

Figure TA-2-66
Actinide Migration Evaluation
Pathway Report

Filtered UHSU U-235 in
Groundwater, 1991 - 1999 (Avg.)

U-235 Activity-Concentration (pCi/L)
(1991-99)

- 0 - 0.1
- 0.1 - 0.5
- 0.5 - 1.0
- 1.0 - 1.79
- 1.79 - 5
- > 5

- Alluvium Wells
- △ Bedrock Wells

Background Benchmark = 1.79 pCi/L
 Action Level = 1.01 pCi/L

NOTES:
 Top red value = U-235/U-238 ratio.
 Bottom red value = U-236/U-238 ratio.

- Groundwater Collection and Treatment Systems
- Slurry Wall
- Active Actinide Site
- Under Building Contamination (UBC)
- Accepted as Proposed No Further Action (NFA)
- Proposed No Further Action (NFA)
- Foundation Drains
- Groundwater Basin Divides
- Groundwater Sub-Basin Divides
- U-235 concentration equal to or greater than 1.01 pCi/L (Action Level)
- U-235 concentration equal to or greater than 1.79 pCi/L (Background Level)

- Standard Map Features
- Buildings and other structures
 - Solar Evaporation Ponds (SEPs)
 - Lakes and ponds
 - Streams, ditches, or other drainage features
 - Fences and other barriers
 - Topographic Contour (20-Foot)
 - Rocky Flats boundary
 - Paved roads
 - Dirt roads

DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas. Digitized from the orthophotographs, 1/95. Topographic contours were derived from digital elevation model (DEM) data by Meritain Knudson (MK) using ESRI Arc TIN and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1994 Aerial Flyover at ~10 meter resolution. DEM post-processing performed by MK, Winter 1997.



Scale = 1 : 21330
 1 inch represents approximately 1778 feet

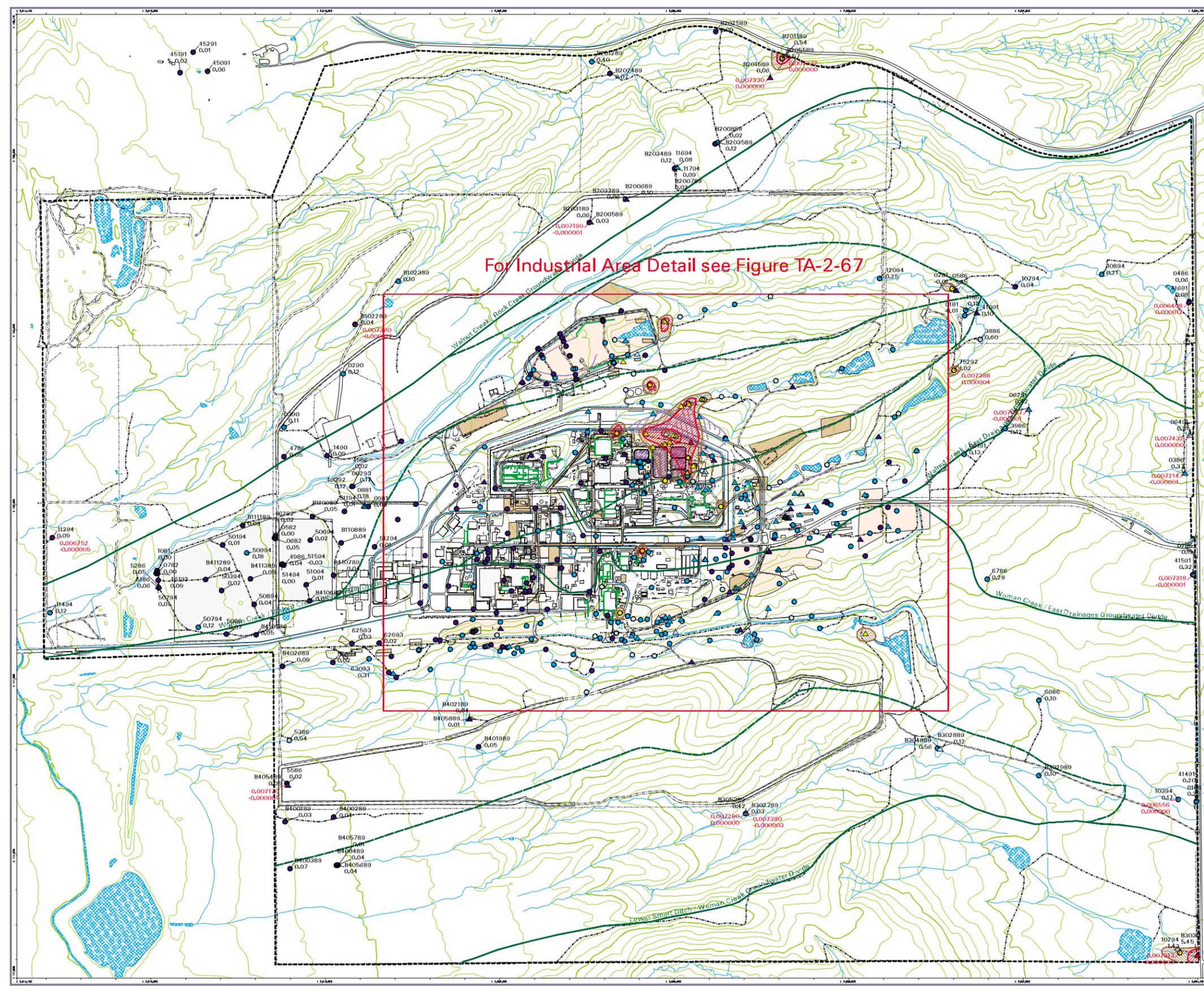
State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD27

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 Rocky Flats Environmental Technology Site



Prepared For: GRS Dept. 303-666-7707

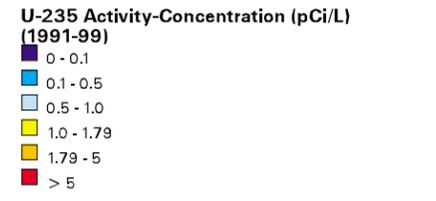
March 22, 2002



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Figure TA-2-67
Actinide Migration Evaluation
Pathway Report

Industrial Area
Filtered UHSU U-235 in
Groundwater, 1991 - 1999 (Avg.)



- Alluvium Wells
- △ Bedrock Wells

Background Benchmark = 1.79 pCi/L
 Action Level = 1.01 pCi/L

NOTES:
 Top red value = U-235/U-238 ratio.
 Bottom red value = U-236/U-238 ratio.

- Groundwater Collection and Treatment Systems
- Slurry Wall
- Active Actinide Site
- Under Building Contamination (UBC)
- Accepted as Proposed No Further Action (NFA)
- Proposed No Further Action (NFA)
- Foundation Drains
- Groundwater Basin Divides
- Groundwater Sub-Basin Divides
- U-235 concentration equal to or greater than 1.01 pCi/L (Action Level)
- U-235 concentration equal to or greater than 1.79 pCi/L (Background Level)

- Standard Map Features**
- Buildings and other structures
 - Solar Evaporation Ponds (SEPs)
 - Lakes and ponds
 - Streams, ditches, or other drainage features
 - Fences and other barriers
 - Topographic Contour (20-Foot)
 - Rocky Flats boundary
 - Paved roads
 - Dirt roads

DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas. Digitized from the orthophotographs, 1/95. Topographic contours were derived from digital elevation model (DEM) data by Mortison Knudsen (MK) using ESRI Arc TIN and LANTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1994 Aerial Flyover at ~10 meter resolution. DEM post-processing performed by MK, Winter 1997.

