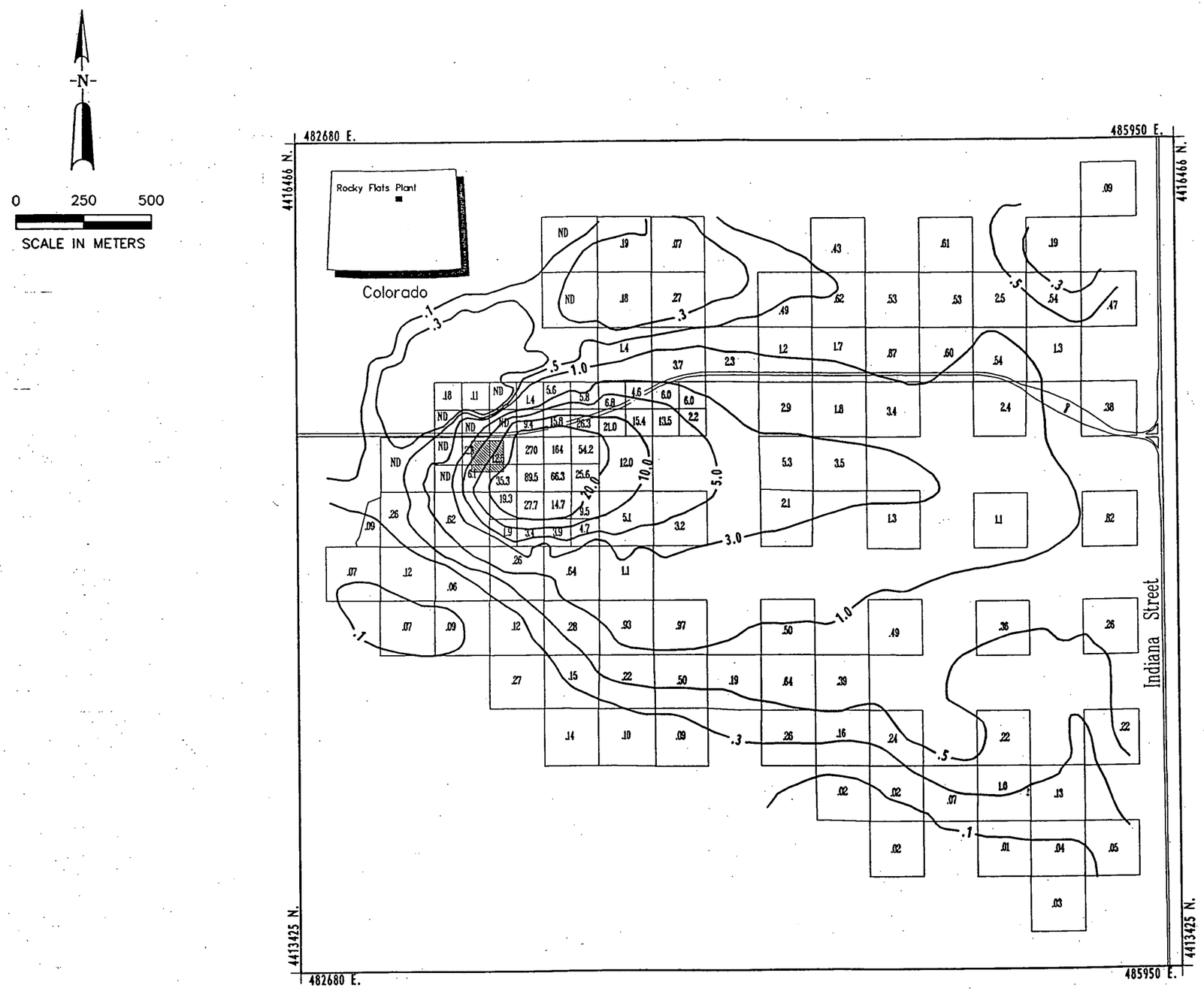
MAP OF 7.5 pCi/g
CONTOUR MAP
OF Pu-249/240

FIGURE 4.2-10 OCTOBER 1993

OU2RI353 1-1



EXPLANATION

12.0 — SAMPLING PLOT WITH OBSERVED VALUE (IN pCi/g) IN THE CENTER

5.0 — Am-241 ISOPLETH USING ORDINARY KRINGING

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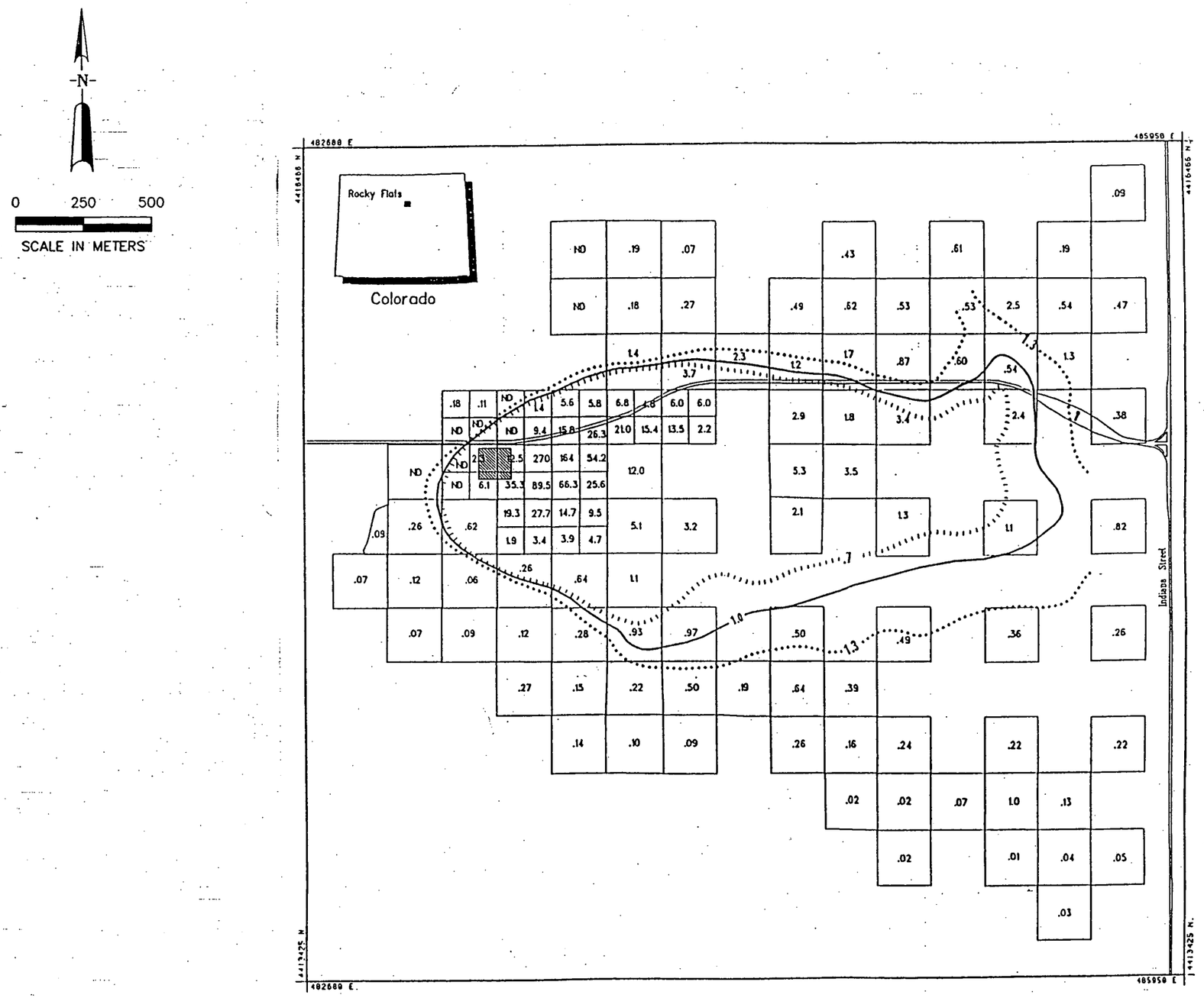
PHASE II RFI/RI REPORT

ISOPLETH MAP OF
AMERICIUM-241
IN SOILS

FIGURE 4.2-11 OCTOBER 1993

OU2RI341 1=1



EXPLANATION

25.6 — SAMPLING PLOT WITH OBSERVED VALUE (IN pCi/g) IN THE CENTER

.7 — 1.0 pCi/g CONTOUR OF Am-241 WITH 90% EMPIRICAL CONFIDENCE LIMITS

1.0

1.3

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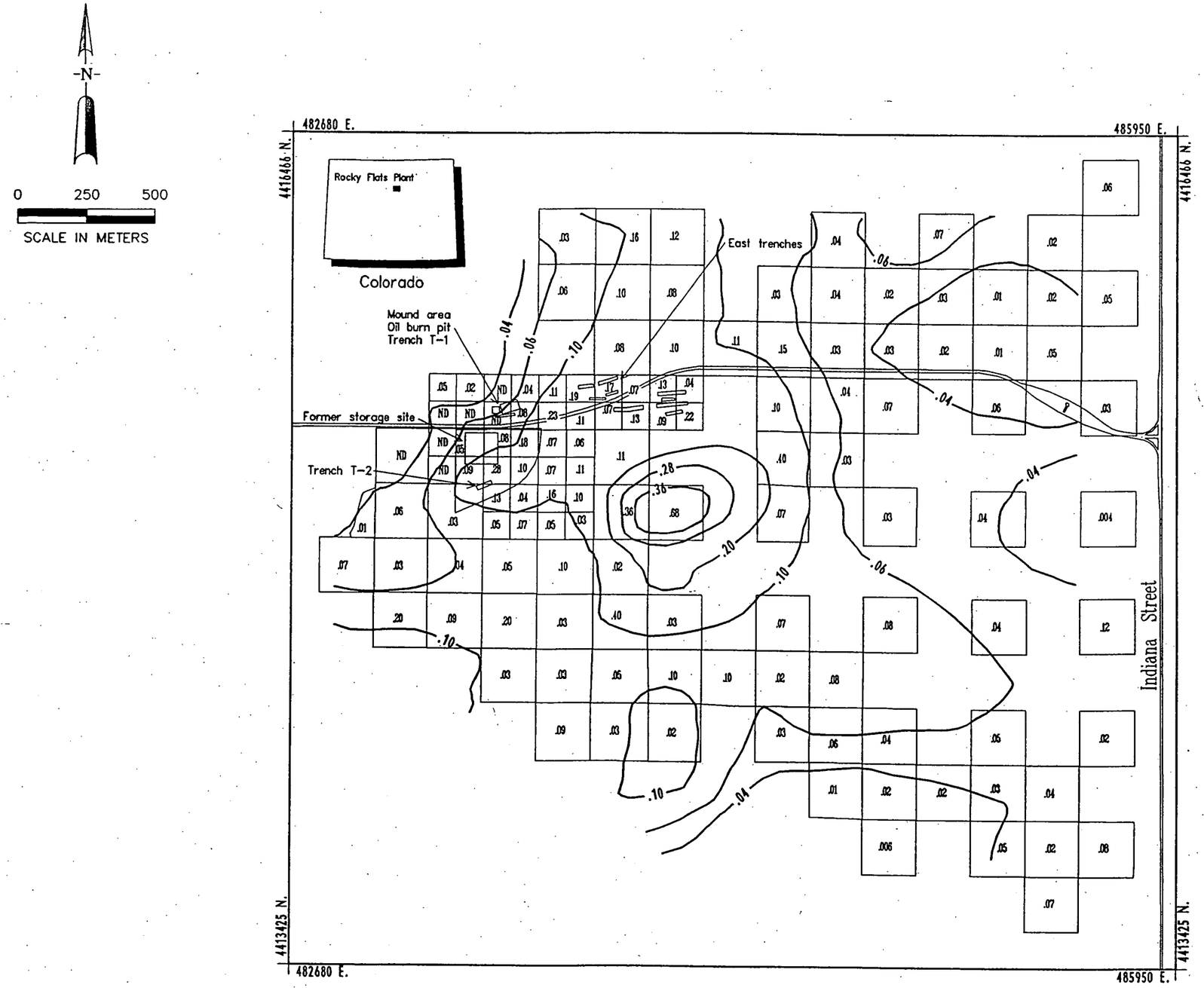
MAP OF 1.0 pCi/g
CONTOUR MAP
OF Am-241

FIGURE 4.2-12 OCTOBER 1993

0U2RI354 1=1



EXPLANATION

.11	SAMPLING PLOT WITH OBSERVED VALUE (IN pCi/g) IN THE CENTER
.20	U-235 ISOPLETH USING ORDINARY KRIGING
	IHSS LOCATION

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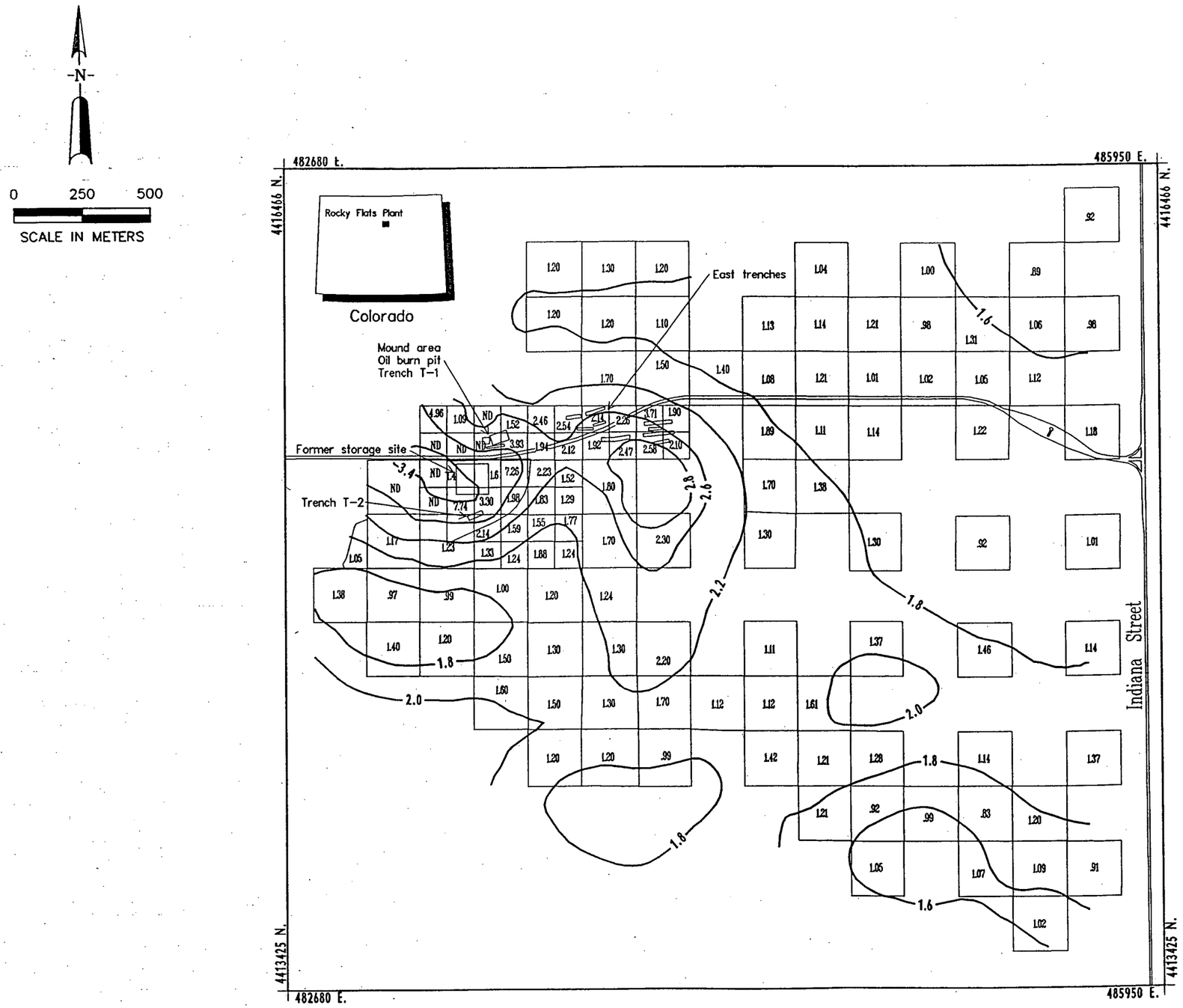
PHASE II RFI/RI REPORT

ISOPLETH MAP OF
URANIUM-235
IN SOILS

FIGURE 4.2-13 OCTOBER 1993

OU2RI342 1=1



EXPLANATION

1.80 — SAMPLING PLOT WITH OBSERVED VALUE (IN pCi/g) IN THE CENTER

2.2 — U-238 ISOPLETH USING ORDINARY KRIGING

IHSS LOCATION

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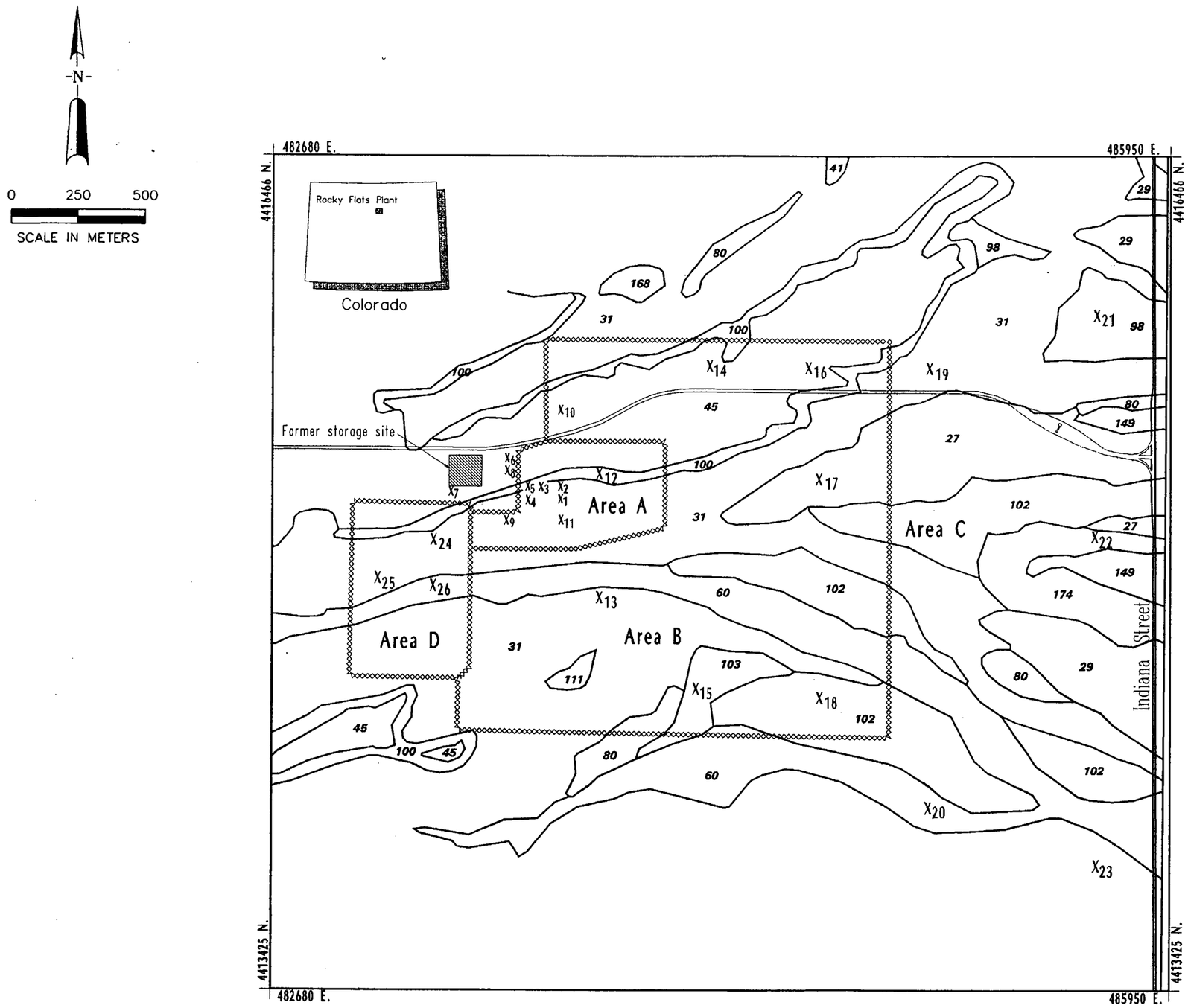
PHASE II RFI/RI REPORT

ISOPLETH MAP OF
URANIUM-238
IN SOILS

FIGURE 4.2-14 OCTOBER 1993

OU2RI343 1=1



EXPLANATION

X_{12} TEST PIT LOCATION

903 PAD

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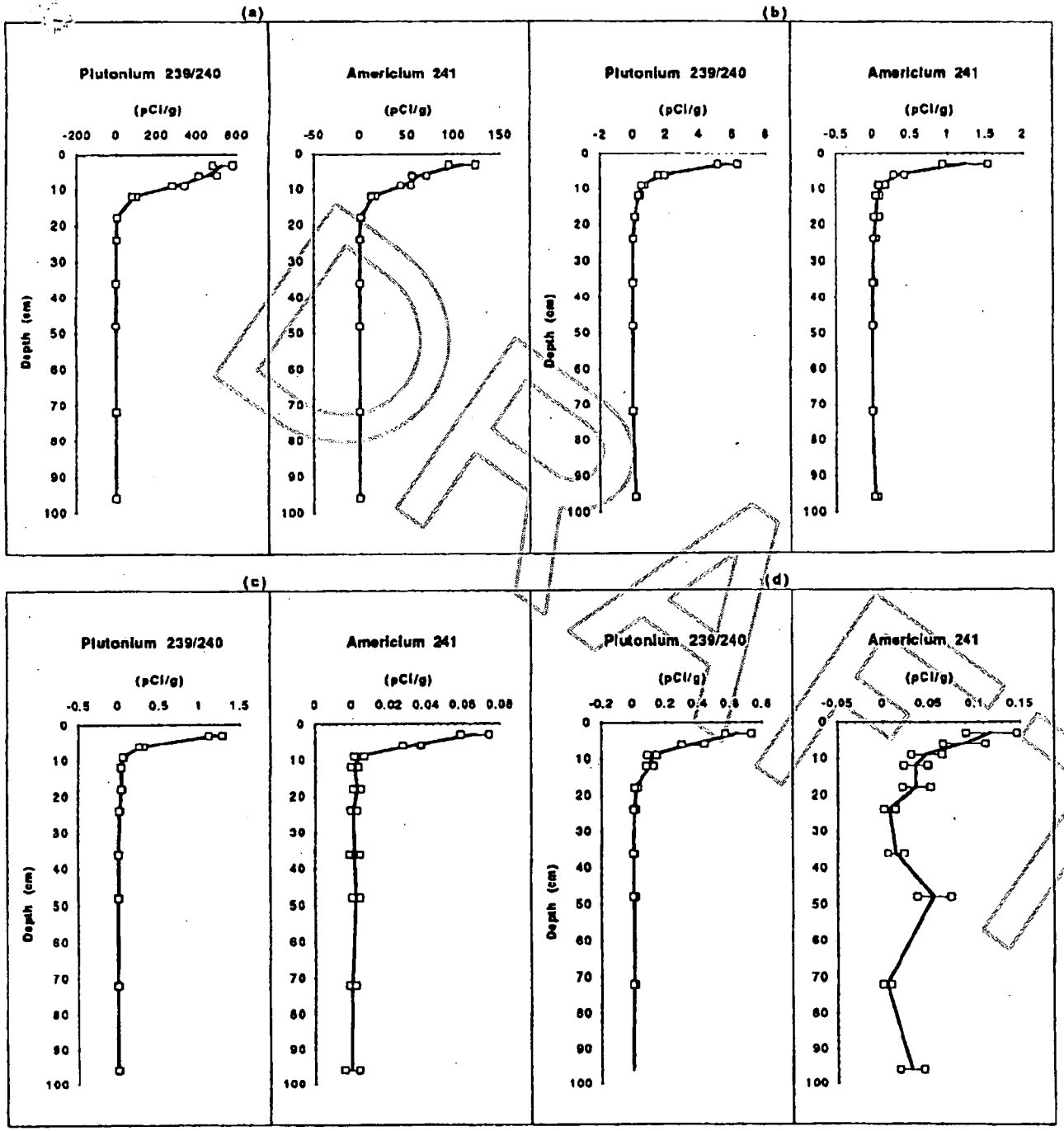
PHASE II RFI/RI REPORT

LOCATION OF THE
26 SOIL PITS

FIGURE 4.2-15 OCTOBER 1993

OU2RI344 1=1



EXPLANATION

THE NEGATIVE VALUES CORRESPOND TO ANALYTICAL ERROR AROUND THE MEASUREMENT WHICH ARE CLOSE TO 0. THE ANALYTICAL ERROR REPRESENTS THE MEASURE OF SPREAD ASSOCIATED WITH EACH ANALYSIS.

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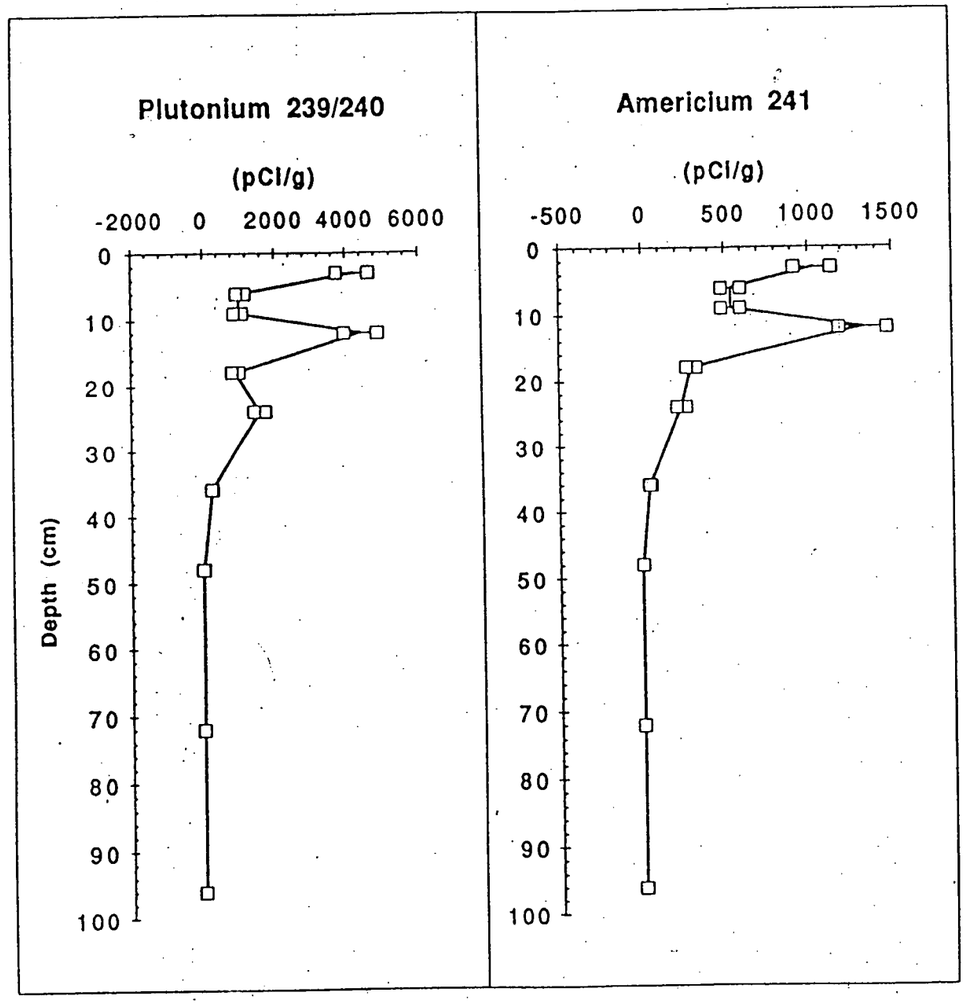
TYPICAL VERTICAL DISTRIBUTION
OF ACTINIDES IN
AREA A, B, C AND D

FIGURE 4.2-16 OCTOBER 1993

OU2R484 1-1

LOCATION 8



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VERTICAL DISTRIBUTION OF
ACTINIDES IN SOIL IMMEDIATELY EAST
OF THE FORMER STORAGE SITE

FIGURE 4.2-17 OCTOBER 1993

OU2RI355 1=1

SOIL SYMBOLS

- GW WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
- GP POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
- GM SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
- GC CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
- SW WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
- SP POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
- SM SILTY SANDS, SAND-SILT MIXTURES
- SC CLAYEY SANDS, SAND-CLAY MIXTURES
- ML INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
- CL INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
- CH INORGANIC CLAYS OR HIGH PLASTICITY, FAT CLAYS

LIST OF CROSS-SECTION UNITS

Qrf = ROCKY FLATS ALLUVIUM
Qc = COLLUVIUM
Ka = ARAPAHOE FORMATION
Ka(No.1) = ARAPAHOE NO. 1 SANDSTONE
Ka/Kl = ARAPAHOE OR LARAMIE FORMATION
Kl(ss) = LARAMIE SANDSTONE

BEDROCK SYMBOLS

- SANDSTONE
- SILTY SANDSTONE
- CLAYEY SANDSTONE
- SILTSTONE
- SANDY SILTSTONE
- CLAYEY SILTSTONE
- CLAYSTONE
- SANDY CLAYSTONE
- SILTY CLAYSTONE
- CALICHE
- NO RECOVERY OR SAMPLED INTERVAL NOT LOGGED

WATER LEVEL AND LOCATION SYMBOLS

- 5/92 MEASURED HIGH WATER LEVEL AND DATE
- INITIAL WATER AT TIME OF DRILLING
- ALLUVIAL/COLLUVIAL MONITORING WELL LOCATION
- BEDROCK MONITORING WELL LOCATION
- SOURCE BOREHOLE LOCATION
- SOURCE BOREHOLE AND MONITORING WELL LOCATION
- 09991 LOCATION NUMBER. LAST 2 DIGITS INDICATE YEAR IN WHICH LOCATION WAS DRILLED

GROUNDWATER ANALYTE DATA

● CCl_4	CARBON TETRACHLORIDE
■ $CHCl_3$	CHLOROFORM
● TCE	TRICHLOROETHENE
▲ PCE	TETRACHLOROETHENE
× 1,2-DCE	1,2-DICHLOROETHENE
✪ 1,1,1-TCA	1,1,1-TRICHLOROETHANE
△ 1,2-DCA	1,2-DICHLOROETHANE
○ TOTAL Xylenes	
⊗ Am-241	Americium-241
⊕ Pu-239/240	Plutonium-239/240
280	CONCENTRATION (ug/Kg)
— — — —?—?	LINE CONNECTING CONCENTRATION VALUES AT SAMPLE POINTS ABOVE WATER LEVEL AT THE TIME OF DRILLING. INFERRED WHERE LIMITED DATA EXISTS.
—— - - ——?	LINE CONNECTING CONCENTRATION VALUES AT SAMPLE POINTS BELOW WATER LEVEL AT THE TIME OF DRILLING. INFERRED WHERE LIMITED DATA EXISTS.
— —— —	INFERRED GEOLOGICAL CONTACT

DRAFT

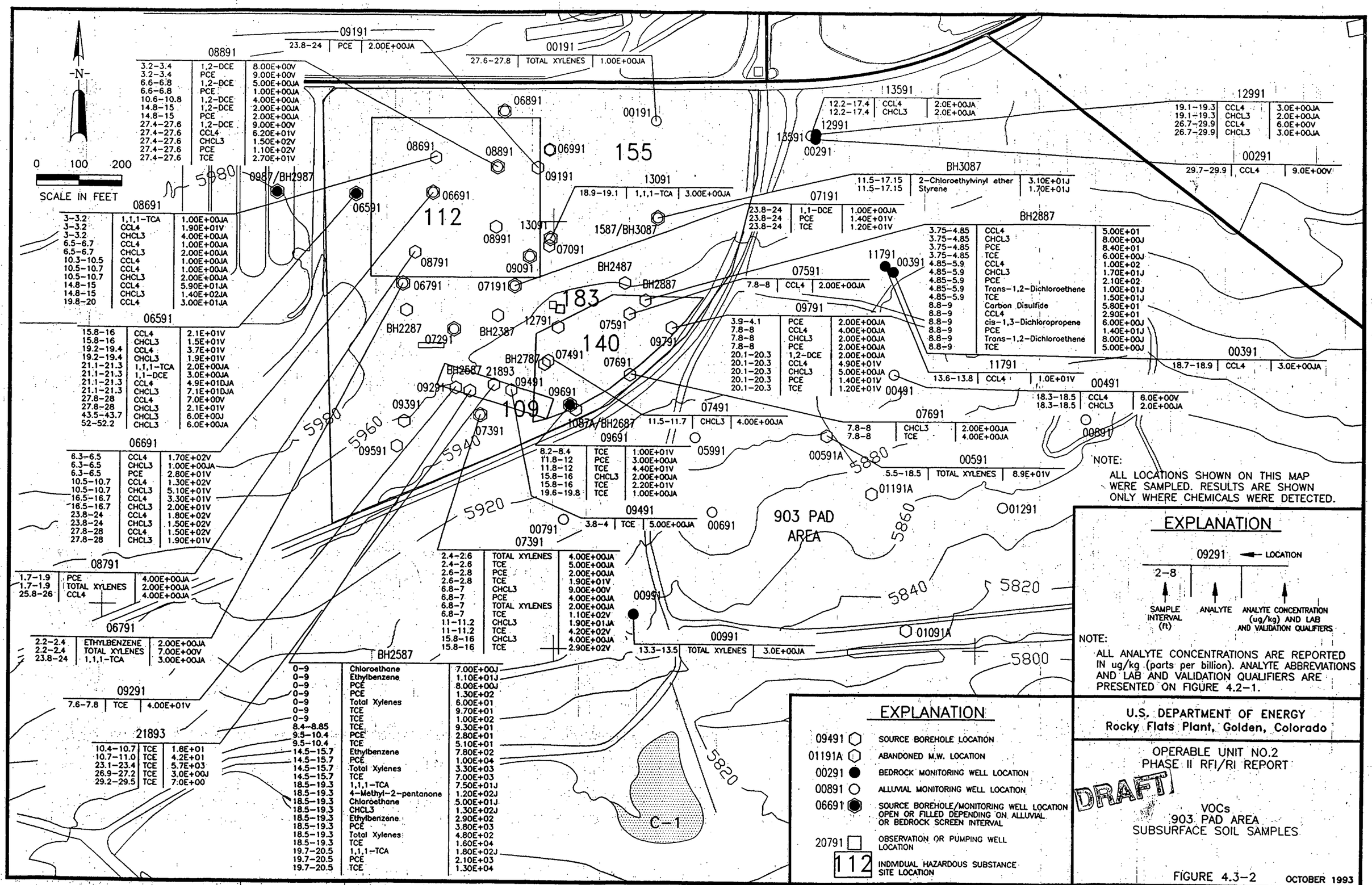
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

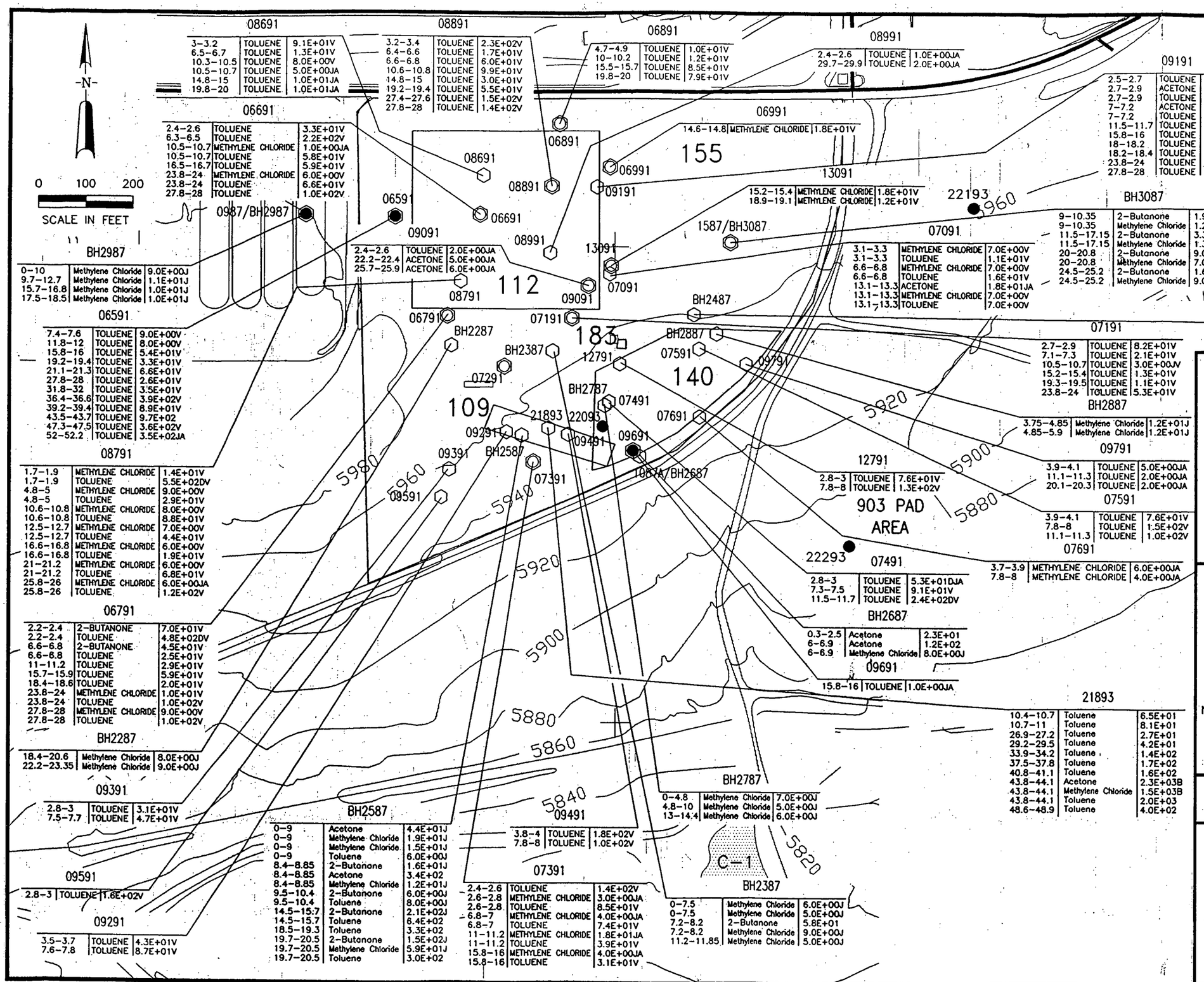
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION LEGEND

FIGURE 4.3-1 OCTOBER 1993

OU2RI018 1=1


N
0 100 200
SCALE IN FEET
09191
23.8-24 PCE 2.00E+00JA
08891
3.2-3.4 1,2-DCE 8.00E+00V
3.2-3.4 PCE 9.00E+00V
6.6-6.8 1,2-DCE 5.00E+00JA
6.6-6.8 PCE 1.00E+00JA
10.6-10.8 1,2-DCE 4.00E+00JA
14.8-15 1,2-DCE 2.00E+00JA
14.8-15 PCE 2.00E+00JA
27.4-27.6 1,2-DCE 9.00E+00V
27.4-27.6 CCL4 6.20E+01V
27.4-27.6 CHCL3 1.50E+02V
27.4-27.6 PCE 1.10E+02V
27.4-27.6 TCE 2.70E+01V
00191
27.6-27.8 TOTAL XYLENES 1.00E+00JA
13591
12.2-17.4 CCL4 2.0E+00JA
12.2-17.4 CHCL3 2.0E+00JA
12991
19.1-19.3 CCL4 3.0E+00JA
19.1-19.3 CHCL3 2.0E+00JA
26.7-29.9 CCL4 6.0E+00V
26.7-29.9 CHCL3 3.0E+00JA
00291
29.7-29.9 CCL4 9.0E+00V
BH3087
11.5-17.15 2-Chloroethylvinyl ether 3.10E+01J
11.5-17.15 Styrene 1.70E+01J
08691
3-3.2 1,1,1-TCA 1.00E+00JA
3-3.2 CCL4 1.90E+01V
3-3.2 CHCL3 4.00E+00JA
6.5-6.7 CCL4 1.00E+00JA
6.5-6.7 CHCL3 2.00E+00JA
10.3-10.5 CCL4 1.00E+00JA
10.5-10.7 CCL4 1.00E+00JA
10.5-10.7 CHCL3 2.00E+00JA
14.8-15 CCL4 5.90E+01JA
14.8-15 CHCL3 1.40E+02JA
19.8-20 CCL4 3.00E+01JA
06591
15.8-16 CCL4 2.1E+01V
15.8-16 CHCL3 1.5E+01V
19.2-19.4 CCL4 3.7E+01V
19.2-19.4 CHCL3 1.9E+01V
21.1-21.3 1,1,1-TCA 2.0E+00JA
21.1-21.3 1,1-DCE 3.0E+00JA
21.1-21.3 CCL4 4.9E+01DJA
21.1-21.3 CHCL3 7.1E+01DJA
27.8-28 CCL4 7.0E+00V
27.8-28 CHCL3 2.1E+01V
43.5-43.7 CHCL3 6.0E+00J
52-52.2 CHCL3 6.0E+00JA
06691
6.3-6.5 CCL4 1.70E+02V
6.3-6.5 CHCL3 1.00E+00JA
6.3-6.5 PCE 2.80E+01V
10.5-10.7 CCL4 1.30E+02V
10.5-10.7 CHCL3 5.10E+01V
16.5-16.7 CCL4 3.30E+01V
16.5-16.7 CHCL3 2.00E+01V
23.8-24 CCL4 1.80E+02V
23.8-24 CHCL3 1.50E+02V
27.8-28 CCL4 1.50E+02V
27.8-28 CHCL3 1.90E+01V
08791
1.7-1.9 PCE 4.00E+00JA
1.7-1.9 TOTAL XYLENES 2.00E+00JA
25.8-26 CCL4 4.00E+00JA
06791
2.2-2.4 ETHYLBENZENE 2.00E+00JA
2.2-2.4 TOTAL XYLENES 7.00E+00V
23.8-24 1,1,1-TCA 3.00E+00JA
09291
7.6-7.8 TCE 4.00E+01V
21893
10.4-10.7 TCE 1.8E+01
10.7-11.0 TCE 4.2E+01
23.1-23.4 TCE 5.7E+03
26.9-27.2 TCE 3.0E+00J
29.2-29.5 TCE 7.0E+00
BH2587
0-9 Chloroethane 7.00E+00J
0-9 Ethylbenzene 1.10E+01J
0-9 PCE 8.00E+00J
0-9 PCE 1.30E+02
0-9 Total Xylenes 6.00E+01
0-9 TCE 9.70E+01
0-9 TCE 1.00E+02
8.4-8.85 TCE 9.30E+01
9.5-10.4 PCE 2.80E+01
9.5-10.4 TCE 5.10E+01
14.5-15.7 Ethylbenzene 7.80E+02
14.5-15.7 PCE 1.00E+04
14.5-15.7 Total Xylenes 3.30E+03
14.5-15.7 TCE 7.00E+03
18.5-19.3 1,1,1-TCA 7.50E+01J
18.5-19.3 4-Methyl-2-pentanone 1.20E+02J
18.5-19.3 Chloroethane 5.00E+01J
18.5-19.3 CHCL3 1.30E+02J
18.5-19.3 Ethylbenzene 2.90E+02
18.5-19.3 PCE 3.80E+03
18.5-19.3 Total Xylenes 4.80E+02
18.5-19.3 TCE 1.60E+04
19.7-20.5 1,1,1-TCA 1.80E+02J
19.7-20.5 PCE 2.10E+03
19.7-20.5 TCE 1.30E+04
07391
2.4-2.6 TOTAL XYLENES 4.00E+00JA
2.4-2.6 TCE 5.00E+00JA
2.6-2.8 PCE 2.00E+00JA
2.6-2.8 TCE 1.90E+01V
6.8-7 CHCL3 9.00E+00V
6.8-7 PCE 4.00E+00JA
6.8-7 TOTAL XYLENES 2.00E+00JA
6.8-7 TCE 1.10E+02V
11-11.2 CHCL3 1.90E+01JA
11-11.2 TCE 4.20E+02V
15.8-16 CHCL3 4.00E+00JA
15.8-16 TCE 2.90E+02V
09491
3.8-4 TCE 5.00E+00JA
09691
8.2-8.4 TCE 1.00E+01V
11.8-12 PCE 3.00E+00JA
11.8-12 TCE 4.40E+01V
15.8-16 CHCL3 2.00E+00JA
15.8-16 TCE 2.20E+01V
19.6-19.8 TCE 1.00E+00JA
13091
18.9-19.1 1,1,1-TCA 3.00E+00JA
07191
23.8-24 1,1-DCE 1.00E+00JA
23.8-24 PCE 1.40E+01V
23.8-24 TCE 1.20E+01V
BH2887
3.75-4.85 CCL4 5.00E+01
3.75-4.85 CHCL3 8.00E+00J
3.75-4.85 PCE 8.40E+01
3.75-4.85 TCE 6.00E+00J
4.85-5.9 CCL4 1.00E+02
4.85-5.9 CHCL3 1.70E+01J
4.85-5.9 PCE 2.10E+02
4.85-5.9 Trans-1,2-Dichloroethene 1.00E+01J
4.85-5.9 TCE 1.50E+01J
8.8-9 Carbon Disulfide 5.80E+01
8.8-9 CCL4 2.90E+01
8.8-9 cis-1,3-Dichloropropene 6.00E+00J
8.8-9 PCE 1.40E+01J
8.8-9 Trans-1,2-Dichloroethene 8.00E+00J
8.8-9 TCE 5.00E+00J
07591
7.8-8 CCL4 2.00E+00JA
09791
3.9-4.1 PCE 2.00E+00JA
7.8-8 CCL4 4.00E+00JA
7.8-8 CHCL3 2.00E+00JA
7.8-8 PCE 2.00E+00JA
20.1-20.3 1,2-DCE 2.00E+00JA
20.1-20.3 CCL4 4.90E+01V
20.1-20.3 CHCL3 5.00E+00JA
20.1-20.3 PCE 1.40E+01V
20.1-20.3 TCE 1.20E+01V
11791
13.6-13.8 CCL4 1.0E+01V
00391
18.7-18.9 CCL4 3.0E+00JA
00491
18.3-18.5 CCL4 8.0E+00V
18.3-18.5 CHCL3 2.0E+00JA
07491
11.5-11.7 CHCL3 4.00E+00JA
07691
7.8-8 CHCL3 2.00E+00JA
7.8-8 TCE 4.00E+00JA
00591
5.5-18.5 TOTAL XYLENES 8.9E+01V
00991
13.3-13.5 TOTAL XYLENES 3.0E+00JA
155
112
183
140
109
903 PAD AREA
C-1
5980
5960
5940
5920
5880
5860
5840
5820
5800
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE CHEMICALS WERE DETECTED.
EXPLANATION
09291 LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
01191A ABANDONED M.W. LOCATION
00291 BEDROCK MONITORING WELL LOCATION
00891 ALLUVIAL MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREEN INTERVAL
20791 OBSERVATION OR PUMPING WELL LOCATION
112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
DRAFT
VOCs
903 PAD AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-2
OCTOBER 1993
OU2RI013 1=200



EXPLANATION

09491 ⬡	SOURCE BOREHOLE LOCATION
06691 ⬢	SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
00291 ●	BEDROCK MONITORING WELL LOCATION
00891 ○	ALLUVIAL MONITORING WELL LOCATION
20791 □	OBSERVATION OR PUMPING WELL LOCATION
112	INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

EXPLANATION

08691 ← LOCATION

2-8

SAMPLE INTERVAL (ft) | ANALYTE | ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS

NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

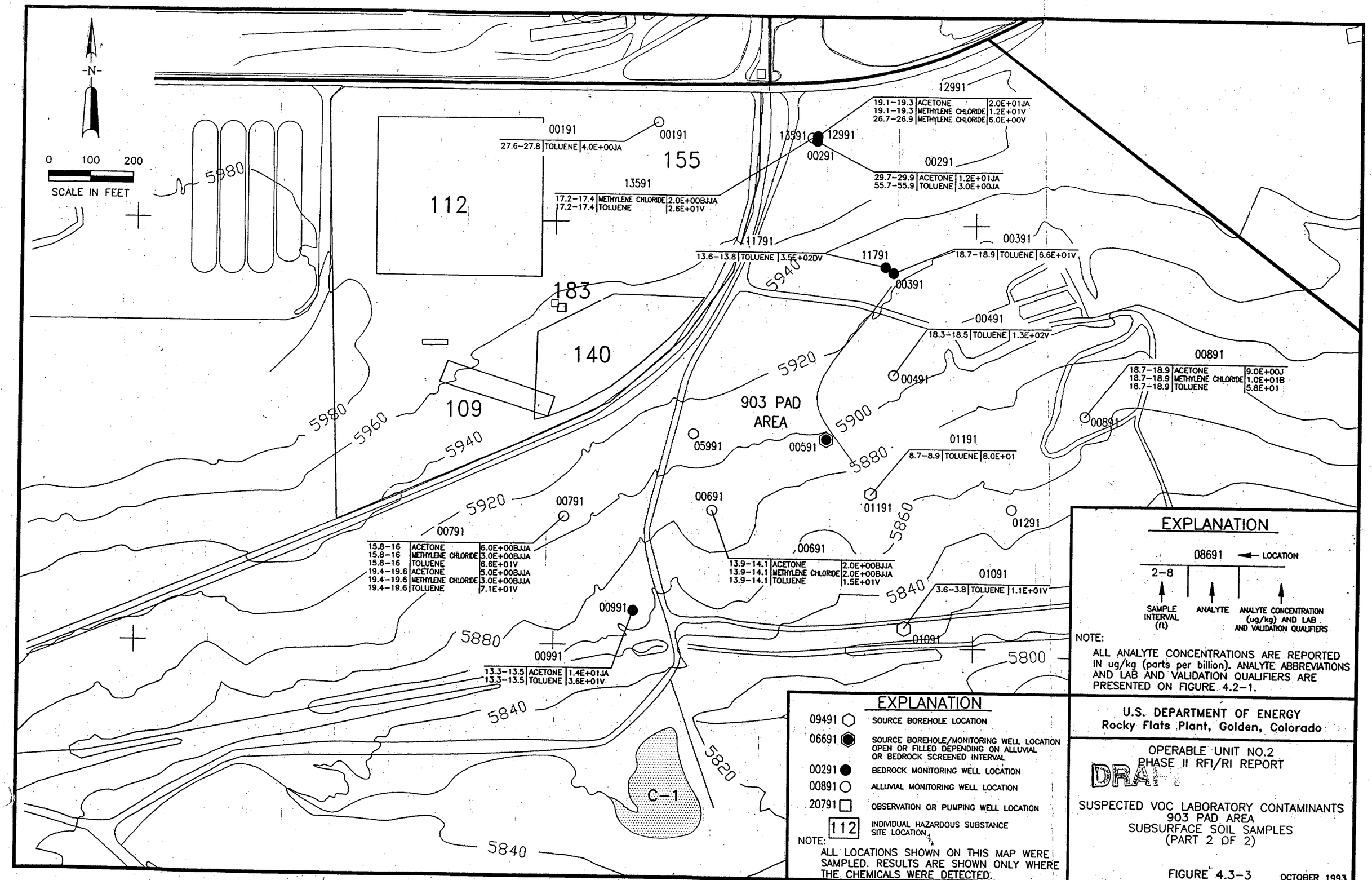
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

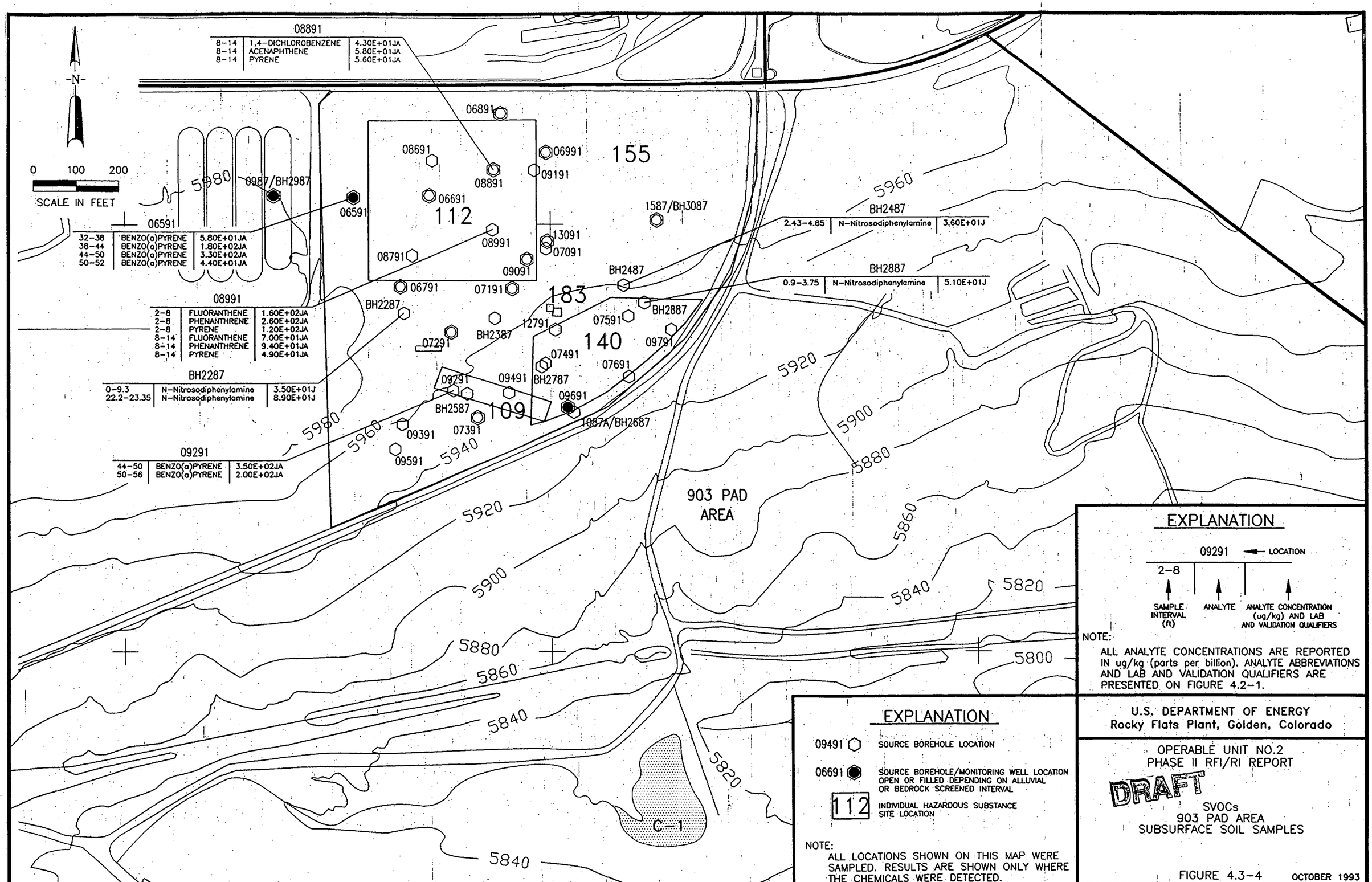
DRAFT

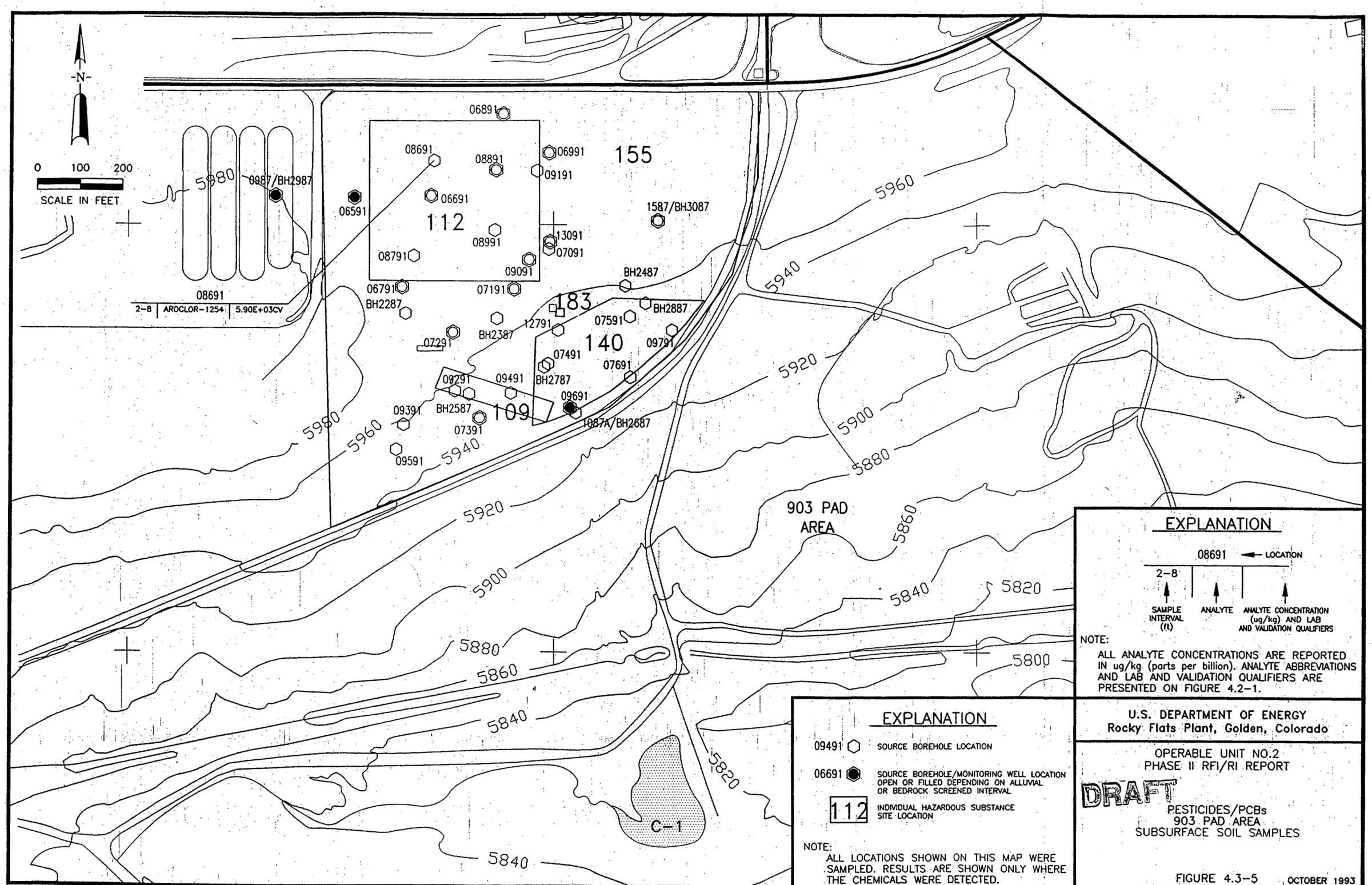
SUSPECTED VOC LABORATORY CONTAMINANTS
903 PAD AREA
SUBSURFACE SOIL SAMPLES
(PART 1 OF 2)

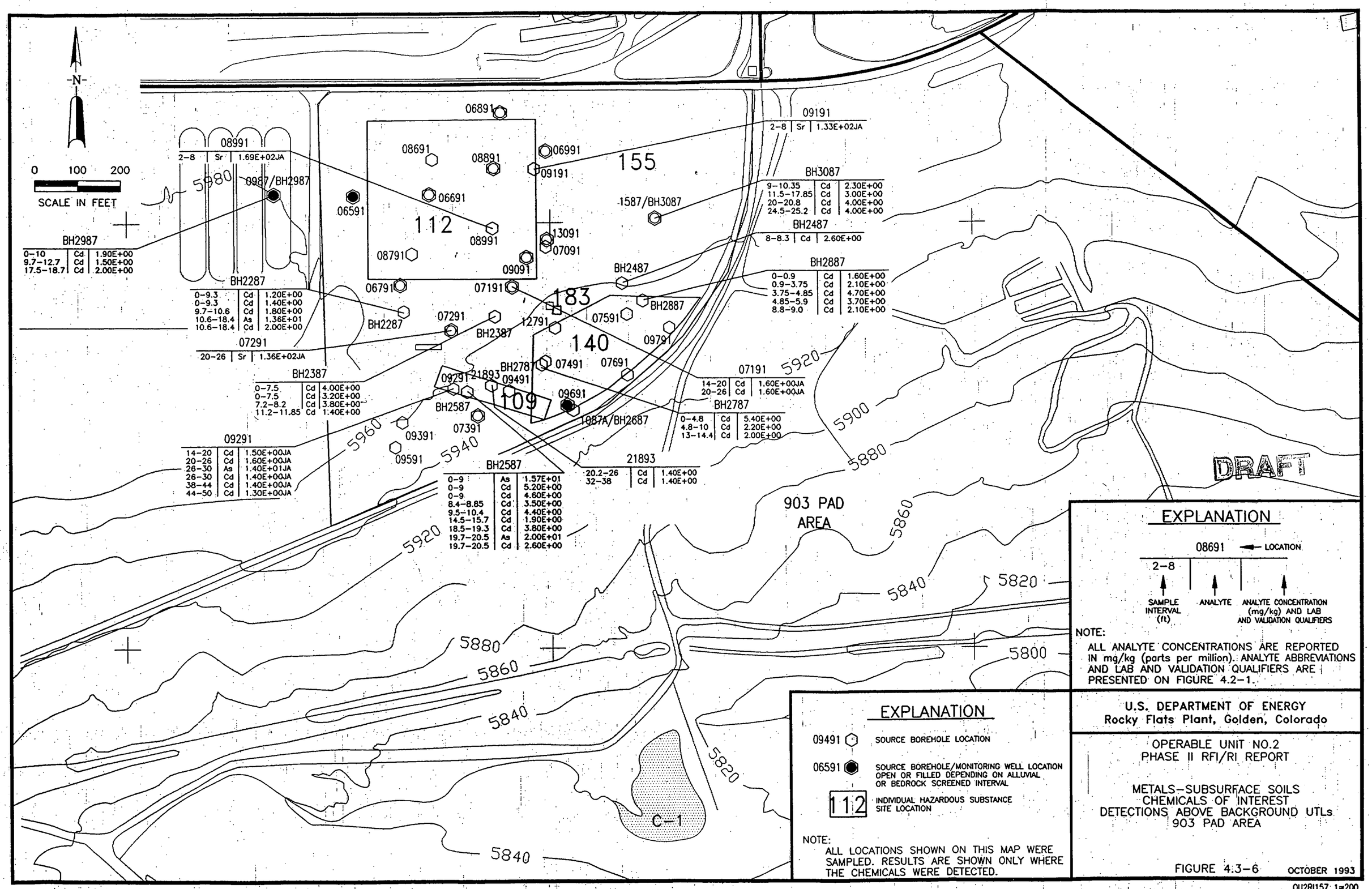
FIGURE 4.3-3 OCTOBER 1993

OU2RI183 1=200


-N-
0 100 200
SCALE IN FEET
112
155
183
140
109
903 PAD AREA
C-1
5980
5960
5940
5920
5900
5880
5860
5840
5820
5800
00191
27.6-27.8 TOLUENE 4.0E+00JA
13591
17.2-17.4 METHYLENE CHLORIDE 2.0E+00BJJA
17.2-17.4 TOLUENE 2.6E+01V
12991
19.1-19.3 ACETONE 2.0E+01JA
19.1-19.3 METHYLENE CHLORIDE 1.2E+01V
26.7-26.9 METHYLENE CHLORIDE 6.0E+00V
00291
29.7-29.9 ACETONE 1.2E+01JA
55.7-55.9 TOLUENE 3.0E+00JA
11791
13.6-13.8 TOLUENE 3.5E+02DV
00391
18.7-18.9 TOLUENE 6.6E+01V
00491
18.3-18.5 TOLUENE 1.3E+02V
00891
18.7-18.9 ACETONE 9.0E+00J
18.7-18.9 METHYLENE CHLORIDE 1.0E+01B
18.7-18.9 TOLUENE 5.8E+01
05991
00591
01191
8.7-8.9 TOLUENE 8.0E+01
01291
00791
15.8-16 ACETONE 6.0E+00BJJA
15.8-16 METHYLENE CHLORIDE 3.0E+00BJJA
15.8-16 TOLUENE 6.6E+01V
19.4-19.6 ACETONE 5.0E+00BJJA
19.4-19.6 METHYLENE CHLORIDE 3.0E+00BJJA
19.4-19.6 TOLUENE 7.1E+01V
00691
13.9-14.1 ACETONE 2.0E+00BJJA
13.9-14.1 METHYLENE CHLORIDE 2.0E+00BJJA
13.9-14.1 TOLUENE 1.5E+01V
01091
3.6-3.8 TOLUENE 1.1E+01V
00991
13.3-13.5 ACETONE 1.4E+01JA
13.3-13.5 TOLUENE 3.6E+01V
EXPLANATION
08691 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
00291 BEDROCK MONITORING WELL LOCATION
00891 ALLUVIAL MONITORING WELL LOCATION
20791 OBSERVATION OR PUMPING WELL LOCATION
112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
DRAFT
SUSPECTED VOC LABORATORY CONTAMINANTS
903 PAD AREA
SUBSURFACE SOIL SAMPLES
(PART 2 OF 2)
FIGURE 4.3-3
OCTOBER 1993
OU2RI337 1=200


-N-
0 100 200
SCALE IN FEET
08891
8-14 1,4-DICHLOROBENZENE 4.30E+01JA
8-14 ACENAPHTHENE 5.80E+01JA
8-14 PYRENE 5.60E+01JA
06591
32-38 BENZO(a)PYRENE 5.80E+01JA
38-44 BENZO(a)PYRENE 1.80E+02JA
44-50 BENZO(a)PYRENE 3.30E+02JA
50-52 BENZO(a)PYRENE 4.40E+01JA
08991
2-8 FLUORANTHENE 1.60E+02JA
2-8 PHENANTHRENE 2.60E+02JA
2-8 PYRENE 1.20E+02JA
8-14 FLUORANTHENE 7.00E+01JA
8-14 PHENANTHRENE 9.40E+01JA
8-14 PYRENE 4.90E+01JA
BH2287
0-9.3 N-Nitrosodiphenylamine 3.50E+01J
22.2-23.35 N-Nitrosodiphenylamine 8.90E+01J
09291
44-50 BENZO(a)PYRENE 3.50E+02JA
50-56 BENZO(a)PYRENE 2.00E+02JA
BH2487
2.43-4.85 N-Nitrosodiphenylamine 3.60E+01J
BH2887
0.9-3.75 N-Nitrosodiphenylamine 5.10E+01J
06891
08691
06991
09191
08891
06691
112
155
1587/BH3087
0987/BH2987
06591
13091
07091
08991
08791
09091
06791
07191
183
BH2487
BH2887
BH2287
12791
07591
BH2387
07291
140
09791
07491
07691
09291
09491
BH2787
09691
BH2587
109
1087A/BH2687
09391
07391
09591
5980
5960
5940
5920
5900
5880
5860
5840
5820
5800
903 PAD
AREA
C-1
EXPLANATION
09291 LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
DRAFT
SVOCs
903 PAD AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-4
OCTOBER 1993
OU2RI123 1=200


-N-
0 100 200
SCALE IN FEET
5980
0987/BH2987
08691
2-8 | AROCLOR-1254 | 5.90E+03CV
06891
08691
08891
06991
09191
155
06591
06691
112
08991
13091
07091
1587/BH3087
08791
09091
06791
07191
BH2487
BH2287
183
BH2887
12791
07591
BH2387
07291
140
09791
07491
07691
09291
09491
BH2787
09691
09391
BH2587
109
07391
1087A/BH2687
09591
5960
5940
5920
5900
5880
5860
5840
5820
5800
903 PAD
AREA
C-1
EXPLANATION
08691 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
DRAFT
PESTICIDES/PCBs
903 PAD AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-5
OCTOBER 1993
OU2RI127 1=200



EXPLANATION

08691 ← LOCATION

2-8

SAMPLE INTERVAL (ft) | ANALYTE | ANALYTE CONCENTRATION (mg/kg) AND LAB AND VALIDATION QUALIFIERS

NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN mg/kg (parts per million). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

09491 — SOURCE BOREHOLE LOCATION

06591 — SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 — INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT NO.2
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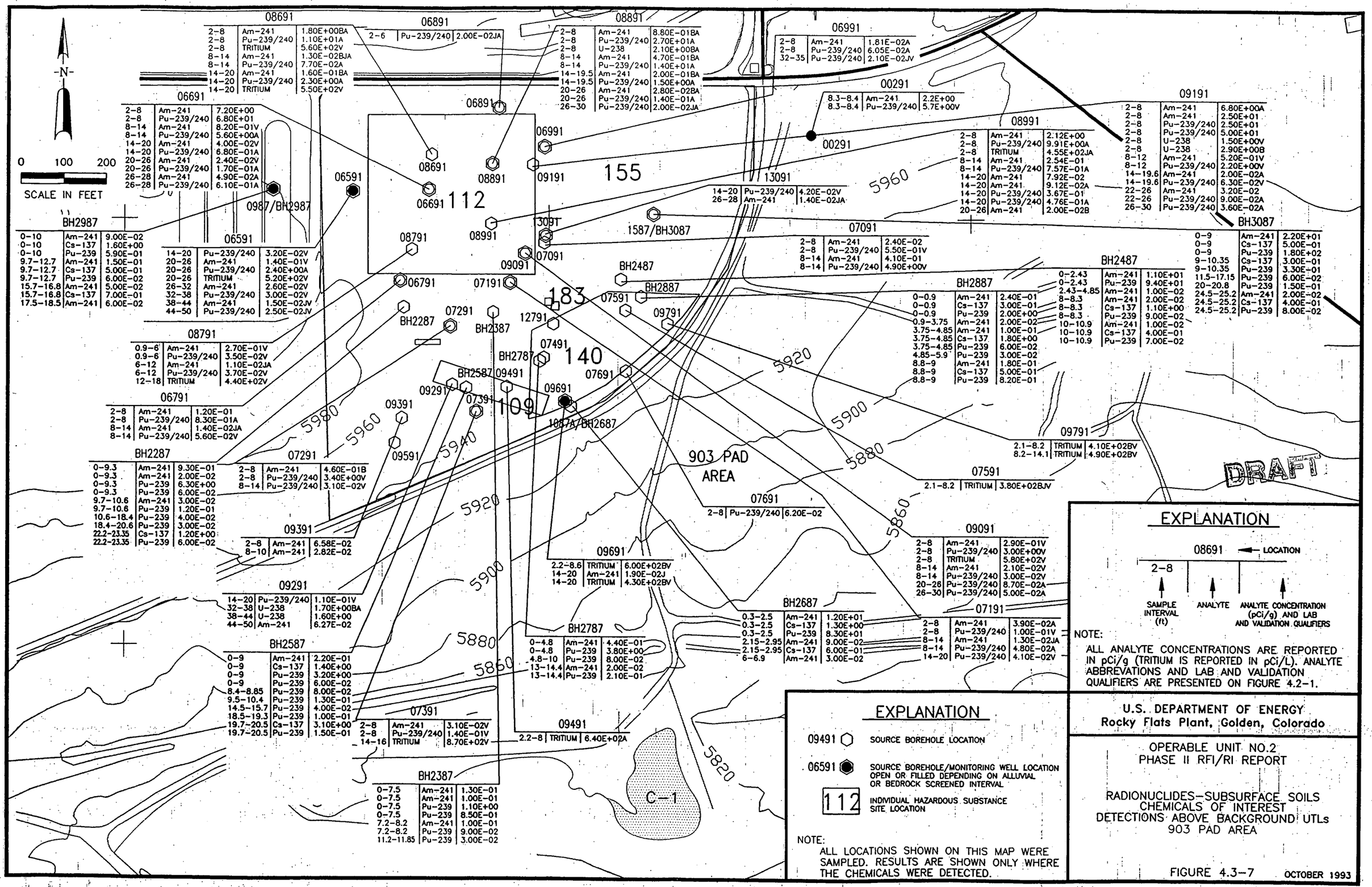
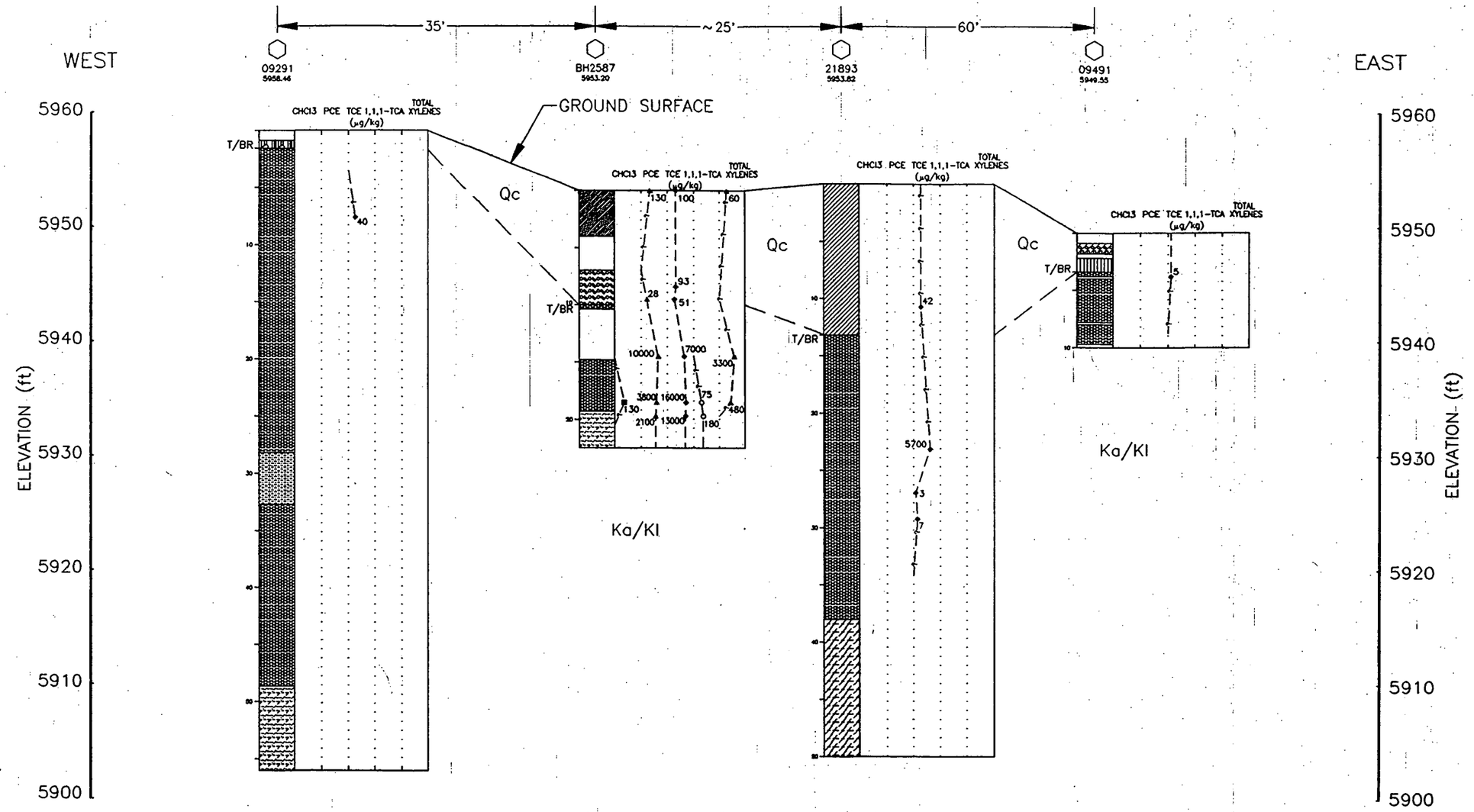
METALS-SUBSURFACE SOILS
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
903 PAD AREA

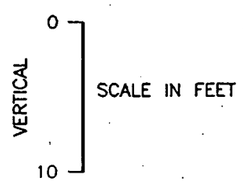
FIGURE 4.3-6 OCTOBER 1993

OU2RI157 1=200

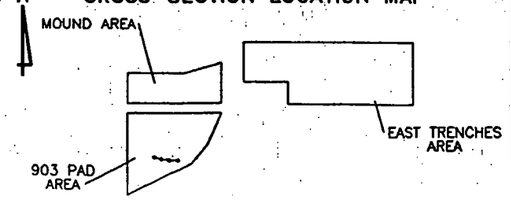

-N-
0 100 200
SCALE IN FEET
08691
2-8 Am-241 1.80E+00BA
2-8 Pu-239/240 1.10E+01A
2-8 TRITIUM 5.60E+02V
8-14 Am-241 1.30E-02BJA
8-14 Pu-239/240 7.70E-02A
14-20 Am-241 1.60E-01BA
14-20 Pu-239/240 2.30E+00A
14-20 TRITIUM 5.50E+02V
06891
2-6 Pu-239/240 2.00E-02JA
08891
2-8 Am-241 8.80E-01BA
2-8 Pu-239/240 2.70E+01A
2-8 U-238 2.10E+00BA
8-14 Am-241 4.70E-01BA
8-14 Pu-239/240 1.40E+01A
14-19.5 Am-241 2.00E-01BA
14-19.5 Pu-239/240 1.50E+00A
20-26 Am-241 2.80E-02BA
20-26 Pu-239/240 1.40E-01A
26-30 Pu-239/240 2.00E-02JA
06991
2-8 Am-241 1.81E-02A
2-8 Pu-239/240 6.05E-02A
32-35 Pu-239/240 2.10E-02JV
00291
8.3-8.4 Am-241 2.2E+00
8.3-8.4 Pu-239/240 5.7E+00V
06691
2-8 Am-241 7.20E+00
2-8 Pu-239/240 6.80E+01
8-14 Am-241 8.20E-01V
8-14 Pu-239/240 5.60E+00A
14-20 Am-241 4.00E-02V
14-20 Pu-239/240 6.80E-01A
20-26 Am-241 2.40E-02V
20-26 Pu-239/240 1.70E-01A
26-28 Am-241 4.90E-02A
26-28 Pu-239/240 6.10E-01A
09191
2-8 Am-241 6.80E+00A
2-8 Am-241 2.50E+01
2-8 Pu-239/240 2.50E+01
2-8 Pu-239/240 5.00E+01
2-8 U-238 1.50E+00V
2-8 U-238 2.90E+00B
8-12 Am-241 5.20E-01V
8-12 Pu-239/240 2.20E+00V
14-19.6 Am-241 2.00E-02A
14-19.6 Pu-239/240 6.30E-02V
22-26 Am-241 3.20E-02
22-26 Pu-239/240 9.00E-02A
26-30 Pu-239/240 3.60E-02A
08991
2-8 Am-241 2.12E+00
2-8 Pu-239/240 9.91E+00A
2-8 TRITIUM 4.55E+02JA
8-14 Am-241 2.54E-01
8-14 Pu-239/240 7.57E-01A
14-20 Am-241 7.92E-02
14-20 Am-241 9.12E-02A
14-20 Pu-239/240 3.67E-01
14-20 Pu-239/240 4.76E-01A
20-26 Am-241 2.00E-02B
BH2987
0-10 Am-241 9.00E-02
0-10 Cs-137 1.60E+00
0-10 Pu-239 5.90E-01
9.7-12.7 Am-241 1.50E-01
9.7-12.7 Cs-137 5.00E-01
9.7-12.7 Pu-239 6.00E-02
15.7-16.8 Am-241 5.00E-02
15.7-16.8 Cs-137 7.00E-01
17.5-18.5 Am-241 6.00E-02
0987/BH2987
06591
14-20 Pu-239/240 3.20E-02V
20-26 Am-241 1.40E-01V
20-26 Pu-239/240 2.40E+00A
20-26 TRITIUM 5.20E+02V
26-32 Am-241 2.60E-02V
32-38 Pu-239/240 3.00E-02V
38-44 Am-241 1.50E-02JV
44-50 Pu-239/240 2.50E-02JV
14-20 Pu-239/240 4.20E-02V
26-28 Am-241 1.40E-02JA
1587/BH3087
07091
2-8 Am-241 2.40E-02
2-8 Pu-239/240 5.50E-01V
8-14 Am-241 4.10E-01
8-14 Pu-239/240 4.90E+00V
BH3087
0-9 Am-241 2.20E+01
0-9 Cs-137 5.00E-01
0-9 Pu-239 1.80E+02
9-10.35 Cs-137 3.00E-01
9-10.35 Pu-239 3.30E-01
11.5-17.15 Pu-239 6.00E-02
20-20.8 Pu-239 1.50E-01
24.5-25.2 Am-241 2.00E-02
24.5-25.2 Cs-137 4.00E-01
24.5-25.2 Pu-239 8.00E-02
BH2487
0-2.43 Am-241 1.10E+01
0-2.43 Pu-239 9.40E+01
2.43-4.85 Am-241 1.00E-02
8-8.3 Am-241 2.00E-02
8-8.3 Cs-137 1.10E+00
8-8.3 Pu-239 9.00E-02
10-10.9 Am-241 1.00E-02
10-10.9 Cs-137 4.00E-01
10-10.9 Pu-239 7.00E-02
BH2887
0-0.9 Am-241 2.40E-01
0-0.9 Cs-137 3.00E-01
0-0.9 Pu-239 2.00E+00
0.9-3.75 Am-241 2.00E-02
3.75-4.85 Am-241 1.00E-01
3.75-4.85 Cs-137 1.80E+00
3.75-4.85 Pu-239 6.00E-02
4.85-5.9 Pu-239 3.00E-02
8.8-9 Am-241 1.80E-01
8.8-9 Cs-137 5.00E-01
8.8-9 Pu-239 8.20E-01
08791
0.9-6 Am-241 2.70E-01V
0.9-6 Pu-239/240 3.50E-02V
6-12 Am-241 1.10E-02JA
6-12 Pu-239/240 3.70E-02V
12-18 TRITIUM 4.40E+02V
06791
2-8 Am-241 1.20E-01
2-8 Pu-239/240 8.30E-01A
8-14 Am-241 1.40E-02JA
8-14 Pu-239/240 5.60E-02V
09791
2.1-8.2 TRITIUM 4.10E+02BV
8.2-14.1 TRITIUM 4.90E+02BV
BH2287
0-9.3 Am-241 9.30E-01
0-9.3 Am-241 2.00E-02
0-9.3 Pu-239 6.30E+00
0-9.3 Pu-239 6.00E-02
9.7-10.6 Am-241 3.00E-02
9.7-10.6 Pu-239 1.20E-01
10.6-18.4 Pu-239 4.00E-02
18.4-20.6 Pu-239 3.00E-02
22.2-23.35 Cs-137 1.20E+00
22.2-23.35 Pu-239 6.00E-02
07291
2-8 Am-241 4.60E-01B
2-8 Pu-239/240 3.40E+00V
8-14 Pu-239/240 3.10E-02V
09391
2-8 Am-241 6.58E-02
8-10 Am-241 2.82E-02
09291
14-20 Pu-239/240 1.10E-01V
32-38 U-238 1.70E+00BA
38-44 U-238 1.60E+00
44-50 Am-241 6.27E-02
BH2587
0-9 Am-241 2.20E-01
0-9 Cs-137 1.40E+00
0-9 Pu-239 3.20E+00
0-9 Pu-239 6.00E-02
8.4-8.85 Pu-239 8.00E-02
9.5-10.4 Pu-239 1.30E-01
14.5-15.7 Pu-239 4.00E-02
18.5-19.3 Pu-239 1.00E-01
19.7-20.5 Cs-137 3.10E+00
19.7-20.5 Pu-239 1.50E-01
07391
2-8 Am-241 3.10E-02V
2-8 Pu-239/240 1.40E-01V
14-16 TRITIUM 8.70E+02V
BH2387
0-7.5 Am-241 1.30E-01
0-7.5 Am-241 1.00E-01
0-7.5 Pu-239 1.10E+00
0-7.5 Pu-239 8.50E-01
7.2-8.2 Am-241 1.00E-01
7.2-8.2 Pu-239 9.00E-02
11.2-11.85 Pu-239 3.00E-02
09491
2.2-8 TRITIUM 6.40E+02A
09691
2.2-8.6 TRITIUM 6.00E+02BV
14-20 Am-241 1.90E-02J
14-20 TRITIUM 4.30E+02BV
BH2787
0-4.8 Am-241 4.40E-01
0-4.8 Pu-239 3.80E+00
4.8-10 Pu-239 8.00E-02
13-14.4 Am-241 2.00E-02
13-14.4 Pu-239 2.10E-01
07691
2-8 Pu-239/240 6.20E-02
07591
2.1-8.2 TRITIUM 3.80E+02BJV
09091
2-8 Am-241 2.90E-01V
2-8 Pu-239/240 3.00E+00V
2-8 TRITIUM 5.80E+02V
8-14 Am-241 2.10E-02V
8-14 Pu-239/240 3.00E-02V
20-26 Pu-239/240 8.70E-02A
26-30 Pu-239/240 5.00E-02A
BH2687
0.3-2.5 Am-241 1.20E+01
0.3-2.5 Cs-137 1.30E+00
0.3-2.5 Pu-239 8.30E+01
2.15-2.95 Am-241 9.00E-02
2.15-2.95 Cs-137 6.00E-01
6-6.9 Am-241 3.00E-02
07191
2-8 Am-241 3.90E-02A
2-8 Pu-239/240 1.00E-01V
8-14 Am-241 1.30E-02JA
8-14 Pu-239/240 4.80E-02A
14-20 Pu-239/240 4.10E-02V
155
112
183
140
109
903 PAD AREA
C-1
5980
5960
5940
5920
5900
5880
5860
5820
DRAFT
EXPLANATION
08691 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (pCi/g) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/g (TRITIUM IS REPORTED IN pCi/L). ANALYTE ABBREVATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06591 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
RADIONUCLIDES-SUBSURFACE SOILS
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
903 PAD AREA
FIGURE 4.3-7
OCTOBER 1993
OU2RI161 1=200

IHSS 109



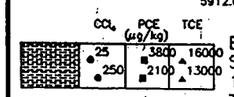


NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

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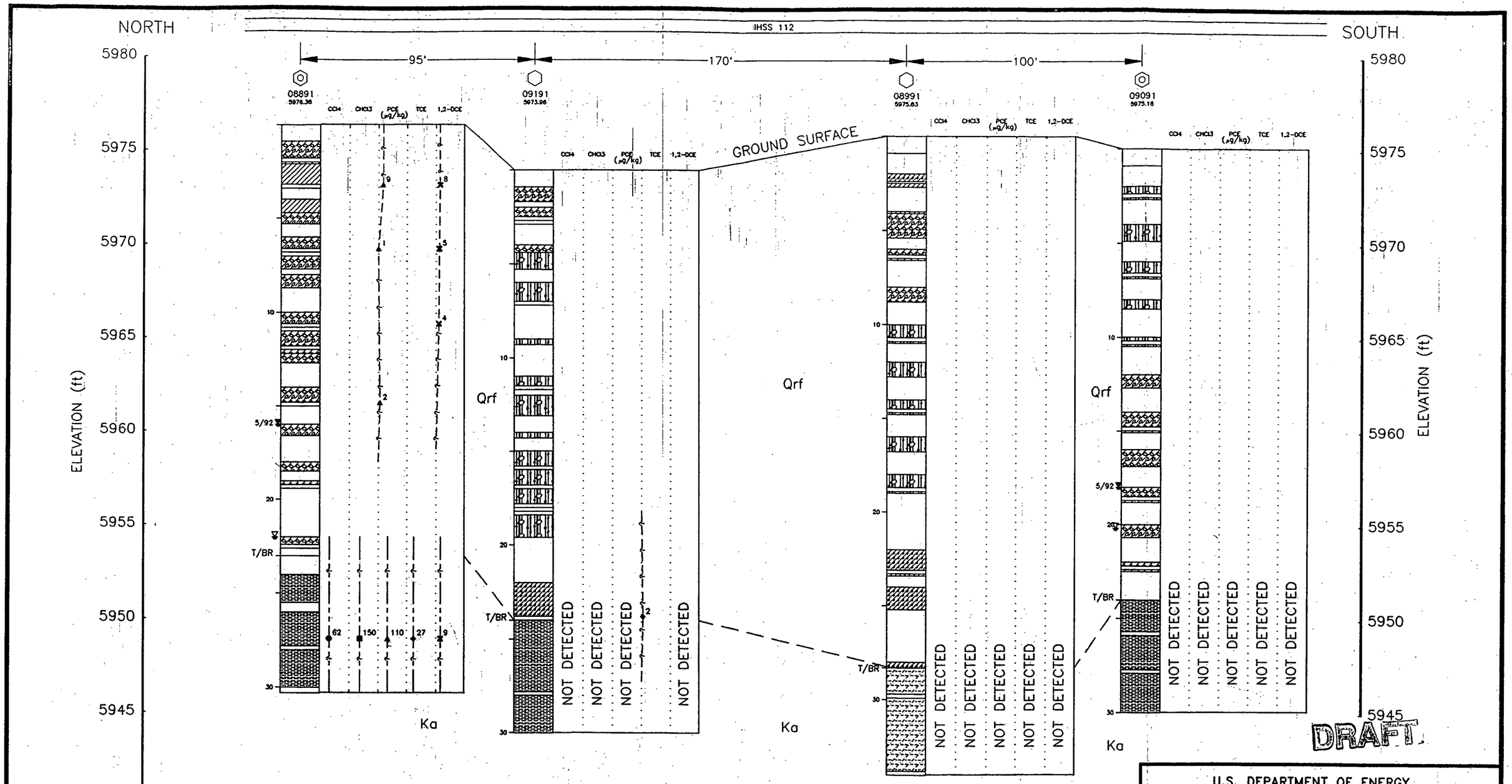
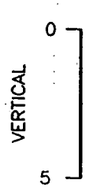
SOURCE BOREHOLE CROSS-SECTION IHSS 109 (TRENCH T-2)

FIGURE 4.3-8 OCTOBER 1993

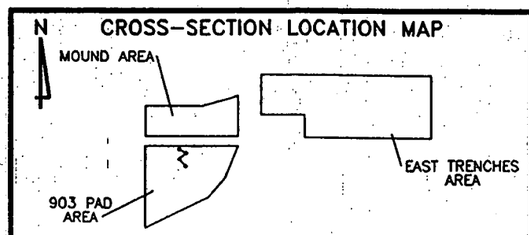
DRAFT

OU2RI285 1=1



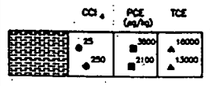


NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

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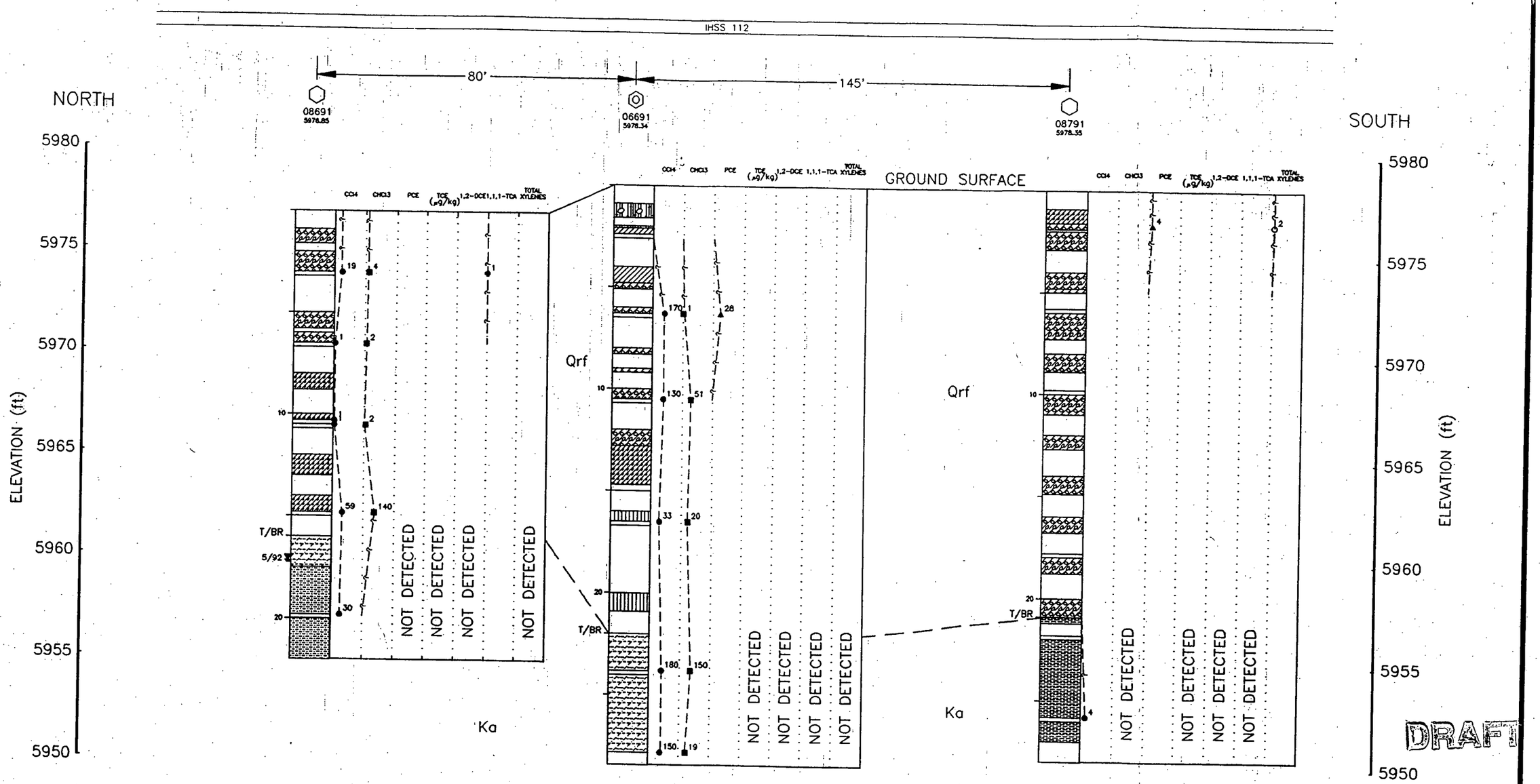
SOURCE BOREHOLE CROSS-SECTION IHSS 112 (903 PAD) EASTERN SECTION

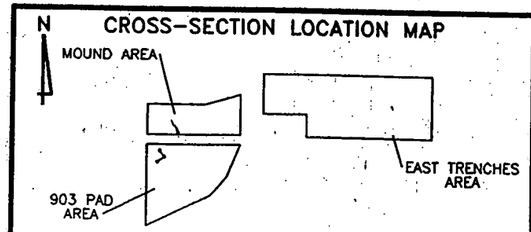
FIGURE 4.3-9 OCTOBER 1993

OU2RI080 1=1



VERTICAL 0 5 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)

CCl4 PCE (µg/kg) TCE
25 250 3800 2100 16000 13000

EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

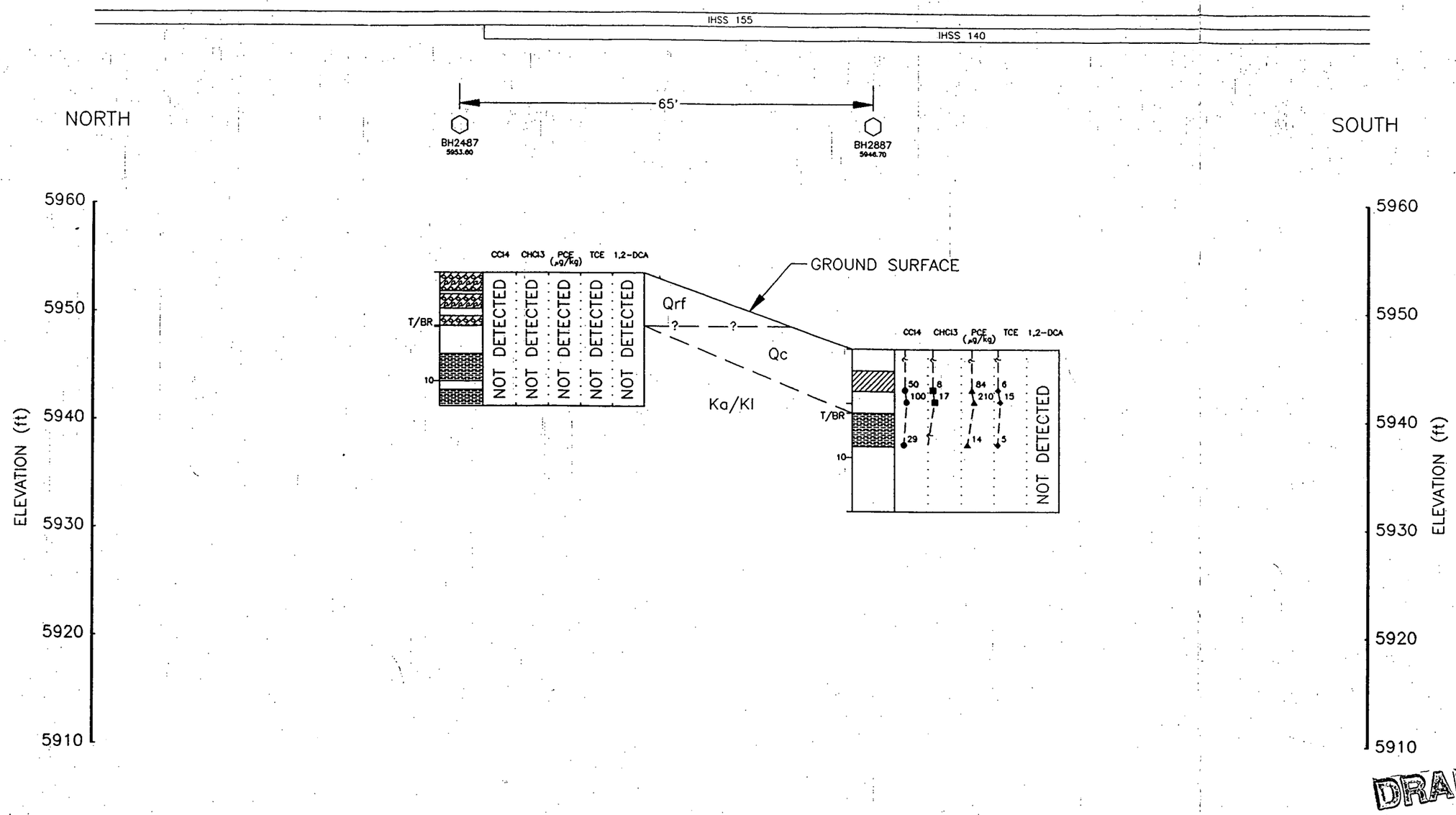
(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION
IHSS 112 (903 PAD)
WESTERN SECTION

FIGURE 4.3-10 OCTOBER 1993

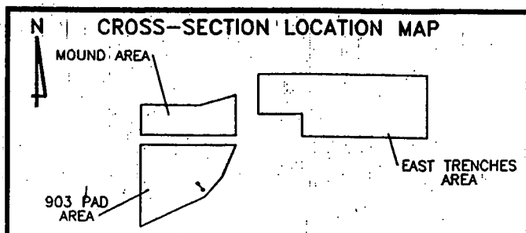


DRAFT

VERTICAL 0 — 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.

