# FIGURES

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# SECTION 1 FIGURES

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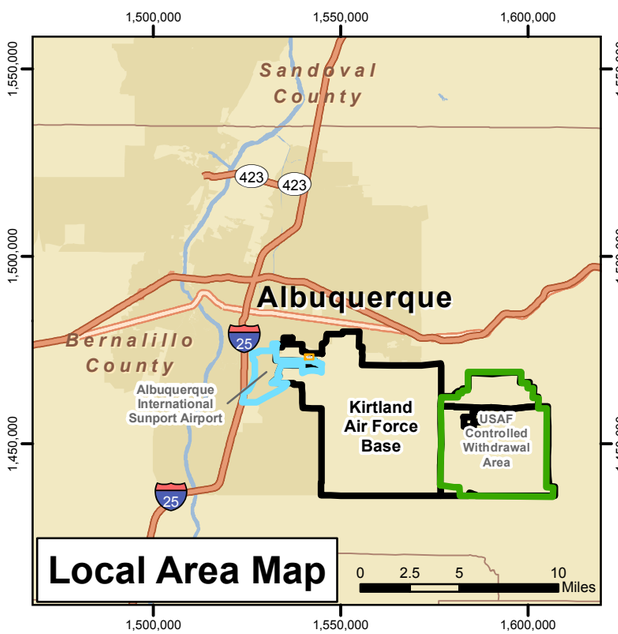


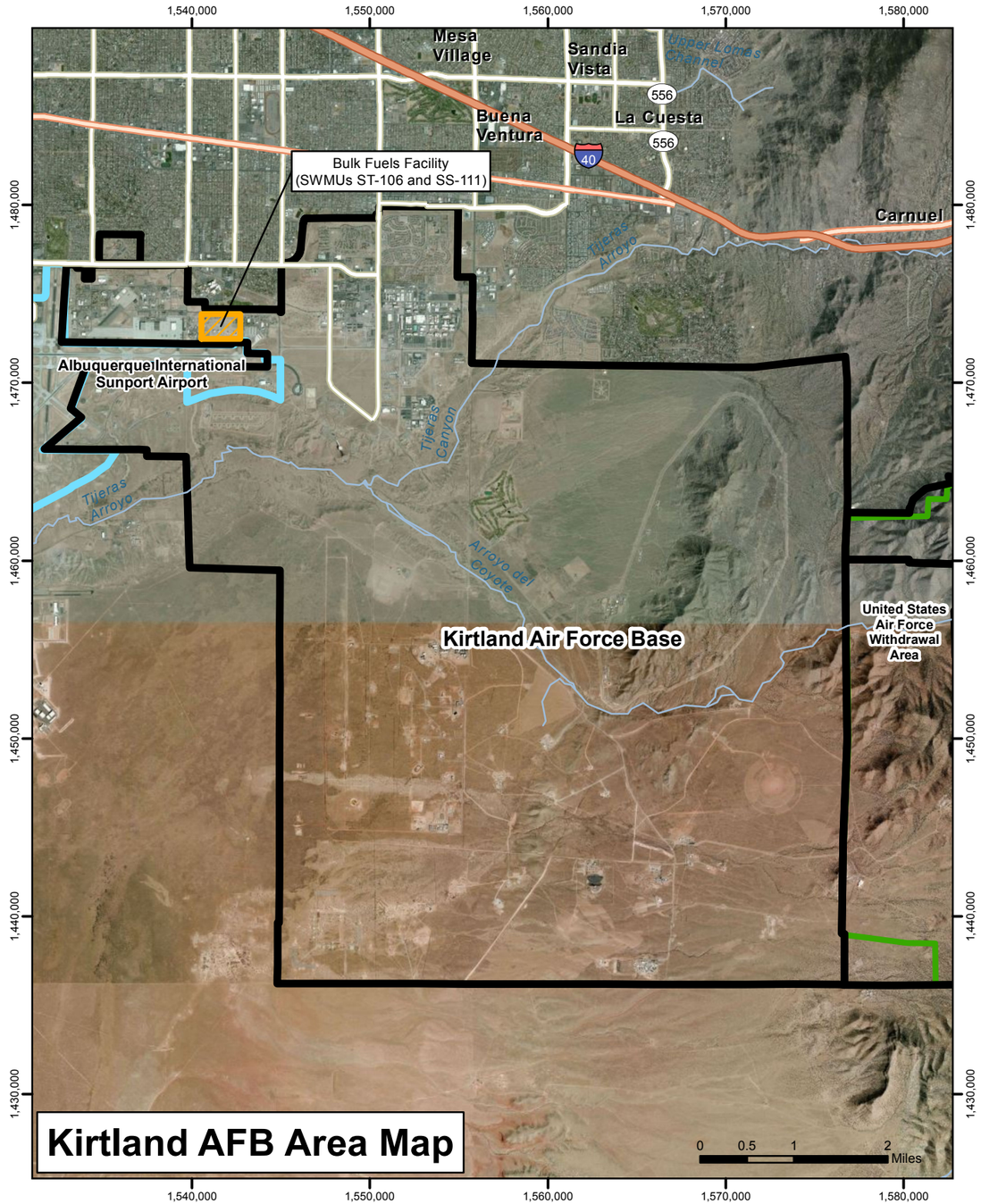


## Legend

- Major Highways
- Highways
- Major Roads
- Rivers
- Bulk Fuels Facility (SWMUs ST-106 and SS-111)
- Installation Location
- Kirtland Air Force Base Installation Boundary
- Albuquerque International Sunport Airport
- United States Air Force Withdrawal Area
- Urban Areas
- Counties
- States