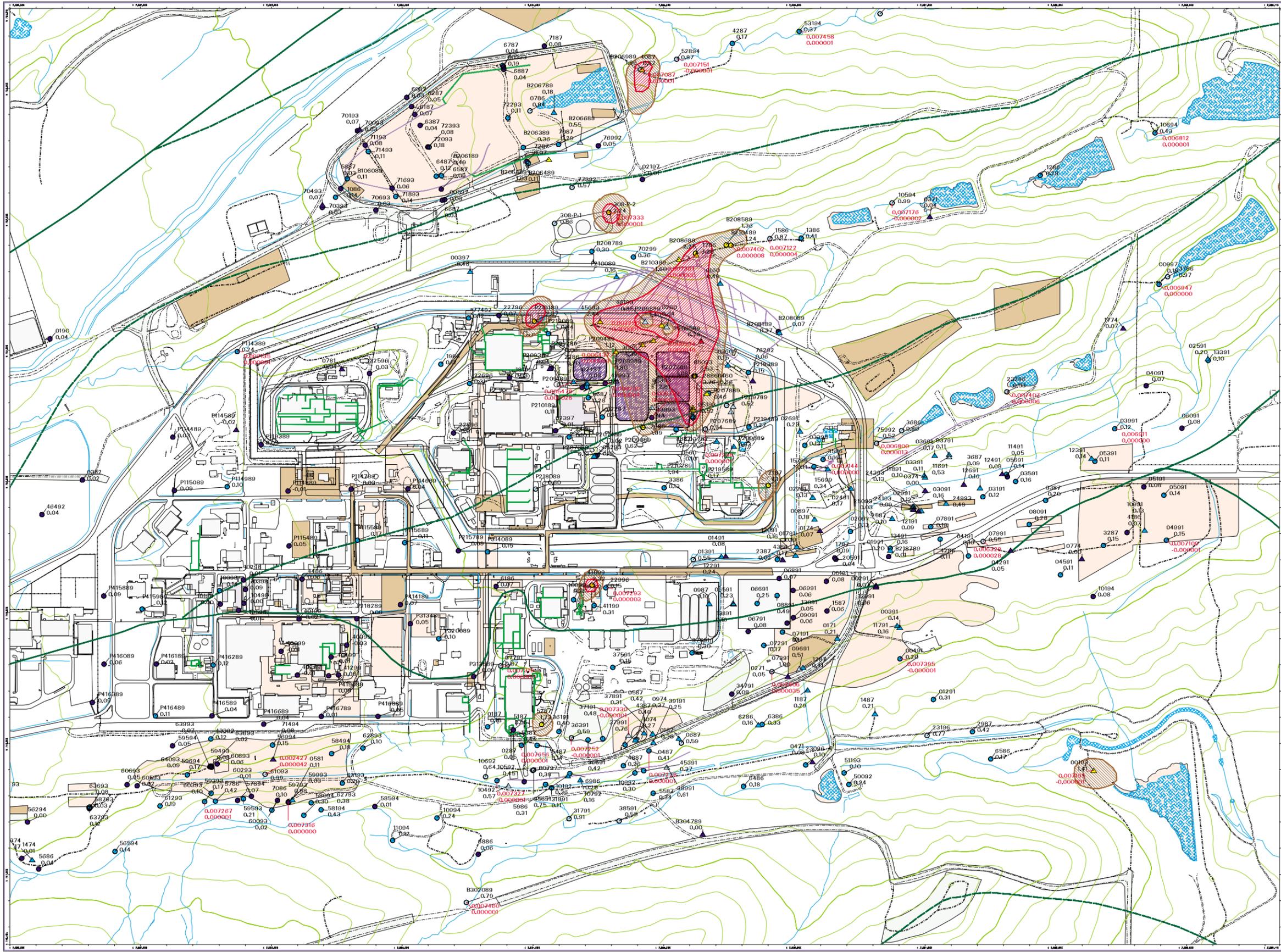
Scale = 1 : 9220
 1 inch represents approximately 768 feet

100 0 200 400 ft

State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD27

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GIS Dept. 303-866-7707



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Figure TA-2-68
Actinide Migration Evaluation
Pathway Report

Filtered UHSU U-238 in
Groundwater, 1991 - 1999 (Avg.)

U-238 Activity-Concentration (pCi/L)
(1991-99)

- 0 - 0.77
- 0.77 - 5
- 5 - 10
- 10 - 41.8
- 41.8 - 100
- > 100

- Alluvium Wells
- △ Bedrock Wells

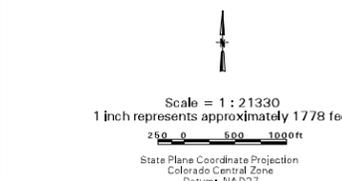
Background Benchmark = 41.8 pCi/L
 Action Level = 0.767 pCi/L

NOTES:
 Top red value = U-235/U-238 ratio.
 Bottom red value = U-236/U-238 ratio.

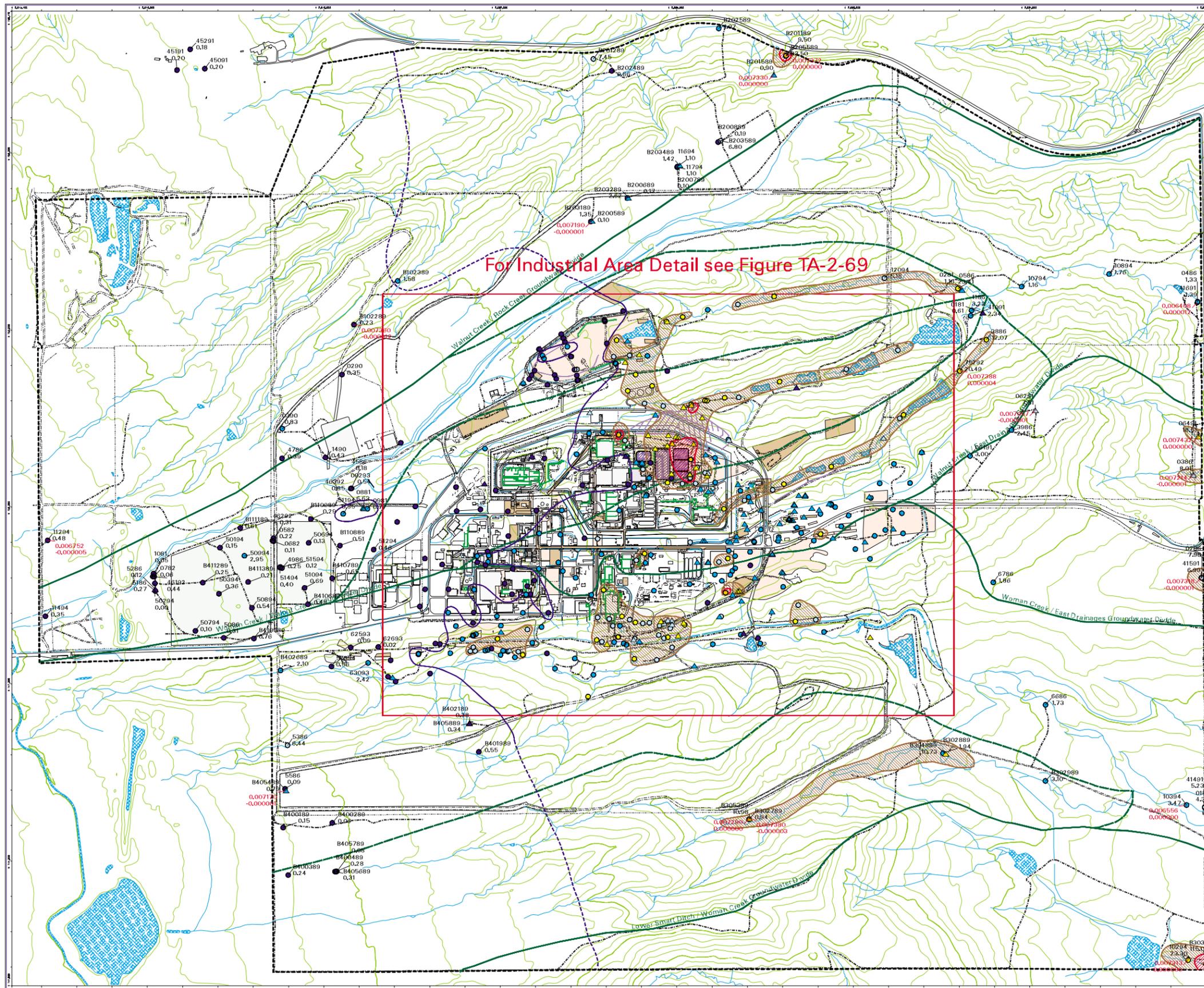
- Groundwater Collection and Treatment Systems
- Slurry Wall
- Active Actinide Site
- Under Building Contamination (UBC)
- Accepted as Proposed No Further Action (NFA)
- Proposed No Further Action (NFA)
- Foundation Drains
- Groundwater Basin Divides
- Groundwater Sub-Basin Divides
- U-238 concentration equal to or greater than 0.767 pCi/L (Action Level) (dashed where inferred)
- U-238 concentration equal to or greater than 5.0 pCi/L (Intermediate Level)
- U-238 concentration equal to or greater than 41.8 pCi/L (Background Level)

- Standard Map Features
- Buildings and other structures
 - Solar Evaporation Ponds (SEPs)
 - Lakes and ponds
 - Streams, ditches, or other drainage features
 - Fences and other barriers
 - Topographic Contour (20-Foot)
 - Rocky Flats boundary
 - Paved roads
 - Dirt roads

DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSI, Las Vegas. Digitized from the orthophotographs, 1/95. Topographic contours were derived from digital elevation model (DEM) data by Morrison Knudsen (MK) using ESRI Arc TIN and LATICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1994 Aerial Flyover at ~10 meter resolution. DEM post-processing performed by MK, Winter 1997.



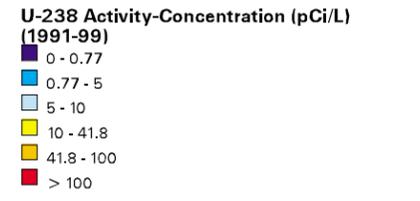
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 Prepared by: **DynCorp**
 Prepared for: **DOE**
 GRS Dept. 303-666-7707
 March 22, 2002



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Figure TA-2-69
Actinide Migration Evaluation
Pathway Report
Industrial Area

Filtered UHSU U-238 in
Groundwater, 1991 - 1999 (Avg.)