CROSS-SECTION LOCATION MAP



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)

CCl4 PCE (µg/kg) TCE
25 250 3600 2100 16000 13000

EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

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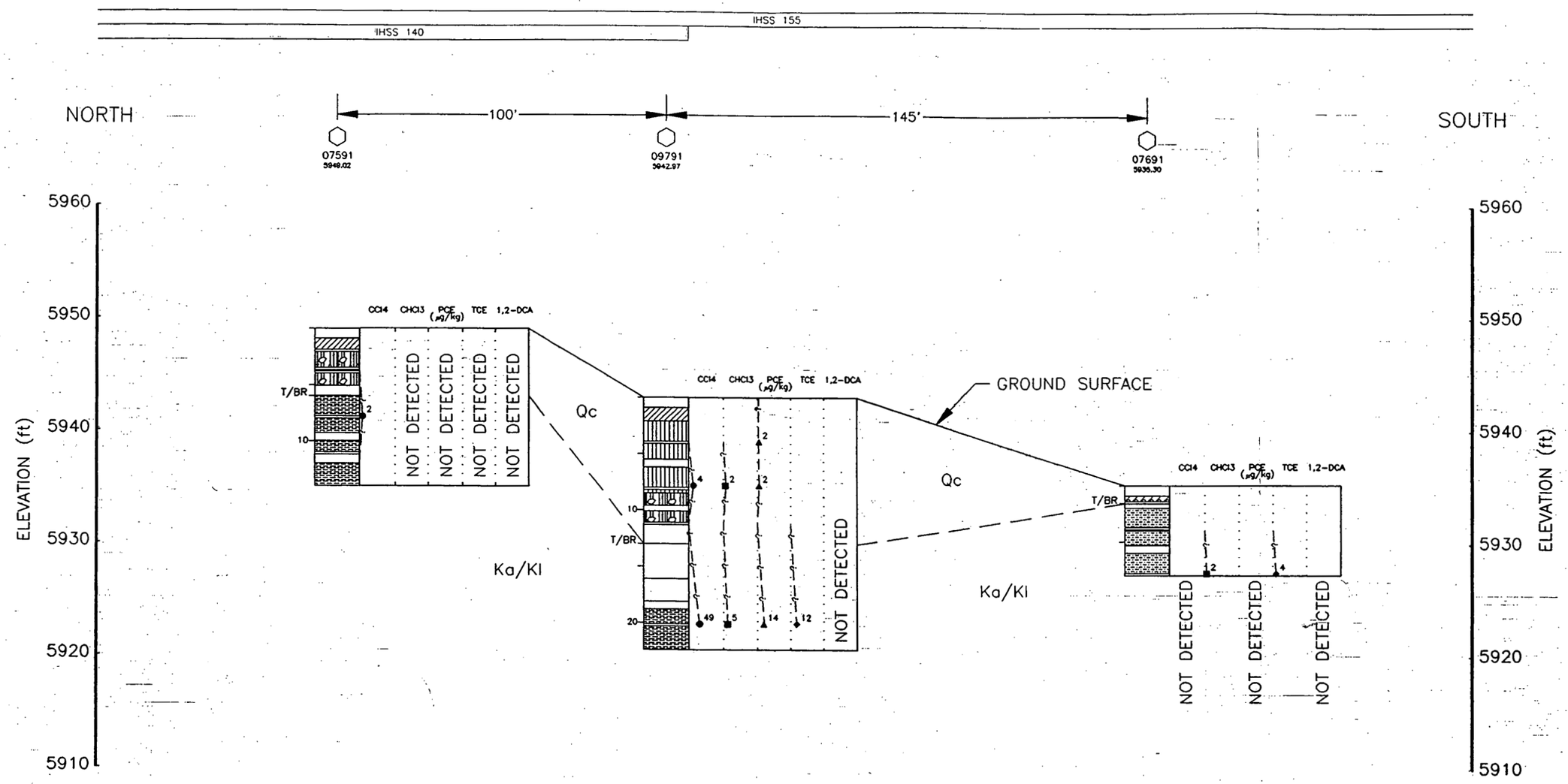
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE CROSS-SECTION IHSS 140 (REACTIVE METAL DESTRUCTION SITE) EASTERN SECTION (PART 1 OF 2)

FIGURE 4.3-11 OCTOBER 1993

OU2RI146 1=1

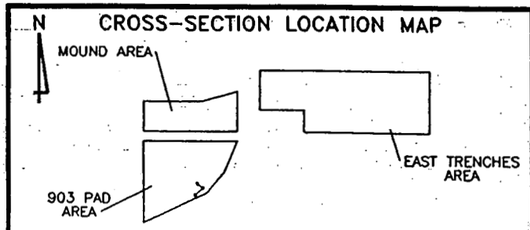


DRAFT

VERTICAL 0 SCALE IN FEET 10

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.

CROSS-SECTION LOCATION MAP



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)

CCl4 PCE (µg/kg) TCE
25 250 3600 2100 16000 13000

EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

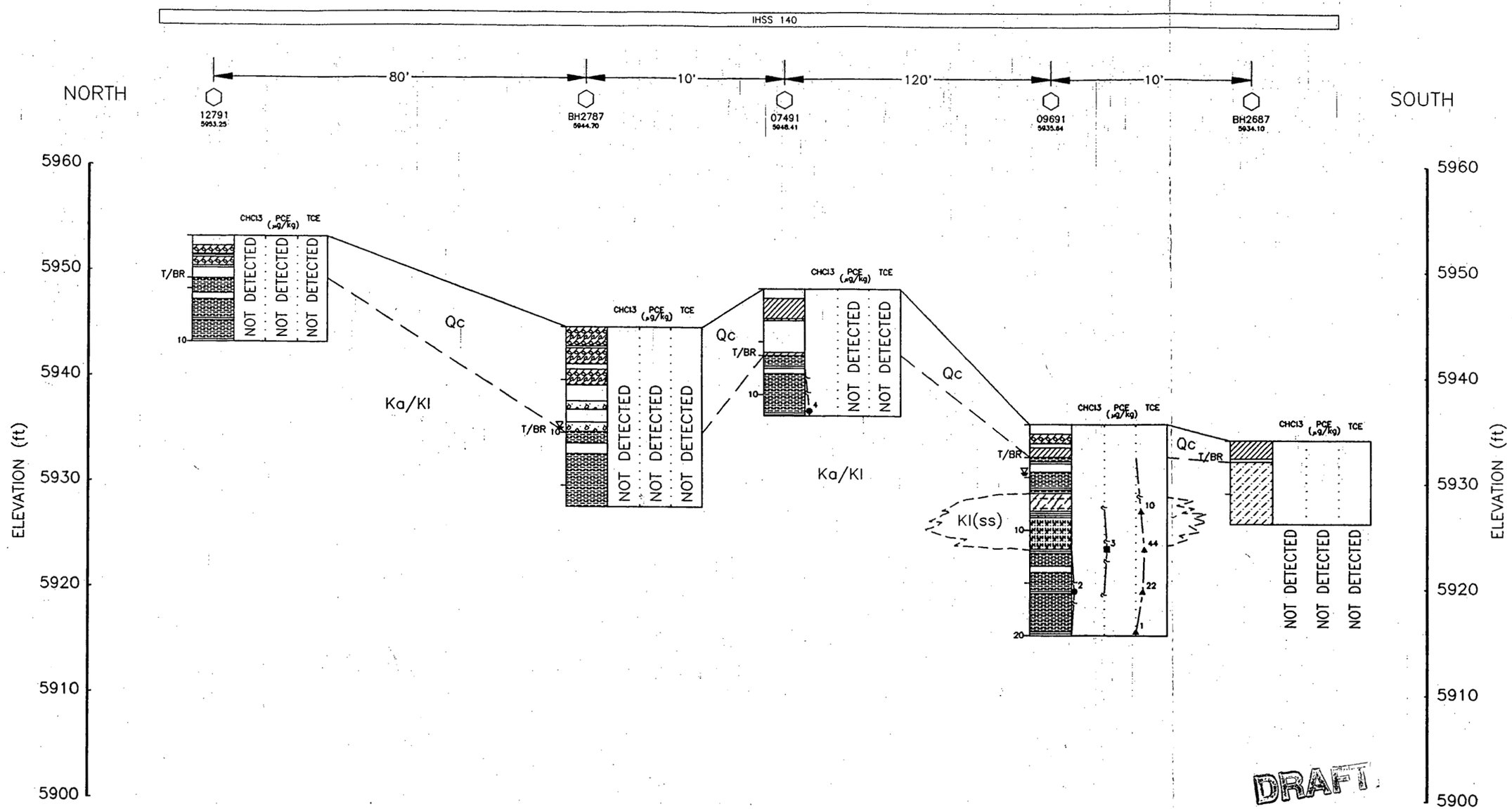
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION
IHSS 140
(REACTIVE METAL DESTRUCTION SITE)
EASTERN SECTION
(PART 2 OF 2)

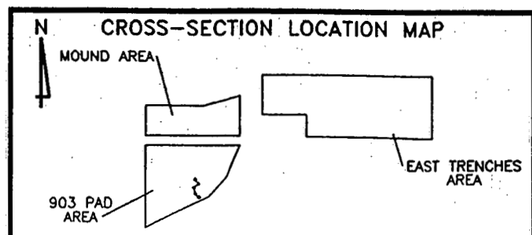
FIGURE 4.3-11 OCTOBER 1993

OU2RI147 1=1



VERTICAL 0 — 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



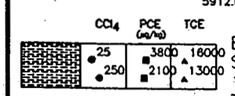
EXPLANATION

T/BR = TOP OF BEDROCK

⬡ = LOCATION SYMBOL

3486 = LOCATION NAME

5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

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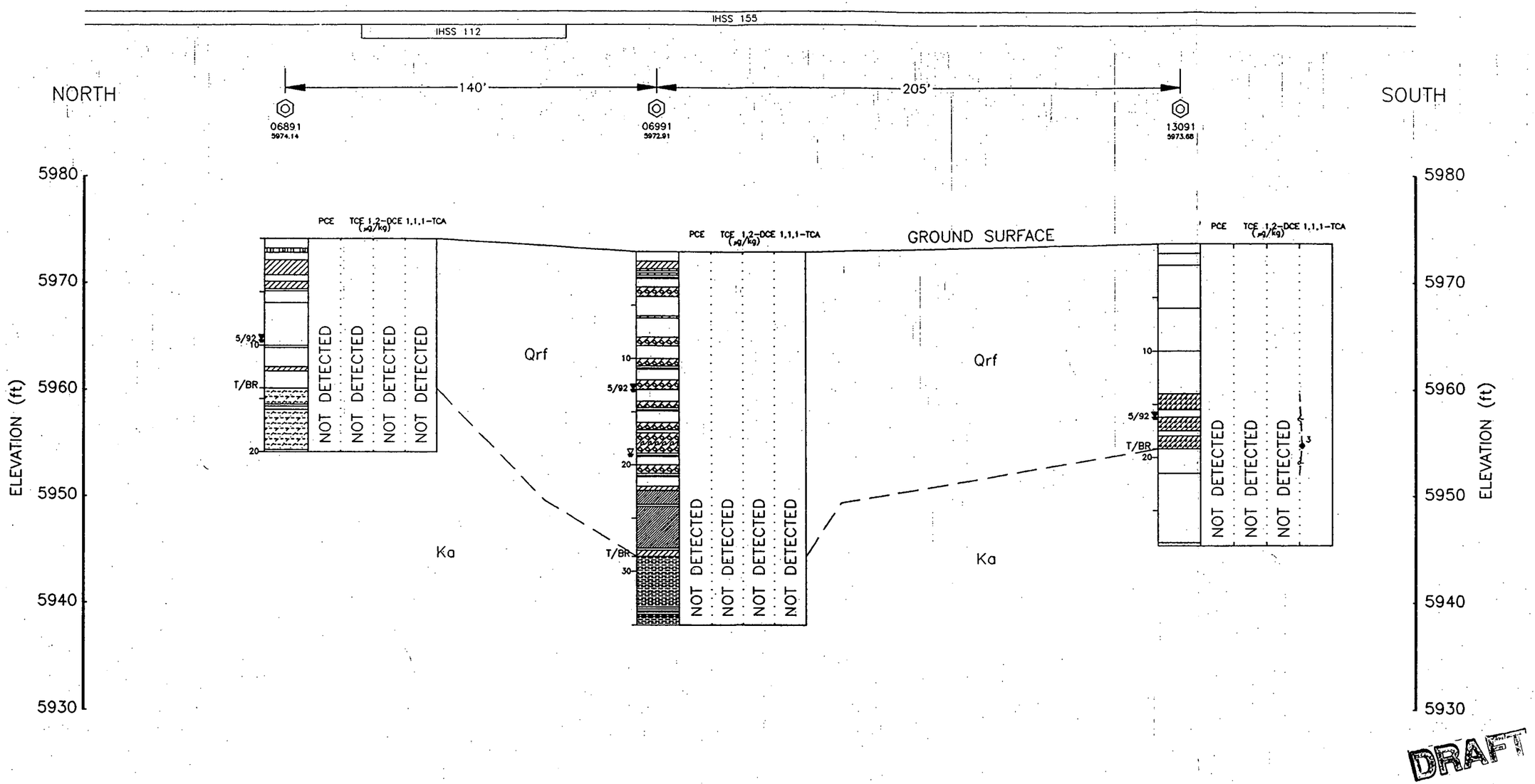
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

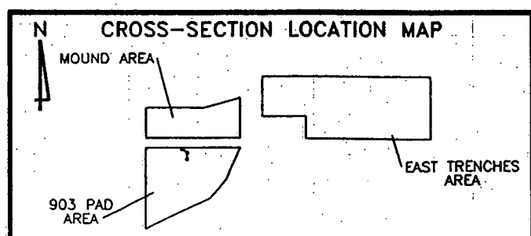
SOURCE BOREHOLE CROSS-SECTION IHSS 140 (REACTIVE METAL DESTRUCTION SITE) WESTERN SECTION

FIGURE 4.3-12 OCTOBER 1993



VERTICAL 0 — 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



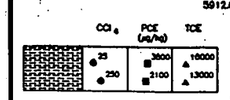
EXPLANATION

T/BR = TOP OF BEDROCK

⬡ = LOCATION SYMBOL

3486 = LOCATION NAME

5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

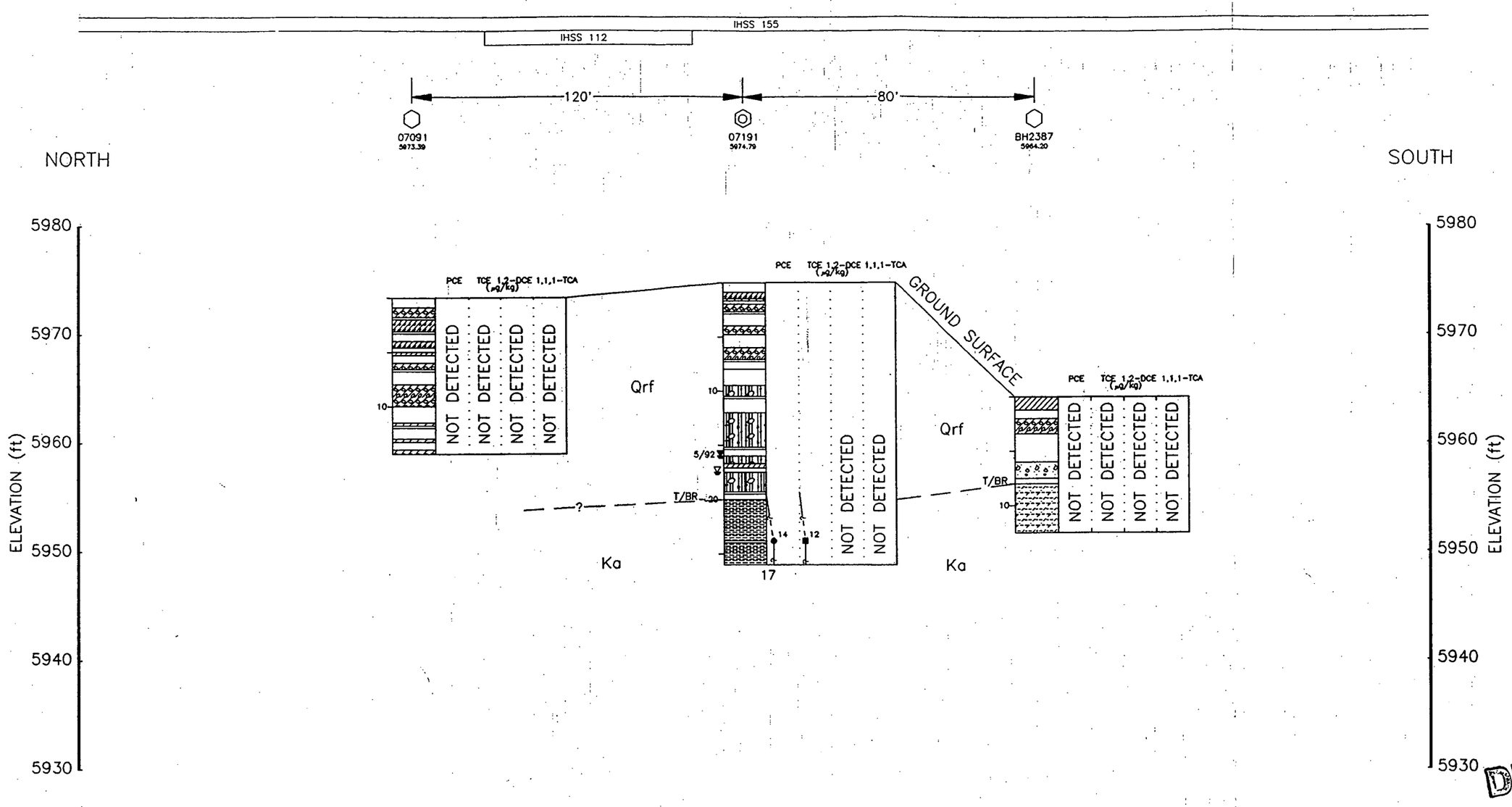
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE CROSS-SECTION IHSS 155 (903 LIP) EASTERN SECTION (PART 1 OF 2)

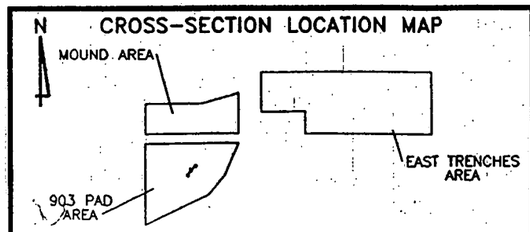
FIGURE 4.3-13 OCTOBER 1993

OU2RI116 1=1



VERTICAL 0 — 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)

CCl4 PCE (µg/kg) TCE
25 250 3800 3100 16000 13000

EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

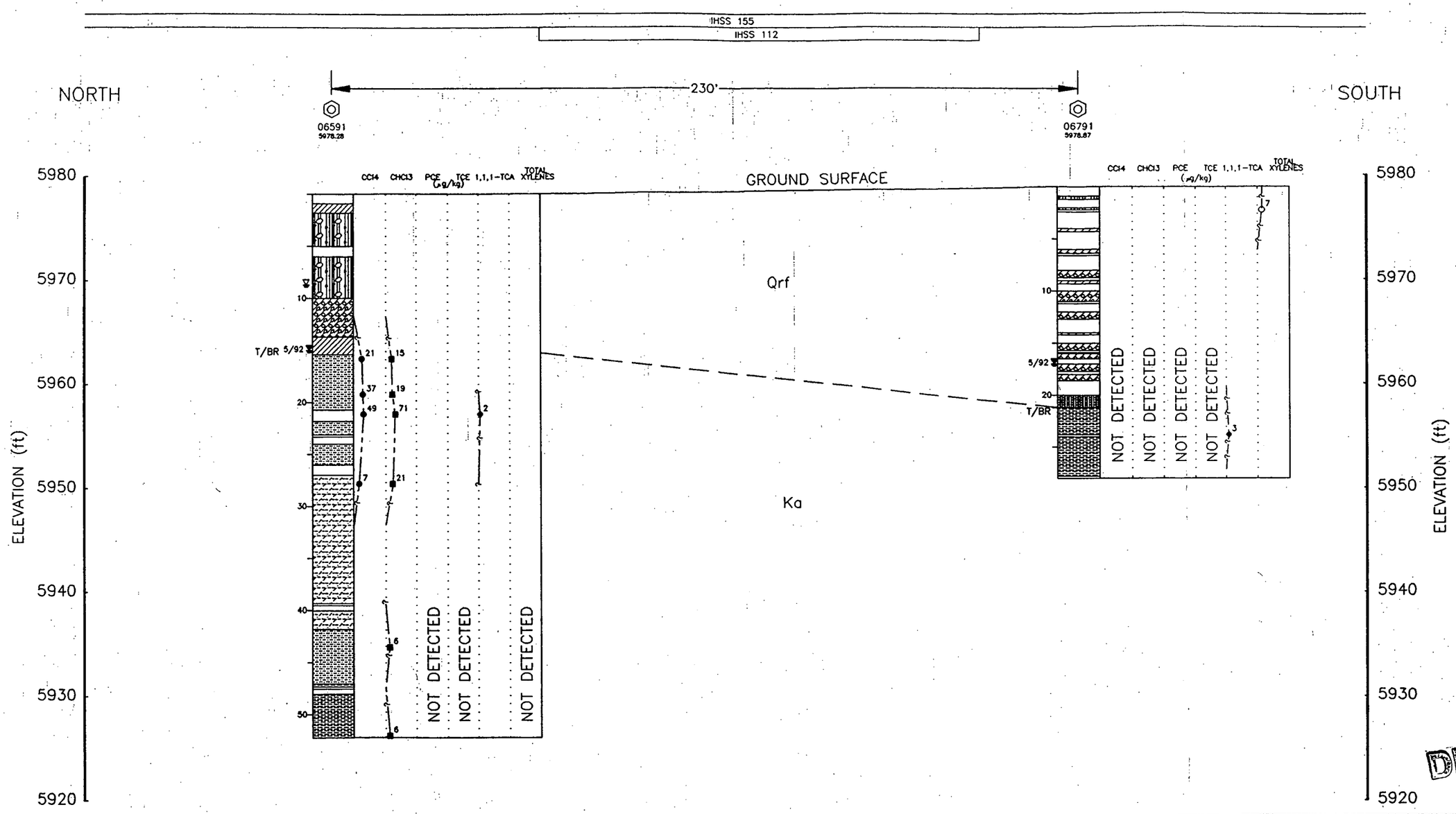
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE CROSS-SECTION IHSS 155 (903 LIP) EASTERN SECTION (PART 2 OF 2)

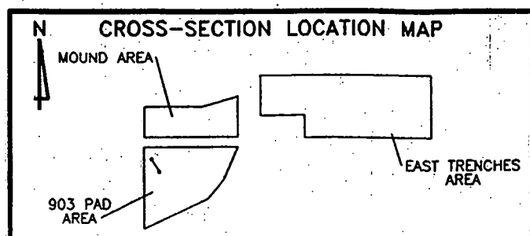
FIGURE 4.3-13 OCTOBER 1993

OU2RI117 1=1



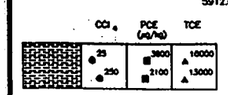
VERTICAL 0 — 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

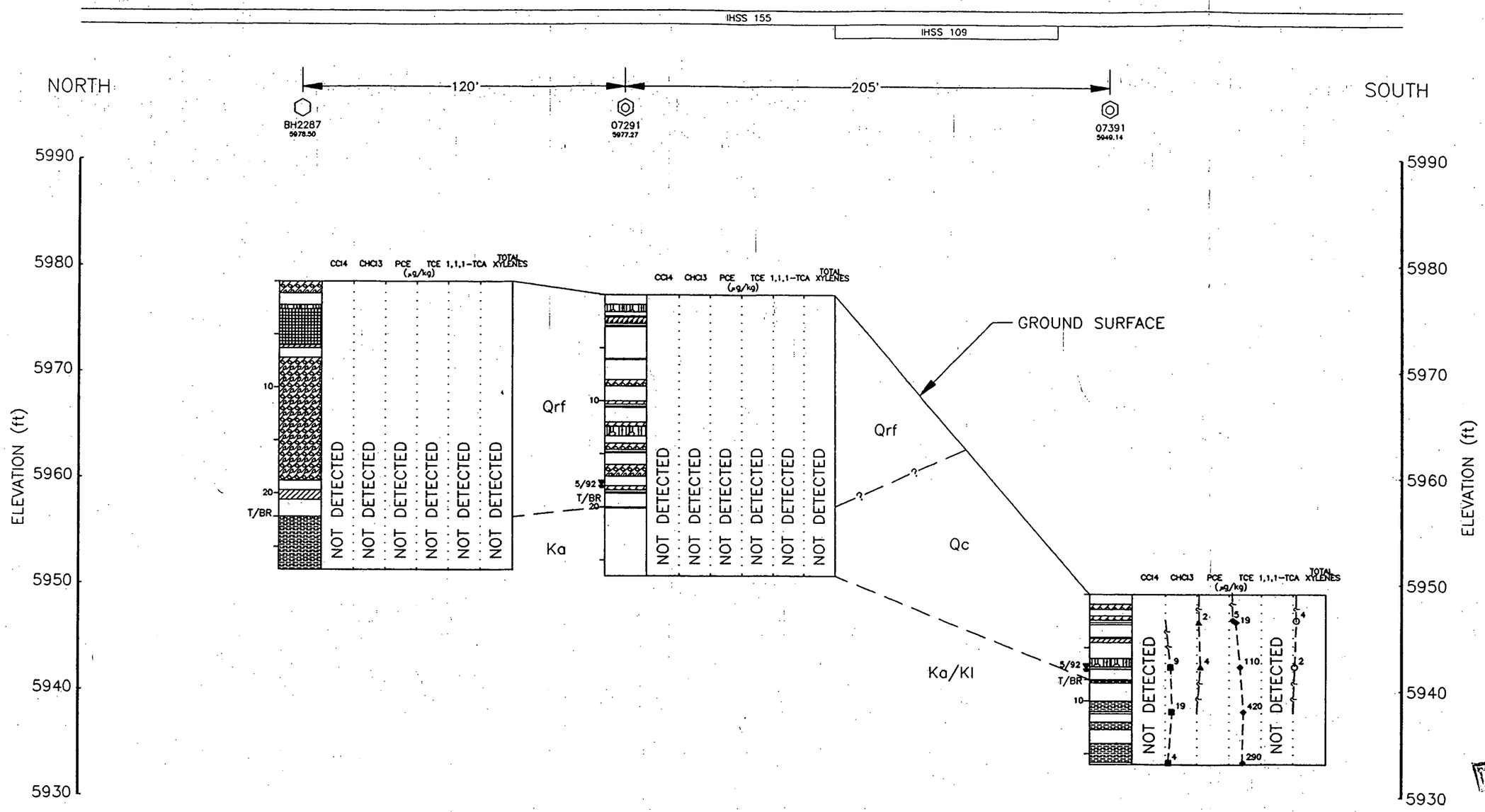
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION
IHSS 155 (903 LIP)
WESTERN SECTION
(PART 1 OF 2)

FIGURE 4.3-14 OCTOBER 1993

DRAFT

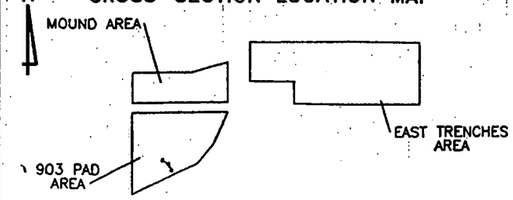
OU2RI118 1-1



VERTICAL 0 — 10 SCALE IN FEET

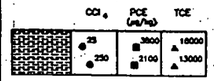
NOTE: HORIZONTAL DISTANCE NOT TO SCALE.

CROSS-SECTION LOCATION MAP



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

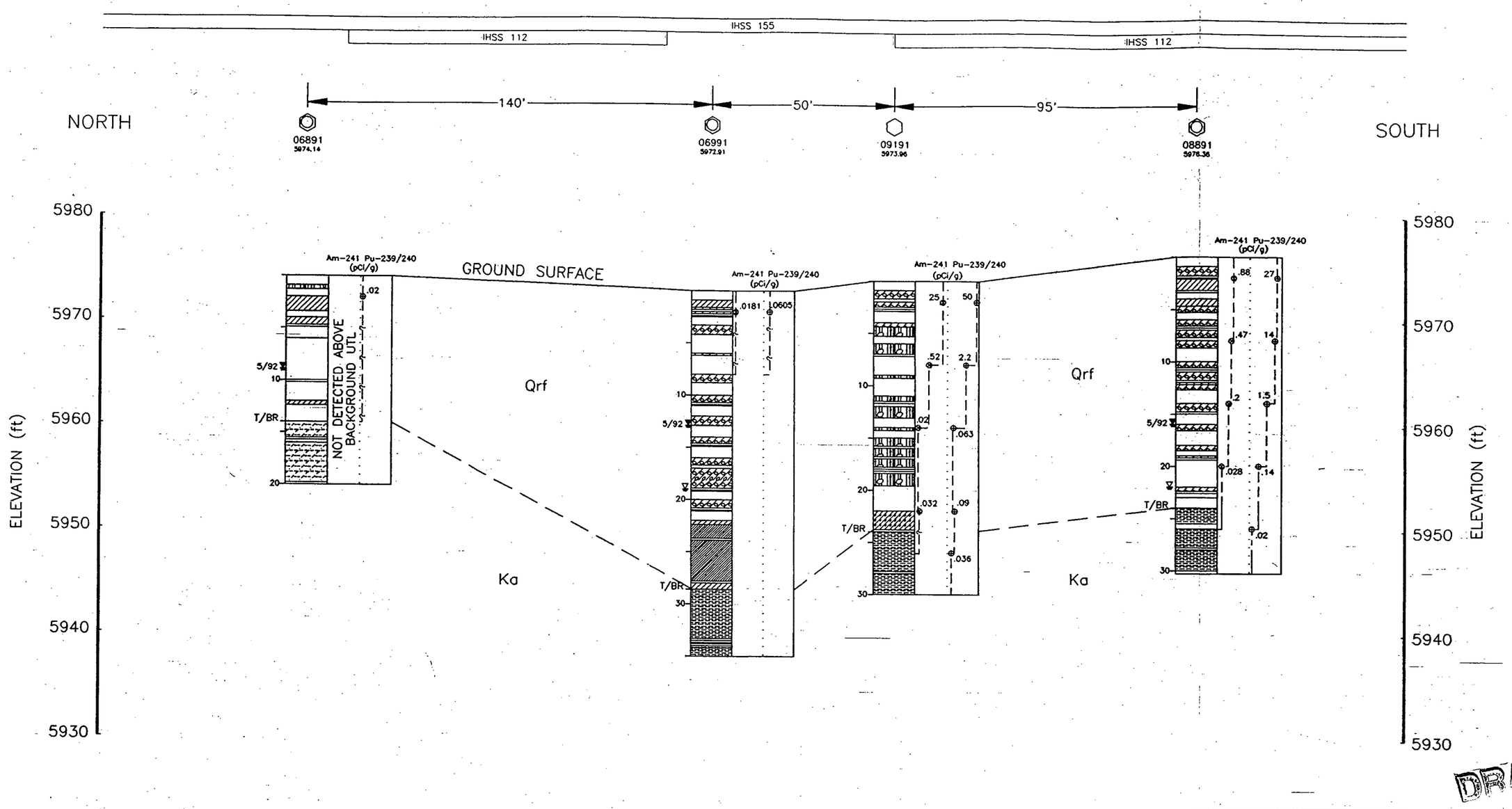
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE CROSS-SECTION IHSS 155 (903 LIP) WESTERN SECTION (PART 2 OF 2)

FIGURE 4.3-14 OCTOBER 1993

OU2RI119 1=1

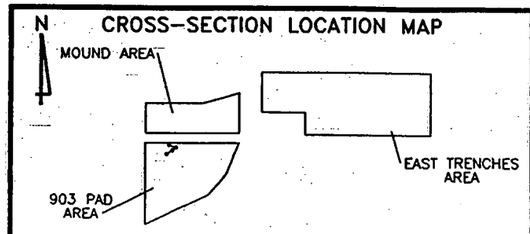


DRAFT

VERTICAL 0 – 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.

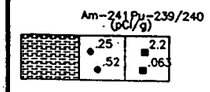
CROSS-SECTION LOCATION MAP



NOTE: ALL ANALYTICAL VALUES REPORTED ARE GREATER THAN BACKGROUND UTLs.

EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 100 (pCi/g). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

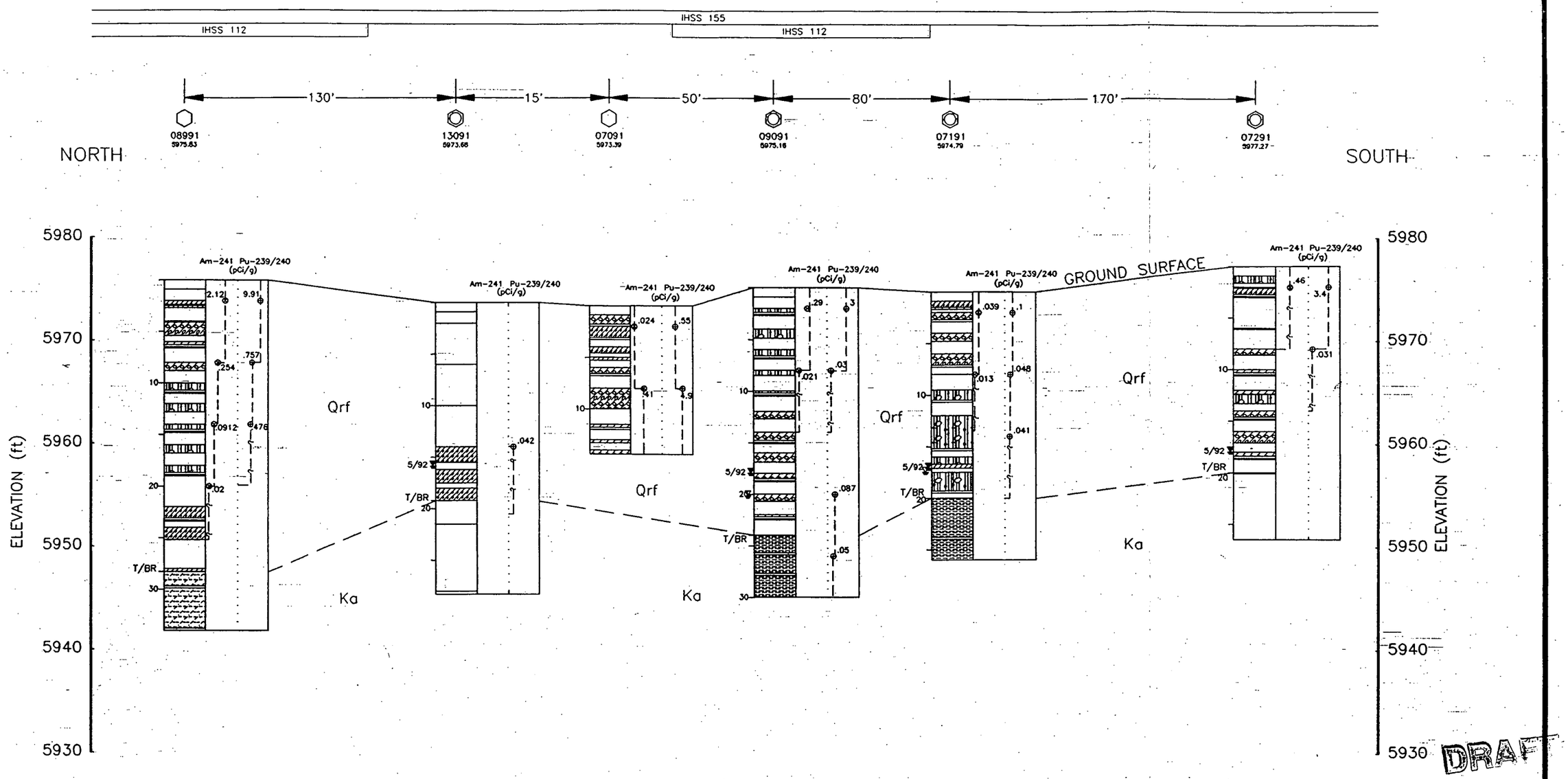
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

RADIONUCLIDE SOURCE BOREHOLE CROSS-SECTION IHSS 112 (903 PAD) EASTERN SECTION (PART 1 OF 2)

FIGURE 4.3-15 OCTOBER 1993

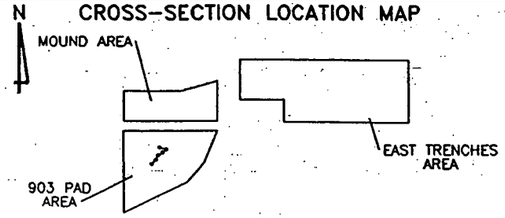
OU2RI179 1=1



VERTICAL 0 — 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.

CROSS-SECTION LOCATION MAP



NOTE: ALL ANALYTICAL VALUES REPORTED ARE GREATER THAN BACKGROUND UTLs.

EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)

Am-241 Pu-239/240 (pCi/g) .024 .41 .55 .45

EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 100 (pCi/g). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

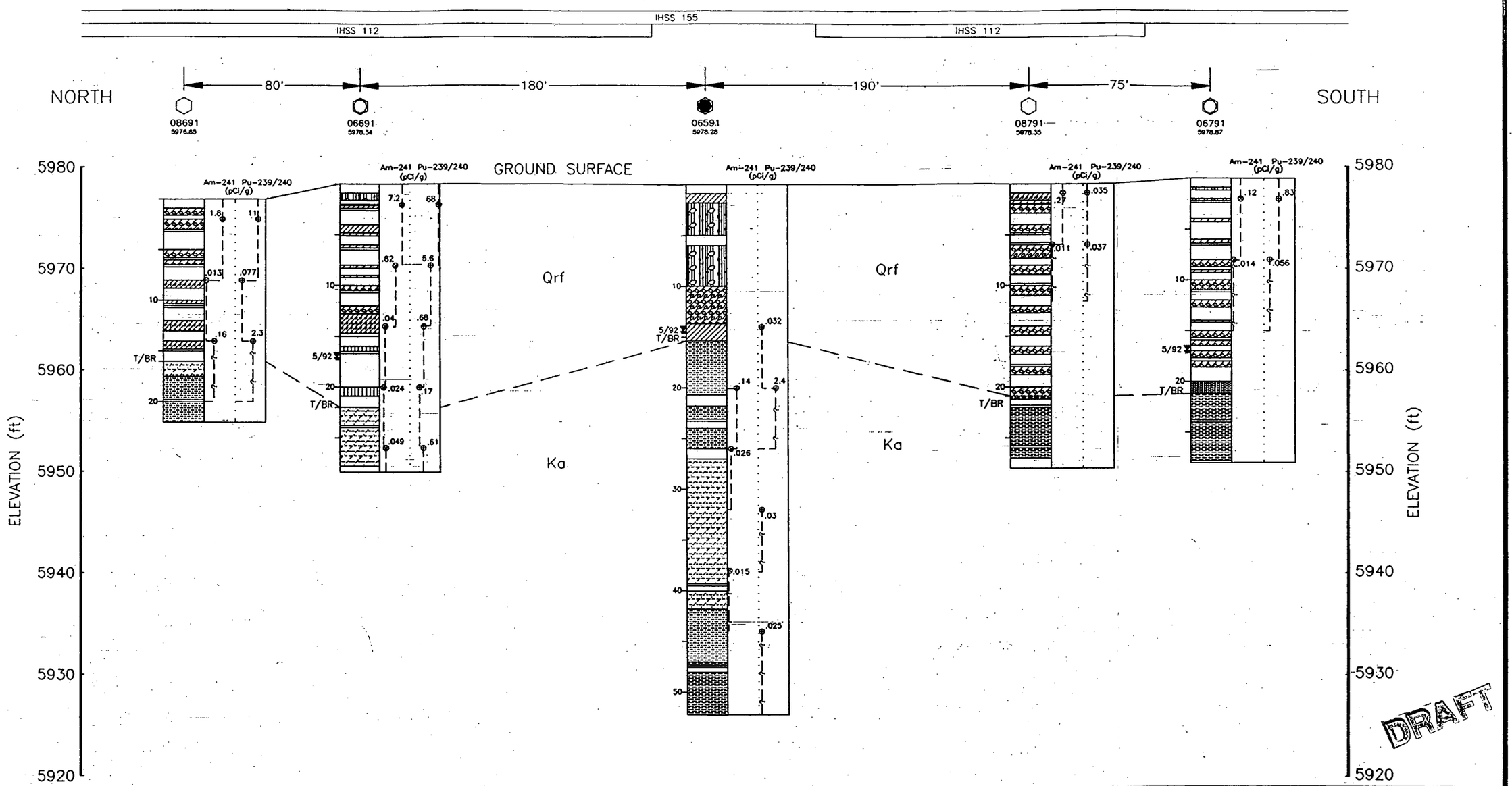
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

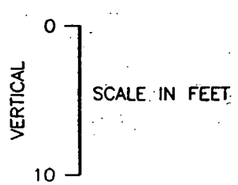
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

RADIONUCLIDE SOURCE BOREHOLE CROSS-SECTION IHSS 112 (903 PAD) EASTERN SECTION (PART 2 OF 2)

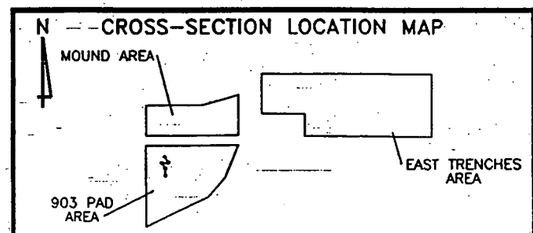
FIGURE 4.3-15 OCTOBER 1993

OU2RI180 1=1





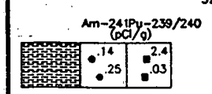
NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



NOTE: ALL ANALYTICAL VALUES REPORTED ARE GREATER THAN BACKGROUND UTLs.

EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 100 (pCi/g). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

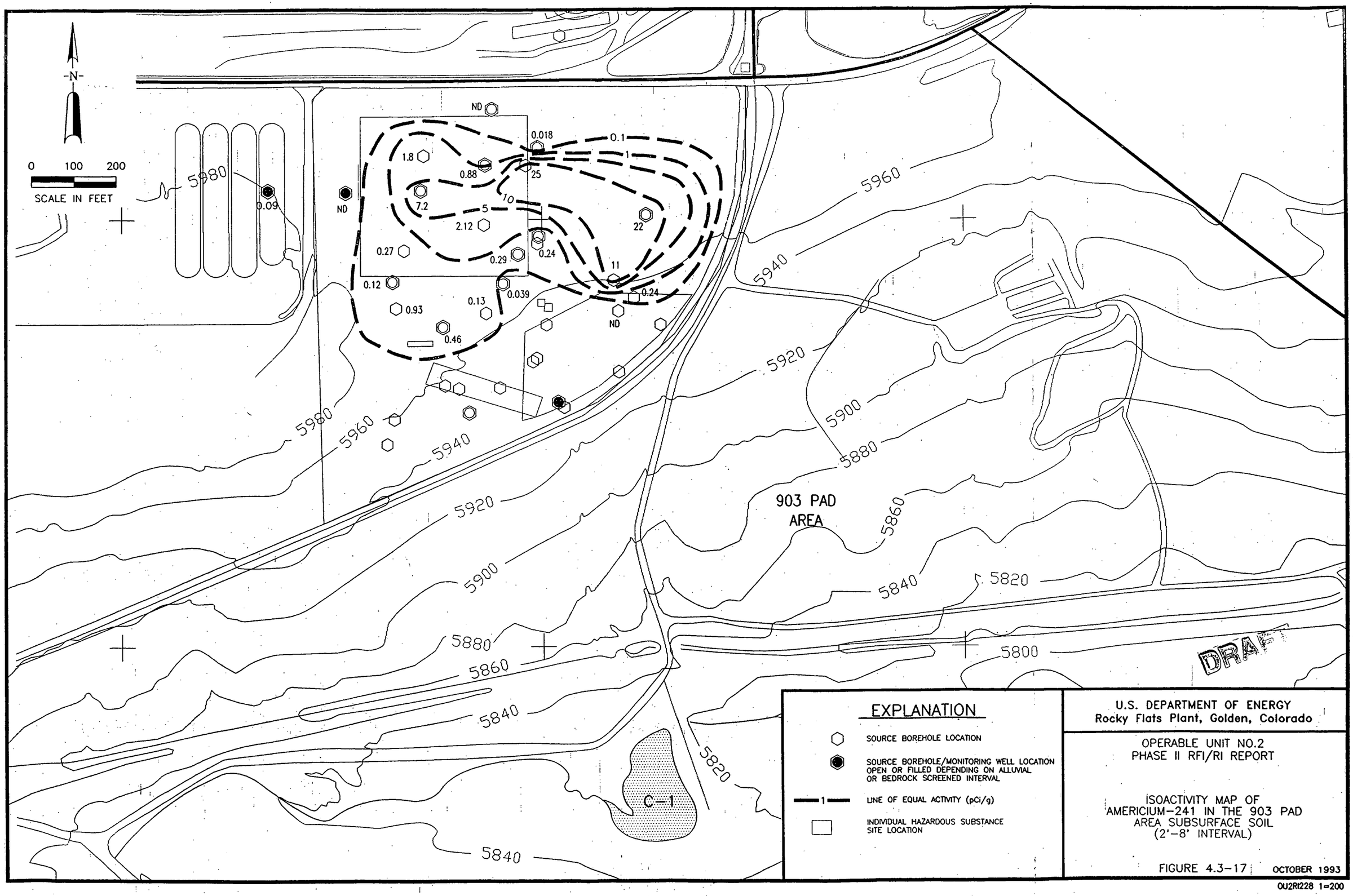
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

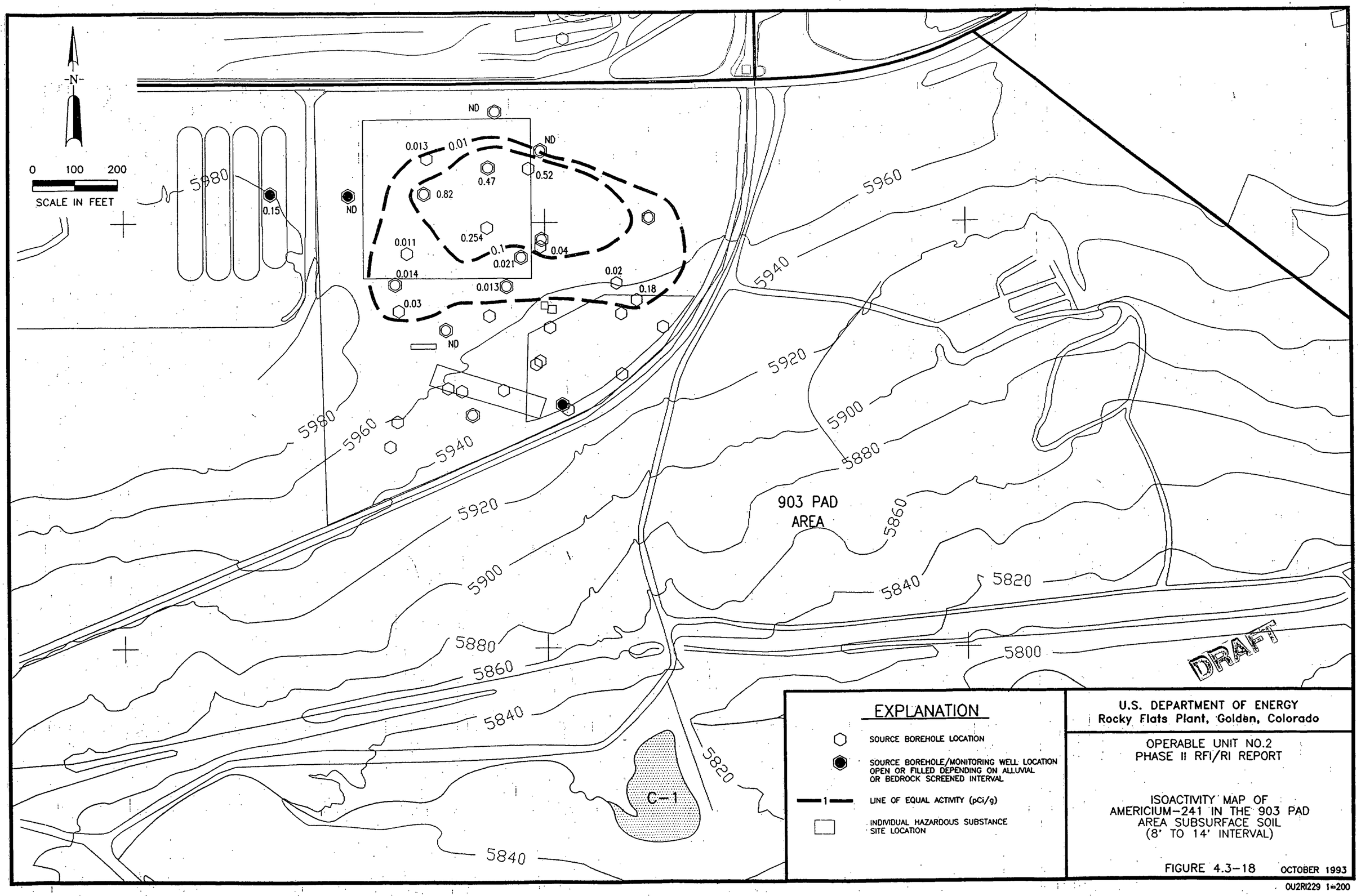
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

RADIONUCLIDE SOURCE BOREHOLE CROSS-SECTION IHSS 112 (903 PAD) WESTERN SECTION

FIGURE 4.3-16 OCTOBER 1993

OU2RI181 1=1


N
0 100 200
SCALE IN FEET
903 PAD AREA
C-1
ND
0.018
0.1
1
10
5
25
1.8
0.88
7.2
2.12
22
0.27
0.29
0.24
11
0.12
0.039
0.24
0.93
0.13
0.46
0.09
5980
5960
5940
5920
5900
5880
5860
5840
5820
5800
DRAFT
EXPLANATION
SOURCE BOREHOLE LOCATION
SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
1
LINE OF EQUAL ACTIVITY (pCi/g)
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
ISOACTIVITY MAP OF AMERICIUM-241 IN THE 903 PAD AREA SUBSURFACE SOIL (2'-8' INTERVAL)
FIGURE 4.3-17
OCTOBER 1993
OU2RI228 1=200



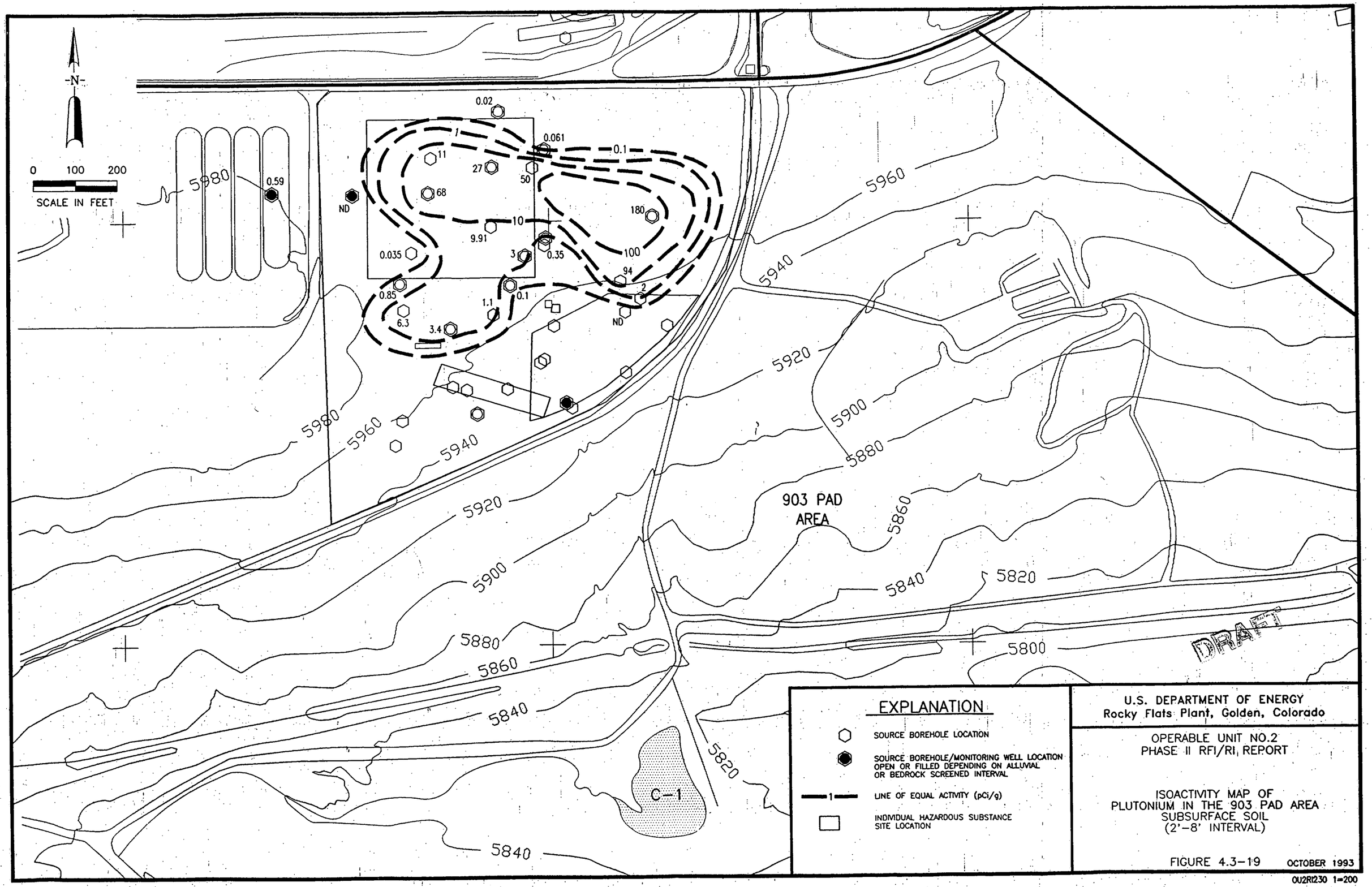
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

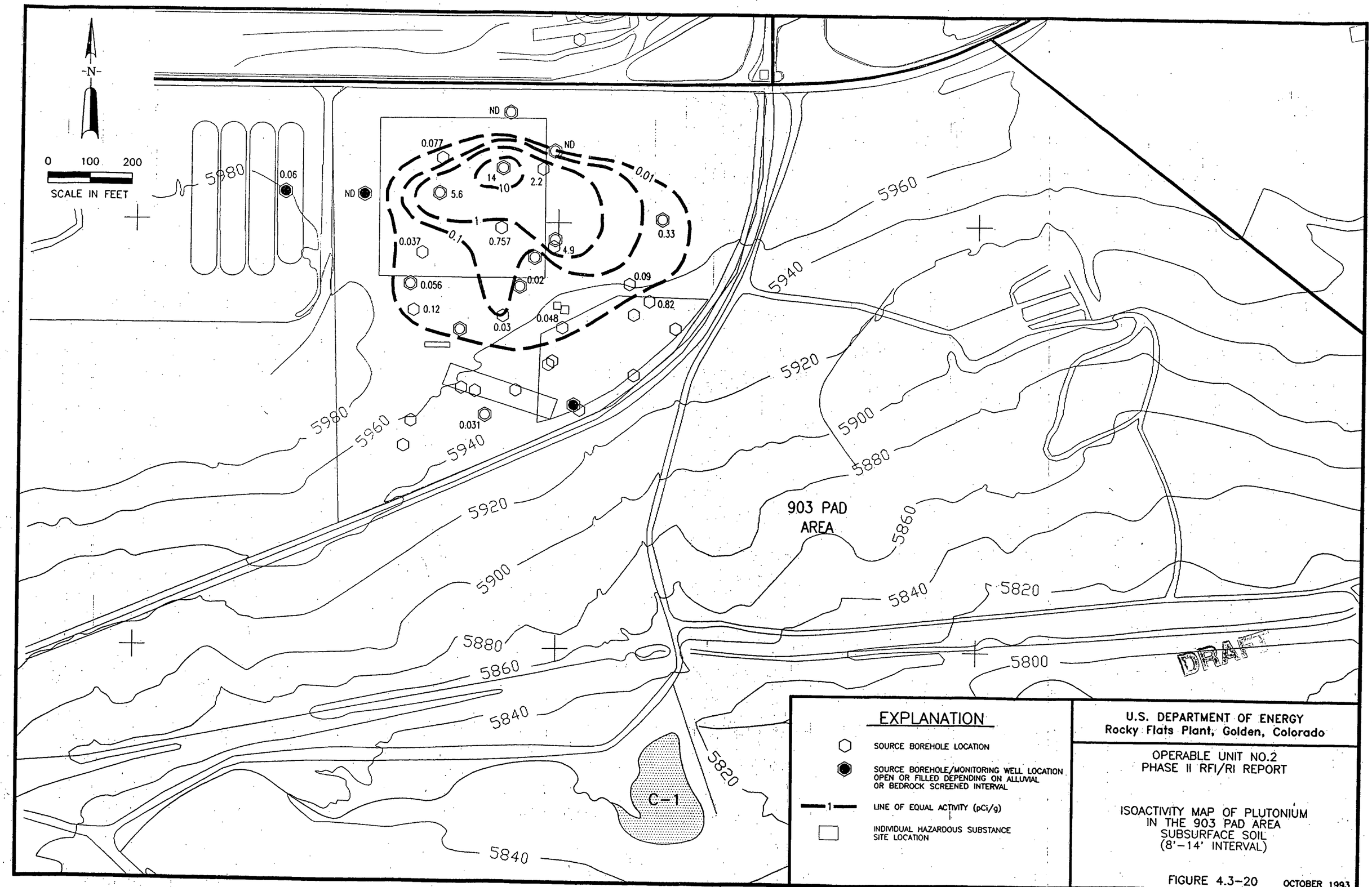
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

ISOACTIVITY MAP OF
AMERICIUM-241 IN THE 903 PAD
AREA SUBSURFACE SOIL
(8' TO 14' INTERVAL)

FIGURE 4.3-18 OCTOBER 1993

OU2RI229 1=200


-N-
0 100 200
SCALE IN FEET
0.02
0.061
0.1
11
27
50
68
ND
180
10
9.91
0.035
3
0.35
100
94
2
0.85
1.1
0.1
6.3
3.4
ND
5980
0.59
5960
5940
5920
5900
5880
5860
5840
5820
5800
903 PAD
AREA
C-1
DRAFT
EXPLANATION
SOURCE BOREHOLE LOCATION
SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
LINE OF EQUAL ACTIVITY (pCi/g)
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
ISOACTIVITY MAP OF
PLUTONIUM IN THE 903 PAD AREA
SUBSURFACE SOIL
(2'-8' INTERVAL)
FIGURE 4.3-19
OCTOBER 1993
OU2RI230 1=200



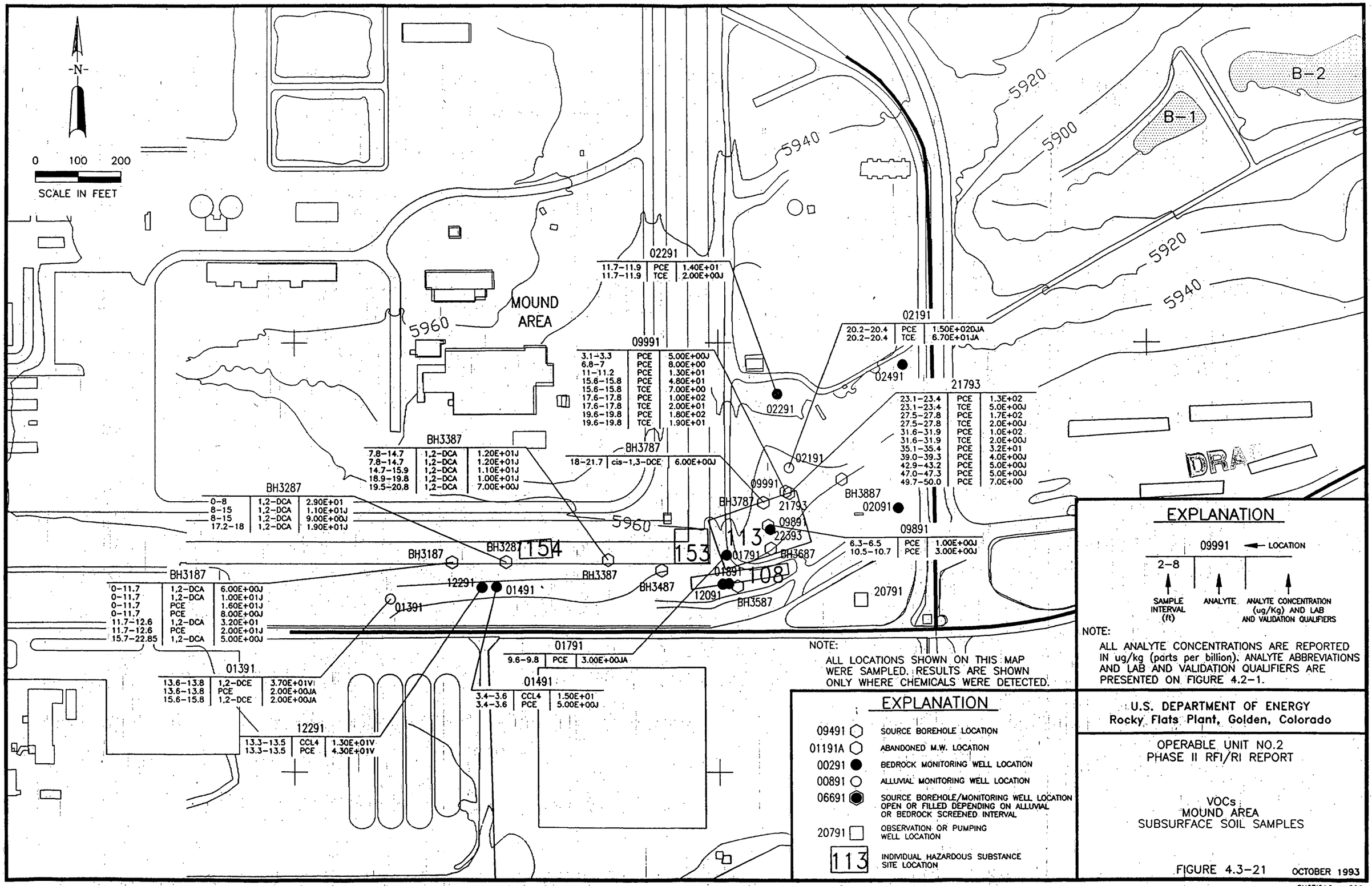
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

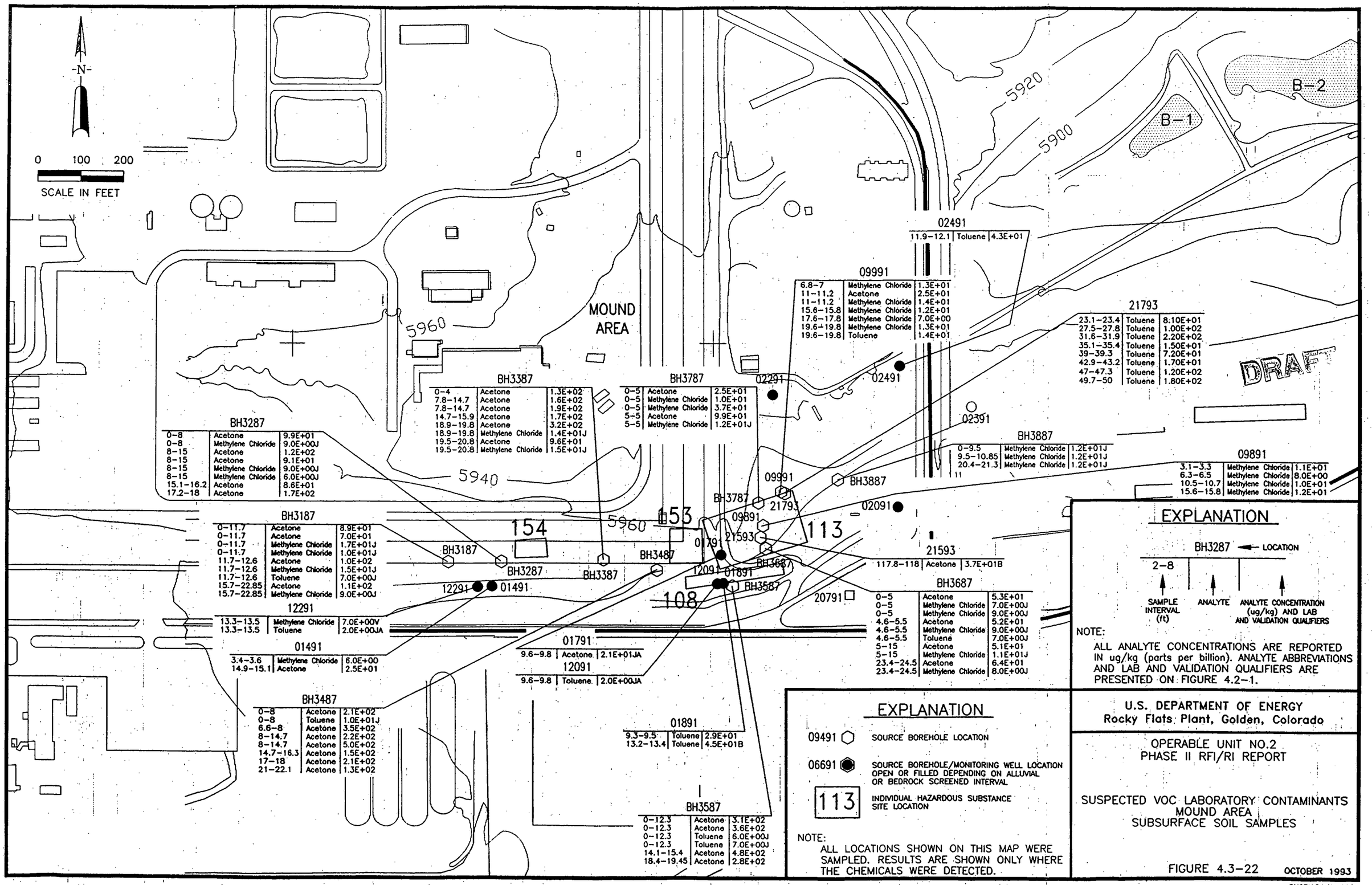
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

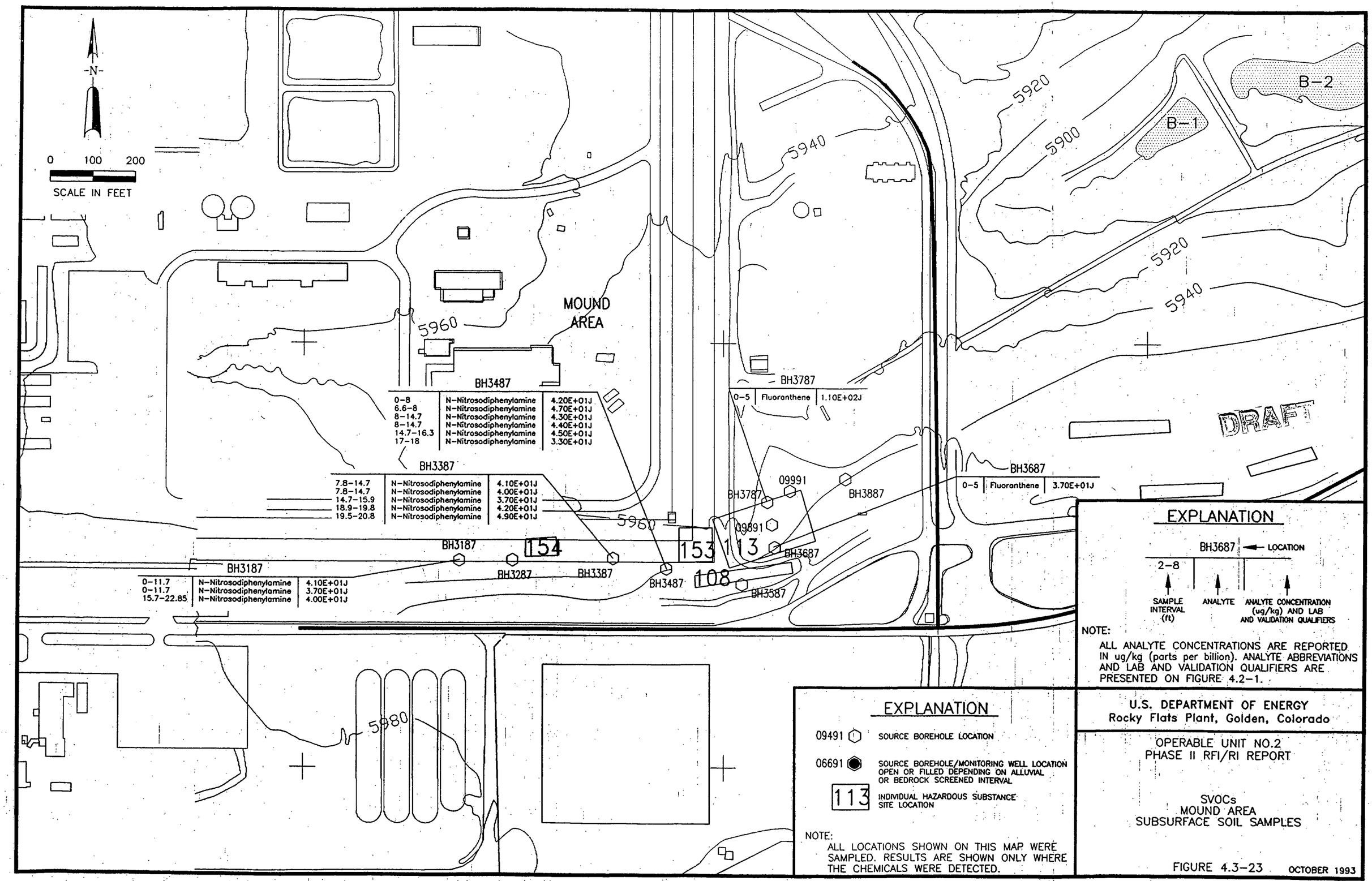
ISOACTIVITY MAP OF PLUTONIUM
IN THE 903 PAD AREA
SUBSURFACE SOIL
(8'-14' INTERVAL)

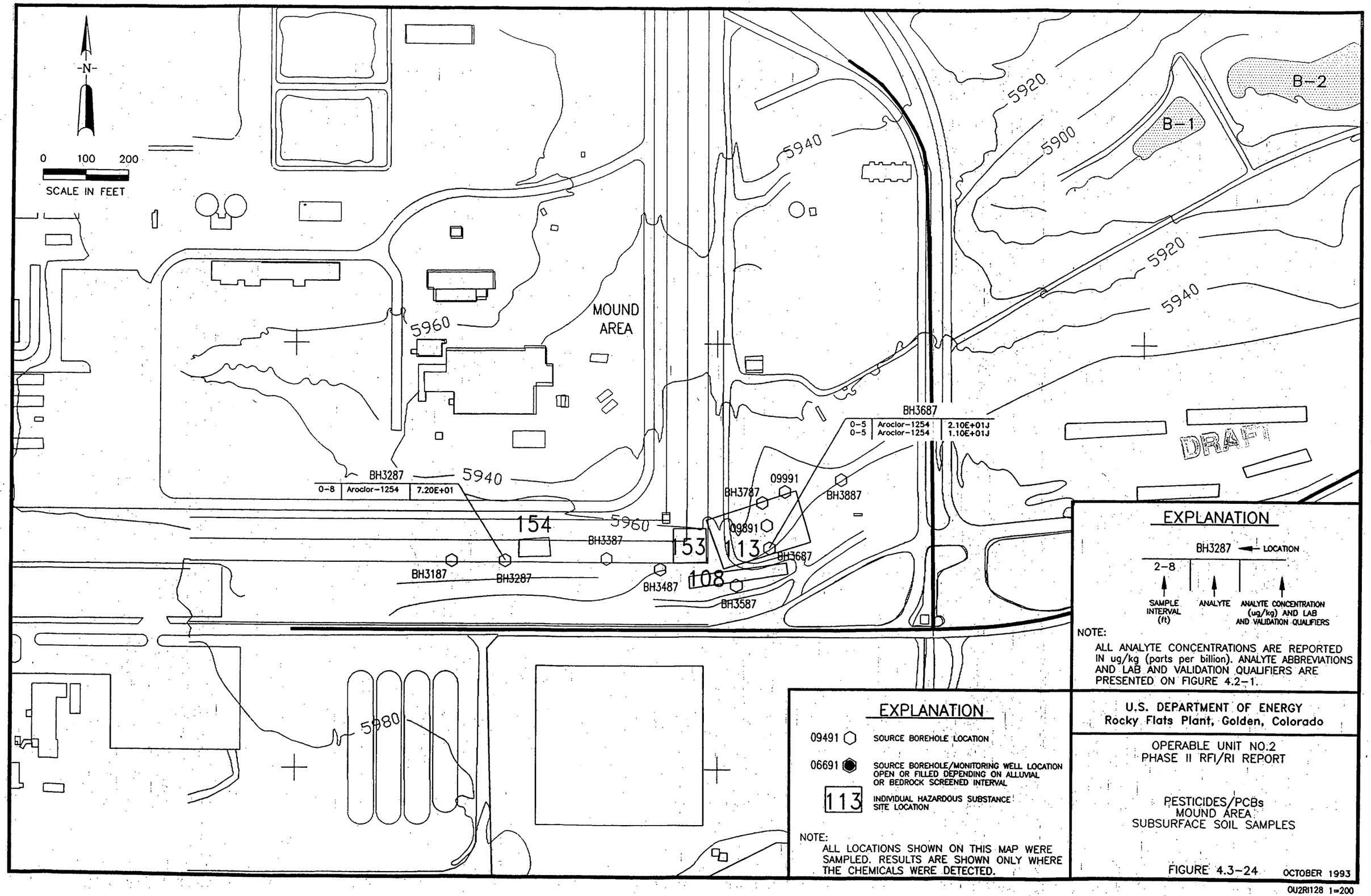
FIGURE 4.3-20 OCTOBER 1993

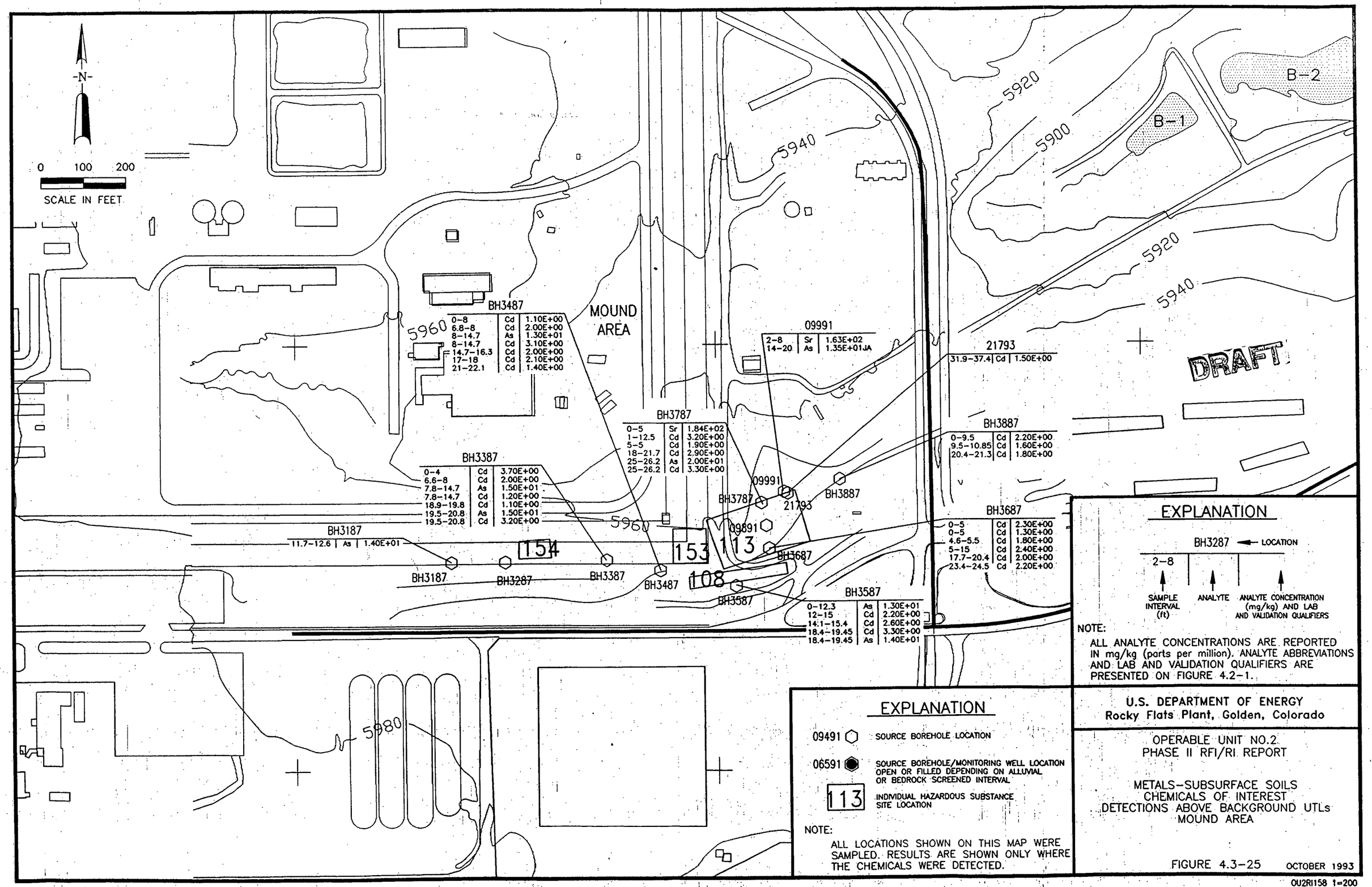
OU2RI231 1=200

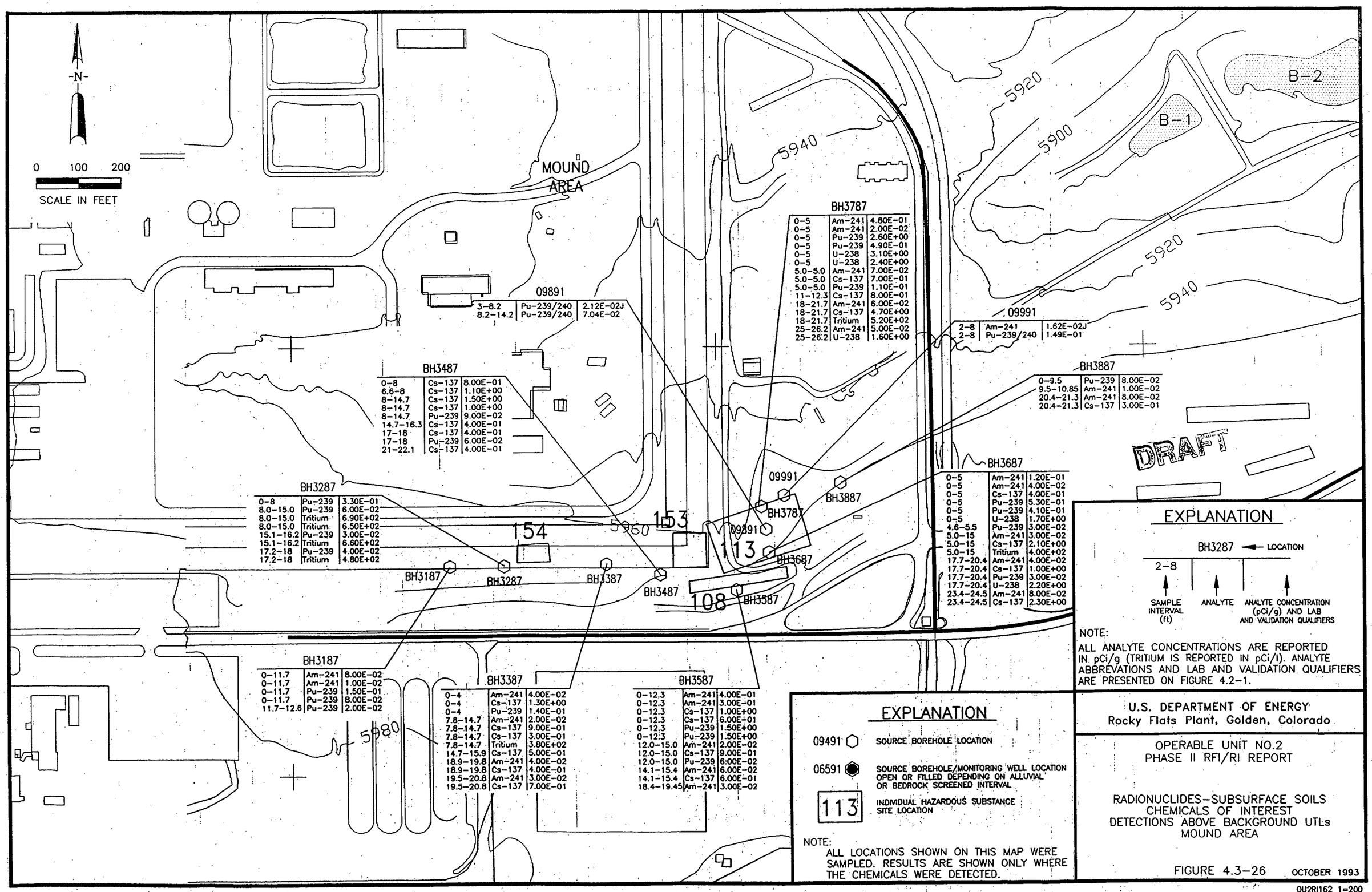

-N-
0 100 200
SCALE IN FEET
MOUND AREA
5960
5940
5920
5900
B-1
B-2
DRA
02291
11.7-11.9 PCE 1.40E+01
11.7-11.9 TCE 2.00E+00J
09991
3.1-3.3 PCE 5.00E+00J
6.8-7 PCE 8.00E+00
11-11.2 PCE 1.30E+01
15.6-15.8 PCE 4.80E+01
15.6-15.8 TCE 7.00E+00
17.6-17.8 PCE 1.00E+02
17.6-17.8 TCE 2.00E+01
19.6-19.8 PCE 1.80E+02
19.6-19.8 TCE 1.90E+01
02191
20.2-20.4 PCE 1.50E+02DJA
20.2-20.4 TCE 6.70E+01JA
02491
21793
23.1-23.4 PCE 1.3E+02
23.1-23.4 TCE 5.0E+00J
27.5-27.8 PCE 1.7E+02
27.5-27.8 TCE 2.0E+00J
31.6-31.9 PCE 1.0E+02
31.6-31.9 TCE 2.0E+00J
35.1-35.4 PCE 3.2E+01
39.0-39.3 PCE 4.0E+00J
42.9-43.2 PCE 5.0E+00J
47.0-47.3 PCE 5.0E+00J
49.7-50.0 PCE 7.0E+00
BH3387
7.8-14.7 1,2-DCA 1.20E+01J
7.8-14.7 1,2-DCA 1.20E+01J
14.7-15.9 1,2-DCA 1.10E+01J
18.9-19.8 1,2-DCA 1.00E+01J
19.5-20.8 1,2-DCA 7.00E+00J
BH3787
18-21.7 cis-1,3-DCE 6.00E+00J
BH3287
0-8 1,2-DCA 2.90E+01
8-15 1,2-DCA 1.10E+01J
8-15 1,2-DCA 9.00E+00J
17.2-18 1,2-DCA 1.90E+01J
BH3187
0-11.7 1,2-DCA 6.00E+00J
0-11.7 1,2-DCA 1.00E+01J
0-11.7 PCE 1.60E+01J
0-11.7 PCE 8.00E+00J
11.7-12.6 1,2-DCA 3.20E+01
11.7-12.6 PCE 2.00E+01J
15.7-22.85 1,2-DCA 5.00E+00J
01391
13.6-13.8 1,2-DCE 3.70E+01V
13.6-13.8 PCE 2.00E+00JA
15.6-15.8 1,2-DCE 2.00E+00JA
12291
13.3-13.5 CCL4 1.30E+01V
13.3-13.5 PCE 4.30E+01V
01491
3.4-3.6 CCL4 1.50E+01
3.4-3.6 PCE 5.00E+00J
01791
9.6-9.8 PCE 3.00E+00JA
09891
6.3-6.5 PCE 1.00E+00J
10.5-10.7 PCE 3.00E+00J
BH3887
02091
BH3687
BH3487
BH3587
20791
22393
12091
01891
154
153
113
108
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE CHEMICALS WERE DETECTED.
EXPLANATION
09991 LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/Kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
01191A ABANDONED M.W. LOCATION
00291 BEDROCK MONITORING WELL LOCATION
00891 ALLUVIAL MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
20791 OBSERVATION OR PUMPING WELL LOCATION
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
VOCs
MOUND AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-21
OCTOBER 1993
OU2RI016 1=200