N

Revision Date: 04/04/12

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 1-1

SITE LOCATION MAP

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# SECTION 2 FIGURES

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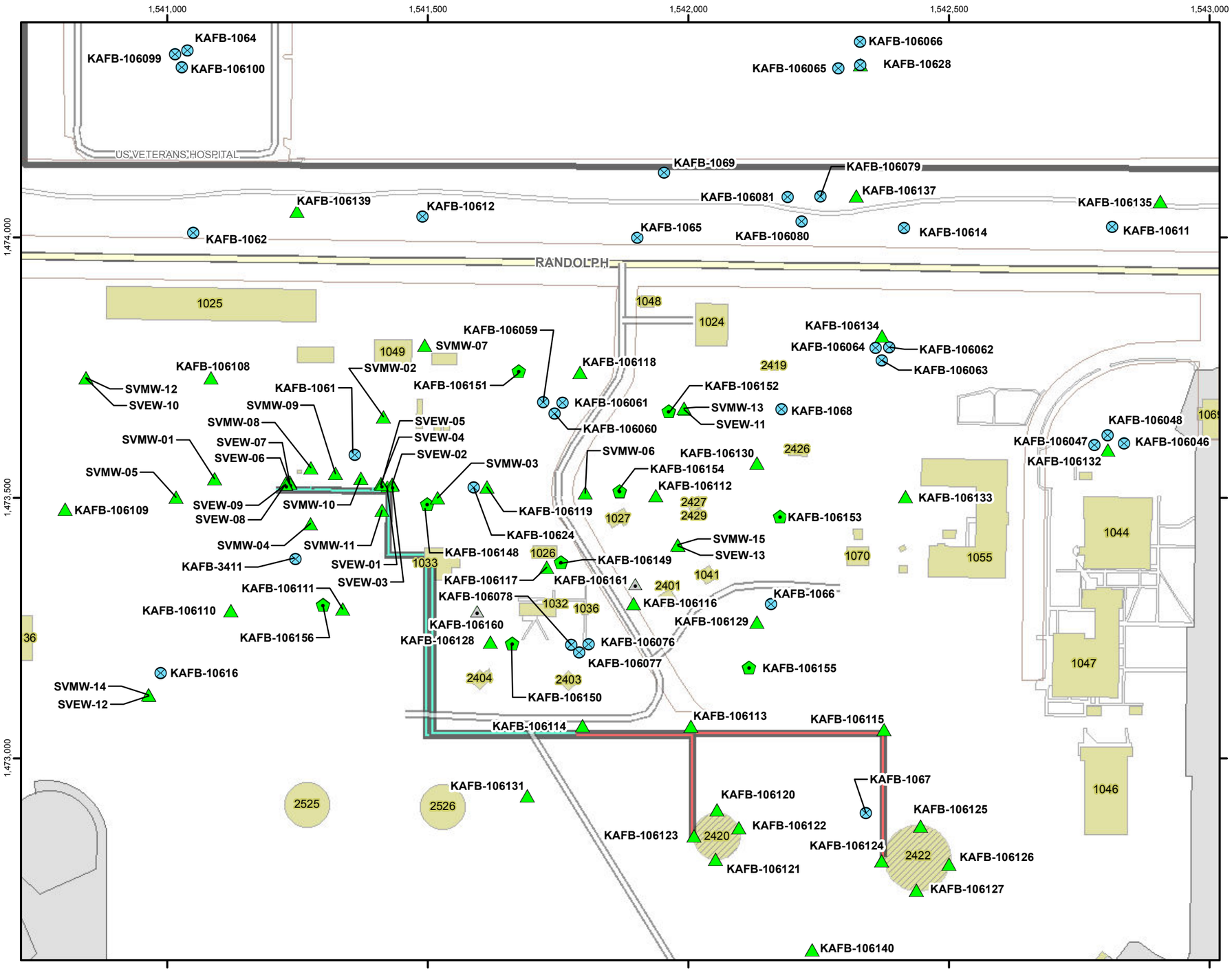


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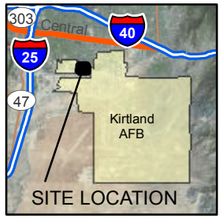
## Legend

- Proposed SVE Extraction Well
- Monitor Well
- Pneu Log
- SVE Extraction Well
- SVM Cluster
- Interstate
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Parcels
- Existing Structure
- Previously Existing Structure
- Runway
- Sidewalk
- Installation Boundary