- Alluvium Wells
- △ Bedrock Wells

Background Benchmark = 41.8 pCi/L
 Action Level = 0.767 pCi/L

- NOTES:**
 Top red value = U-235/U-238 ratio.
 Bottom red value = U-236/U-238 ratio.
- Groundwater Collection and Treatment Systems
 - Slurry Wall
 - Active Actinide Site
 - Under Building Contamination (UBC)
 - Accepted as Proposed No Further Action (NFA)
 - Proposed No Further Action (NFA)
 - Foundation Drains
 - Groundwater Basin Divides
 - Groundwater Sub-Basin Divides
 - U-238 concentration equal to or greater than 0.767 pCi/L (Action Level) (dashed where inferred)
 - U-238 concentration equal to or greater than 5.0 pCi/L (Intermediate Level)
 - U-238 concentration equal to or greater than 41.8 pCi/L (Background Level)

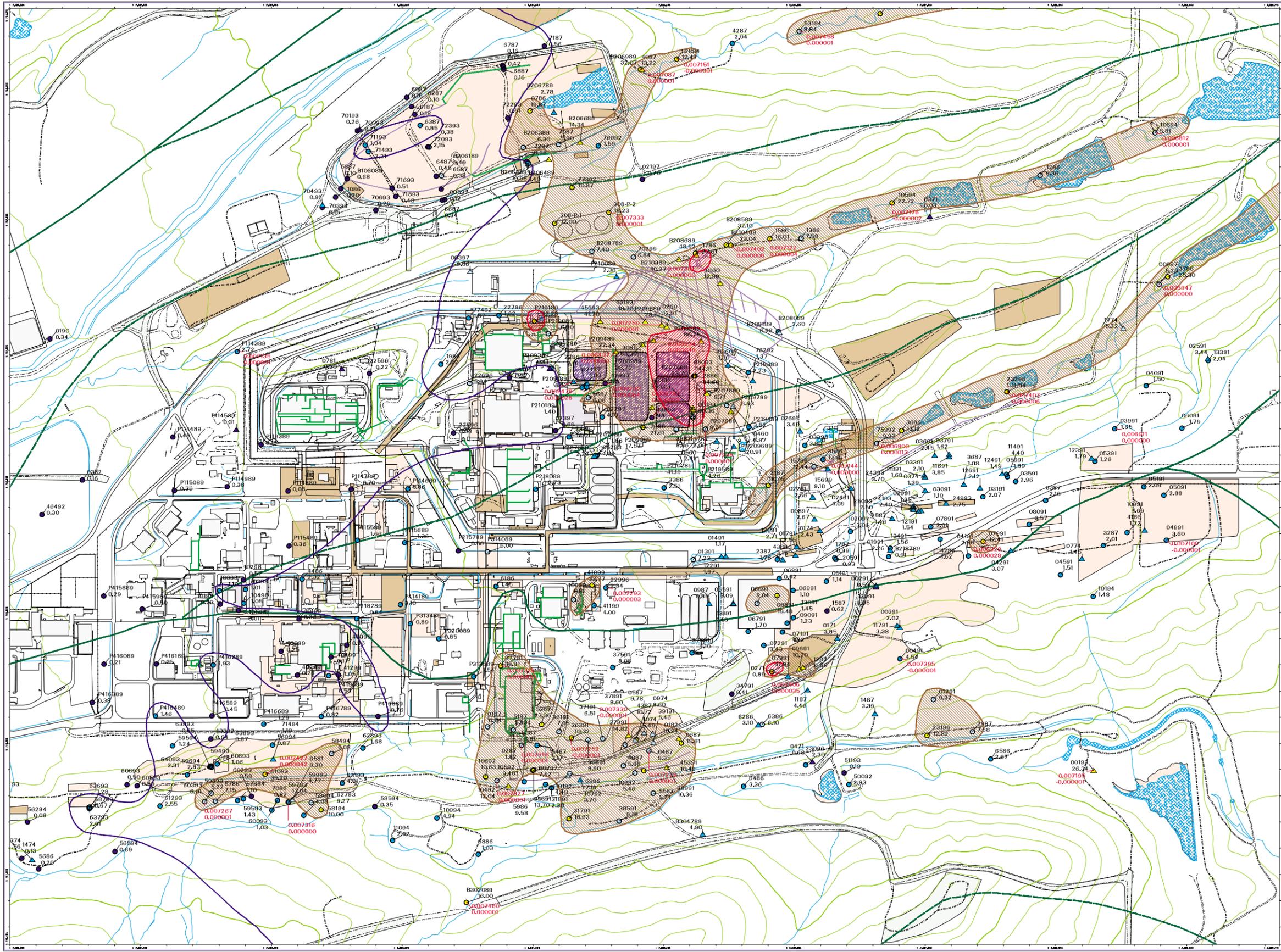
- Standard Map Features**
- Buildings and other structures
 - Solar Evaporation Ponds (SEPs)
 - Lakes and ponds
 - Streams, ditches, or other drainage features
 - Fences and other barriers
 - Topographic Contour (20-Foot)
 - Rocky Flats boundary
 - Paved roads
 - Dirt roads

DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL Las Vegas. Digitized from the orthophotographs, 1/95 topographic contours were derived from digital elevation model (DEM) data by Marlon Knudson (MK) using ESRI Arc TIN and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1994 Aerial Fiyover at ~10 meter resolution. DEM post-processing performed by MK, Winter 1997.

Scale = 1 : 9220
 1 inch represents approximately 768 feet

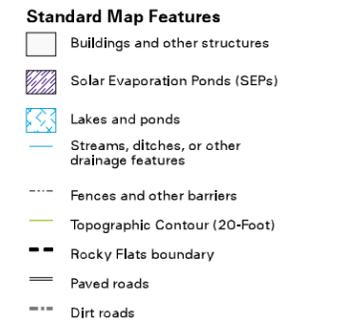
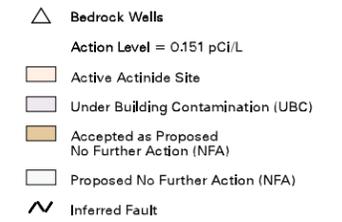
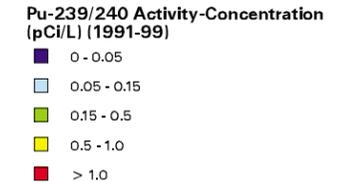
State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD27

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 March 22, 2002

Figure TA-2-70
Actinide Migration Evaluation
Pathway Report
Unfiltered LHSU Pu-239/240 in
Groundwater, 1991 - 1999 (Avg.)



DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by ECHS INC., Las Vegas. Digitized from the orthophotographs. 1/85
 Topographic contours were derived from digital elevation model (DEM) data by Thomson Knudson (TKN) using ESRI Arc 7TM and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1984 Aerial Flyover at ~10 meter resolution. DEM post-processing performed by NIK, Winter 1997.



Scale = 1 : 21330
 1 inch represents approximately 1778 feet

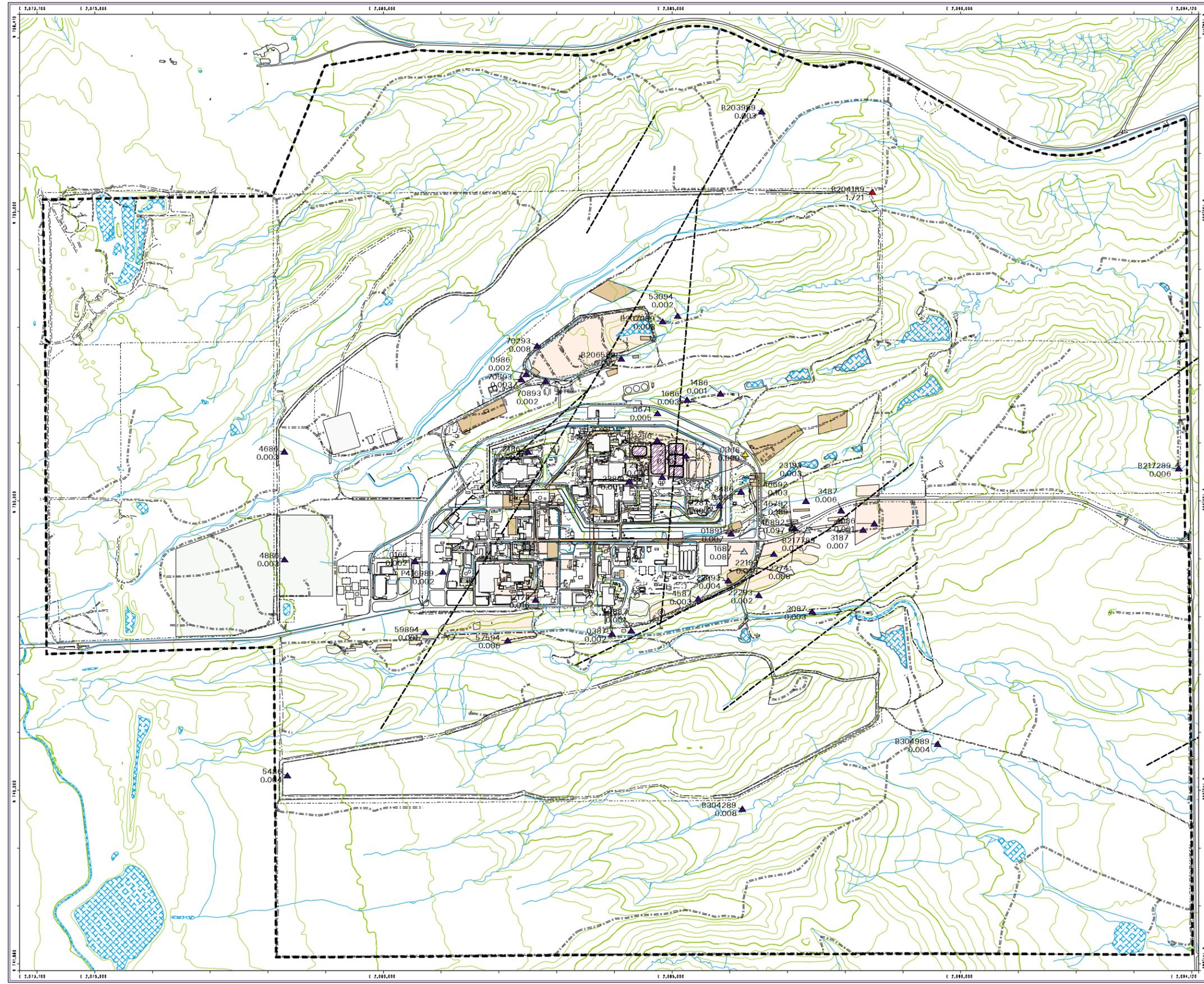
State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD27