-N-
0 100 200
SCALE IN FEET
MOUND AREA
5960
5940
5920
5900
B-1
B-2
DRAFT
02491
11.9–12.1 | Toluene | 4.3E+01
09991
6.8–7 | Methylene Chloride | 1.3E+01
11–11.2 | Acetone | 2.5E+01
11–11.2 | Methylene Chloride | 1.4E+01
15.6–15.8 | Methylene Chloride | 1.2E+01
17.6–17.8 | Methylene Chloride | 7.0E+00
19.6–19.8 | Methylene Chloride | 1.3E+01
19.6–19.8 | Toluene | 1.4E+01
21793
23.1–23.4 | Toluene | 8.10E+01
27.5–27.8 | Toluene | 1.00E+02
31.6–31.9 | Toluene | 2.20E+02
35.1–35.4 | Toluene | 1.50E+01
39–39.3 | Toluene | 7.20E+01
42.9–43.2 | Toluene | 1.70E+01
47–47.3 | Toluene | 1.20E+02
49.7–50 | Toluene | 1.80E+02
BH3387
0–4 | Acetone | 1.3E+02
7.8–14.7 | Acetone | 1.6E+02
7.8–14.7 | Acetone | 1.9E+02
14.7–15.9 | Acetone | 1.7E+02
18.9–19.8 | Acetone | 3.2E+02
18.9–19.8 | Methylene Chloride | 1.4E+01J
19.5–20.8 | Acetone | 9.6E+01
19.5–20.8 | Methylene Chloride | 1.5E+01J
BH3787
0–5 | Acetone | 2.5E+01
0–5 | Methylene Chloride | 1.0E+01
0–5 | Methylene Chloride | 3.7E+01
5–5 | Acetone | 9.9E+01
5–5 | Methylene Chloride | 1.2E+01J
BH3887
0–9.5 | Methylene Chloride | 1.2E+01J
9.5–10.85 | Methylene Chloride | 1.2E+01J
20.4–21.3 | Methylene Chloride | 1.2E+01J
09891
3.1–3.3 | Methylene Chloride | 1.1E+01
6.3–6.5 | Methylene Chloride | 8.0E+00
10.5–10.7 | Methylene Chloride | 1.0E+01
15.6–15.8 | Methylene Chloride | 1.2E+01
BH3287
0–8 | Acetone | 9.9E+01
0–8 | Methylene Chloride | 9.0E+00J
8–15 | Acetone | 1.2E+02
8–15 | Acetone | 9.1E+01
8–15 | Methylene Chloride | 9.0E+00J
8–15 | Methylene Chloride | 6.0E+00J
15.1–16.2 | Acetone | 8.6E+01
17.2–18 | Acetone | 1.7E+02
BH3187
0–11.7 | Acetone | 8.9E+01
0–11.7 | Acetone | 7.0E+01
0–11.7 | Methylene Chloride | 1.7E+01J
0–11.7 | Methylene Chloride | 1.0E+01J
11.7–12.6 | Acetone | 1.0E+02
11.7–12.6 | Methylene Chloride | 1.5E+01J
11.7–12.6 | Toluene | 7.0E+00J
15.7–22.85 | Acetone | 1.1E+02
15.7–22.85 | Methylene Chloride | 9.0E+00J
12291
13.3–13.5 | Methylene Chloride | 7.0E+00V
13.3–13.5 | Toluene | 2.0E+00JA
01491
3.4–3.6 | Methylene Chloride | 6.0E+00
14.9–15.1 | Acetone | 2.5E+01
01791
9.6–9.8 | Acetone | 2.1E+01JA
12091
9.6–9.8 | Toluene | 2.0E+00JA
BH3487
0–8 | Acetone | 2.1E+02
0–8 | Toluene | 1.0E+01J
6.6–8 | Acetone | 3.5E+02
8–14.7 | Acetone | 2.2E+02
8–14.7 | Acetone | 5.0E+02
14.7–16.3 | Acetone | 1.5E+02
17–18 | Acetone | 2.1E+02
21–22.1 | Acetone | 1.3E+02
01891
9.3–9.5 | Toluene | 2.9E+01
13.2–13.4 | Toluene | 4.5E+01B
BH3587
0–12.3 | Acetone | 3.1E+02
0–12.3 | Acetone | 3.6E+02
0–12.3 | Toluene | 6.0E+00J
0–12.3 | Toluene | 7.0E+00J
14.1–15.4 | Acetone | 4.8E+02
18.4–19.45 | Acetone | 2.8E+02
21593
117.8–118 | Acetone | 3.7E+01B
BH3687
0–5 | Acetone | 5.3E+01
0–5 | Methylene Chloride | 7.0E+00J
0–5 | Methylene Chloride | 9.0E+00J
4.6–5.5 | Acetone | 5.2E+01
4.6–5.5 | Methylene Chloride | 9.0E+00J
4.6–5.5 | Toluene | 7.0E+00J
5–15 | Acetone | 5.1E+01
5–15 | Methylene Chloride | 1.1E+01J
23.4–24.5 | Acetone | 6.4E+01
23.4–24.5 | Methylene Chloride | 8.0E+00J
154
153
113
108
02291
02391
02091
20791
12291
01491
01791
12091
01891
EXPLANATION
BH3287 ← LOCATION
2–8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2–1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SUSPECTED VOC LABORATORY CONTAMINANTS
MOUND AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3–22
OCTOBER 1993
0U2RI184 1=200


-N-
0 100 200
SCALE IN FEET
MOUND AREA
5960
5940
5920
5900
5980
B-1
B-2
BH3487
0-8 N-Nitrosodiphenylamine 4.20E+01J
6.6-8 N-Nitrosodiphenylamine 4.70E+01J
8-14.7 N-Nitrosodiphenylamine 4.30E+01J
8-14.7 N-Nitrosodiphenylamine 4.40E+01J
14.7-16.3 N-Nitrosodiphenylamine 4.50E+01J
17-18 N-Nitrosodiphenylamine 3.30E+01J
BH3387
7.8-14.7 N-Nitrosodiphenylamine 4.10E+01J
7.8-14.7 N-Nitrosodiphenylamine 4.00E+01J
14.7-15.9 N-Nitrosodiphenylamine 3.70E+01J
18.9-19.8 N-Nitrosodiphenylamine 4.20E+01J
19.5-20.8 N-Nitrosodiphenylamine 4.90E+01J
BH3187
0-11.7 N-Nitrosodiphenylamine 4.10E+01J
0-11.7 N-Nitrosodiphenylamine 3.70E+01J
15.7-22.85 N-Nitrosodiphenylamine 4.00E+01J
BH3787
0-5 Fluoranthene 1.10E+02J
BH3687
0-5 Fluoranthene 3.70E+01J
09991
09891
BH3787
BH3887
BH3687
BH3587
BH3187
BH3287
BH3387
BH3487
154
153
113
108
DRAFT
EXPLANATION
BH3687 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SVOCs
MOUND AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-23
OCTOBER 1993
OU2RI124 1=200


-N-
0 100 200
SCALE IN FEET
MOUND AREA
5960
5940
5920
5900
5980
B-1
B-2
BH3687
0-5 Aroclor-1254 2.10E+01J
0-5 Aroclor-1254 1.10E+01J
BH3287
0-8 Aroclor-1254 7.20E+01
09991
BH3787
BH3887
09891
BH3387
BH3687
BH3187
BH3287
BH3487
BH3587
154
153
113
108
DRAFT
EXPLANATION
BH3287 LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
PESTICIDES/PCBs
MOUND AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-24
OCTOBER 1993
OU2RI128 1=200


-N-
0 100 200
SCALE IN FEET
MOUND AREA
B-1
B-2
5920
5900
5940
5960
5980
DRAFT
BH3487
0-8 Cd 1.10E+00
6.8-8 Cd 2.00E+00
8-14.7 As 1.30E+01
8-14.7 Cd 3.10E+00
14.7-16.3 Cd 2.00E+00
17-18 Cd 2.10E+00
21-22.1 Cd 1.40E+00
09991
2-8 Sr 1.63E+02
14-20 As 1.35E+01JA
21793
31.9-37.4 Cd 1.50E+00
BH3787
0-5 Sr 1.84E+02
1-12.5 Cd 3.20E+00
5-5 Cd 1.90E+00
18-21.7 Cd 2.90E+00
25-26.2 As 2.00E+01
25-26.2 Cd 3.30E+00
BH3887
0-9.5 Cd 2.20E+00
9.5-10.85 Cd 1.60E+00
20.4-21.3 Cd 1.80E+00
BH3387
0-4 Cd 3.70E+00
6.6-8 Cd 2.00E+00
7.8-14.7 As 1.50E+01
7.8-14.7 Cd 1.20E+00
18.9-19.8 Cd 1.10E+00
19.5-20.8 As 1.50E+01
19.5-20.8 Cd 3.20E+00
BH3187
11.7-12.6 As 1.40E+01
BH3687
0-5 Cd 2.30E+00
0-5 Cd 1.30E+00
4.6-5.5 Cd 1.80E+00
5-15 Cd 2.40E+00
17.7-20.4 Cd 2.00E+00
23.4-24.5 Cd 2.20E+00
BH3587
0-12.3 As 1.30E+01
12-15 Cd 2.20E+00
14.1-15.4 Cd 2.60E+00
18.4-19.45 Cd 3.30E+00
18.4-19.45 As 1.40E+01
154
153
113
108
BH3187
BH3287
BH3387
BH3487
BH3587
BH3687
BH3787
BH3887
09991
09891
21793
EXPLANATION
BH3287 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (mg/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN mg/kg (parts per million). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06591 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
METALS-SUBSURFACE SOILS
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
MOUND AREA
FIGURE 4.3-25
OCTOBER 1993
OU2RI158 1=200



BH3787

0-5	Am-241	4.80E-01
0-5	Am-241	2.00E-02
0-5	Pu-239	2.60E+00
0-5	Pu-239	4.90E-01
0-5	U-238	3.10E+00
0-5	U-238	2.40E+00
5.0-5.0	Am-241	7.00E-02
5.0-5.0	Cs-137	7.00E-01
5.0-5.0	Pu-239	1.10E-01
11-12.3	Cs-137	8.00E-01
18-21.7	Am-241	6.00E-02
18-21.7	Cs-137	4.70E+00
18-21.7	Tritium	5.20E+02
25-26.2	Am-241	5.00E-02
25-26.2	U-238	1.60E+00

09891

3-8.2	Pu-239/240	2.12E-02J
8.2-14.2	Pu-239/240	7.04E-02

09991

2-8	Am-241	1.62E-02J
2-8	Pu-239/240	1.49E-01

BH3487

0-8	Cs-137	8.00E-01
6.6-8	Cs-137	1.10E+00
8-14.7	Cs-137	1.50E+00
8-14.7	Cs-137	1.00E+00
8-14.7	Pu-239	9.00E-02
14.7-16.3	Cs-137	4.00E-01
17-18	Cs-137	4.00E-01
17-18	Pu-239	6.00E-02
21-22.1	Cs-137	4.00E-01

BH3887

0-9.5	Pu-239	8.00E-02
9.5-10.85	Am-241	1.00E-02
20.4-21.3	Am-241	8.00E-02
20.4-21.3	Cs-137	3.00E-01

BH3687

0-5	Am-241	1.20E-01
0-5	Am-241	4.00E-02
0-5	Cs-137	4.00E-01
0-5	Pu-239	5.30E-01
0-5	Pu-239	4.10E-01
0-5	U-238	1.70E+00
4.6-5.5	Pu-239	3.00E-02
5.0-15	Am-241	3.00E-02
5.0-15	Cs-137	2.10E+00
5.0-15	Tritium	4.00E+02
17.7-20.4	Am-241	4.00E-02
17.7-20.4	Cs-137	1.00E+00
17.7-20.4	Pu-239	3.00E-02
17.7-20.4	U-238	2.20E+00
23.4-24.5	Am-241	8.00E-02
23.4-24.5	Cs-137	2.30E+00

BH3287

0-8	Pu-239	3.30E-01
8.0-15.0	Pu-239	6.00E-02
8.0-15.0	Tritium	6.90E+02
8.0-15.0	Tritium	6.50E+02
15.1-16.2	Pu-239	3.00E-02
15.1-16.2	Tritium	6.60E+02
17.2-18	Pu-239	4.00E-02
17.2-18	Tritium	4.80E+02

BH3187

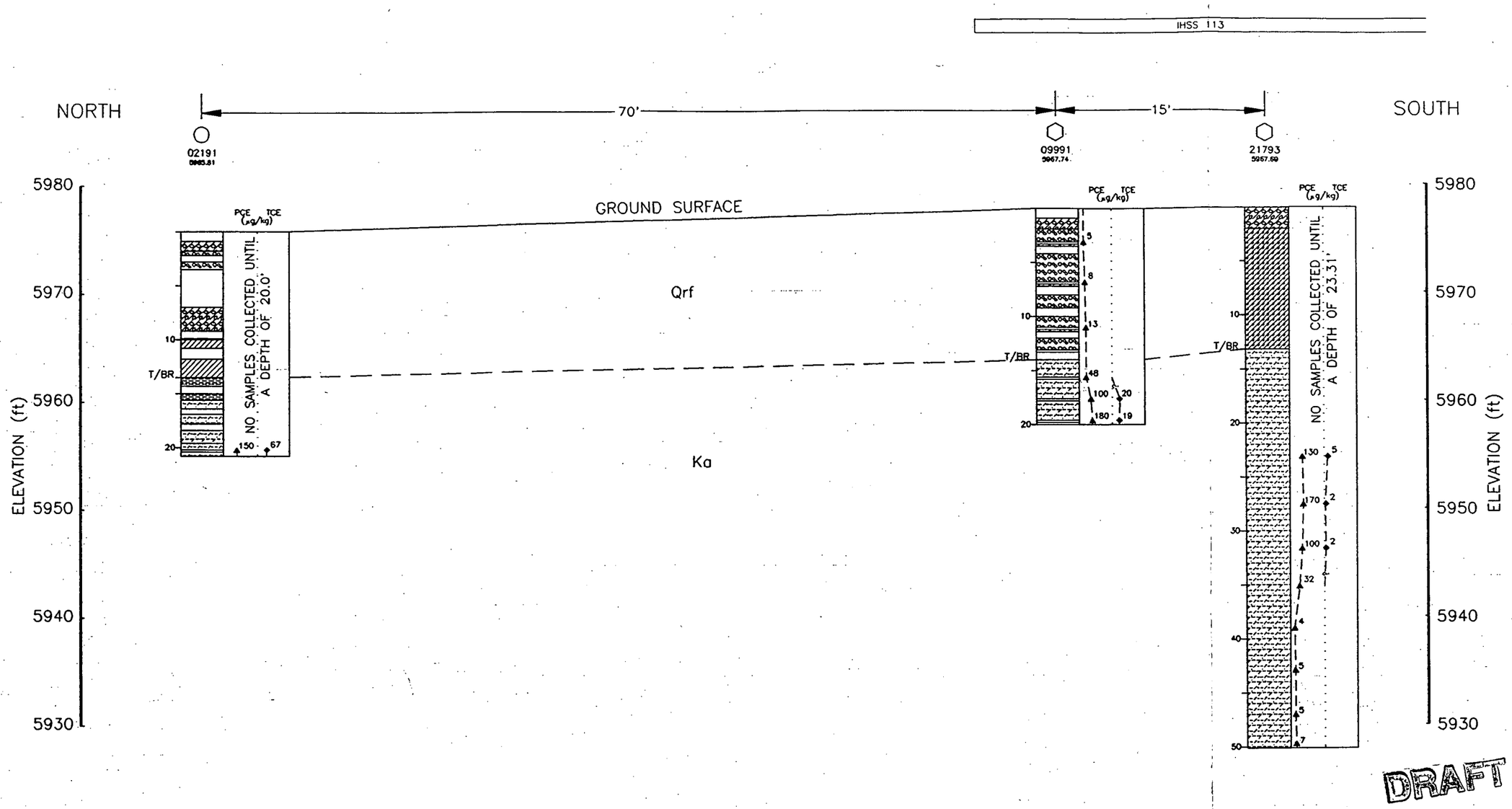
0-11.7	Am-241	8.00E-02
0-11.7	Am-241	1.00E-02
0-11.7	Pu-239	1.50E-01
0-11.7	Pu-239	8.00E-02
11.7-12.6	Pu-239	2.00E-02

BH3387

0-4	Am-241	4.00E-02
0-4	Cs-137	1.30E+00
0-4	Pu-239	1.40E-01
7.8-14.7	Am-241	2.00E-02
7.8-14.7	Cs-137	9.00E-01
7.8-14.7	Cs-137	3.00E-01
7.8-14.7	Tritium	3.80E+02
14.7-15.9	Cs-137	5.00E-01
18.9-19.8	Am-241	4.00E-02
18.9-19.8	Cs-137	4.00E-01
19.5-20.8	Am-241	3.00E-02
19.5-20.8	Cs-137	7.00E-01

BH3587

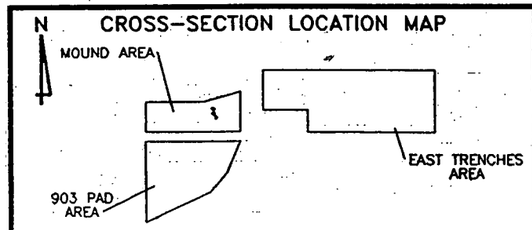
0-12.3	Am-241	4.00E-01
0-12.3	Am-241	3.00E+01
0-12.3	Cs-137	1.00E+00
0-12.3	Cs-137	6.00E+01
0-12.3	Pu-239	1.50E+00
0-12.3	Pu-239	1.50E+00
12.0-15.0	Am-241	2.00E-02
12.0-15.0	Cs-137	9.00E-01
12.0-15.0	Pu-239	6.00E-02
14.1-15.4	Am-241	6.00E-02
14.1-15.4	Cs-137	6.00E-01
18.4-19.45	Am-241	3.00E-02



VERTICAL 0 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.

CROSS-SECTION LOCATION MAP



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)

PCE (µg/kg) TCE
100 20
180 19

EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

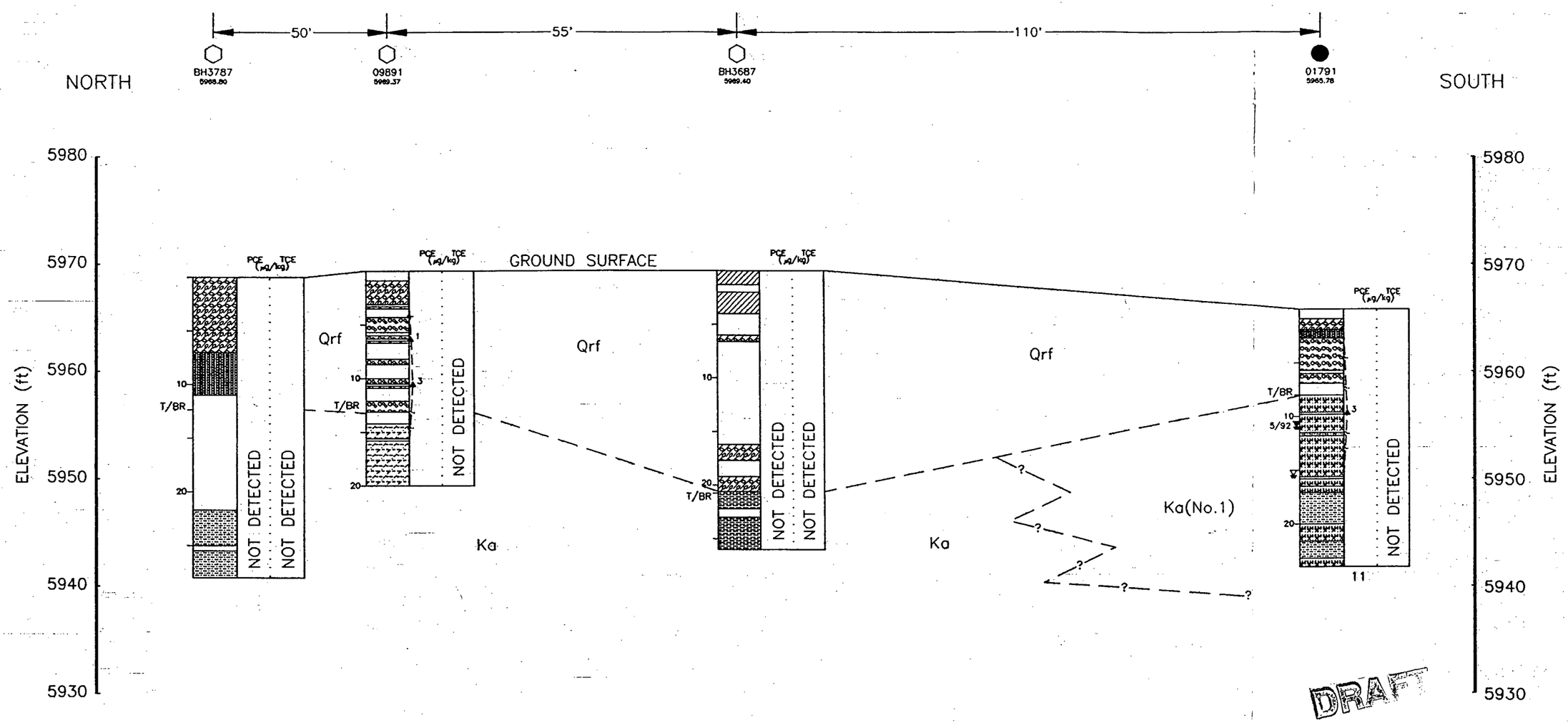
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE CROSS-SECTION
IHSS 113 (MOUND SITE)
(PART 1 OF 2)

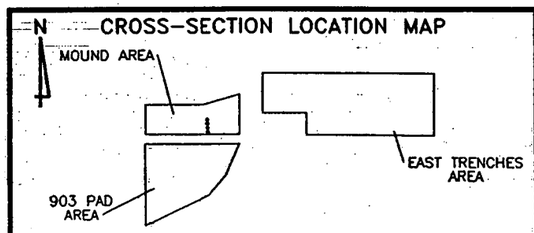
FIGURE 4.3-27 OCTOBER 1993

OU2RI135 1=1



VERTICAL 0 — 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK

⬡ = LOCATION SYMBOL

3486 = LOCATION NAME

5912.00 = GROUND SURFACE ELEVATION (ft)

CCl4 PCE (µg/kg) TCE

25 250 3600 2100 16000 13000

EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

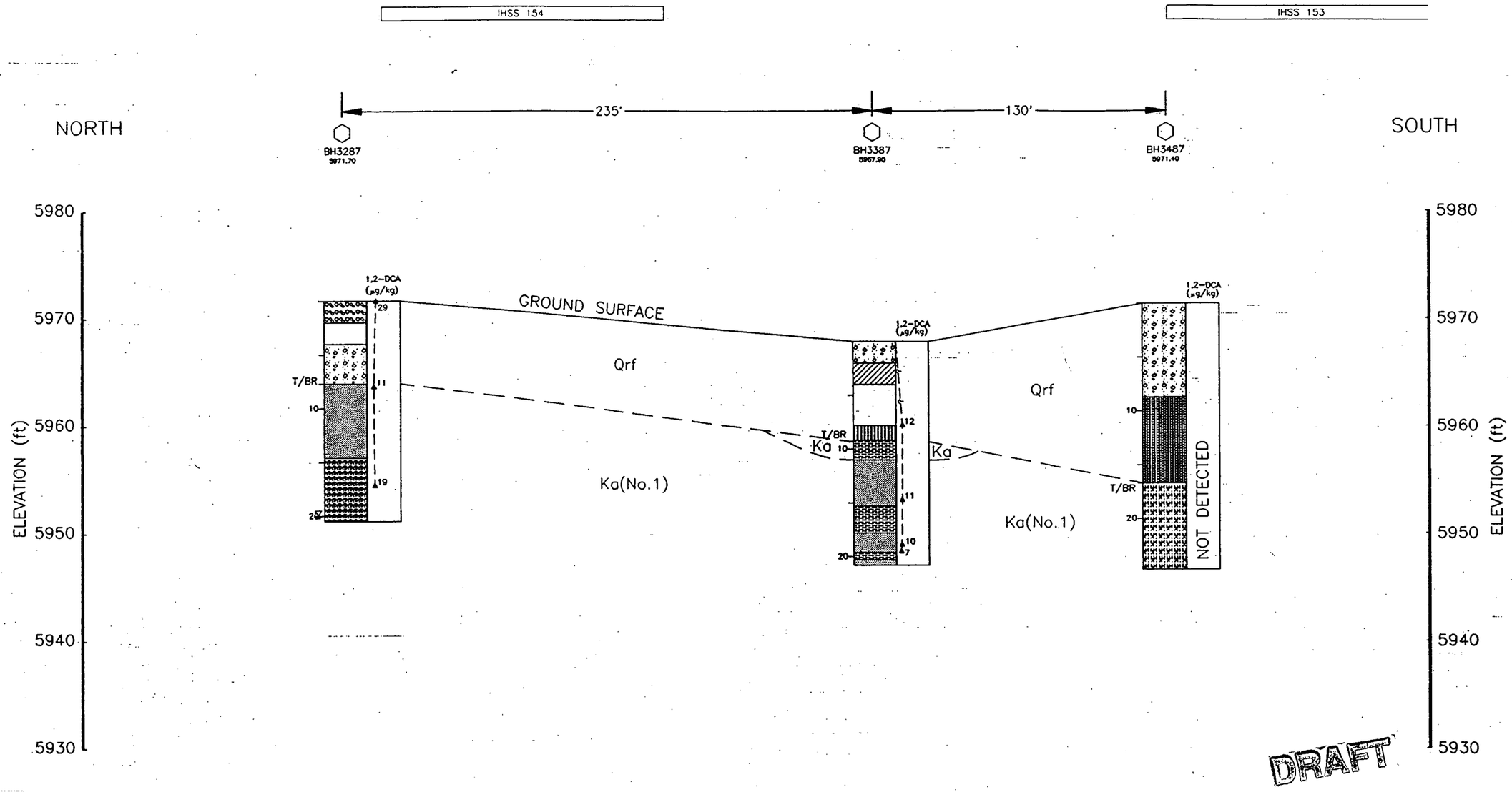
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

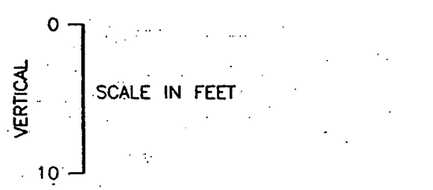
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION
IHSS 113 (MOUND SITE)
(PART 2 OF 2)

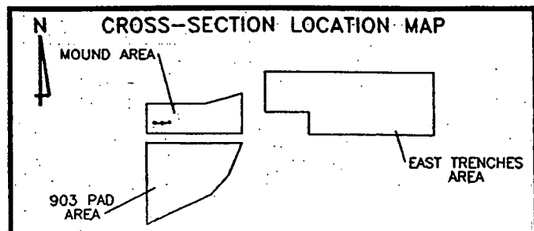
FIGURE 4.3-27 OCTOBER 1993

OU2RI134 1=1



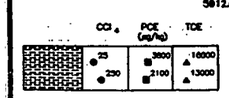


NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

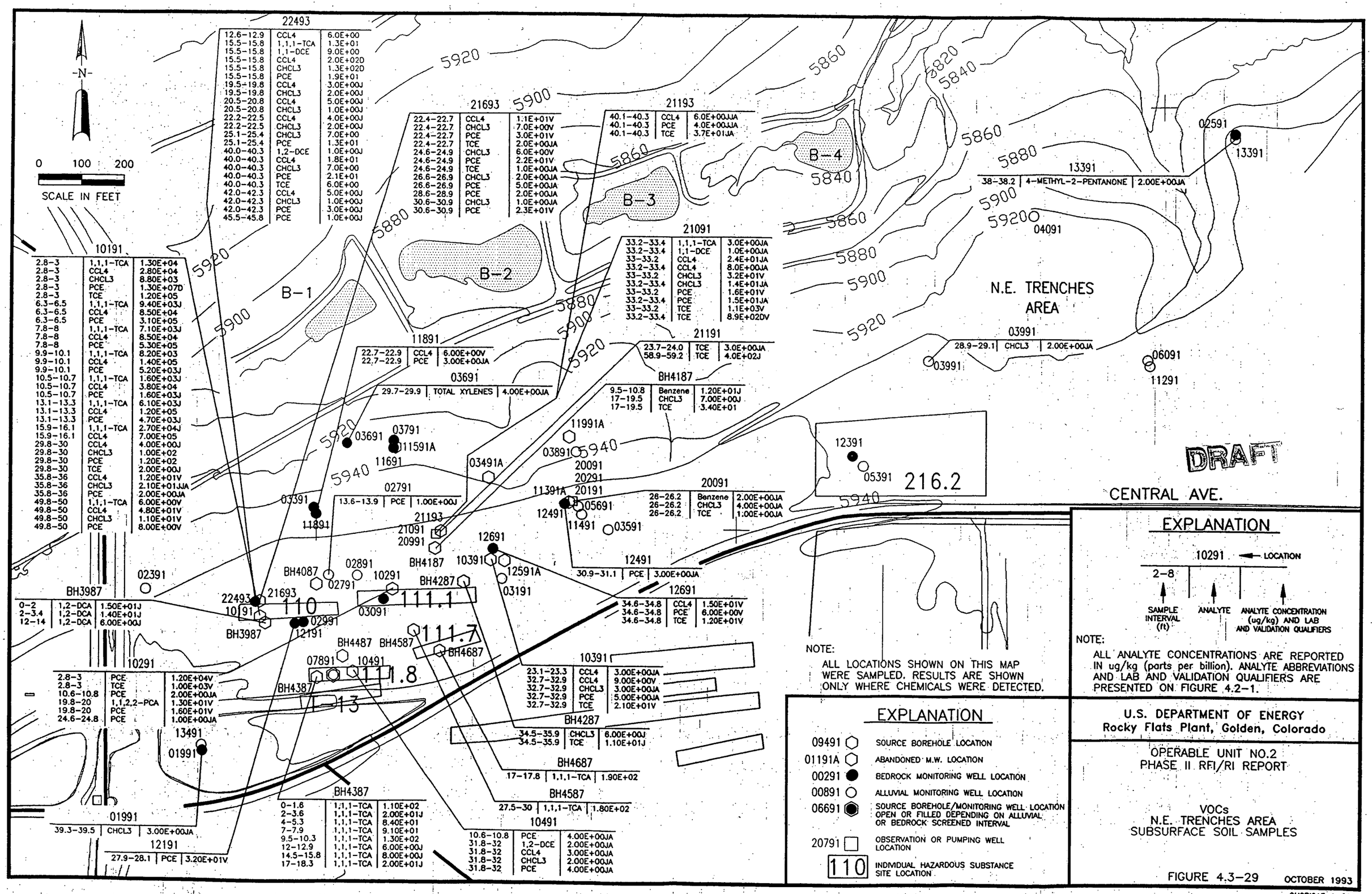
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

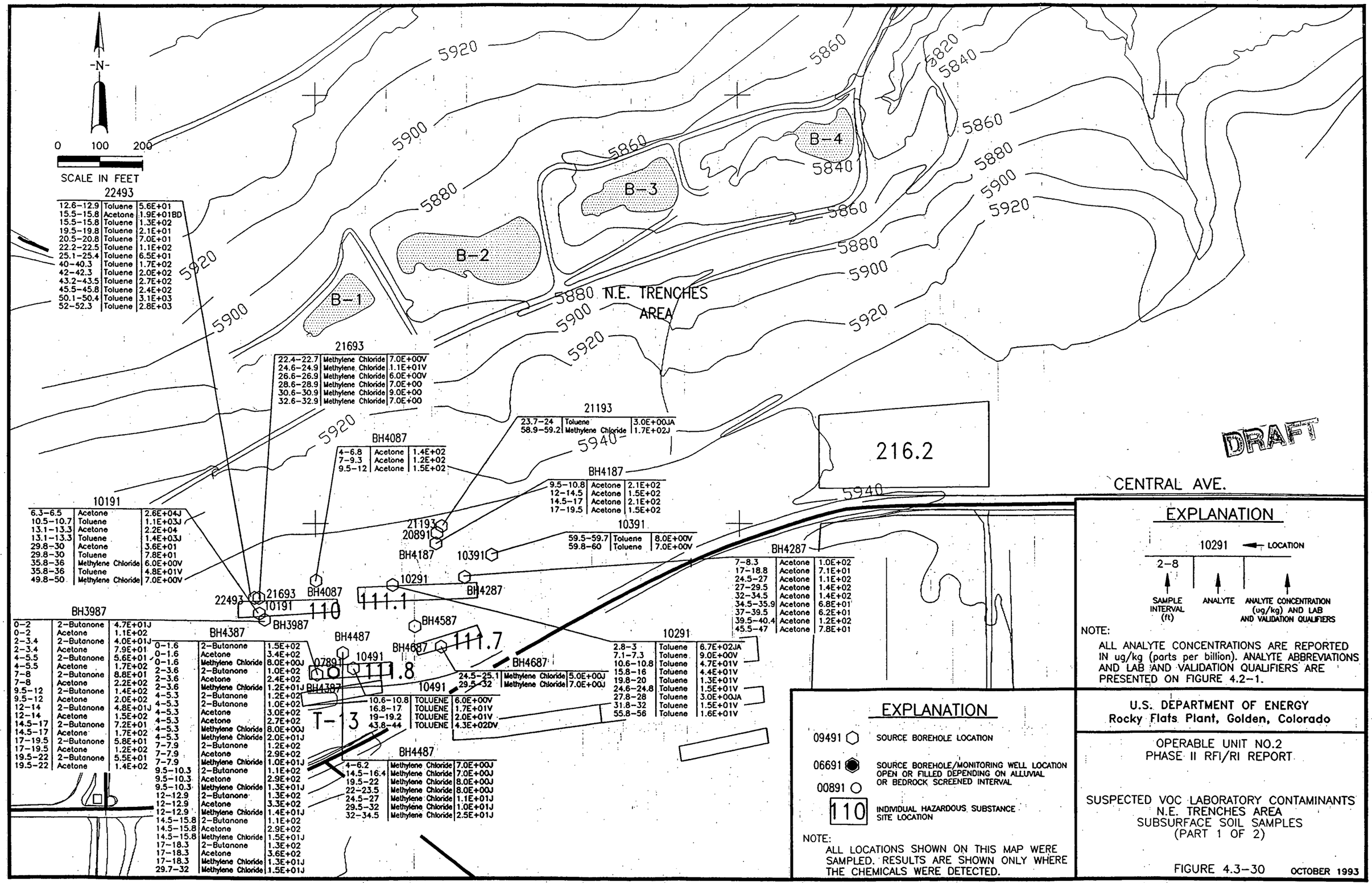
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION
IHSSs 153 AND 154
(PALLET BURN SITE)

FIGURE 4.3-28 OCTOBER 1993

OU2RI136 1=1


-N-
0 100 200
SCALE IN FEET
22493
12.6-12.9 CCL4 6.0E+00
15.5-15.8 1,1,1-TCA 1.3E+01
15.5-15.8 1,1-DCE 9.0E+00
15.5-15.8 CCL4 2.0E+02D
15.5-15.8 CHCL3 1.3E+02D
15.5-15.8 PCE 1.9E+01
19.5-19.8 CCL4 3.0E+00J
19.5-19.8 CHCL3 2.0E+00J
20.5-20.8 CCL4 5.0E+00J
20.5-20.8 CHCL3 1.0E+00J
22.2-22.5 CCL4 4.0E+00J
22.2-22.5 CHCL3 2.0E+00J
25.1-25.4 CHCL3 7.0E+00
25.1-25.4 PCE 1.3E+01
40.0-40.3 1,2-DCE 1.0E+00J
40.0-40.3 CCL4 1.8E+01
40.0-40.3 CHCL3 7.0E+00
40.0-40.3 PCE 2.1E+01
40.0-40.3 TCE 6.0E+00
42.0-42.3 CCL4 5.0E+00J
42.0-42.3 CHCL3 1.0E+00J
42.0-42.3 PCE 3.0E+00J
45.5-45.8 PCE 1.0E+00J
21693
22.4-22.7 CCL4 1.1E+01V
22.4-22.7 CHCL3 7.0E+00V
22.4-22.7 PCE 3.0E+01V
22.4-22.7 TCE 2.0E+00JA
24.6-24.9 CHCL3 6.0E+00V
24.6-24.9 PCE 2.2E+01V
24.6-24.9 TCE 1.0E+00JA
26.6-26.9 CHCL3 2.0E+00JA
26.6-26.9 PCE 5.0E+00JA
28.6-28.9 PCE 2.0E+00JA
30.6-30.9 CHCL3 1.0E+00JA
30.6-30.9 PCE 2.3E+01V
21193
40.1-40.3 CCL4 6.0E+00JJA
40.1-40.3 PCE 4.0E+00JJA
40.1-40.3 TCE 3.7E+01JA
10191
2.8-3 1,1,1-TCA 1.30E+04
2.8-3 CCL4 2.80E+04
2.8-3 CHCL3 8.80E+03
2.8-3 PCE 1.30E+07D
2.8-3 TCE 1.20E+05
6.3-6.5 1,1,1-TCA 9.40E+03J
6.3-6.5 CCL4 8.50E+04
6.3-6.5 PCE 3.10E+05
7.8-8 1,1,1-TCA 7.10E+03J
7.8-8 CCL4 8.50E+04
7.8-8 PCE 5.30E+05
9.9-10.1 1,1,1-TCA 8.20E+03
9.9-10.1 CCL4 1.40E+05
9.9-10.1 PCE 5.20E+03J
10.5-10.7 1,1,1-TCA 1.60E+03J
10.5-10.7 CCL4 3.80E+04
10.5-10.7 PCE 1.60E+03J
13.1-13.3 1,1,1-TCA 6.10E+03J
13.1-13.3 CCL4 1.20E+05
13.1-13.3 PCE 4.70E+03J
15.9-16.1 1,1,1-TCA 2.70E+04J
15.9-16.1 CCL4 7.00E+05
29.8-30 CCL4 4.00E+00J
29.8-30 CHCL3 1.00E+02
29.8-30 PCE 1.20E+02
29.8-30 TCE 2.00E+00J
35.8-36 CCL4 1.20E+01V
35.8-36 CHCL3 2.10E+01JJA
35.8-36 PCE 2.00E+00JA
49.8-50 1,1,1-TCA 6.00E+00V
49.8-50 CCL4 4.80E+01V
49.8-50 CHCL3 1.10E+01V
49.8-50 PCE 8.00E+00V
21091
33.2-33.4 1,1,1-TCA 3.0E+00JA
33.2-33.4 1,1-DCE 1.0E+00JA
33-33.2 CCL4 2.4E+01JA
33.2-33.4 CCL4 8.0E+00JA
33-33.2 CHCL3 3.2E+01V
33.2-33.4 CHCL3 1.4E+01JA
33-33.2 PCE 1.6E+01V
33.2-33.4 PCE 1.5E+01JA
33-33.2 TCE 1.1E+03V
33.2-33.4 TCE 8.9E+02DV
11891
22.7-22.9 CCL4 6.00E+00V
22.7-22.9 PCE 3.00E+00JA
03691
29.7-29.9 TOTAL XYLENES 4.00E+00JA
21191
23.7-24.0 TCE 3.0E+00JA
58.9-59.2 TCE 4.0E+02J
BH4187
9.5-10.8 Benzene 1.20E+01J
17-19.5 CHCL3 7.00E+00J
17-19.5 TCE 3.40E+01
20091
26-26.2 Benzene 2.00E+00JA
26-26.2 CHCL3 4.00E+00JA
26-26.2 TCE 1.00E+00JA
02791
13.6-13.9 PCE 1.00E+00J
12491
30.9-31.1 PCE 3.00E+00JA
12691
34.6-34.8 CCL4 1.50E+01V
34.6-34.8 PCE 6.00E+00V
34.6-34.8 TCE 1.20E+01V
13391
38-38.2 4-METHYL-2-PENTANONE 2.00E+00JA
03991
28.9-29.1 CHCL3 2.00E+00JA
BH3987
0-2 1,2-DCA 1.50E+01J
2-3.4 1,2-DCA 1.40E+01J
12-14 1,2-DCA 6.00E+00J
10291
2.8-3 PCE 1.20E+04V
2.8-3 TCE 1.00E+03V
10.6-10.8 PCE 2.00E+00JA
19.8-20 1,1,2,2-PCA 1.30E+01V
19.8-20 PCE 1.60E+01V
24.6-24.8 PCE 1.00E+00JA
13491
01991
39.3-39.5 CHCL3 3.00E+00JA
12191
27.9-28.1 PCE 3.20E+01V
BH4387
0-1.6 1,1,1-TCA 1.10E+02
2-3.6 1,1,1-TCA 2.00E+01J
4-5.3 1,1,1-TCA 8.40E+01
7-7.9 1,1,1-TCA 9.10E+01
9.5-10.3 1,1,1-TCA 1.30E+02
12-12.9 1,1,1-TCA 6.00E+00J
14.5-15.8 1,1,1-TCA 8.00E+00J
17-18.3 1,1,1-TCA 2.00E+01J
10391
23.1-23.3 CCL4 3.00E+00JA
32.7-32.9 CCL4 9.00E+00V
32.7-32.9 CHCL3 3.00E+00JA
32.7-32.9 PCE 5.00E+00JA
32.7-32.9 TCE 2.10E+01V
BH4287
34.5-35.9 CHCL3 6.00E+00J
34.5-35.9 TCE 1.10E+01J
BH4687
17-17.8 1,1,1-TCA 1.90E+02
BH4587
27.5-30 1,1,1-TCA 1.80E+02
10491
10.6-10.8 PCE 4.00E+00JA
31.8-32 1,2-DCE 2.00E+00JA
31.8-32 CCL4 3.00E+00JA
31.8-32 CHCL3 2.00E+00JA
31.8-32 PCE 4.00E+00JA
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
CENTRAL AVE.
DRAFT
216.2
110
111.1
111.7
111.8
113
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE CHEMICALS WERE DETECTED.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
01191A ABANDONED M.W. LOCATION
00291 BEDROCK MONITORING WELL LOCATION
00891 ALLUVIAL MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
20791 OBSERVATION OR PUMPING WELL LOCATION
110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
EXPLANATION
10291 LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
VOCs
N.E. TRENCHES AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-29
OCTOBER 1993
OU2RI015 1=200



EXPLANATION

09491 ⬡ SOURCE BOREHOLE LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

00891 ○

110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

EXPLANATION

10291 ← LOCATION

2–8

SAMPLE INTERVAL (ft) | ANALYTE | ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS

NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2–1.

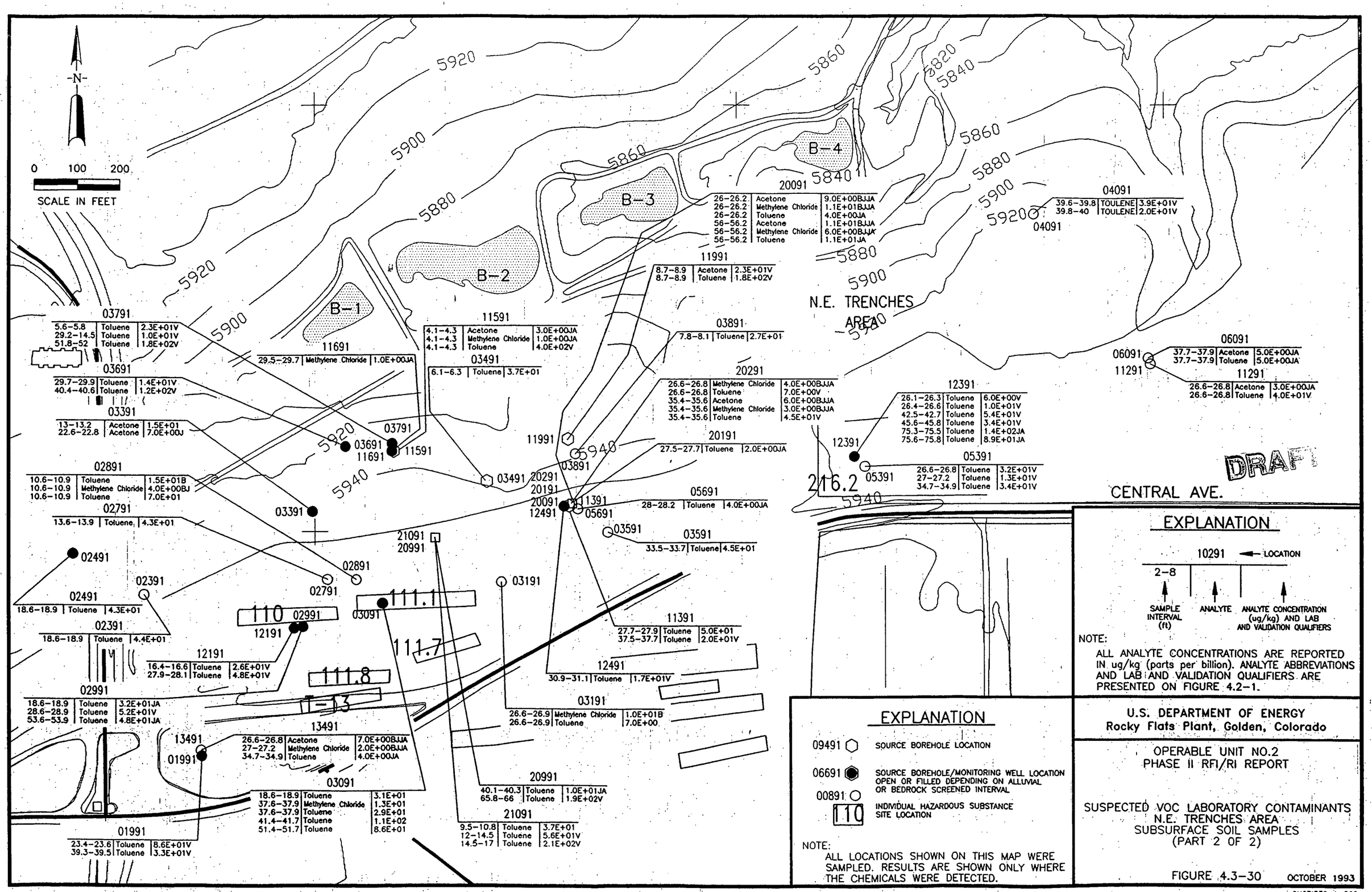
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

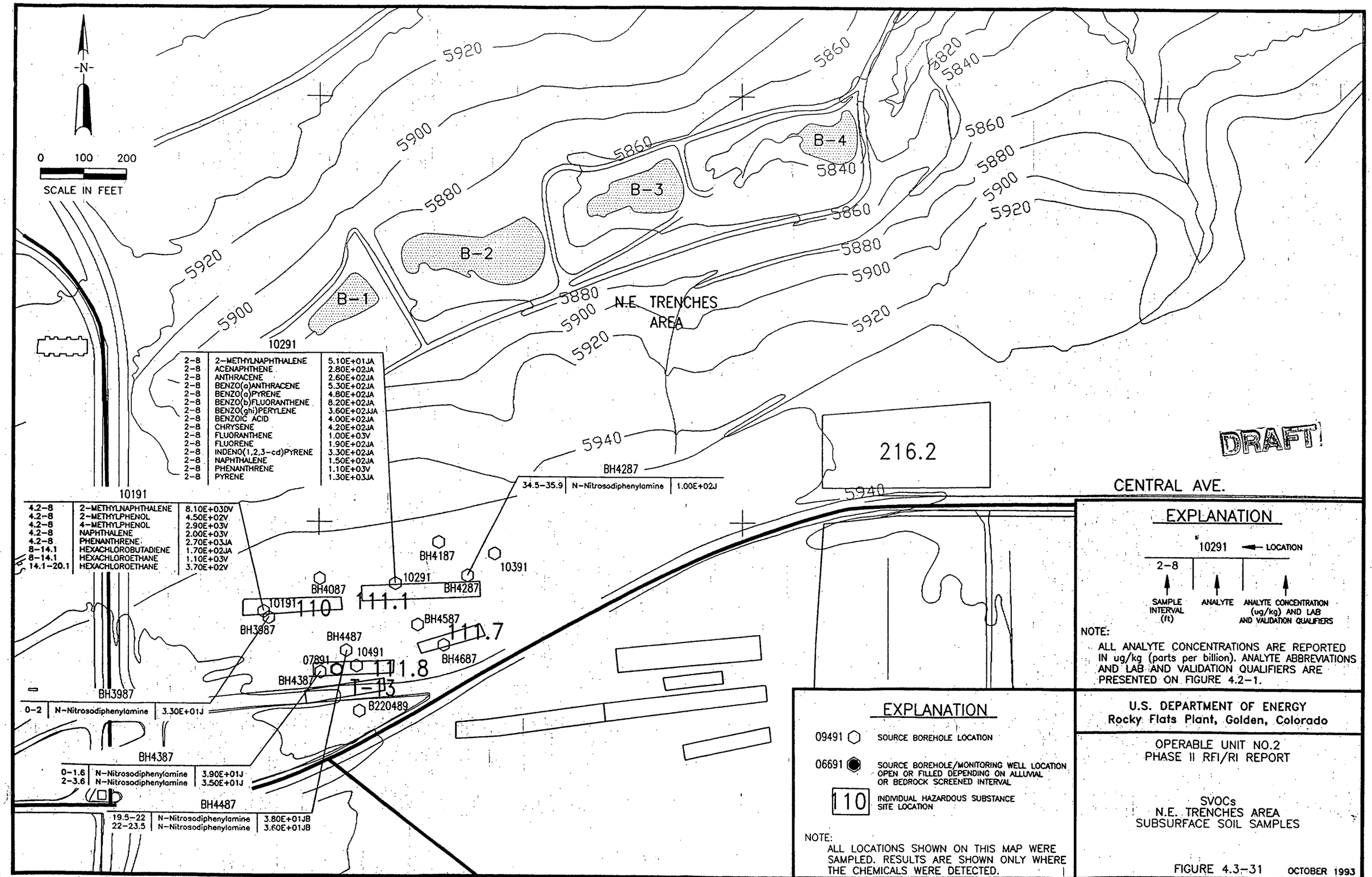
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

SUSPECTED VOC LABORATORY CONTAMINANTS
N.E. TRENCHES AREA
SUBSURFACE SOIL SAMPLES
(PART 1 OF 2)

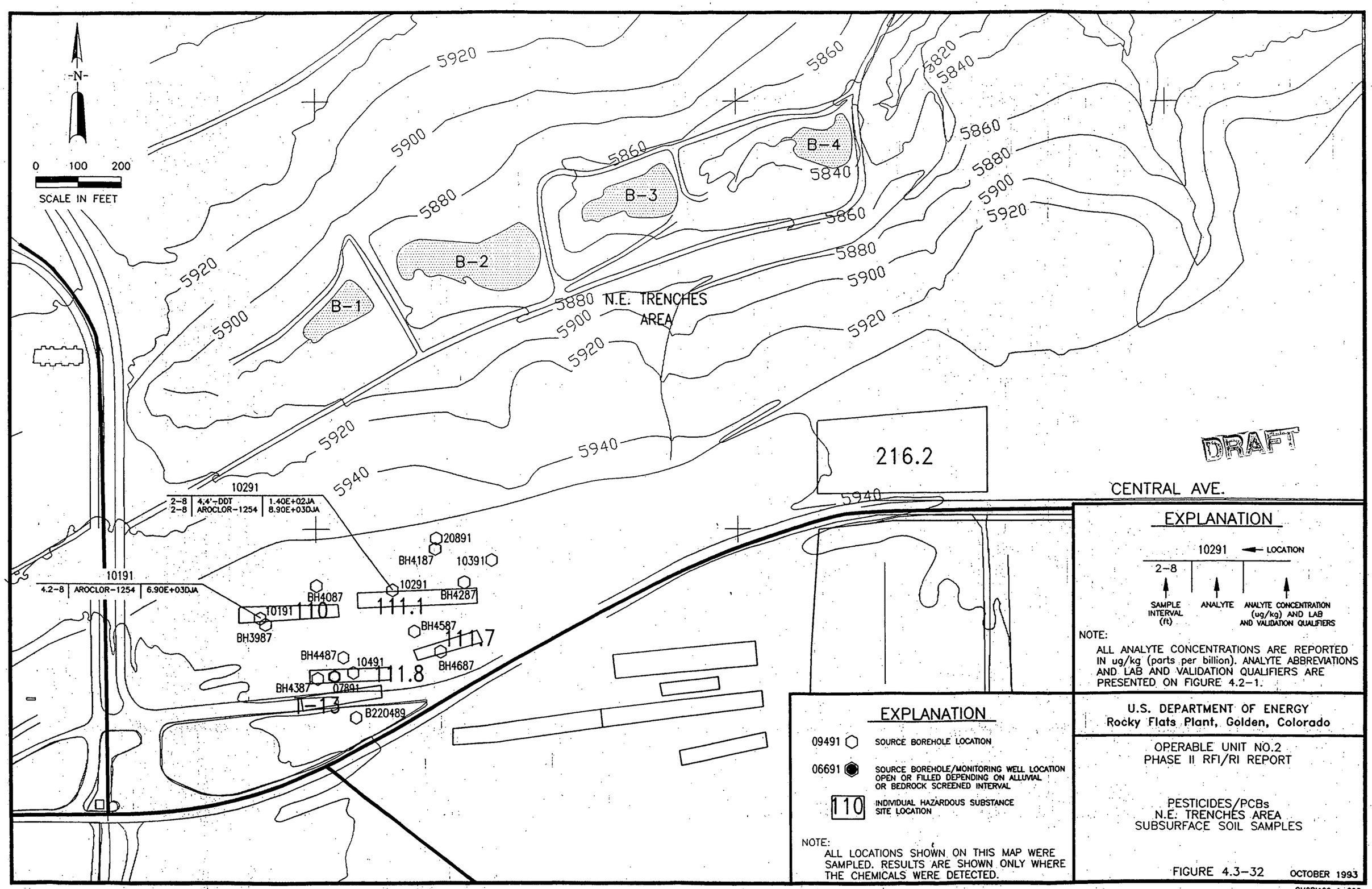
FIGURE 4.3–30 OCTOBER 1993

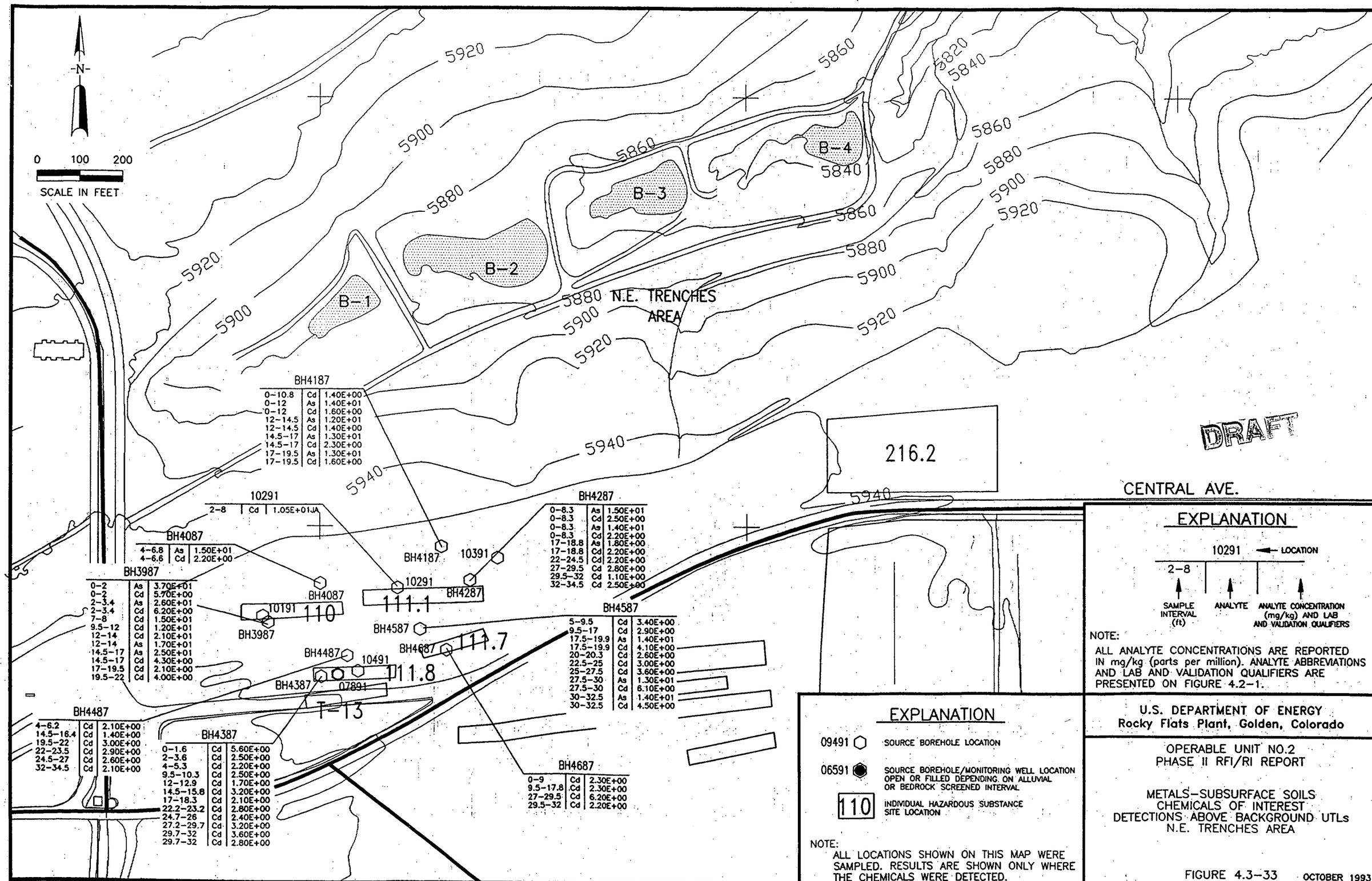
0U2RI185 1=200

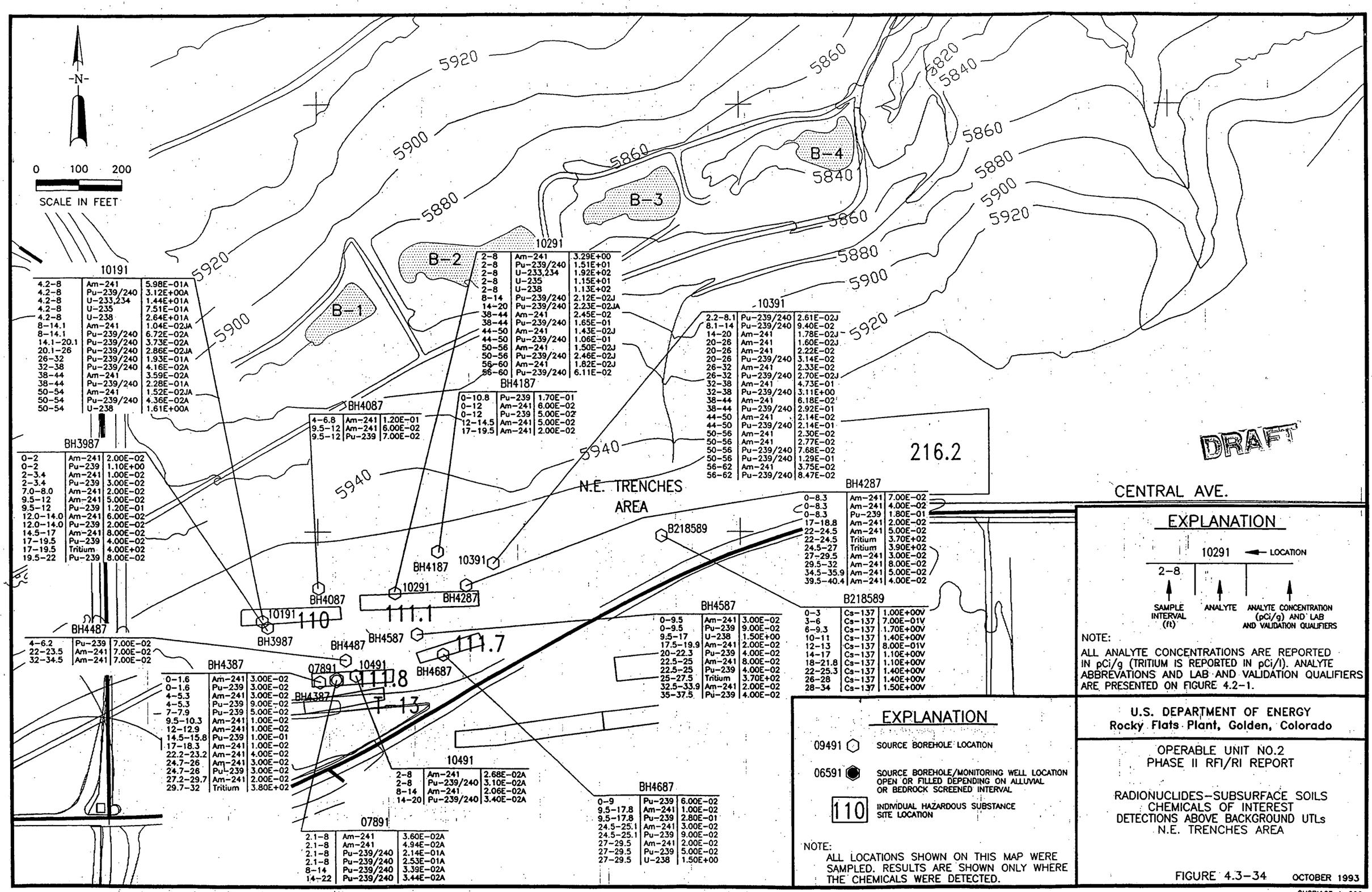

-N-
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
5940
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
CENTRAL AVE.
DRAFT
03791
5.6-5.8 Toluene 2.3E+01V
29.2-14.5 Toluene 1.0E+01V
51.8-52 Toluene 1.8E+02V
03691
29.7-29.9 Toluene 1.4E+01V
40.4-40.6 Toluene 1.2E+02V
03391
13-13.2 Acetone 1.5E+01
22.6-22.8 Acetone 7.0E+00J
02891
10.6-10.9 Toluene 1.5E+01B
10.6-10.9 Methylene Chloride 4.0E+00BJ
10.6-10.9 Toluene 7.0E+01
02791
13.6-13.9 Toluene 4.3E+01
02491
18.6-18.9 Toluene 4.3E+01
02391
18.6-18.9 Toluene 4.4E+01
02991
18.6-18.9 Toluene 3.2E+01JA
28.6-28.9 Toluene 5.2E+01V
53.6-53.9 Toluene 4.8E+01JA
01991
23.4-23.6 Toluene 8.6E+01V
39.3-39.5 Toluene 3.3E+01V
11691
29.5-29.7 Methylene Chloride 1.0E+00JA
11591
4.1-4.3 Acetone 3.0E+00JA
4.1-4.3 Methylene Chloride 1.0E+00JA
4.1-4.3 Toluene 4.0E+02V
03491
6.1-6.3 Toluene 3.7E+01
12191
16.4-16.6 Toluene 2.6E+01V
27.9-28.1 Toluene 4.8E+01V
13491
26.6-26.8 Acetone 7.0E+00BJJA
27-27.2 Methylene Chloride 2.0E+00BJJA
34.7-34.9 Toluene 4.0E+00JA
03091
18.6-18.9 Toluene 3.1E+01
37.6-37.9 Methylene Chloride 1.3E+01
37.6-37.9 Toluene 2.9E+01
41.4-41.7 Toluene 1.1E+02
51.4-51.7 Toluene 8.6E+01
110
111.1
111.7
111.8
T-13
20991
40.1-40.3 Toluene 1.0E+01JA
65.8-66 Toluene 1.9E+02V
21091
9.5-10.8 Toluene 3.7E+01
12-14.5 Toluene 5.6E+01V
14.5-17 Toluene 2.1E+02V
11991
8.7-8.9 Acetone 2.3E+01V
8.7-8.9 Toluene 1.8E+02V
03891
7.8-8.1 Toluene 2.7E+01
20291
26.6-26.8 Methylene Chloride 4.0E+00BJJA
26.6-26.8 Toluene 7.0E+00V
35.4-35.6 Acetone 6.0E+00BJJA
35.4-35.6 Methylene Chloride 3.0E+00BJJA
35.4-35.6 Toluene 4.5E+01V
20191
27.5-27.7 Toluene 2.0E+00JA
20091
26-26.2 Acetone 9.0E+00BJJA
26-26.2 Methylene Chloride 1.1E+01BJJA
26-26.2 Toluene 4.0E+00JA
56-56.2 Acetone 1.1E+01BJJA
56-56.2 Methylene Chloride 6.0E+00BJJA
56-56.2 Toluene 1.1E+01JA
11391
05691
28-28.2 Toluene 4.0E+00JA
03591
33.5-33.7 Toluene 4.5E+01
03191
26.6-26.9 Methylene Chloride 1.0E+01B
26.6-26.9 Toluene 7.0E+00
11391
27.7-27.9 Toluene 5.0E+01
37.5-37.7 Toluene 2.0E+01V
12491
30.9-31.1 Toluene 1.7E+01V
12391
26.1-26.3 Toluene 6.0E+00V
26.4-26.6 Toluene 1.0E+01V
42.5-42.7 Toluene 5.4E+01V
45.6-45.8 Toluene 3.4E+01V
75.3-75.5 Toluene 1.4E+02JA
75.6-75.8 Toluene 8.9E+01JA
05391
26.6-26.8 Toluene 3.2E+01V
27-27.2 Toluene 1.3E+01V
34.7-34.9 Toluene 3.4E+01V
216.2
04091
39.6-39.8 TOULENE 3.9E+01V
39.8-40 TOULENE 2.0E+01V
06091
37.7-37.9 Acetone 5.0E+00JA
37.7-37.9 Toluene 5.0E+00JA
11291
26.6-26.8 Acetone 3.0E+00JA
26.6-26.8 Toluene 4.0E+01V
EXPLANATION
10291 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
00891 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
110
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SUSPECTED VOC LABORATORY CONTAMINANTS
N.E. TRENCHES AREA
SUBSURFACE SOIL SAMPLES
(PART 2 OF 2)
FIGURE 4.3-30
OCTOBER 1993
OU2RI338 1=200


-N-
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
10291
2-8 2-METHYLNAPHTHALENE 5.10E+01JA
2-8 ACENAPHTHENE 2.80E+02JA
2-8 ANTHRACENE 2.60E+02JA
2-8 BENZO(a)ANTHRACENE 5.30E+02JA
2-8 BENZO(a)PYRENE 4.80E+02JA
2-8 BENZO(b)FLUORANTHENE 8.20E+02JA
2-8 BENZO(ghi)PERYLENE 3.60E+02JJA
2-8 BENZOIC ACID 4.00E+02JA
2-8 CHRYSENE 4.20E+02JA
2-8 FLUORANTHENE 1.00E+03V
2-8 FLUORENE 1.90E+02JA
2-8 INDENO(1,2,3-cd)PYRENE 3.30E+02JA
2-8 NAPHTHALENE 1.50E+02JA
2-8 PHENANTHRENE 1.10E+03V
2-8 PYRENE 1.30E+03JA
10191
4.2-8 2-METHYLNAPHTHALENE 8.10E+03DV
4.2-8 2-METHYLPHENOL 4.50E+02V
4.2-8 4-METHYLPHENOL 2.90E+03V
4.2-8 NAPHTHALENE 2.00E+03V
4.2-8 PHENANTHRENE 2.70E+03JA
8-14.1 HEXACHLOROBUTADIENE 1.70E+02JA
8-14.1 HEXACHLOROETHANE 1.10E+03V
14.1-20.1 HEXACHLOROETHANE 3.70E+02V
BH4287
34.5-35.9 N-Nitrosodiphenylamine 1.00E+02J
216.2
DRAFT
CENTRAL AVE.
BH4187
10391
BH4087
10291
BH4287
10191
110
111.1
BH3987
BH4587
111.7
BH4487
10491
07891
BH4687
111.8
BH4387
T-13
B220489
BH3987
0-2 N-Nitrosodiphenylamine 3.30E+01J
BH4387
0-1.6 N-Nitrosodiphenylamine 3.90E+01J
2-3.6 N-Nitrosodiphenylamine 3.50E+01J
BH4487
19.5-22 N-Nitrosodiphenylamine 3.80E+01JB
22-23.5 N-Nitrosodiphenylamine 3.60E+01JB
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
EXPLANATION
10291 LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SVOCs
N.E. TRENCHES AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-31
OCTOBER 1993
OU2RI125 1=200

60


-N-
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
5940
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
216.2
DRAFT
CENTRAL AVE.
10291
2-8 | 4,4'-DDT | 1.40E+02JA
2-8 | AROCLOR-1254 | 8.90E+03DJA
10191
4.2-8 | AROCLOR-1254 | 6.90E+03DJA
20891
BH4187
10391
BH4087
10291
BH4287
10191
110
111.1
BH3987
BH4587
111.7
BH4487
10491
BH4687
111.8
BH4387
07891
113
B220489
EXPLANATION
10291 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
PESTICIDES/PCBs
N.E. TRENCHES AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-32
OCTOBER 1993
OU2RI129 1=200


-N-
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
BH4187
0-10.8 Cd 1.40E+00
0-12 As 1.40E+01
0-12 Cd 1.60E+00
12-14.5 As 1.20E+01
12-14.5 Cd 1.40E+00
14.5-17 As 1.30E+01
14.5-17 Cd 2.30E+00
17-19.5 As 1.30E+01
17-19.5 Cd 1.60E+00
10291
2-8 Cd 1.05E+01JA
BH4087
4-6.8 As 1.50E+01
4-6.6 Cd 2.20E+00
BH3987
0-2 As 3.70E+01
0-2 Cd 5.70E+00
2-3.4 As 2.60E+01
2-3.4 Cd 6.20E+00
7-8 Cd 1.50E+01
9.5-12 Cd 1.20E+01
12-14 Cd 2.10E+01
12-14 As 1.70E+01
14.5-17 As 2.50E+01
14.5-17 Cd 4.30E+00
17-19.5 Cd 2.10E+00
19.5-22 Cd 4.00E+00
BH4287
0-8.3 As 1.50E+01
0-8.3 Cd 2.50E+00
0-8.3 As 1.40E+01
0-8.3 Cd 2.20E+00
17-18.8 As 1.80E+00
17-18.8 Cd 2.20E+00
22-24.5 Cd 2.20E+00
27-29.5 Cd 2.80E+00
29.5-32 Cd 1.10E+00
32-34.5 Cd 2.50E+00
BH4587
5-9.5 Cd 3.40E+00
9.5-17 Cd 2.90E+00
17.5-19.9 As 1.40E+01
17.5-19.9 Cd 4.10E+00
20-20.3 Cd 2.60E+00
22.5-25 Cd 3.00E+00
25-27.5 Cd 3.60E+00
27.5-30 As 1.30E+01
27.5-30 Cd 6.10E+00
30-32.5 As 1.40E+01
30-32.5 Cd 4.50E+00
BH4487
4-6.2 Cd 2.10E+00
14.5-16.4 Cd 1.40E+00
19.5-22 Cd 3.00E+00
22-23.5 Cd 2.90E+00
24.5-27 Cd 2.60E+00
32-34.5 Cd 2.10E+00
BH4387
0-1.6 Cd 5.60E+00
2-3.6 Cd 2.50E+00
4-5.3 Cd 2.20E+00
9.5-10.3 Cd 2.50E+00
12-12.9 Cd 1.70E+00
14.5-15.8 Cd 3.20E+00
17-18.3 Cd 2.10E+00
22.2-23.2 Cd 2.80E+00
24.7-26 Cd 2.40E+00
27.2-29.7 Cd 3.20E+00
29.7-32 Cd 3.60E+00
29.7-32 Cd 2.80E+00
BH4687
0-9 Cd 2.30E+00
9.5-17.8 Cd 2.30E+00
27-29.5 Cd 6.20E+00
29.5-32 Cd 2.20E+00
10391
10191
07891
10491
110
111.1
111.7
111.8
T-13
216.2
CENTRAL AVE.
DRAFT
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06591 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
EXPLANATION
10291 LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (mg/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN mg/kg (parts per million). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
METALS-SUBSURFACE SOILS
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
N.E. TRENCHES AREA
FIGURE 4.3-33
OCTOBER 1993
OU2RI159 1=200



10191

4.2-8	Am-241	5.98E-01A
4.2-8	Pu-239/240	3.12E+00A
4.2-8	U-233,234	1.44E+01A
4.2-8	U-235	7.51E-01A
4.2-8	U-238	2.64E+01A
8-14.1	Am-241	1.04E-02JA
8-14.1	Pu-239/240	6.72E-02A
14.1-20.1	Pu-239/240	3.73E-02A
20.1-26	Pu-239/240	2.86E-02JA
26-32	Pu-239/240	1.93E-01A
32-38	Pu-239/240	4.16E-02A
38-44	Am-241	3.59E-02A
38-44	Pu-239/240	2.28E-01A
50-54	Am-241	1.52E-02JA
50-54	Pu-239/240	4.36E-02A
50-54	U-238	1.61E+00A

BH3987

0-2	Am-241	2.00E-02
0-2	Pu-239	1.10E+00
2-3.4	Am-241	1.00E-02
2-3.4	Pu-239	3.00E-02
7.0-8.0	Am-241	2.00E-02
9.5-12	Am-241	5.00E-02
9.5-12	Pu-239	1.20E-01
12.0-14.0	Am-241	6.00E-02
12.0-14.0	Pu-239	2.00E-02
14.5-17	Am-241	8.00E-02
17-19.5	Pu-239	4.00E-02
17-19.5	Tritium	4.00E+02
19.5-22	Pu-239	8.00E-02

BH4487

4-6.2	Pu-239	7.00E-02
22-23.5	Am-241	7.00E-02
32-34.5	Am-241	7.00E-02

BH4087

4-6.8	Am-241	1.20E-01
9.5-12	Am-241	6.00E-02
9.5-12	Pu-239	7.00E-02

BH4387

0-1.6	Am-241	3.00E-02
0-1.6	Pu-239	3.00E-02
4-5.3	Am-241	3.00E-02
4-5.3	Pu-239	9.00E-02
7-7.9	Pu-239	5.00E-02
9.5-10.3	Am-241	1.00E-02
12-12.9	Am-241	1.00E-02
14.5-15.8	Pu-239	1.00E-01
17-18.3	Am-241	1.00E-02
22.2-23.2	Am-241	4.00E-02
24.7-26	Am-241	3.00E-02
24.7-26	Pu-239	3.00E-02
27.2-29.7	Am-241	2.00E-02
29.7-32	Tritium	3.80E+02

07891

2.1-8	Am-241	3.60E-02A
2.1-8	Am-241	4.94E-02A
2.1-8	Pu-239/240	2.14E-01A
2.1-8	Pu-239/240	2.53E-01A
8-14	Pu-239/240	3.39E-02A
14-22	Pu-239/240	3.44E-02A

10291

2-8	Am-241	3.29E+00
2-8	Pu-239/240	1.51E+01
2-8	U-233,234	1.92E+02
2-8	U-235	1.15E+01
2-8	U-238	1.13E+02
8-14	Pu-239/240	2.12E-02J
14-20	Pu-239/240	2.23E-02JA
38-44	Am-241	2.45E-02
38-44	Pu-239/240	1.65E-01
44-50	Am-241	1.43E-02J
44-50	Pu-239/240	1.06E-01
50-56	Am-241	1.50E-02J
50-56	Pu-239/240	2.46E-02J
56-60	Am-241	1.82E-02J
56-60	Pu-239/240	6.11E-02

BH4187

0-10.8	Pu-239	1.70E-01
0-12	Am-241	6.00E-02
0-12	Pu-239	5.00E-02
12-14.5	Am-241	5.00E-02
17-19.5	Am-241	2.00E-02

10391

2.2-8.1	Pu-239/240	2.61E-02J
8.1-14	Pu-239/240	9.40E-02
14-20	Am-241	1.78E-02J
20-26	Am-241	1.60E-02J
20-26	Am-241	2.22E-02
20-26	Pu-239/240	3.14E-02
26-32	Am-241	2.33E-02
26-32	Pu-239/240	2.70E-02J
32-38	Am-241	4.73E-01
32-38	Pu-239/240	3.11E+00
38-44	Am-241	6.18E-02
38-44	Pu-239/240	2.92E-01
44-50	Am-241	2.14E-02
44-50	Pu-239/240	2.14E-01
50-56	Am-241	2.30E-02
50-56	Am-241	2.77E-02
50-56	Pu-239/240	7.68E-02
50-56	Pu-239/240	1.29E-01
56-62	Am-241	3.75E-02
56-62	Pu-239/240	8.47E-02

BH4287

0-8.3	Am-241	7.00E-02
0-8.3	Am-241	4.00E-02
0-8.3	Pu-239	1.80E-01
17-18.8	Am-241	2.00E-02
22-24.5	Am-241	5.00E-02
22-24.5	Tritium	3.70E+02
24.5-27	Tritium	3.90E+02
27-29.5	Am-241	3.00E-02
29.5-32	Am-241	8.00E-02
34.5-35.9	Am-241	5.00E-02
39.5-40.4	Am-241	4.00E-02

BH4587

0-9.5	Am-241	3.00E-02
0-9.5	Pu-239	9.00E-02
9.5-17	U-238	1.50E+00
17.5-19.9	Am-241	2.00E-02
20-22.3	Pu-239	4.00E-02
22.5-25	Am-241	8.00E-02
22.5-25	Pu-239	4.00E-02
25-27.5	Tritium	3.70E+02
32.5-33.9	Am-241	2.00E-02
35-37.5	Pu-239	4.00E-02

B218589

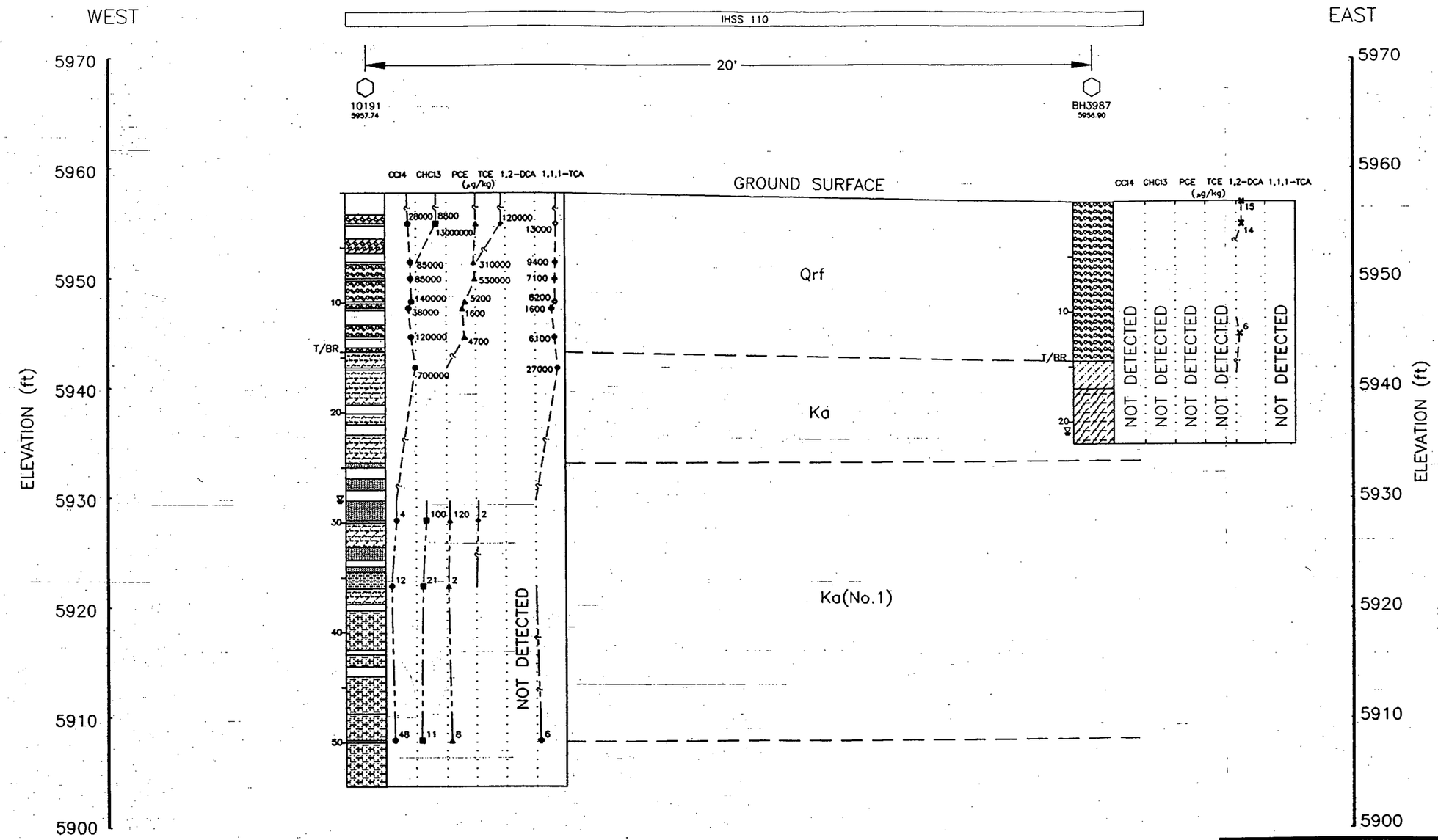
0-3	Cs-137	1.00E+00V
3-6	Cs-137	7.00E-01V
6-9.3	Cs-137	1.70E+00V
10-11	Cs-137	1.40E+00V
12-13	Cs-137	8.00E-01V
14-17	Cs-137	1.10E+00V
18-21.8	Cs-137	1.10E+00V
22-25.3	Cs-137	1.40E+00V
26-28	Cs-137	1.40E+00V
28-34	Cs-137	1.50E+00V

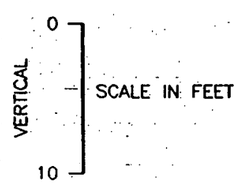
10491

2-8	Am-241	2.68E-02A
2-8	Pu-239/240	3.10E-02A
8-14	Am-241	2.06E-02A
14-20	Pu-239/240	3.40E-02A

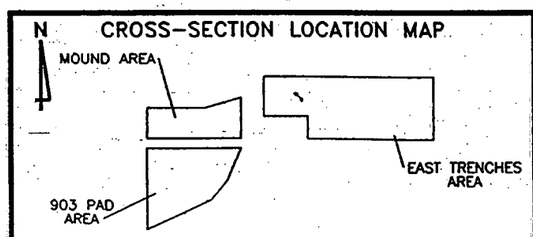
BH4687

0-9	Pu-239	6.00E-02
9.5-17.8	Am-241	1.00E-02
9.5-17.8	Pu-239	2.80E-01
24.5-25.1	Am-241	3.00E-02
24.5-25.1	Pu-239	9.00E-02
27-29.5	Am-241	2.00E-02
27-29.5	Pu-239	5.00E-02
27-29.5	U-238	1.50E+00



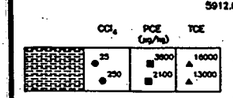


NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

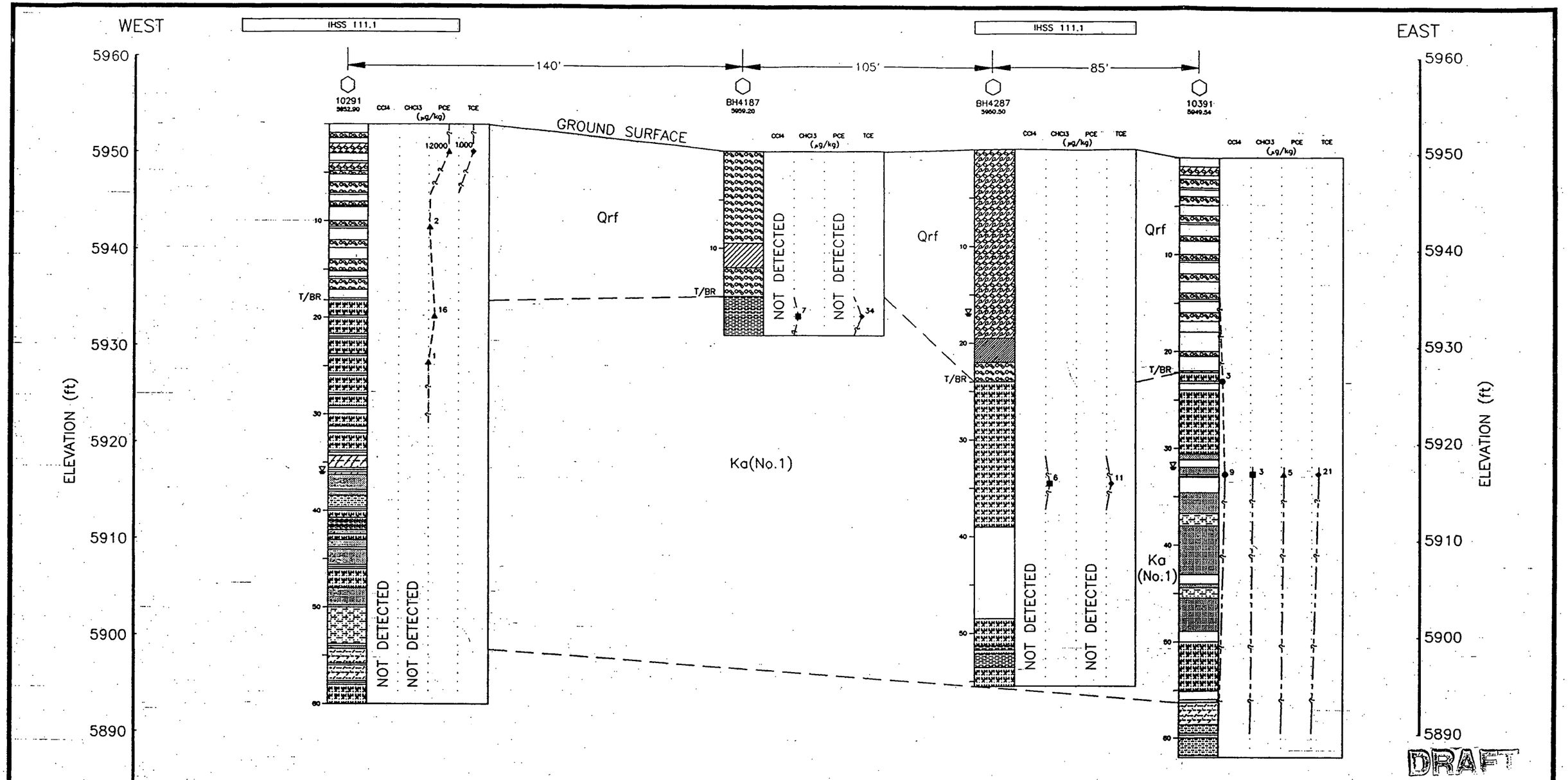
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE CROSS-SECTION IHSS 110 (TRENCH T-3)

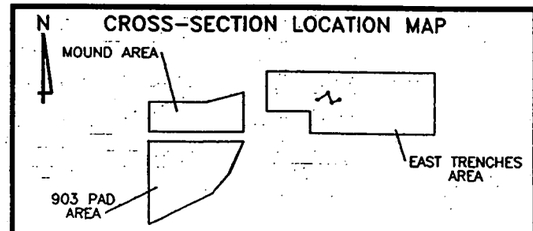
FIGURE 4.3-35 OCTOBER 1993

OU2RI076 1=1



VERTICAL 0 – 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



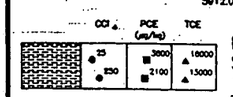
EXPLANATION

T/BR = TOP OF BEDROCK

⬡ = LOCATION SYMBOL

3486 = LOCATION NAME

5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

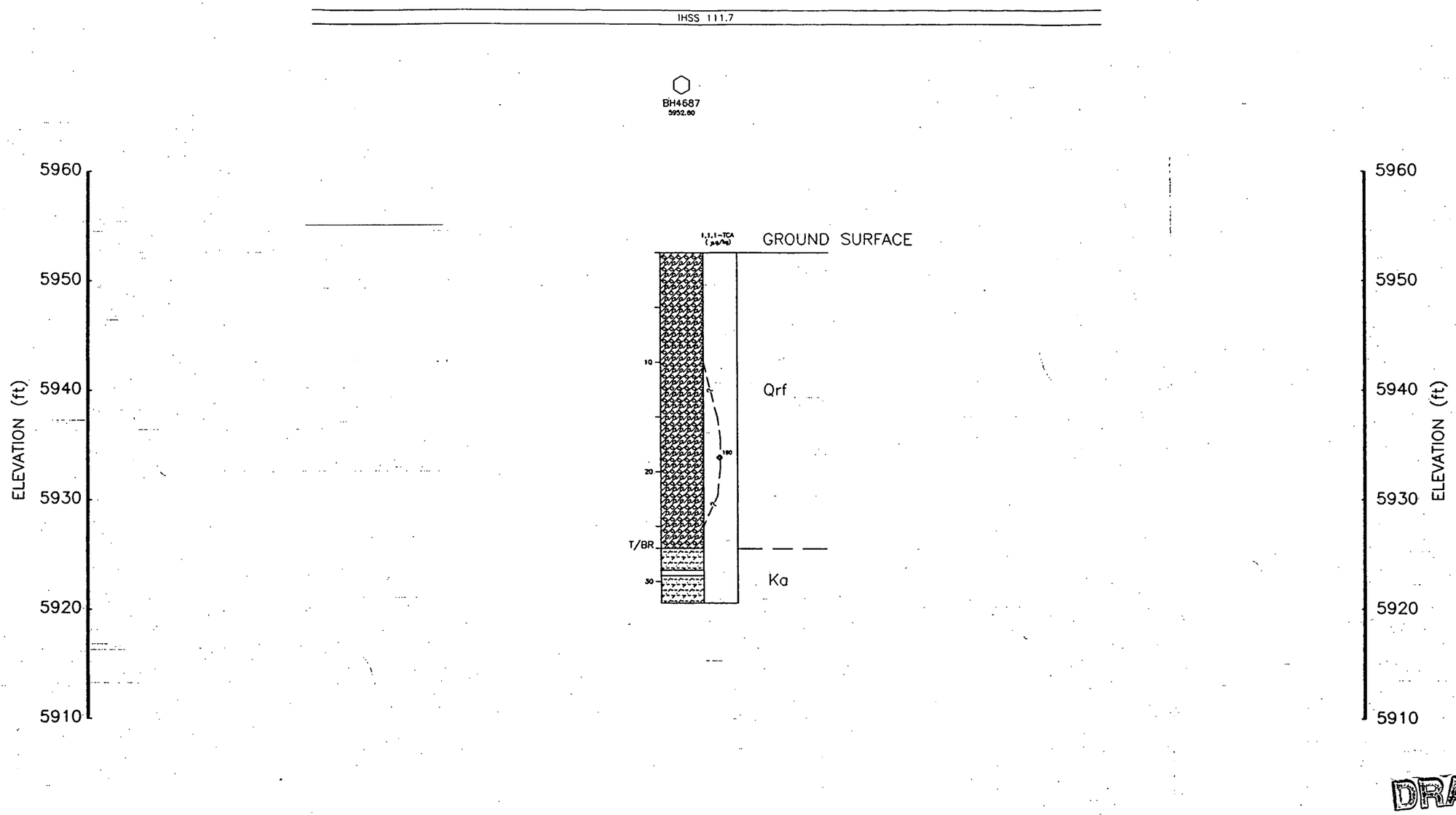
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

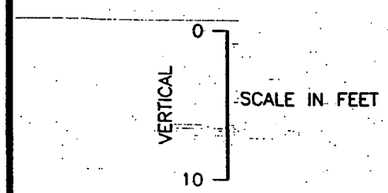
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE CROSS-SECTION IHSS 111.1 (TRENCH T-4)