Revision Date: 05/08/12

N

0 100 200 400

Feet

1 inch = 200 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 2-1

LOCATION OF SOIL VAPOR MONITORING AND EXTRACTION WELLS, BULK FUELS FACILITY

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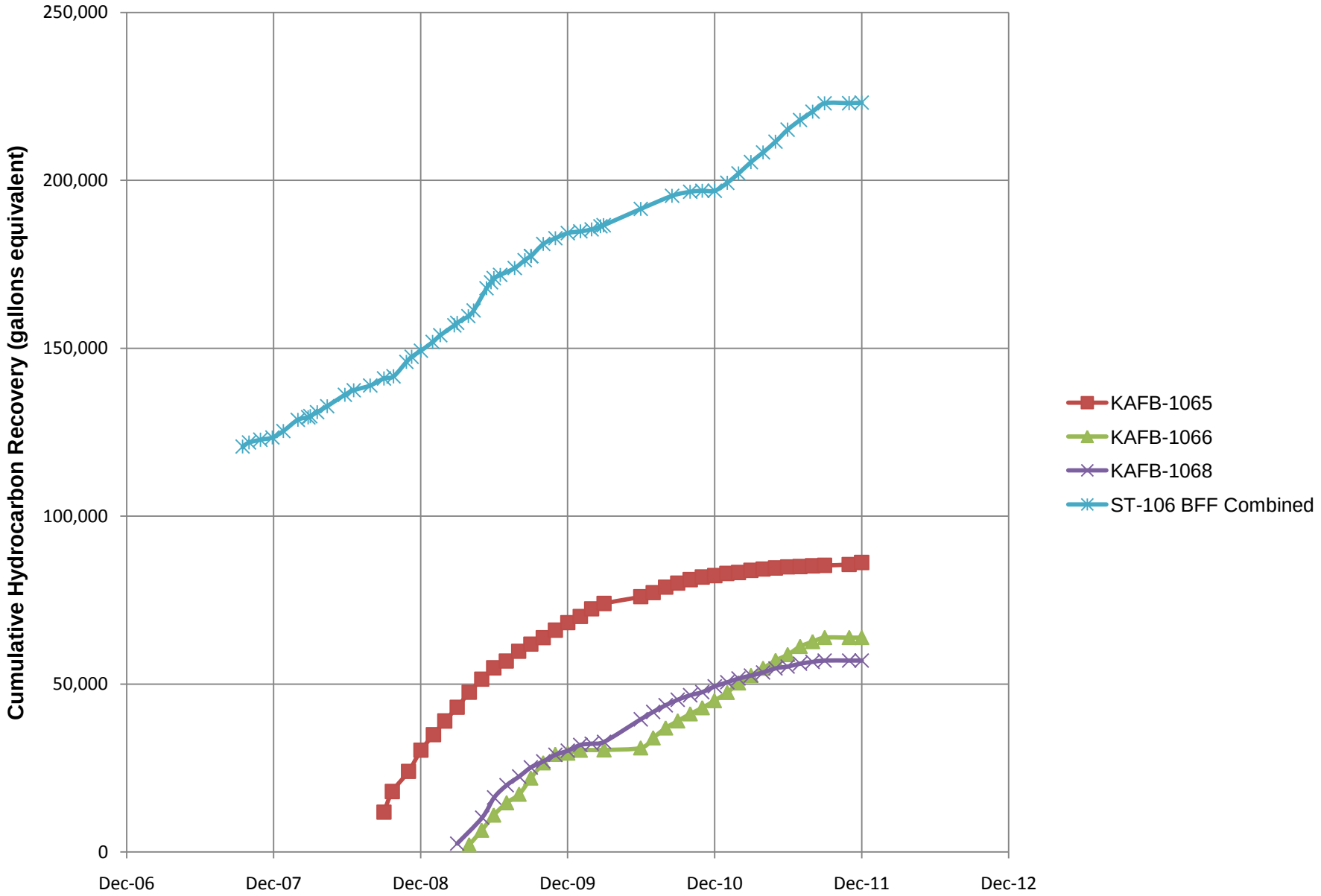
# Figure 2-2. SVE Cumulative Mass Recovery Over Time



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# SECTION 3 FIGURES

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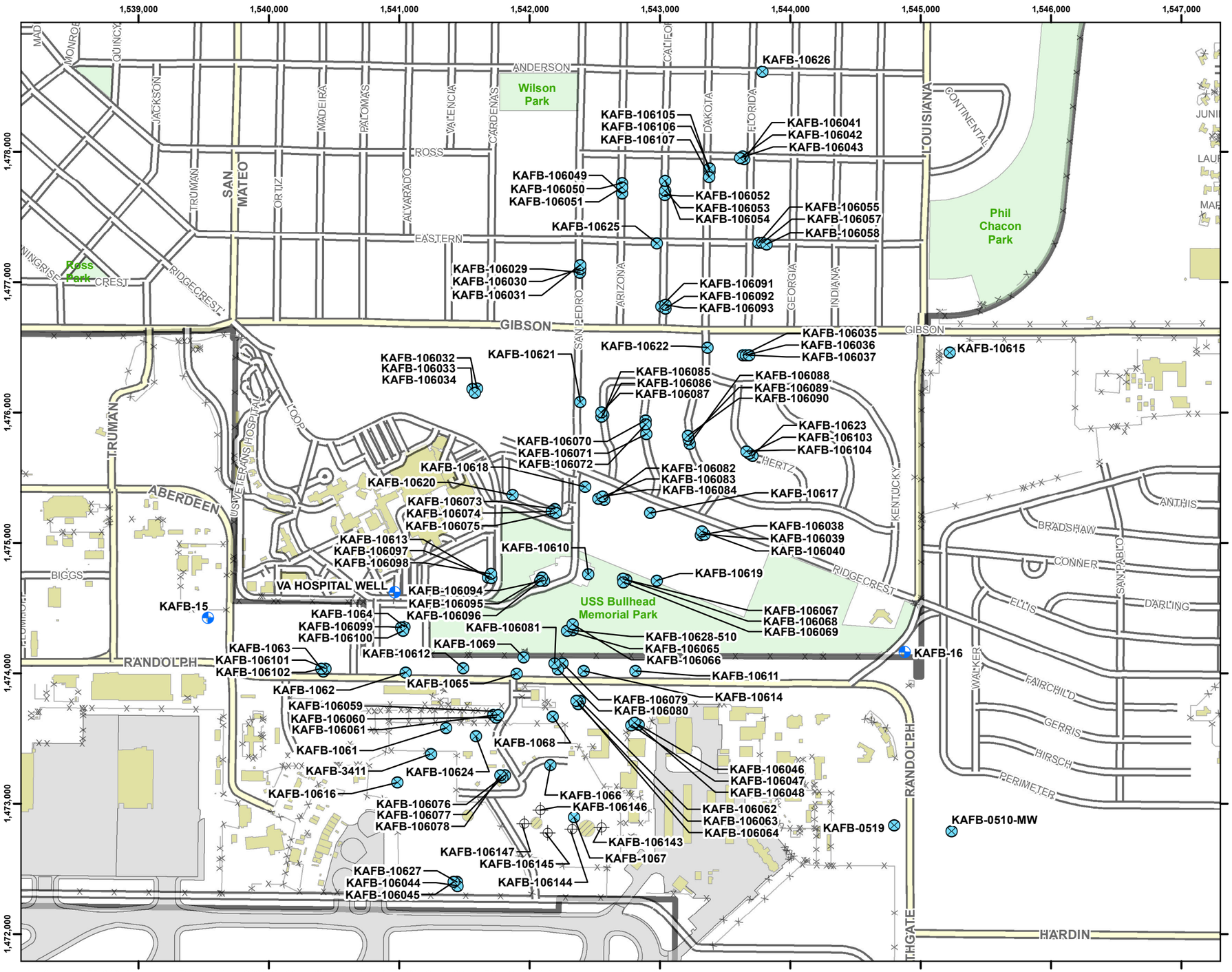