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Prepared by: **DynCorp** GIS Dept. 303-966-7707
 Prepared for: **Kaiser-Hill**

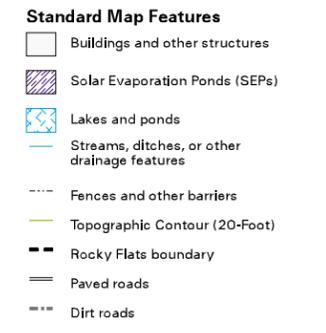
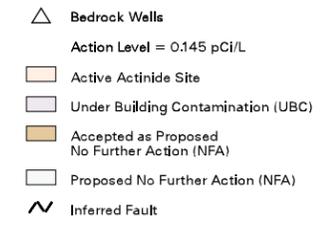
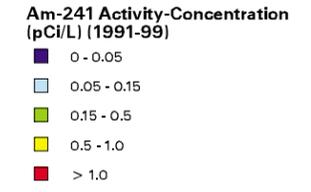


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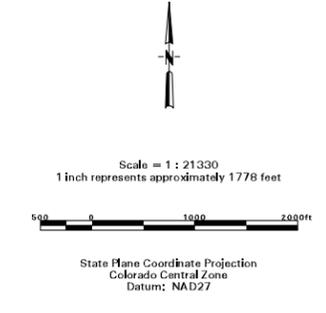


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Figure TA-2-71
Actinide Migration Evaluation
Pathway Report
Unfiltered LHSU Am-241 in
Groundwater, 1991 - 1999 (Avg.)



DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by ECHS INC., Las Vegas. Digitized from the orthophotographs. 1/85
 Topographic contours were derived from digital elevation model (DEM) data by Thomson Knudson (TKN) using ESRI Arc 7.0 and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1984 Aerial Flyover at 10 meter resolution. DEM post-processing performed by NIK, Winter 1997.



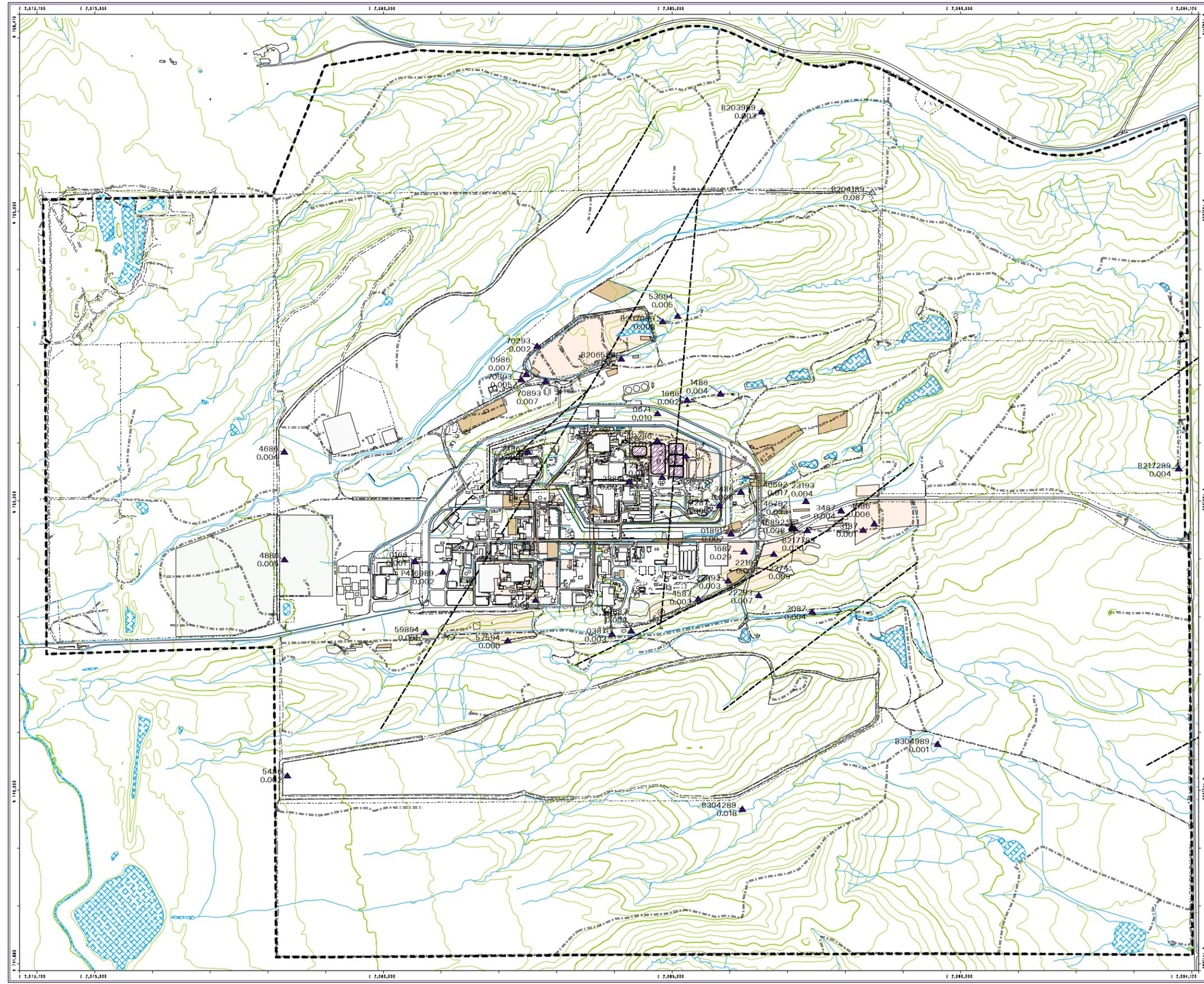
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GIS Dept. 303-966-7707

Prepared by: **DynCorp** Prepared for: **Kaiser-Hill**

THE ART OF TECHNOLOGY CONSULTING

March 22, 2002



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Figure TA-2-72
Actinide Migration Evaluation
Pathway Report
Filtered LHSU U-233/234 in
Groundwater, 1991 - 1999 (Avg.)

U-233/234 Activity-Concentration
(pCi/L) (1991-99)

- 0 - 1
- 1 - 5
- 5 - 40
- 40 - 60.7
- 60.7 - 100
- > 100

- Bedrock Wells
- Background Benchmark = 60.7 pCi/L
Action Level = 1.07 pCi/L
- Active Actinide Site
- Under Building Contamination (UBC)
- Accepted as Proposed
No Further Action (NFA)
- Proposed No Further Action (NFA)
- Inferred Fault

- Standard Map Features**
- Buildings and other structures
 - Solar Evaporation Ponds (SEPs)
 - Lakes and ponds
 - Streams, ditches, or other drainage features
 - Fences and other barriers
 - Topographic Contour (20-Foot)
 - Rocky Flats boundary
 - Paved roads
 - Dirt roads

DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSI, Las Vegas. Digitized from the orthorectified, 1:85 Topographic contours were derived from digital elevation model (DEM) data by Morrison Knudsen WPI using ESRI Arc 775 and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1984. Aerial flyover at 10 meter resolution. DEM post-processing performed by MK, Winter 1997.