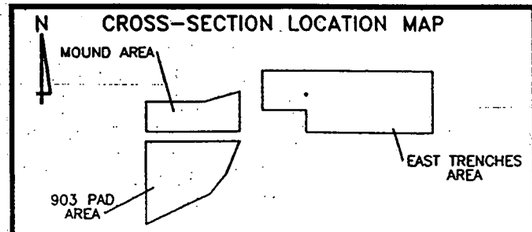
FIGURE 4.3-36 OCTOBER 1993

OU2RI077 1=1



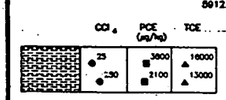


NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

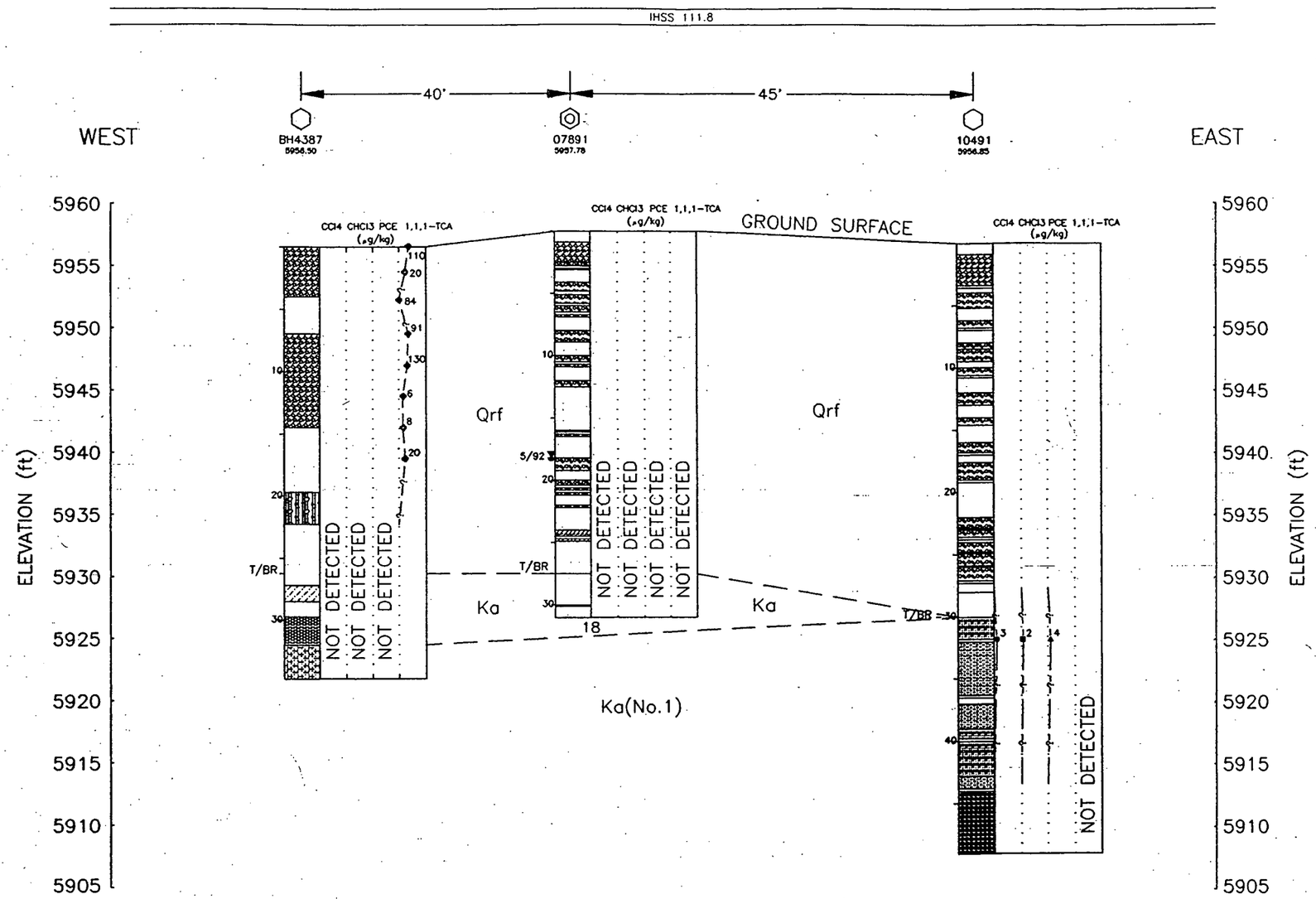
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION
IHSS 111.7 (TRENCH T-10)

FIGURE 4.3-37 OCTOBER 1993

OU2RI137 1=1



DRAFT

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

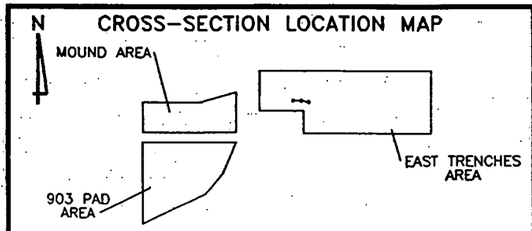
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION
IHSS 111.8 (TRENCH T-11)

FIGURE 4.3-38 OCTOBER 1993

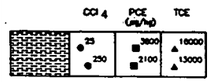
VERTICAL
0
10
SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

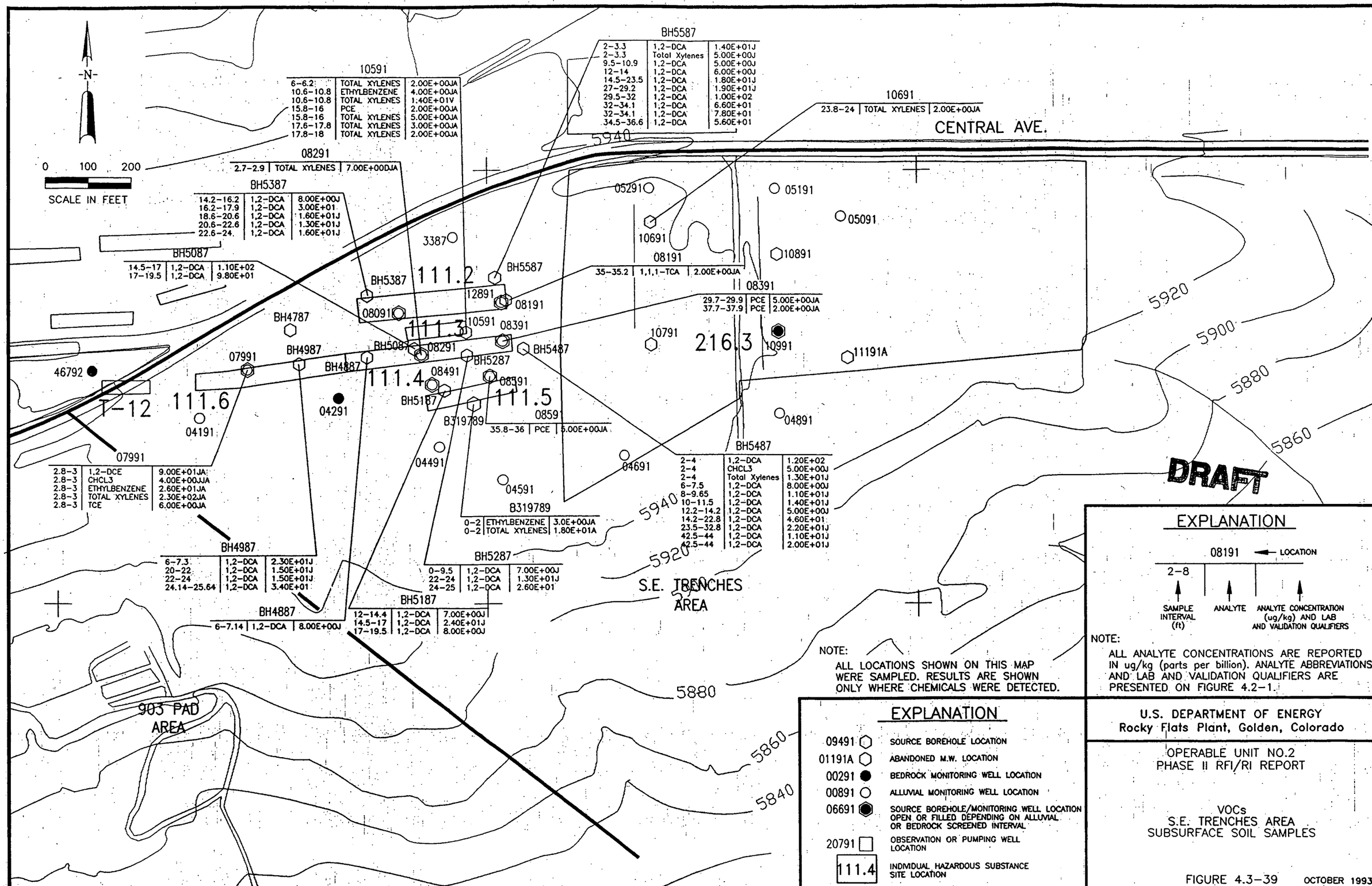
T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)

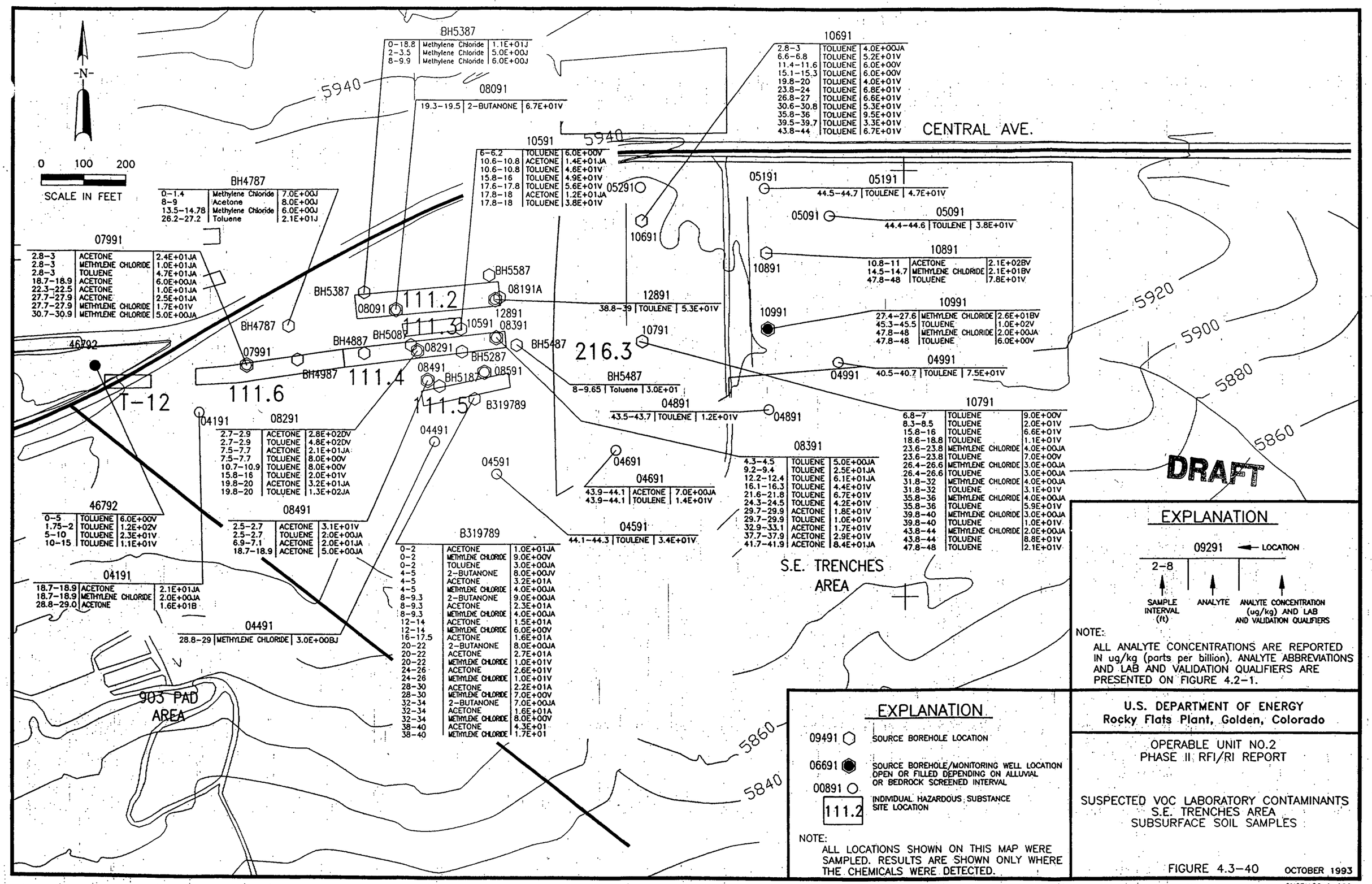


EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

OU2RI082 1=1


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
DRAFT
S.E. TRENCHES AREA
903 PAD AREA
T-12
111.2
111.3
111.4
111.5
111.6
216.3
5940
5920
5900
5880
5860
5840
10591
6-6.2 | TOTAL XYLENES | 2.00E+00JA
10.6-10.8 | ETHYLBENZENE | 4.00E+00JA
10.6-10.8 | TOTAL XYLENES | 1.40E+01V
15.8-16 | PCE | 2.00E+00JA
15.8-16 | TOTAL XYLENES | 5.00E+00JA
17.6-17.8 | TOTAL XYLENES | 3.00E+00JA
17.8-18 | TOTAL XYLENES | 2.00E+00JA
BH5587
2-3.3 | 1,2-DCA | 1.40E+01J
2-3.3 | Total Xylenes | 5.00E+00J
9.5-10.9 | 1,2-DCA | 5.00E+00J
12-14 | 1,2-DCA | 6.00E+00J
14.5-23.5 | 1,2-DCA | 1.80E+01J
27-29.2 | 1,2-DCA | 1.90E+01J
29.5-32 | 1,2-DCA | 1.00E+02
32-34.1 | 1,2-DCA | 6.60E+01
32-34.1 | 1,2-DCA | 7.80E+01
34.5-36.6 | 1,2-DCA | 5.60E+01
10691
23.8-24 | TOTAL XYLENES | 2.00E+00JA
08291
2.7-2.9 | TOTAL XYLENES | 7.00E+00DJA
BH5387
14.2-16.2 | 1,2-DCA | 8.00E+00J
16.2-17.9 | 1,2-DCA | 3.00E+01
18.6-20.6 | 1,2-DCA | 1.60E+01J
20.6-22.6 | 1,2-DCA | 1.30E+01J
22.6-24 | 1,2-DCA | 1.60E+01J
BH5087
14.5-17 | 1,2-DCA | 1.10E+02
17-19.5 | 1,2-DCA | 9.80E+01
08191
35-35.2 | 1,1,1-TCA | 2.00E+00JA
08391
29.7-29.9 | PCE | 5.00E+00JA
37.7-37.9 | PCE | 2.00E+00JA
07991
2.8-3 | 1,2-DCE | 9.00E+01JA
2.8-3 | CHCL3 | 4.00E+00JJA
2.8-3 | ETHYLBENZENE | 2.60E+01JA
2.8-3 | TOTAL XYLENES | 2.30E+02JA
2.8-3 | TCE | 6.00E+00JA
BH5487
2-4 | 1,2-DCA | 1.20E+02
2-4 | CHCL3 | 5.00E+00J
2-4 | Total Xylenes | 1.30E+01J
6-7.5 | 1,2-DCA | 8.00E+00J
8-9.65 | 1,2-DCA | 1.10E+01J
10-11.5 | 1,2-DCA | 1.40E+01J
12.2-14.2 | 1,2-DCA | 5.00E+00J
14.2-22.8 | 1,2-DCA | 4.60E+01
23.5-32.8 | 1,2-DCA | 2.20E+01J
42.5-44 | 1,2-DCA | 1.10E+01J
42.5-44 | 1,2-DCA | 2.00E+01J
0859
35.8-36 | PCE | 5.00E+00JA
B319789
0-2 | ETHYLBENZENE | 3.0E+00JA
0-2 | TOTAL XYLENES | 1.80E+01A
BH4987
6-7.3 | 1,2-DCA | 2.30E+01J
20-22 | 1,2-DCA | 1.50E+01J
22-24 | 1,2-DCA | 1.50E+01J
24.14-25.64 | 1,2-DCA | 3.40E+01
BH5287
0-9.5 | 1,2-DCA | 7.00E+00J
22-24 | 1,2-DCA | 1.30E+01J
24-25 | 1,2-DCA | 2.60E+01
BH4887
6-7.14 | 1,2-DCA | 8.00E+00J
BH5187
12-14.4 | 1,2-DCA | 7.00E+00J
14.5-17 | 1,2-DCA | 2.40E+01J
17-19.5 | 1,2-DCA | 8.00E+00J
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE CHEMICALS WERE DETECTED.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
01191A ABANDONED M.W. LOCATION
00291 BEDROCK MONITORING WELL LOCATION
00891 ALLUVIAL MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
20791 OBSERVATION OR PUMPING WELL LOCATION
111.4 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
EXPLANATION
08191 LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
VOCs
S.E. TRENCHES AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-39
OCTOBER 1993
OU2R1014 1=200



BH5387

0-18.8	Methylene Chloride	1.1E+01J
2-3.5	Methylene Chloride	5.0E+00J
8-9.9	Methylene Chloride	6.0E+00J

08091

19.3-19.5	2-BUTANONE	6.7E+01V

10691

2.8-3	TOLUENE	4.0E+00JA
6.6-6.8	TOLUENE	5.2E+01V
11.4-11.6	TOLUENE	6.0E+00V
15.1-15.3	TOLUENE	6.0E+00V
19.8-20	TOLUENE	4.0E+01V
23.8-24	TOLUENE	6.8E+01V
26.8-27	TOLUENE	6.6E+01V
30.6-30.8	TOLUENE	5.3E+01V
35.8-36	TOLUENE	9.5E+01V
39.5-39.7	TOLUENE	3.3E+01V
43.8-44	TOLUENE	6.7E+01V

10591

6-6.2	TOLUENE	6.0E+00V
10.6-10.8	ACETONE	1.4E+01JA
10.6-10.8	TOLUENE	4.6E+01V
15.8-16	TOLUENE	4.9E+01V
17.6-17.8	TOLUENE	5.6E+01V
17.8-18	ACETONE	1.2E+01JA
17.8-18	TOLUENE	3.8E+01V

BH4787

0-1.4	Methylene Chloride	7.0E+00J
8-9	Acetone	8.0E+00J
13.5-14.78	Methylene Chloride	6.0E+00J
26.2-27.2	Toluene	2.1E+01J

07991

2.8-3	ACETONE	2.4E+01JA
2.8-3	METHYLENE CHLORIDE	1.0E+01JA
2.8-3	TOLUENE	4.7E+01JA
18.7-18.9	ACETONE	6.0E+00JA
22.3-22.5	ACETONE	1.0E+01JA
27.7-27.9	ACETONE	2.5E+01JA
27.7-27.9	METHYLENE CHLORIDE	1.7E+01V
30.7-30.9	METHYLENE CHLORIDE	5.0E+00JA

05191

44.5-44.7	TOULENE	4.7E+01V

05091

44.4-44.6	TOULENE	3.8E+01V

10891

10.8-11	ACETONE	2.1E+02BV
14.5-14.7	METHYLENE CHLORIDE	2.1E+01BV
47.8-48	TOLUENE	7.8E+01V

10991

27.4-27.6	METHYLENE CHLORIDE	2.6E+01BV
45.3-45.5	TOLUENE	1.0E+02V
47.8-48	METHYLENE CHLORIDE	2.0E+00JA
47.8-48	TOLUENE	6.0E+00V

12891

38.8-39	TOULENE	5.3E+01V

04991

40.5-40.7	TOULENE	7.5E+01V

BH5487

8-9.65	Toluene	3.0E+01

04891

43.5-43.7	TOULENE	1.2E+01V

10791

6.8-7	TOLUENE	9.0E+00V
8.3-8.5	TOLUENE	2.0E+01V
15.8-16	TOLUENE	6.6E+01V
18.6-18.8	TOLUENE	1.1E+01V
23.6-23.8	METHYLENE CHLORIDE	4.0E+00JA
23.6-23.8	TOLUENE	7.0E+00V
26.4-26.6	METHYLENE CHLORIDE	3.0E+00JA
26.4-26.6	TOLUENE	3.0E+00JA
31.8-32	METHYLENE CHLORIDE	4.0E+00JA
31.8-32	TOLUENE	3.1E+01V
35.8-36	METHYLENE CHLORIDE	4.0E+00JA
35.8-36	TOLUENE	5.9E+01V
39.8-40	METHYLENE CHLORIDE	3.0E+00JA
39.8-40	TOLUENE	1.0E+01V
43.8-44	METHYLENE CHLORIDE	2.0E+00JA
43.8-44	TOLUENE	8.8E+01V
47.8-48	TOLUENE	2.1E+01V

08391

4.3-4.5	TOLUENE	5.0E+00JA
9.2-9.4	TOLUENE	2.5E+01JA
12.2-12.4	TOLUENE	6.1E+01JA
16.1-16.3	TOLUENE	4.4E+01V
21.6-21.8	TOLUENE	6.7E+01V
24.3-24.5	TOLUENE	4.2E+01V
29.7-29.9	ACETONE	1.8E+01V
29.7-29.9	TOLUENE	1.0E+01V
32.9-33.1	ACETONE	1.7E+01V
37.7-37.9	ACETONE	2.9E+01V
41.7-41.9	ACETONE	8.4E+01JA

08291

2.7-2.9	ACETONE	2.8E+02DV
2.7-2.9	TOLUENE	4.8E+02DV
7.5-7.7	ACETONE	2.1E+01JA
7.5-7.7	TOLUENE	8.0E+00V
10.7-10.9	TOLUENE	8.0E+00V
15.8-16	TOLUENE	2.0E+01V
19.8-20	ACETONE	3.2E+01JA
19.8-20	TOLUENE	1.3E+02JA

46792

0-5	TOLUENE	6.0E+00V
1.75-2	TOLUENE	1.2E+02V
5-10	TOLUENE	2.3E+01V
10-15	TOLUENE	1.1E+01V

08491

2.5-2.7	ACETONE	3.1E+01V
2.5-2.7	TOLUENE	2.0E+00JA
6.9-7.1	ACETONE	2.0E+01JA
18.7-18.9	ACETONE	5.0E+00JA

04191

18.7-18.9	ACETONE	2.1E+01JA
18.7-18.9	METHYLENE CHLORIDE	2.0E+00JA
28.8-29.0	ACETONE	1.6E+01B

04491

28.8-29	METHYLENE CHLORIDE	3.0E+00BJ

04591

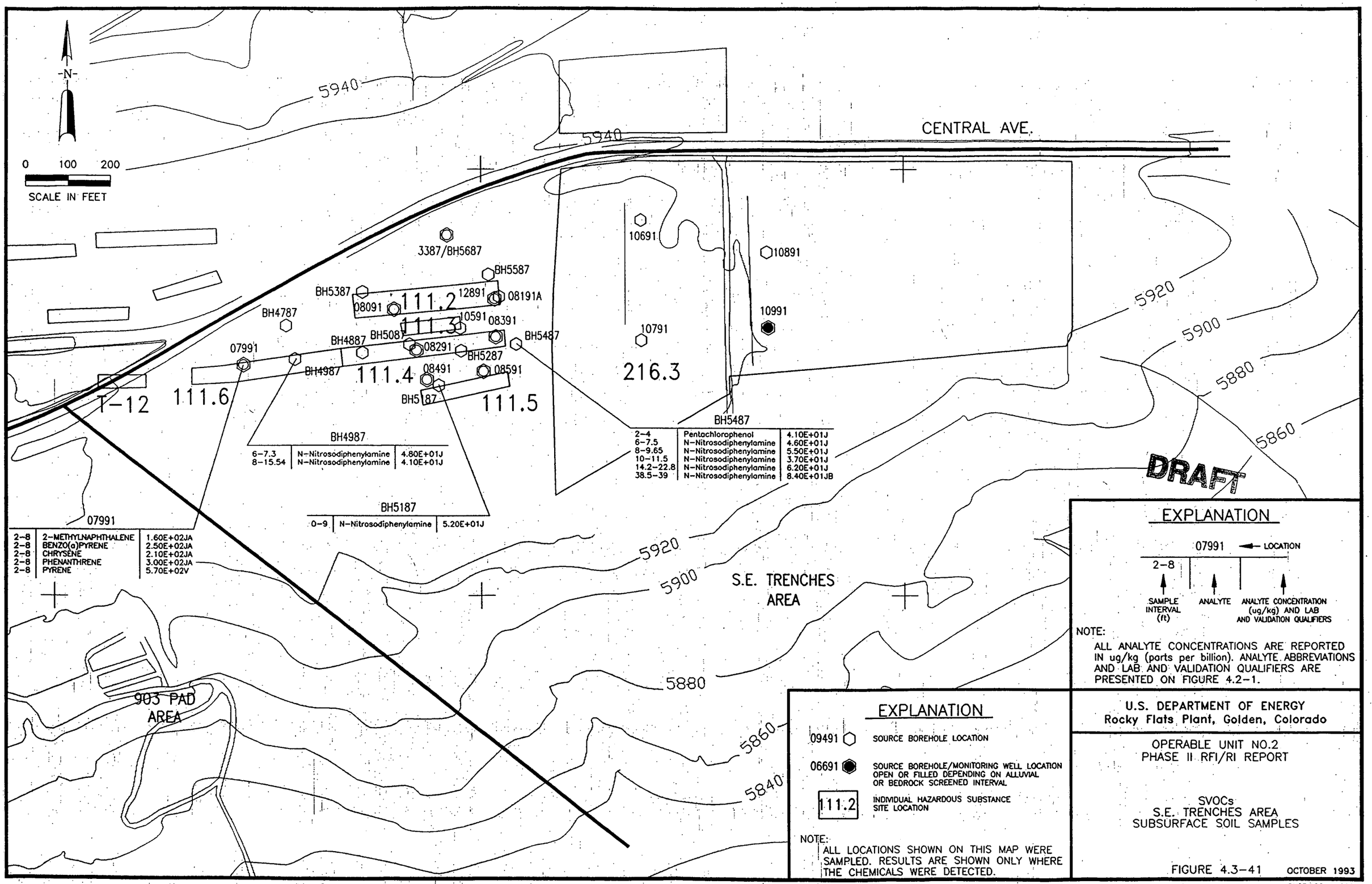
44.1-44.3	TOULENE	3.4E+01V

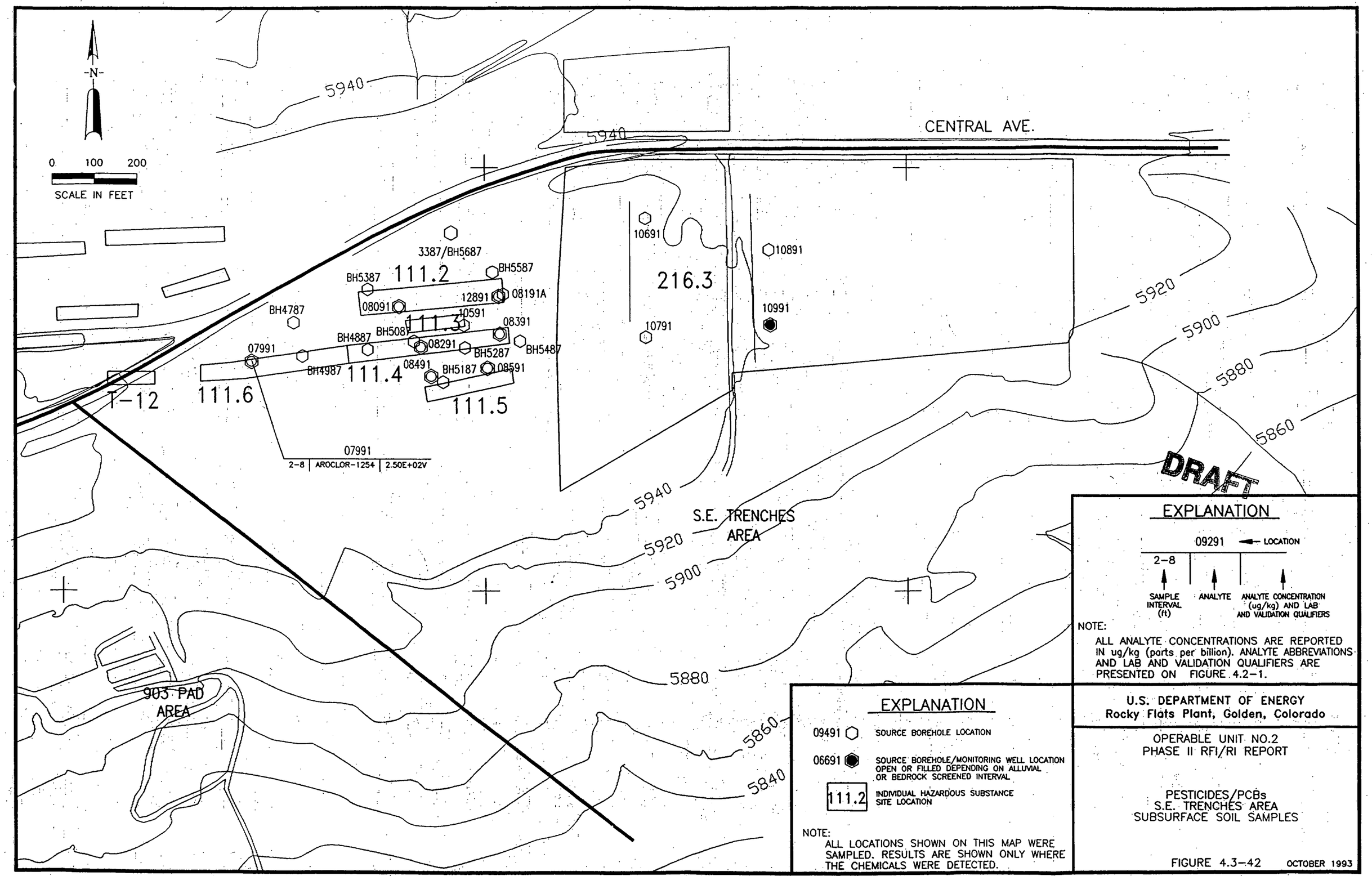
04691

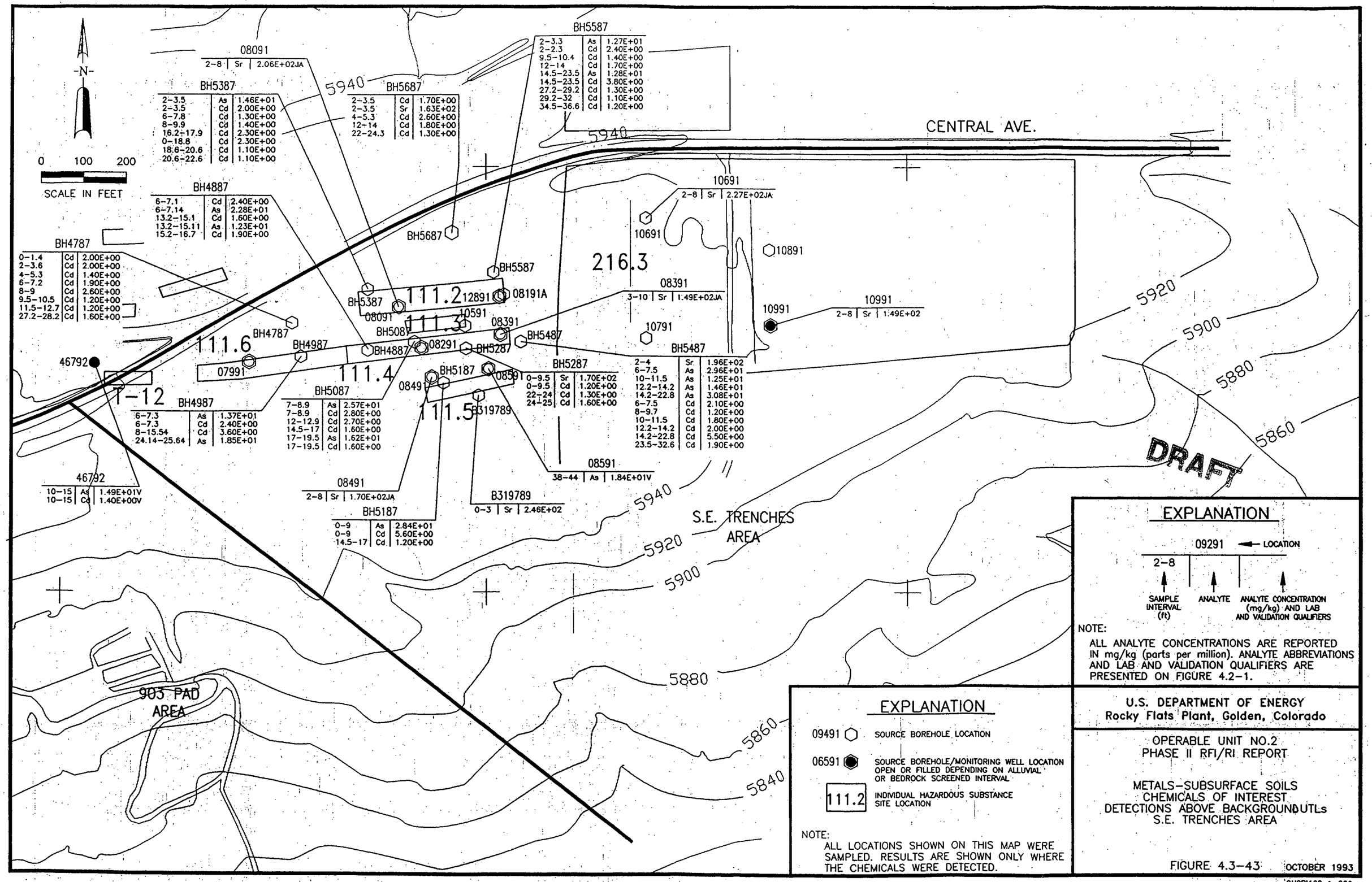
43.9-44.1	ACETONE	7.0E+00JA
43.9-44.1	TOULENE	1.4E+01V

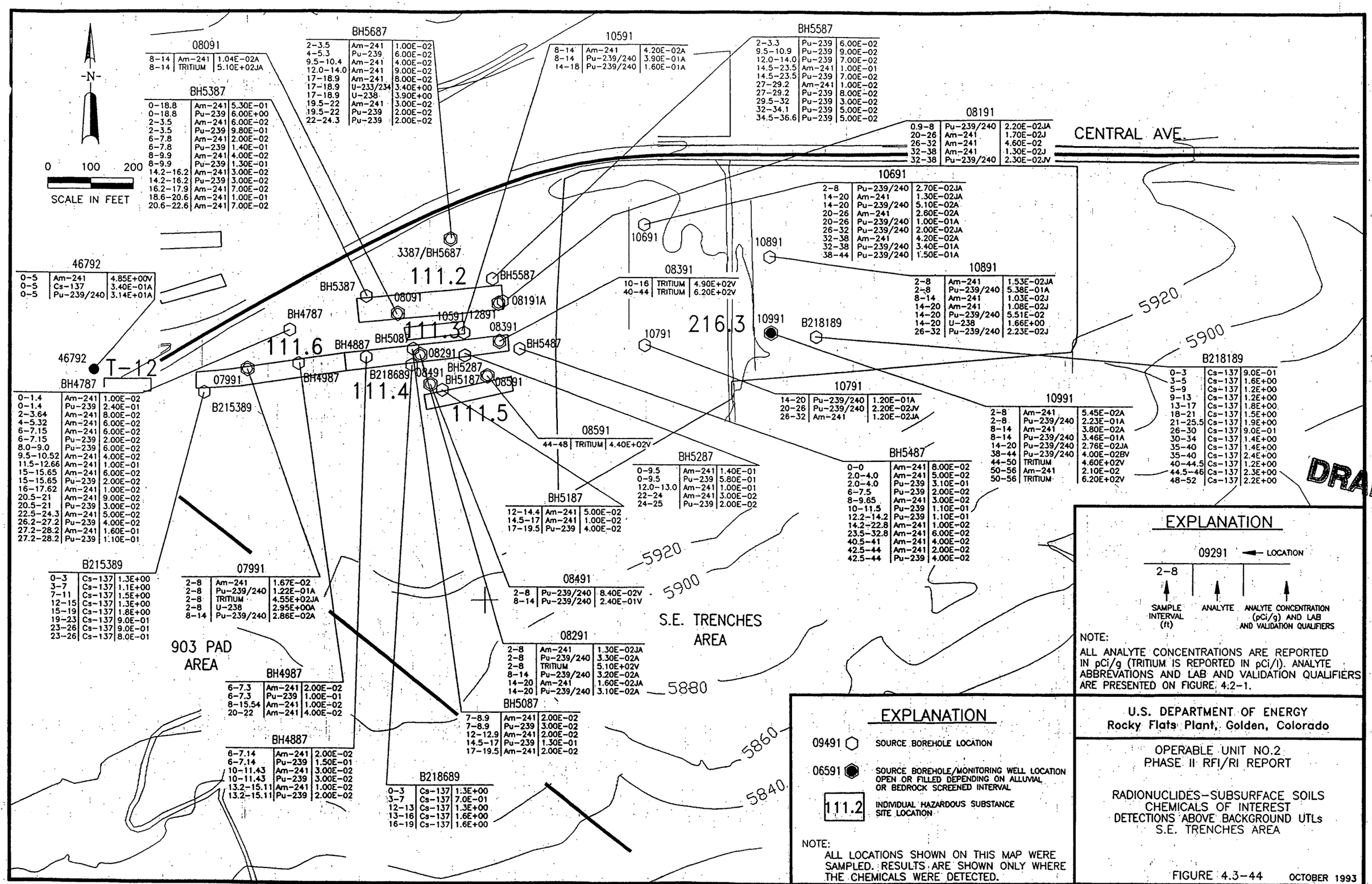
B319789

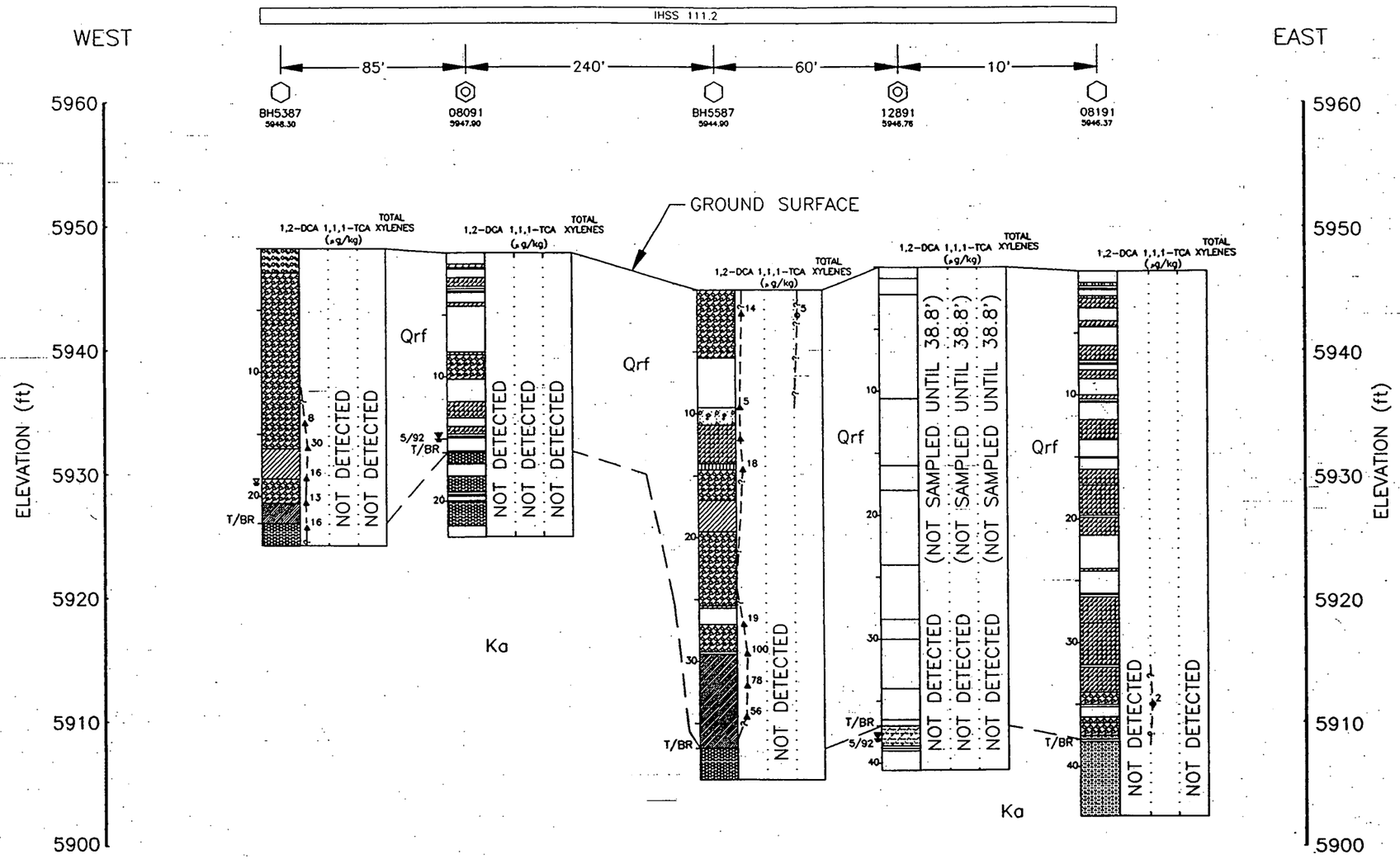
0-2	ACETONE	1.0E+01JA
0-2	METHYLENE CHLORIDE	9.0E+00V
0-2	TOLUENE	3.0E+00JA
4-5	2-BUTANONE	8.0E+00JV
4-5	ACETONE	3.2E+01A
4-5	METHYLENE CHLORIDE	4.0E+00JA
8-9.3	2-BUTANONE	9.0E+00JA
8-9.3	ACETONE	2.3E+01A
8-9.3	METHYLENE CHLORIDE	4.0E+00JA
12-14	ACETONE	1.5E+01A
12-14	METHYLENE CHLORIDE	6.0E+00V
16-17.5	ACETONE	1.6E+01A
20-22	2-BUTANONE	8.0E+00JA
20-22	ACETONE	2.7E+01A
20-22	METHYLENE CHLORIDE	1.0E+01V
24-26	ACETONE	2.6E+01V
24-26	METHYLENE CHLORIDE	1.0E+01V
28-30	ACETONE	2.2E+01A
28-30	METHYLENE CHLORIDE	7.0E+00V
32-34	2-BUTANONE	7.0E+00JA
32-34	ACETONE	1.6E+01A
32-34	METHYLENE CHLORIDE	8.0E+00V
38-40	ACETONE	4.3E+01
38-40	METHYLENE CHLORIDE	1.7E+01


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
5940
5920
5900
5880
5860
5840
3387/BH5687
BH5587
BH5387
08091
111.2
12891
08191A
BH4787
10591
08391
111.3
BH5087
BH4887
BH5487
07991
08291
BH5287
BH4987
111.4
08491
08591
BH5187
111.5
T-12
111.6
10691
10891
10991
10791
216.3
BH5487
BH4987
6-7.3 | N-Nitrosodiphenylamine | 4.80E+01J
8-15.54 | N-Nitrosodiphenylamine | 4.10E+01J
BH5187
0-9 | N-Nitrosodiphenylamine | 5.20E+01J
07991
2-8 | 2-METHYLNAPHTHALENE | 1.60E+02JA
2-8 | BENZO(a)PYRENE | 2.50E+02JA
2-8 | CHRYSENE | 2.10E+02JA
2-8 | PHENANTHRENE | 3.00E+02JA
2-8 | PYRENE | 5.70E+02V
BH5487
2-4 | Pentachlorophenol | 4.10E+01J
6-7.5 | N-Nitrosodiphenylamine | 4.60E+01J
8-9.65 | N-Nitrosodiphenylamine | 5.50E+01J
10-11.5 | N-Nitrosodiphenylamine | 3.70E+01J
14.2-22.8 | N-Nitrosodiphenylamine | 6.20E+01J
38.5-39 | N-Nitrosodiphenylamine | 8.40E+01JB
DRAFT
S.E. TRENCHES AREA
903 PAD AREA
EXPLANATION
07991 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.2 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SVOCs
S.E. TRENCHES AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-41
OCTOBER 1993
OU2RI126 1=200


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
5940
5920
5900
5880
5860
5840
3387/BH5687
BH5587
BH5387
111.2
12891
08191A
08091
BH4787
10591
111.3
08391
BH5087
BH4887
08291
BH5287
BH5487
07991
BH4987
111.4
08491
BH5187
08591
111.5
111.6
T-12
07991
2-8 | AROCLOR-1254 | 2.50E+02V
10691
10891
216.3
10991
10791
S.E. TRENCHES AREA
903 PAD AREA
DRAFT
EXPLANATION
09291 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (ug/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/kg (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.2 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
PESTICIDES/PCBs
S.E. TRENCHES AREA
SUBSURFACE SOIL SAMPLES
FIGURE 4.3-42
OCTOBER 1993
0U2RI130 1=200


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
08091
2-8 Sr 2.06E+02JA
BH5387
2-3.5 As 1.46E+01
2-3.5 Cd 2.00E+00
6-7.8 Cd 1.30E+00
8-9.9 Cd 1.40E+00
16.2-17.9 Cd 2.30E+00
0-18.8 Cd 2.30E+00
18.6-20.6 Cd 1.10E+00
20.6-22.6 Cd 1.10E+00
BH5687
2-3.5 Cd 1.70E+00
2-3.5 Sr 1.63E+02
4-5.3 Cd 2.60E+00
12-14 Cd 1.80E+00
22-24.3 Cd 1.30E+00
BH5587
2-3.3 As 1.27E+01
2-2.3 Cd 2.40E+00
9.5-10.4 Cd 1.40E+00
12-14 Cd 1.70E+00
14.5-23.5 As 1.28E+01
14.5-23.5 Cd 3.80E+00
27.2-29.2 Cd 1.30E+00
29.2-32 Cd 1.10E+00
34.5-36.6 Cd 1.20E+00
BH4887
6-7.1 Cd 2.40E+00
6-7.14 As 2.28E+01
13.2-15.1 Cd 1.60E+00
13.2-15.11 As 1.23E+01
15.2-16.7 Cd 1.90E+00
BH4787
0-1.4 Cd 2.00E+00
2-3.6 Cd 2.00E+00
4-5.3 Cd 1.40E+00
6-7.2 Cd 1.90E+00
8-9 Cd 2.60E+00
9.5-10.5 Cd 1.20E+00
11.5-12.7 Cd 1.20E+00
27.2-28.2 Cd 1.60E+00
10691
2-8 Sr 2.27E+02JA
10891
10991
2-8 Sr 1.49E+02
08391
3-10 Sr 1.49E+02JA
10791
BH5487
2-4 Sr 1.96E+02
6-7.5 As 2.96E+01
10-11.5 As 1.25E+01
12.2-14.2 As 1.46E+01
14.2-22.8 As 3.08E+01
6-7.5 Cd 2.10E+00
8-9.7 Cd 1.20E+00
10-11.5 Cd 1.80E+00
12.2-14.2 Cd 2.00E+00
14.2-22.8 Cd 5.50E+00
23.5-32.6 Cd 1.90E+00
BH5287
0-9.5 Sr 1.70E+02
0-9.5 Cd 1.20E+00
22-24 Cd 1.30E+00
24-25 Cd 1.60E+00
08591
38-44 As 1.84E+01V
46792
10-15 As 1.49E+01V
10-15 Cd 1.40E+00V
BH4987
6-7.3 As 1.37E+01
6-7.3 Cd 2.40E+00
8-15.54 Cd 3.60E+00
24.14-25.64 As 1.85E+01
BH5087
7-8.9 As 2.57E+01
7-8.9 Cd 2.80E+00
12-12.9 Cd 2.70E+00
14.5-17 Cd 1.60E+00
17-19.5 As 1.62E+01
17-19.5 Cd 1.60E+00
08491
2-8 Sr 1.70E+02JA
BH5187
0-9 As 2.84E+01
0-9 Cd 5.60E+00
14.5-17 Cd 1.20E+00
B319789
0-3 Sr 2.46E+02
111.6
111.4
111.5
111.3
111.2
216.3
T-12
07991
08291
08191A
12891
10591
0849
08591
B319789
46792
5940
5920
5900
5880
5860
5840
S.E. TRENCHES AREA
903 PAD AREA
DRAFT
EXPLANATION
09291 LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (mg/kg) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN mg/kg (parts per million). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06591 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.2 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
METALS-SUBSURFACE SOILS
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
S.E. TRENCHES AREA
FIGURE 4.3-43
OCTOBER 1993
OU2RI160 1=200

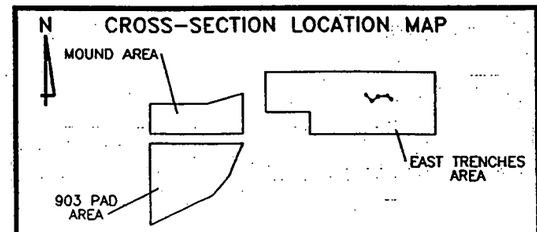

-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
08091
8-14 Am-241 1.04E-02A
8-14 TRITIUM 5.10E+02JA
BH5387
0-18.8 Am-241 5.30E-01
0-18.8 Pu-239 6.00E+00
2-3.5 Am-241 6.00E-02
2-3.5 Pu-239 9.80E-01
6-7.8 Am-241 2.00E-02
6-7.8 Pu-239 1.40E-01
8-9.9 Am-241 4.00E-02
8-9.9 Pu-239 1.30E-01
14.2-16.2 Am-241 3.00E-02
14.2-16.2 Pu-239 3.00E-02
16.2-17.9 Am-241 7.00E-02
18.6-20.6 Am-241 1.00E-01
20.6-22.6 Am-241 7.00E-02
BH5687
2-3.5 Am-241 1.00E-02
4-5.3 Pu-239 6.00E-02
9.5-10.4 Am-241 4.00E-02
12.0-14.0 Am-241 9.00E-02
17-18.9 Am-241 8.00E-02
17-18.9 U-233/234 3.40E+00
17-18.9 U-238 3.90E+00
19.5-22 Am-241 3.00E-02
19.5-22 Pu-239 2.00E-02
22-24.3 Pu-239 2.00E-02
10591
8-14 Am-241 4.20E-02A
8-14 Pu-239/240 3.90E-01A
14-18 Pu-239/240 1.60E-01A
BH5587
2-3.3 Pu-239 6.00E-02
9.5-10.9 Pu-239 9.00E-02
12.0-14.0 Pu-239 7.00E-02
14.5-23.5 Am-241 1.00E-01
14.5-23.5 Pu-239 7.00E-02
27-29.2 Am-241 1.00E-02
27-29.2 Pu-239 8.00E-02
29.5-32 Pu-239 3.00E-02
32-34.1 Pu-239 5.00E-02
34.5-36.6 Pu-239 5.00E-02
08191
0.9-8 Pu-239/240 2.20E-02JA
20-26 Am-241 1.70E-02J
26-32 Am-241 4.60E-02
32-38 Am-241 1.30E-02J
32-38 Pu-239/240 2.30E-02JV
10691
2-8 Pu-239/240 2.70E-02JA
14-20 Am-241 1.30E-02JA
14-20 Pu-239/240 5.10E-02A
20-26 Am-241 2.60E-02A
20-26 Pu-239/240 1.00E-01A
26-32 Pu-239/240 2.00E-02JA
32-38 Am-241 4.20E-02A
32-38 Pu-239/240 3.40E-01A
38-44 Pu-239/240 1.50E-01A
10891
2-8 Am-241 1.53E-02JA
2-8 Pu-239/240 5.38E-01A
8-14 Am-241 1.03E-02J
14-20 Am-241 1.08E-02J
14-20 Pu-239/240 5.51E-02
14-20 U-238 1.66E+00
26-32 Pu-239/240 2.23E-02J
46792
0-5 Am-241 4.85E+00V
0-5 Cs-137 3.40E-01A
0-5 Pu-239/240 3.14E+01A
46792
T-12
BH4787
0-1.4 Am-241 1.00E-02
0-1.4 Pu-239 2.40E-01
2-3.64 Am-241 8.00E-02
4-5.32 Am-241 6.00E-02
6-7.15 Am-241 6.00E-02
6-7.15 Pu-239 2.00E-02
8.0-9.0 Pu-239 6.00E-02
9.5-10.52 Am-241 4.00E-02
11.5-12.66 Am-241 1.00E-01
15-15.65 Am-241 6.00E-02
15-15.65 Pu-239 2.00E-02
16-17.62 Am-241 1.00E-02
20.5-21 Am-241 9.00E-02
20.5-21 Pu-239 3.00E-02
22.5-24.3 Am-241 5.00E-02
26.2-27.2 Pu-239 4.00E-02
27.2-28.2 Am-241 1.60E-01
27.2-28.2 Pu-239 1.10E-01
3387/BH5687
111.2
BH5587
08091
08191A
BH5387
10591
12891
111.3
BH4787
111.6
BH4887
BH5087
08391
BH5487
08291
BH5287
BH5187
08591
07991
BH4987
B218689
08491
111.4
111.5
B215389
10691
10891
08391
10-16 TRITIUM 4.90E+02V
40-44 TRITIUM 6.20E+02V
216.3
10791
10991
B218189
5920
5900
10791
14-20 Pu-239/240 1.20E-01A
20-26 Pu-239/240 2.20E-02JV
26-32 Am-241 1.20E-02JA
10991
2-8 Am-241 5.45E-02A
2-8 Pu-239/240 2.23E-01A
8-14 Am-241 3.80E-02A
8-14 Pu-239/240 3.46E-01A
14-20 Pu-239/240 2.76E-02JA
38-44 Pu-239/240 4.00E-02BV
44-50 TRITIUM 4.60E+02V
50-56 Am-241 2.10E-02
50-56 TRITIUM 6.20E+02V
B218189
0-3 Cs-137 9.0E-01
3-5 Cs-137 1.6E+00
5-9 Cs-137 1.2E+00
9-13 Cs-137 1.2E+00
13-17 Cs-137 1.8E+00
18-21 Cs-137 1.5E+00
21-25.5 Cs-137 1.9E+00
26-30 Cs-137 9.0E-01
30-34 Cs-137 1.4E+00
35-40 Cs-137 1.4E+00
35-40 Cs-137 2.4E+00
40-44.5 Cs-137 1.2E+00
44.5-46 Cs-137 2.3E+00
48-52 Cs-137 2.2E+00
DRAFT
08591
44-48 TRITIUM 4.40E+02V
BH5287
0-9.5 Am-241 1.40E-01
0-9.5 Pu-239 5.80E-01
12.0-13.0 Am-241 1.00E-01
22-24 Am-241 3.00E-02
24-25 Pu-239 2.00E-02
BH5487
0-0 Am-241 8.00E-02
2.0-4.0 Am-241 5.00E-02
2.0-4.0 Pu-239 3.10E-01
6-7.5 Pu-239 2.00E-02
8-9.65 Am-241 3.00E-02
10-11.5 Pu-239 1.10E-01
12.2-14.2 Pu-239 1.10E-01
14.2-22.8 Am-241 1.00E-02
23.5-32.8 Am-241 6.00E-02
40.5-41 Am-241 4.00E-02
42.5-44 Am-241 2.00E-02
42.5-44 Pu-239 4.00E-02
BH5187
12-14.4 Am-241 5.00E-02
14.5-17 Am-241 1.00E-02
17-19.5 Pu-239 4.00E-02
5920
5900
08491
2-8 Pu-239/240 8.40E-02V
8-14 Pu-239/240 2.40E-01V
S.E. TRENCHES AREA
08291
2-8 Am-241 1.30E-02JA
2-8 Pu-239/240 3.30E-02A
2-8 TRITIUM 5.10E+02V
8-14 Pu-239/240 3.20E-02A
14-20 Am-241 1.60E-02JA
14-20 Pu-239/240 3.10E-02A
5880
BH5087
7-8.9 Am-241 2.00E-02
7-8.9 Pu-239 3.00E-02
12-12.9 Am-241 2.00E-02
14.5-17 Pu-239 1.30E-01
17-19.5 Am-241 2.00E-02
5860
5840
B215389
0-3 Cs-137 1.3E+00
3-7 Cs-137 1.1E+00
7-11 Cs-137 1.5E+00
12-15 Cs-137 1.3E+00
15-19 Cs-137 1.8E+00
19-23 Cs-137 9.0E-01
23-26 Cs-137 9.0E-01
23-26 Cs-137 8.0E-01
07991
2-8 Am-241 1.67E-02
2-8 Pu-239/240 1.22E-01A
2-8 TRITIUM 4.55E+02JA
2-8 U-238 2.95E+00A
8-14 Pu-239/240 2.86E-02A
903 PAD AREA
BH4987
6-7.3 Am-241 2.00E-02
6-7.3 Pu-239 1.00E-01
8-15.54 Am-241 1.00E-02
20-22 Am-241 4.00E-02
BH4887
6-7.14 Am-241 2.00E-02
6-7.14 Pu-239 1.50E-01
10-11.43 Am-241 3.00E-02
10-11.43 Pu-239 3.00E-02
13.2-15.11 Am-241 1.00E-02
13.2-15.11 Pu-239 2.00E-02
B218689
0-3 Cs-137 1.3E+00
3-7 Cs-137 7.0E-01
12-13 Cs-137 1.3E+00
13-16 Cs-137 1.6E+00
16-19 Cs-137 1.6E+00
EXPLANATION
09291 ← LOCATION
2-8
SAMPLE INTERVAL (ft)
ANALYTE
ANALYTE CONCENTRATION (pCi/g) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/g (TRITIUM IS REPORTED IN pCi/l). ANALYTE ABBREVATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
09491 SOURCE BOREHOLE LOCATION
06591 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.2 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
RADIONUCLIDES-SUBSURFACE SOILS
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
S.E. TRENCHES AREA
FIGURE 4.3-44
OCTOBER 1993
OU2RI164 1=200



DRAFT

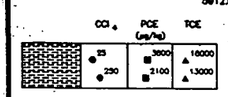
VERTICAL 0 — 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

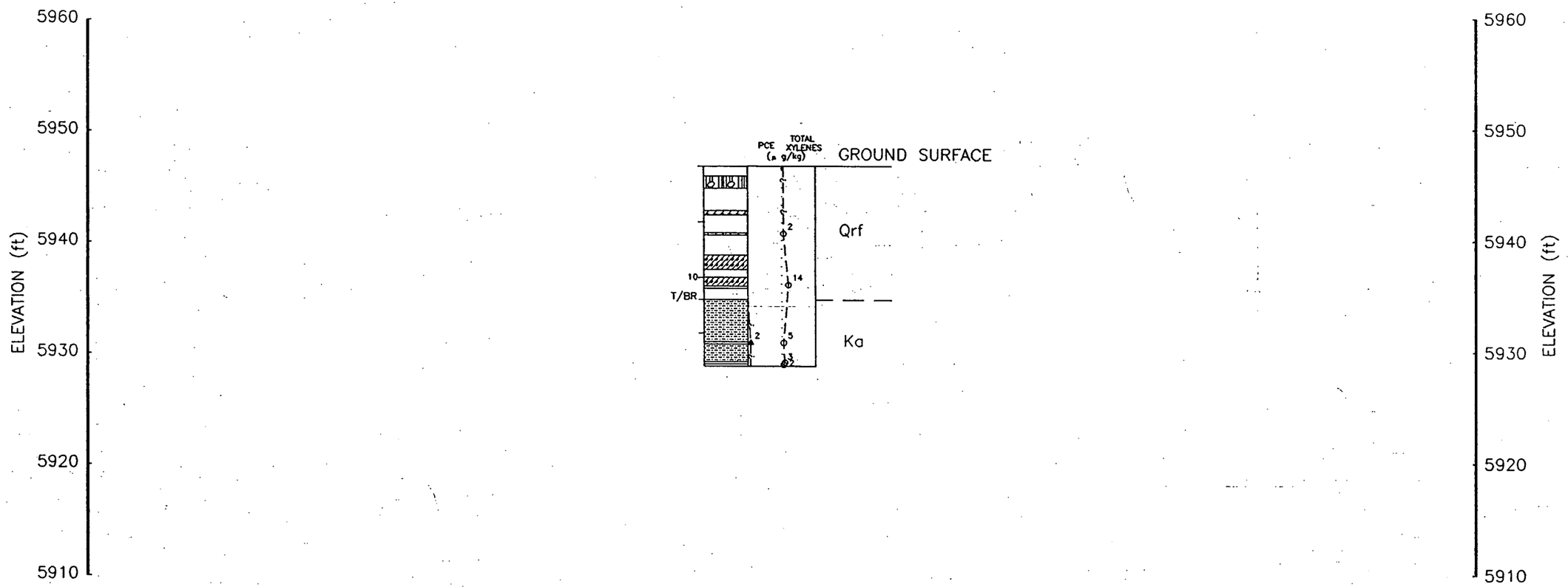
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION
IHSS 111.2 (TRENCH T-5)

FIGURE 4.3-45 OCTOBER 1993

OU2RI078 1=1



DRAFT

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

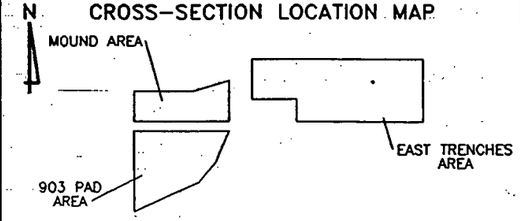
SOURCE BOREHOLE
CROSS-SECTION
IHSS 111.3 (TRENCH T-6)

FIGURE 4.3-46 OCTOBER 1993

VERTICAL 0 10 SCALE IN FEET

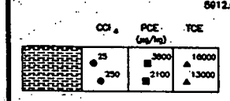
NOTE: HORIZONTAL DISTANCE NOT TO SCALE.

CROSS-SECTION LOCATION MAP



EXPLANATION

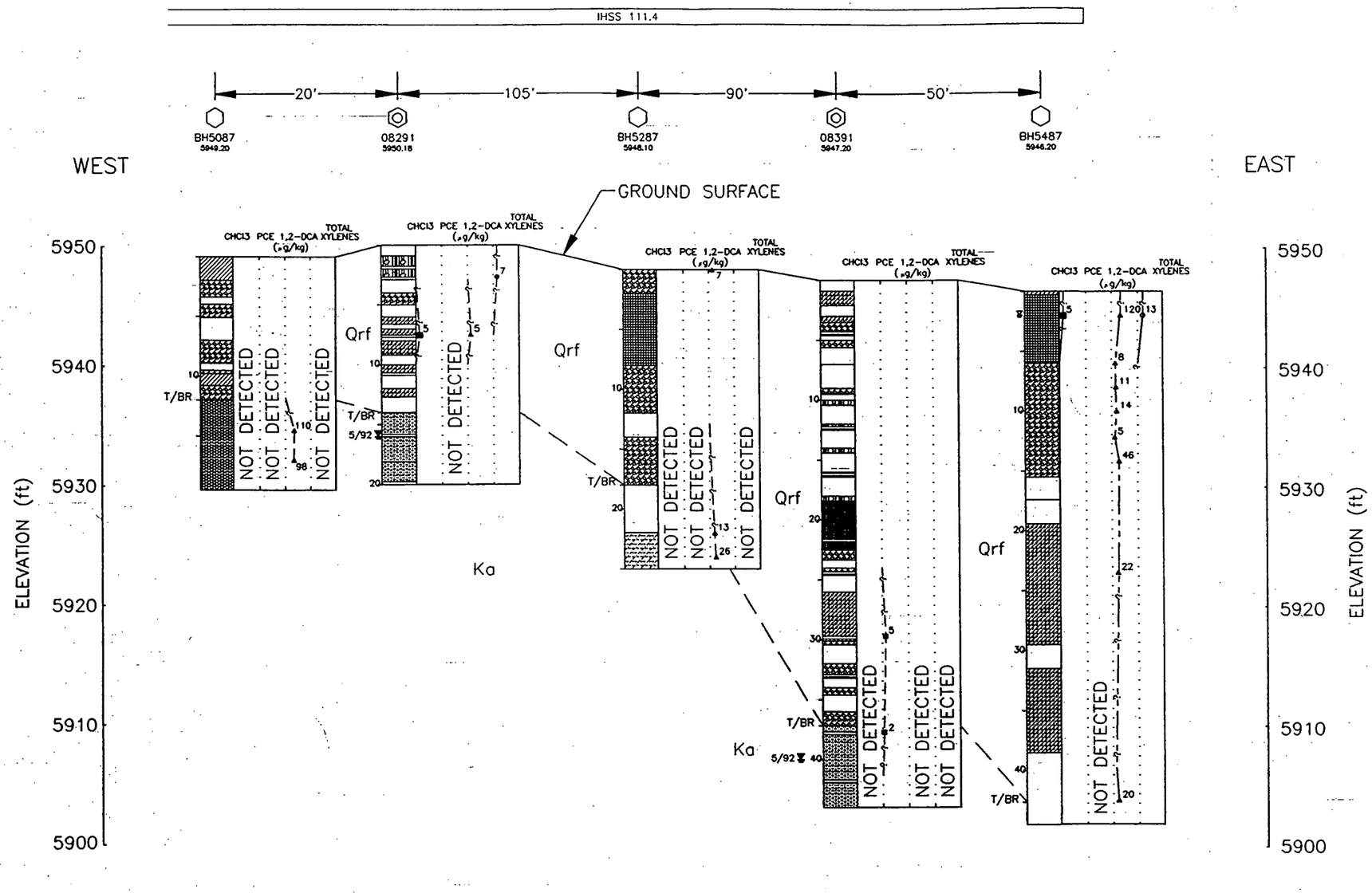
T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

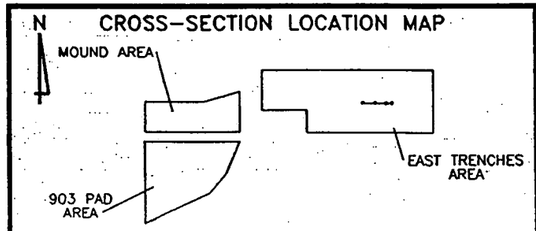
(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

OU2RI138 1=1



VERTICAL 0 – 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)

EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

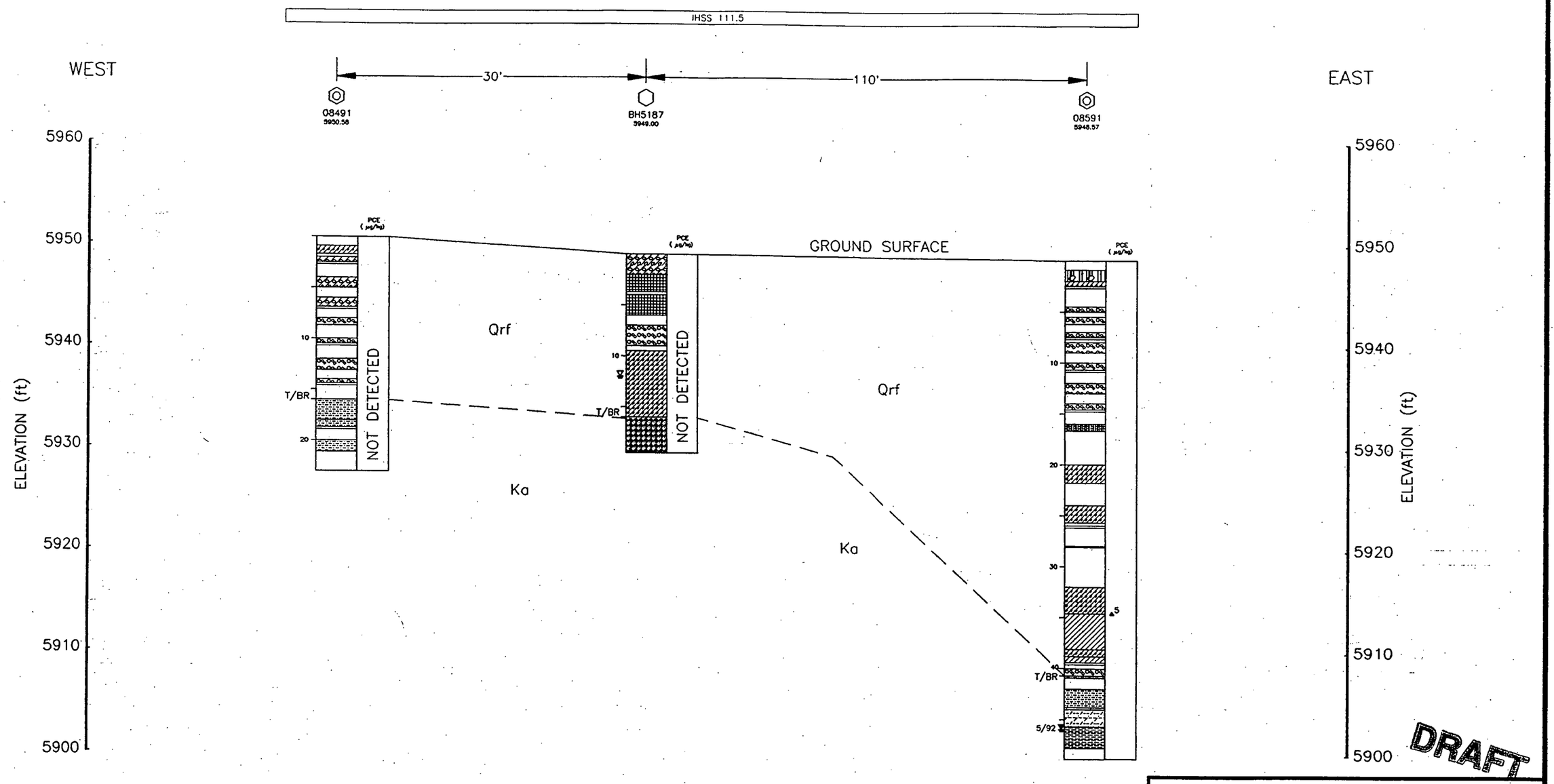
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

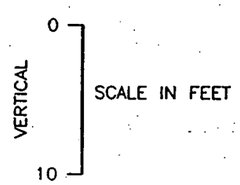
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE CROSS-SECTION IHSS 111.4 (TRENCH T-7)

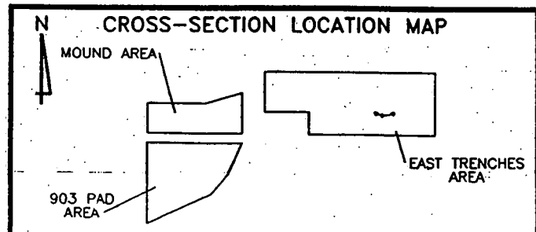
FIGURE 4.3-47 OCTOBER 1993

OU2RI081 1=1



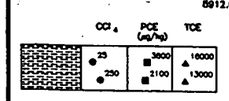


NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



EXPLANATION

T/BR = TOP OF BEDROCK
⬡ = LOCATION SYMBOL
3486 = LOCATION NAME
5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

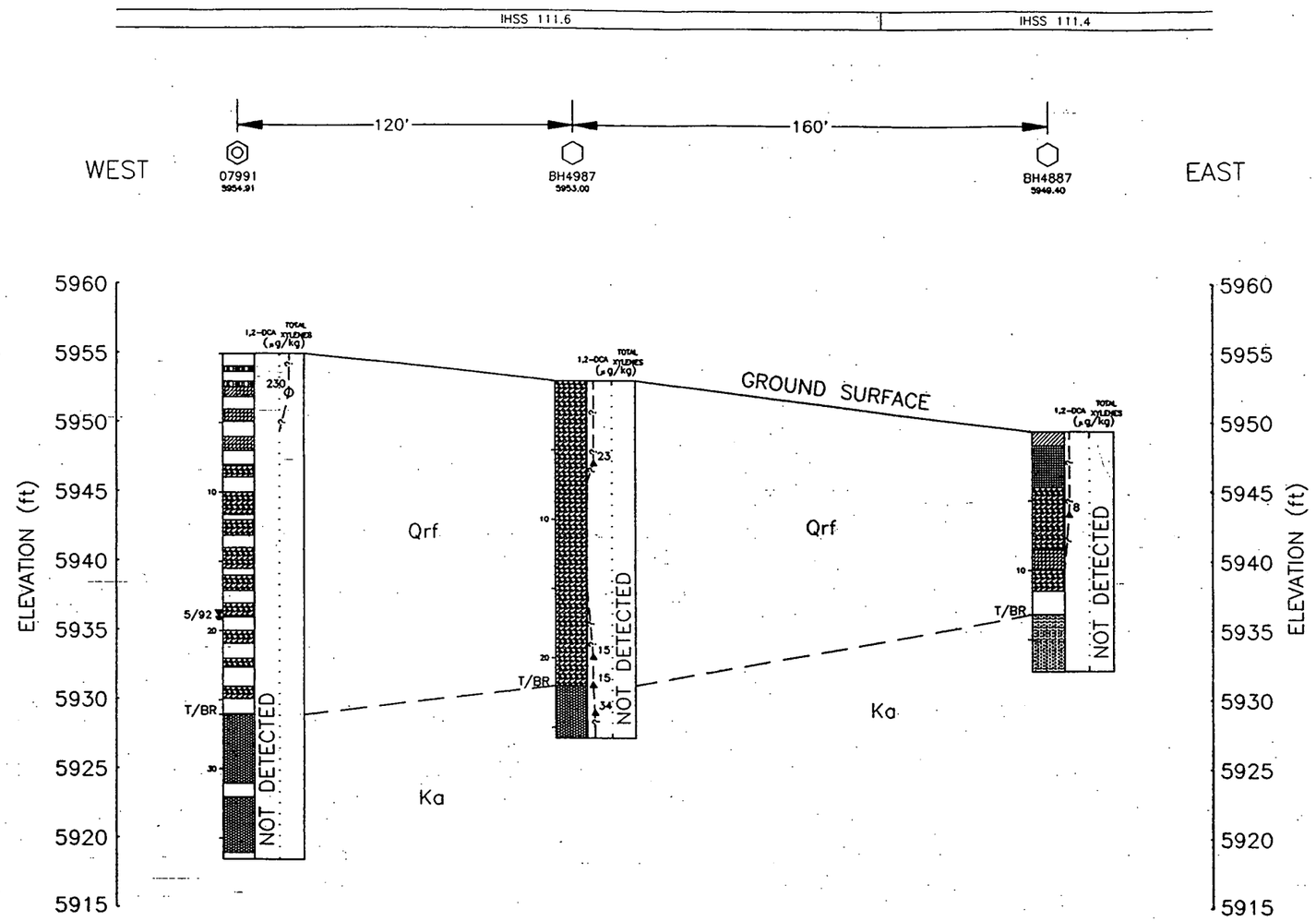
(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE
CROSS-SECTION
IHSS 111.5 (TRENCH T-8)

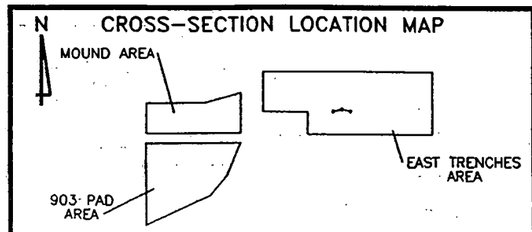
FIGURE 4.3-48 OCTOBER 1993



DRAFT

VERTICAL 0 – 10 SCALE IN FEET

NOTE: HORIZONTAL DISTANCE NOT TO SCALE.



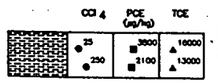
EXPLANATION

T/BR = TOP OF BEDROCK

⬡ = LOCATION SYMBOL

3486 = LOCATION NAME

5912.00 = GROUND SURFACE ELEVATION (ft)



EACH CHEMICAL IS PLOTTED ON A LOGARITHMIC SCALE (INCREASING TO RIGHT) FROM 1 TO 1,000,000 (µg/kg). DATA POINT REPRESENTS TOP OF SAMPLING INTERVAL.

(SEE FIGURE 4.3-1, SOURCE BOREHOLE CHARACTERIZATION LEGEND, FOR SOIL, BEDROCK AND LOCATION SYMBOLS)

U.S. DEPARTMENT OF ENERGY
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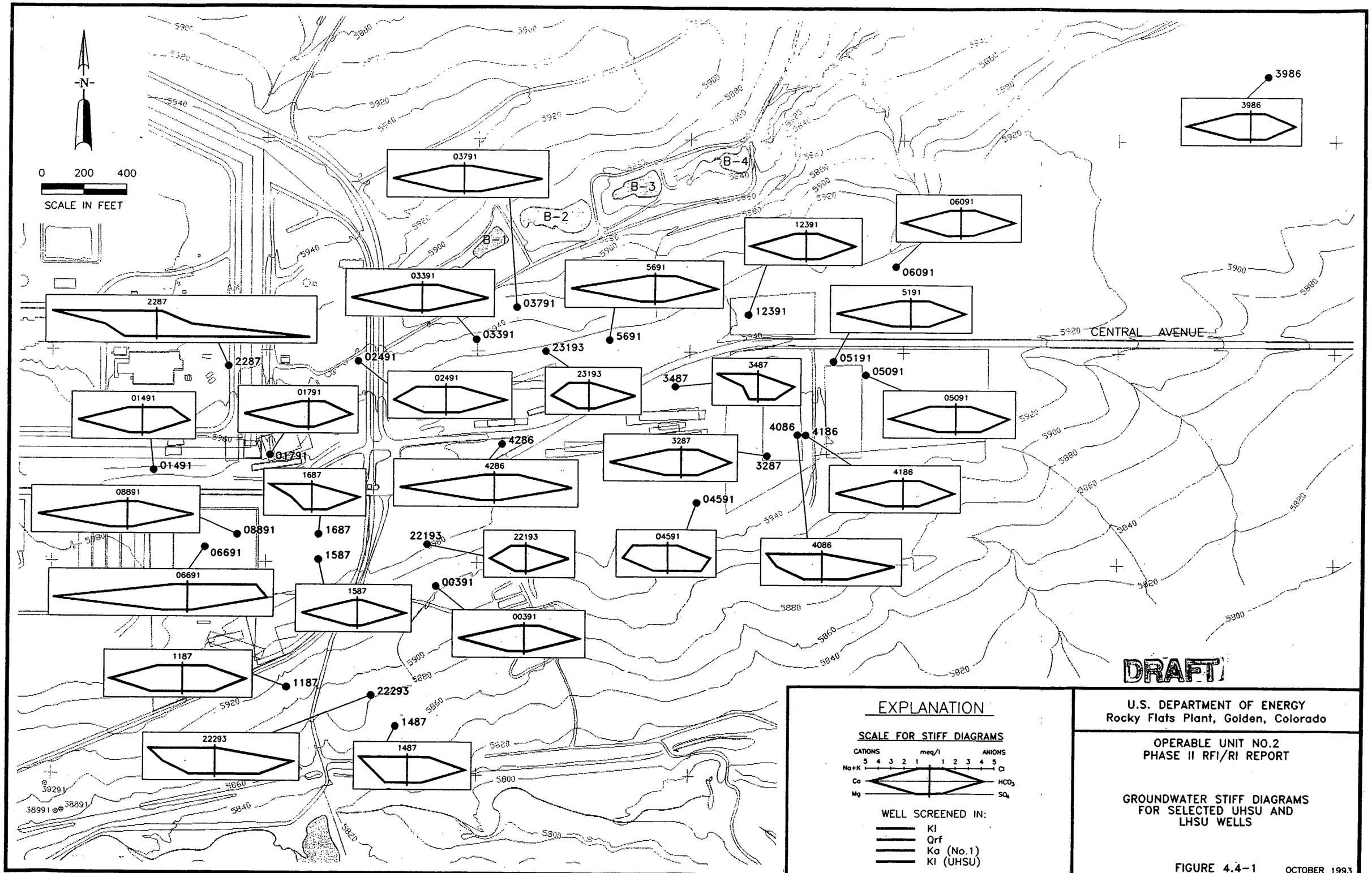
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

SOURCE BOREHOLE CROSS-SECTION IHSS 111.6 (TRENCH T-9)

FIGURE 4.3-49 OCTOBER 1993

OU2R10B3 1=1



U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

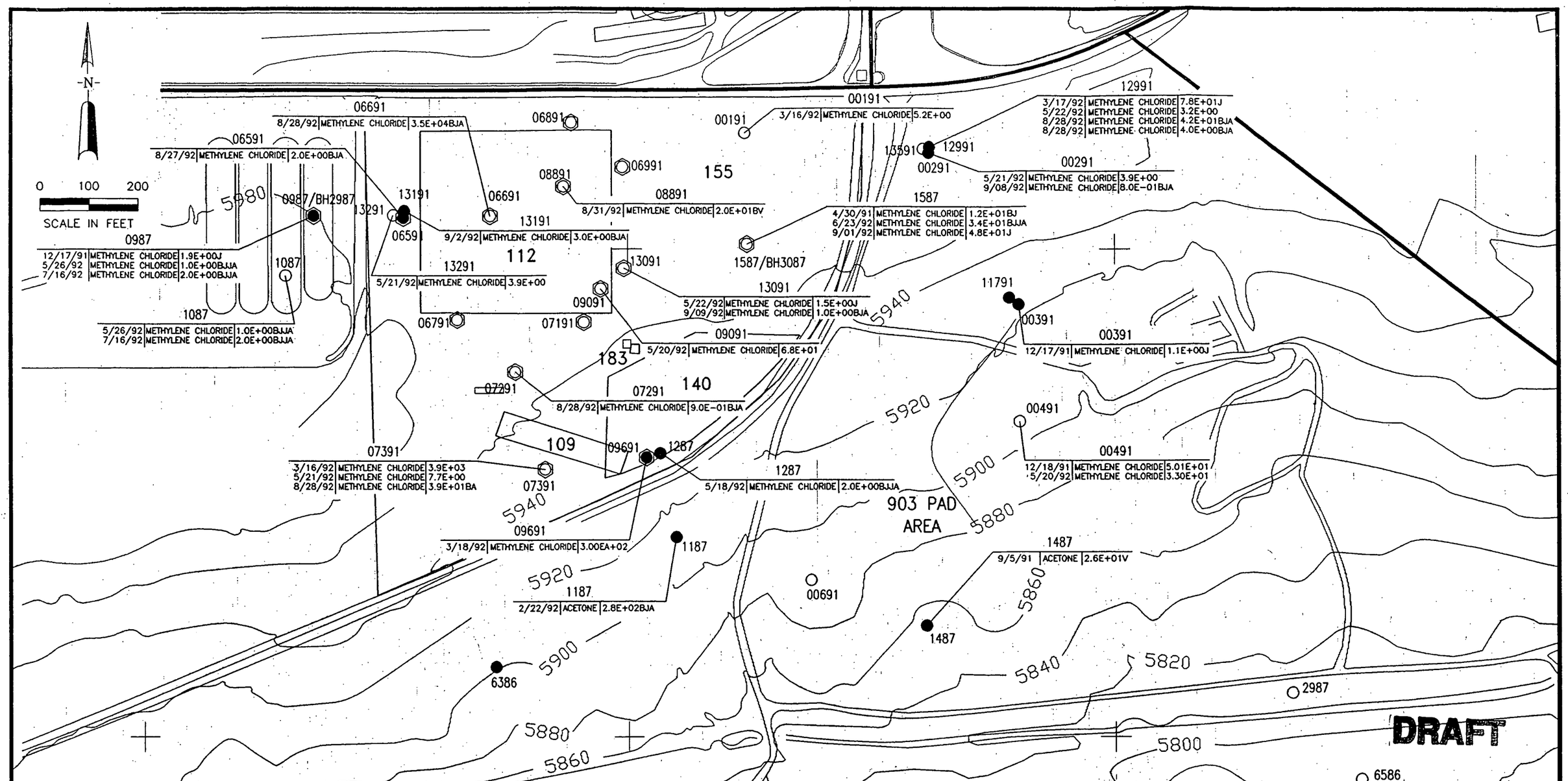
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

GROUNDWATER STIFF DIAGRAMS
FOR SELECTED UHSU AND
LHSU WELLS

FIGURE 4.4-1

OCTOBER 1993

OU2RI279 1=400



EXPLANATION

08691 ← LOCATION

3/6/92 | | |

DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

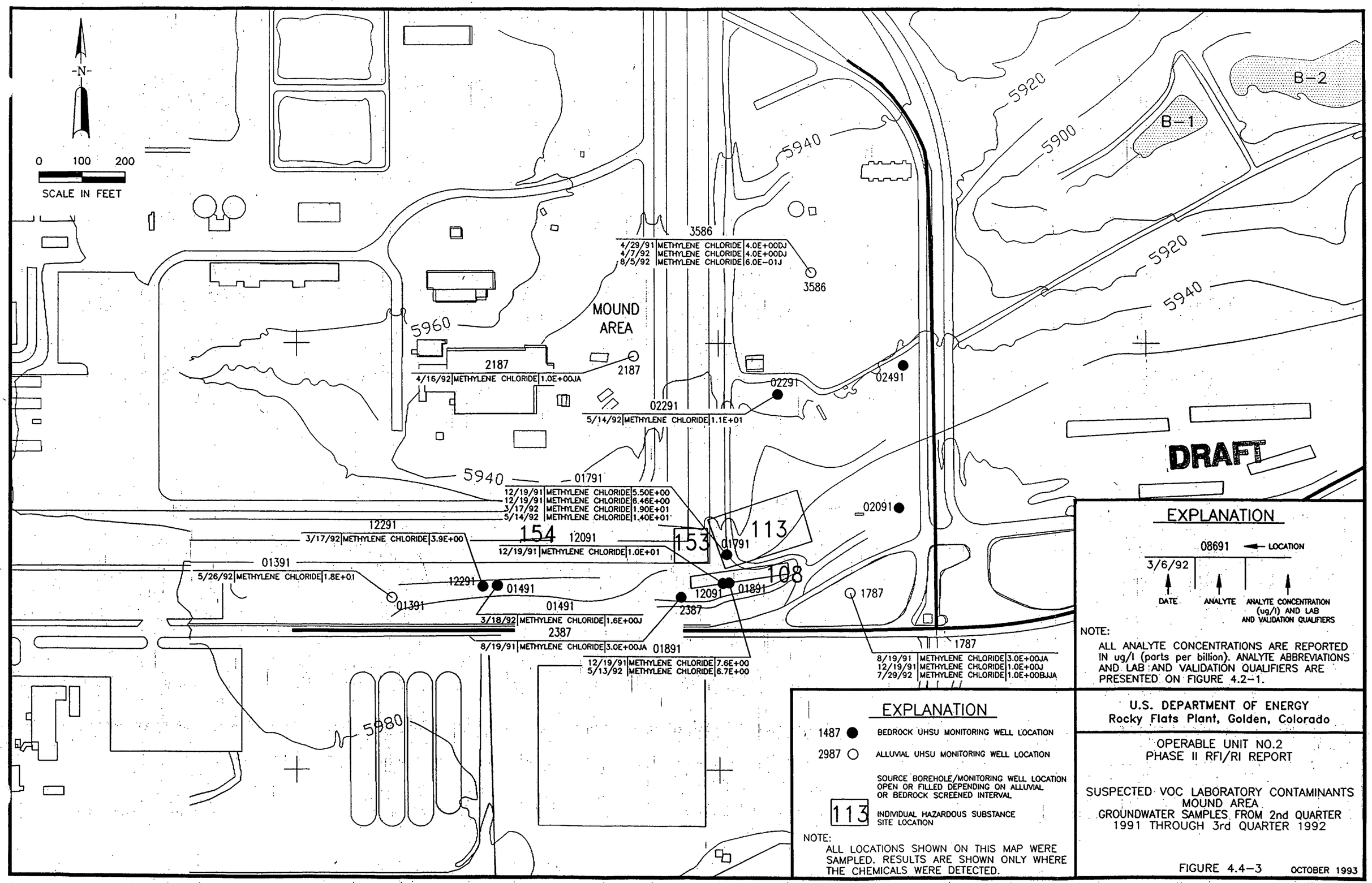
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

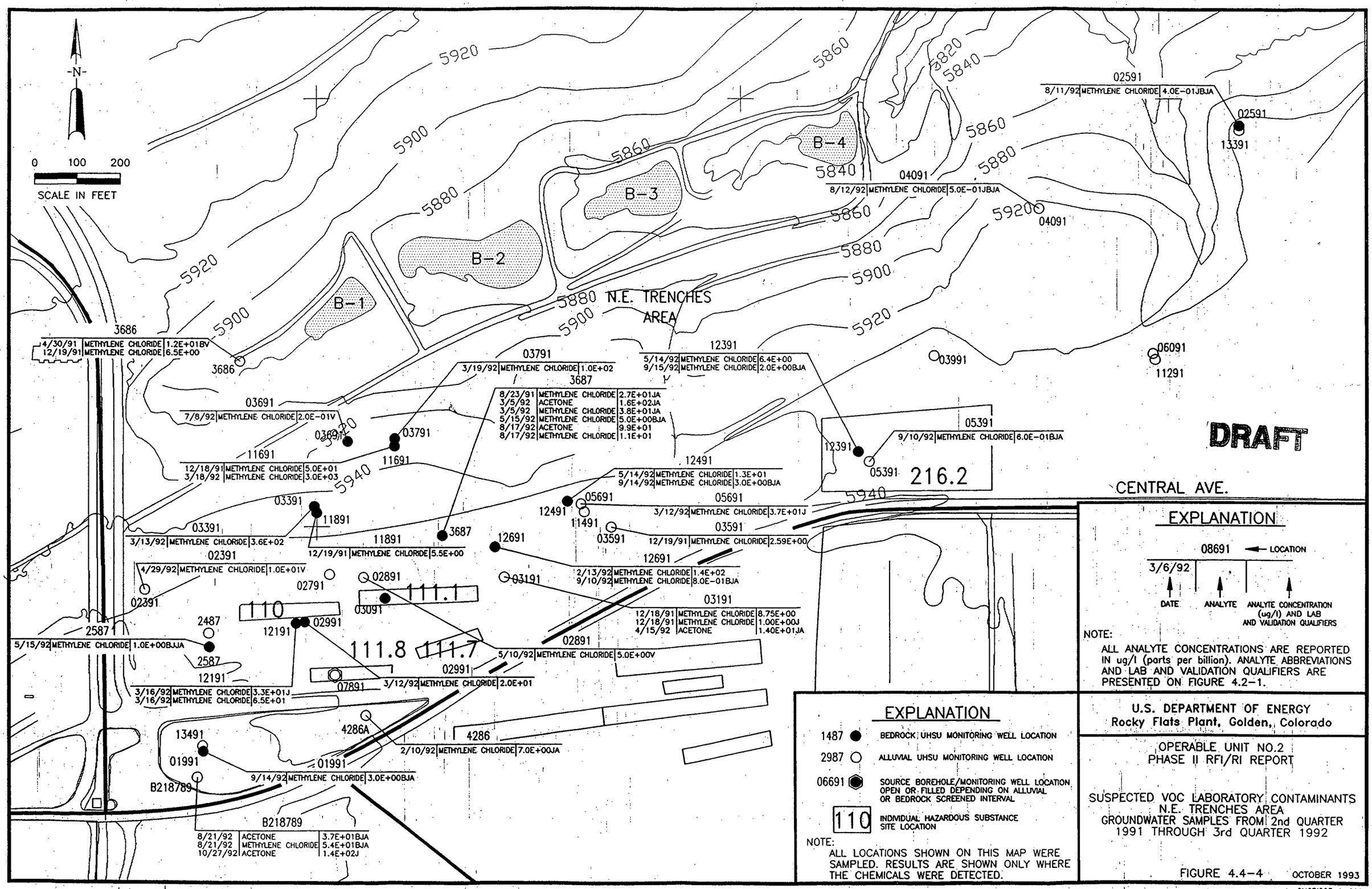
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

SUSPECTED VOC LABORATORY CONTAMINANTS
903 PAD AREA
GROUNDWATER SAMPLES FROM 2nd QUARTER 1991 THROUGH 3rd QUARTER 1992

FIGURE 4.4-2 OCTOBER 1993

OU2RI203 1=200


-N-
0 100 200
SCALE IN FEET
MOUND AREA
3586
4/29/91 METHYLENE CHLORIDE 4.0E+00DJ
4/7/92 METHYLENE CHLORIDE 4.0E+00DJ
8/5/92 METHYLENE CHLORIDE 6.0E-01J
2187
4/16/92 METHYLENE CHLORIDE 1.0E+00JA
02291
5/14/92 METHYLENE CHLORIDE 1.1E+01
01791
12/19/91 METHYLENE CHLORIDE 5.50E+00
12/19/91 METHYLENE CHLORIDE 6.46E+00
3/17/92 METHYLENE CHLORIDE 1.90E+01
5/14/92 METHYLENE CHLORIDE 1.40E+01
12291
3/17/92 METHYLENE CHLORIDE 3.9E+00
12091
12/19/91 METHYLENE CHLORIDE 1.0E+01
01391
5/26/92 METHYLENE CHLORIDE 1.8E+01
01491
3/18/92 METHYLENE CHLORIDE 1.6E+00J
2387
8/19/91 METHYLENE CHLORIDE 3.0E+00JA
01891
12/19/91 METHYLENE CHLORIDE 7.6E+00
5/13/92 METHYLENE CHLORIDE 6.7E+00
1787
8/19/91 METHYLENE CHLORIDE 3.0E+00JA
12/19/91 METHYLENE CHLORIDE 1.0E+00J
7/29/92 METHYLENE CHLORIDE 1.0E+00BJJA
02491
02091
154
153
113
108
5960
5940
5920
5900
5980
B-1
B-2
DRAFT
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SUSPECTED VOC LABORATORY CONTAMINANTS
MOUND AREA
GROUNDWATER SAMPLES FROM 2nd QUARTER 1991 THROUGH 3rd QUARTER 1992
FIGURE 4.4-3
OCTOBER 1993
OU2RI204 1=200



EXPLANATION

08691 ← LOCATION

3/6/92

DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ◉ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

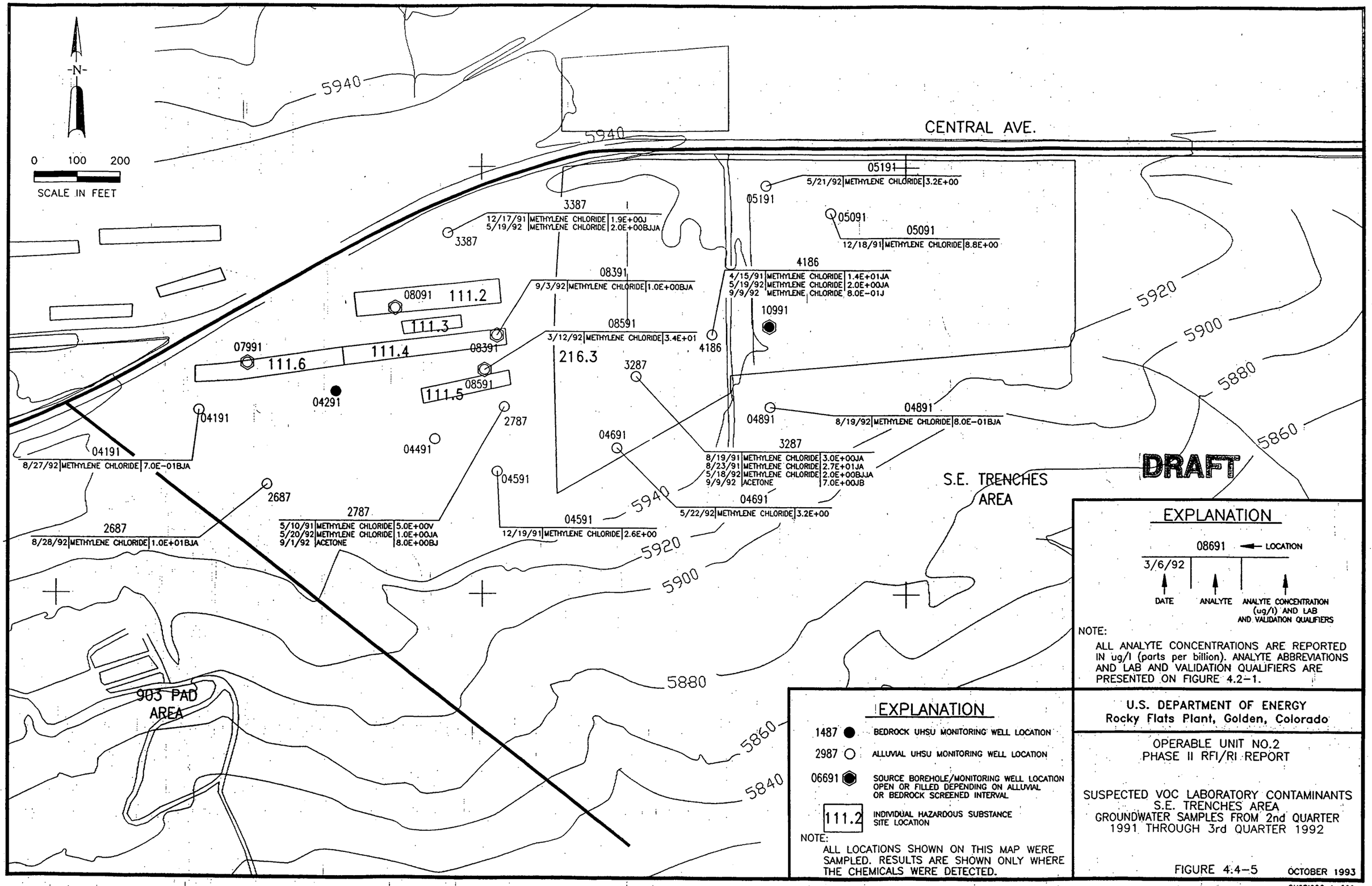
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

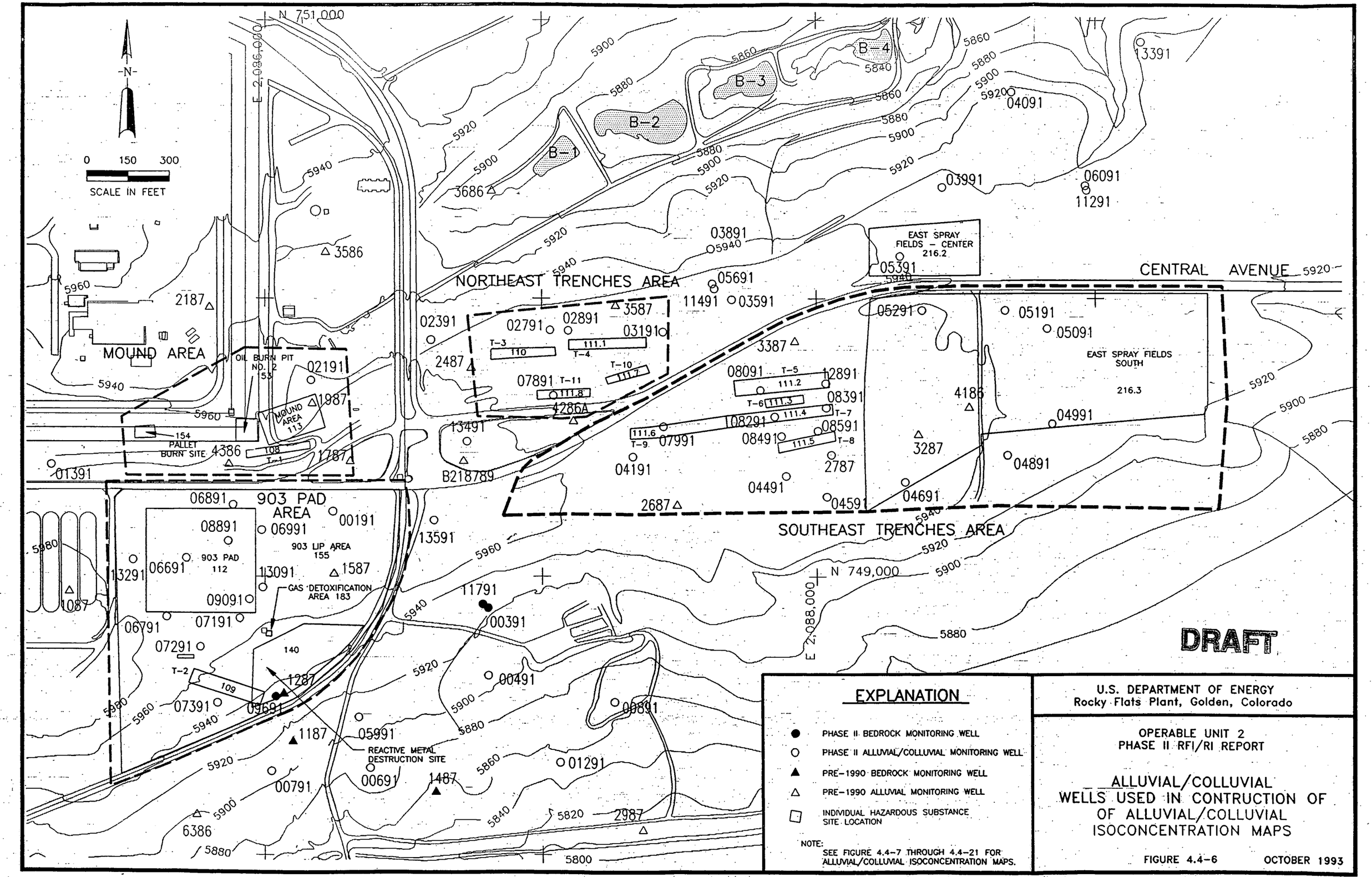
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

SUSPECTED VOC LABORATORY CONTAMINANTS
N.E. TRENCHES AREA
GROUNDWATER SAMPLES FROM 2nd QUARTER 1991 THROUGH 3rd QUARTER 1992

FIGURE 4.4-4 OCTOBER 1993

0U2RI205 1=200


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
5940
5920
5900
5880
5860
5840
05191
5/21/92 METHYLENE CHLORIDE 3.2E+00
05191
05091
05091
12/18/91 METHYLENE CHLORIDE 8.8E+00
3387
12/17/91 METHYLENE CHLORIDE 1.9E+00J
5/19/92 METHYLENE CHLORIDE 2.0E+00BJJA
3387
4186
4/15/91 METHYLENE CHLORIDE 1.4E+01JA
5/19/92 METHYLENE CHLORIDE 2.0E+00JA
9/9/92 METHYLENE CHLORIDE 8.0E-01J
10991
08391
9/3/92 METHYLENE CHLORIDE 1.0E+00BJA
08091
111.2
111.3
08591
3/12/92 METHYLENE CHLORIDE 3.4E+01
4186
07991
111.6
111.4
08391
216.3
3287
111.5
08591
04291
04191
2787
04491
04691
04891
04891
8/19/92 METHYLENE CHLORIDE 8.0E-01BJA
3287
8/19/91 METHYLENE CHLORIDE 3.0E+00JA
8/23/91 METHYLENE CHLORIDE 2.7E+01JA
5/18/92 METHYLENE CHLORIDE 2.0E+00BJJA
9/9/92 ACETONE 7.0E+00JB
04191
8/27/92 METHYLENE CHLORIDE 7.0E-01BJA
04591
2687
04691
5/22/92 METHYLENE CHLORIDE 3.2E+00
2787
5/10/91 METHYLENE CHLORIDE 5.0E+00V
5/20/92 METHYLENE CHLORIDE 1.0E+00JA
9/1/92 ACETONE 8.0E+00BJ
04591
12/19/91 METHYLENE CHLORIDE 2.6E+00
2687
8/28/92 METHYLENE CHLORIDE 1.0E+01BJA
S.E. TRENCHES AREA
DRAFT
903 PAD AREA
EXPLANATION
08691 ← LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.2 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SUSPECTED VOC LABORATORY CONTAMINANTS
S.E. TRENCHES AREA
GROUNDWATER SAMPLES FROM 2nd QUARTER 1991 THROUGH 3rd QUARTER 1992
FIGURE 4.4-5
OCTOBER 1993
OU2RI206 1=200



EXPLANATION

- ● PHASE II BEDROCK MONITORING WELL
- ○ PHASE II ALLUVIAL/COLLUVIAL MONITORING WELL
- ▲ PRE-1990 BEDROCK MONITORING WELL
- △ PRE-1990 ALLUVIAL MONITORING WELL
- □ INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
SEE FIGURE 4.4-7 THROUGH 4.4-21 FOR ALLUVIAL/COLLUVIAL ISOCONCENTRATION MAPS.