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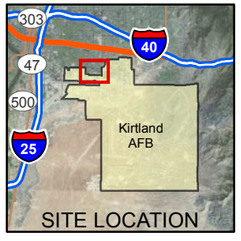
## Legend

- Monitor Well
- Water Supply Well
- Borehole
- Fence
- Interstate
- Major Road
- Road
- Existing Structure
- Previously Existing Structure
- Runway
- Park
- Installation Boundary




N

Revision Date: 04/11/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 3-1

GROUNDWATER MONITORING WELL AND SOIL BORING LOCATIONS

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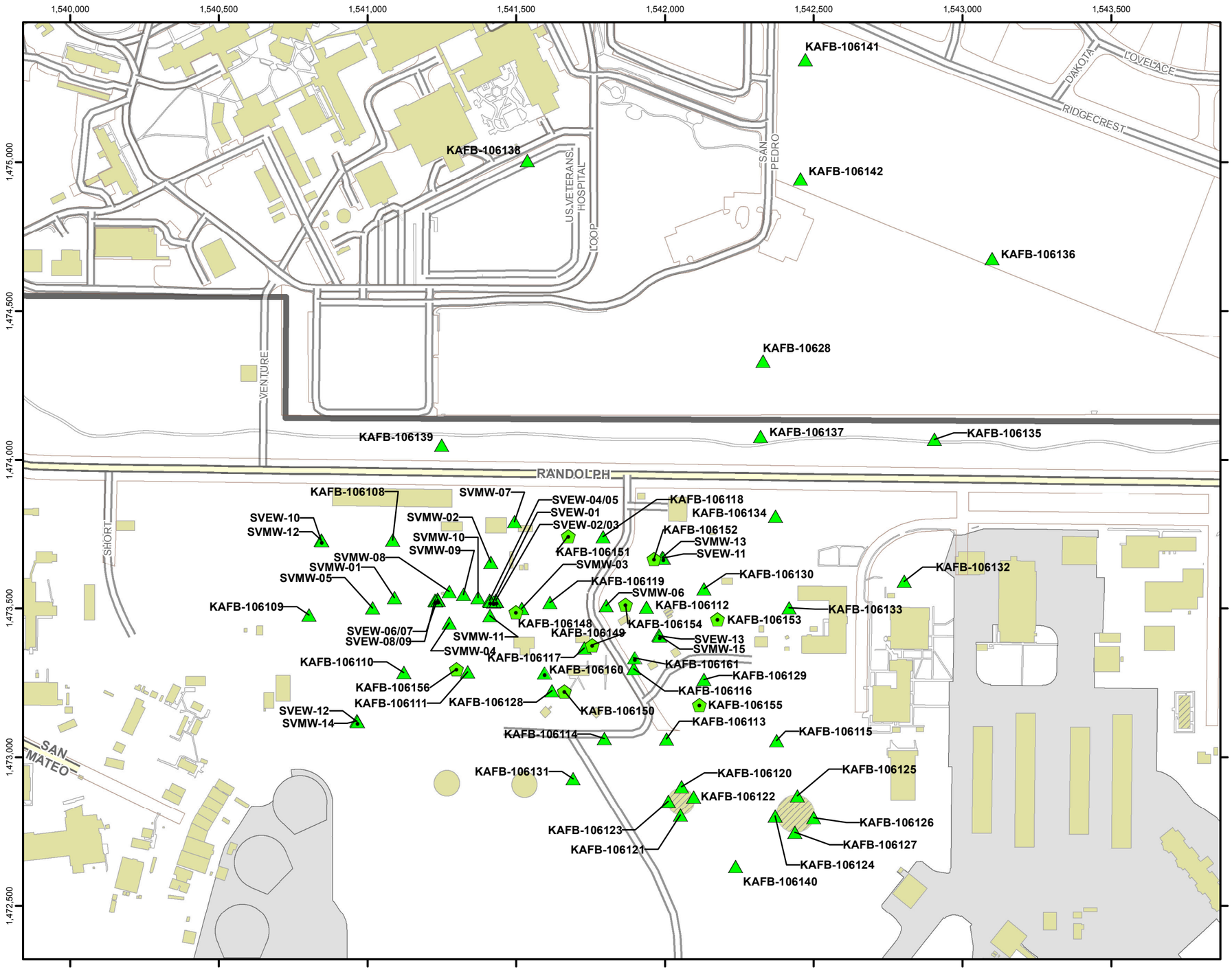
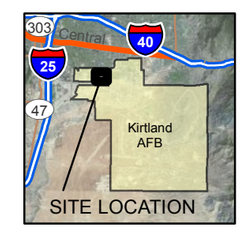