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Scale = 1 : 21330
 1 inch represents approximately 1778 feet

State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD27

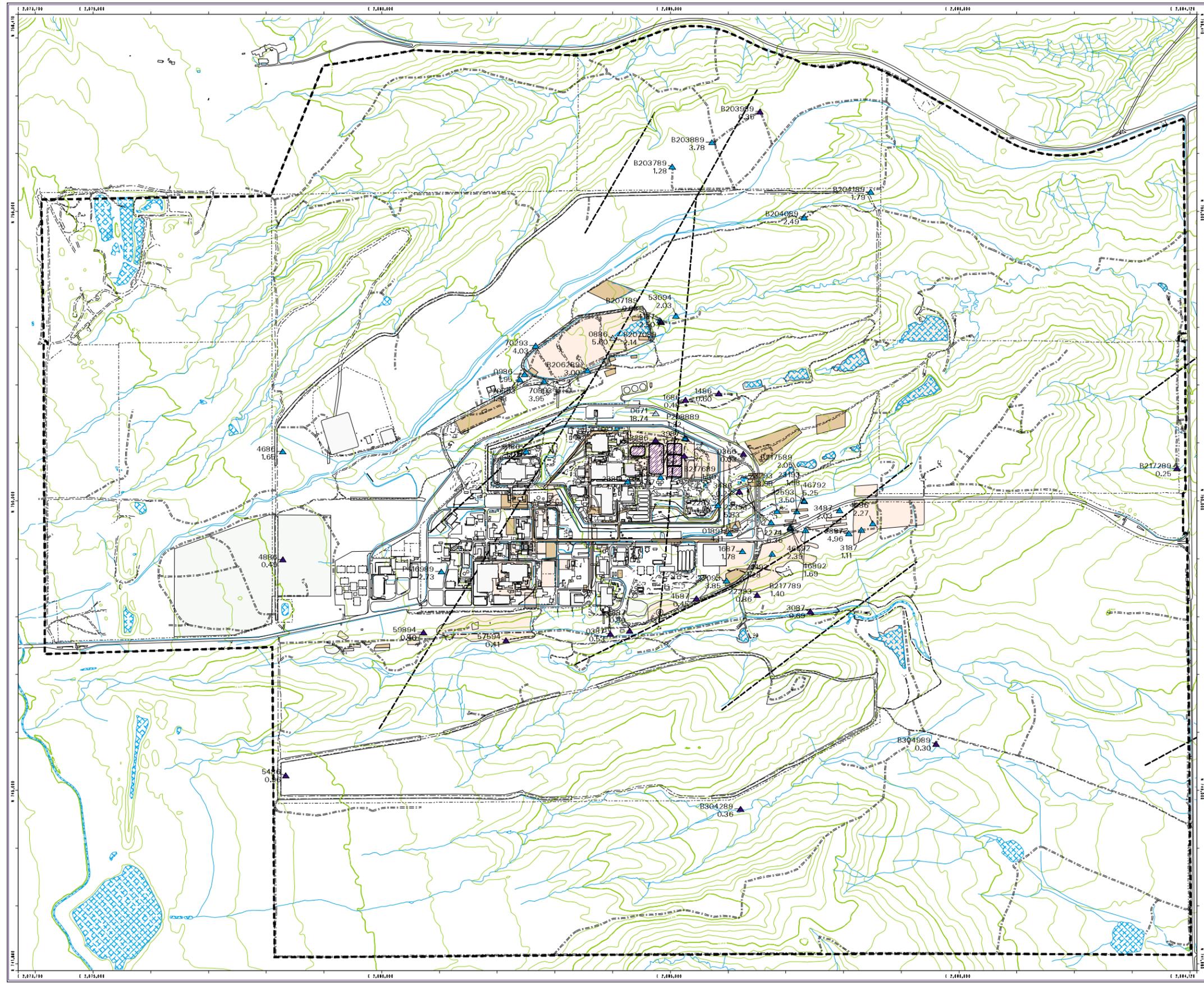
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 Prepared for: **Kaiser-Hill**

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March 22, 2002



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Figure TA-2-73
Actinide Migration Evaluation
Pathway Report
Filtered LHSU U-235 in
Groundwater, 1991 - 1999 (Avg.)

U-235 Activity-Concentration
(pCi/L) (1991-99)

- 0 - 0.1
- 0.1 - 0.5
- 0.5 - 1.0
- 1.0 - 1.79
- 1.79 - 5
- > 5

△ Bedrock Wells

Background Benchmark = 1.79 pCi/L
 Action Level = 1.01 pCi/L

- Active Actinide Site
- Under Building Contamination (UBC)
- Accepted as Proposed No Further Action (NFA)
- Proposed No Further Action (NFA)
- Inferred Fault

Standard Map Features

- Buildings and other structures
- Solar Evaporation Ponds (SEPs)
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences and other barriers
- Topographic Contour (20-Foot)
- Rocky Flats boundary
- Paved roads
- Dirt roads

DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial photo data captured by EG&G RSI, Las Vegas. Digitized from the orthorectified, 1985 topographic contours were derived from digital elevation model (DEM) data by Morrison Knudsen WPI using ESRI Arc 775 and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1984 Aerial Flyover at 10 meter resolution. DEM post-processing performed by MK, Winter 1997.



Scale = 1 : 21330
 1 inch represents approximately 1778 feet

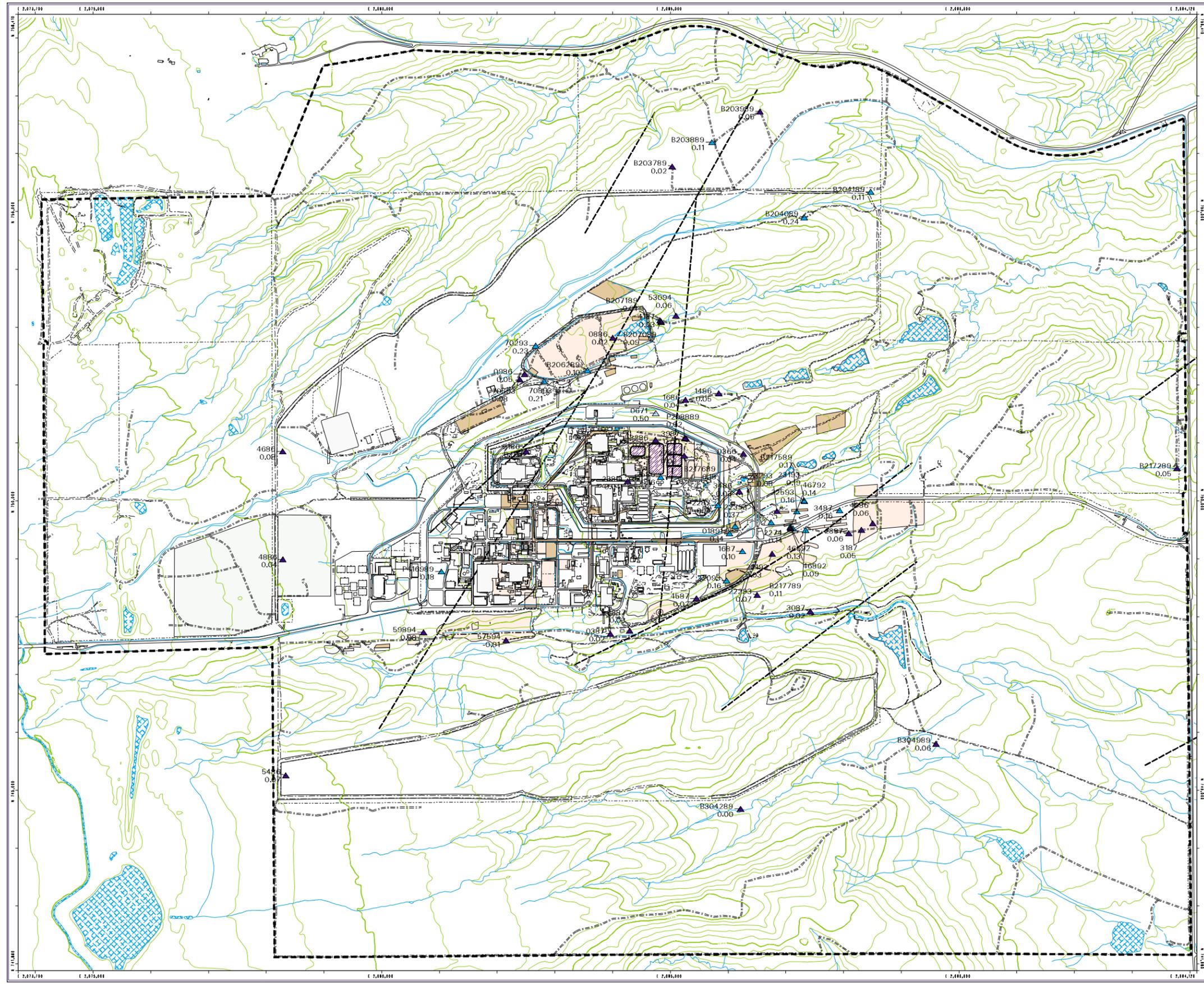
State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD27

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 Rocky Flats Environmental Technology Site

Prepared by: **DynCorp** GIS Dept. 303-966-7707
 Prepared for: **Kaiser-Hill**



March 22, 2002



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Figure TA-2-74
Actinide Migration Evaluation
Pathway Report
Filtered LHSU U-238 in
Groundwater, 1991 - 1999 (Avg.)