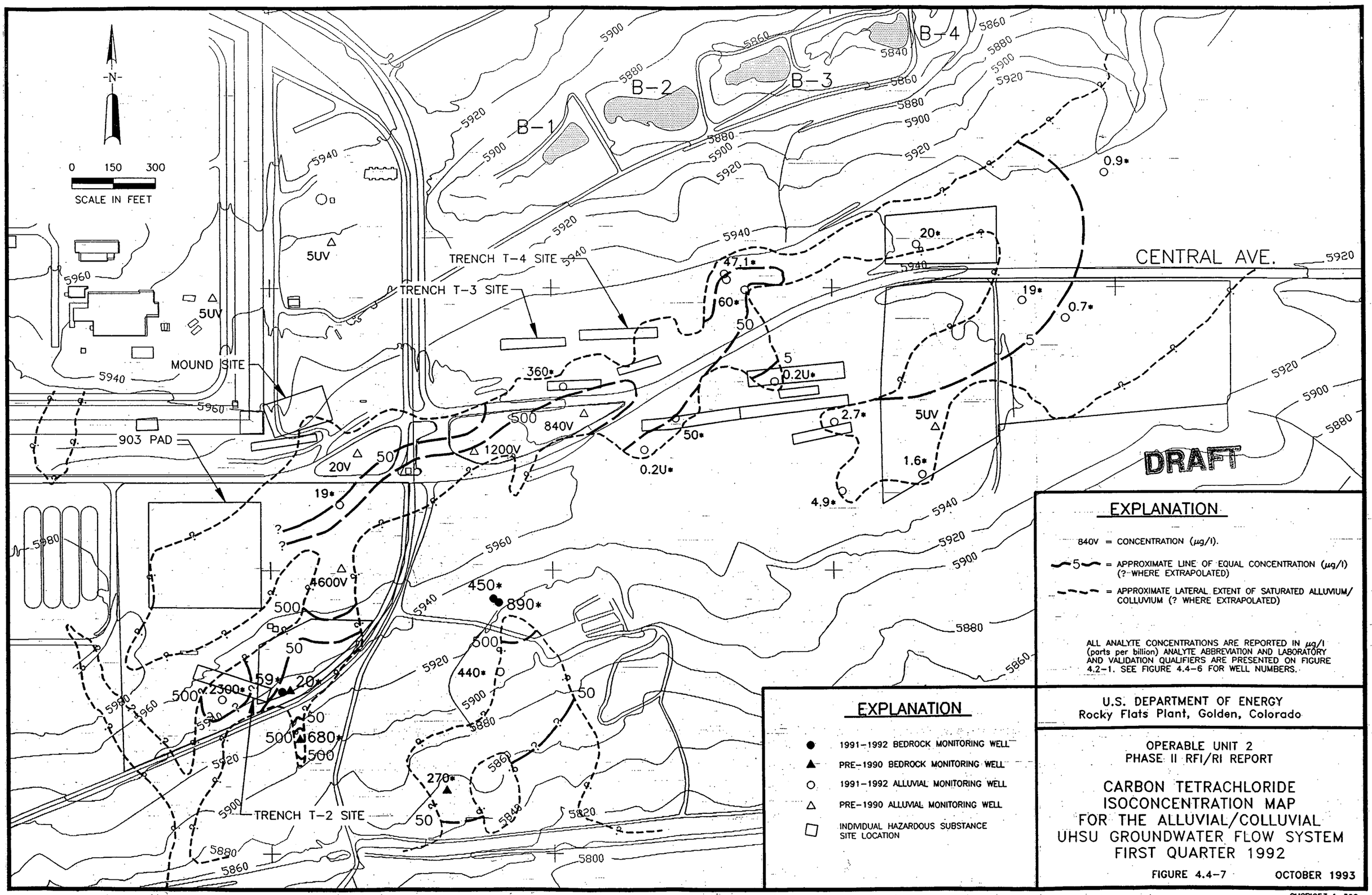
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

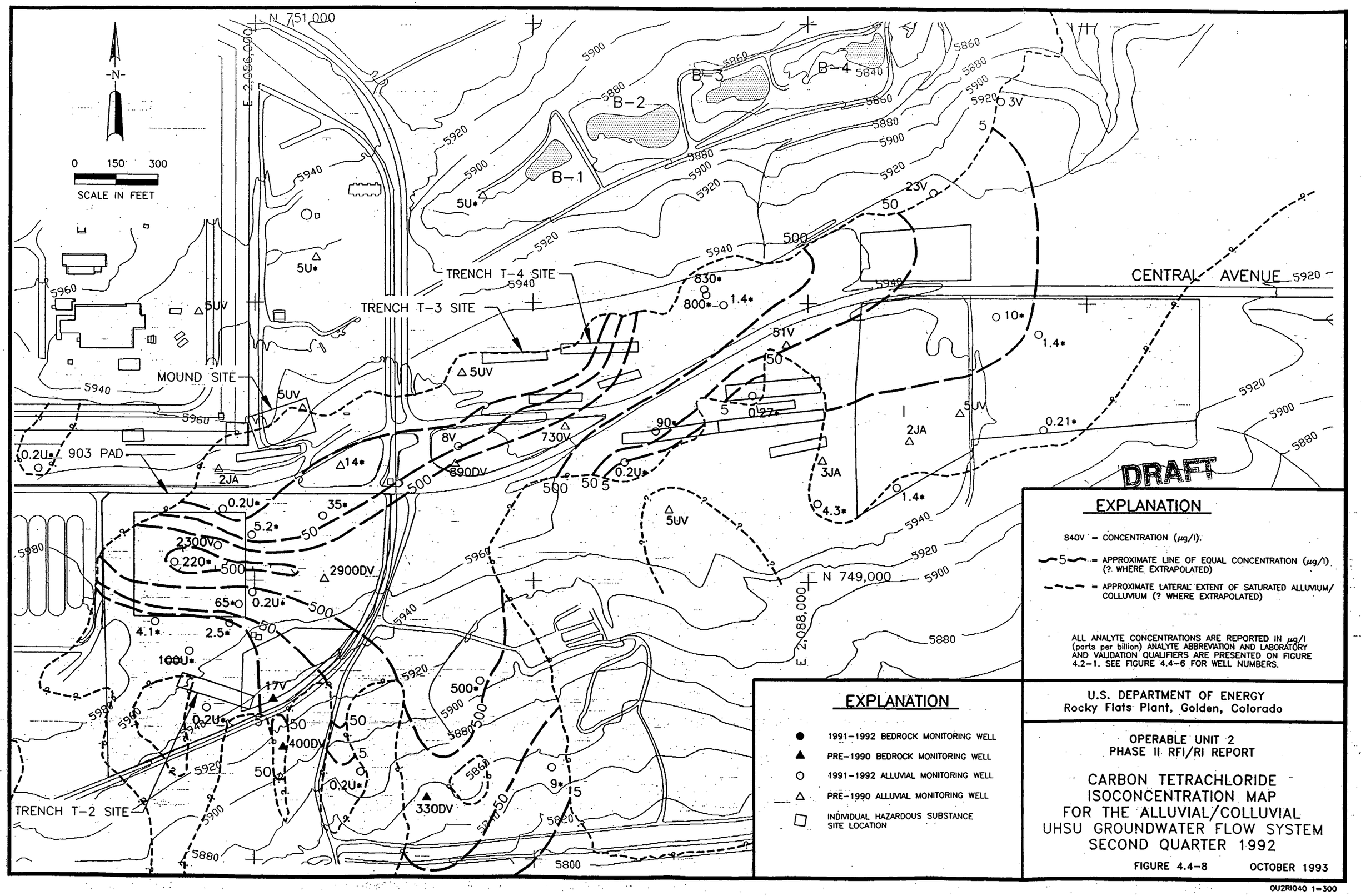
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

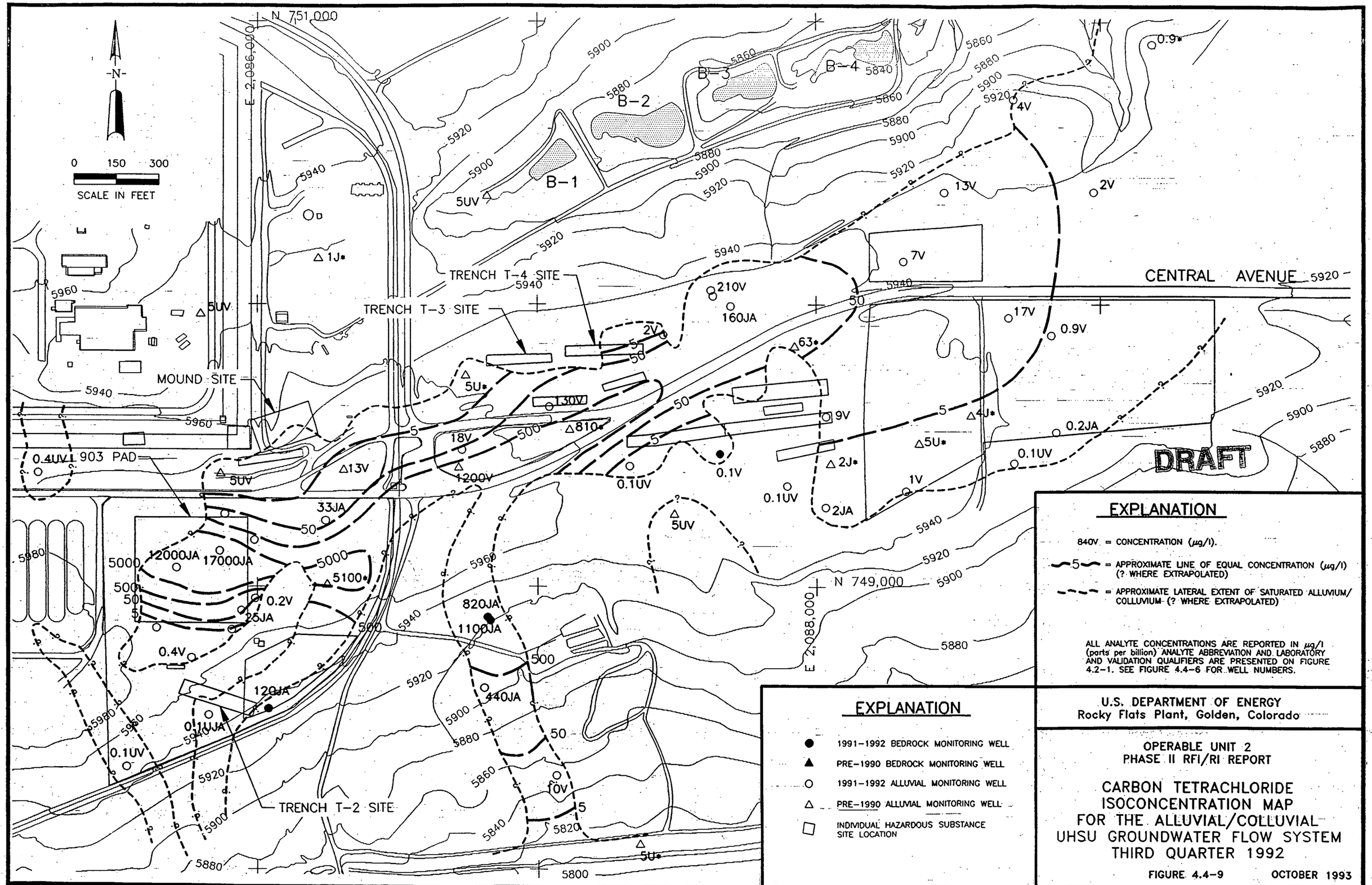
ALLUVIAL/COLLUVIAL WELLS USED IN CONTRUCTION OF OF ALLUVIAL/COLLUVIAL ISOCONCENTRATION MAPS

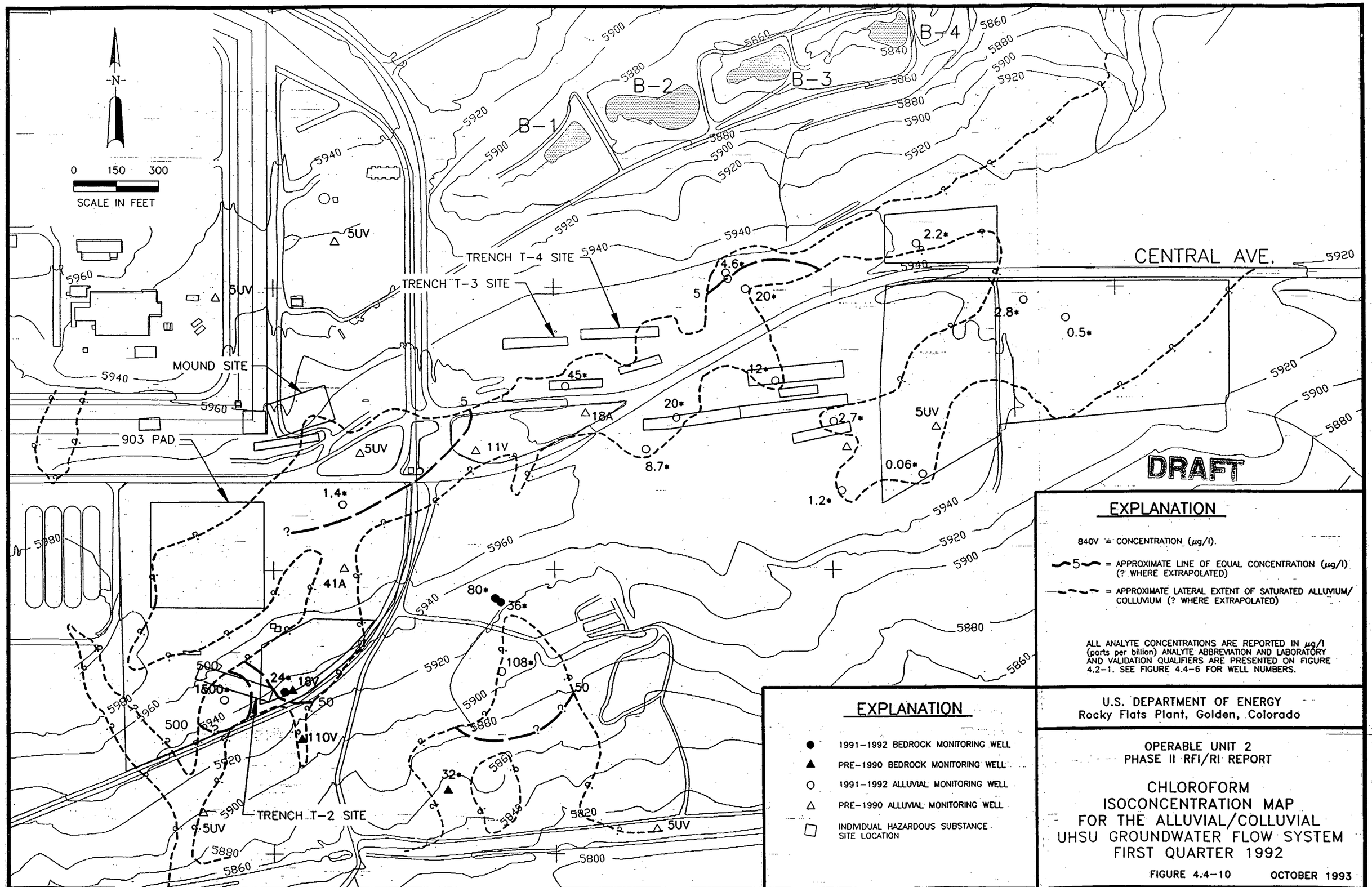
FIGURE 4.4-6 OCTOBER 1993

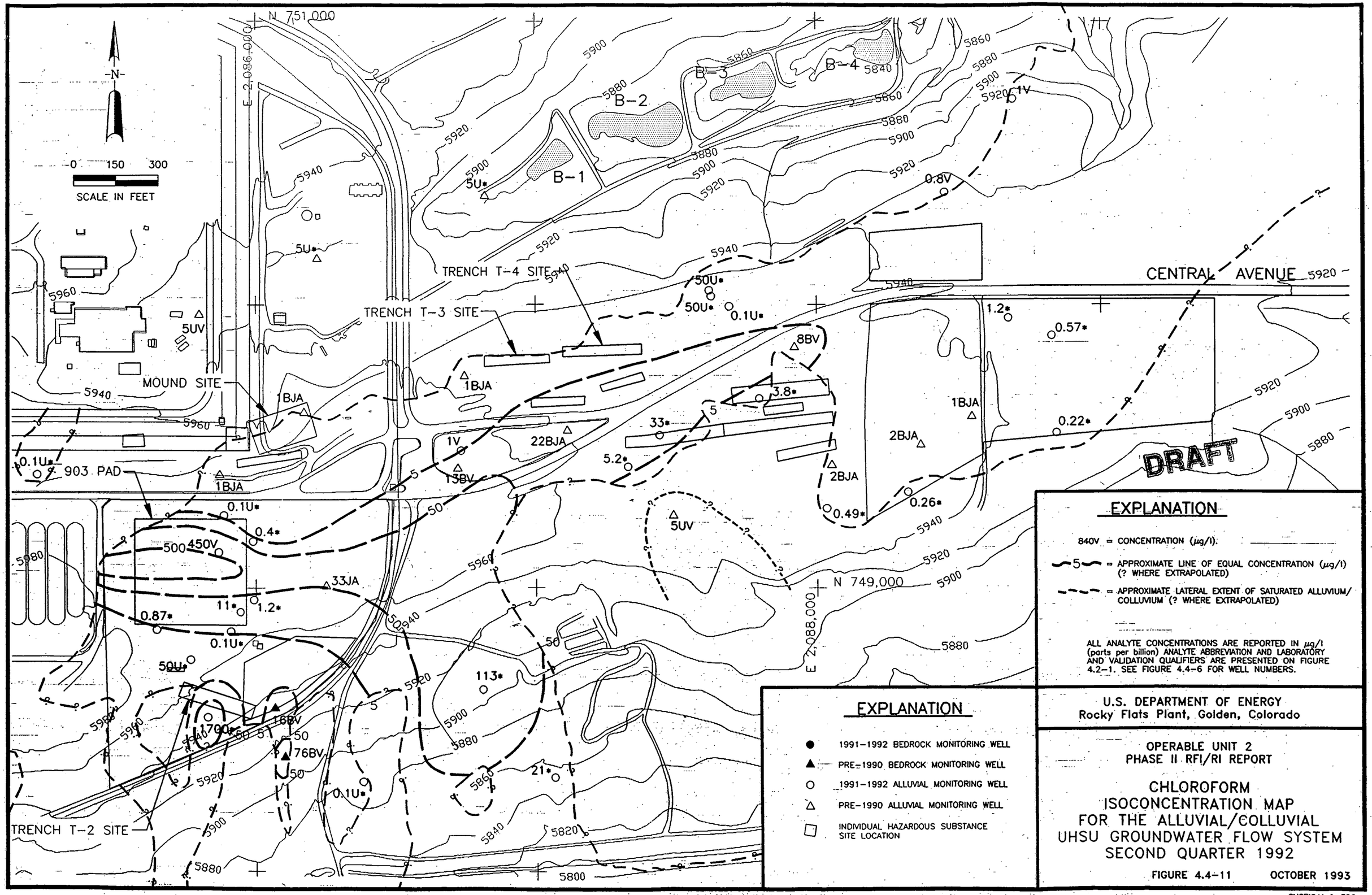
OU2RI335 1=300

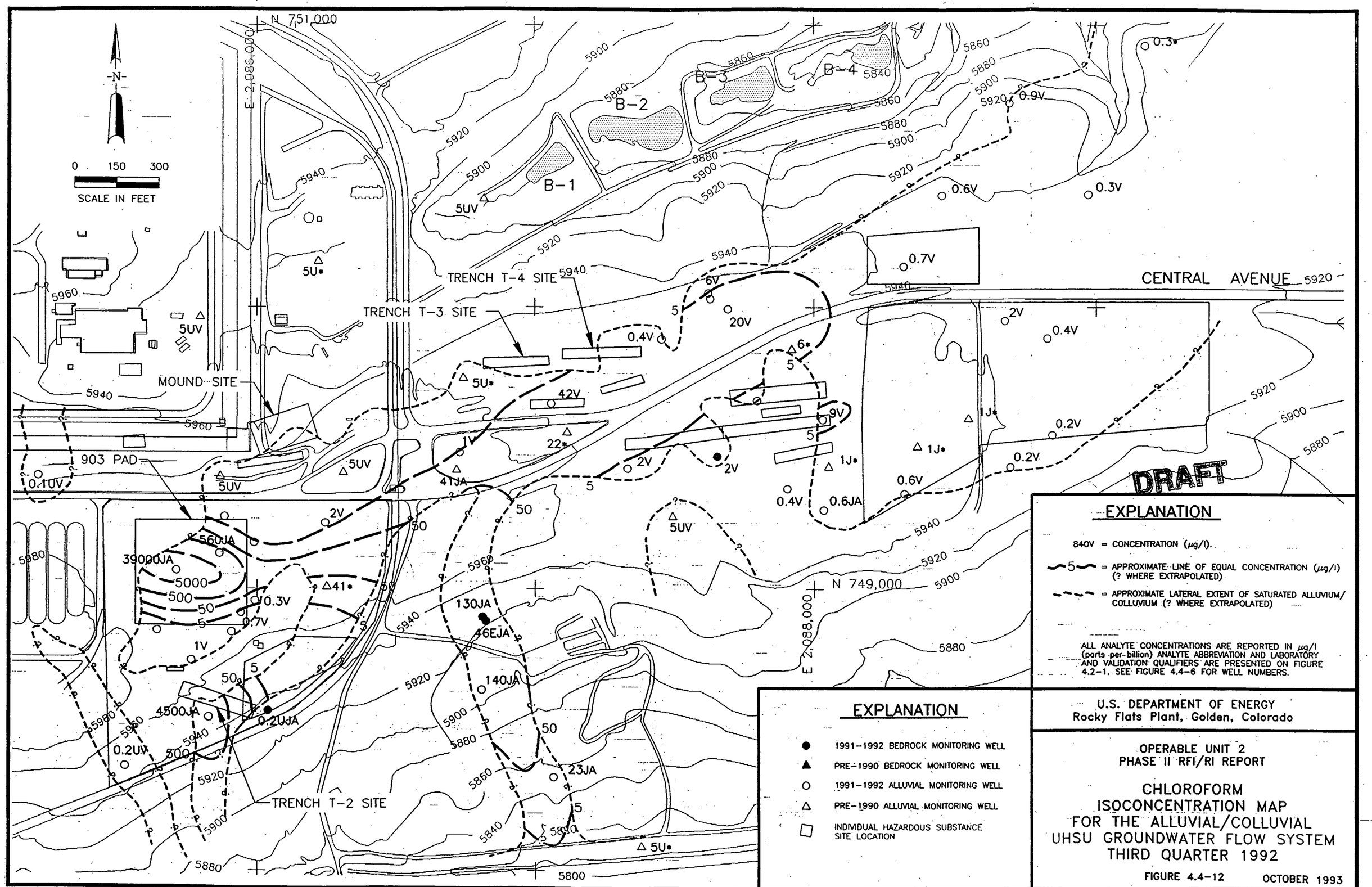

-N-
0 150 300
SCALE IN FEET
B-1
B-2
B-3
B-4
CENTRAL AVE.
TRENCH T-4 SITE
TRENCH T-3 SITE
MOUND SITE
903 PAD
TRENCH T-2 SITE
5UV
20V
1200V
840V
4600V
360*
47.1*
60*
20*
19*
0.7*
0.9*
0.2U*
2.7*
1.6*
4.9*
450*
890*
440*
2300*
59*
680*
270*
DRAFT
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CARBON TETRACHLORIDE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992
FIGURE 4.4-7
OCTOBER 1993
OU2R1053 1=300

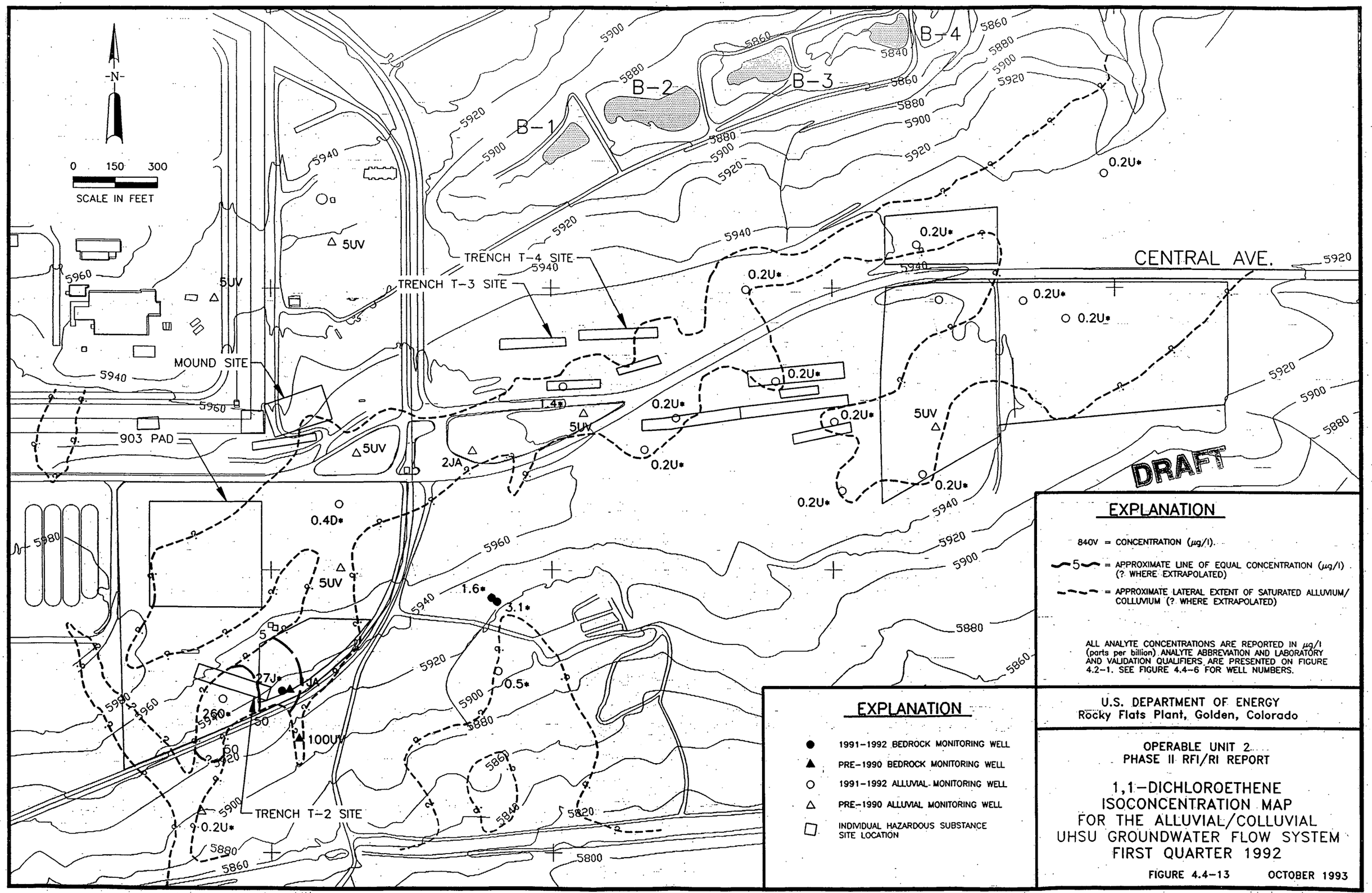

-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
TRENCH T-4 SITE
TRENCH T-3 SITE
MOUND SITE
903 PAD
TRENCH T-2 SITE
CENTRAL AVENUE
DRAFT
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CARBON TETRACHLORIDE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
SECOND QUARTER 1992
FIGURE 4.4-8
OCTOBER 1993
OU2RI040 1=300

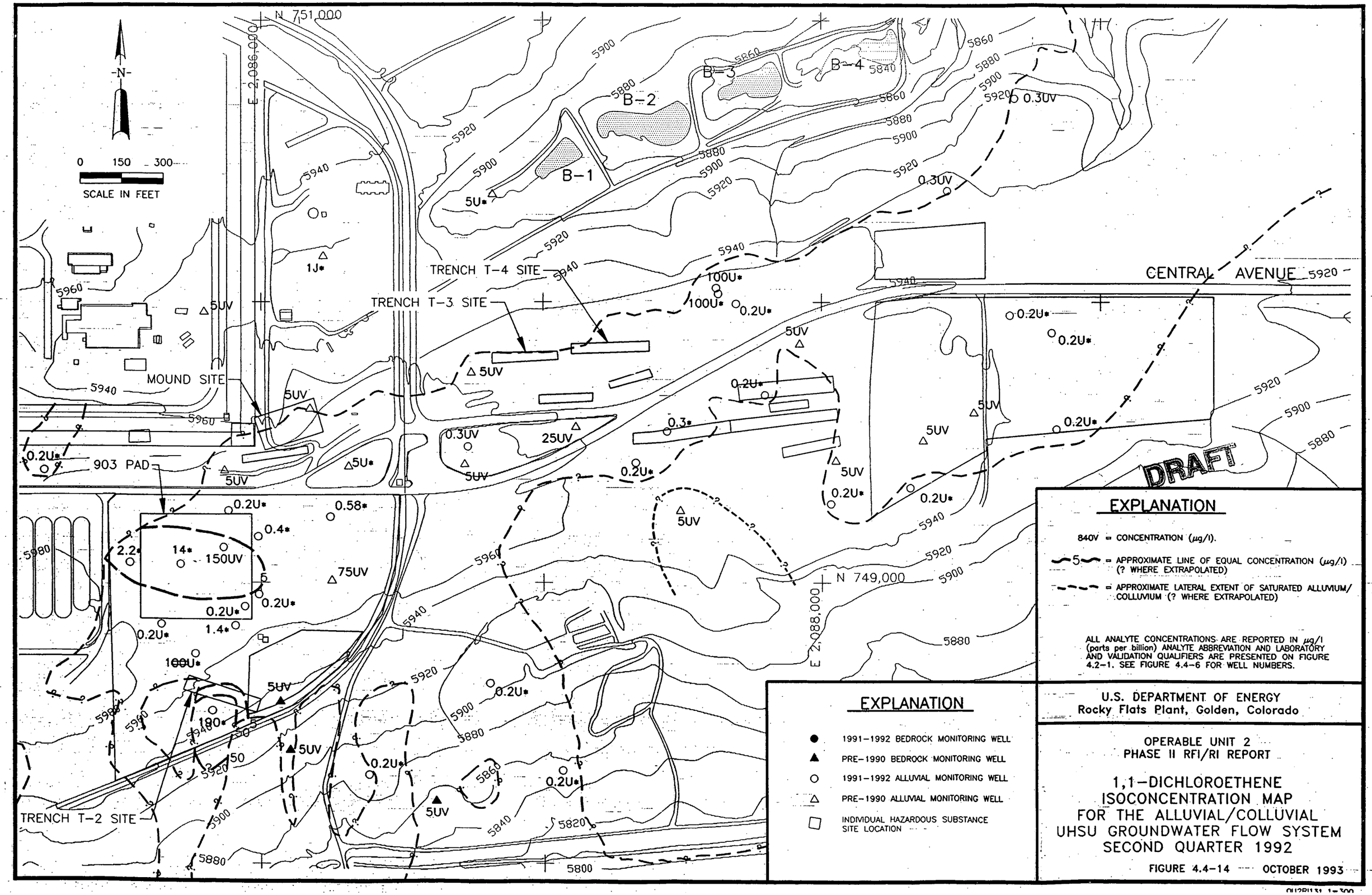

-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,096,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
CENTRAL AVENUE
TRENCH T-4 SITE
TRENCH T-3 SITE
MOUND SITE
903 PAD
TRENCH T-2 SITE
DRAFT
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CARBON TETRACHLORIDE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992
FIGURE 4.4-9
OCTOBER 1993
0U2RI030 1=300

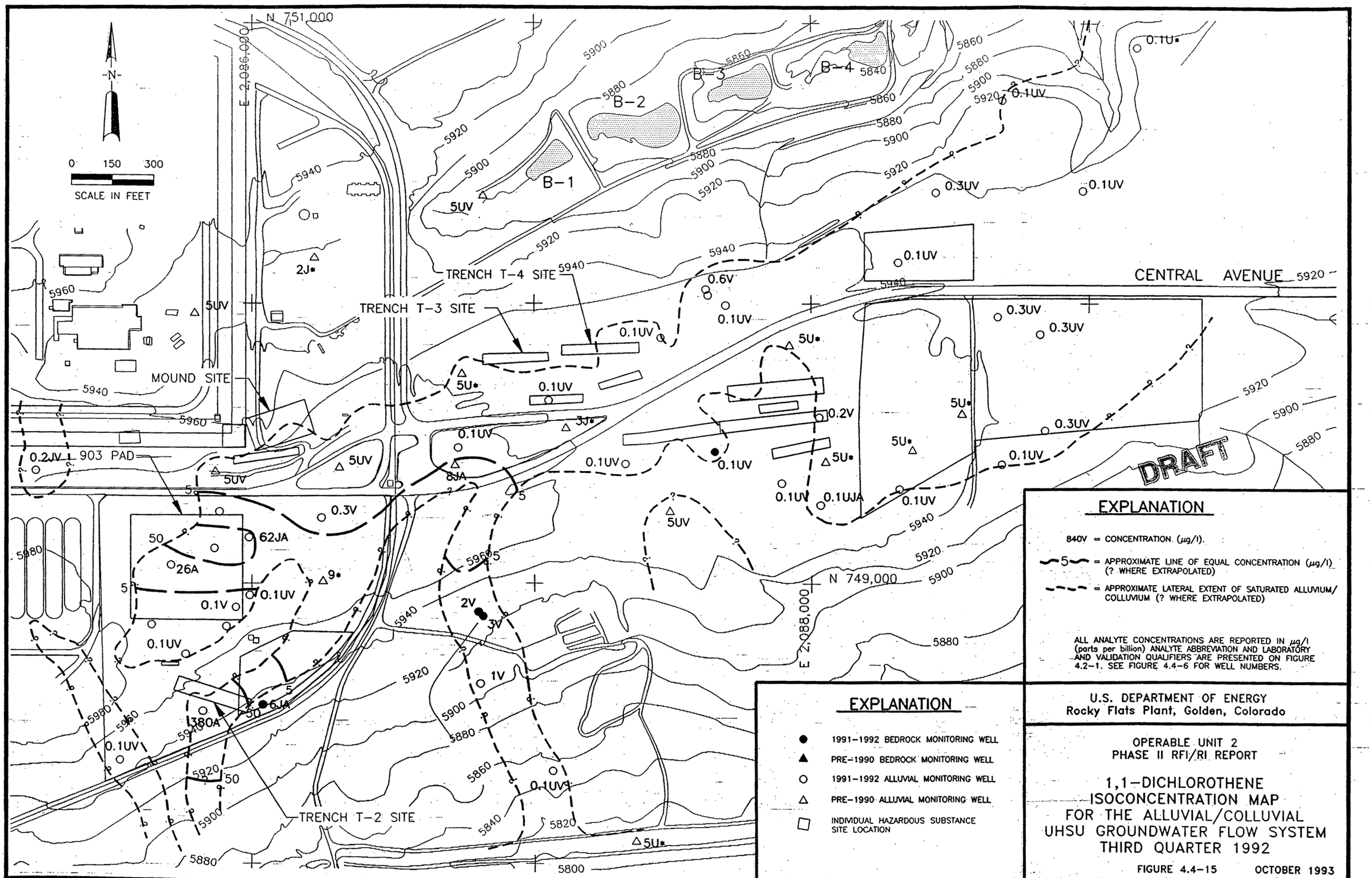

-N-
0 150 300
SCALE IN FEET
B-1
B-2
B-3
B-4
TRENCH T-4 SITE
TRENCH T-3 SITE
MOUND SITE
903 PAD
TRENCH T-2 SITE
CENTRAL AVE.
DRAFT
5UV
18A
11V
41A
18V
110V
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CHLOROFORM
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992
FIGURE 4.4-10
OCTOBER 1993
OU2RI064 1=300

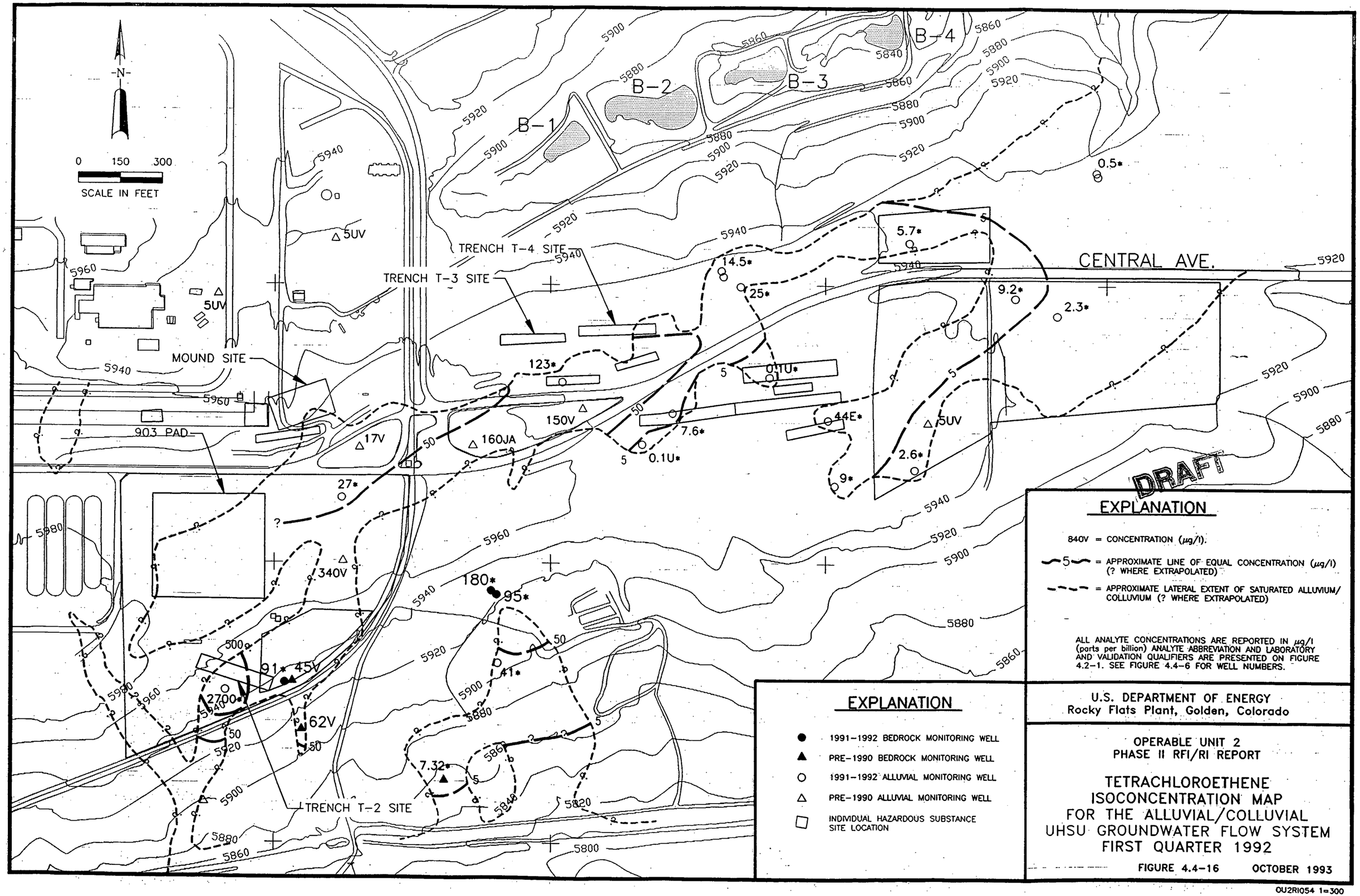

N
0 150 300
SCALE IN FEET
N 751,000
E 2,096,000
B-1
B-2
B-3
B-4
TRENCH T-4 SITE
TRENCH T-3 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
CENTRAL AVENUE
DRAFT
N 749,000
E 2,088,000
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CHLOROFORM
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
SECOND QUARTER 1992
FIGURE 4.4-11
OCTOBER 1993
OU2RI041 1=300

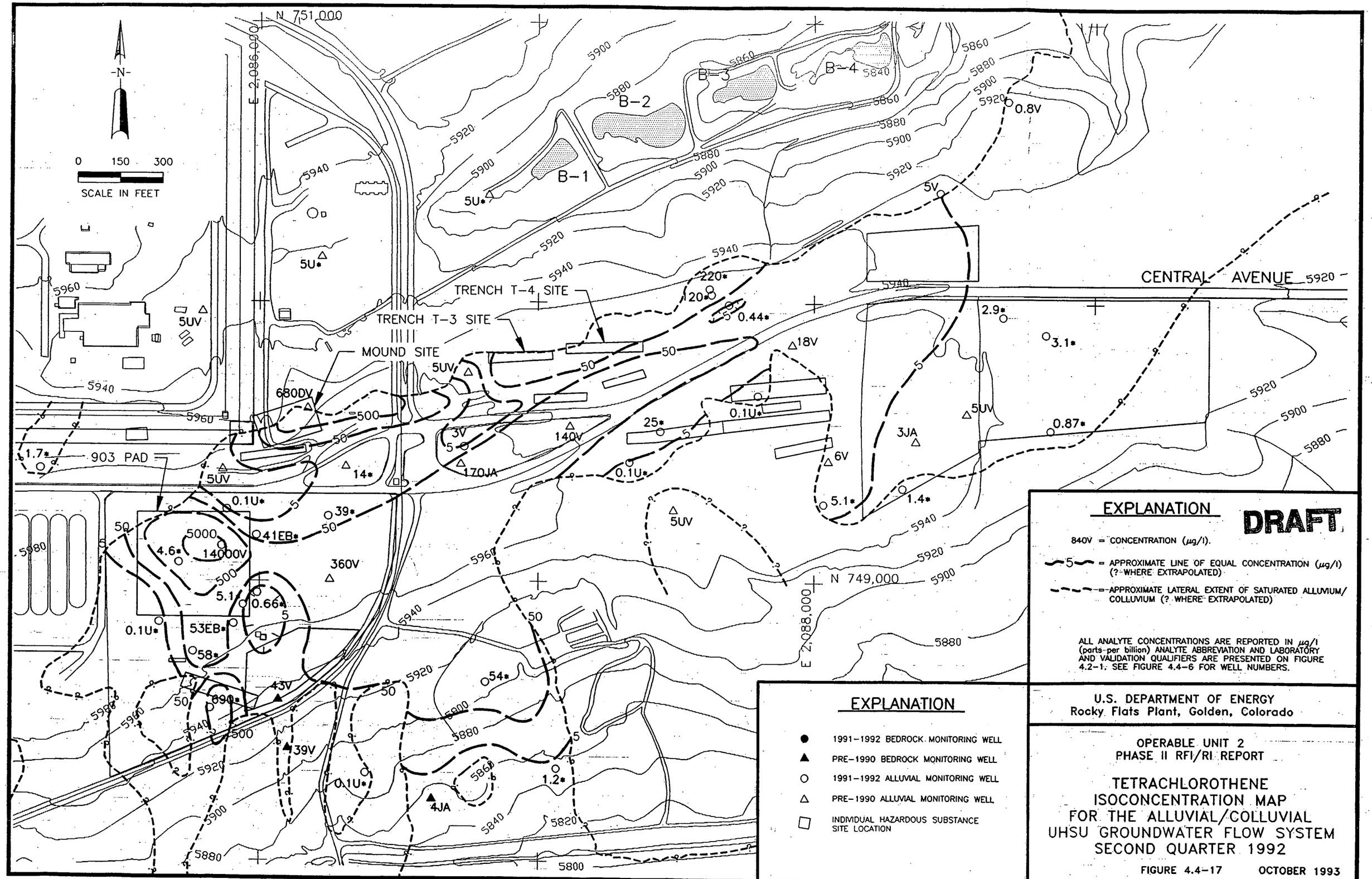

-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
CENTRAL AVENUE
TRENCH T-4 SITE
TRENCH T-3 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
DRAFT
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CHLOROFORM
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992
FIGURE 4.4-12
OCTOBER 1993
OU2RI031 1=300


-N-
0 150 300
SCALE IN FEET
B-1
B-2
B-3
B-4
CENTRAL AVE.
TRENCH T-4 SITE
TRENCH T-3 SITE
MOUND SITE
903 PAD
TRENCH T-2 SITE
DRAFT
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion). ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
1,1-DICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992
FIGURE 4.4-13
OCTOBER 1993
OU2RI063. 1=300

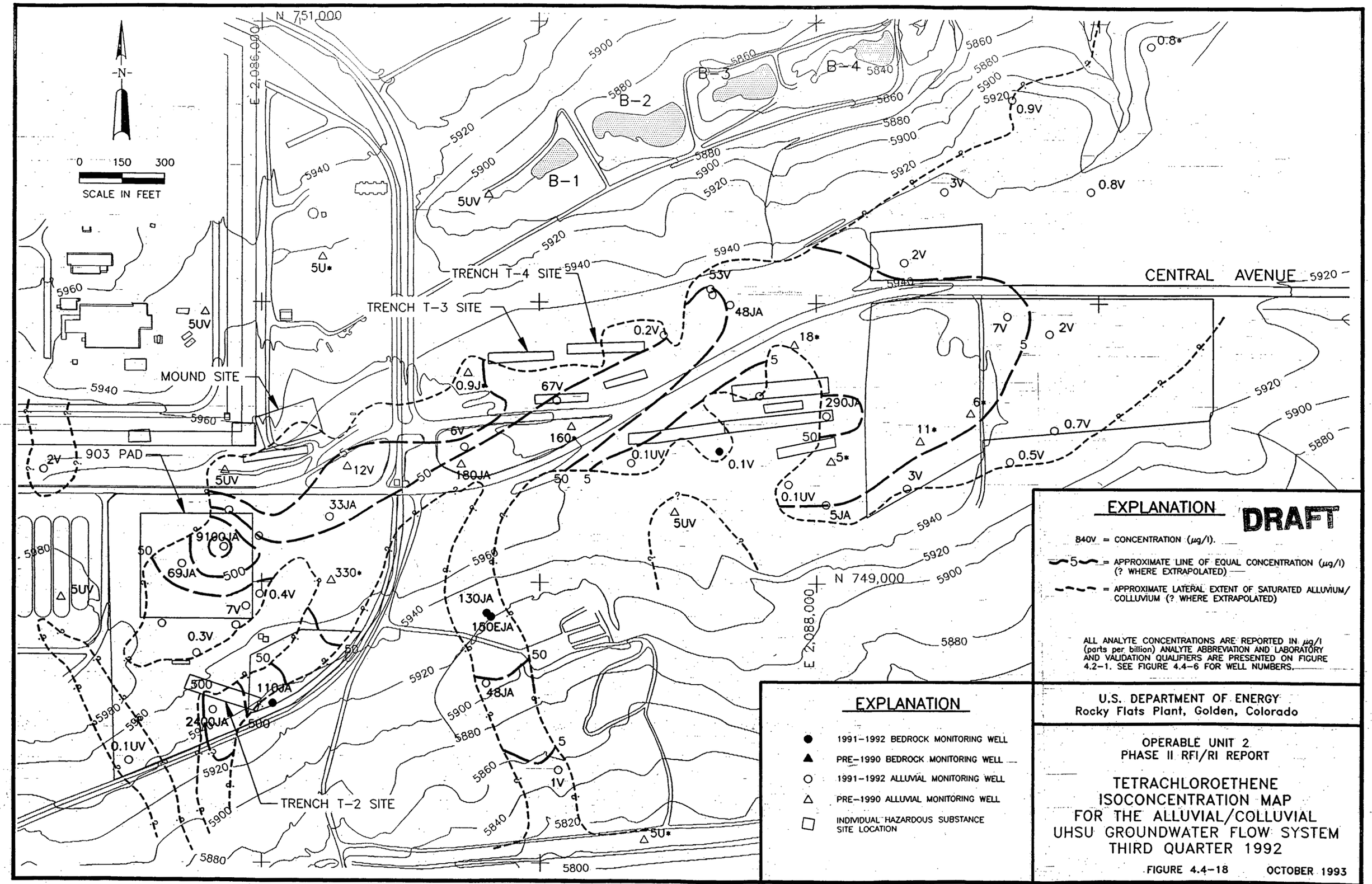

-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
TRENCH T-4 SITE
TRENCH T-3 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
CENTRAL AVENUE
DRAFT
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
1,1-DICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
SECOND QUARTER 1992
FIGURE 4.4-14 OCTOBER 1993

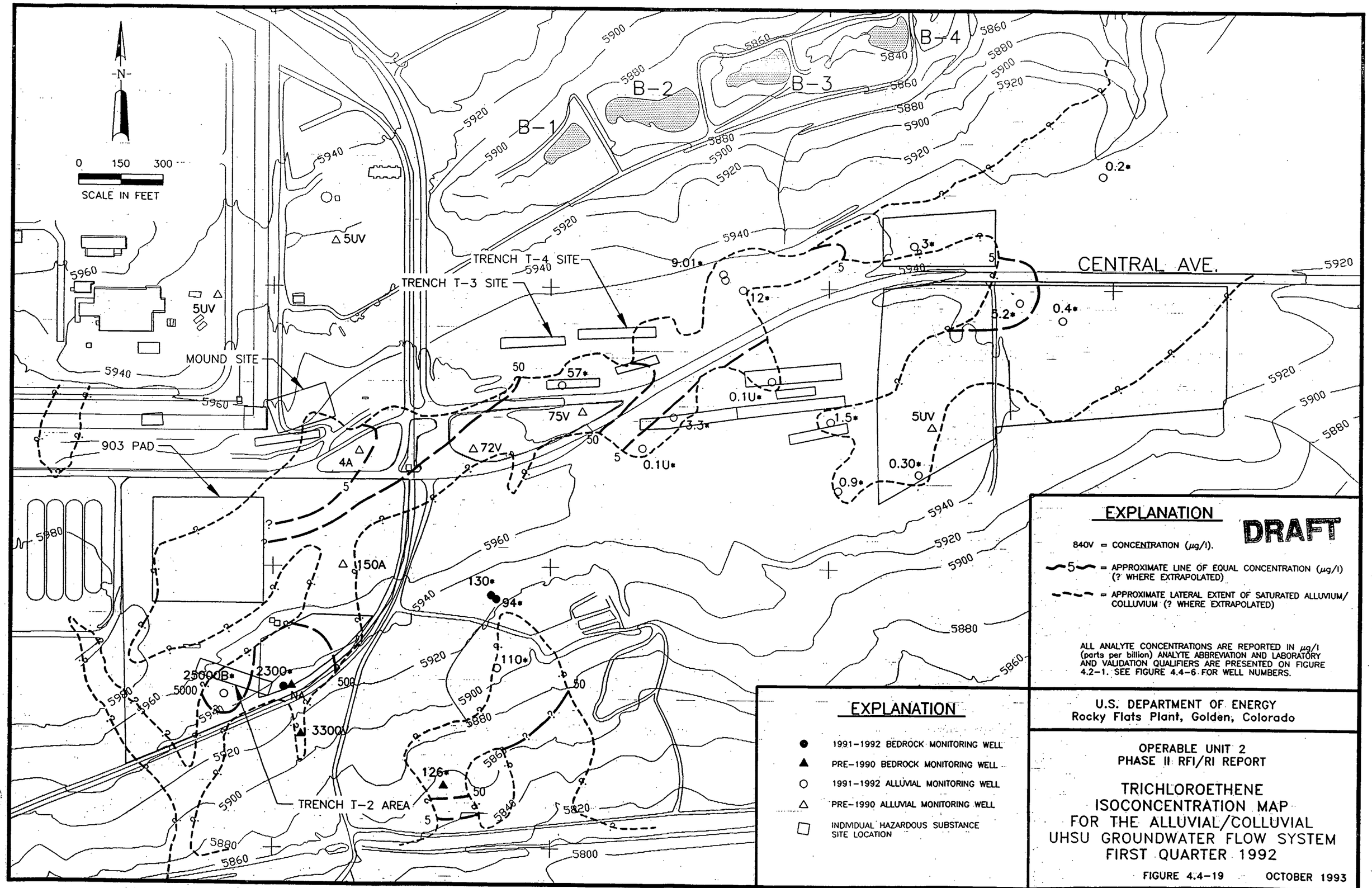

-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
TRENCH T-4 SITE
TRENCH T-3 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
CENTRAL AVENUE
DRAFT
EXPLANATION
840V = CONCENTRATION. (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
1,1-DICHLOROTHENE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992
FIGURE 4.4-15
OCTOBER 1993


-N-
0 150 300
SCALE IN FEET
B-1
B-2
B-3
B-4
TRENCH T-4 SITE
TRENCH T-3 SITE
MOUND SITE
903 PAD
CENTRAL AVE.
TRENCH T-2 SITE
5UV
17V
160JA
150V
340V
62V
45V
123*
27*
14.5*
25*
5.7*
9.2*
2.3*
0.5*
0.1U*
7.6*
44E*
2.6*
9*
180*
95*
91*
2700*
41*
7.32*
DRAFT
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
TETRACHLOROETHENE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992
FIGURE 4.4-16 OCTOBER 1993
OU2RI054 1=300



OU2RI043 1=300


-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
CENTRAL AVENUE
TRENCH T-4 SITE
TRENCH T-3 SITE
MOUND SITE
903 PAD
TRENCH T-2 SITE
EXPLANATION
DRAFT
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
TETRACHLOROETHENE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992
FIGURE 4.4-18
OCTOBER 1993
OU2RI033 1=300



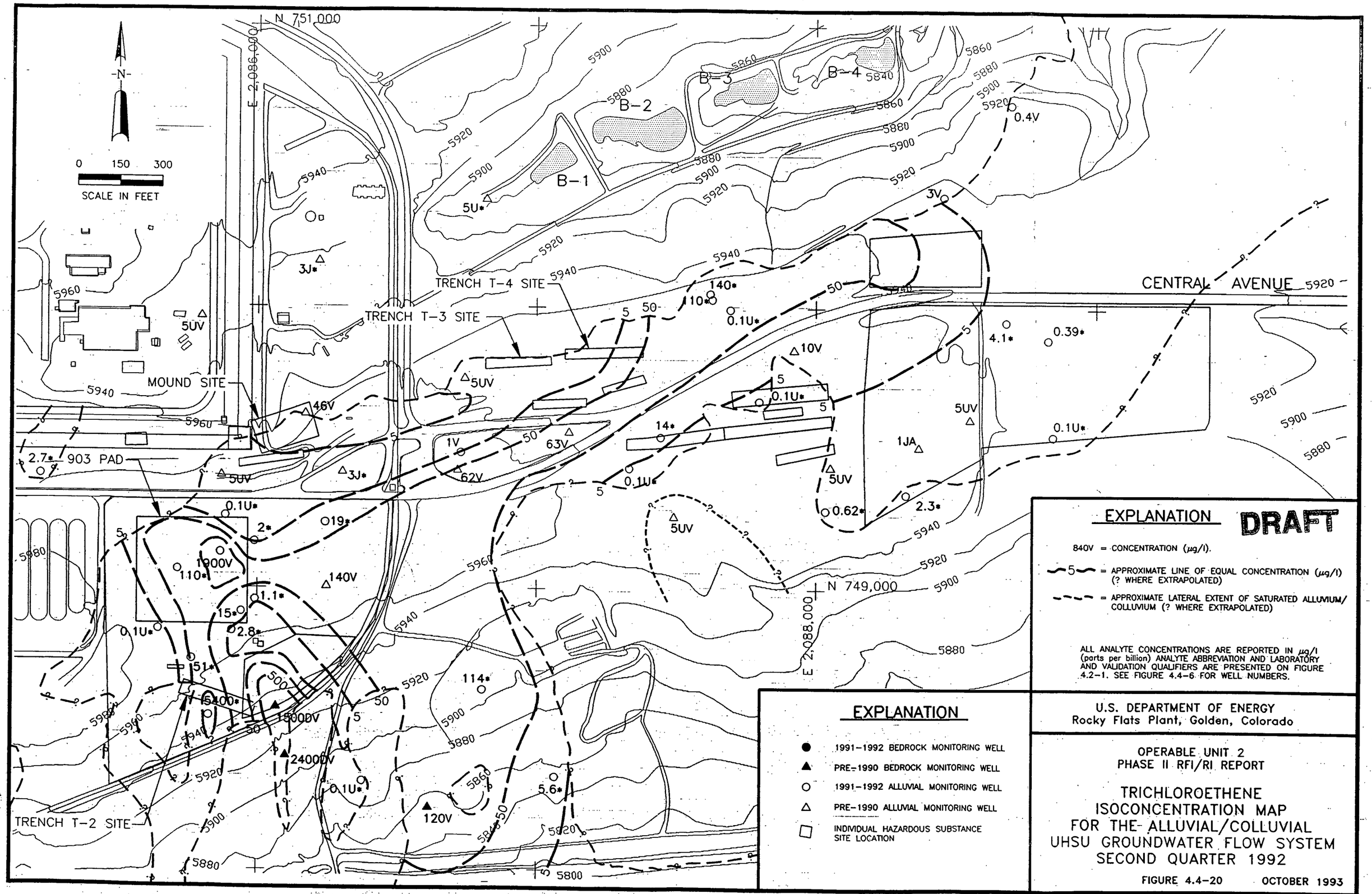
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

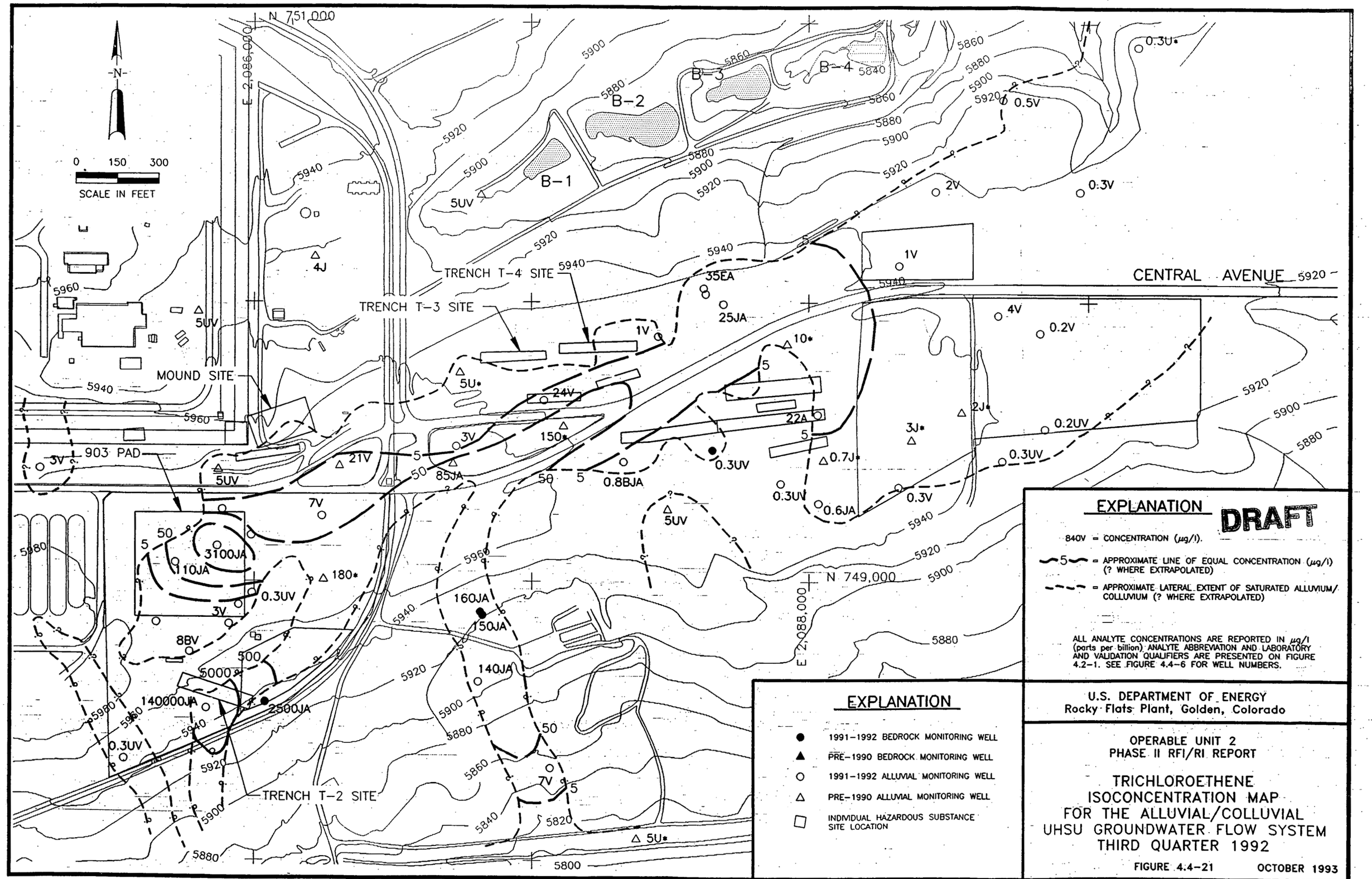
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

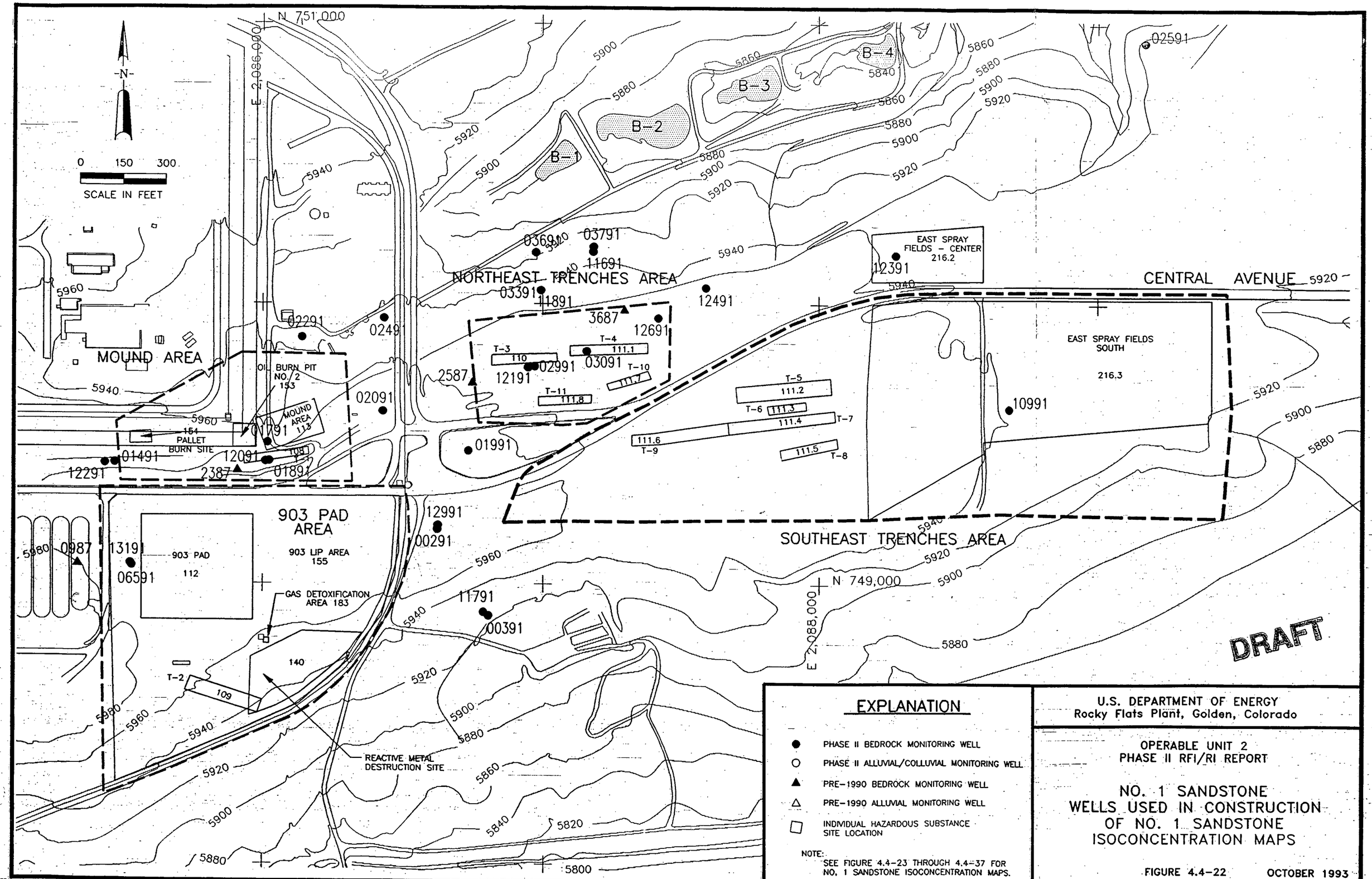
TRICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992

FIGURE 4.4-19 OCTOBER 1993

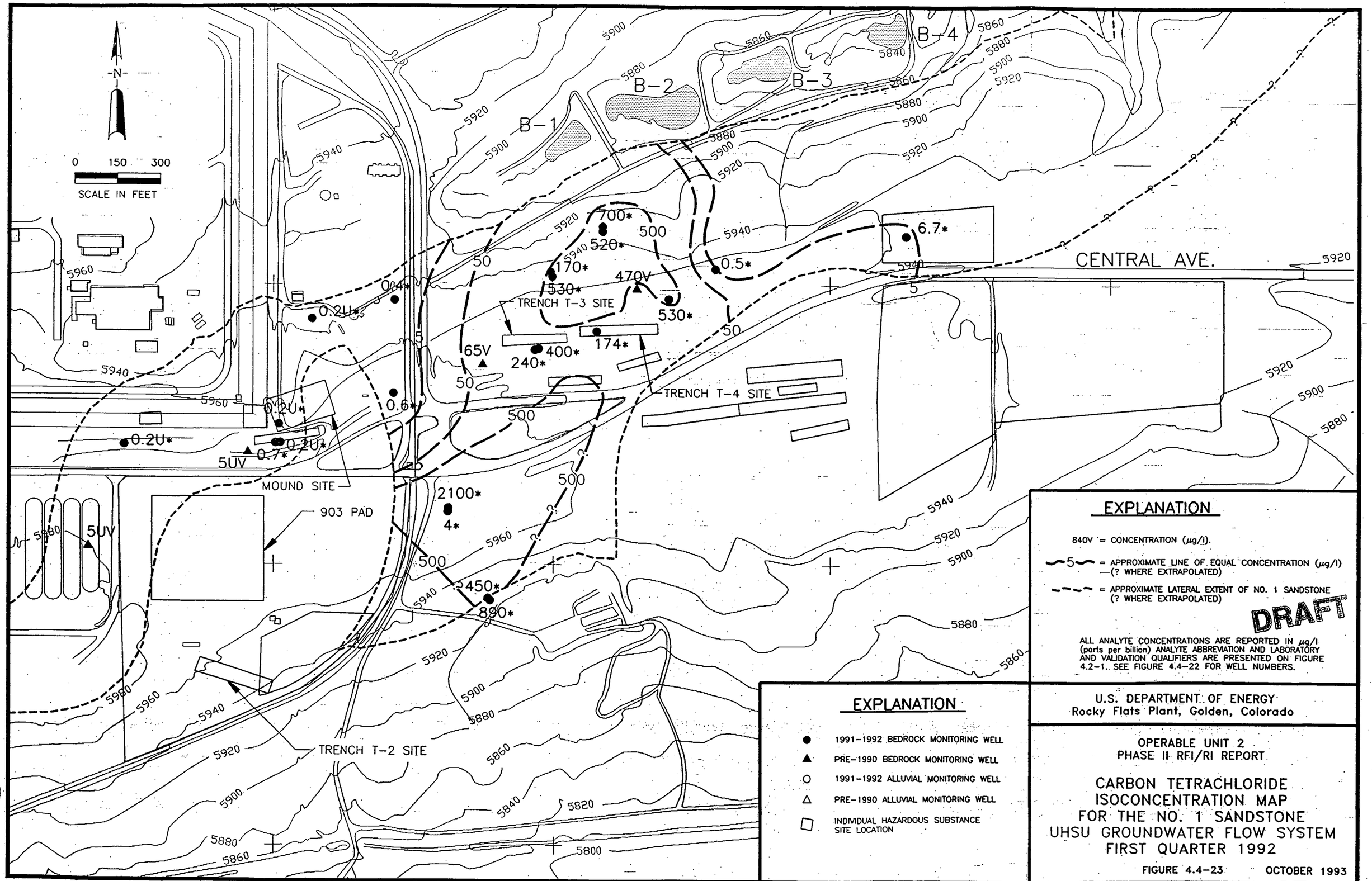
OU2RI055 1=300

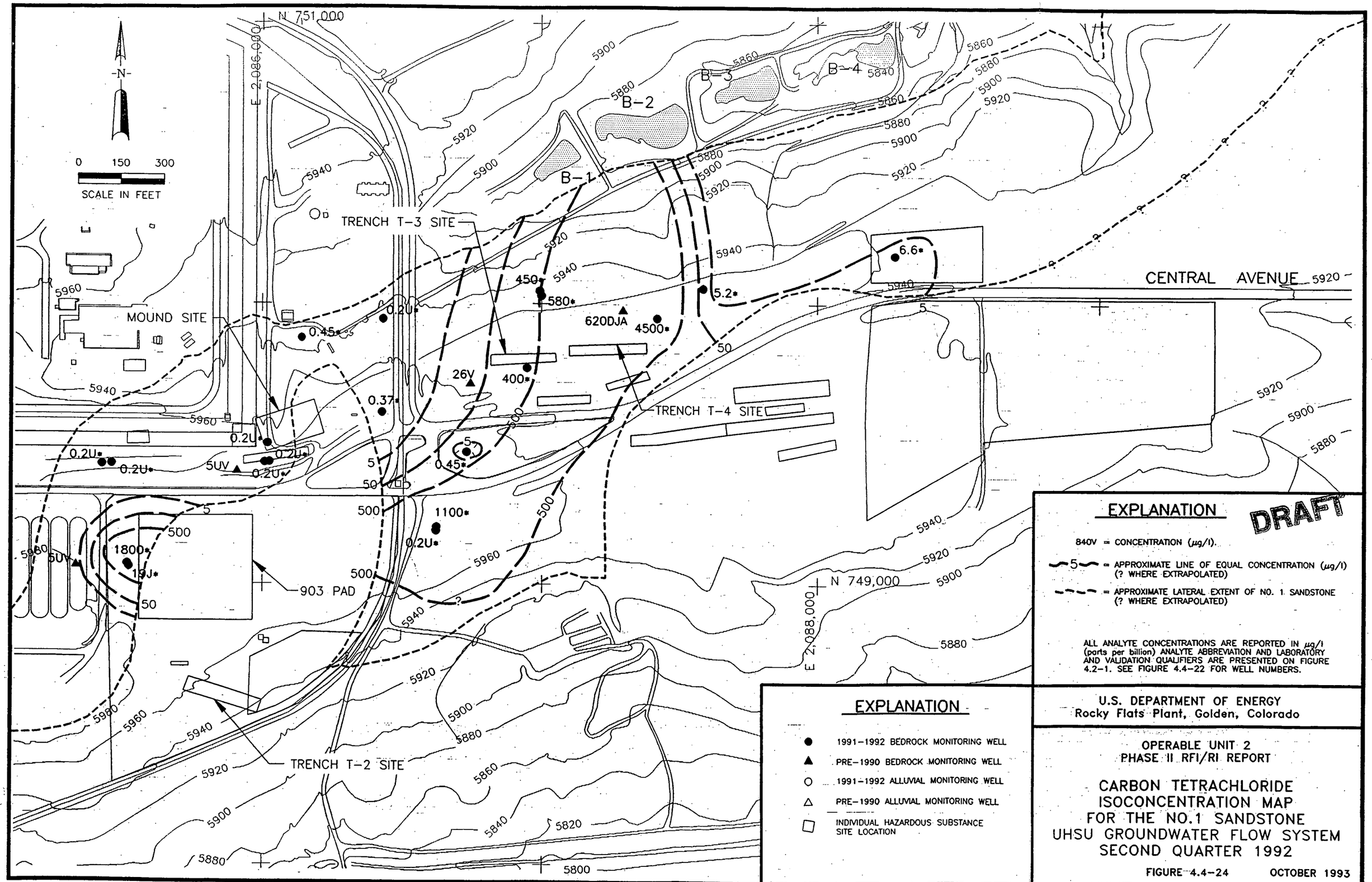

-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
TRENCH T-4 SITE
TRENCH T-3 SITE
MOUND SITE
903 PAD
TRENCH T-2 SITE
CENTRAL AVENUE
EXPLANATION
DRAFT
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
TRICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
SECOND QUARTER 1992
FIGURE 4.4-20
OCTOBER 1993
OU2R1044 1=300

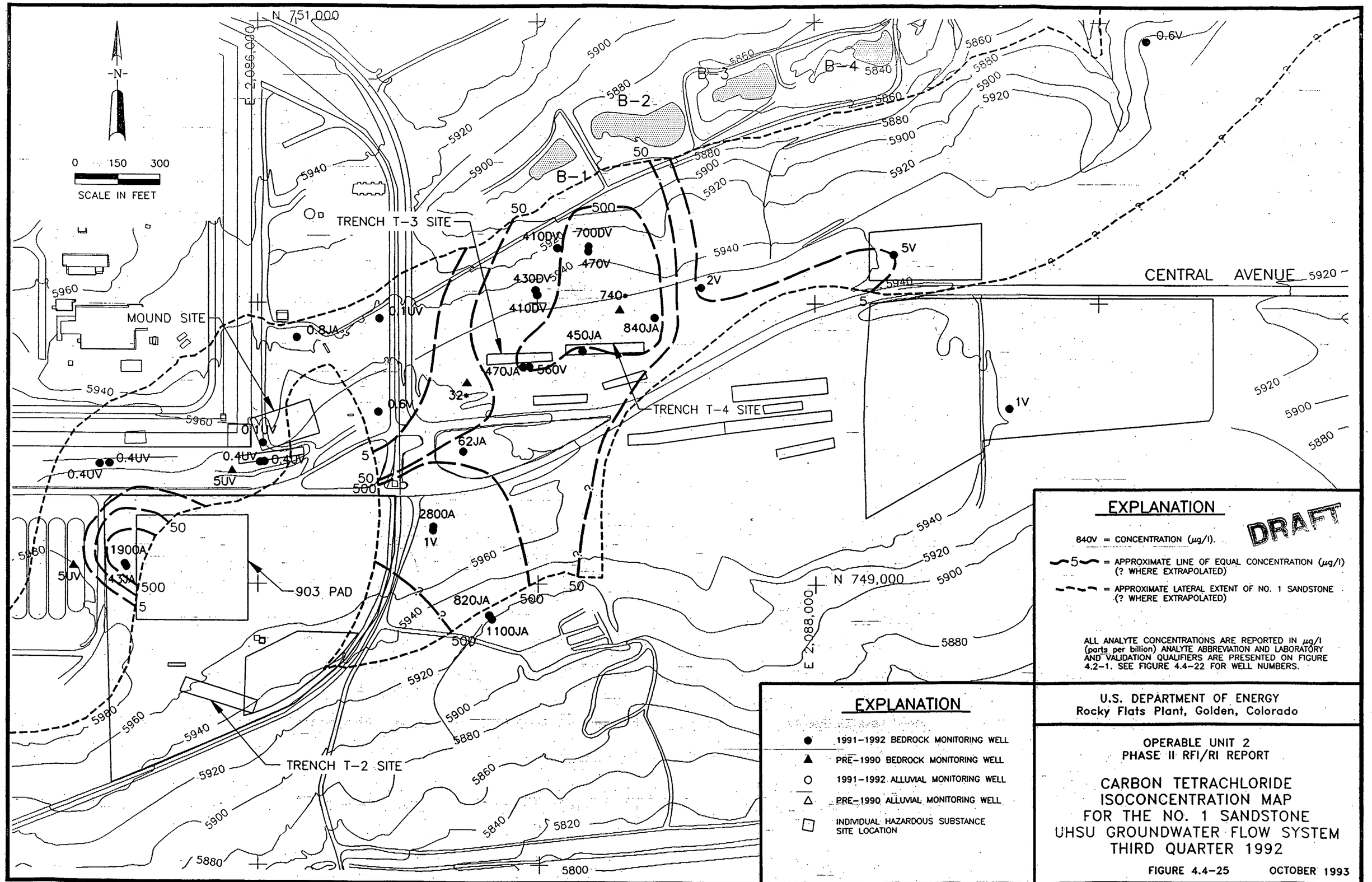

-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
TRENCH T-4 SITE
TRENCH T-3 SITE
MOUND SITE
903 PAD
TRENCH T-2 SITE
CENTRAL AVENUE
EXPLANATION
DRAFT
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF SATURATED ALLUVIUM/ COLLUVIUM (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion). ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-6 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
TRICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE ALLUVIAL/COLLUVIAL
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992
FIGURE 4.4-21
OCTOBER 1993
OU2RI034 1=300

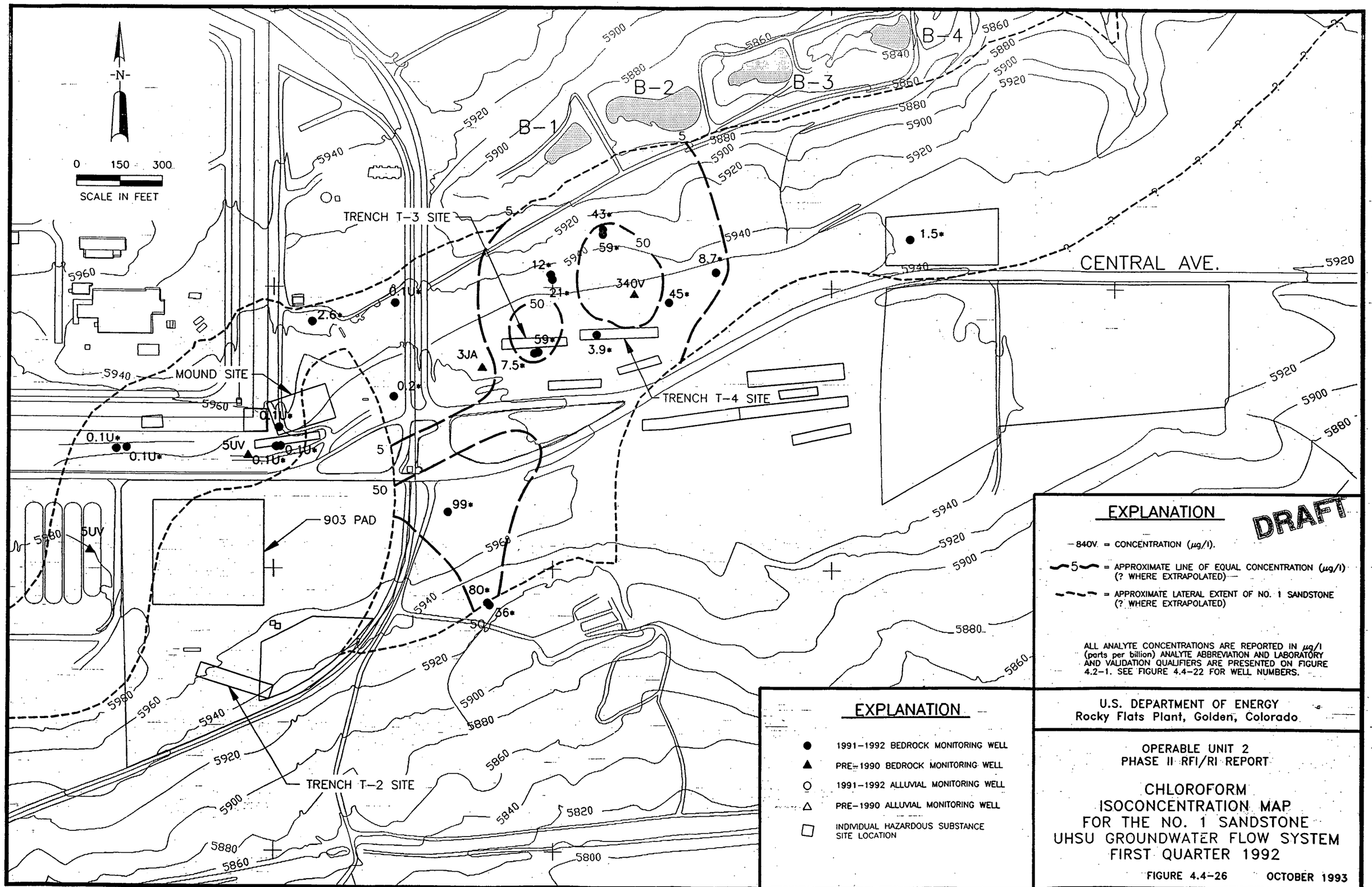

N
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
NORTHEAST TRENCHES AREA
SOUTHEAST TRENCHES AREA
CENTRAL AVENUE
MOUND AREA
OIL BURN PIT NO. 2 153
MOUND AREA 113
154 PALLET BURN SITE
903 PAD AREA
903 PAD 112
903 LIP AREA 155
GAS DETOXIFICATION AREA 183
REACTIVE METAL DESTRUCTION SITE
140
109
T-2
T-3
T-4
T-5
T-6
T-7
T-8
T-9
T-10
T-11
EAST SPRAY FIELDS - CENTER 216.2
EAST SPRAY FIELDS SOUTH 216.3
DRAFT
EXPLANATION
PHASE II BEDROCK MONITORING WELL
PHASE II ALLUVIAL/COLLUVIAL MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
SEE FIGURE 4.4-23 THROUGH 4.4-37 FOR NO. 1 SANDSTONE ISOCONCENTRATION MAPS.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
NO. 1 SANDSTONE
WELLS USED IN CONSTRUCTION
OF NO. 1 SANDSTONE
ISOCONCENTRATION MAPS
FIGURE 4.4-22
OCTOBER 1993
OU2RI336 1=300