## Legend

- Pneulog Cluster
- SVE Extraction Well
- SVM Cluster
- Interstate
- Major Road
- Road
- Parcels
- Existing Structure
- Previously Existing Structure
- Runway
- Sidewalk
- Installation Boundary




Revision Date: 04/11/12

N

0 175 350 700

Feet

1 inch = 350 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 3-2

SOIL VAPOR MONITORING LOCATIONS

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_018_SVE.mxd 04/11/12

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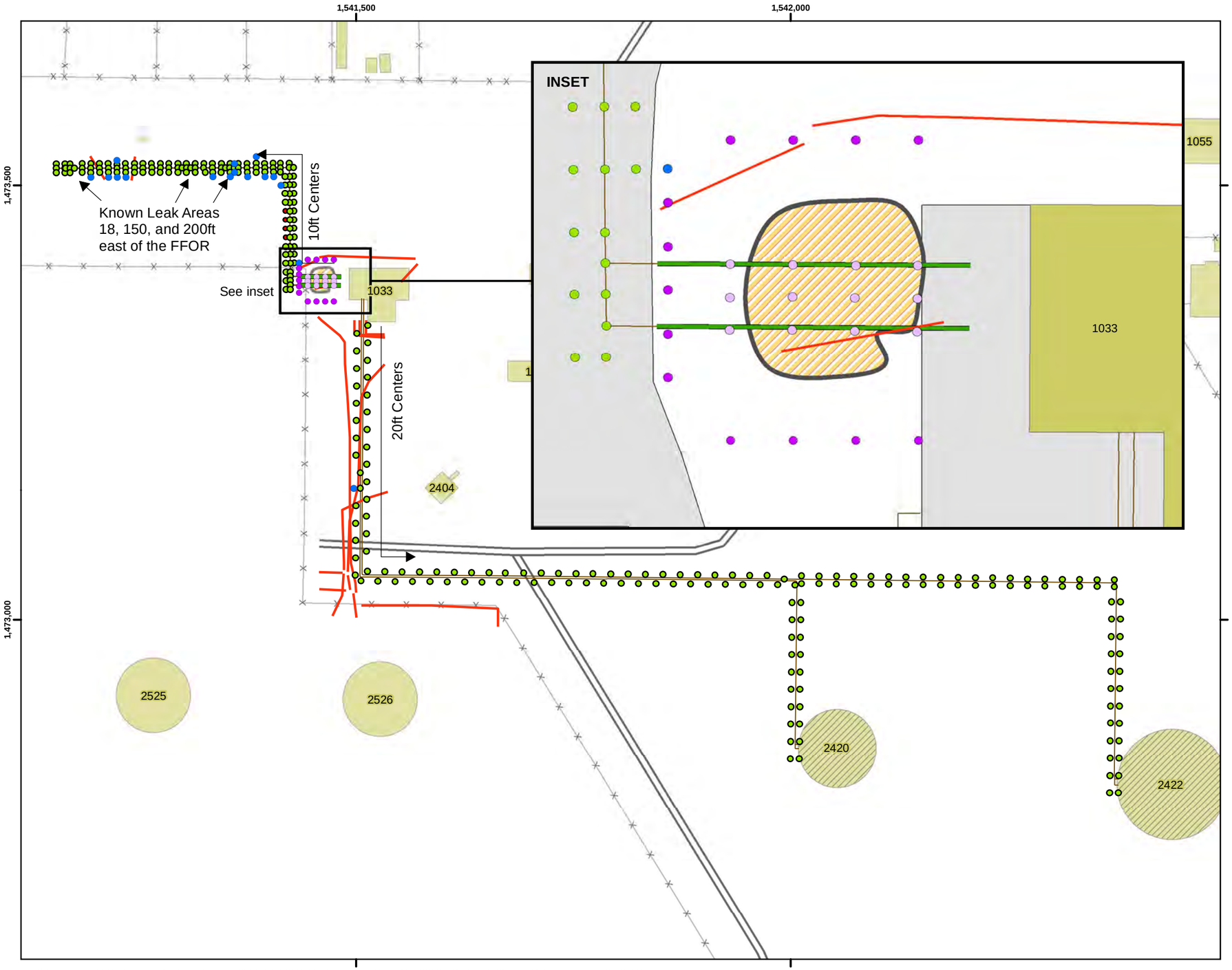
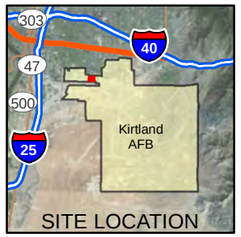