U-238 Activity-Concentration
(pCi/L) (1991-99)

- 0 - 0.77
- 0.77 - 5
- 5 - 10
- 10 - 41.8
- 41.8 - 100
- > 100

△ Bedrock Wells

Background Benchmark = 41.8 pCi/L
 Action Level = 0.767 pCi/L

- Active Actinide Site
- Under Building Contamination (UBC)
- Accepted as Proposed No Further Action (NFA)
- Proposed No Further Action (NFA)
- Inferred Fault

Standard Map Features

- Buildings and other structures
- Solar Evaporation Ponds (SEPs)
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences and other barriers
- Topographic Contour (20-Foot)
- Rocky Flats boundary
- Paved roads
- Dirt roads

DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial photo data captured by EG&G RSI, Las Vegas. Digitized from the orthorectified, 1:85 Topographic contours were derived from digital elevation model (DEM) data by Morrison Knudsen W/N using ESRI Arc 775 and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, 7/1/1984. Aerial flyover at 10 meter resolution. DEM post-processing performed by MK, Winter 1997.



Scale = 1 : 21330
 1 inch represents approximately 1778 feet



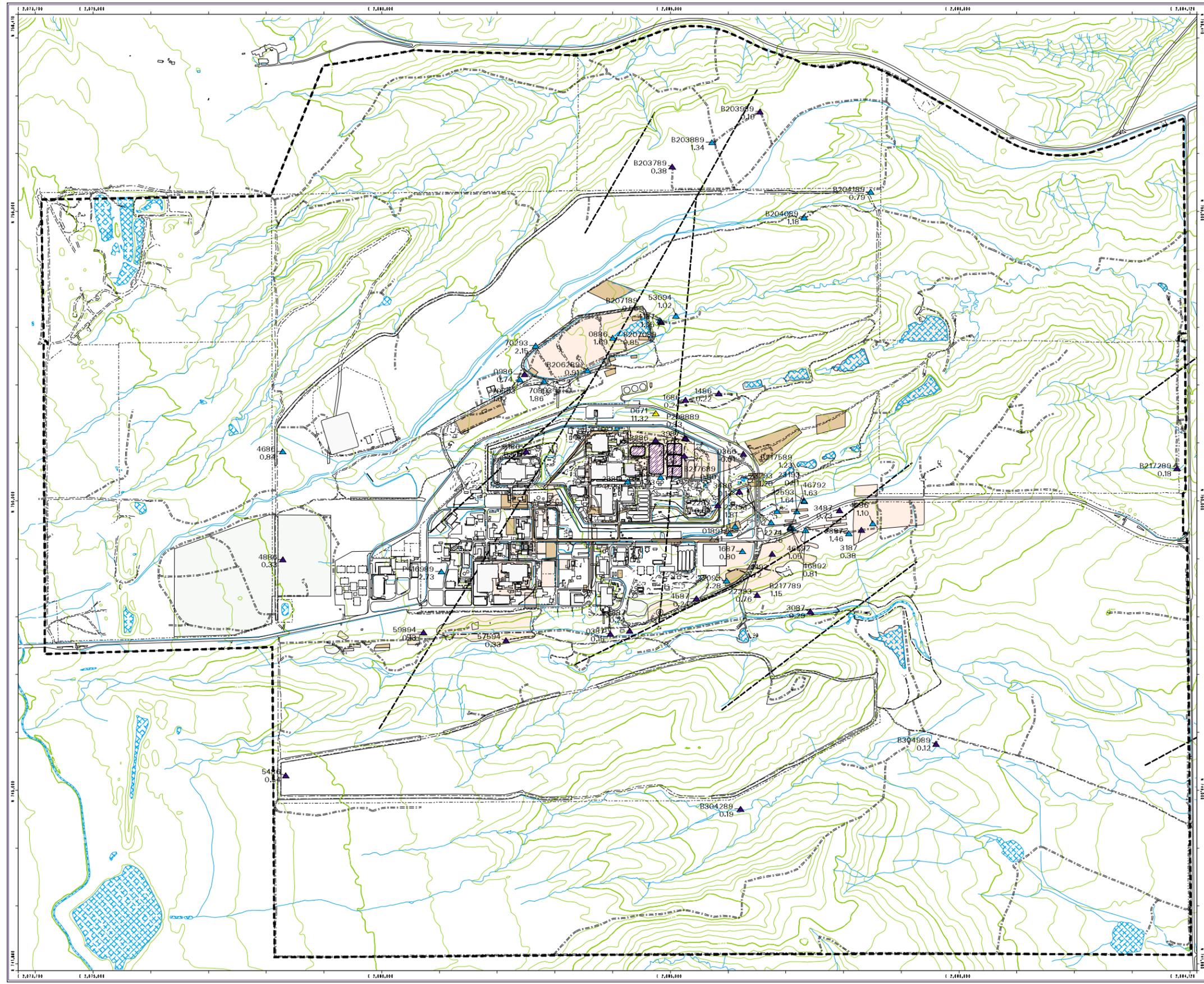
State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD27

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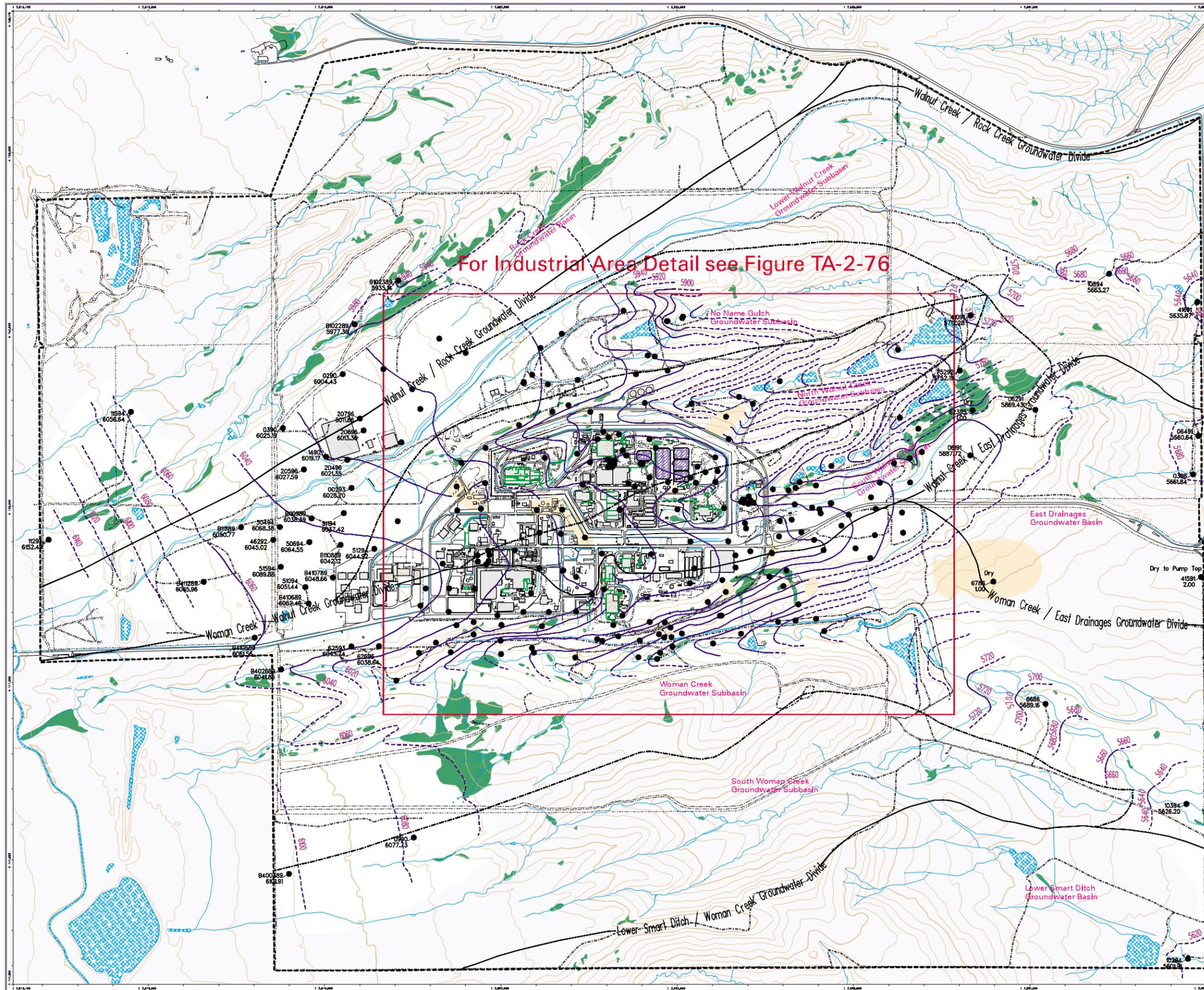
GIS Dept. 303-966-7707
 Prepared for: **KAISER-HILL**
 CONSULTANTS

March 22, 2002



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Figure TA-2-75
Actinide Migration Evaluation
Pathway Report
Groundwater Basins & Divides for
Permeable Units of the UHSU



- Groundwater Monitoring Well
- Water Level Contour
- - - Dashed where inferred
- Foundation Drain
- Approximate location of Groundwater Basin Divide
- - - Approximate location of Groundwater Subbasin Divide
- Approximate extent of Unsaturated Area
- Area without Groundwater Elevation Data
- Seeps

- Standard Map Features**
- Buildings and other structures
 - Solar Evaporation Ponds (SEPs)
 - Lakes and ponds
 - Streams, ditches, or other drainage features
 - - - Fences and other barriers
 - Topographic Contour (20-Foot)
 - Rocky Flats boundary
 - Paved roads
 - - - Dirt roads

DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas. Digitized from the orthophotographs. 1/95
 Topographic contours were derived from digital elevation model (DEM) data by Morrison Knudson (MK) using ESRI Arc TIN and LATICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1994 Aerial Flyover at ~10 meter resolution. DEM post-processing performed by MK, Winter 1997.