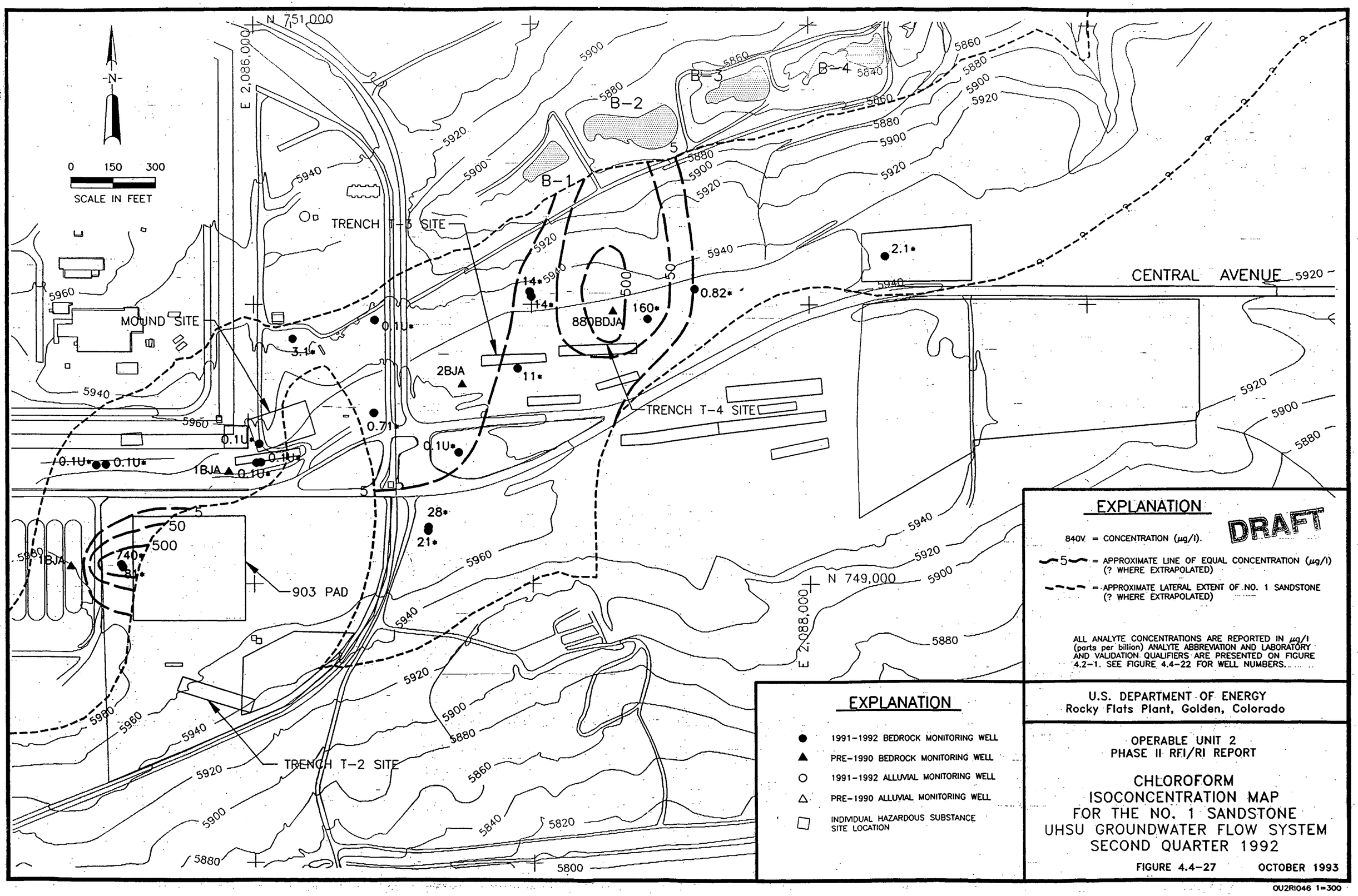
100

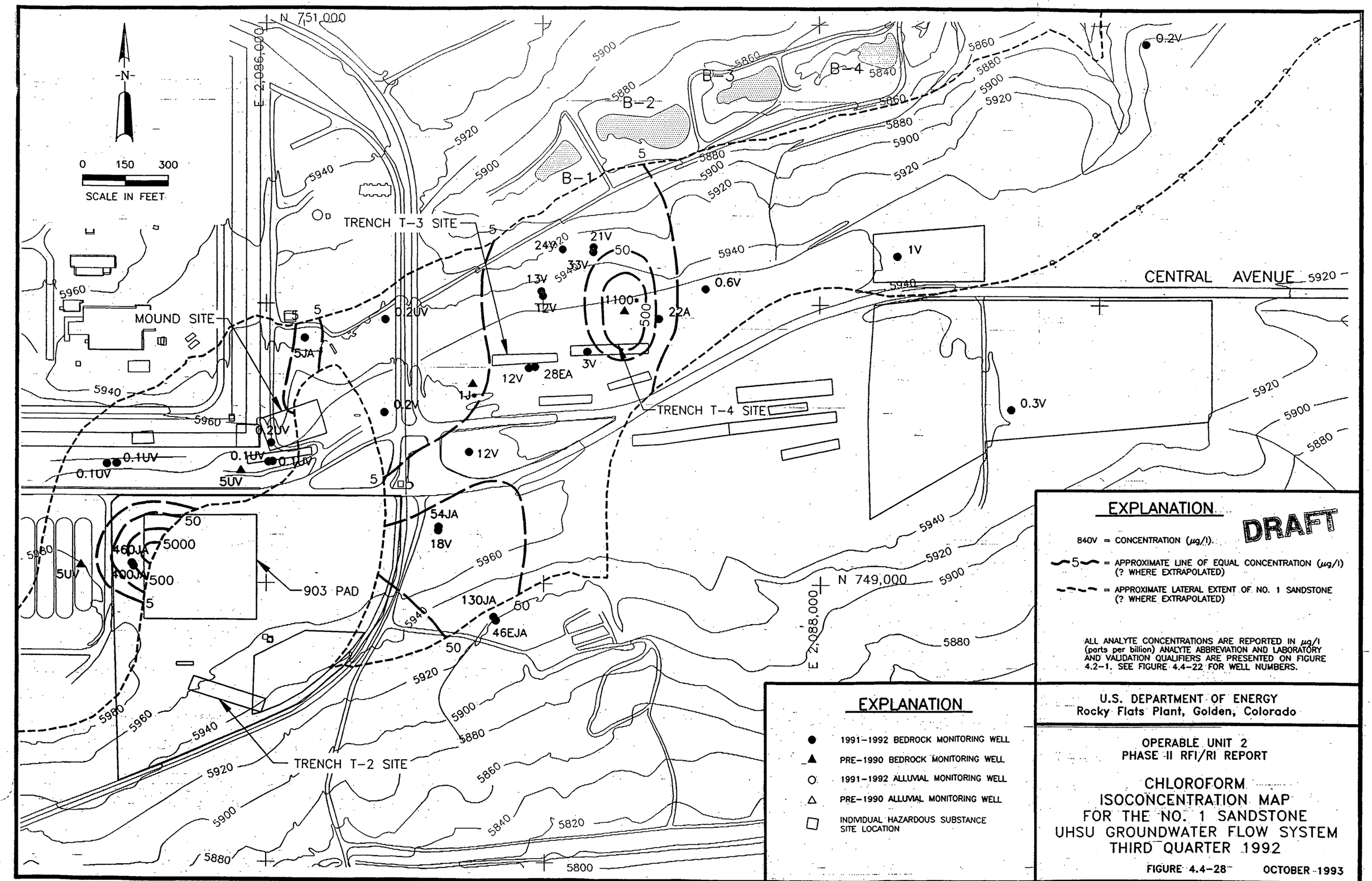

N
0 150 300
SCALE IN FEET
B-1
B-2
B-3
B-4
CENTRAL AVE.
TRENCH T-3 SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
700*
520*
500
170*
530*
470V
530*
0.5*
6.7*
0.4*
0.2U*
65V
240*
400*
174*
50
0.6*
0.2U*
0.2U*
0.7*
5UV
2100*
4*
450*
890*
5UV
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
DRAFT
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CARBON TETRACHLORIDE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992
FIGURE 4.4-23
OCTOBER 1993
OU2RI056 1=300

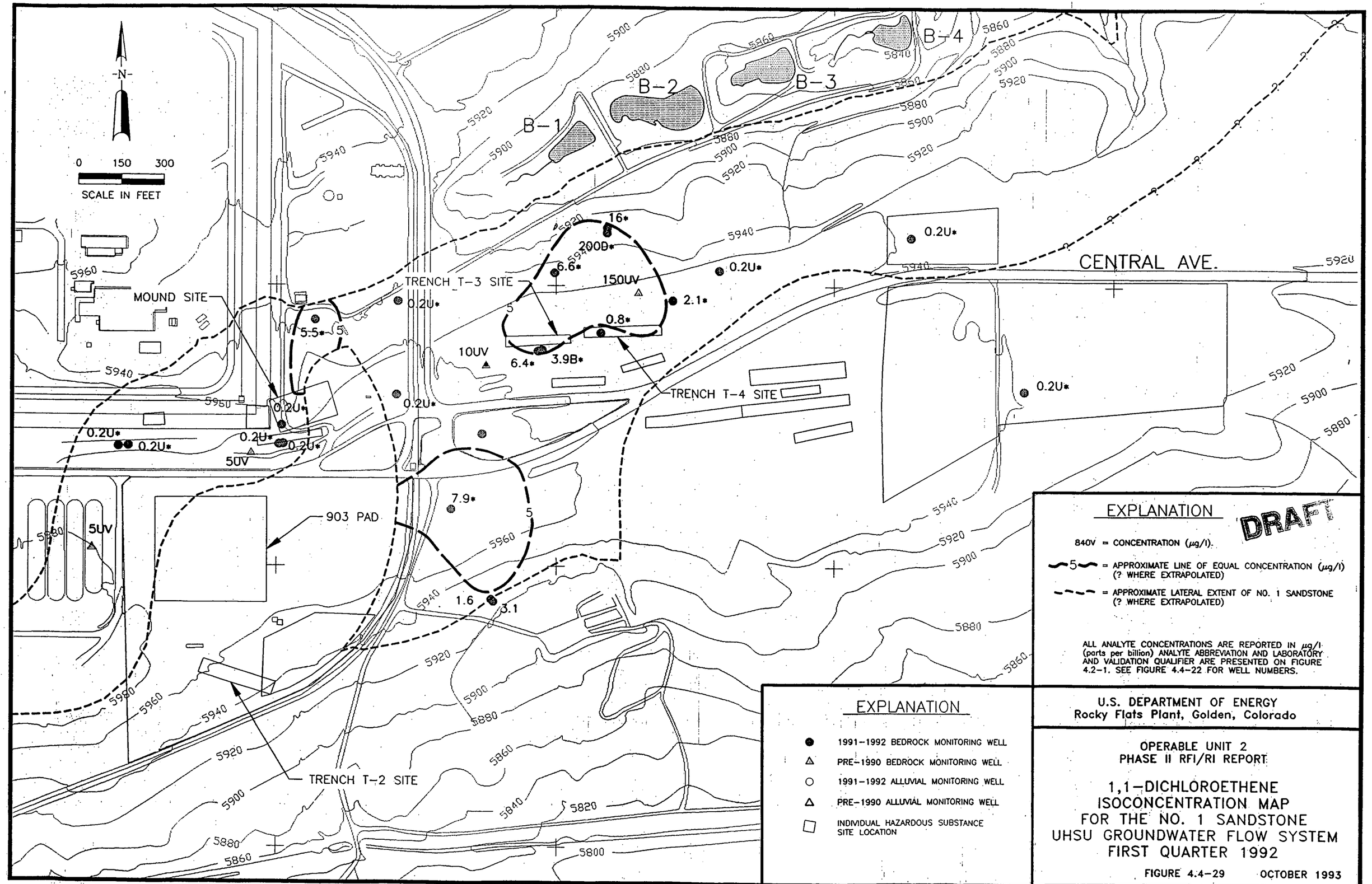

N
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
B-1
B-2
B-3
B-4
TRENCH T-3 SITE
MOUND SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
903 PAD
CENTRAL AVENUE
620DJA
26V
5UV
450*
580*
4500*
400*
1100*
1800*
19J*
6.6*
5.2*
0.45*
0.37*
0.2U*
N 749,000
E 2,088,000
EXPLANATION
DRAFT
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CARBON TETRACHLORIDE
ISOCONCENTRATION MAP
FOR THE NO.1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
SECOND QUARTER 1992
FIGURE 4.4-24
OCTOBER 1993
OU2RI045 1=300

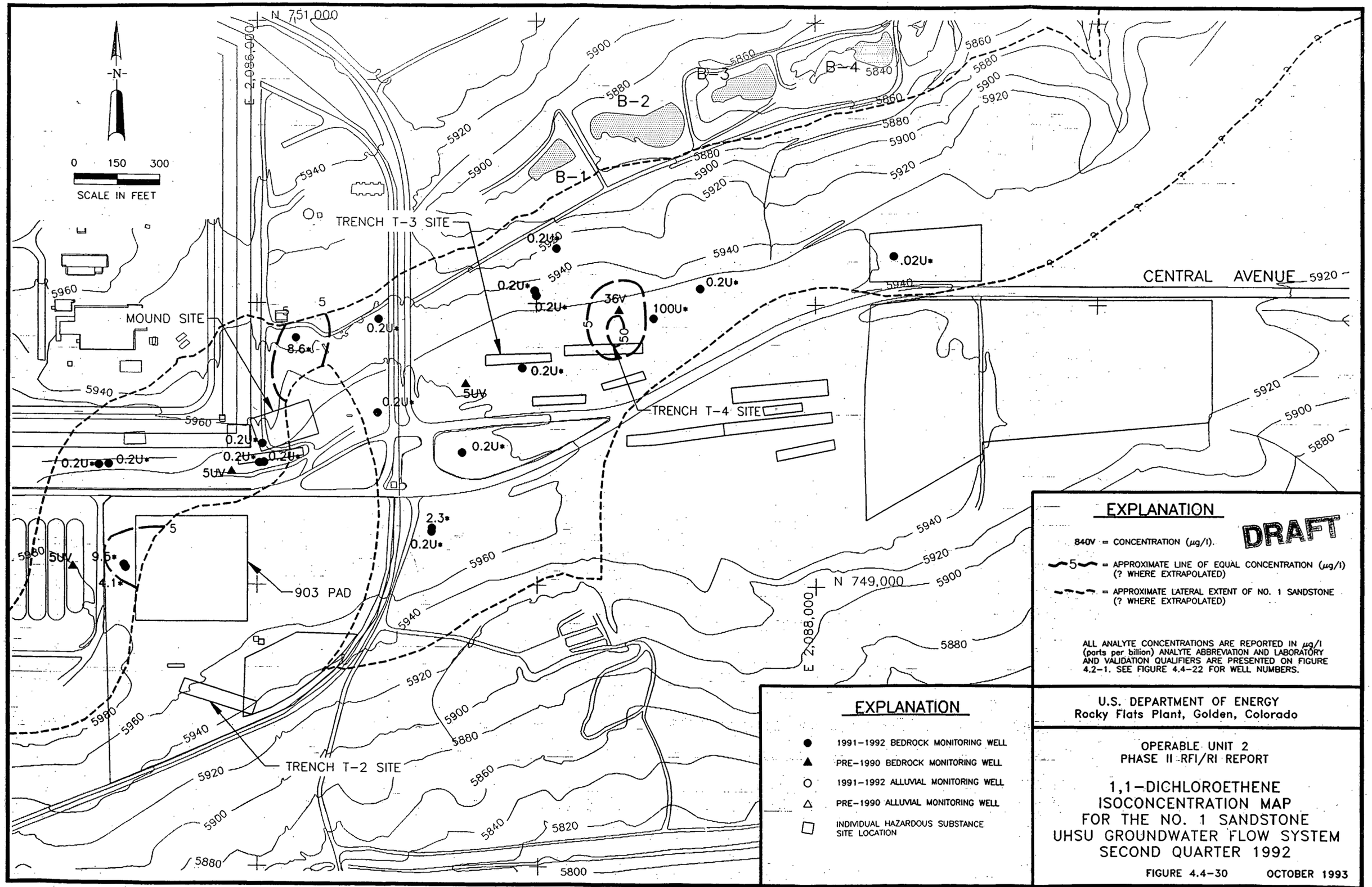

-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
CENTRAL AVENUE
MOUND SITE
TRENCH T-3 SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
903 PAD
B-1
B-2
B-3
B-4
410DV
700DV
470V
430DV
410DV
740
840JA
450JA
470JA
560V
32
62JA
2800A
1V
1900A
430JA
820JA
1100JA
0.8JA
0.1UV
0.6V
0.4UV
5UV
2V
5V
0.6V
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
DRAFT
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CARBON TETRACHLORIDE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992
FIGURE 4.4-25
OCTOBER 1993
OU2RI035 1=300

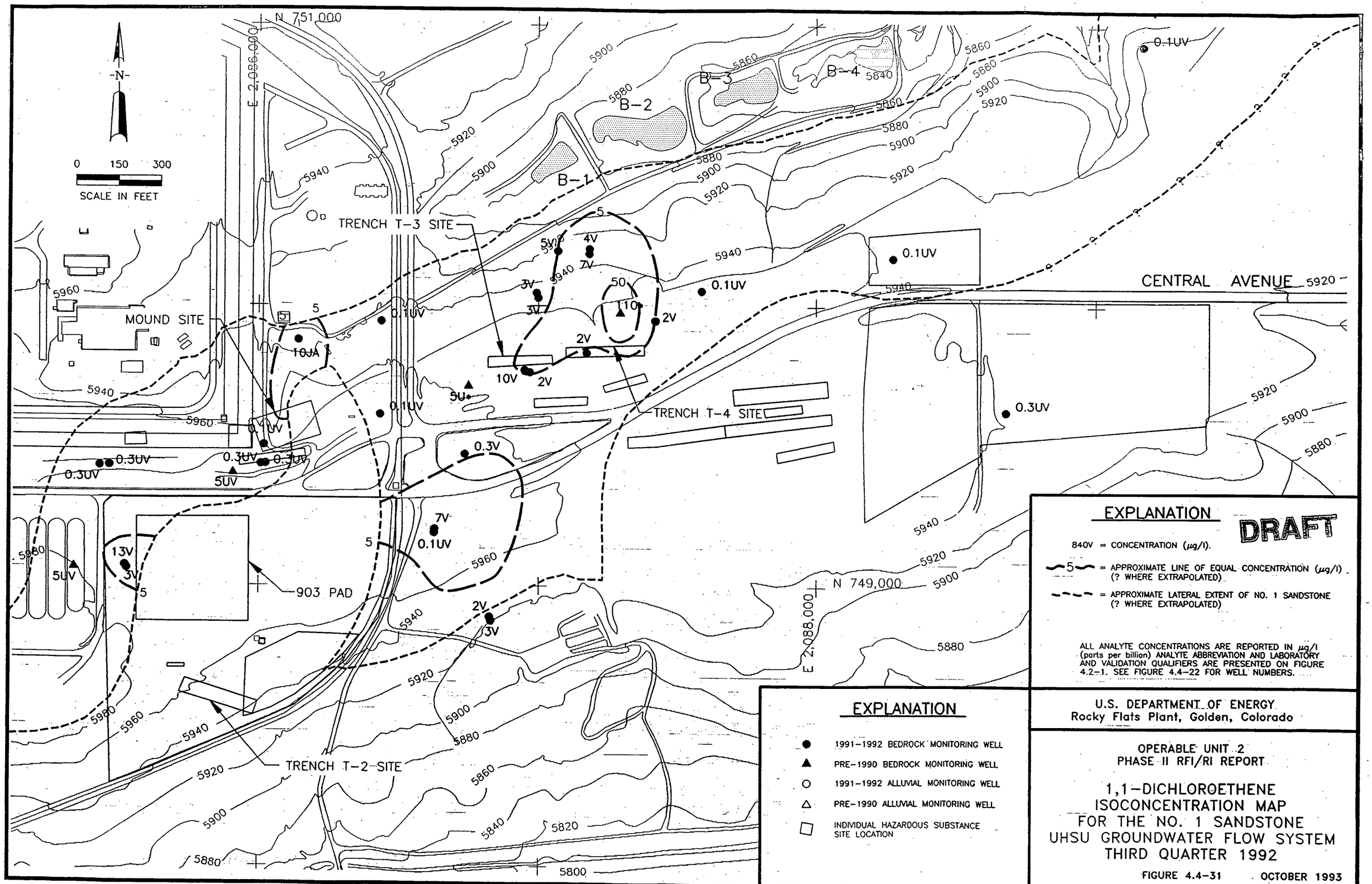

-N-
0 150 300
SCALE IN FEET
B-1
B-2
B-3
B-4
TRENCH T-3 SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
CENTRAL AVE.
43*
59*
50
12*
21*
340V
45*
8.7*
1.5*
2.6*
0.1U*
3JA
7.5*
3.9*
0.2*
5UV
99*
80*
86*
EXPLANATION
DRAFT
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CHLOROFORM
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992
FIGURE 4.4-26
OCTOBER 1993
OU2RI067 1=300


N
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
B-1
B-2
B-3
B-4
TRENCH T-3 SITE
MOUND SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
903 PAD
CENTRAL AVENUE
N 749,000
E 2,088,000
14*
14*
880BDJA
160*
0.82*
2.1*
3.1*
0.1U*
2BJA
11*
0.71*
0.1U*
0.1U*
0.1U*
0.1U*
0.1U*
1BJA
0.1U*
28*
21*
740*
84*
1BJA
50
500
5
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
DRAFT
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CHLOROFORM
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
SECOND QUARTER 1992
FIGURE 4.4-27
OCTOBER 1993
OU2RI046 1=300


-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
TRENCH T-3 SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
CENTRAL AVENUE
5960
5940
5920
5900
5880
5860
5840
5820
5800
0.2V
1V
0.6V
0.3V
0.2UV
0.1UV
5UV
5JA
24V
21V
33V
13V
T2V
1100*
500
22A
3V
12V
28EA
1J*
54JA
18V
460JA
400JA
130JA
46EJA
50
5000
500
5
EXPLANATION
DRAFT
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
CHLOROFORM
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992
FIGURE 4.4-28
OCTOBER 1993
OU2RI036 1=300


-N-
0 150 300
SCALE IN FEET
B-1
B-2
B-3
B-4
CENTRAL AVE.
MOUND SITE
TRENCH T-3 SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
903 PAD
16*
200D*
6.6*
150UV
2.1*
0.8*
10UV
6.4*
3.9B*
5.5*
0.2U*
7.9*
1.6
3.1
5UV
50V
EXPLANATION
DRAFT
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIER ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
1,1-DICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992
FIGURE 4.4-29
OCTOBER 1993


-N-
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
B-1
B-2
B-3
B-4
TRENCH T-3 SITE
MOUND SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
903 PAD
CENTRAL AVENUE
N 749,000
E 2,088,000
0.2U*
.02U*
36V
100U*
5UV
8.6*
9.5*
4.1*
2.3*
5
50
5960
5940
5920
5900
5880
5860
5840
5820
5800
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
DRAFT
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
1,1-DICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
SECOND QUARTER 1992
FIGURE 4.4-30
OCTOBER 1993
OU2RI132 1=300



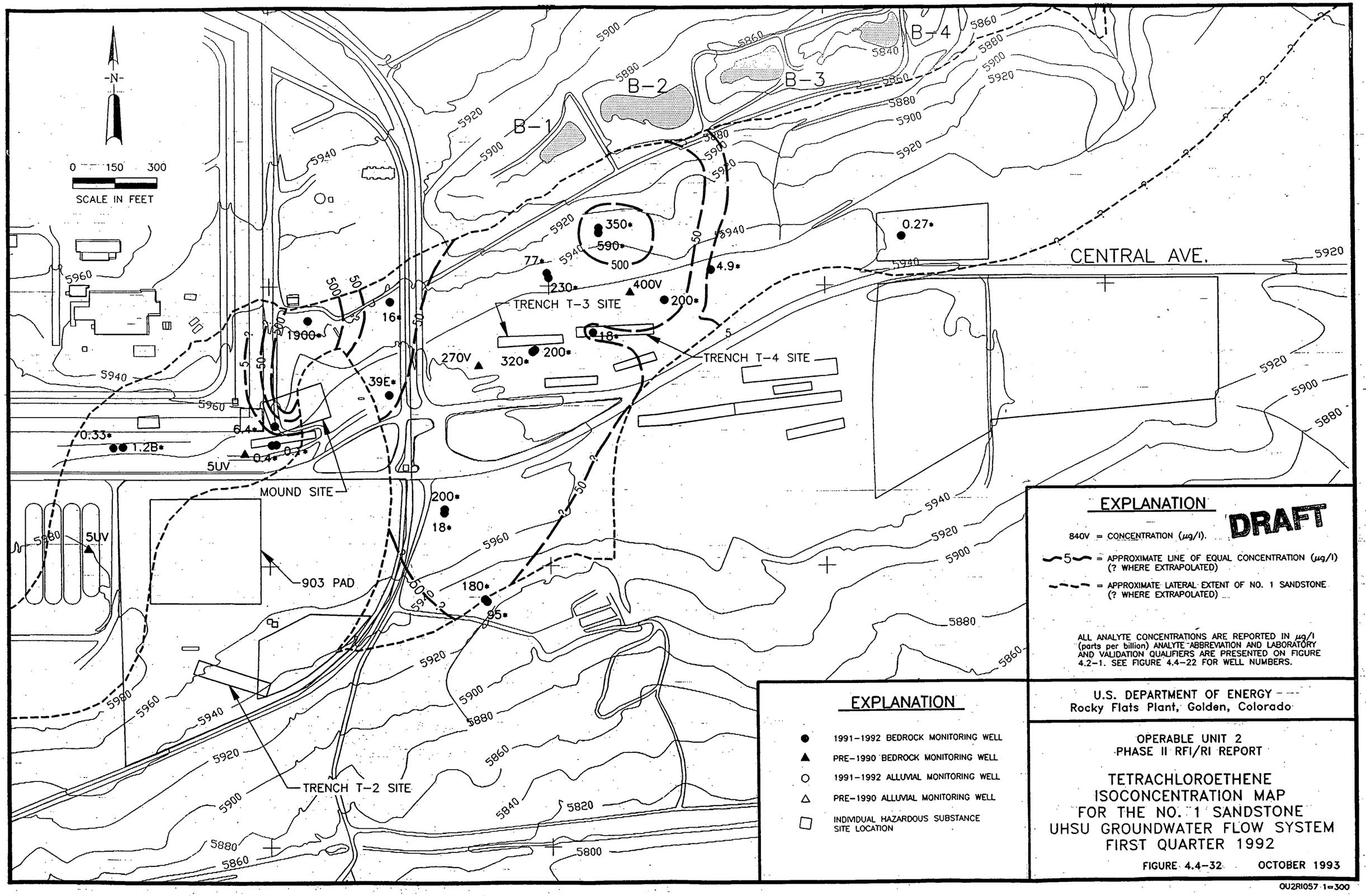
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

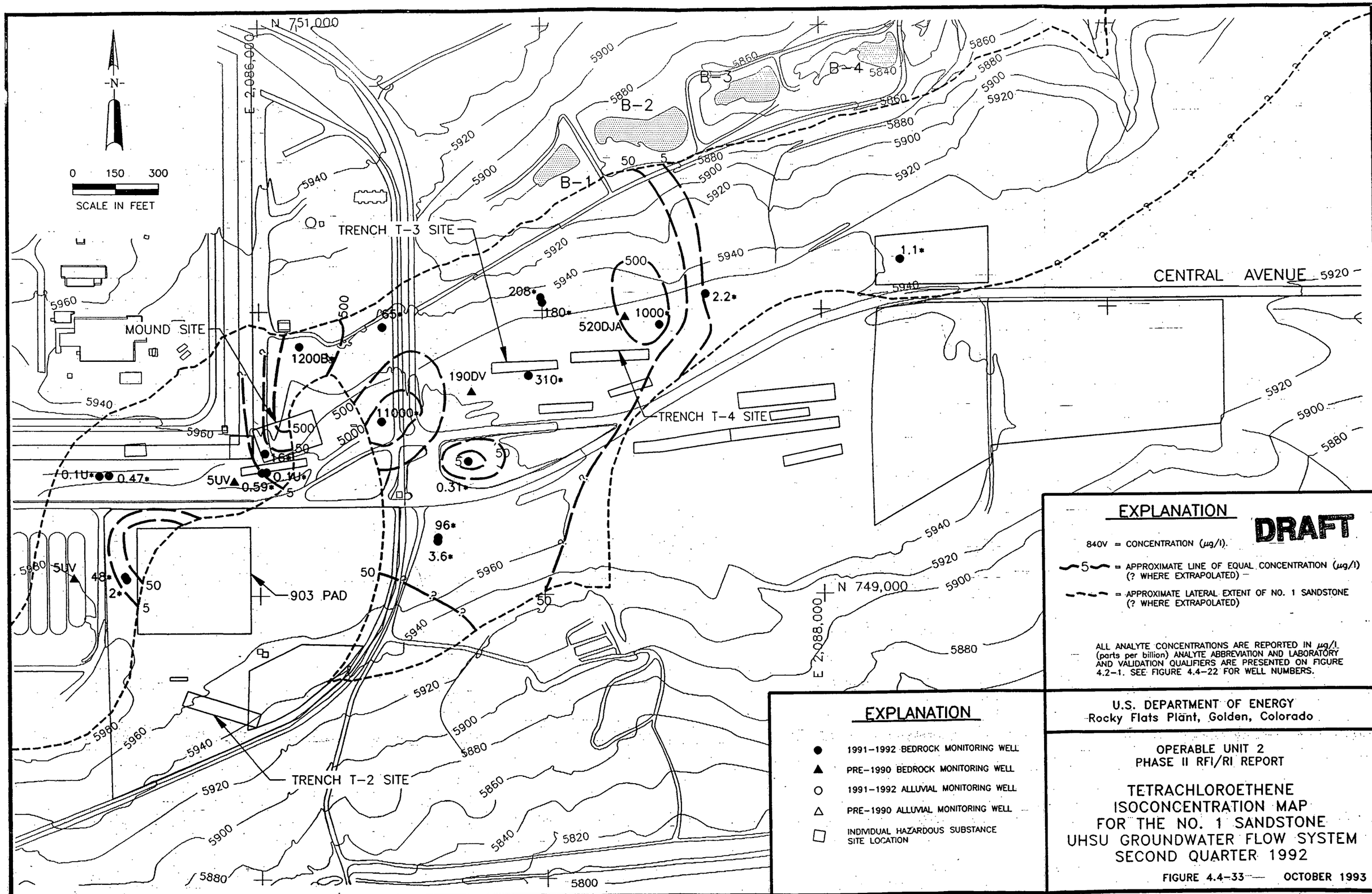
OPERABLE UNIT 2
PHASE II RFI/RI REPORT

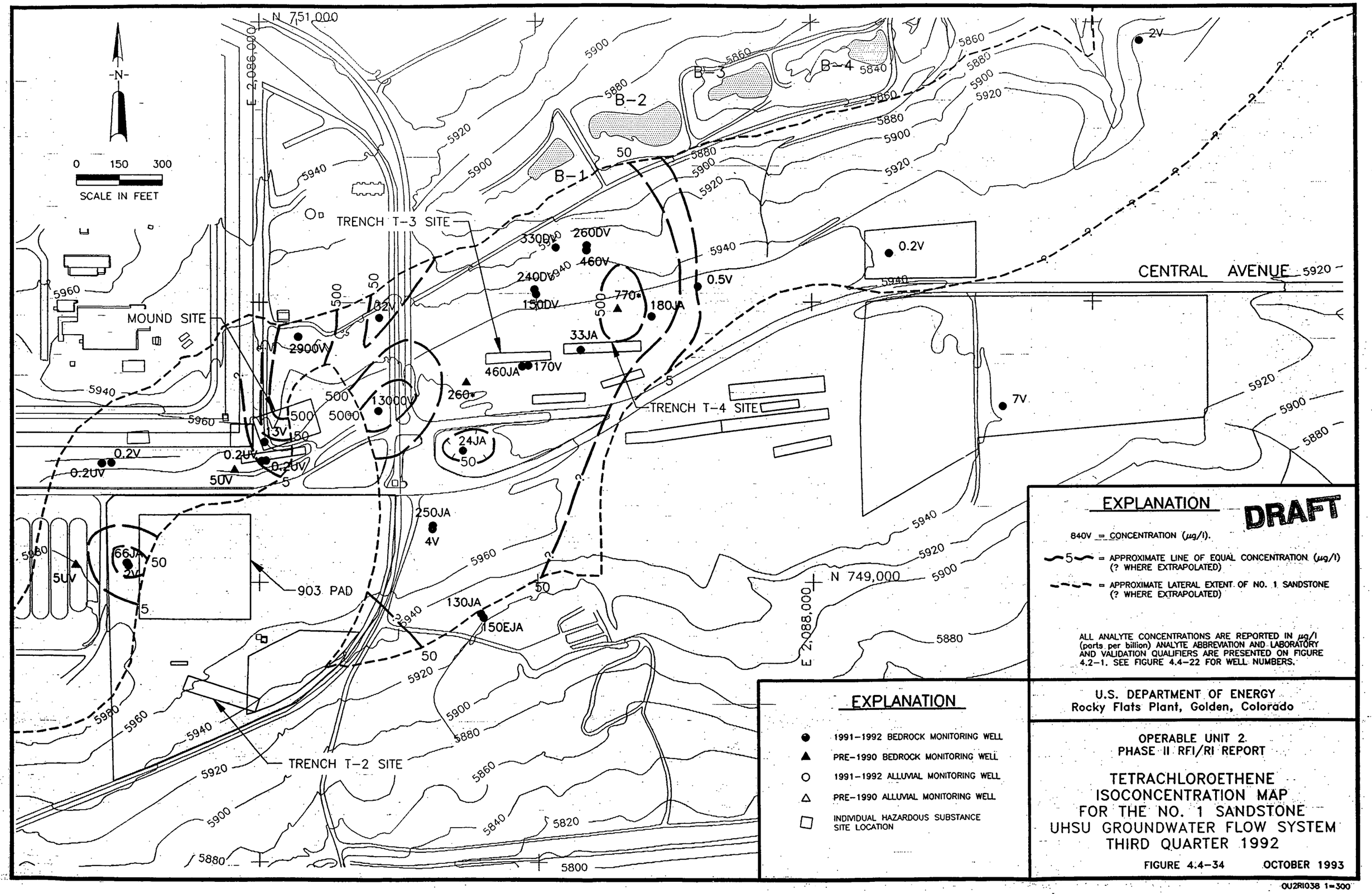
1,1-DICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992

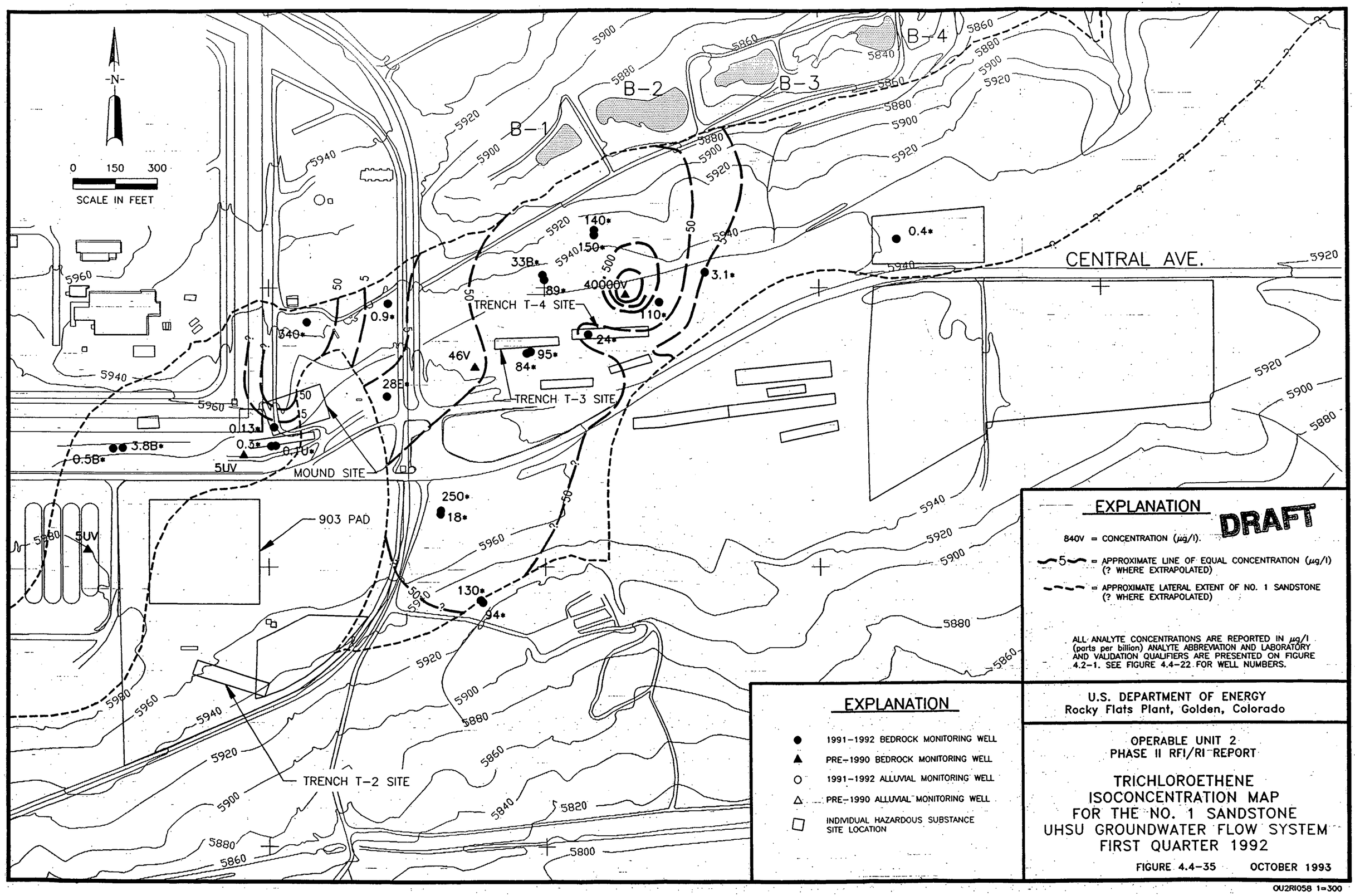
FIGURE 4.4-31 OCTOBER 1993

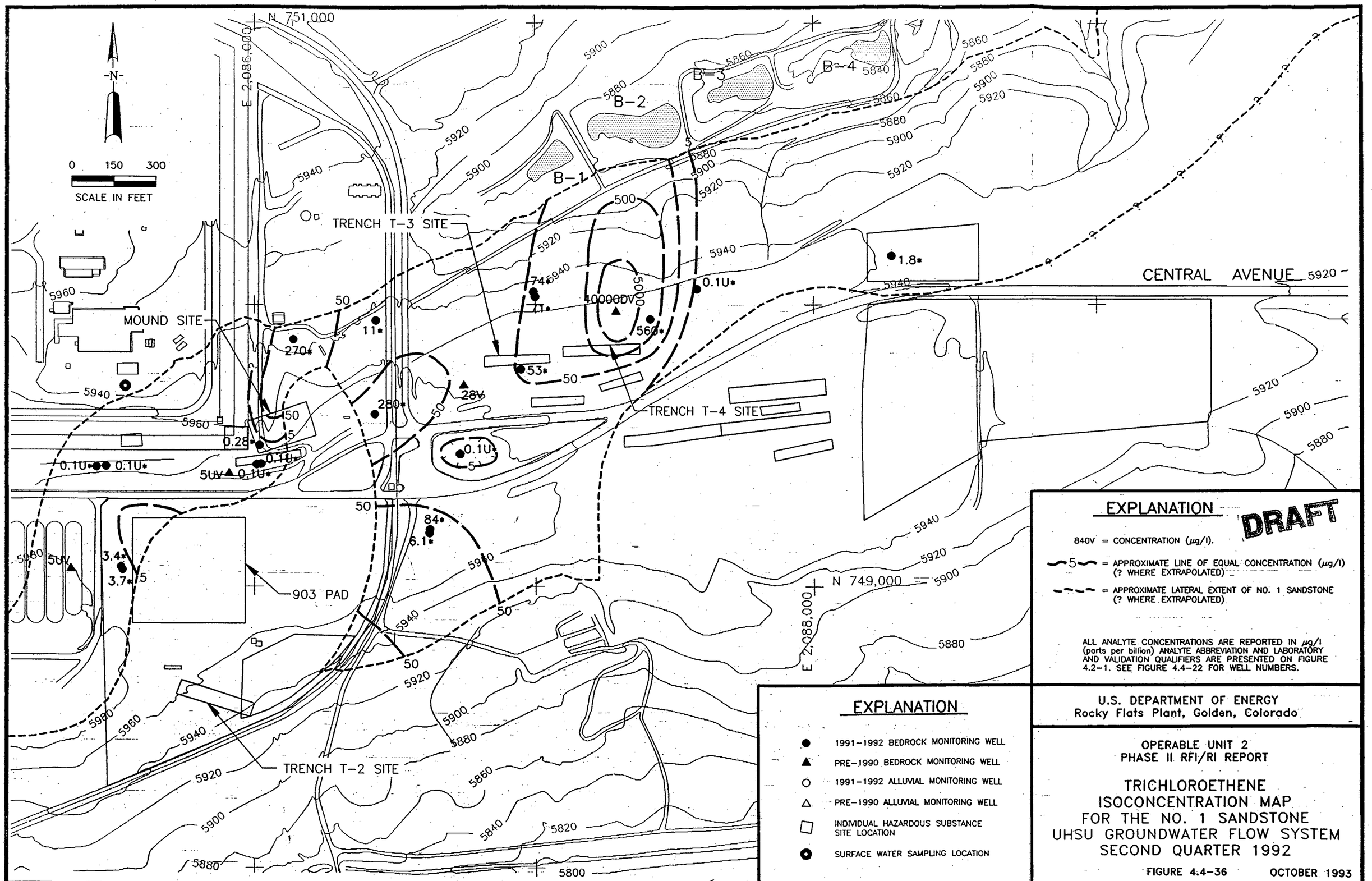
OU2RI141 1=300


-N-
0 150 300
SCALE IN FEET
B-1
B-2
B-3
B-4
CENTRAL AVE.
TRENCH T-3 SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
350*
590*
500
77*
230*
400V
200*
4.9*
0.27*
16*
1900*
18*
270V
320*
200*
39E*
6.4*
0.33*
1.2B*
0.4*
0.7*
5UV
200*
18*
180*
95*
5UV
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
DRAFT
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
TETRACHLOROETHENE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992
FIGURE 4.4-32
OCTOBER 1993
OU2RI057 1=300

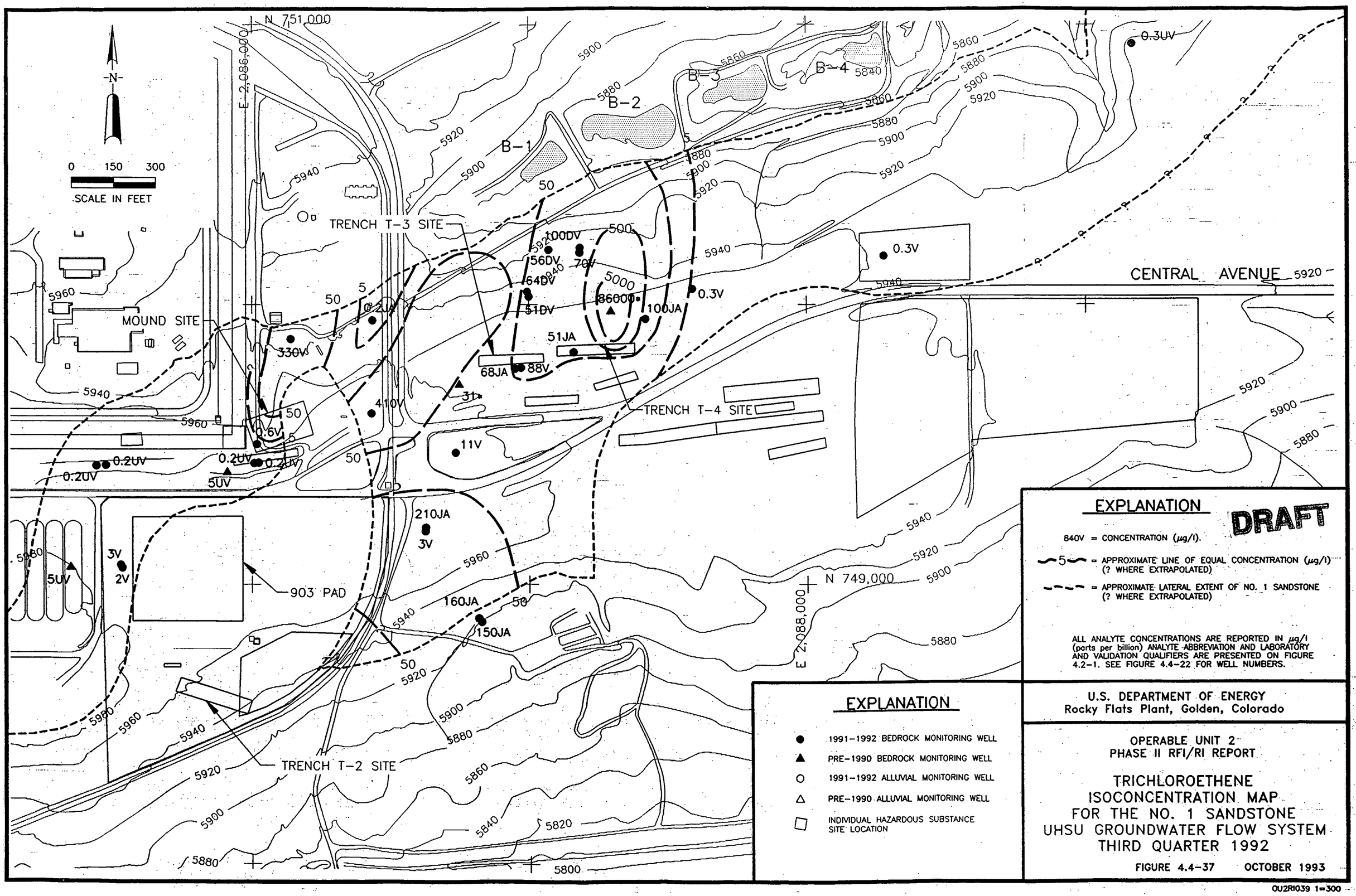

N
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
B-1
B-2
B-3
B-4
TRENCH T-3 SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
CENTRAL AVENUE
520DJA
190DV
5UV
N 749,000
E 2,088,000
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
DRAFT
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
TETRACHLOROETHENE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
SECOND QUARTER 1992
FIGURE 4.4-33
OCTOBER 1993
OU2RI048 1=300

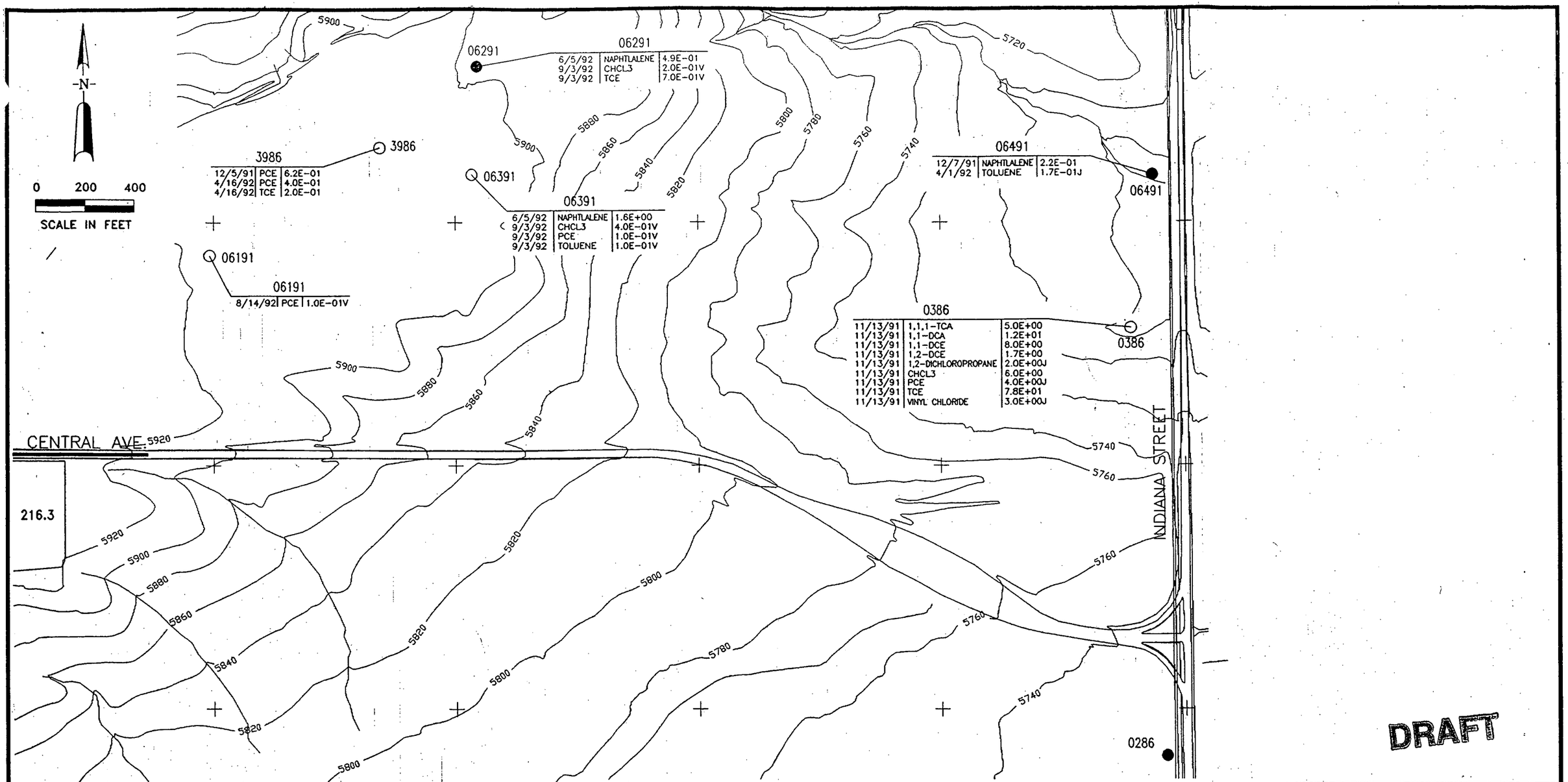

N
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
N 749,000
E 2,088,000
B-1
B-2
B-3
B-4
TRENCH T-3 SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
CENTRAL AVENUE
330DV
260DV
460V
240DV
150DV
770*
180JA
33JA
460JA
170V
2900VV
13000V
260*
24JA
250JA
4V
66JA
130JA
150EJA
0.2V
0.5V
7V
2V
13V
0.2UV
50V
5UV
EXPLANATION
DRAFT
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
TETRACHLOROETHENE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992
FIGURE 4.4-34
OCTOBER 1993
OU2RI038 1=300


-N-
0 150 300
SCALE IN FEET
B-1
B-2
B-3
B-4
CENTRAL AVE.
TRENCH T-4 SITE
TRENCH T-3 SITE
TRENCH T-2 SITE
MOUND SITE
903 PAD
140*
150*
33B*
189*
40000V
3.1*
110*
24*
95*
84*
46V
0.9*
340*
28B*
0.4*
0.13*
0.3*
0.10*
3.8B*
0.5B*
5UV
250*
18*
130*
94*
EXPLANATION
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
DRAFT
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
TRICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
FIRST QUARTER 1992
FIGURE 4.4-35 OCTOBER 1993
OU2RI058 1=300



OU2RI049 1=300


N
0 150 300
SCALE IN FEET
N 751,000
E 2,086,000
B-1
B-2
B-3
B-4
TRENCH T-3 SITE
MOUND SITE
TRENCH T-4 SITE
TRENCH T-2 SITE
903 PAD
CENTRAL AVENUE
N 749,000
E 2,088,000
100DV
56DV
64DV
51DV
70V
86000*
100JA
51JA
68JA
88V
330V
410V
11V
210JA
3V
160JA
150JA
0.3V
0.3UV
0.6V
0.2UV
5UV
2V
EXPLANATION
DRAFT
840V = CONCENTRATION (µg/l).
5 = APPROXIMATE LINE OF EQUAL CONCENTRATION (µg/l) (? WHERE EXTRAPOLATED)
= APPROXIMATE LATERAL EXTENT OF NO. 1 SANDSTONE (? WHERE EXTRAPOLATED)
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN µg/l (parts per billion) ANALYTE ABBREVIATION AND LABORATORY AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1. SEE FIGURE 4.4-22 FOR WELL NUMBERS.
EXPLANATION
1991-1992 BEDROCK MONITORING WELL
PRE-1990 BEDROCK MONITORING WELL
1991-1992 ALLUVIAL MONITORING WELL
PRE-1990 ALLUVIAL MONITORING WELL
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT 2
PHASE II RFI/RI REPORT
TRICHLOROETHENE
ISOCONCENTRATION MAP
FOR THE NO. 1 SANDSTONE
UHSU GROUNDWATER FLOW SYSTEM
THIRD QUARTER 1992
FIGURE 4.4-37 OCTOBER 1993
OU2R1039 1=300



EXPLANATION

08691 ← LOCATION

3/6/92		
DATE	ANALYTE	ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ◉ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

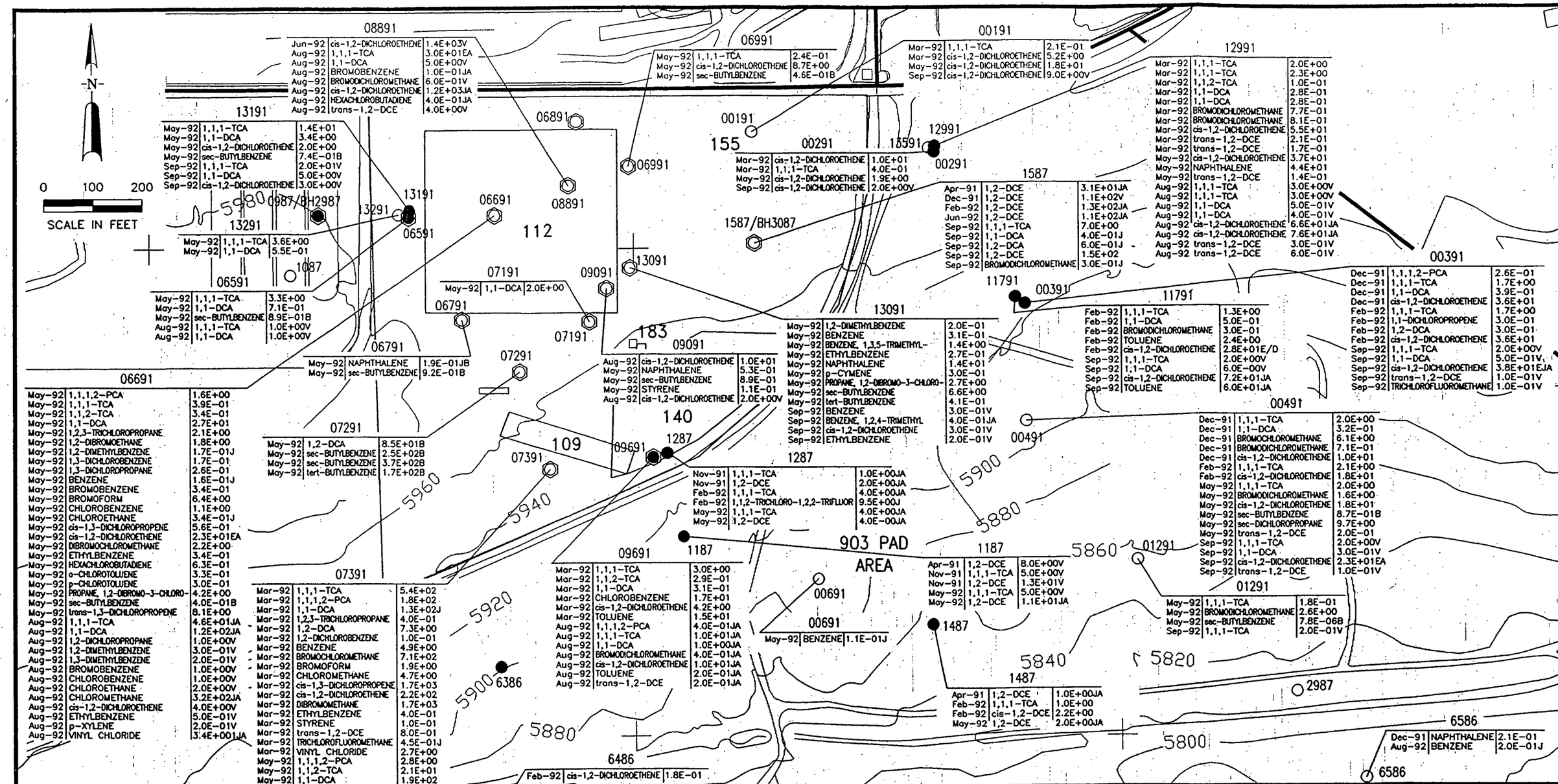
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

VOCs-GROUNDWATER
EAST OF IHSS AREAS
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992

FIGURE 4.4-38 OCTOBER 1993

OU2RI345 1=400



EXPLANATION

08691 ← LOCATION

May-92

DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

109 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

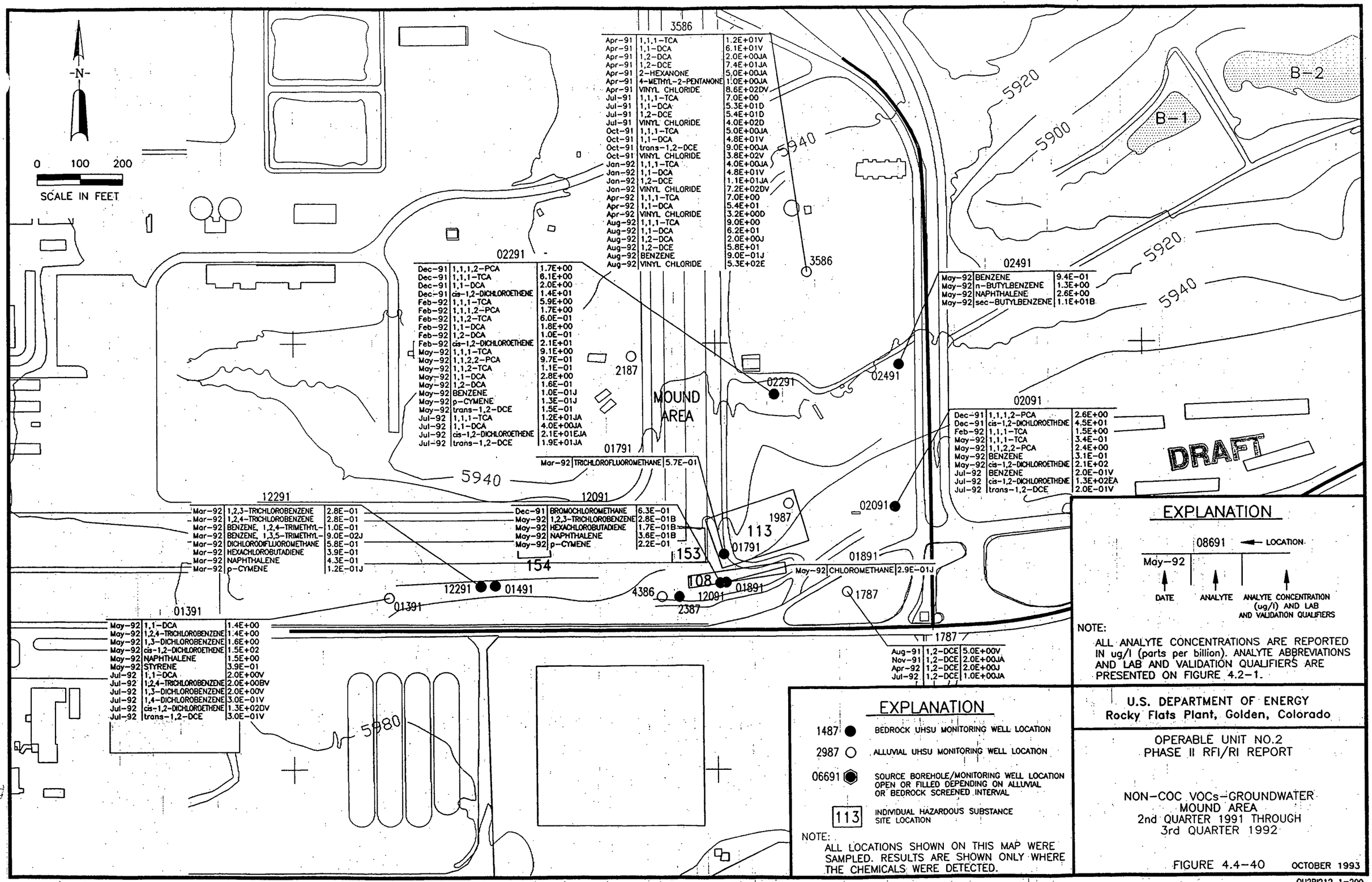
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

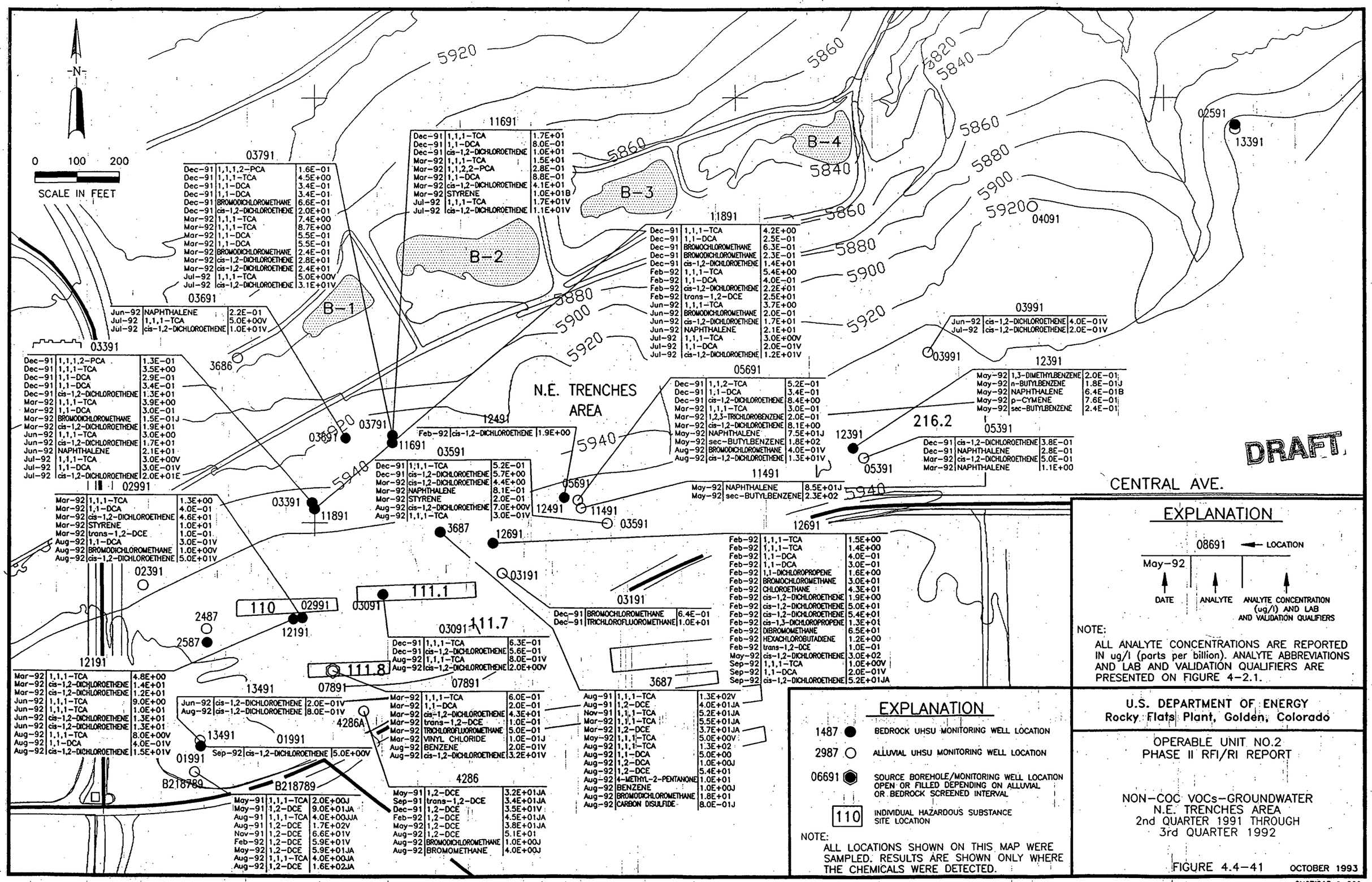
DRAFT

NON-COC VOCs-GROUNDWATER
903 PAD AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992

FIGURE 4.4-39 OCTOBER 1993

OU2RI211 1=200


-N-
0 100 200
SCALE IN FEET
3586
Apr-91 1,1,1-TCA 1.2E+01V
Apr-91 1,1-DCA 6.1E+01V
Apr-91 1,2-DCA 2.0E+00JA
Apr-91 1,2-DCE 7.4E+01JA
Apr-91 2-HEXANONE 5.0E+00JA
Apr-91 4-METHYL-2-PENTANONE 1.0E+00JA
Apr-91 VINYL CHLORIDE 8.6E+02DV
Jul-91 1,1,1-TCA 7.0E+00
Jul-91 1,1-DCA 5.3E+01D
Jul-91 1,2-DCE 5.4E+01D
Jul-91 VINYL CHLORIDE 4.0E+02D
Oct-91 1,1,1-TCA 5.0E+00JA
Oct-91 1,1-DCA 4.8E+01V
Oct-91 trans-1,2-DCE 9.0E+00JA
Oct-91 VINYL CHLORIDE 3.8E+02V
Jan-92 1,1,1-TCA 4.0E+00JA
Jan-92 1,1-DCA 4.8E+01V
Jan-92 1,2-DCE 1.1E+01JA
Jan-92 VINYL CHLORIDE 7.2E+02DV
Apr-92 1,1,1-TCA 7.0E+00
Apr-92 1,1-DCA 5.4E+01
Apr-92 VINYL CHLORIDE 3.2E+00D
Aug-92 1,1,1-TCA 9.0E+00
Aug-92 1,1-DCA 6.2E+01
Aug-92 1,2-DCA 2.0E+00J
Aug-92 1,2-DCE 5.8E+01
Aug-92 BENZENE 9.0E-01J
Aug-92 VINYL CHLORIDE 5.3E+02E
5940
3586
5920
5900
B-1
B-2
5920
5940
02491
May-92 BENZENE 9.4E-01
May-92 n-BUTYLBENZENE 1.3E+00
May-92 NAPHTHALENE 2.6E+00
May-92 sec-BUTYLBENZENE 1.1E+01B
02291
Dec-91 1,1,1,2-PCA 1.7E+00
Dec-91 1,1,1-TCA 6.1E+00
Dec-91 1,1-DCA 2.0E+00
Dec-91 cis-1,2-DICHLOROETHENE 1.4E+01
Feb-92 1,1,1-TCA 5.9E+00
Feb-92 1,1,1,2-PCA 1.7E+00
Feb-92 1,1,2-TCA 6.0E-01
Feb-92 1,1-DCA 1.8E+00
Feb-92 1,2-DCA 1.0E-01
Feb-92 cis-1,2-DICHLOROETHENE 2.1E+01
May-92 1,1,1-TCA 9.1E+00
May-92 1,1,2,2-PCA 9.7E-01
May-92 1,1,2-TCA 1.1E-01
May-92 1,1-DCA 2.8E+00
May-92 1,2-DCA 1.6E-01
May-92 BENZENE 1.0E-01J
May-92 p-CYMENE 1.3E-01J
May-92 trans-1,2-DCE 1.5E-01
Jul-92 1,1,1-TCA 1.2E+01JA
Jul-92 1,1-DCA 4.0E+00JA
Jul-92 cis-1,2-DICHLOROETHENE 2.1E+01EJA
Jul-92 trans-1,2-DCE 1.9E+01JA
2187
MOUND AREA
02291
02491
02091
Dec-91 1,1,1,2-PCA 2.6E+00
Dec-91 cis-1,2-DICHLOROETHENE 4.5E+01
Feb-92 1,1,1-TCA 1.5E+00
May-92 1,1,1-TCA 3.4E-01
May-92 1,1,2,2-PCA 2.4E+00
May-92 BENZENE 3.1E-01
May-92 cis-1,2-DICHLOROETHENE 2.1E+02
Jul-92 BENZENE 2.0E-01V
Jul-92 cis-1,2-DICHLOROETHENE 1.3E+02EA
Jul-92 trans-1,2-DCE 2.0E-01V
DRAFT
01791
Mar-92 TRICHLOROFLUOROMETHANE 5.7E-01
5940
12291
Mar-92 1,2,3-TRICHLOROBENZENE 2.8E-01
Mar-92 1,2,4-TRICHLOROBENZENE 2.8E-01
Mar-92 BENZENE, 1,2,4-TRIMETHYL- 1.0E-01
Mar-92 BENZENE, 1,3,5-TRIMETHYL- 9.0E-02J
Mar-92 DICHLORODIFLUOROMETHANE 5.8E-01
Mar-92 HEXACHLOROBUTADIENE 3.9E-01
Mar-92 NAPHTHALENE 4.3E-01
Mar-92 p-CYMENE 1.2E-01J
12091
Dec-91 BROMOCHLOROMETHANE 6.3E-01
May-92 1,2,3-TRICHLOROBENZENE 2.8E-01B
May-92 HEXACHLOROBUTADIENE 1.7E-01B
May-92 NAPHTHALENE 3.6E-01B
May-92 p-CYMENE 2.2E-01
154
153
113
1987
01791
01891
May-92 CHLOROMETHANE 2.9E-01J
108
01891
12291
01491
12091
4386
2387
1787
01391
01391
May-92 1,1-DCA 1.4E+00
May-92 1,2,4-TRICHLOROBENZENE 1.4E+00
May-92 1,3-DICHLOROBENZENE 1.6E+00
May-92 cis-1,2-DICHLOROETHENE 1.5E+02
May-92 NAPHTHALENE 1.5E+00
May-92 STYRENE 3.9E-01
Jul-92 1,1-DCA 2.0E+00V
Jul-92 1,2,4-TRICHLOROBENZENE 2.0E+00BV
Jul-92 1,3-DICHLOROBENZENE 2.0E+00V
Jul-92 1,4-DICHLOROBENZENE 3.0E-01V
Jul-92 cis-1,2-DICHLOROETHENE 1.3E+02DV
Jul-92 trans-1,2-DCE 3.0E-01V
1787
Aug-91 1,2-DCE 5.0E+00V
Nov-91 1,2-DCE 2.0E+00JA
Apr-92 1,2-DCE 2.0E+00J
Jul-92 1,2-DCE 1.0E+00JA
5980
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
EXPLANATION
08691 LOCATION
May-92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
NON-COC VOCs-GROUNDWATER
MOUND AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-40
OCTOBER 1993
OU2RI212 1=200



EXPLANATION

08691 ← LOCATION

May-92

DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4-2.1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ◉ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

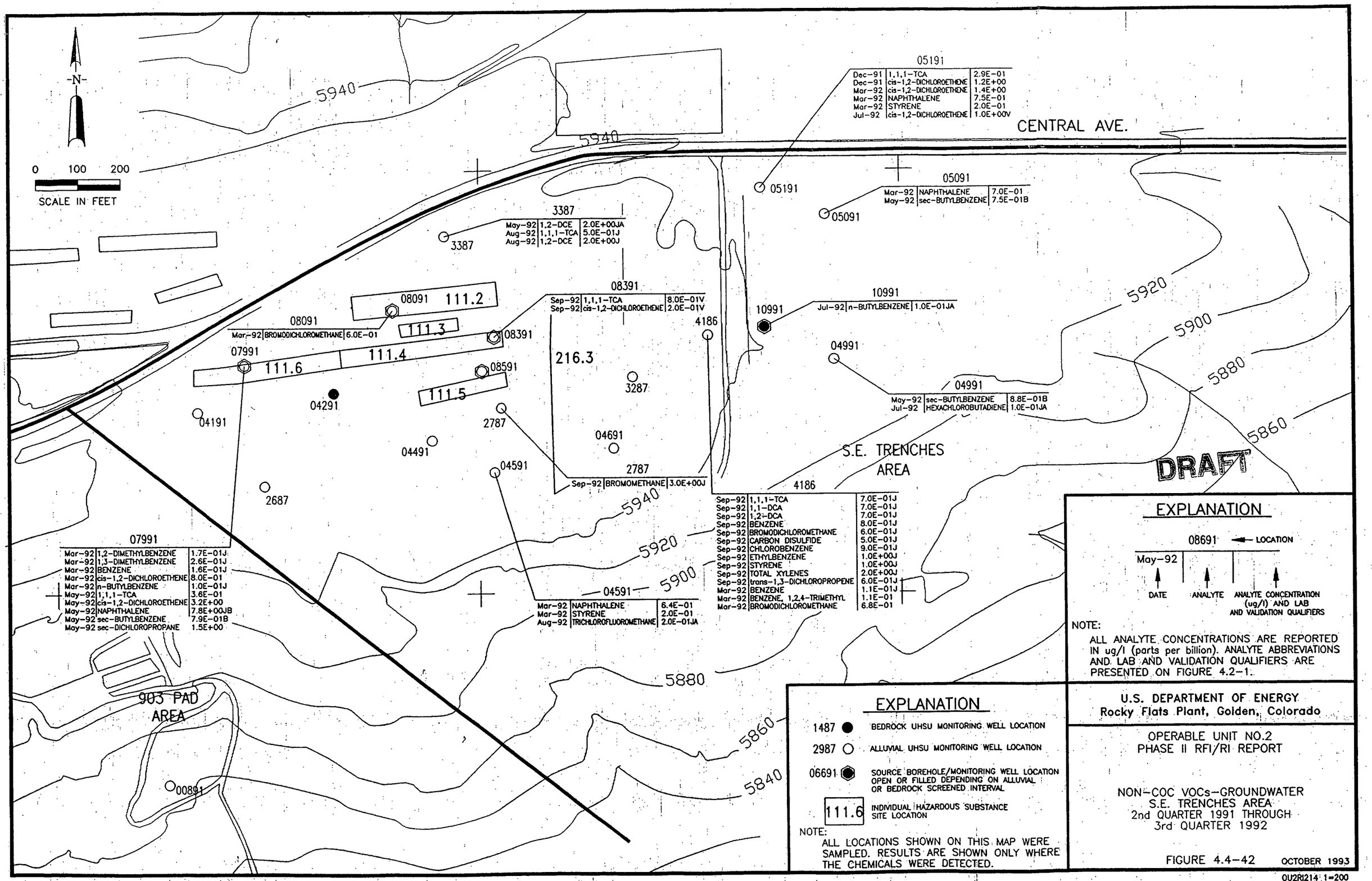
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

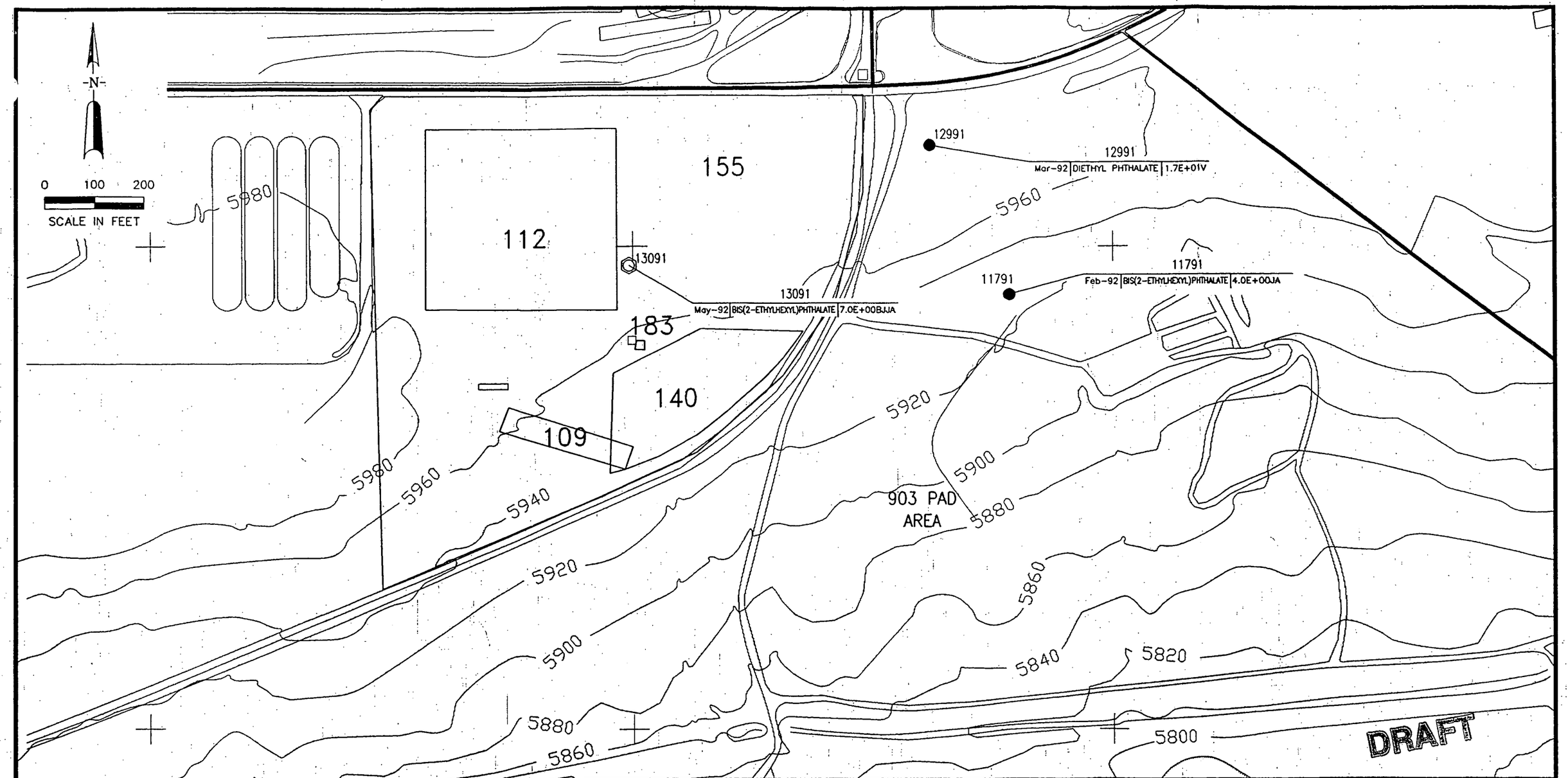
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

NON-COC VOCs-GROUNDWATER
N.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992

FIGURE 4.4-41 OCTOBER 1993

OU2RI213 1=200


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
5940
5920
5900
5880
5860
5840
05191
Dec-91 1,1,1-TCA 2.9E-01
Dec-91 cis-1,2-DICHLOROETHENE 1.2E+00
Mar-92 cis-1,2-DICHLOROETHENE 1.4E+00
Mar-92 NAPHTHALENE 7.5E-01
Mar-92 STYRENE 2.0E-01
Jul-92 cis-1,2-DICHLOROETHENE 1.0E+00V
05091
Mar-92 NAPHTHALENE 7.0E-01
May-92 sec-BUTYLBENZENE 7.5E-01B
3387
May-92 1,2-DCE 2.0E+00JA
Aug-92 1,1,1-TCA 5.0E-01J
Aug-92 1,2-DCE 2.0E+00J
08391
Sep-92 1,1,1-TCA 8.0E-01V
Sep-92 cis-1,2-DICHLOROETHENE 2.0E-01V
08091
Mar-92 BROMODICHLOROMETHANE 6.0E-01
111.2
111.3
111.4
111.6
111.5
216.3
10991
Jul-92 n-BUTYLBENZENE 1.0E-01JA
04991
May-92 sec-BUTYLBENZENE 8.8E-01B
Jul-92 HEXACHLOROBUTADIENE 1.0E-01JA
2787
Sep-92 BROMOMETHANE 3.0E+00J
4186
Sep-92 1,1,1-TCA 7.0E-01J
Sep-92 1,1-DCA 7.0E-01J
Sep-92 1,2-DCA 7.0E-01J
Sep-92 BENZENE 8.0E-01J
Sep-92 BROMODICHLOROMETHANE 6.0E-01J
Sep-92 CARBON DISULFIDE 5.0E-01J
Sep-92 CHLOROBENZENE 9.0E-01J
Sep-92 ETHYLBENZENE 1.0E+00J
Sep-92 STYRENE 1.0E+00J
Sep-92 TOTAL XYLENES 2.0E+00J
Sep-92 trans-1,3-DICHLOROPROPENE 6.0E-01J
Mar-92 BENZENE 1.1E-01J
Mar-92 BENZENE, 1,2,4-TRIMETHYL 1.1E-01
Mar-92 BROMODICHLOROMETHANE 6.8E-01
07991
Mar-92 1,2-DIMETHYLBENZENE 1.7E-01J
Mar-92 1,3-DIMETHYLBENZENE 2.6E-01J
Mar-92 BENZENE 1.6E-01J
Mar-92 cis-1,2-DICHLOROETHENE 8.0E-01
Mar-92 n-BUTYLBENZENE 1.0E-01J
May-92 1,1,1-TCA 3.6E-01
May-92 cis-1,2-DICHLOROETHENE 3.2E+00
May-92 NAPHTHALENE 7.8E+00JB
May-92 sec-BUTYLBENZENE 7.9E-01B
May-92 sec-DICHLOROPROPANE 1.5E+00
04591
Mar-92 NAPHTHALENE 6.4E-01
Mar-92 STYRENE 2.0E-01
Aug-92 TRICHLOROFLUOROMETHANE 2.0E-01JA
S.E. TRENCHES AREA
903 PAD AREA
DRAFT
04191
04291
04491
04591
04691
3287
2787
2687
00891
EXPLANATION
08691 ← LOCATION
May-92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.6 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
NON-COC VOCs-GROUNDWATER
S.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-42
OCTOBER 1993
0U2RI214 1=200



EXPLANATION

08691 ← LOCATION

May-92

DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

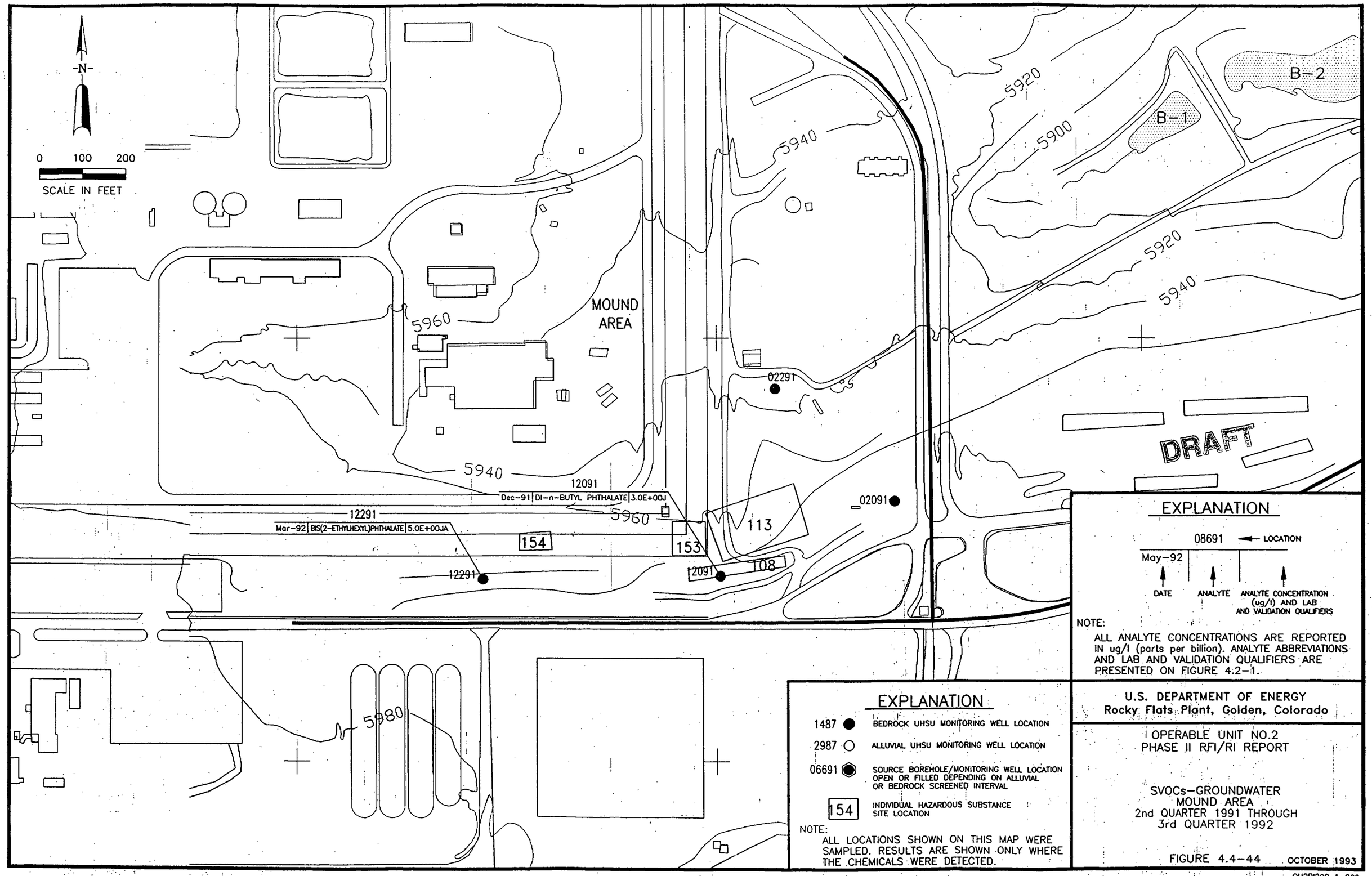
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

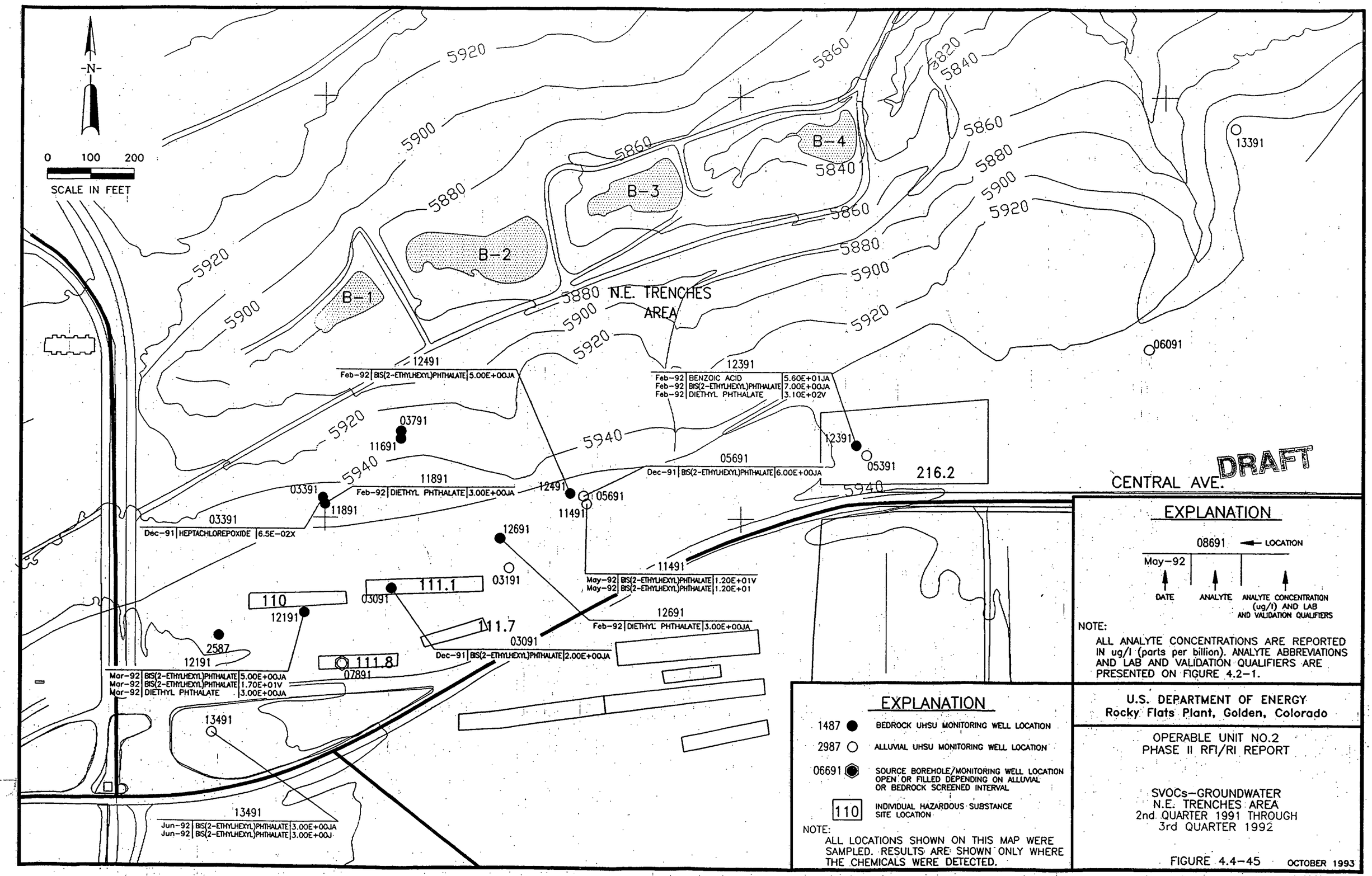
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