## Legend

- Proposed Borehole Locations
- Original Borehole Location Will Not Be Completed Due to Presence of Excavation
- Proposed Step-Out Locations
- Borehole Locations Completed
- Borehole Locations Not Completed
- Former Fuel Lines
- In-Place Fuel Lines
- Electric Utility Line
- Fence
- Interstate
- Major Road
- Road
- Existing Excavation
- Structure
- Previously Existing Structure




Revision Date: 06/01/12

N

0 60 120 240

Feet
1 inch = 120 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-3

FFOR BOREHOLE LOCATIONS

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_015_FFOR_locs.mxd 06/01/12

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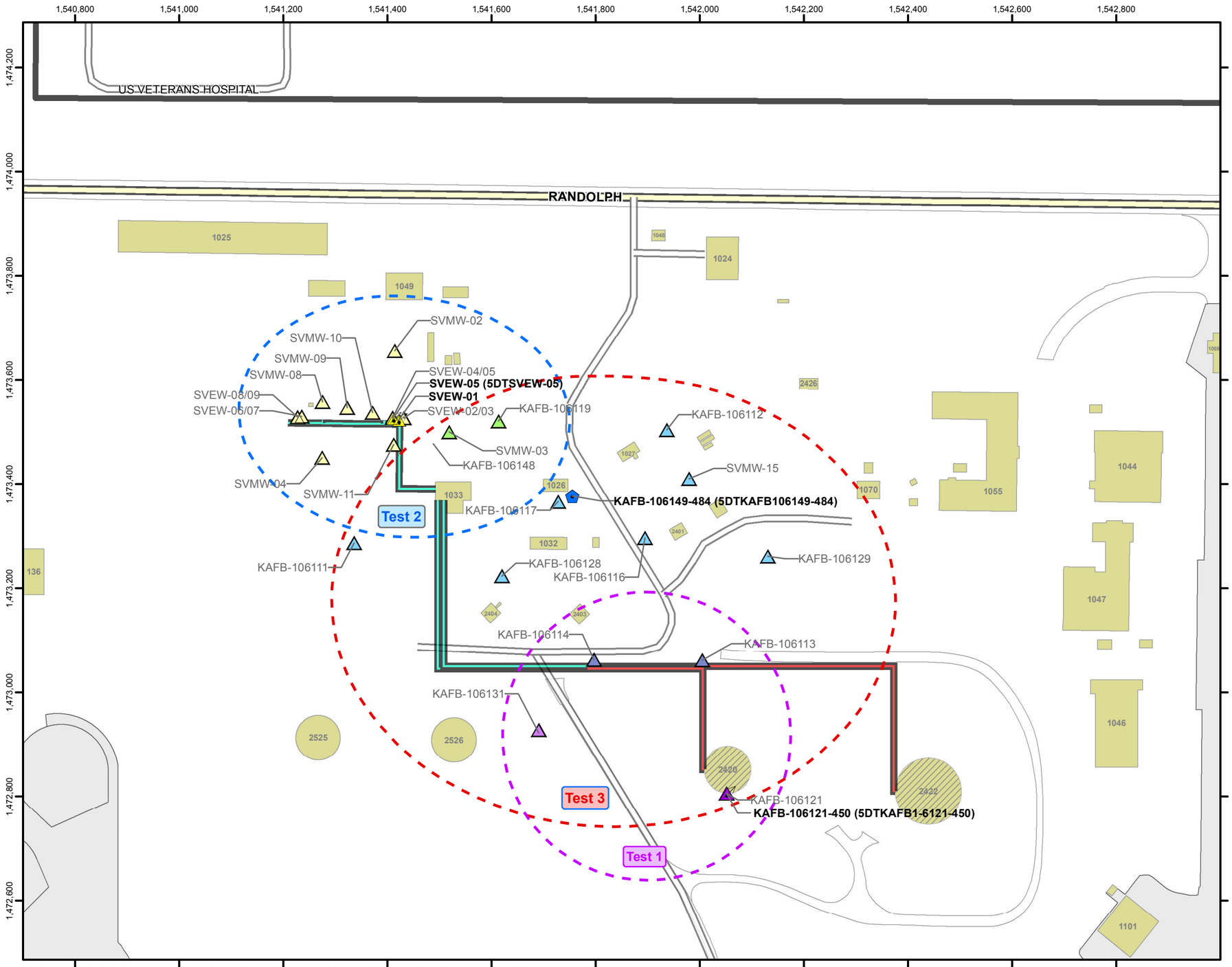


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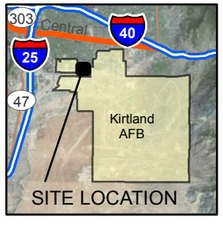
## Legend

- Observation Well Cluster for ROI Test 1
- Extraction Well for ROI Test 1
- Observation Well Cluster for ROI Tests 1 and 3
- Observation Well Cluster for ROI Tests 2 and 3
- Extraction Well and Alternative for ROI Test 2
- Observation Pneulog Well for ROI Test 2
- Observation Well for ROI Test 2
- Extraction Well for ROI Test 3
- Observation Well Cluster for ROI Test 3
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Interstate
- Major Road
- Road
- Existing Structure
- Previously Existing Structure
- Runway
- Installation Boundary

Note:
Extraction wells for tests are labeled in **bold** font.
Observation wells for tests are labeled in regular font.