Scale = 1 : 21330
 1 inch represents approximately 1778 feet
 250 0 500 1000ft

State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD27

U.S. Department of Energy
 Rocky Flats Environmental Technology Site

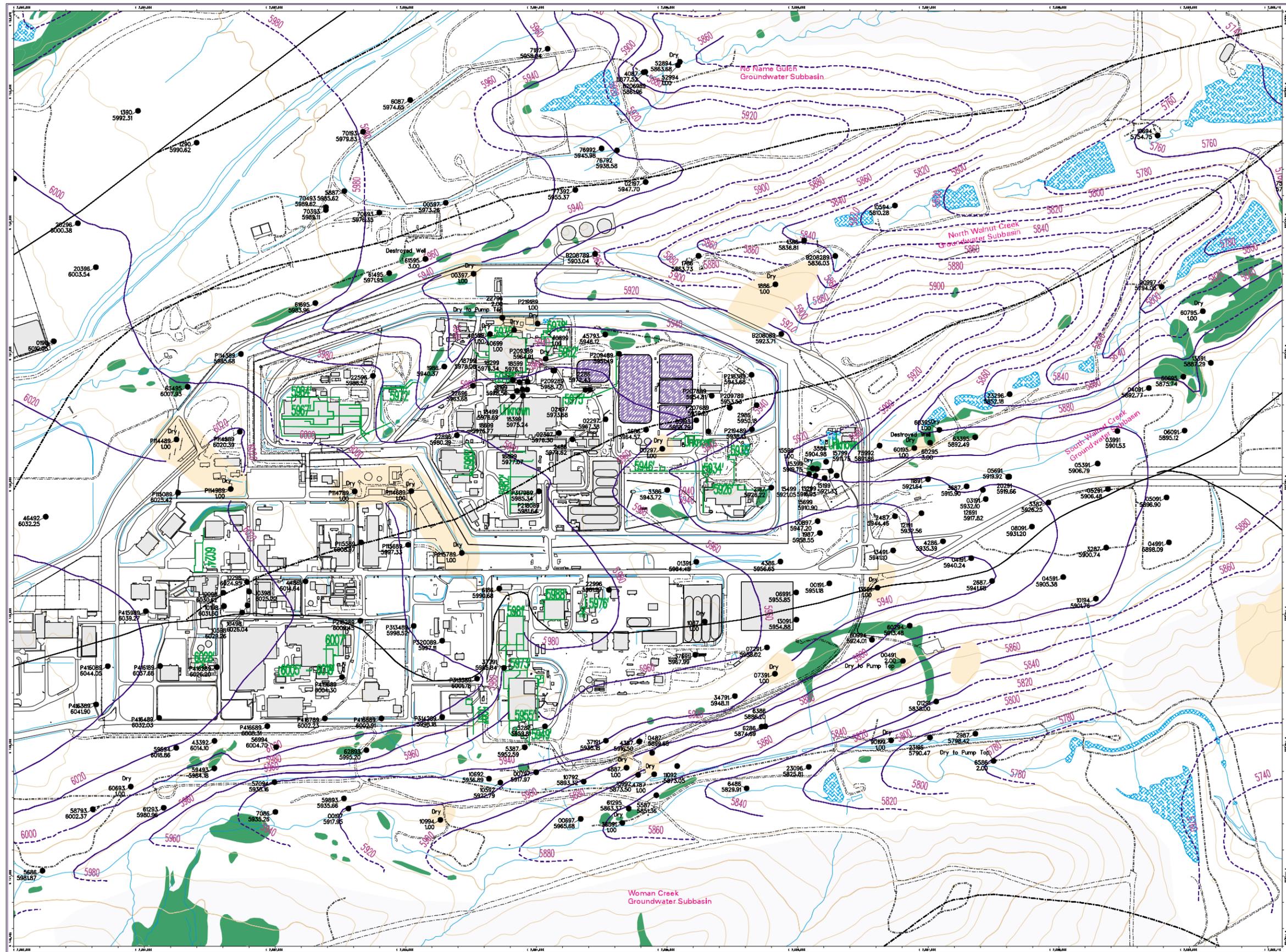
Prepared by: **DynCorp**
 THE ART OF TECHNOLOGY

Prepared for: **MORRISON KNUDSON**
 CONSULTANTS

GIS Dept., 803-666-7707
 March 06, 2002

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Figure TA-2-76
Actinide Migration Evaluation
Pathway Report
Industrial Area
Groundwater Basins & Divides for
Permeable Units of the UHSU



- Groundwater Monitoring Well
- Water Level Contour
- - - Dashed where inferred
- Foundation Drain
- - - Approximate location of Groundwater Basin Divide
- - - Approximate location of Groundwater Subbasin Divide
- Approximate extent of Unsaturated Area
- Area without Groundwater Elevation Data
- Seeps

- Standard Map Features**
- Buildings and other structures
 - Solar Evaporation Ponds (SEPs)
 - Lakes and ponds
 - Streams, ditches, or other drainage features
 - - - Fences and other barriers
 - - - Topographic Contour (20-Foot)
 - - - Rocky Flats boundary
 - Paved roads
 - - - Dirt roads

DATA SOURCE BASE FEATURES:
 Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by EG&G RSL, Las Vegas. Digitized from the orthophotographs. 1/95 Topographic contours were derived from digital elevation model (DEM) data by Morrison Knudson (MK) using ESRI Arc TIN and LATTICE to process the DEM data to create 5-foot contours. The DEM data was captured by the Remote Sensing Lab, Las Vegas, NV, 1994 Aerial Flyover at ~10 meter resolution. DEM post-processing performed by MK, Winter 1997.

Scale = 1 : 9230
 1 inch represents approximately 769 feet
 100 0 200 400 ft
 State Plane Coordinate Projection
 Colorado Central Zone
 Datum: NAD27

U.S. Department of Energy
 Rocky Flats Environmental Technology Site

Prepared for: **DynCorp**
 Prepared by: **IKI**
 Date: 03-06-2007

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Figure TA-2-77 Actinide Migration Evaluation Pathway Report Air Sampling Location Map

LEGEND

● Air monitoring locations

Standard Map Features

- Buildings and other structures
- ▨ Solar Evaporation Ponds (SEPs)
- Lakes and ponds
- Streams, ditches, or other drainage features
- - - Fences and other barriers
- - - Rocky Flats boundary
- Heavy duty paved roads
- Medium duty paved roads
- Light duty paved roads
- - - Dirt roads

DATA SOURCE BASE FEATURES:
Buildings, fences, hydrography, roads and other structures from 1994 aerial fly-over data captured by ECH-6 RS, Las Vegas. Digitized from the orthophotographs, 1/95

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Scale = 1 : 32160
1 inch represents 2680 feet



State Plane Coordinate Projection
Colorado Central Zone
Datum: NAD27

U.S. Department of Energy
Rocky Flats Environmental Technology Site

GIS Dept. 303-966-7707

Prepared by:

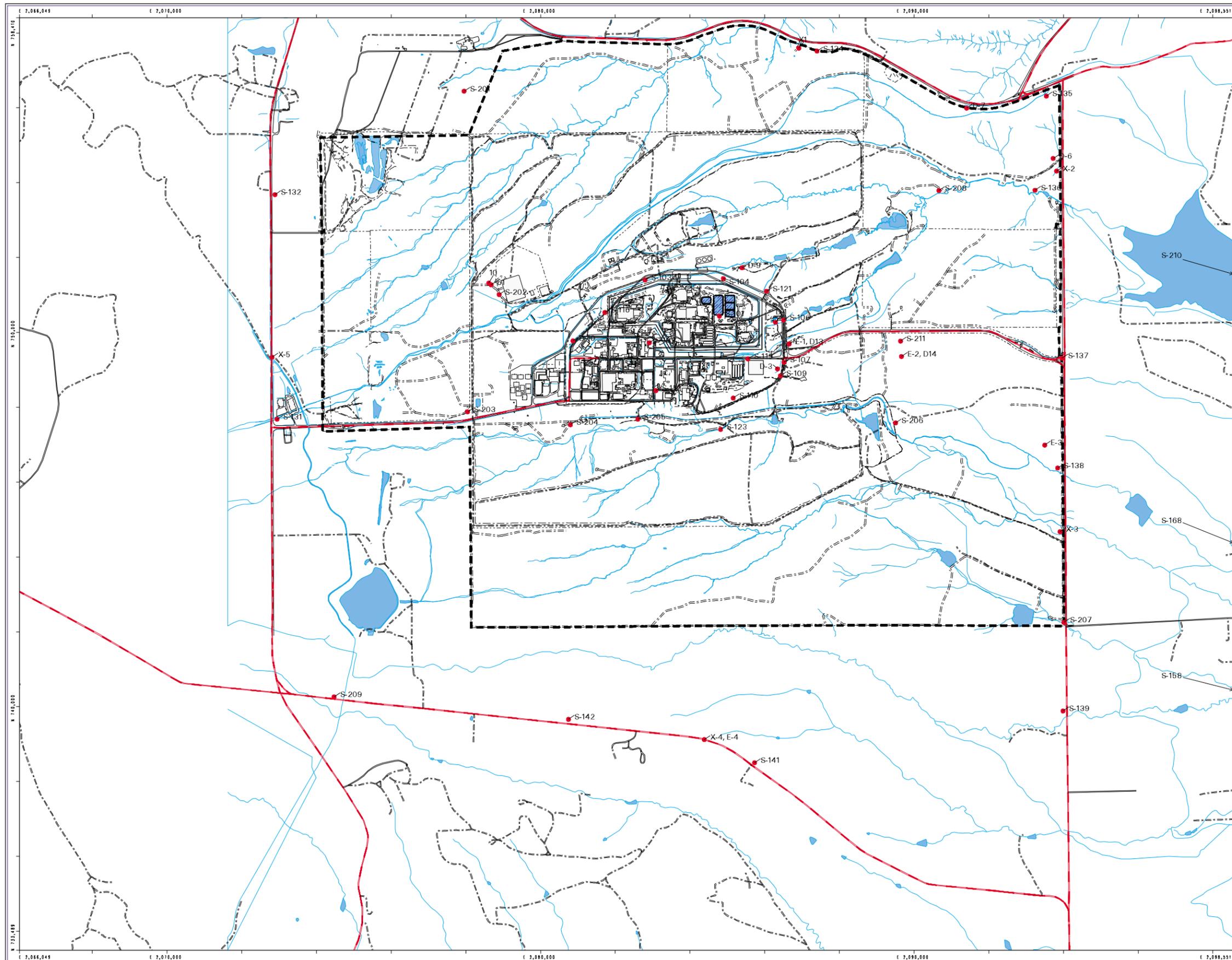


Prepared for:



MAP ID: misc_maps/air_sampling.aml

January 21, 2002



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Figure TA-2-78. Average Actinide Concentrations in Air at RFETS Perimeter, 1997 –1999

(Total dose as a fraction of the 10-mrem standard converted using 40 CFR 61, Subpart H, Table 2)

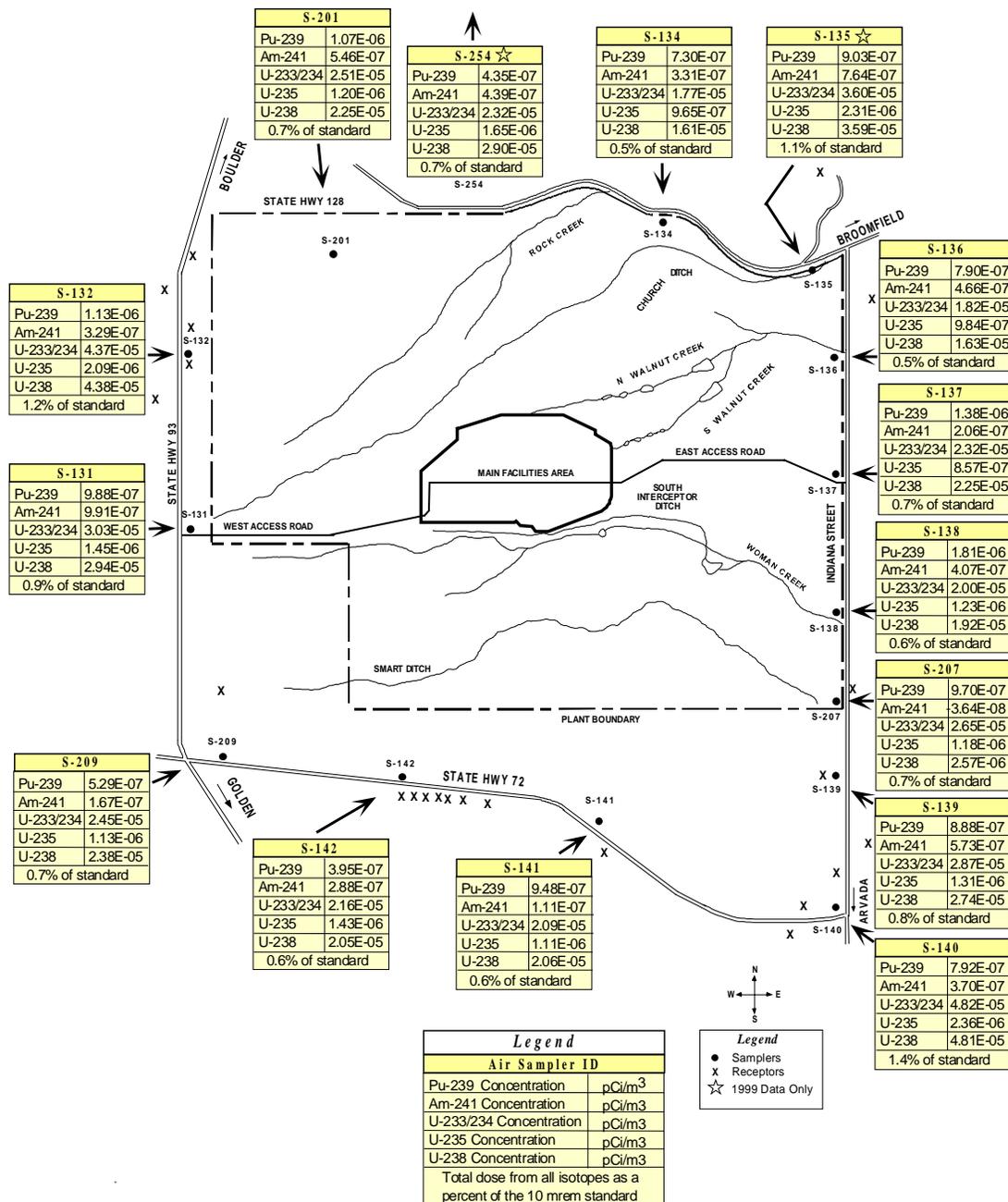


Figure TA-2-79. Expanded View of RAAMP Sampler

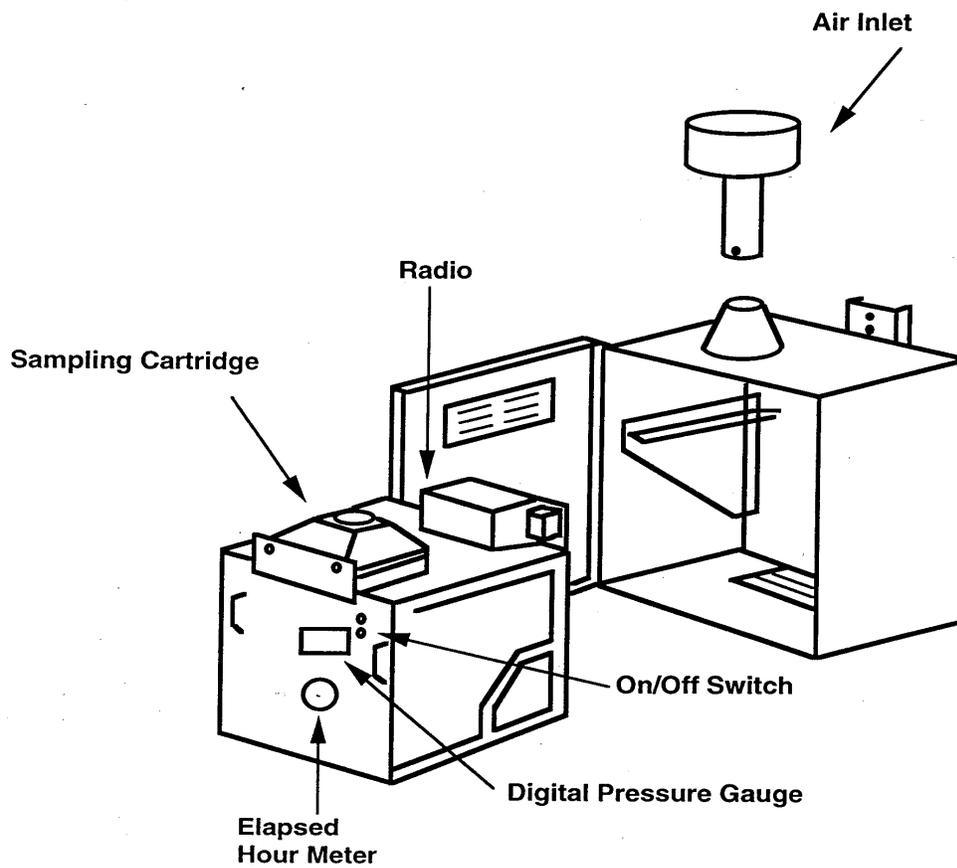


Figure TA-2-80. RAAMP Sampler (foreground) Near 903 Pad