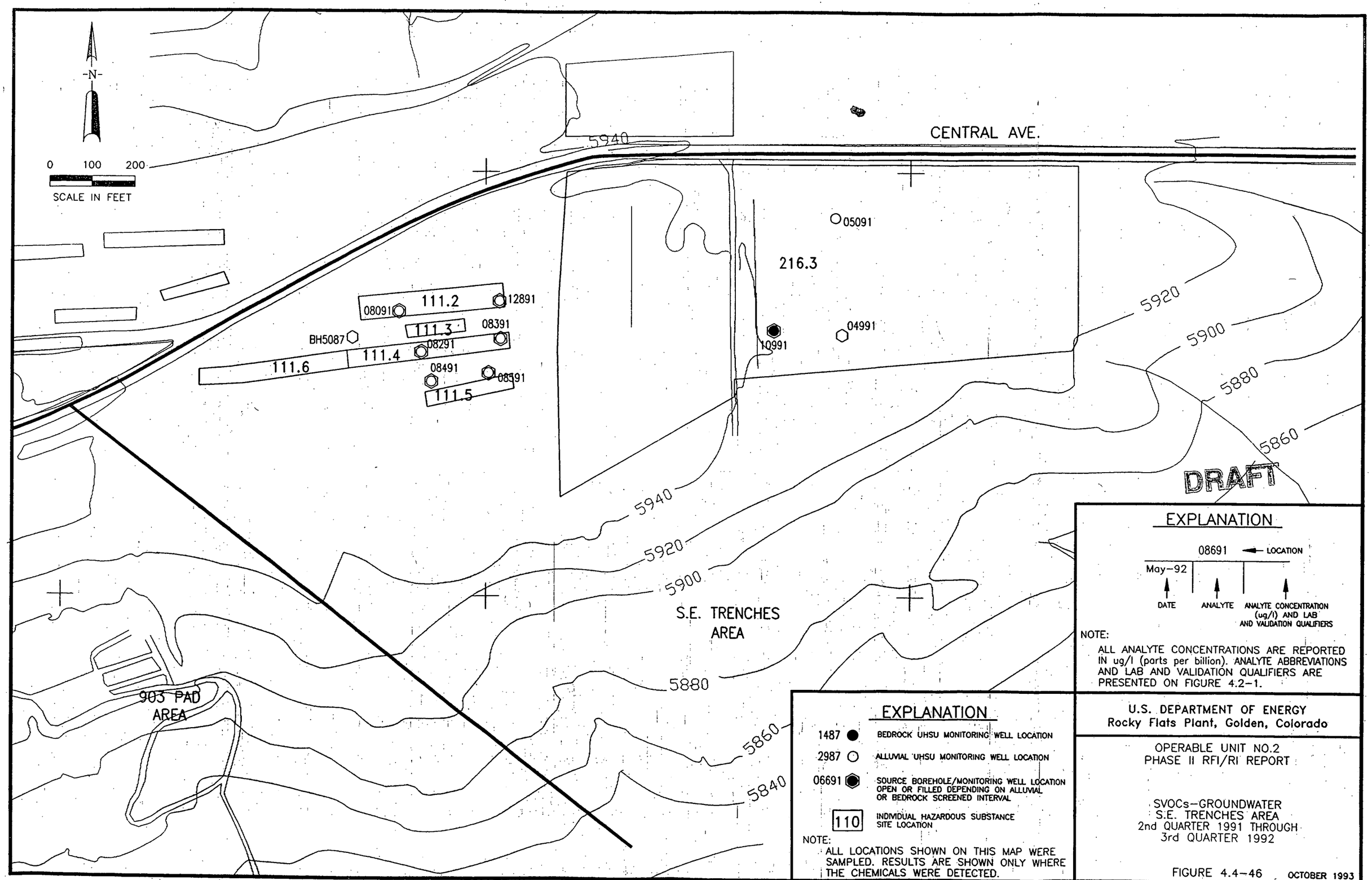
SVOCs-GROUNDWATER
903 PAD AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992

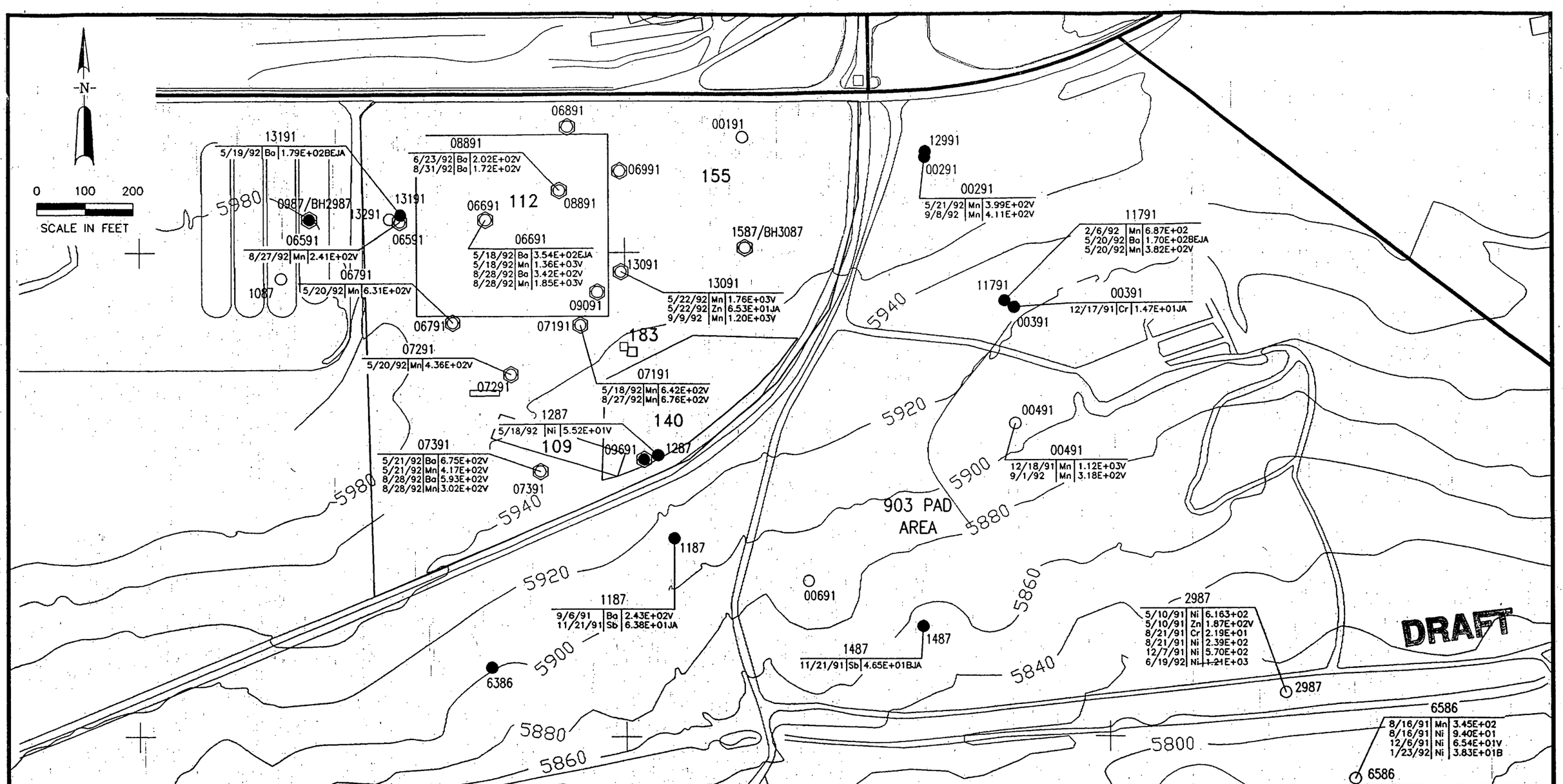
FIGURE 4.4-43 OCTOBER 1993

OU2RI207 1=200


-N-
0 100 200
SCALE IN FEET
MOUND AREA
5960
5940
5920
5900
5980
B-1
B-2
02291
02091
12091
Dec-91 | DI-n-BUTYL PHTHALATE | 3.0E+00J
12291
Mar-92 | BIS(2-ETHYLHEXYL)PHTHALATE | 5.0E+00JA
154
153
113
108
DRAFT
EXPLANATION
08691 ← LOCATION
May-92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
154 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SVOCs-GROUNDWATER
MOUND AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-44
OCTOBER 1993
OU2RI208 1=200


-N-
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
5940
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
CENTRAL AVE.
DRAFT
216.2
111.1
111.7
111.8
110
12491
Feb-92 BIS(2-ETHYLHEXYL)PHTHALATE 5.00E+00JA
12391
Feb-92 BENZOIC ACID 5.60E+01JA
Feb-92 BIS(2-ETHYLHEXYL)PHTHALATE 7.00E+00JA
Feb-92 DIETHYL PHTHALATE 3.10E+02V
05691
Dec-91 BIS(2-ETHYLHEXYL)PHTHALATE 6.00E+00JA
11891
Feb-92 DIETHYL PHTHALATE 3.00E+00JA
03391
Dec-91 HEPTACHLOREPOXIDE 6.5E-02X
11491
May-92 BIS(2-ETHYLHEXYL)PHTHALATE 1.20E+01V
May-92 BIS(2-ETHYLHEXYL)PHTHALATE 1.20E+01
12691
Feb-92 DIETHYL PHTHALATE 3.00E+00JA
03091
Dec-91 BIS(2-ETHYLHEXYL)PHTHALATE 2.00E+00JA
12191
Mar-92 BIS(2-ETHYLHEXYL)PHTHALATE 5.00E+00JA
Mar-92 BIS(2-ETHYLHEXYL)PHTHALATE 1.70E+01V
Mar-92 DIETHYL PHTHALATE 3.00E+00JA
13491
Jun-92 BIS(2-ETHYLHEXYL)PHTHALATE 3.00E+00JA
Jun-92 BIS(2-ETHYLHEXYL)PHTHALATE 3.00E+00J
03791
11691
03391
11891
12491
05691
11491
12691
03191
03091
2587
12191
07891
13491
12391
05391
13391
06091
EXPLANATION
08691 ← LOCATION
May-92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SVOCs-GROUNDWATER
N.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-45
OCTOBER 1993
OU2RI209 1=200


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
5940
05091
216.3
04991
10991
111.2
12891
08091
111.3
08391
BH5087
08291
111.4
111.6
08491
08391
111.5
5920
5900
5880
5860
DRAFT
5940
5920
5900
S.E. TRENCHES
AREA
5880
903 PAD
AREA
5860
5840
EXPLANATION
08691 ← LOCATION
May-92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
SVOCs-GROUNDWATER
S.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-46
OCTOBER 1993
OU2RI339 1=200



EXPLANATION

08691 ← LOCATION

3/6/92

DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per million). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

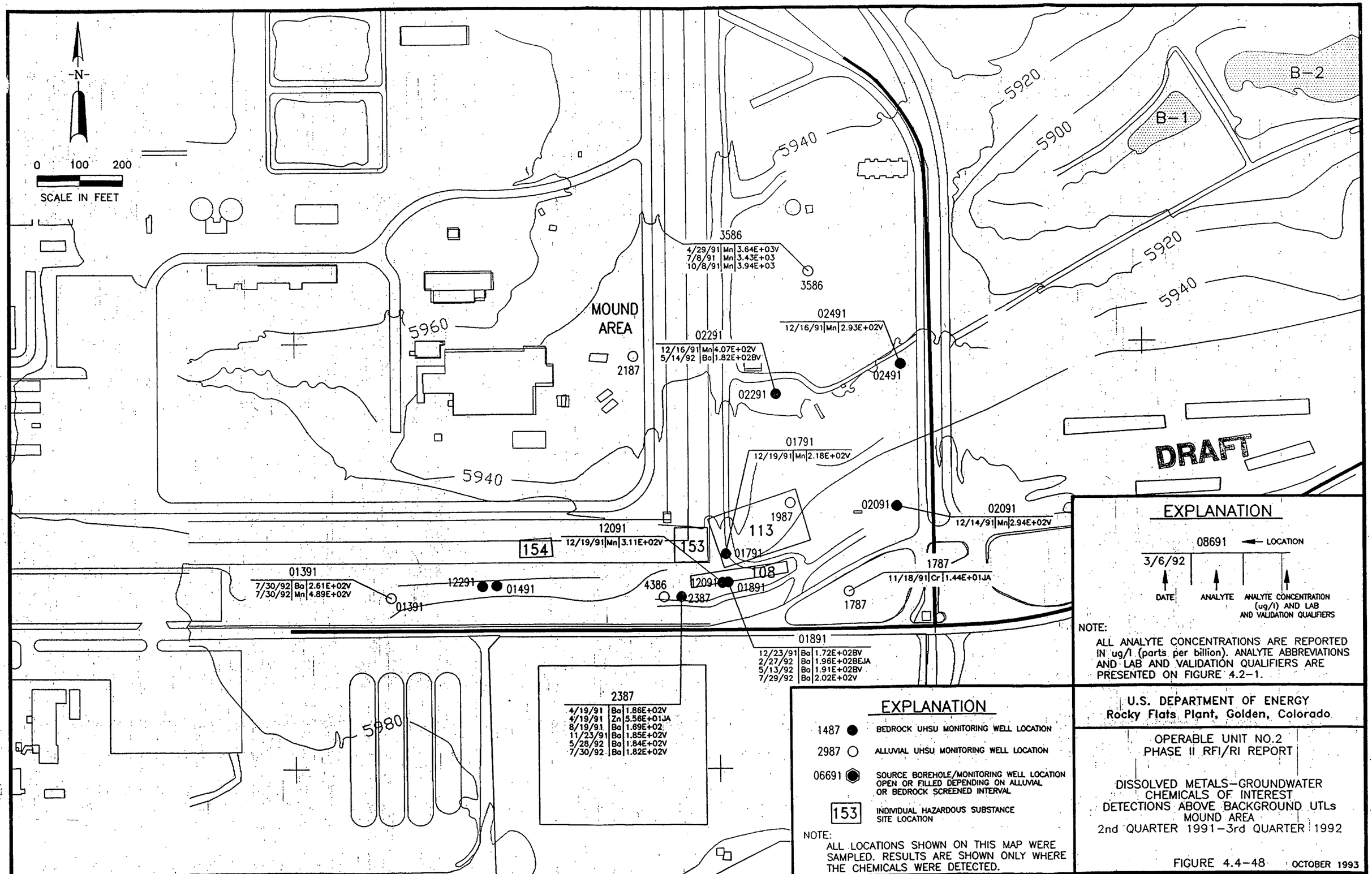
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

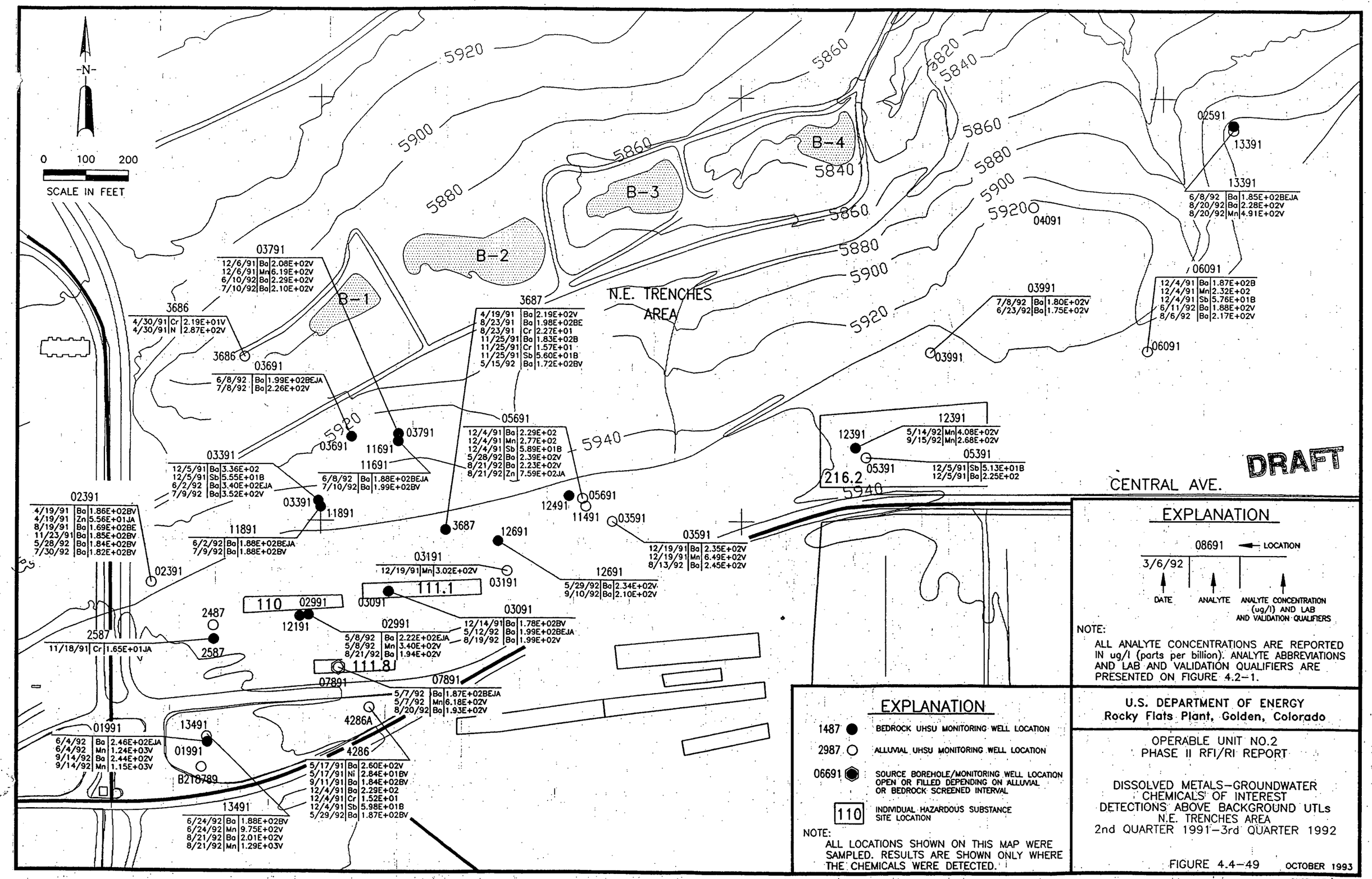
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

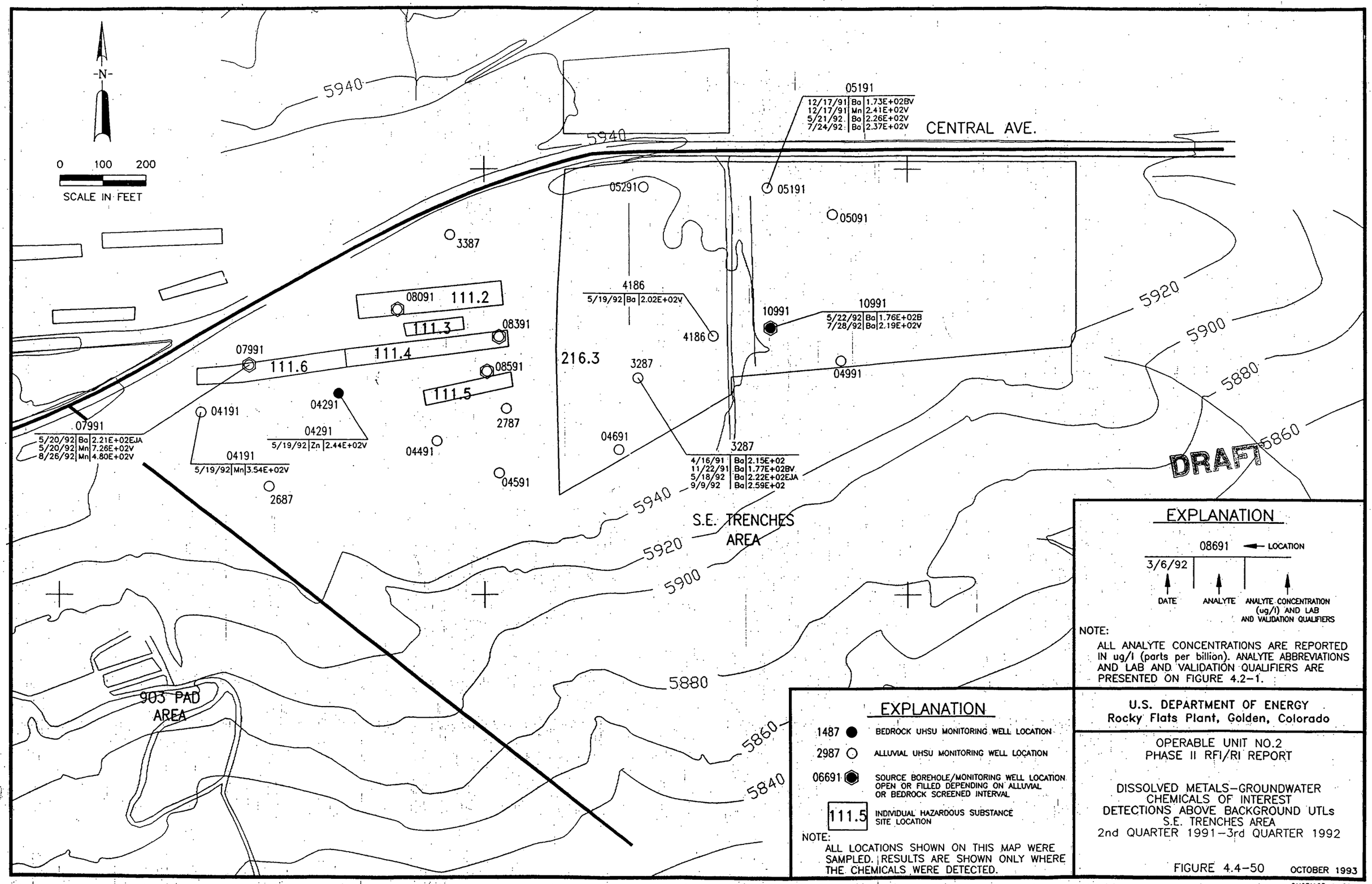
DISSOLVED METALS-GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
903 PAD AREA
2nd QUARTER 1991-3rd QUARTER 1992

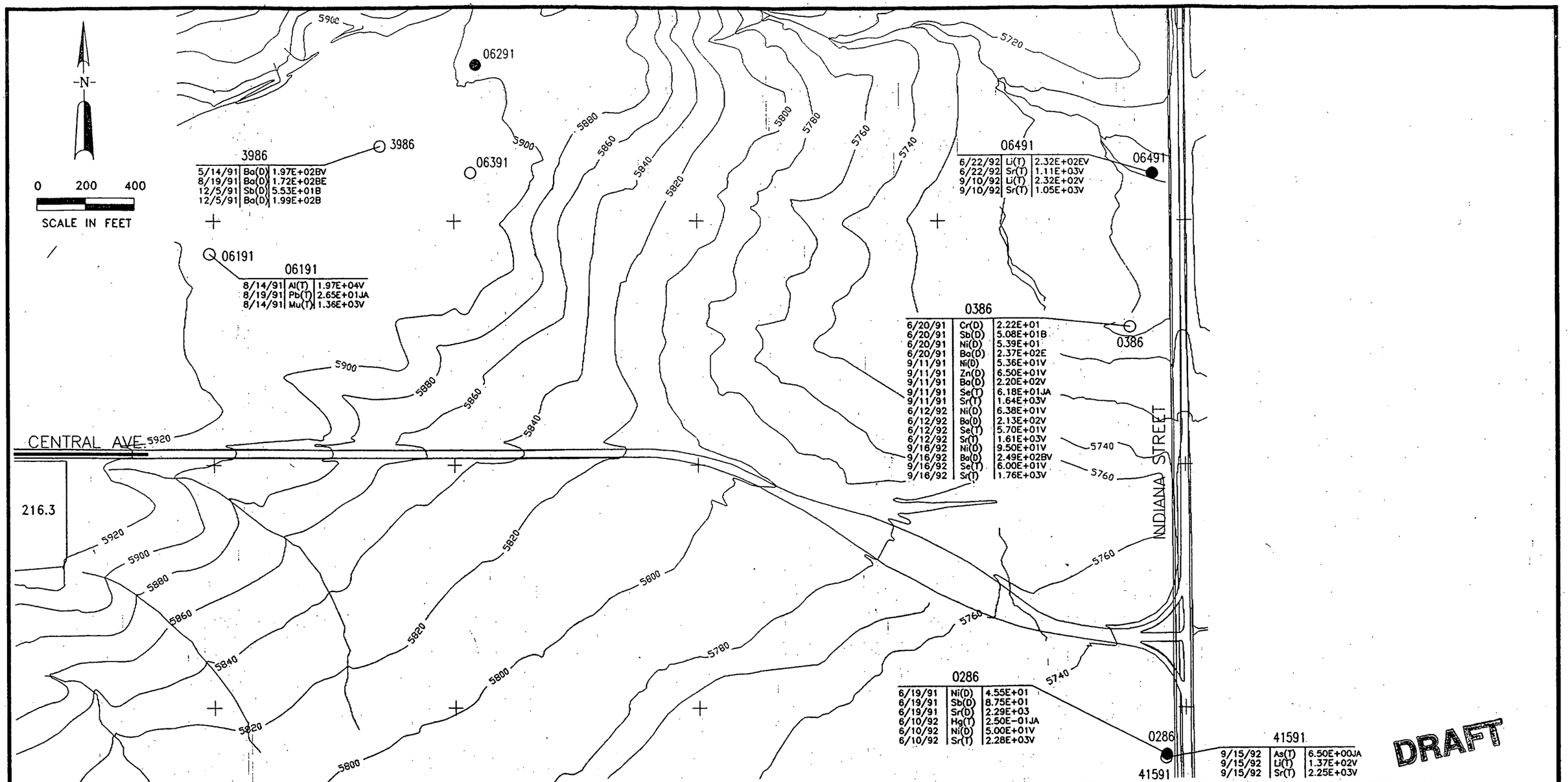
FIGURE 4.4-47 OCTOBER 1993

OU2RI195 1=200


N
0 100 200
SCALE IN FEET
MOUND AREA
5960
5940
5920
5900
5980
B-1
B-2
3586
4/29/91 Mn 3.64E+03V
7/8/91 Mn 3.43E+03
10/8/91 Mn 3.94E+03
3586
02491
12/16/91 Mn 2.93E+02V
02491
02291
12/16/91 Mn 4.07E+02V
5/14/92 Ba 1.82E+02BV
02291
2187
01791
12/19/91 Mn 2.18E+02V
DRAFT
02091
02091
12/14/91 Mn 2.94E+02V
1987
113
12091
12/19/91 Mn 3.11E+02V
154
153
01791
108
1787
11/18/91 Cr 1.44E+01JA
1787
01391
7/30/92 Ba 2.61E+02V
7/30/92 Mn 4.89E+02V
01391
12291
01491
4386
2387
12091
01891
01891
12/23/91 Ba 1.72E+02BV
2/27/92 Ba 1.96E+02BEJA
5/13/92 Ba 1.91E+02BV
7/29/92 Ba 2.02E+02V
2387
4/19/91 Ba 1.86E+02V
4/19/91 Zn 5.56E+01JA
8/19/91 Ba 1.69E+02
11/23/91 Ba 1.85E+02V
5/28/92 Ba 1.84E+02V
7/30/92 Ba 1.82E+02V
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
153 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
DISSOLVED METALS-GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
MOUND AREA
2nd QUARTER 1991-3rd QUARTER 1992
FIGURE 4.4-48
OCTOBER 1993
OU2RI196 1=200


-N-
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
5940
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
CENTRAL AVE.
DRAFT
03791
12/6/91 Ba 2.08E+02V
12/6/91 Mn 6.19E+02V
6/10/92 Ba 2.29E+02V
7/10/92 Ba 2.10E+02V
3686
4/30/91 Cr 2.19E+01V
4/30/91 N 2.87E+02V
3686
03691
6/8/92 Ba 1.99E+02BEJA
7/8/92 Ba 2.26E+02V
3687
4/19/91 Ba 2.19E+02V
8/23/91 Ba 1.98E+02BE
8/23/91 Cr 2.27E+01
11/25/91 Ba 1.83E+02B
11/25/91 Cr 1.57E+01
11/25/91 Sb 5.60E+01B
5/15/92 Ba 1.72E+02BV
05691
12/4/91 Ba 2.29E+02
12/4/91 Mn 2.77E+02
12/4/91 Sb 5.89E+01B
5/28/92 Ba 2.39E+02V
8/21/92 Ba 2.23E+02V
8/21/92 Zn 7.59E+02JA
03391
12/5/91 Ba 3.36E+02
12/5/91 Sb 5.55E+01B
6/2/92 Ba 3.40E+02EJA
7/9/92 Ba 3.52E+02V
03391
11691
11691
6/8/92 Ba 1.88E+02BEJA
7/10/92 Ba 1.99E+02BV
11891
11891
6/2/92 Ba 1.88E+02BEJA
7/9/92 Ba 1.88E+02BV
02391
4/19/91 Ba 1.86E+02BV
4/19/91 Zn 5.56E+01JA
8/19/91 Ba 1.69E+02BE
11/23/91 Ba 1.85E+02BV
5/28/92 Ba 1.84E+02BV
7/30/92 Ba 1.82E+02BV
02391
03191
12/19/91 Mn 3.02E+02V
03191
111.1
03091
110
02991
12191
02991
5/8/92 Ba 2.22E+02EJA
5/8/92 Mn 3.40E+02V
8/21/92 Ba 1.94E+02V
03091
12/14/91 Ba 1.78E+02BV
5/12/92 Ba 1.99E+02BEJA
8/19/92 Ba 1.99E+02V
2487
2587
11/18/91 Cr 1.65E+01JA
2587
111.8
07891
07891
5/7/92 Ba 1.87E+02BEJA
5/7/92 Mn 6.18E+02V
8/20/92 Ba 1.93E+02V
4286A
01991
6/4/92 Ba 2.46E+02EJA
6/4/92 Mn 1.24E+03V
9/14/92 Ba 2.44E+02V
9/14/92 Mn 1.15E+03V
13491
01991
B218789
4286
5/17/91 Ba 2.60E+02V
5/17/91 Ni 2.84E+01BV
9/11/91 Ba 1.84E+02BV
12/4/91 Ba 2.29E+02
12/4/91 Cr 1.52E+01
12/4/91 Sb 5.98E+01B
5/29/92 Ba 1.87E+02BV
13491
6/24/92 Ba 1.88E+02BV
6/24/92 Mn 9.75E+02V
8/21/92 Ba 2.01E+02V
8/21/92 Mn 1.29E+03V
12491
05691
11491
03591
03591
12/19/91 Ba 2.35E+02V
12/19/91 Mn 6.49E+02V
8/13/92 Ba 2.45E+02V
12691
12691
5/29/92 Ba 2.34E+02V
9/10/92 Ba 2.10E+02V
12391
12391
5/14/92 Mn 4.08E+02V
9/15/92 Mn 2.68E+02V
05391
05391
12/5/91 Sb 5.13E+01B
12/5/91 Ba 2.25E+02
216.2
02591
13391
13391
6/8/92 Ba 1.85E+02BEJA
8/20/92 Ba 2.28E+02V
8/20/92 Mn 4.91E+02V
04091
06091
12/4/91 Ba 1.87E+02B
12/4/91 Mn 2.32E+02
12/4/91 Sb 5.76E+01B
6/11/92 Ba 1.88E+02V
8/6/92 Ba 2.17E+02V
06091
03991
7/8/92 Ba 1.80E+02V
6/23/92 Ba 1.75E+02V
03991
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
DISSOLVED METALS-GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
N.E. TRENCHES AREA
2nd QUARTER 1991-3rd QUARTER 1992
FIGURE 4.4-49
OCTOBER 1993
OU2RI197 1=200


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
05191
12/17/91 Ba 1.73E+02BV
12/17/91 Mn 2.41E+02V
5/21/92 Ba 2.26E+02V
7/24/92 Ba 2.37E+02V
05291
05191
05091
3387
4186
5/19/92 Ba 2.02E+02V
4186
10991
10991
5/22/92 Ba 1.76E+02B
7/28/92 Ba 2.19E+02V
08091
111.2
111.3
08391
07991
111.6
111.4
08591
111.5
216.3
3287
04991
04191
04291
2787
07991
5/20/92 Ba 2.21E+02EJA
5/20/92 Mn 7.26E+02V
8/26/92 Mn 4.80E+02V
04291
5/19/92 Zn 2.44E+02V
04491
04691
3287
4/16/91 Ba 2.15E+02
11/22/91 Ba 1.77E+02BV
5/18/92 Ba 2.22E+02EJA
9/9/92 Ba 2.59E+02
04191
5/19/92 Mn 3.54E+02V
2687
04591
5940
5920
5900
5880
5860
5840
DRAFT
S.E. TRENCHES AREA
903 PAD AREA
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.5 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
DISSOLVED METALS-GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
S.E. TRENCHES AREA
2nd QUARTER 1991-3rd QUARTER 1992
FIGURE 4.4-50
OCTOBER 1993
OU2RI198 1=200



EXPLANATION

0386 ← LOCATION

8/20/91		
↑ DATE	↑ ANALYTE	↑ ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

D = DISSOLVED

T = TOTAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

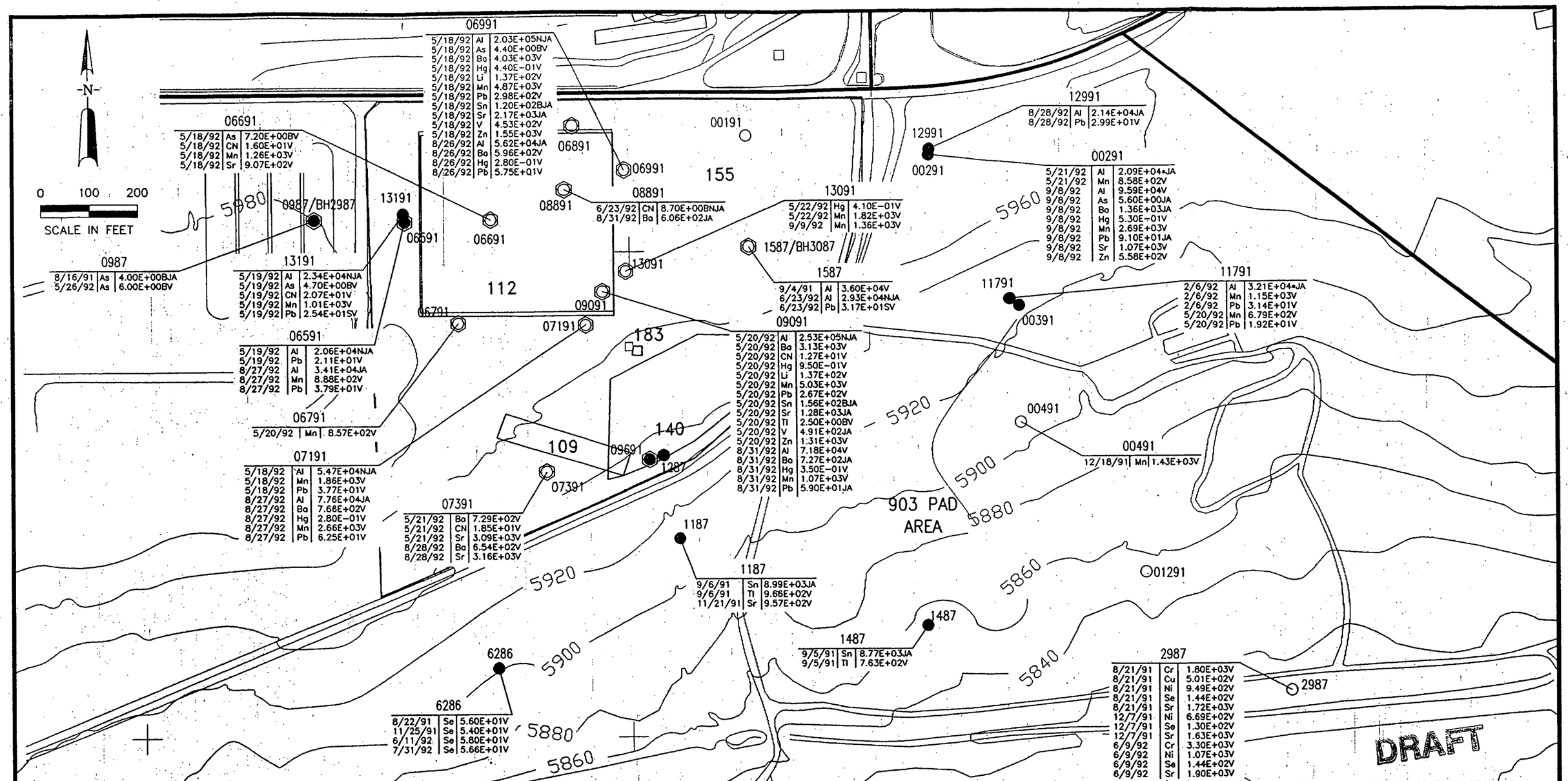
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

DISSOLVED AND TOTAL METALS DETECTIONS ABOVE BACKGROUND UTLs IN UHSU GROUNDWATER EAST OF THE IHSS AREAS

FIGURE 4.4-51 OCTOBER 1993

OU2RI347 1=400



EXPLANATION

08691 ← LOCATION

3/6/92

DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). CN IS REPORTED IN mg/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ◉ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

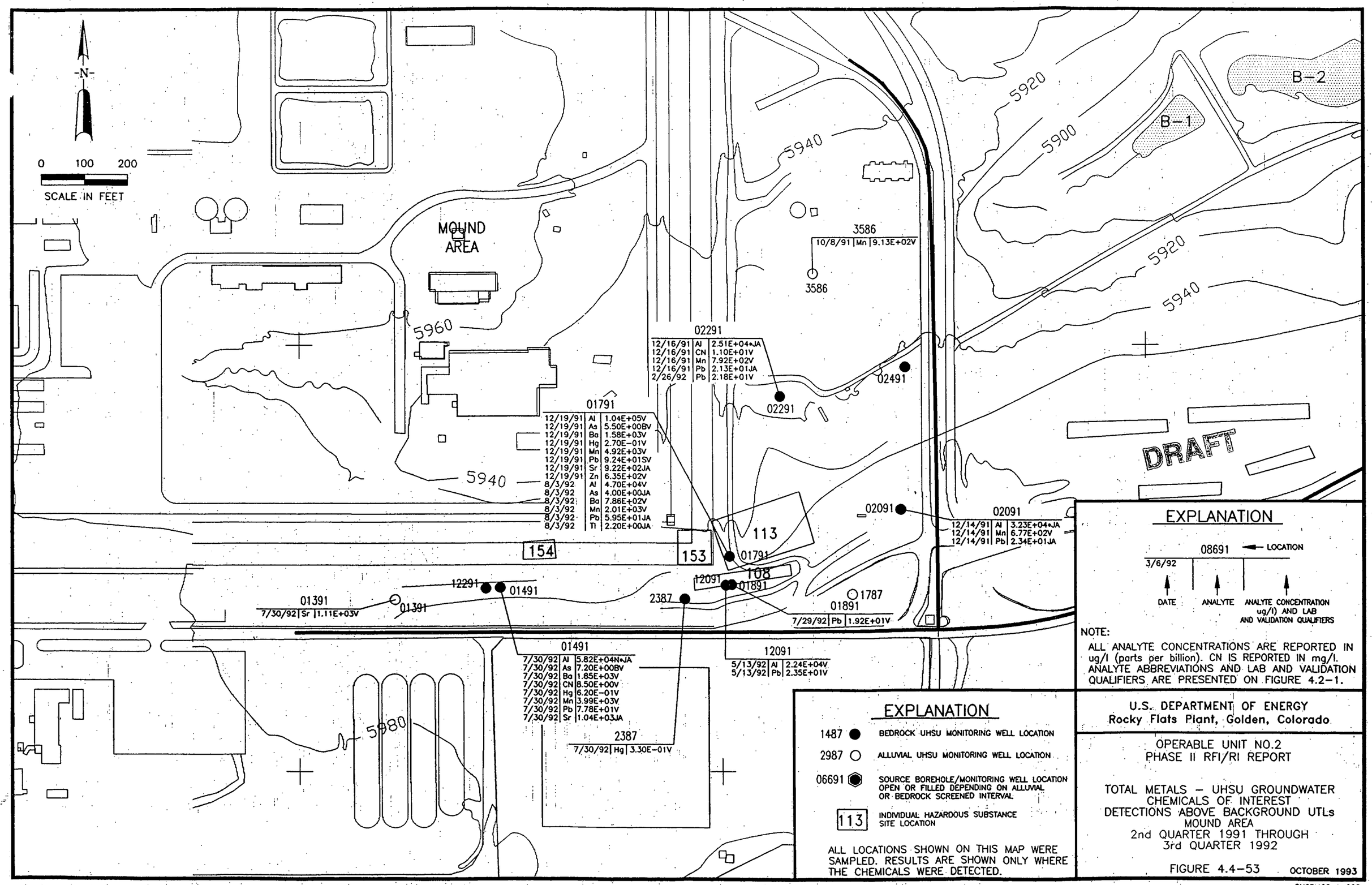
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

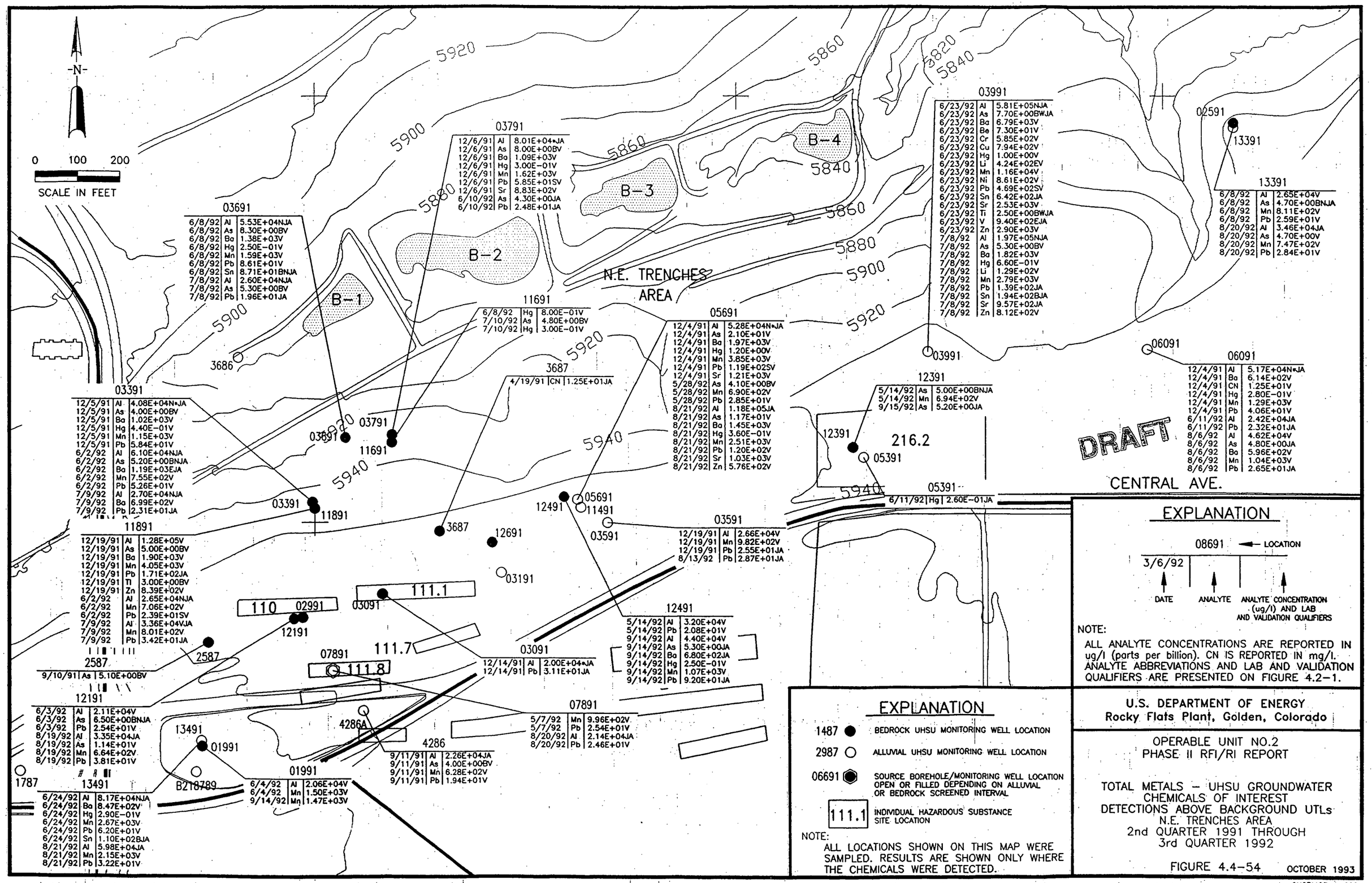
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

TOTAL METALS – UHSU GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
903 PAD AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992

FIGURE 4.4-52 OCTOBER 1993

OU2RI421 1=200


-N-
0 100 200
SCALE IN FEET
MOUND AREA
5960
5940
5980
5920
5900
B-1
B-2
DRAFT
3586
10/8/91 Mn 9.13E+02V
3586
02291
12/16/91 Al 2.51E+04*JA
12/16/91 CN 1.10E+01V
12/16/91 Mn 7.92E+02V
12/16/91 Pb 2.13E+01JA
2/26/92 Pb 2.18E+01V
02291
02491
01791
12/19/91 Al 1.04E+05V
12/19/91 As 5.50E+00BV
12/19/91 Ba 1.58E+03V
12/19/91 Hg 2.70E-01V
12/19/91 Mn 4.92E+03V
12/19/91 Pb 9.24E+01SV
12/19/91 Sr 9.22E+02JA
12/19/91 Zn 6.35E+02V
8/3/92 Al 4.70E+04V
8/3/92 As 4.00E+00JA
8/3/92 Ba 7.86E+02V
8/3/92 Mn 2.01E+03V
8/3/92 Pb 5.95E+01JA
8/3/92 Tl 2.20E+00JA
02091
12/14/91 Al 3.23E+04*JA
12/14/91 Mn 6.77E+02V
12/14/91 Pb 2.34E+01JA
02091
113
154
153
01791
108
12091
01891
1787
01891
7/29/92 Pb 1.92E+01V
12291
01491
01391
01391
7/30/92 Sr 1.11E+03V
2387
01491
7/30/92 Al 5.82E+04N*JA
7/30/92 As 7.20E+00BV
7/30/92 Ba 1.85E+03V
7/30/92 CN 8.50E+00V
7/30/92 Hg 6.20E-01V
7/30/92 Mn 3.99E+03V
7/30/92 Pb 7.78E+01V
7/30/92 Sr 1.04E+03JA
2387
7/30/92 Hg 3.30E-01V
12091
5/13/92 Al 2.24E+04V
5/13/92 Pb 2.35E+01V
EXPLANATION
08691 ← LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). CN IS REPORTED IN mg/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL METALS - UHSU GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
MOUND AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-53
OCTOBER 1993
OU2RI422 1=200



EXPLANATION

08691 ← LOCATION

3/6/92

DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). CN IS REPORTED IN mg/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ◉ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

111.1 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

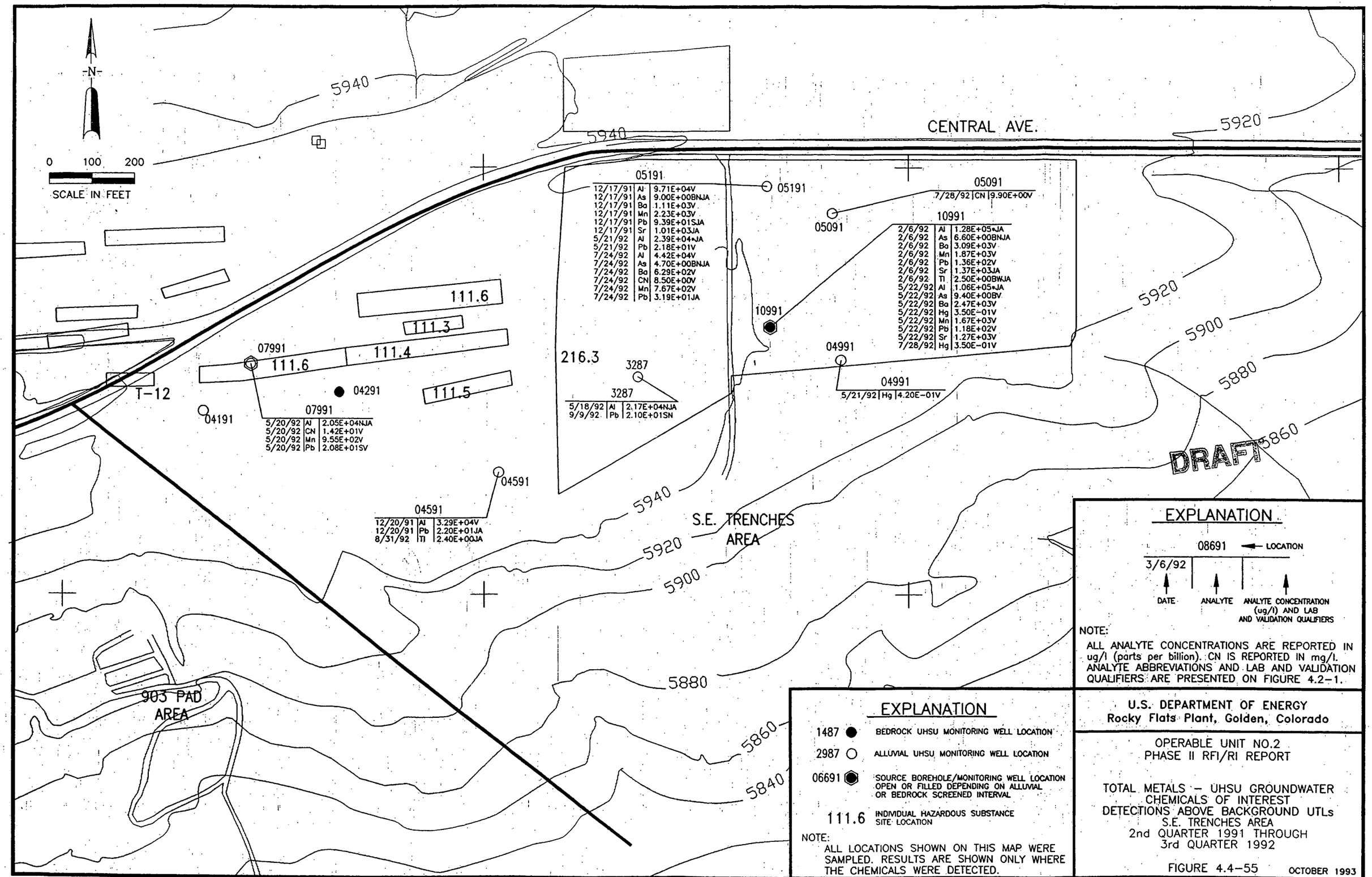
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

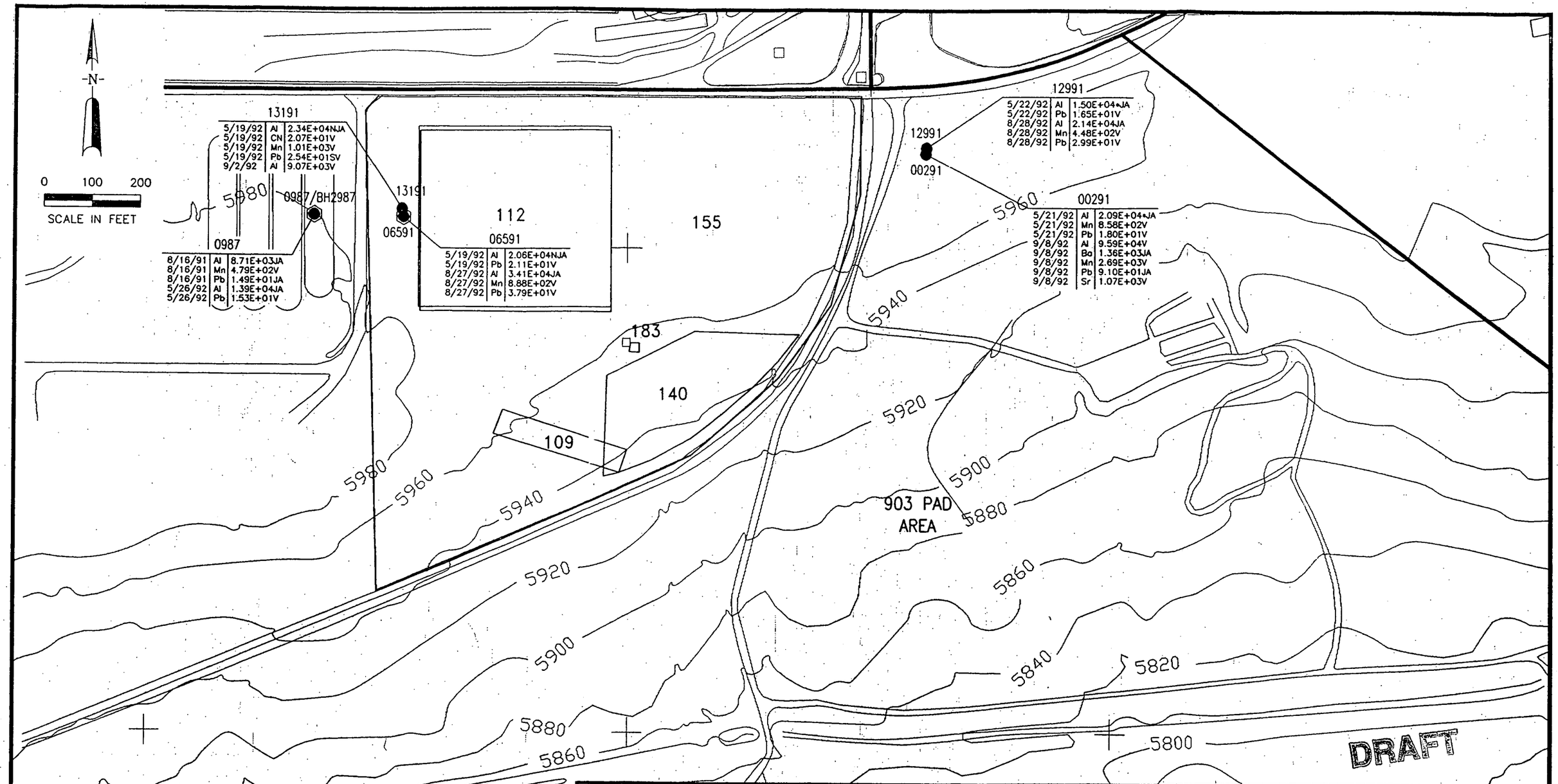
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

TOTAL METALS – UHSU GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
N.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992

FIGURE 4.4-54 OCTOBER 1993

0U2RI423 1=200


N
0 100 200
SCALE IN FEET
CENTRAL AVE.
5940
5920
5900
5880
5860
5840
111.6
111.3
111.4
111.5
216.3
T-12
04191
04291
07991
05191
05091
10991
04991
3287
04591
S.E. TRENCHES AREA
903 PAD AREA
DRAFT
05191
12/17/91 Al 9.71E+04V
12/17/91 As 9.00E+00BNJA
12/17/91 Ba 1.11E+03V
12/17/91 Mn 2.23E+03V
12/17/91 Pb 9.39E+01SJA
12/17/91 Sr 1.01E+03JA
5/21/92 Al 2.39E+04*JA
5/21/92 Pb 2.18E+01V
7/24/92 Al 4.42E+04V
7/24/92 As 4.70E+00BNJA
7/24/92 Ba 6.29E+02V
7/24/92 CN 8.50E+00V
7/24/92 Mn 7.67E+02V
7/24/92 Pb 3.19E+01JA
05091
7/28/92 CN 9.90E+00V
10991
2/6/92 Al 1.28E+05*JA
2/6/92 As 6.60E+00BNJA
2/6/92 Ba 3.09E+03V
2/6/92 Mn 1.87E+03V
2/6/92 Pb 1.36E+02V
2/6/92 Sr 1.37E+03JA
2/6/92 Tl 2.50E+00BWJA
5/22/92 Al 1.06E+05*JA
5/22/92 As 9.40E+00BV
5/22/92 Ba 2.47E+03V
5/22/92 Hg 3.50E-01V
5/22/92 Mn 1.67E+03V
5/22/92 Pb 1.18E+02V
5/22/92 Sr 1.27E+03V
7/28/92 Hg 3.50E-01V
04991
5/21/92 Hg 4.20E-01V
3287
5/18/92 Al 2.17E+04NJA
9/9/92 Pb 2.10E+01SN
07991
5/20/92 Al 2.05E+04NJA
5/20/92 CN 1.42E+01V
5/20/92 Mn 9.55E+02V
5/20/92 Pb 2.08E+01SV
04591
12/20/91 Al 3.29E+04V
12/20/91 Pb 2.20E+01JA
8/31/92 Tl 2.40E+00JA
EXPLANATION
08691 ← LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). CN IS REPORTED IN mg/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.6 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL METALS - UHSU GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
S.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-55
OCTOBER 1993
OU2RI424 1=200



EXPLANATION

08691 ← LOCATION

3/6/92

DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). CN IS REPORTED IN Mg/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

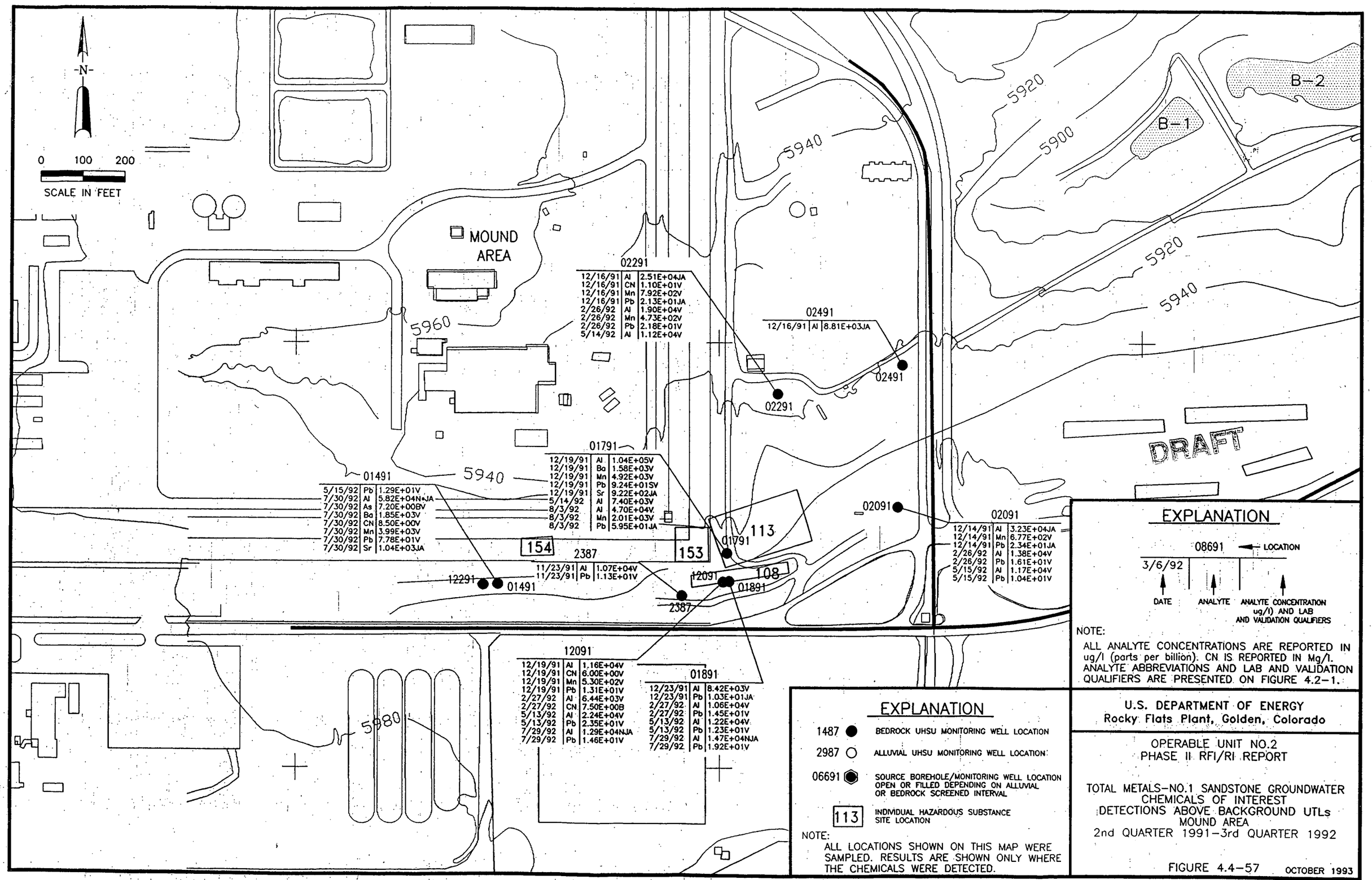
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

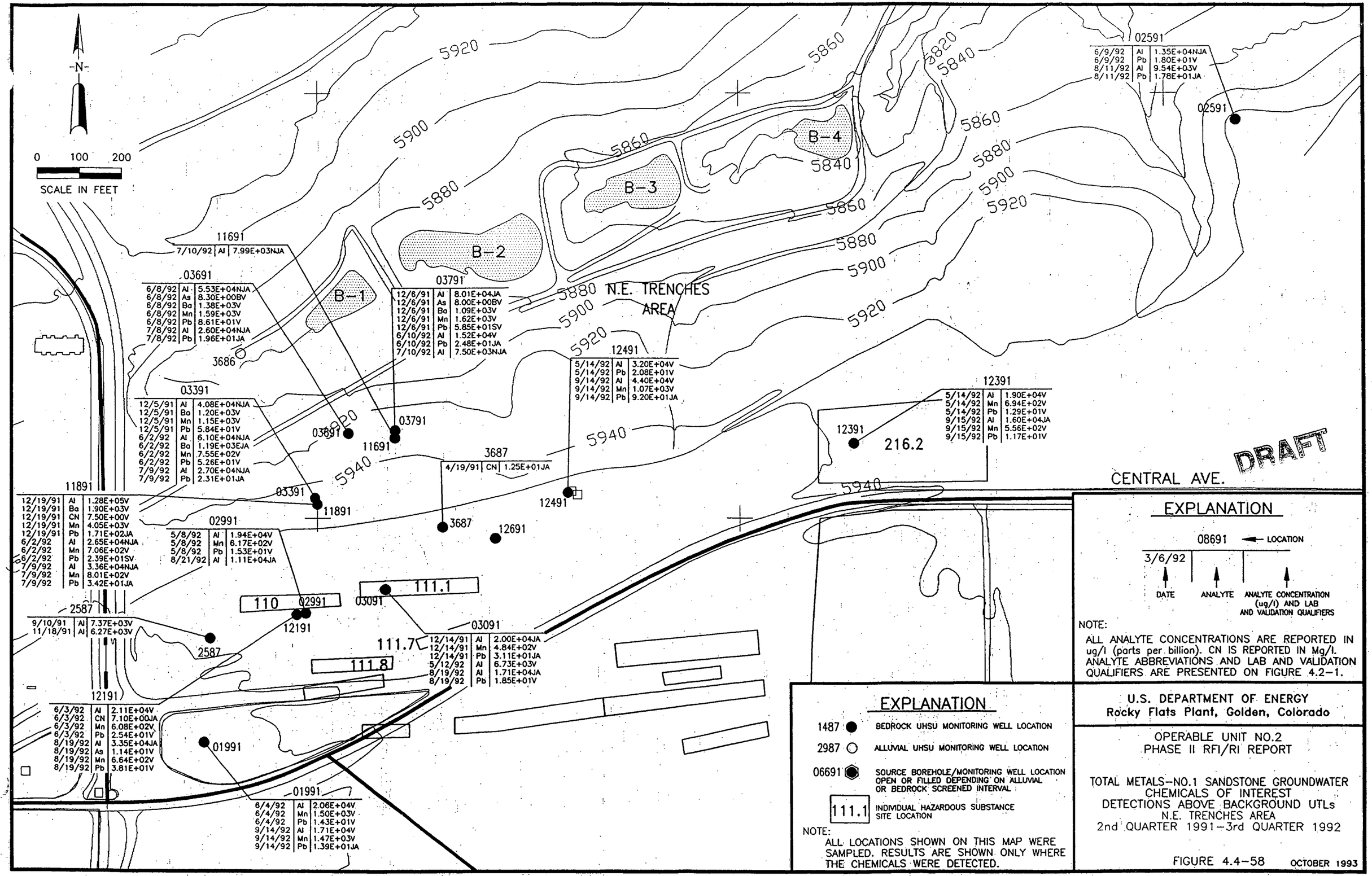
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

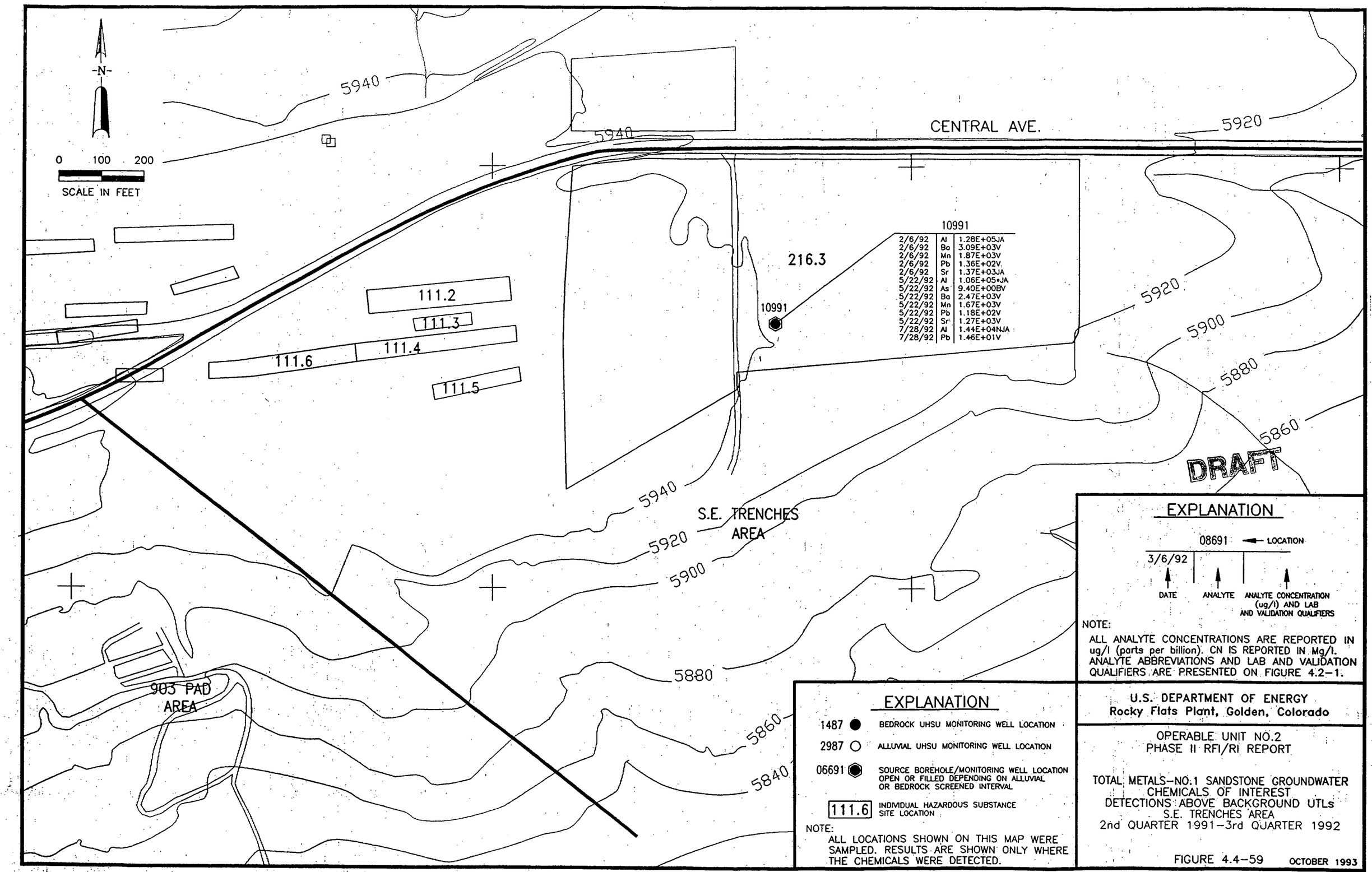
TOTAL METALS-NO.1 SANDSTONE GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
903 PAD AREA
2nd QUARTER 1991-3rd QUARTER 1992

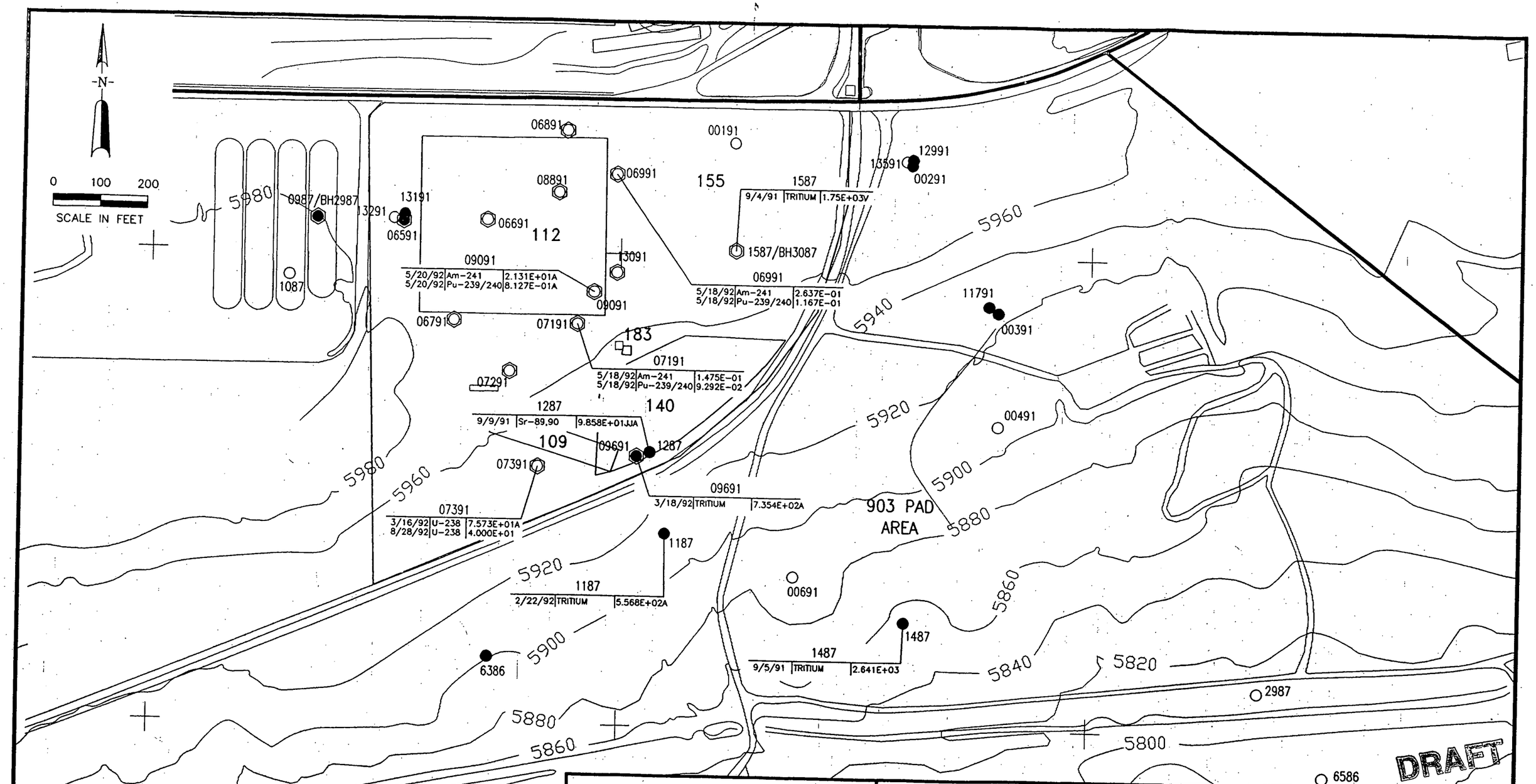
FIGURE 4.4-56 OCTOBER 1993

OU2RI187 1=200


-N-
0 100 200
SCALE IN FEET
MOUND AREA
5960
5940
5920
5900
5980
B-1
B-2
DRAFT
02291
12/16/91 Al 2.51E+04JA
12/16/91 CN 1.10E+01V
12/16/91 Mn 7.92E+02V
12/16/91 Pb 2.13E+01JA
2/26/92 Al 1.90E+04V
2/26/92 Mn 4.73E+02V
2/26/92 Pb 2.18E+01V
5/14/92 Al 1.12E+04V
02491
12/16/91 Al 8.81E+03JA
01791
12/19/91 Al 1.04E+05V
12/19/91 Ba 1.58E+03V
12/19/91 Mn 4.92E+03V
12/19/91 Pb 9.24E+01SV
12/19/91 Sr 9.22E+02JA
5/14/92 Al 7.40E+03V
8/3/92 Al 4.70E+04V.
8/3/92 Mn 2.01E+03V
8/3/92 Pb 5.95E+01JA
01491
5/15/92 Pb 1.29E+01V
7/30/92 Al 5.82E+04N*JA
7/30/92 As 7.20E+00BV
7/30/92 Ba 1.85E+03V
7/30/92 CN 8.50E+00V
7/30/92 Mn 3.99E+03V
7/30/92 Pb 7.78E+01V
7/30/92 Sr 1.04E+03JA
02091
12/14/91 Al 3.23E+04JA
12/14/91 Mn 6.77E+02V
12/14/91 Pb 2.34E+01JA
2/26/92 Al 1.38E+04V
2/26/92 Pb 1.61E+01V
5/15/92 Al 1.17E+04V
5/15/92 Pb 1.04E+01V
2387
11/23/91 Al 1.07E+04V
11/23/91 Pb 1.13E+01V
12091
12/19/91 Al 1.16E+04V
12/19/91 CN 6.00E+00V
12/19/91 Mn 5.30E+02V
12/19/91 Pb 1.31E+01V
2/27/92 Al 6.44E+03V
2/27/92 CN 7.50E+00B
5/13/92 Al 2.24E+04V
5/13/92 Pb 2.35E+01V
7/29/92 Al 1.29E+04NJA
7/29/92 Pb 1.46E+01V
01891
12/23/91 Al 8.42E+03V
12/23/91 Pb 1.03E+01JA
2/27/92 Al 1.06E+04V
2/27/92 Pb 1.45E+01V
5/13/92 Al 1.22E+04V
5/13/92 Pb 1.23E+01V
7/29/92 Al 1.47E+04NJA
7/29/92 Pb 1.92E+01V
154
153
113
108
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). CN IS REPORTED IN Mg/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL METALS-NO.1 SANDSTONE GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
MOUND AREA
2nd QUARTER 1991-3rd QUARTER 1992
FIGURE 4.4-57
OCTOBER 1993
OU2RI188 1=200


N
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
5940
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
CENTRAL AVE.
DRAFT
216.2
110
111.1
111.7
111.8
02591
6/9/92 Al 1.35E+04NJA
6/9/92 Pb 1.80E+01V
8/11/92 Al 9.54E+03V
8/11/92 Pb 1.78E+01JA
11691
7/10/92 Al 7.99E+03NJA
03691
6/8/92 Al 5.53E+04NJA
6/8/92 As 8.30E+00BV
6/8/92 Ba 1.38E+03V
6/8/92 Mn 1.59E+03V
6/8/92 Pb 8.61E+01V
7/8/92 Al 2.60E+04NJA
7/8/92 Pb 1.96E+01JA
03791
12/6/91 Al 8.01E+04JA
12/6/91 As 8.00E+00BV
12/6/91 Ba 1.09E+03V
12/6/91 Mn 1.62E+03V
12/6/91 Pb 5.85E+01SV
6/10/92 Al 1.52E+04V
6/10/92 Pb 2.48E+01JA
7/10/92 Al 7.50E+03NJA
12491
5/14/92 Al 3.20E+04V
5/14/92 Pb 2.08E+01V
9/14/92 Al 4.40E+04V
9/14/92 Mn 1.07E+03V
9/14/92 Pb 9.20E+01JA
12391
5/14/92 Al 1.90E+04V
5/14/92 Mn 6.94E+02V
5/14/92 Pb 1.29E+01V
9/15/92 Al 1.60E+04JA
9/15/92 Mn 5.56E+02V
9/15/92 Pb 1.17E+01V
03391
12/5/91 Al 4.08E+04NJA
12/5/91 Ba 1.20E+03V
12/5/91 Mn 1.15E+03V
12/5/91 Pb 5.84E+01V
6/2/92 Al 6.10E+04NJA
6/2/92 Ba 1.19E+03EJA
6/2/92 Mn 7.55E+02V
6/2/92 Pb 5.26E+01V
7/9/92 Al 2.70E+04NJA
7/9/92 Pb 2.31E+01JA
3687
4/19/91 CN 1.25E+01JA
11891
12/19/91 Al 1.28E+05V
12/19/91 Ba 1.90E+03V
12/19/91 CN 7.50E+00V
12/19/91 Mn 4.05E+03V
12/19/91 Pb 1.71E+02JA
6/2/92 Al 2.65E+04NJA
6/2/92 Mn 7.06E+02V
6/2/92 Pb 2.39E+01SV
7/9/92 Al 3.36E+04NJA
7/9/92 Mn 8.01E+02V
7/9/92 Pb 3.42E+01JA
02991
5/8/92 Al 1.94E+04V
5/8/92 Mn 6.17E+02V
5/8/92 Pb 1.53E+01V
8/21/92 Al 1.11E+04JA
2587
9/10/91 Al 7.37E+03V
11/18/91 Al 6.27E+03V
03091
12/14/91 Al 2.00E+04JA
12/14/91 Mn 4.84E+02V
12/14/91 Pb 3.11E+01JA
5/12/92 Al 6.73E+03V
8/19/92 Al 1.71E+04JA
8/19/92 Pb 1.85E+01V
12191
6/3/92 Al 2.11E+04V
6/3/92 CN 7.10E+00JA
6/3/92 Mn 6.08E+02V
6/3/92 Pb 2.54E+01V
8/19/92 Al 3.35E+04JA
8/19/92 As 1.14E+01V
8/19/92 Mn 6.64E+02V
8/19/92 Pb 3.81E+01V
01991
6/4/92 Al 2.06E+04V
6/4/92 Mn 1.50E+03V
6/4/92 Pb 1.43E+01V
9/14/92 Al 1.71E+04V
9/14/92 Mn 1.47E+03V
9/14/92 Pb 1.39E+01JA
3686
12691
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.1 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). CN IS REPORTED IN Mg/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL METALS-NO.1 SANDSTONE GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
N.E. TRENCHES AREA
2nd QUARTER 1991-3rd QUARTER 1992
FIGURE 4.4-58
OCTOBER 1993
OU2RI189 1=200


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
5940
5920
5900
5880
5860
5840
111.2
111.3
111.4
111.5
111.6
216.3
10991
10991
2/6/92 Al 1.28E+05JA
2/6/92 Ba 3.09E+03V
2/6/92 Mn 1.87E+03V
2/6/92 Pb 1.36E+02V
2/6/92 Sr 1.37E+03JA
5/22/92 Al 1.06E+05*JA
5/22/92 As 9.40E+00BV
5/22/92 Ba 2.47E+03V
5/22/92 Mn 1.67E+03V
5/22/92 Pb 1.18E+02V
5/22/92 Sr 1.27E+03V
7/28/92 Al 1.44E+04NJA
7/28/92 Pb 1.46E+01V
S.E. TRENCHES AREA
903 PAD AREA
DRAFT
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). CN IS REPORTED IN Mg/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.6 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL METALS-NO.1 SANDSTONE GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
S.E. TRENCHES AREA
2nd QUARTER 1991-3rd QUARTER 1992
FIGURE 4.4-59
OCTOBER 1993
OU2RI190 1=200



EXPLANATION

08691 ← LOCATION

3/6/92

DATE | ANALYTE | ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

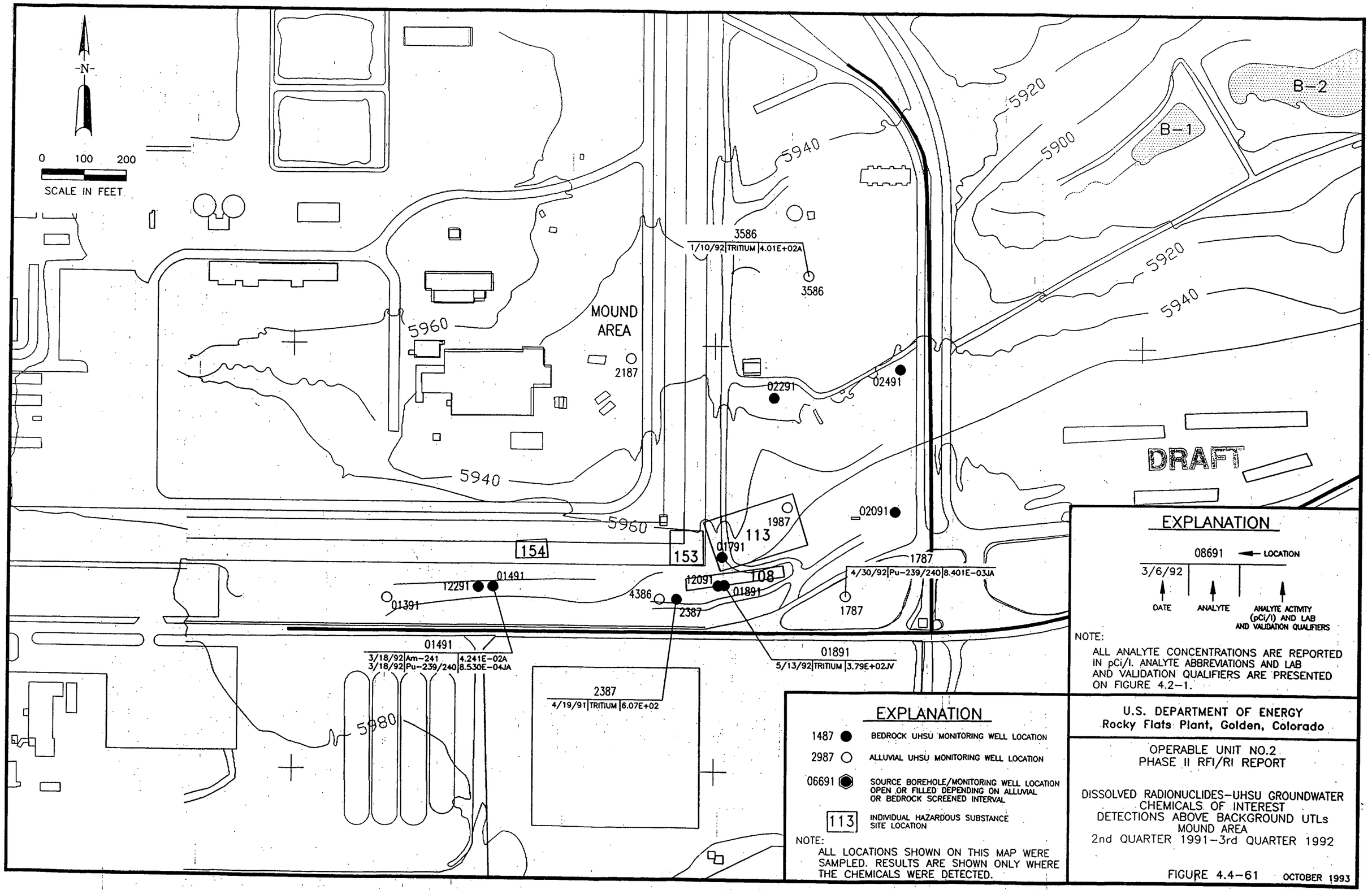
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

DISSOLVED RADIONUCLIDES-UHSU GROUNDWATER CHEMICALS OF INTEREST DETECTIONS ABOVE BACKGROUND UTLs
903 PAD AREA
2nd QUARTER 1991-3rd QUARTER 1992

FIGURE 4.4-60 OCTOBER 1993

OU2RI199 1=200



EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

EXPLANATION

08691 ← LOCATION

3/6/92 | | |

DATE — ANALYTE — ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

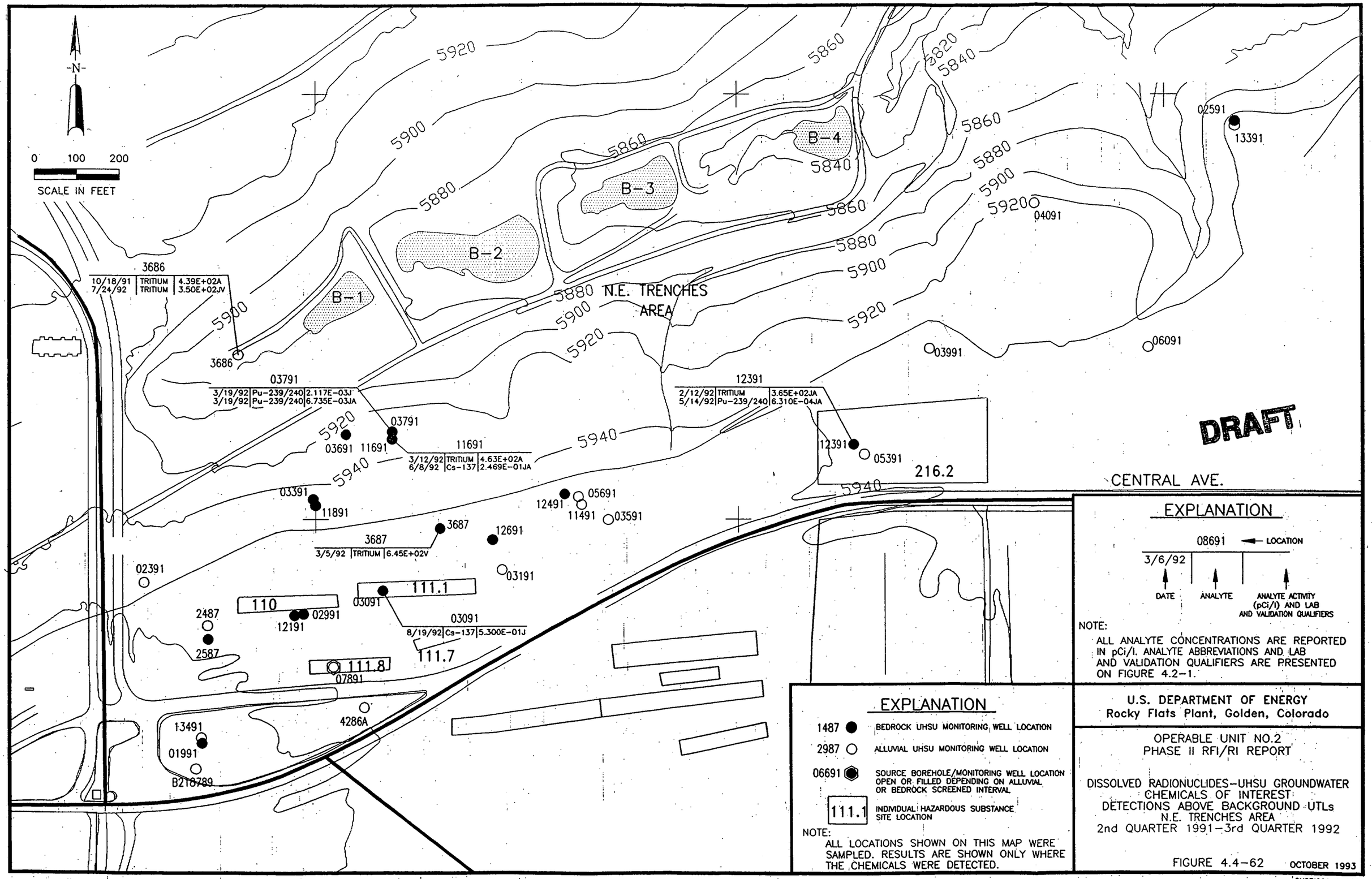
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

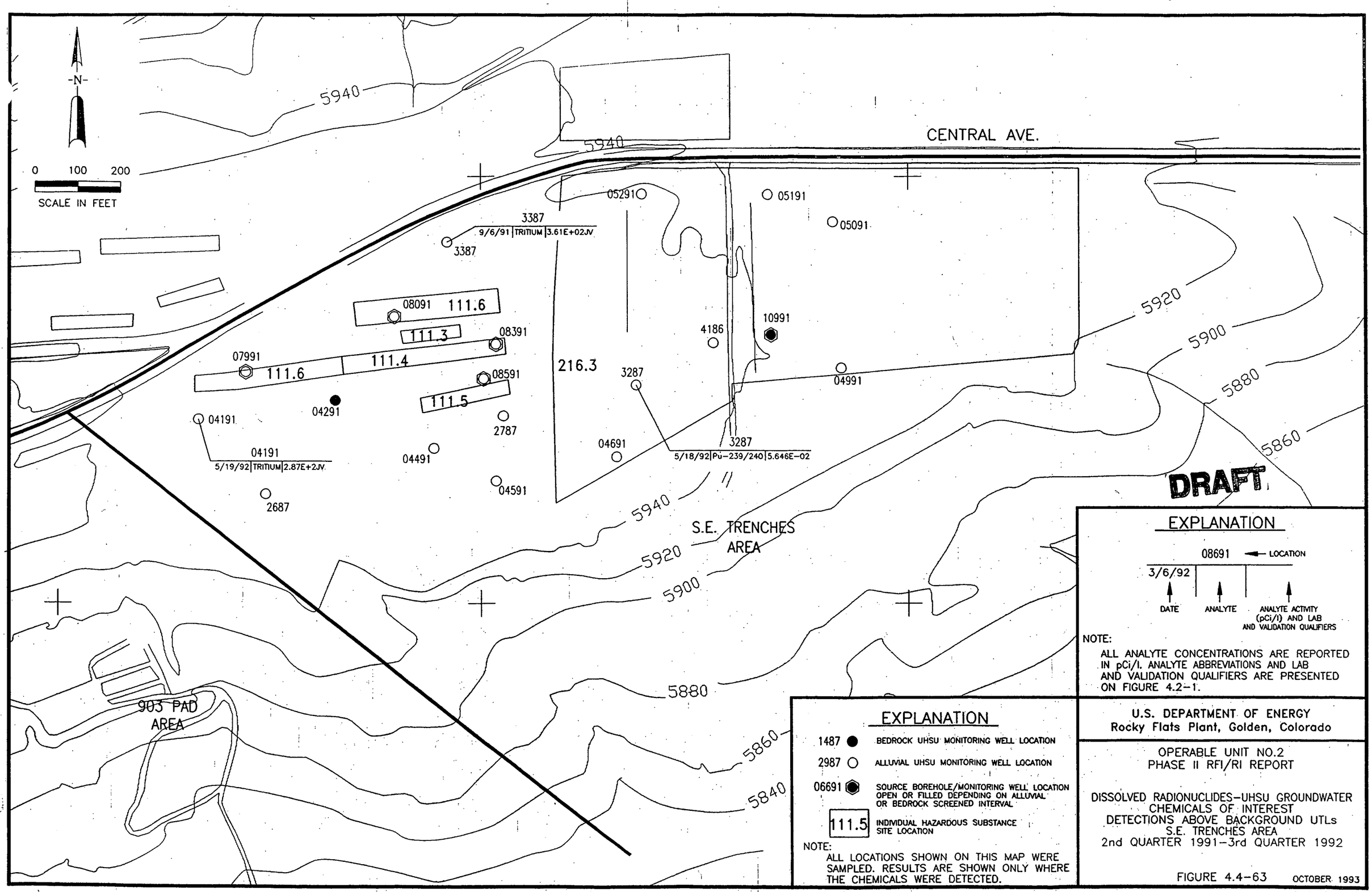
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

DISSOLVED RADIONUCLIDES-UHSU GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
MOUND AREA
2nd QUARTER 1991-3rd QUARTER 1992