Revision Date: 03/16/11

N

0 100 200 400
Feet
1 inch = 200 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-4

RADIUS OF INFLUENCE TEST WELLS

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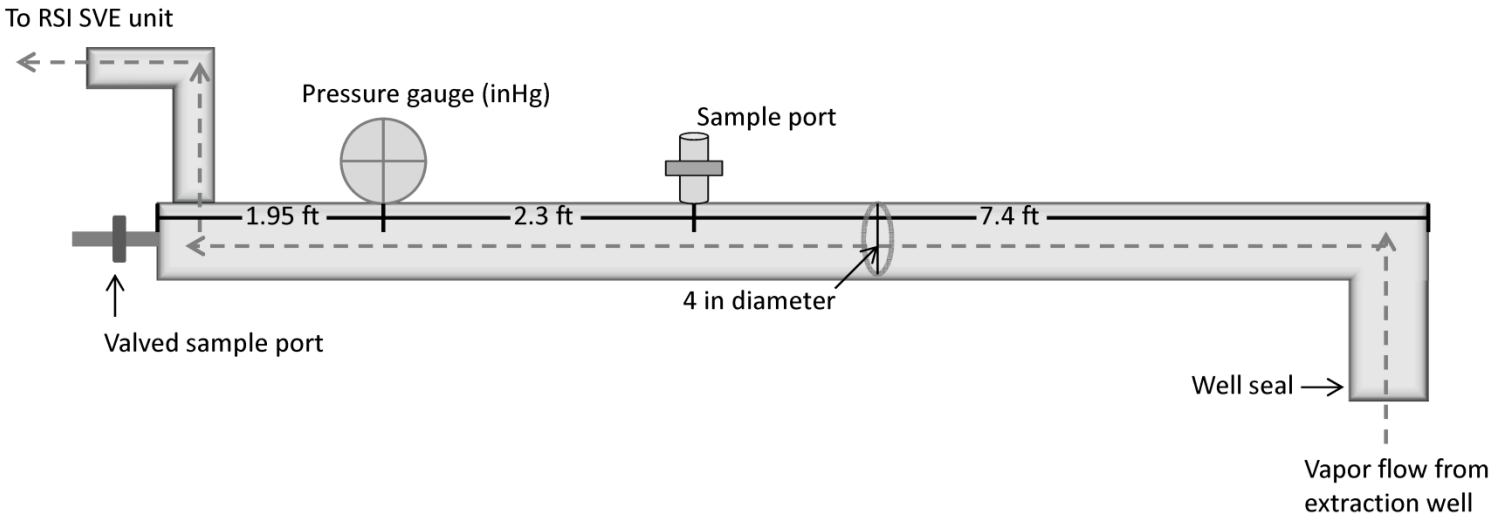


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FIGURE 3-5

TEST WELLHEAD SETUP
FOR USE WITH
RSI SVE UNIT 249

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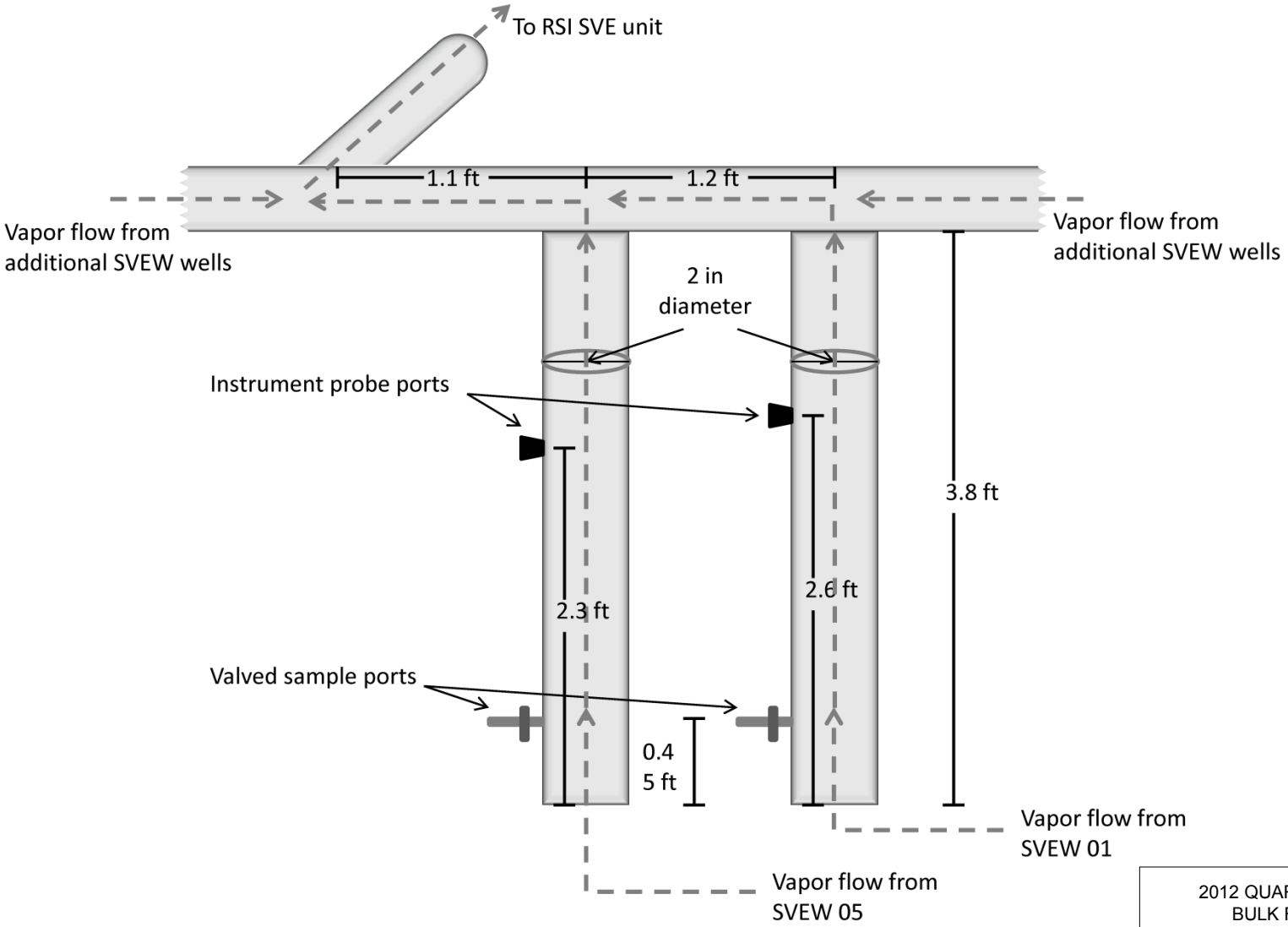