FIGURE 4.4-61 OCTOBER 1993

OU2RI200 1=200


-N-
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
5940
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
3686
10/18/91 TRITIUM 4.39E+02A
7/24/92 TRITIUM 3.50E+02JV
03791
3/19/92 Pu-239/240 2.117E-03J
3/19/92 Pu-239/240 6.735E-03JA
11691
3/12/92 TRITIUM 4.63E+02A
6/8/92 Cs-137 2.469E-01JA
3687
3/5/92 TRITIUM 6.45E+02V
03091
8/19/92 Cs-137 5.300E-01J
12391
2/12/92 TRITIUM 3.65E+02JA
5/14/92 Pu-239/240 6.310E-04JA
110
111.1
111.7
111.8
216.2
CENTRAL AVE.
DRAFT
EXPLANATION
08691 ← LOCATION
3/6/92
DATE
ANALYTE
ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.1 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
DISSOLVED RADIONUCLIDES-UHSU GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
N.E. TRENCHES AREA
2nd QUARTER 1991-3rd QUARTER 1992
FIGURE 4.4-62
OCTOBER 1993
OU2RI201 1=200



EXPLANATION

08691 ← LOCATION

3/6/92

DATE | ANALYTE | ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ●	BEDROCK UHSU MONITORING WELL LOCATION
2987 ○	ALLUVIAL UHSU MONITORING WELL LOCATION
06691 ◉	SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.5	INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

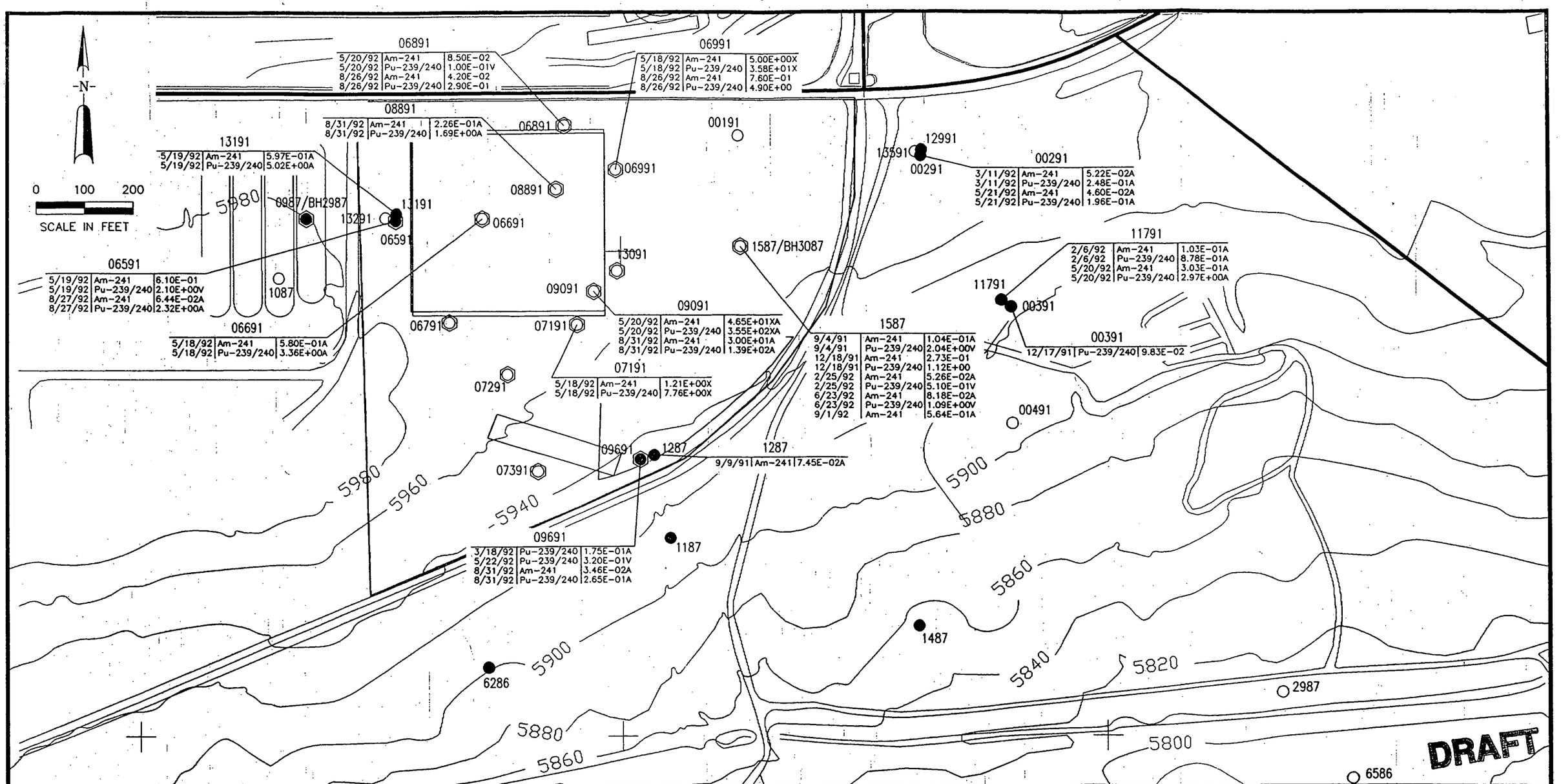
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

DISSOLVED RADIONUCLIDES-UHSU GROUNDWATER CHEMICALS OF INTEREST DETECTIONS ABOVE BACKGROUND UTLs
S.E. TRENCHES AREA
2nd QUARTER 1991-3rd QUARTER 1992

FIGURE 4.4-63 OCTOBER 1993

0U2RI202 1=200



EXPLANATION

08691 ← LOCATION

3/6/92

DATE | ANALYTE | ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

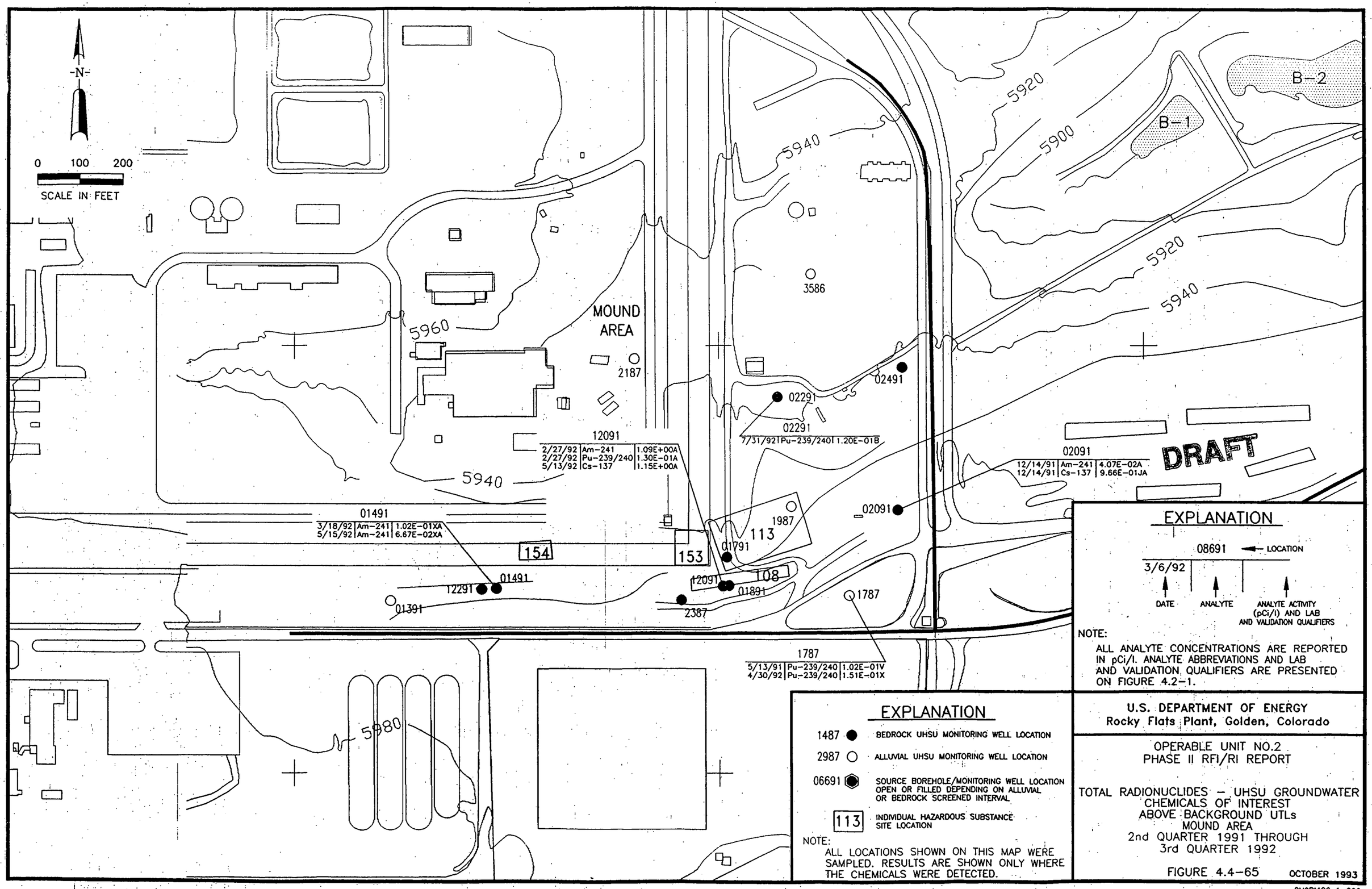
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

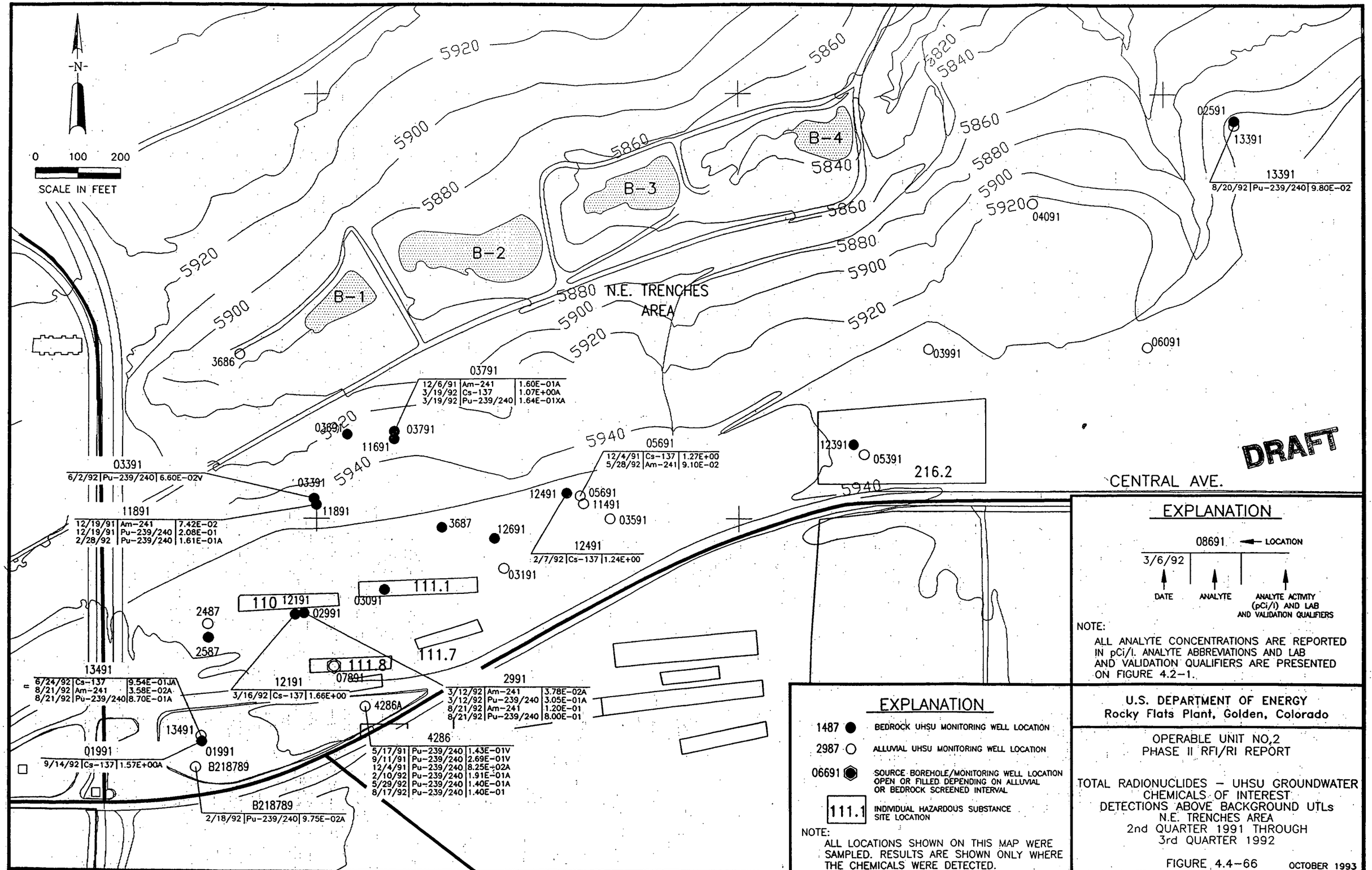
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

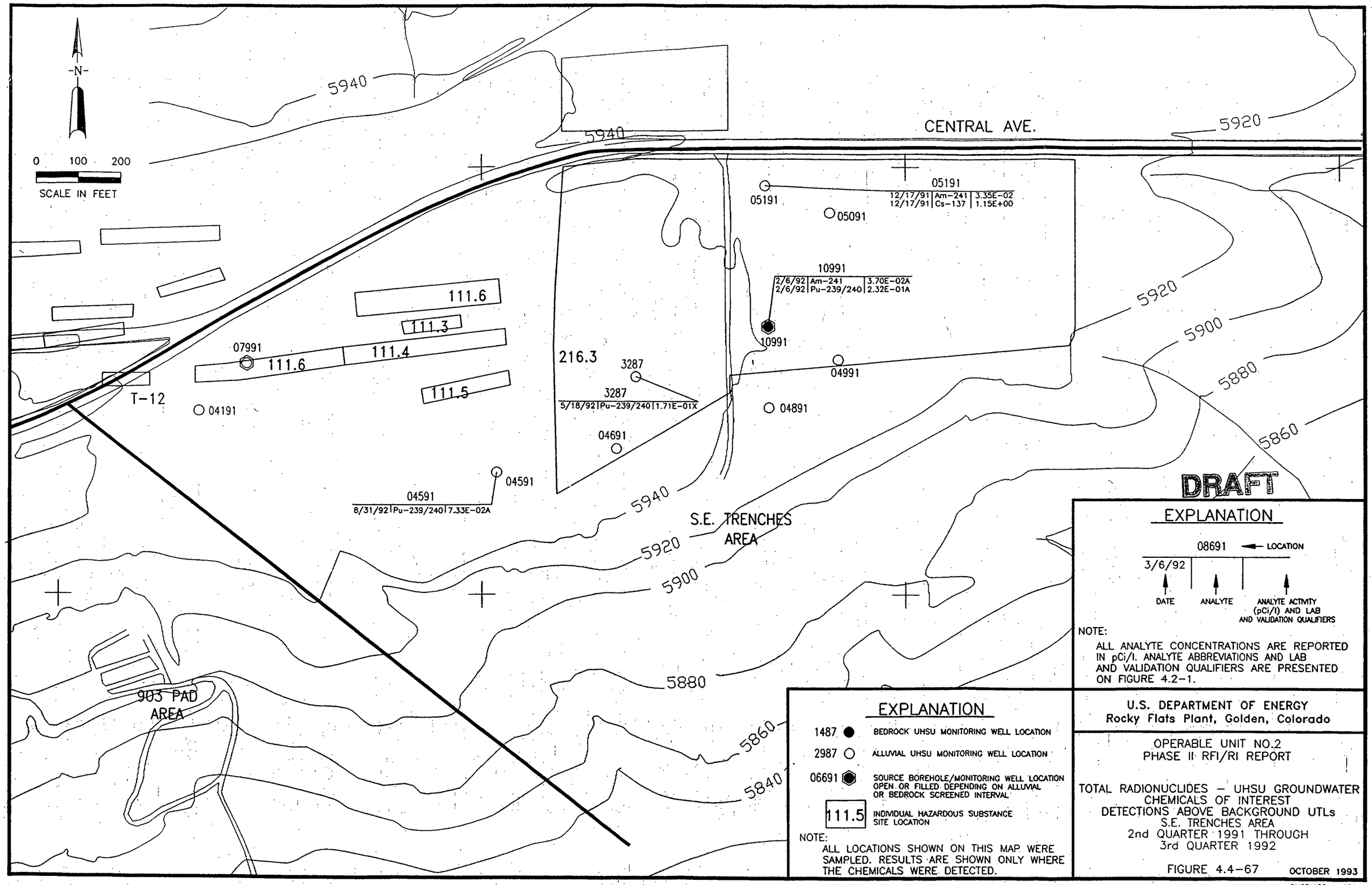
TOTAL RADIONUCLIDES – UHSU GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE UTLs
903 PAD AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992

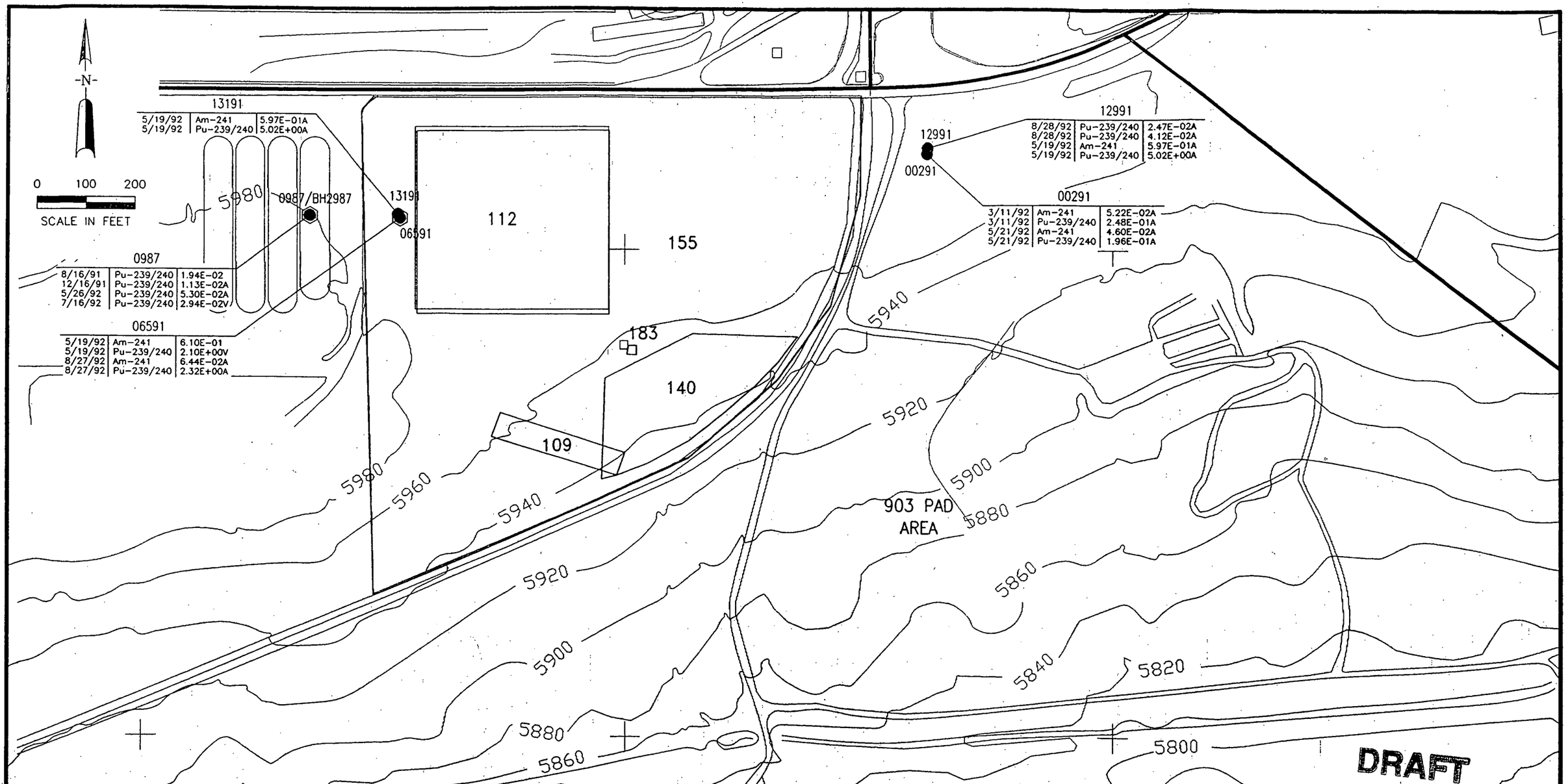
FIGURE 4.4-64 OCTOBER 1993

OU2RI425 1=200


-N-
0 100 200
SCALE IN FEET
MOUND AREA
5960
5940
5920
5900
5980
B-1
B-2
3586
2187
02491
02291
02291
7/31/92 Pu-239/240 1.20E-01B
12091
2/27/92 Am-241 1.09E+00A
2/27/92 Pu-239/240 1.30E-01A
5/13/92 Cs-137 1.15E+00A
02091
12/14/91 Am-241 4.07E-02A
12/14/91 Cs-137 9.66E-01JA
DRAFT
01491
3/18/92 Am-241 1.02E-01XA
5/15/92 Am-241 6.67E-02XA
154
153
113
1987
01791
108
12091
01891
12291
01491
01391
2387
1787
1787
5/13/91 Pu-239/240 1.02E-01V
4/30/92 Pu-239/240 1.51E-01X
02091
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL RADIONUCLIDES – UHSU GROUNDWATER
CHEMICALS OF INTEREST
ABOVE BACKGROUND UTLs
MOUND AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-65
OCTOBER 1993
0U2RI426 1=200


-N-
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
3686
03791
12/6/91 Am-241 1.60E-01A
3/19/92 Cs-137 1.07E+00A
3/19/92 Pu-239/240 1.64E-01XA
03891
11691
03791
5940
05691
12/4/91 Cs-137 1.27E+00
5/28/92 Am-241 9.10E-02
12391
05391
216.2
03991
06091
02591
13391
13391
8/20/92 Pu-239/240 9.80E-02
04091
DRAFT
CENTRAL AVE.
03391
6/2/92 Pu-239/240 6.60E-02V
03391
11891
11891
12/19/91 Am-241 7.42E-02
12/19/91 Pu-239/240 2.08E-01
2/28/92 Pu-239/240 1.61E-01A
3687
12691
12491
05691
11491
03591
12491
2/7/92 Cs-137 1.24E+00
03191
111.1
03091
110
12191
02991
2487
2587
111.7
111.8
07891
13491
6/24/92 Cs-137 9.54E-01JA
8/21/92 Am-241 3.58E-02A
8/21/92 Pu-239/240 8.70E-01A
12191
3/16/92 Cs-137 1.66E+00
2991
3/12/92 Am-241 3.78E-02A
3/12/92 Pu-239/240 3.05E-01A
8/21/92 Am-241 1.20E-01
8/21/92 Pu-239/240 8.00E-01
4286A
13491
01991
9/14/92 Cs-137 1.57E+00A
01991
B218789
B218789
2/18/92 Pu-239/240 9.75E-02A
4286
5/17/91 Pu-239/240 1.43E-01V
9/11/91 Pu-239/240 2.69E-01V
12/4/91 Pu-239/240 8.25E-02A
2/10/92 Pu-239/240 1.91E-01A
5/29/92 Pu-239/240 1.40E-01A
8/17/92 Pu-239/240 1.40E-01
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.1 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL RADIONUCLIDES – UHSU GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
N.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-66
OCTOBER 1993
0U2RI427 1=200


-N-
0 100 200
SCALE IN FEET
CENTRAL AVE.
5940
5920
5900
5880
5860
5840
05191
12/17/91 Am-241 3.35E-02
12/17/91 Cs-137 1.15E+00
05191
05091
10991
2/6/92 Am-241 3.70E-02A
2/6/92 Pu-239/240 2.32E-01A
10991
04991
04891
111.6
111.3
111.4
111.5
111.6
07991
T-12
04191
216.3
3287
3287
5/18/92 Pu-239/240 1.71E-01X
04691
04591
04591
8/31/92 Pu-239/240 7.33E-02A
S.E. TRENCHES AREA
903 PAD AREA
DRAFT
EXPLANATION
08691 LOCATION
3/6/92
DATE
ANALYTE
ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.5 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL RADIONUCLIDES – UHSU GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
S.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-67
OCTOBER 1993
OU2RI428 1=200



EXPLANATION

08691 ← LOCATION

3/6/92 | | |

DATE — ANALYTE — ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.

EXPLANATION

1487 ● BEDROCK UHSU MONITORING WELL LOCATION

2987 ○ ALLUVIAL UHSU MONITORING WELL LOCATION

06691 ⬢ SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL

112 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

NOTE:

ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.

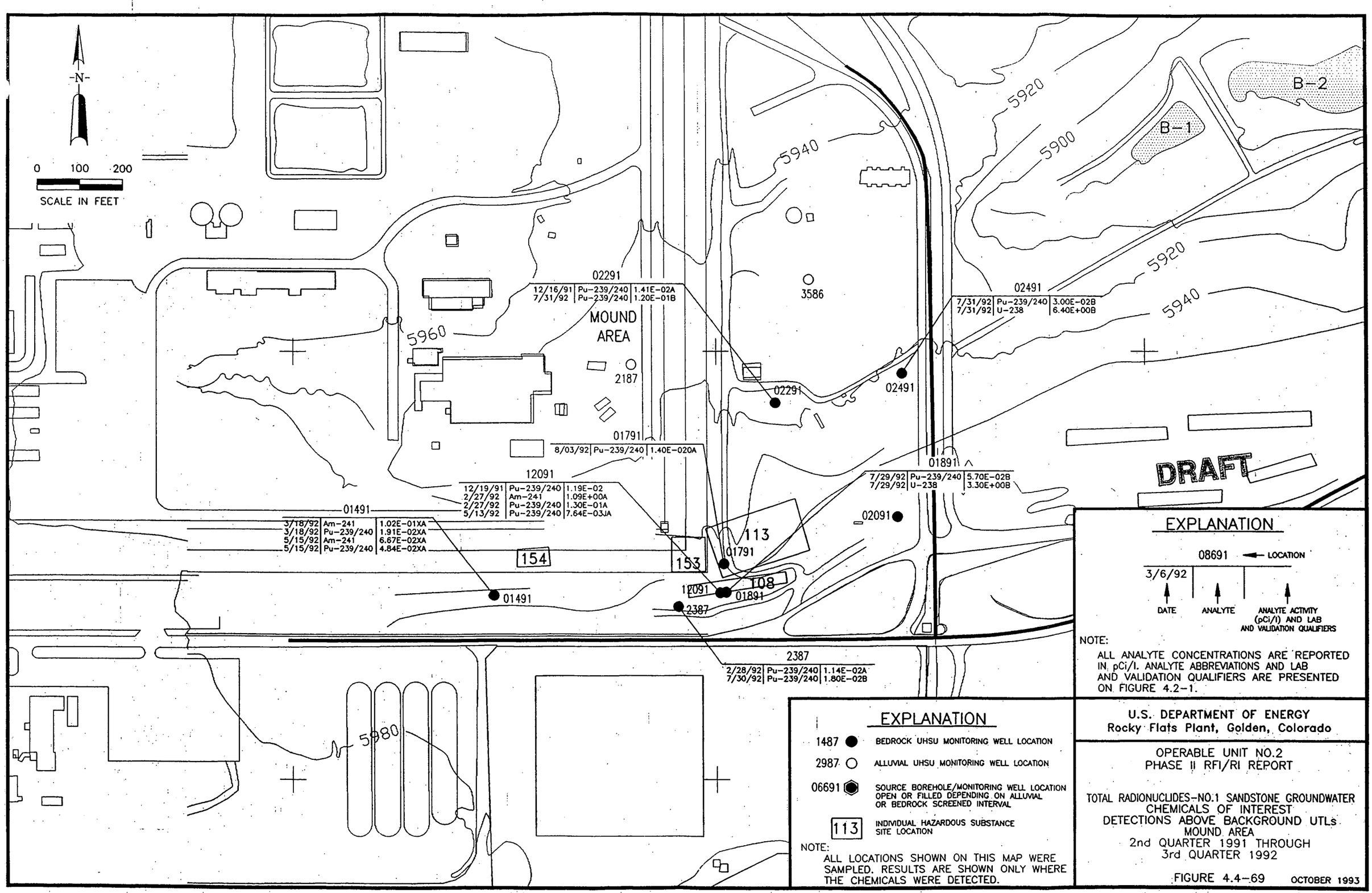
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

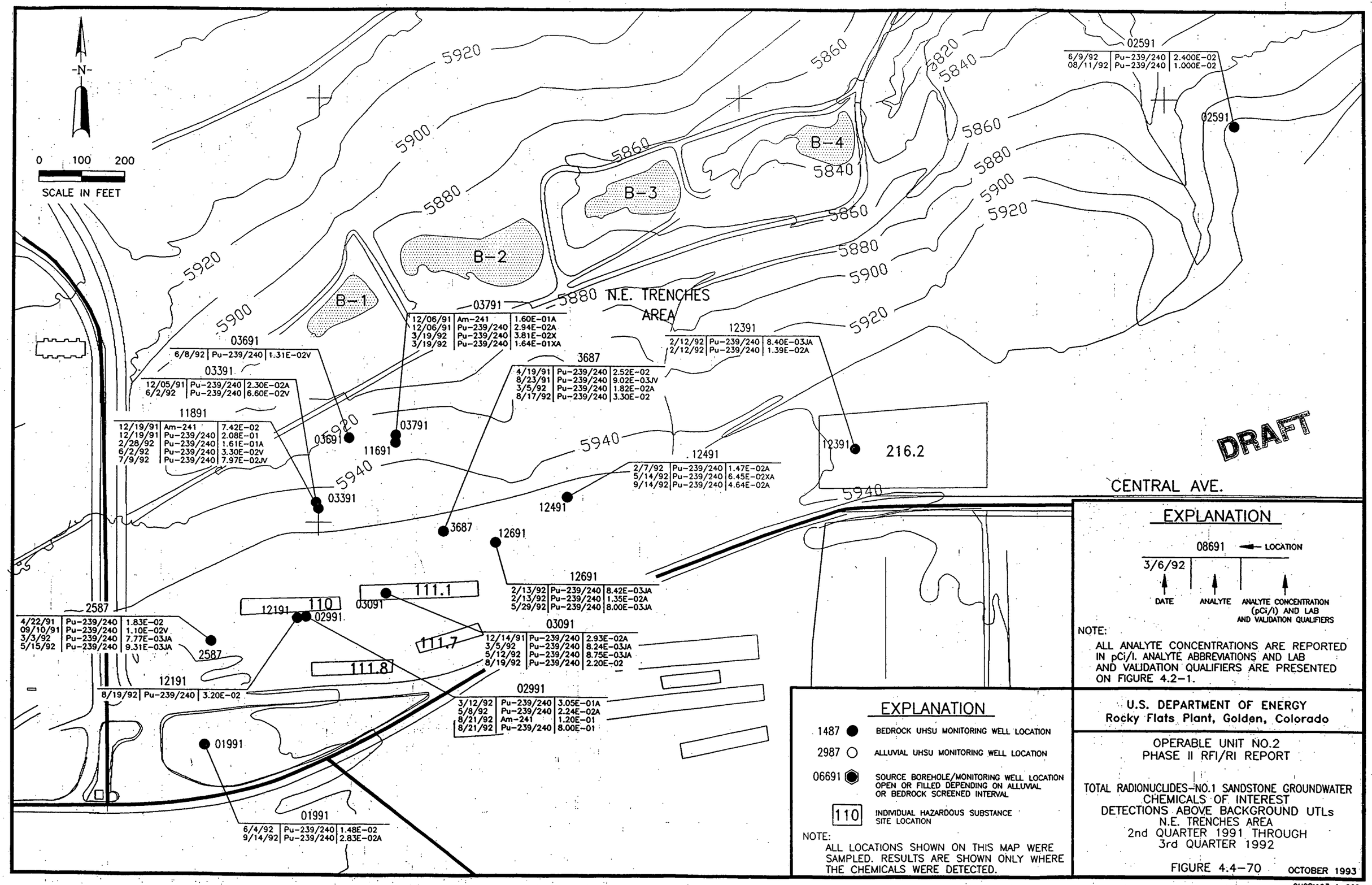
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

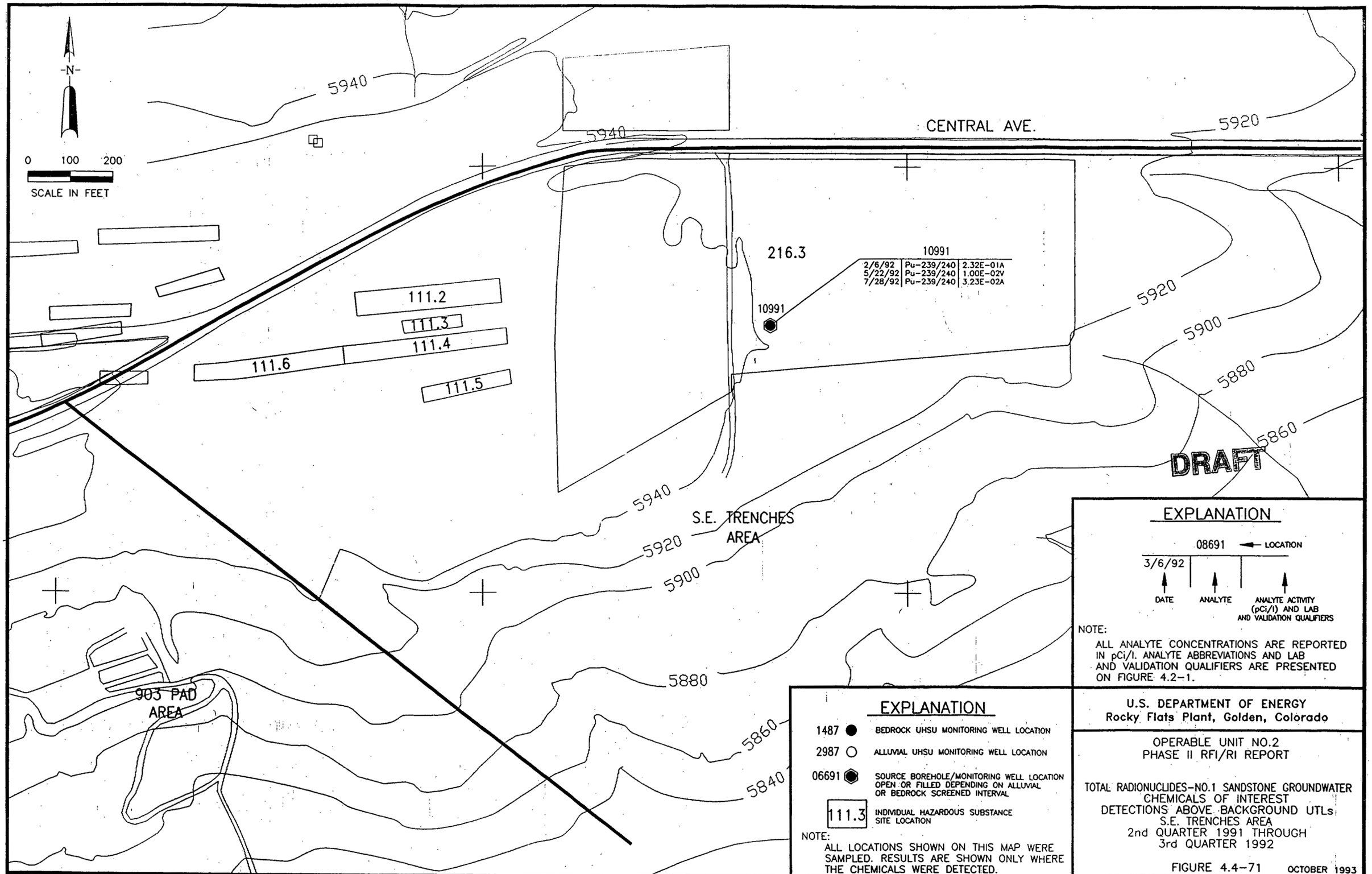
TOTAL RADIONUCLIDES-NO.1 SANDSTONE GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
903 PAD AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992

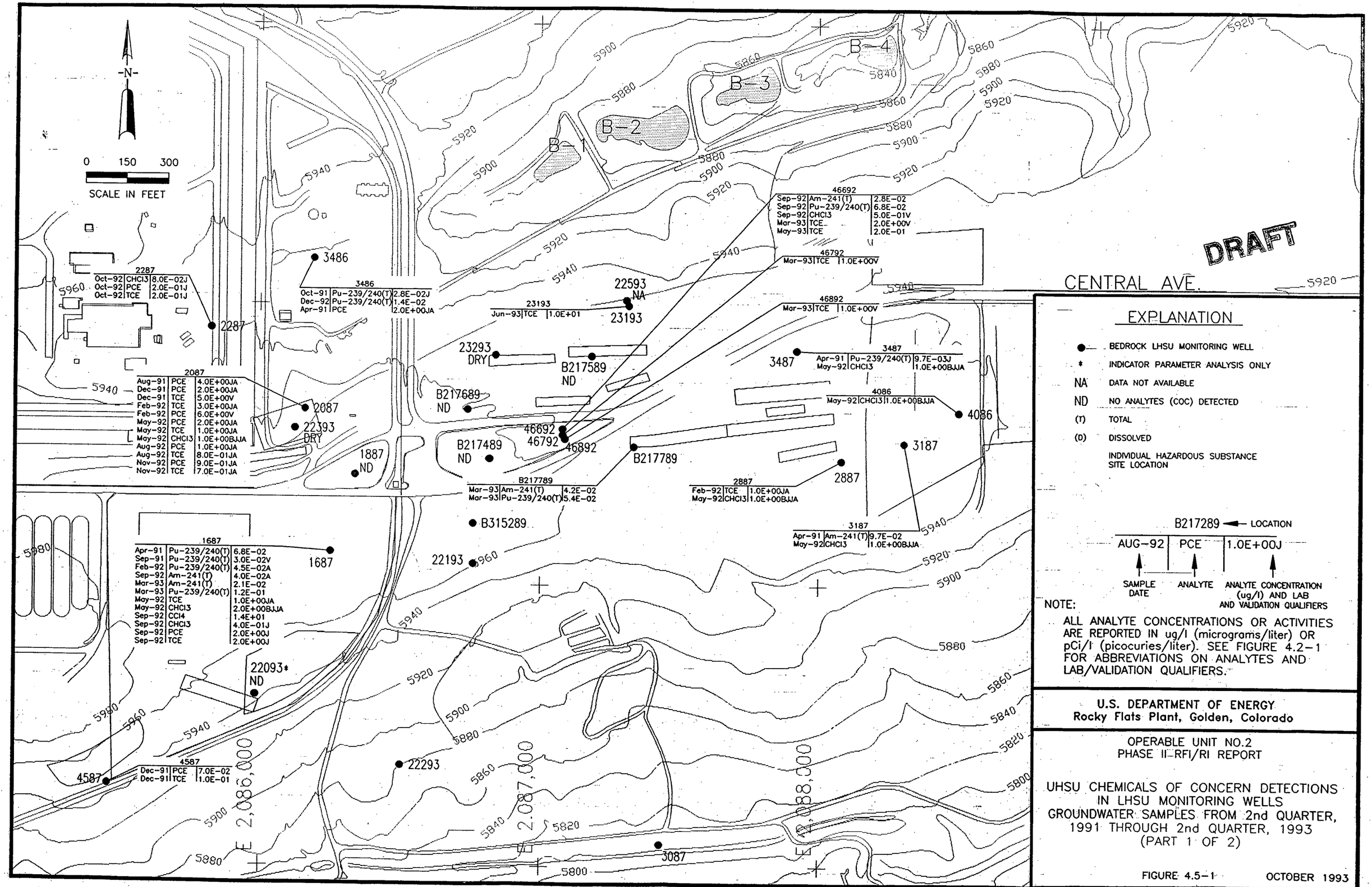
FIGURE 4.4-68 OCTOBER 1993

0U2RI191 1=200

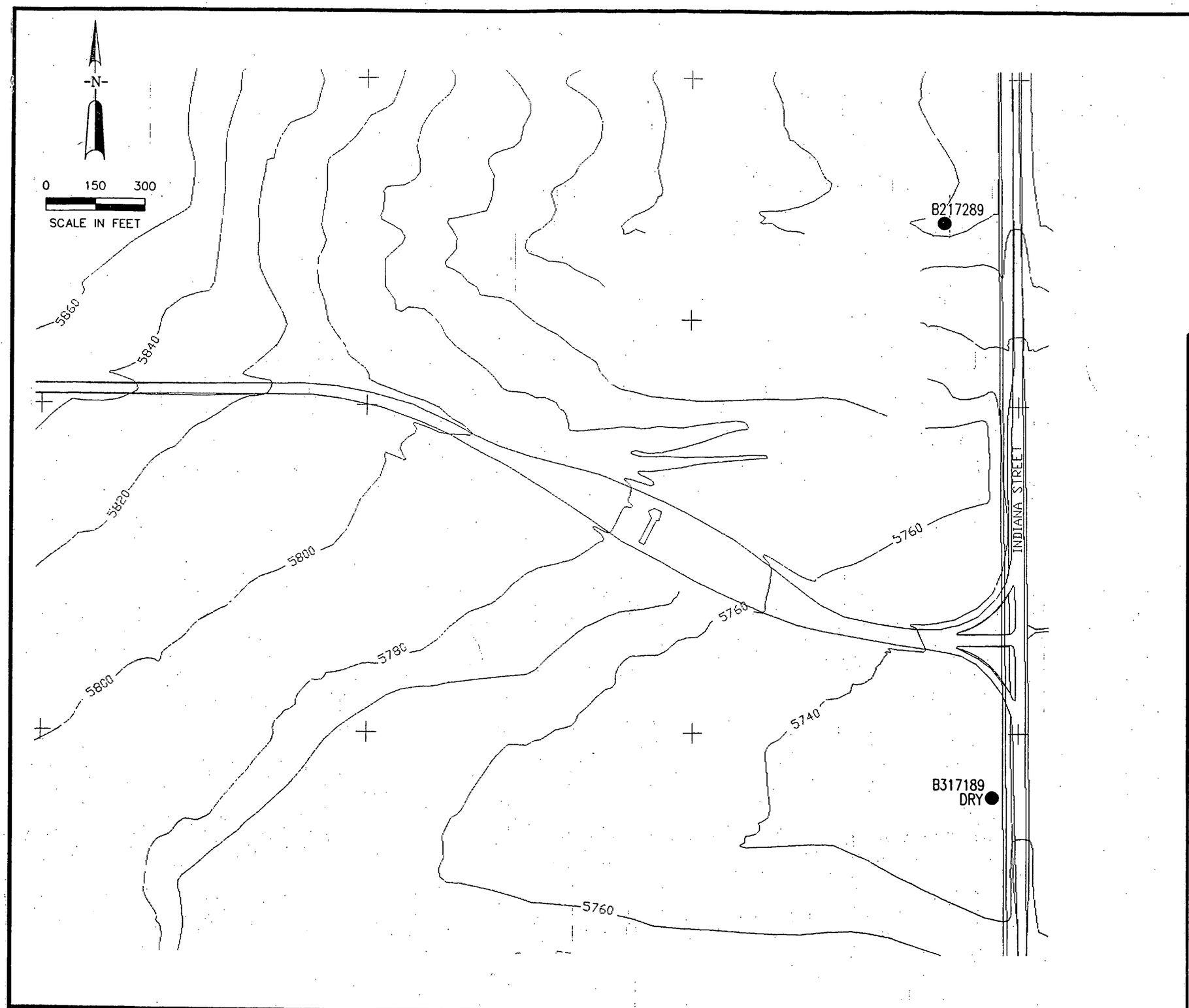

-N-
0 100 200
SCALE IN FEET
MOUND AREA
02291
12/16/91 Pu-239/240 1.41E-02A
7/31/92 Pu-239/240 1.20E-01B
02491
7/31/92 Pu-239/240 3.00E-02B
7/31/92 U-238 6.40E+00B
01791
8/03/92 Pu-239/240 1.40E-020A
12091
12/19/91 Pu-239/240 1.19E-02
2/27/92 Am-241 1.09E+00A
2/27/92 Pu-239/240 1.30E-01A
5/13/92 Pu-239/240 7.64E-03JA
01491
3/18/92 Am-241 1.02E-01XA
3/18/92 Pu-239/240 1.91E-02XA
5/15/92 Am-241 6.67E-02XA
5/15/92 Pu-239/240 4.84E-02XA
01891
7/29/92 Pu-239/240 5.70E-02B
7/29/92 U-238 3.30E+00B
2387
2/28/92 Pu-239/240 1.14E-02A
7/30/92 Pu-239/240 1.80E-02B
5960
5940
5920
5900
5980
B-1
B-2
3586
2187
02091
113
154
153
108
DRAFT
EXPLANATION
08691 ← LOCATION
3/6/92
DATE
ANALYTE
ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
113 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL RADIONUCLIDES-NO.1 SANDSTONE GROUNDWATER
CHEMICALS OF INTEREST
DETECTIONS ABOVE BACKGROUND UTLs
MOUND AREA
2nd QUARTER 1991 THROUGH
3rd QUARTER 1992
FIGURE 4.4-69
OCTOBER 1993
OU2RI192 1=200


-N-
0 100 200
SCALE IN FEET
5920
5900
5880
5860
5840
5820
5940
B-1
B-2
B-3
B-4
N.E. TRENCHES AREA
CENTRAL AVE.
216.2
DRAFT
02591
6/9/92 Pu-239/240 2.400E-02
08/11/92 Pu-239/240 1.000E-02
03791
12/06/91 Am-241 1.60E-01A
12/06/91 Pu-239/240 2.94E-02A
3/19/92 Pu-239/240 3.81E-02X
3/19/92 Pu-239/240 1.64E-01XA
03691
6/8/92 Pu-239/240 1.31E-02V
03391
12/05/91 Pu-239/240 2.30E-02A
6/2/92 Pu-239/240 6.60E-02V
11891
12/19/91 Am-241 7.42E-02
12/19/91 Pu-239/240 2.08E-01
2/28/92 Pu-239/240 1.61E-01A
6/2/92 Pu-239/240 3.30E-02V
7/9/92 Pu-239/240 7.97E-02JV
3687
4/19/91 Pu-239/240 2.52E-02
8/23/91 Pu-239/240 9.02E-03JV
3/5/92 Pu-239/240 1.82E-02A
8/17/92 Pu-239/240 3.30E-02
12391
2/12/92 Pu-239/240 8.40E-03JA
2/12/92 Pu-239/240 1.39E-02A
12491
2/7/92 Pu-239/240 1.47E-02A
5/14/92 Pu-239/240 6.45E-02XA
9/14/92 Pu-239/240 4.64E-02A
12691
2/13/92 Pu-239/240 8.42E-03JA
2/13/92 Pu-239/240 1.35E-02A
5/29/92 Pu-239/240 8.00E-03JA
2587
4/22/91 Pu-239/240 1.83E-02
09/10/91 Pu-239/240 1.10E-02V
3/3/92 Pu-239/240 7.77E-03JA
5/15/92 Pu-239/240 9.31E-03JA
12191
8/19/92 Pu-239/240 3.20E-02
03091
12/14/91 Pu-239/240 2.93E-02A
3/5/92 Pu-239/240 8.24E-03JA
5/12/92 Pu-239/240 8.75E-03JA
8/19/92 Pu-239/240 2.20E-02
02991
3/12/92 Pu-239/240 3.05E-01A
5/8/92 Pu-239/240 2.24E-02A
8/21/92 Am-241 1.20E-01
8/21/92 Pu-239/240 8.00E-01
01991
6/4/92 Pu-239/240 1.48E-02
9/14/92 Pu-239/240 2.83E-02A
110
111.1
111.7
111.8
EXPLANATION
08691 ← LOCATION
3/6/92
DATE
ANALYTE
ANALYTE CONCENTRATION (pCi/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
110 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL RADIONUCLIDES-NO.1 SANDSTONE GROUNDWATER CHEMICALS OF INTEREST DETECTIONS ABOVE BACKGROUND UTLs
N.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH 3rd QUARTER 1992
FIGURE 4.4-70
OCTOBER 1993
OU2RI193 1=200


-N-
0 100 200
SCALE IN FEET
5940
5940
CENTRAL AVE.
5920
216.3
10991
2/6/92 Pu-239/240 2.32E-01A
5/22/92 Pu-239/240 1.00E-02V
7/28/92 Pu-239/240 3.23E-02A
10991
111.2
111.3
111.4
111.6
111.5
5920
5900
5880
5860
DRAFT
5940
S.E. TRENCHES AREA
5920
5900
5880
903 PAD AREA
5860
5840
EXPLANATION
08691 ← LOCATION
3/6/92
DATE
ANALYTE
ANALYTE ACTIVITY (pCi/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON FIGURE 4.2-1.
EXPLANATION
1487 BEDROCK UHSU MONITORING WELL LOCATION
2987 ALLUVIAL UHSU MONITORING WELL LOCATION
06691 SOURCE BOREHOLE/MONITORING WELL LOCATION OPEN OR FILLED DEPENDING ON ALLUVIAL OR BEDROCK SCREENED INTERVAL
111.3 INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
NOTE:
ALL LOCATIONS SHOWN ON THIS MAP WERE SAMPLED. RESULTS ARE SHOWN ONLY WHERE THE CHEMICALS WERE DETECTED.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT
TOTAL RADIONUCLIDES-NO.1 SANDSTONE GROUNDWATER CHEMICALS OF INTEREST DETECTIONS ABOVE BACKGROUND UTLs
S.E. TRENCHES AREA
2nd QUARTER 1991 THROUGH 3rd QUARTER 1992
FIGURE 4.4-71
OCTOBER 1993
OU2RI194 1=200


-N-
0 150 300
SCALE IN FEET
DRAFT
CENTRAL AVE.
B-1
B-2
B-3
B-4
2287
Oct-92 CHCl3 8.0E-02J
Oct-92 PCE 2.0E-01J
Oct-92 TCE 2.0E-01J
3486
Oct-91 Pu-239/240(T) 2.8E-02J
Dec-92 Pu-239/240(T) 1.4E-02
Apr-91 PCE 2.0E+00JA
23193
Jun-93 TCE 1.0E+01
22593
NA
23293
DRY
B217589
ND
B217689
ND
2087
Aug-91 PCE 4.0E+00JA
Dec-91 PCE 2.0E+00JA
Dec-91 TCE 5.0E+00V
Feb-92 TCE 3.0E+00JA
Feb-92 PCE 6.0E+00V
May-92 PCE 2.0E+00JA
May-92 TCE 1.0E+00JA
May-92 CHCl3 1.0E+00BJJA
Aug-92 PCE 1.0E+00JA
Aug-92 TCE 8.0E-01JA
Nov-92 PCE 9.0E-01JA
Nov-92 TCE 7.0E-01JA
22393
DRY
1887
ND
B217489
ND
46692
46792
46892
B217789
B217789
Mar-93 Am-241(T) 4.2E-02
Mar-93 Pu-239/240(T) 5.4E-02
B315289
22193
1687
Apr-91 Pu-239/240(T) 6.8E-02
Sep-91 Pu-239/240(T) 3.0E-02V
Feb-92 Pu-239/240(T) 4.5E-02A
Sep-92 Am-241(T) 4.0E-02A
Mar-93 Am-241(T) 2.1E-02
Mar-93 Pu-239/240(T) 1.2E-01
May-92 TCE 1.0E+00JA
May-92 CHCl3 2.0E+00BJJA
Sep-92 CCl4 1.4E+01
Sep-92 CHCl3 4.0E-01J
Sep-92 PCE 2.0E+00J
Sep-92 TCE 2.0E+00J
22093*
ND
4587
Dec-91 PCE 7.0E-02
Dec-91 TCE 1.0E-01
22293
3087
46692
Sep-92 Am-241(T) 2.8E-02
Sep-92 Pu-239/240(T) 6.8E-02
Sep-92 CHCl3 5.0E-01V
Mar-93 TCE 2.0E+00V
May-93 TCE 2.0E-01
46792
Mar-93 TCE 1.0E+00V
46892
Mar-93 TCE 1.0E+00V
3487
Apr-91 Pu-239/240(T) 9.7E-03J
May-92 CHCl3 1.0E+00BJJA
4086
May-92 CHCl3 1.0E+00BJJA
3187
2887
Feb-92 TCE 1.0E+00JA
May-92 CHCl3 1.0E+00BJJA
3187
Apr-91 Am-241(T) 9.7E-02
May-92 CHCl3 1.0E+00BJJA
E 2,086,000
E 2,087,000
E 2,088,000
EXPLANATION
BEDROCK LHSU MONITORING WELL
* INDICATOR PARAMETER ANALYSIS ONLY
NA DATA NOT AVAILABLE
ND NO ANALYTES (COC) DETECTED
(T) TOTAL
(D) DISSOLVED
INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION
B217289 ← LOCATION
AUG-92 PCE 1.0E+00J
SAMPLE DATE
ANALYTE
ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS
NOTE:
ALL ANALYTE CONCENTRATIONS OR ACTIVITIES ARE REPORTED IN ug/l (micrograms/liter) OR pCi/l (picocuries/liter). SEE FIGURE 4.2-1 FOR ABBREVIATIONS ON ANALYTES AND LAB/VALIDATION QUALIFIERS.
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado
OPERABLE UNIT NO.2
PHASE II-RFI/RI REPORT
UHSU CHEMICALS OF CONCERN DETECTIONS IN LHSU MONITORING WELLS GROUNDWATER SAMPLES FROM 2nd QUARTER, 1991 THROUGH 2nd QUARTER, 1993 (PART 1 OF 2)
FIGURE 4.5-1
OCTOBER 1993
OU2RI277 1=300

150



DRAFT

EXPLANATION

- ● BEDROCK LHSU MONITORING WELL
- * INDICATOR PARAMETER ANALYSIS ONLY
- NA DATA NOT AVAILABLE
- ND NO ANALYTES (COC) DETECTED
- (T) TOTAL
- (D) DISSOLVED
- ▢ INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

B217289 ← LOCATION

AUG-92		
↑ SAMPLE DATE	↑ ANALYTE	↑ ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS OR ACTIVITIES ARE REPORTED IN ug/l (micrograms/liter) OR pCi/l (picocuries/liter). SEE FIGURE 4.2-1 FOR ABBREVIATIONS ON ANALYTES AND LAB/VALIDATION QUALIFIERS.

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

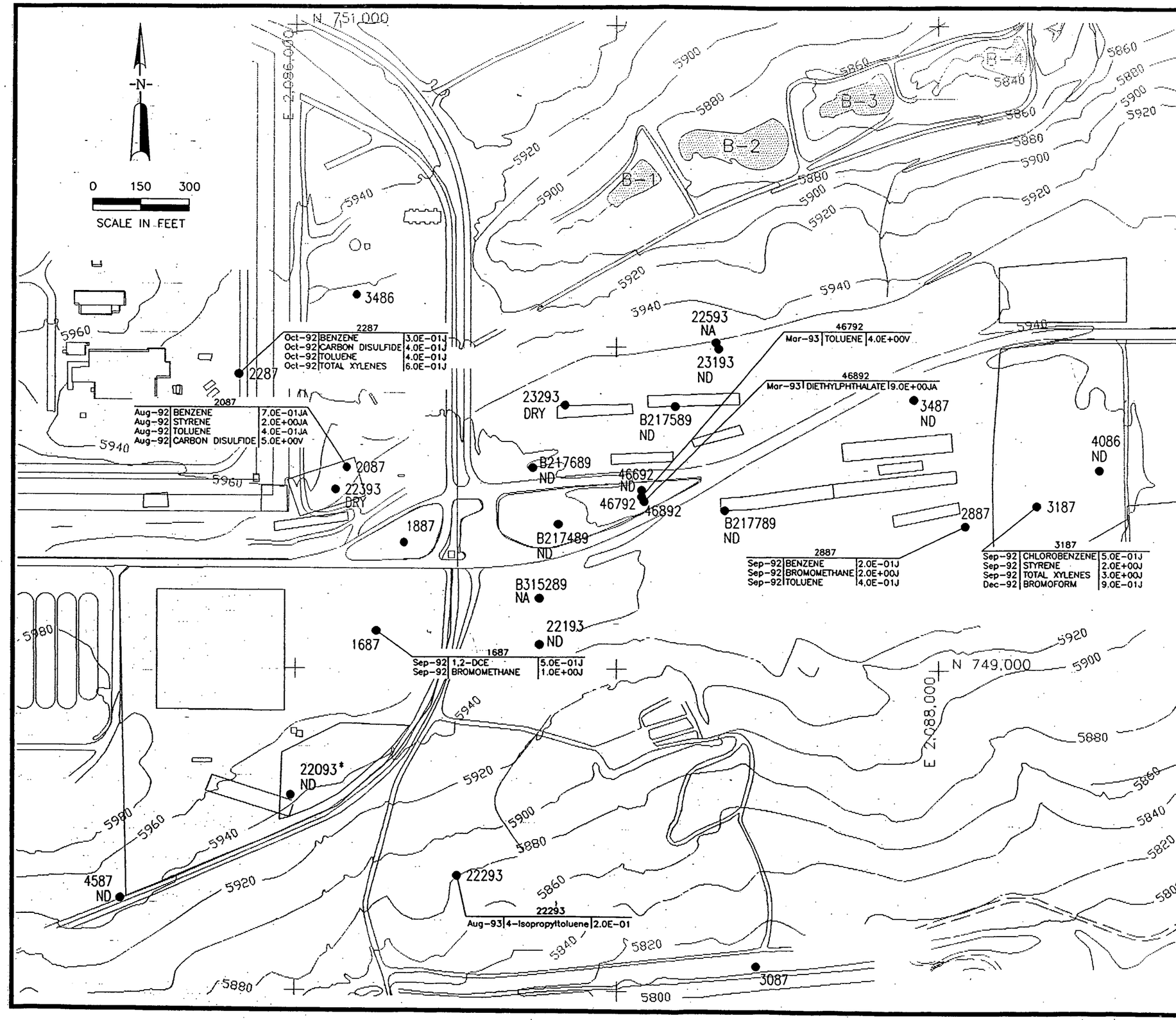
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

UHSU CHEMICALS OF CONCERN DETECTIONS IN LHSU MONITORING WELLS GROUNDWATER SAMPLES FROM 2nd QUARTER, 1991 THROUGH 2nd QUARTER, 1993 (PART 2 OF 2)

FIGURE 4.5-1

OCTOBER 1993

OU2RI278 1=300



NOTE:

ALL ANALYTE CONCENTRATIONS OR ACTIVITIES ARE REPORTED IN ug/l (micrograms/liter) OR pCi/l (picocuries/liter). SEE FIGURE 4.2-1 FOR ABBREVIATIONS ON ANALYTES AND LAB/VALIDATION QUALIFIERS.

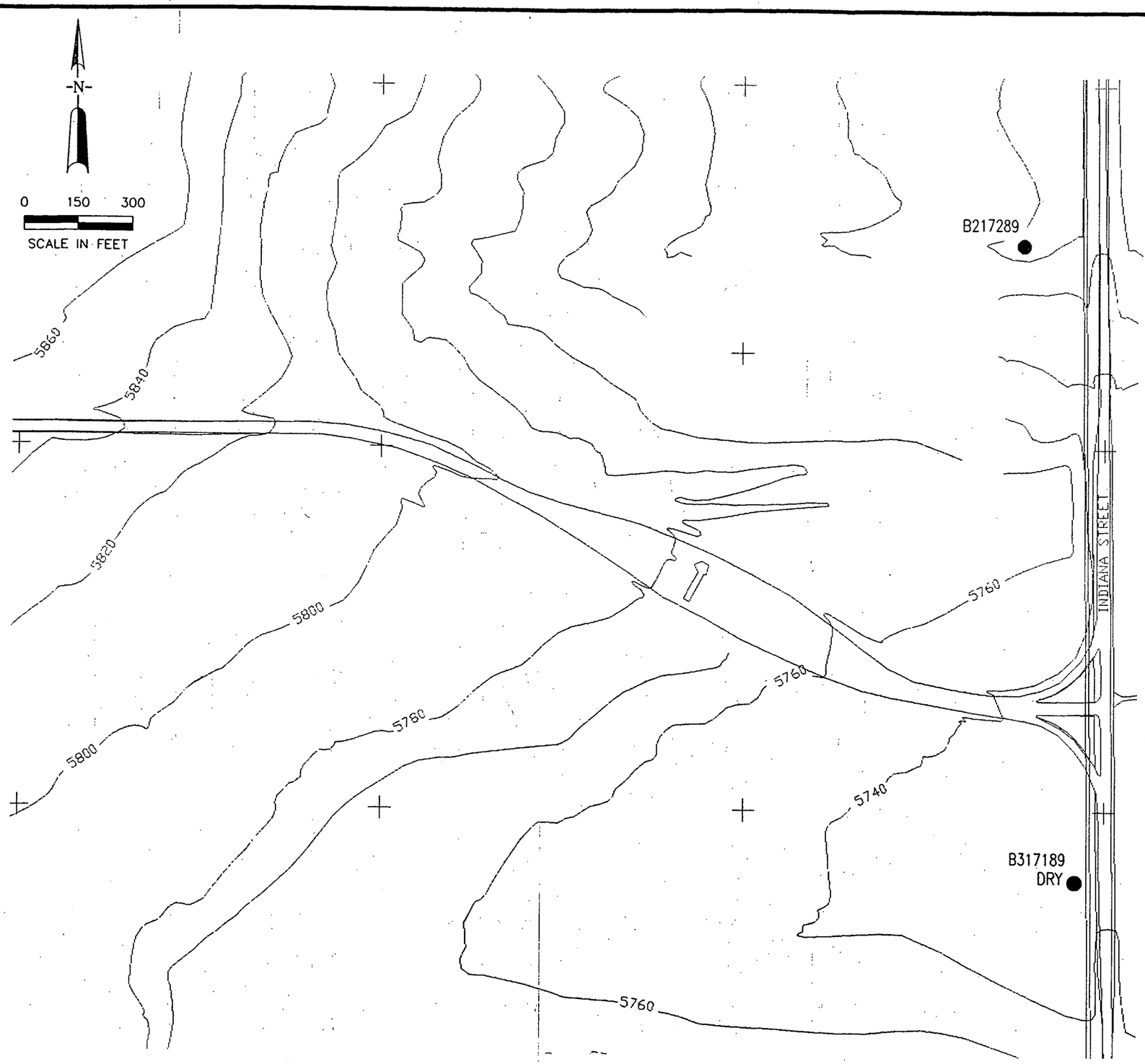
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

NON-CHEMICALS OF CONCERN DETECTIONS IN LHSU MONITORING WELLS GROUNDWATER SAMPLES FROM 2nd QUARTER, 1991 THROUGH 2nd QUARTER, 1993 (PART 1 OF 2)

FIGURE 4.5-2 OCTOBER 1993

OU2RI312 1=300



DRAFT

EXPLANATION

- ● BEDROCK LHSU MONITORING WELL
- * INDICATOR PARAMETER ANALYSIS ONLY
- NA DATA NOT AVAILABLE
- ND NO ANALYTES (NON-COC) DETECTED
- (T) TOTAL
- (D) DISSOLVED
- ▢ INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

B217289 ← LOCATION

AUG-92	Ba(D)	3.8E+02V
↑ SAMPLE DATE	↑ ANALYTE	↑ ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS OR ACTIVITIES ARE REPORTED IN ug/l (micrograms/liter) OR pCi/l (picocuries/liter). SEE FIGURE 4.2-1 FOR ABBREVIATIONS ON ANALYTES AND LAB/VALIDATION QUALIFIERS.

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

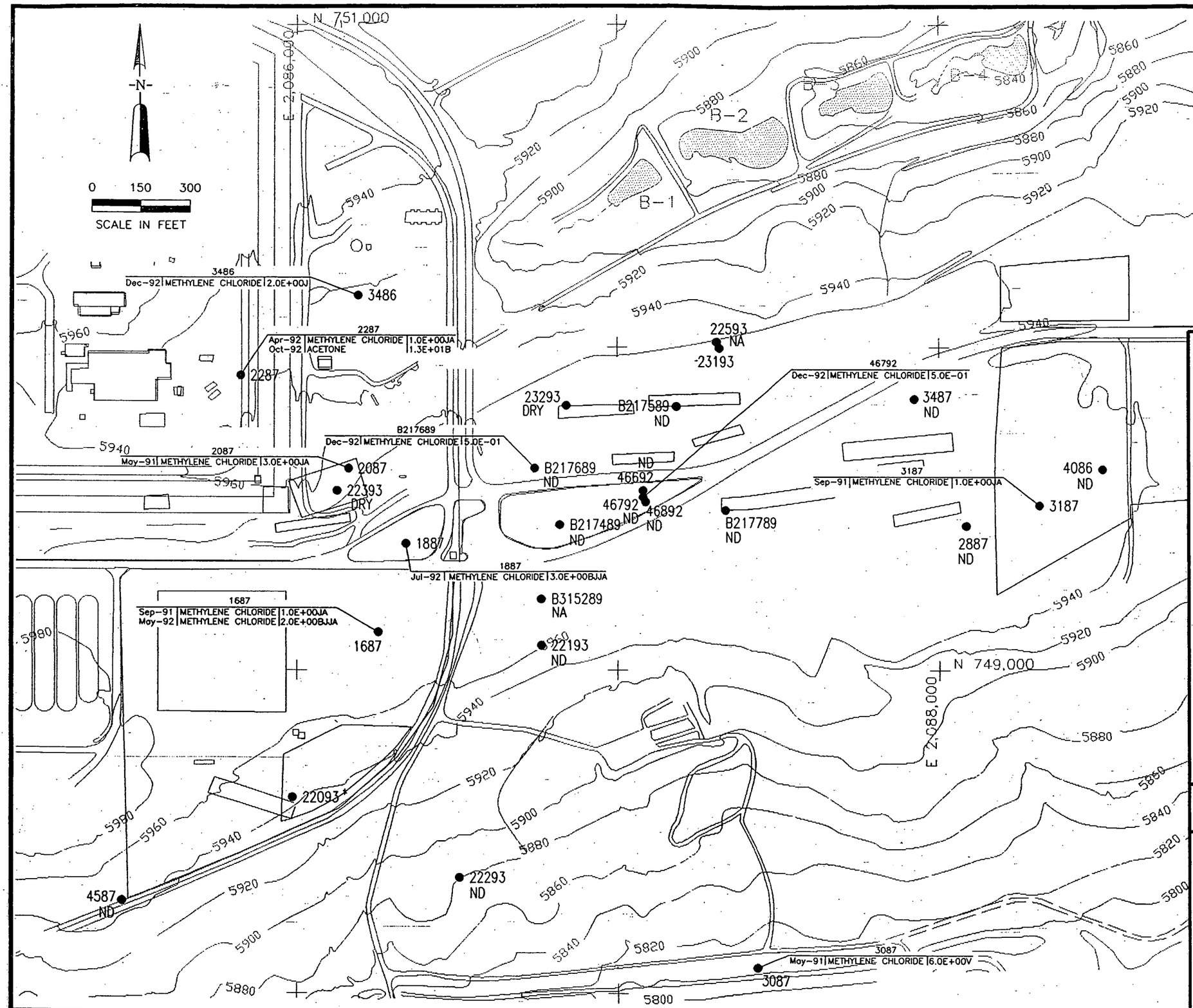
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

NON-CHEMICALS OF CONCERN DETECTIONS IN LHSU MONITORING WELLS GROUNDWATER SAMPLES FROM 2nd QUARTER, 1991 THROUGH 2nd QUARTER, 1993 (PART 2 OF 2)

FIGURE 4.5-2

OCTOBER 1993

OU2RI330 1=300



EXPLANATION

- ● BEDROCK LHSU MONITORING WELL
- * INDICATOR PARAMETER ANALYSIS ONLY
- NA DATA NOT AVAILABLE
- ND NO ANALYTES (LAB CONTAMINANTS) DETECTED
- (T) TOTAL
- (D) DISSOLVED
- ▢ INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

B217289 ← LOCATION

AUG-92	Ba(D)	3.8E+02V
SAMPLE DATE	ANALYTE	ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS OR ACTIVITIES ARE REPORTED IN ug/l (micrograms/liter) OR pCi/l (picocuries/liter). SEE FIGURE 4.2-1 FOR ABBREVIATIONS ON ANALYTES AND LAB/VALIDATION QUALIFIERS.

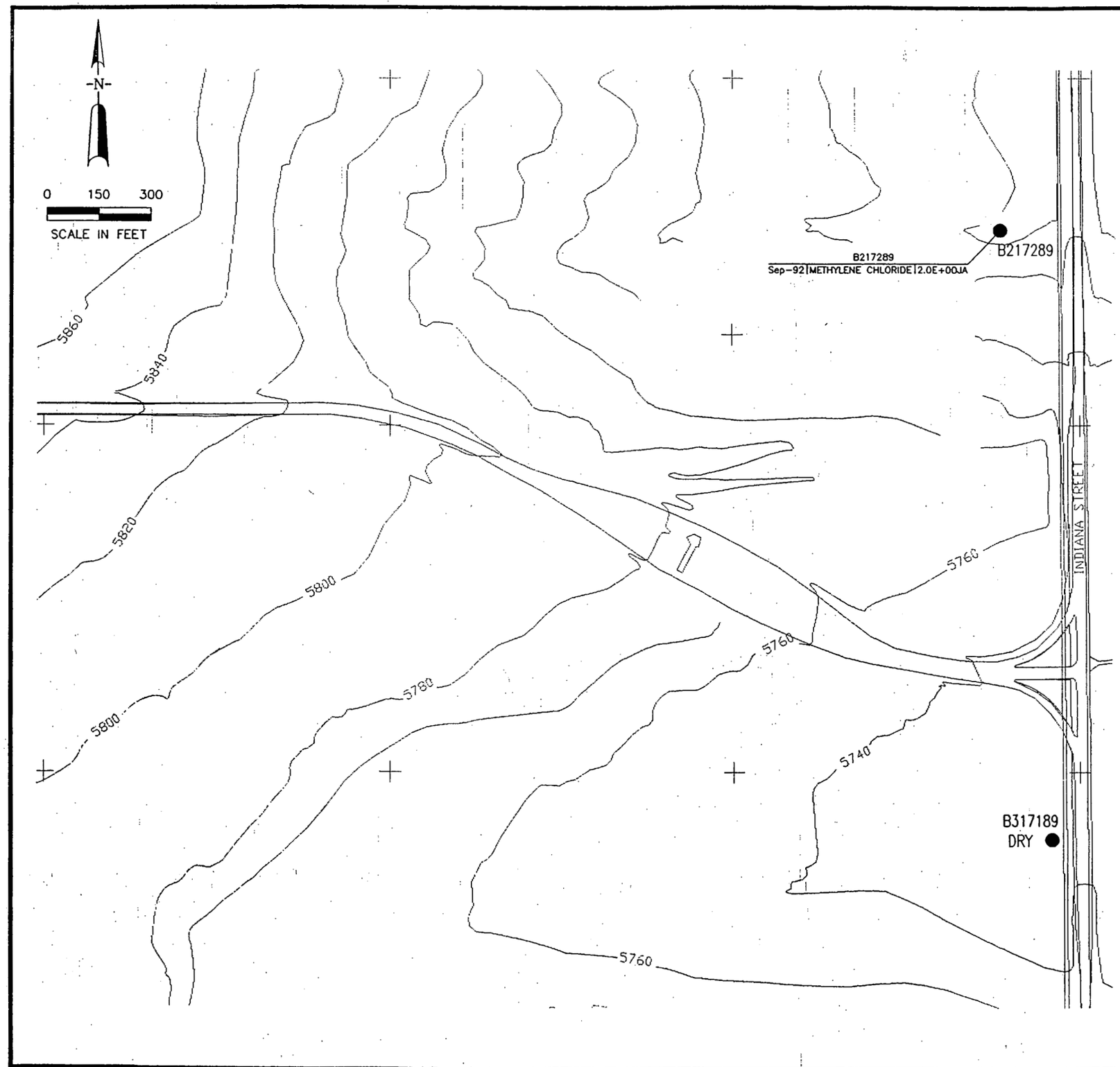
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

POSSIBLE LABORATORY CONTAMINANT DETECTIONS IN LHSU MONITORING WELLS GROUNDWATER SAMPLES FROM 2nd QUARTER, 1991 THROUGH 2nd QUARTER, 1993 (PART 1 OF 2)

FIGURE 4.5-3 OCTOBER 1993

OU2RI310 1=300



DRAFT

EXPLANATION

- ● BEDROCK LHSU MONITORING WELL
- * INDICATOR PARAMETER ANALYSIS ONLY
- NA DATA NOT AVAILABLE
- ND NO ANALYTES (LAB CONTAMINANTS) DETECTED
- (T) TOTAL
- (D) DISSOLVED
- ☐ INDIVIDUAL HAZARDOUS SUBSTANCE SITE LOCATION

B217289 ← LOCATION

AUG-92	Ba(D)	3.8E+02V
SAMPLE DATE	ANALYTE	ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS OR ACTIVITIES ARE REPORTED IN ug/l (micrograms/liter) OR pCi/l (picocuries/liter). SEE FIGURE 4.2-1 FOR ABBREVIATIONS ON ANALYTES AND LAB/VALIDATION QUALIFIERS.

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

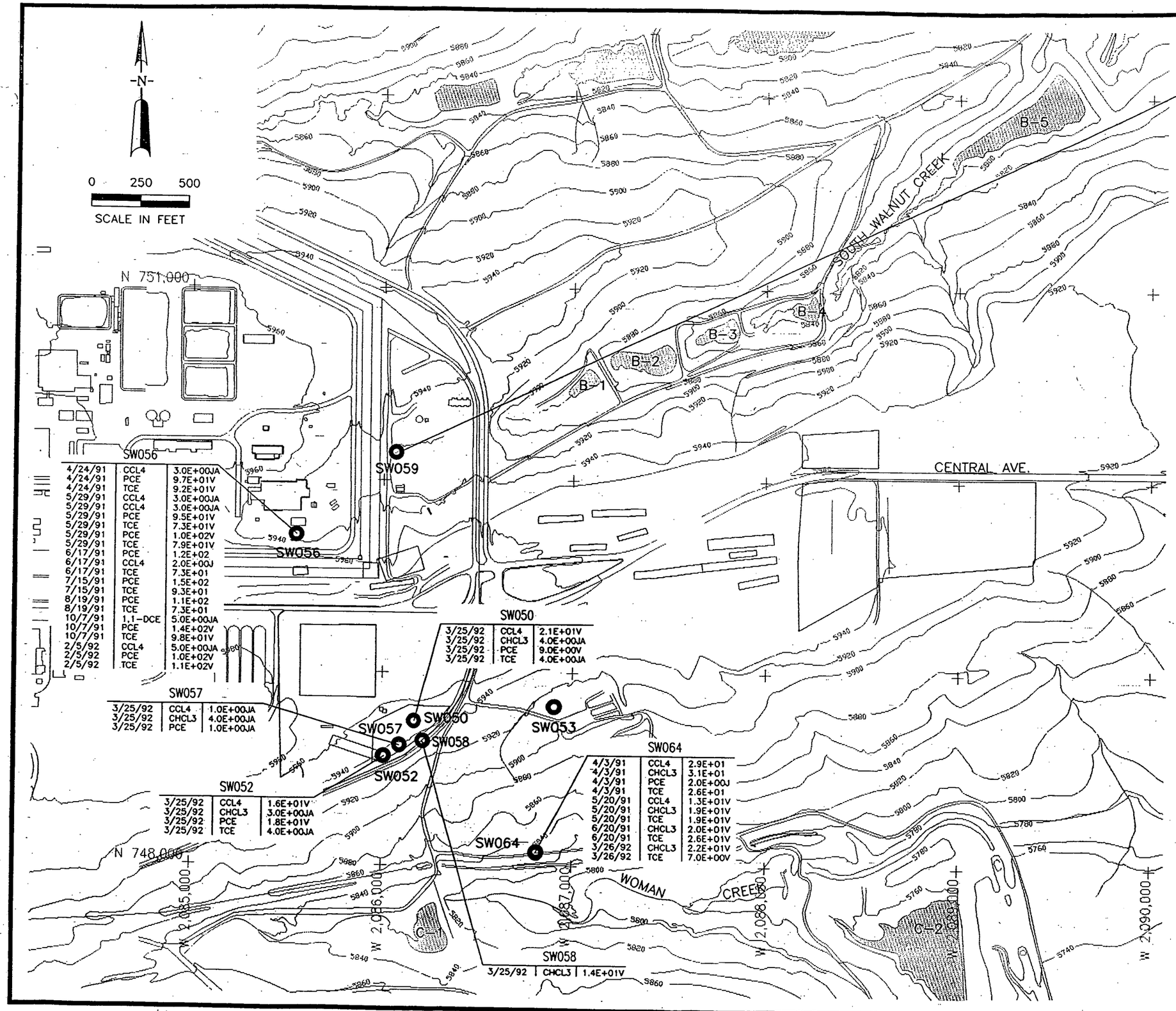
OPERABLE UNIT NO.2
PHASE II RFI/RI REPORT

POSSIBLE LABORATORY CONTAMINANT DETECTIONS IN LHSU MONITORING WELLS
GROUNDWATER SAMPLES FROM 2nd QUARTER, 1991 THROUGH 2nd QUARTER, 1993
(PART 2 OF 2)

FIGURE 4.5-3

OCTOBER 1993

0U2RI311 1=300



SW056

4/24/91	CCL4	3.0E+00JA
4/24/91	PCE	9.7E+01V
4/24/91	TCE	9.2E+01V
5/29/91	CCL4	3.0E+00JA
5/29/91	CCL4	3.0E+00JA
5/29/91	PCE	9.5E+01V
5/29/91	TCE	7.3E+01V
5/29/91	PCE	1.0E+02V
5/29/91	TCE	7.9E+01V
6/17/91	PCE	1.2E+02
6/17/91	CCL4	2.0E+00J
6/17/91	TCE	7.3E+01
7/15/91	PCE	1.5E+02
7/15/91	TCE	9.3E+01
8/19/91	PCE	1.1E+02
8/19/91	TCE	7.3E+01
10/7/91	1,1-DCE	5.0E+00JA
10/7/91	PCE	1.4E+02V
10/7/91	TCE	9.8E+01V
2/5/92	CCL4	5.0E+00JA
2/5/92	PCE	1.0E+02V
2/5/92	TCE	1.1E+02V

SW059

4/11/91	CCL4	8.1E+01	4/22/92	1,1 DCE	9.0E+00V
4/11/91	CHCL3	1.1E+01	4/22/92	CCL4	1.6E+02V
4/11/91	PCE	3.4E+01	4/22/92	CHCL3	2.9E+01V
4/11/91	TCE	3.5E+01	4/22/92	PCE	1.2E+02V
5/8/91	CCL4	6.8E+01V	4/22/92	TCE	1.1E+02V
5/8/91	CHCL3	8.0E+00V	5/6/92	1,1 DCE	6.0E+00V
5/8/91	PCE	5.5E+01V	5/6/92	CCL4	1.5E+02V
5/8/91	TCE	3.9E+01V	5/6/92	CHCL3	2.3E+01BV
6/20/91	1,1 DCE	5.0E+00	5/6/92	PCE	8.7E+01V
6/20/91	CCL4	1.4E+02	5/6/92	TCE	1.1E+02V
6/20/91	CHCL3	2.3E+01	5/20/92	1,1 DCE	7.0E+00V
6/20/91	PCE	7.6E+01	5/20/92	CCL4	1.3E+02JA
6/20/91	TCE	6.9E+01	5/20/92	CHCL3	2.5E+01V
8/7/91	CCL4	4.7E+01JA	5/20/92	PCE	8.8E+01V
8/7/91	CHCL3	6.0E+00V	5/20/92	TCE	1.1E+02V
8/7/91	PCE	3.6E+01V	6/4/92	1,1 DCE	1.1E+01V
8/7/91	TCE	2.5E+01V	6/4/92	CCL4	1.5E+02V
9/17/91	1,1 DCE	4.0E+00JA	6/4/92	CHCL3	2.6E+01BV
9/17/91	CCL4	1.3E+02V	6/4/92	PCE	1.0E+02V
9/17/91	CHCL3	2.1E+01V	6/4/92	TCE	1.4E+02V
9/17/91	PCE	6.9E+01V	6/17/92	1,1 DCE	1.0E+00V
9/17/91	TCE	7.9E+01V	6/17/92	CCL4	1.7E+02V
10/21/91	1,1 DCE	6.0E+00V	6/17/92	CHCL3	3.2E+01V
10/21/91	CCL4	1.6E+02V	6/17/92	PCE	1.1E+02V
10/21/91	CHCL3	2.7E+01V	6/17/92	TCE	1.4E+02V
10/21/91	PCE	6.8E+01V	7/2/92	1,1 DCE	8.0E+00V
10/21/91	TCE	6.1E+01V	7/2/92	CCL4	1.5E+02V
1/27/92	1,1 DCE	7.0E+00V	7/2/92	CHCL3	3.0E+01V
1/27/92	CCL4	1.9E+02V	7/2/92	PCE	1.1E+02V
1/27/92	CHCL3	3.4E+01V	7/2/92	TCE	1.3E+02V
1/27/92	PCE	9.9E+01V	7/29/92	1,1 DCE	8.0E+00V
1/27/92	TCE	1.1E+02V	7/29/92	CCL4	1.5E+02V
4/27/92	1,1 DCE	7.0E+00V	7/29/92	CHCL3	2.7E+01V
4/27/92	CCL4	1.4E+02V	7/29/92	PCE	8.3E+01V
4/27/92	CHCL3	2.5E+01V	7/29/92	TCE	1.2E+02V
4/27/92	PCE	9.4E+01V	8/13/92	1,1 DCE	5.0E+00
4/27/92	TCE	9.0E+01V	8/13/92	CCL4	1.1E+01
8/20/92	1,1 DCE	6.0E+00V	8/13/92	CHCL3	2.3E+01
8/20/92	CCL4	1.3E+02V	8/13/92	PCE	6.6E+01
8/20/92	CHCL3	2.7E+01V	8/13/92	TCE	8.7E+01
8/20/92	PCE	7.6E+01V	9/8/92	1,1 DCE	9.0E+00V
8/20/92	TCE	9.5E+01V	9/8/92	CCL4	1.6E+02V
4/6/92	1,1 DCE	1.1E+01V	9/8/92	CHCL3	3.1E+01V
4/6/92	CCL4	2.0E+02V	9/8/92	PCE	8.1E+01V
4/6/92	CHCL3	3.2E+01V	9/8/92	TCE	1.1E+02V
4/6/92	PCE	1.5E+02V	9/22/92	1,1 DCE	6.0E+00V
4/6/92	TCE	1.7E+02V	9/22/92	CCL4	1.2E+02V
			9/22/92	CHCL3	2.2E+01V
			9/22/92	PCE	6.4E+01V
			9/22/92	TCE	7.8E+01V

SW050

3/25/92	CCL4	2.1E+01V
3/25/92	CHCL3	4.0E+00JA
3/25/92	PCE	9.0E+00V
3/25/92	TCE	4.0E+00JA

SW057

3/25/92	CCL4	1.0E+00JA
3/25/92	CHCL3	4.0E+00JA
3/25/92	PCE	1.0E+00JA

SW052

3/25/92	CCL4	1.6E+01V
3/25/92	CHCL3	3.0E+00JA
3/25/92	PCE	1.8E+01V
3/25/92	TCE	4.0E+00JA

SW064

4/3/91	CCL4	2.9E+01
4/3/91	CHCL3	3.1E+01
4/3/91	PCE	2.0E+00J
4/3/91	TCE	2.6E+01
5/20/91	CCL4	1.3E+01V
5/20/91	CHCL3	1.9E+01V
5/20/91	TCE	1.9E+01V
6/20/91	CHCL3	2.0E+01V
6/20/91	TCE	2.6E+01V
3/26/92	CHCL3	2.2E+01V
3/26/92	TCE	7.0E+00V

SW058

3/25/92	CHCL3	1.4E+01V

DRAFT

EXPLANATION

09291 ← LOCATION

8/20/92

SAMPLE DATE | ANALYTE | ANALYTE CONCENTRATION (ug/l) AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN ug/l (parts per billion). ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON LEGEND PAGE (FIGURE 4.2-1)

● SURFACE WATER SAMPLING LOCATION

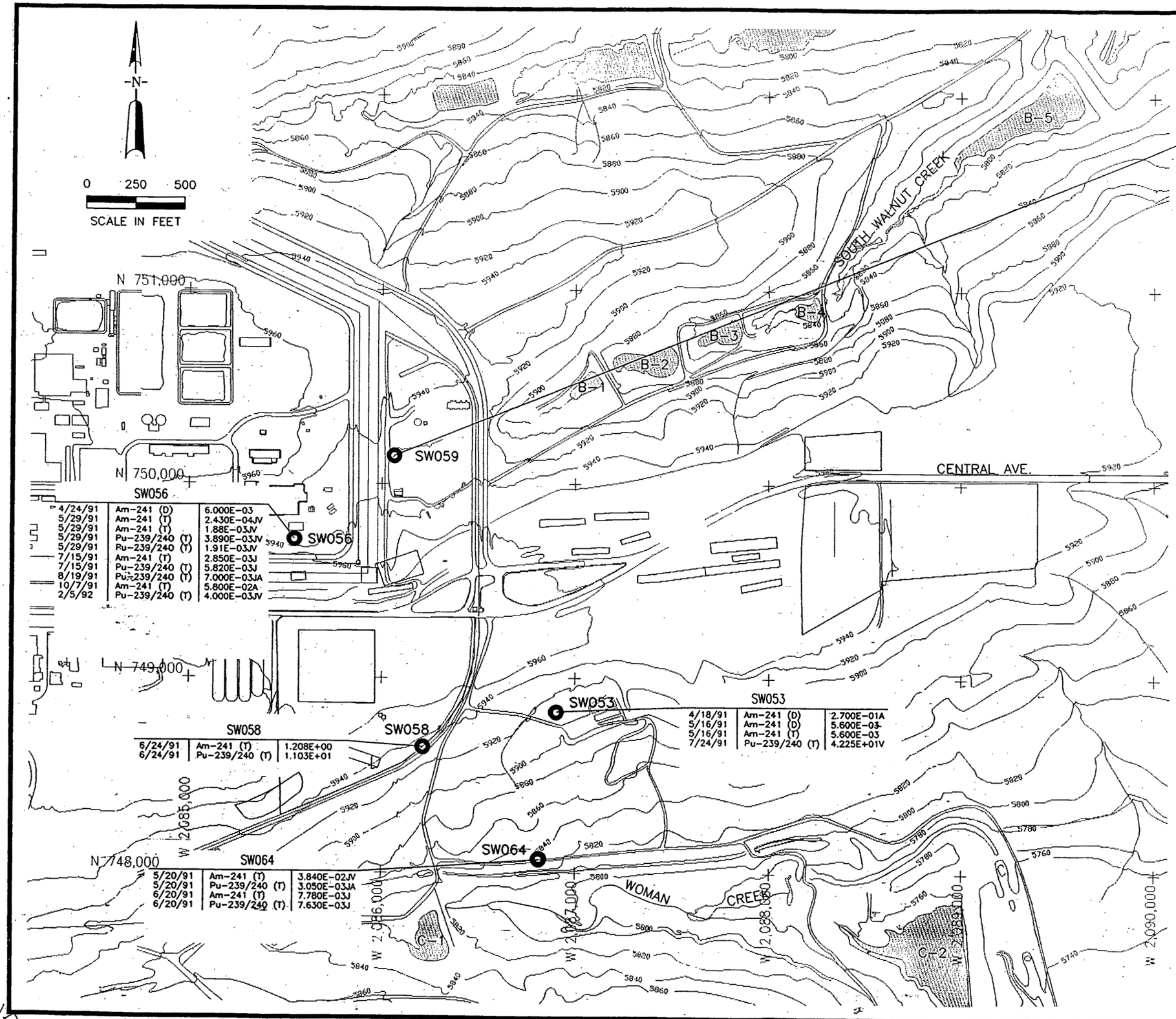
U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

POTENTIAL VOC UHSU CHEMICALS OF CONCERN DETECTIONS IN SURFACE WATER (SEEPS)

FIGURE 4.6-1

OCTOBER 1993



SW056		
4/24/91	Am-241 (D)	6.000E-03
5/29/91	Am-241 (T)	2.430E-04JV
5/29/91	Am-241 (T)	1.88E-03JV
5/29/91	Pu-239/240 (T)	3.890E-03JV
5/29/91	Pu-239/240 (T)	1.91E-03JV
7/15/91	Am-241 (T)	2.850E-03J
7/15/91	Pu-239/240 (T)	5.820E-03J
8/19/91	Pu-239/240 (T)	7.000E-03JA
10/7/91	Am-241 (T)	5.800E-02A
2/5/92	Pu-239/240 (T)	4.000E-03JV

SW058		
6/24/91	Am-241 (T)	1.208E+00
6/24/91	Pu-239/240 (T)	1.103E+01

SW053		
4/18/91	Am-241 (D)	2.700E-01A
5/16/91	Am-241 (D)	5.600E-03
5/16/91	Am-241 (T)	5.600E-03
7/24/91	Pu-239/240 (T)	4.225E+01V

SW064		
5/20/91	Am-241 (T)	3.840E-02JV
5/20/91	Pu-239/240 (T)	3.050E-03JA
6/20/91	Am-241 (T)	7.780E-03J
6/20/91	Pu-239/240 (T)	7.630E-03J

SW059		
5/8/91	Am-241 (D)	4.400E-01
5/8/91	Am-241 (T)	4.400E-01
6/20/91	Am-241 (D)	4.943E-02
6/20/91	Am-241 (T)	1.084E-02J
8/7/91	Am-241 (T)	1.467E-02
8/7/91	Pu-239/240 (T)	3.842E-02
9/17/91	Am-241 (T)	2.500E-02A
9/17/91	Pu-239/240 (T)	2.200E-02A
10/21/91	Am-241 (T)	5.000E-02A
10/21/91	Pu-239/240 (T)	2.100E-02V
1/27/92	Am-241 (T)	1.200E-01A
1/27/92	Pu-239/240 (T)	1.600E-01A
4/27/92	Pu-239/240 (T)	5.620E-01
6/20/92	Am-241 (T)	3.320E-03JV
6/20/92	Pu-239/240 (T)	6.610E-03JV
4/6/92	Am-241 (T)	2.400E-02
4/6/92	Pu-239/240 (T)	4.600E-02
4/22/92	Pu-239/240 (T)	7.500E-02
5/20/92	Am-241 (T)	4.000E-03J
5/20/92	Pu-239/240 (T)	3.800E-02
6/4/92	Am-241 (T)	2.600E-02
6/4/92	Pu-239/240 (T)	2.000E-02
6/17/92	Am-241 (T)	7.800E-02
7/2/92	Am-241 (T)	1.500E-02V
8/13/92	Pu-239/240 (T)	3.750E-03JV
8/26/92	Pu-239/240 (T)	7.000E-03J
9/22/92	Am-241 (T)	1.900E-02

DRAFT

EXPLANATION

09291 ← LOCATION

7/24/91

SAMPLE DATE | ANALYTE | ANALYTE CONCENTRATION pCi/g/L AND LAB AND VALIDATION QUALIFIERS

NOTE:

ALL ANALYTE CONCENTRATIONS ARE REPORTED IN pCi/l. ANALYTE ABBREVIATIONS AND LAB AND VALIDATION QUALIFIERS ARE PRESENTED ON LEGEND PAGE (FIGURE 4.2-1)

(D) – DISSOLVED

(T) – TOTAL

SURFACE WATER SAMPLING LOCATION

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant, Golden, Colorado

OPERABLE UNIT 2
PHASE II RFI/RI REPORT

POTENTIAL RADIONUCLIDE UHSU CHEMICALS OF CONCERN DETECTIONS ABOVE BACKGROUND UTLs IN SURFACE WATER (SEEPS)

FIGURE 4.6-2

OCTOBER 1993

OU2RI295-1=500