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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3-6

WELLHEAD SETUP CONNECTED TO
WELLS SVEW-01
THROUGH SVEW-09

KAFB_052_well_const.ppt

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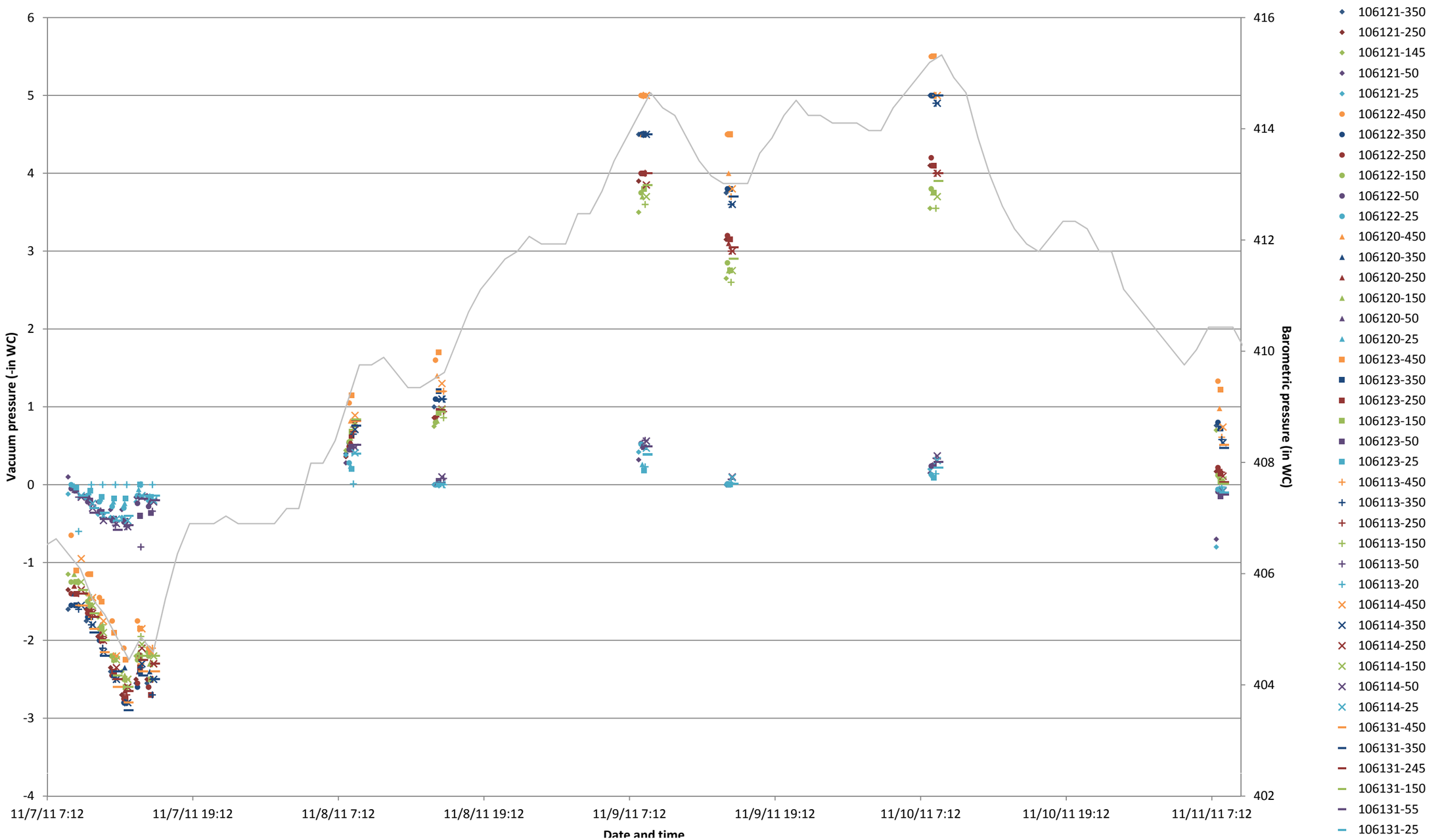
## Figure 3-7: Vacuum Pressure in Monitoring Wells for Test 5DTKAFB106121-450



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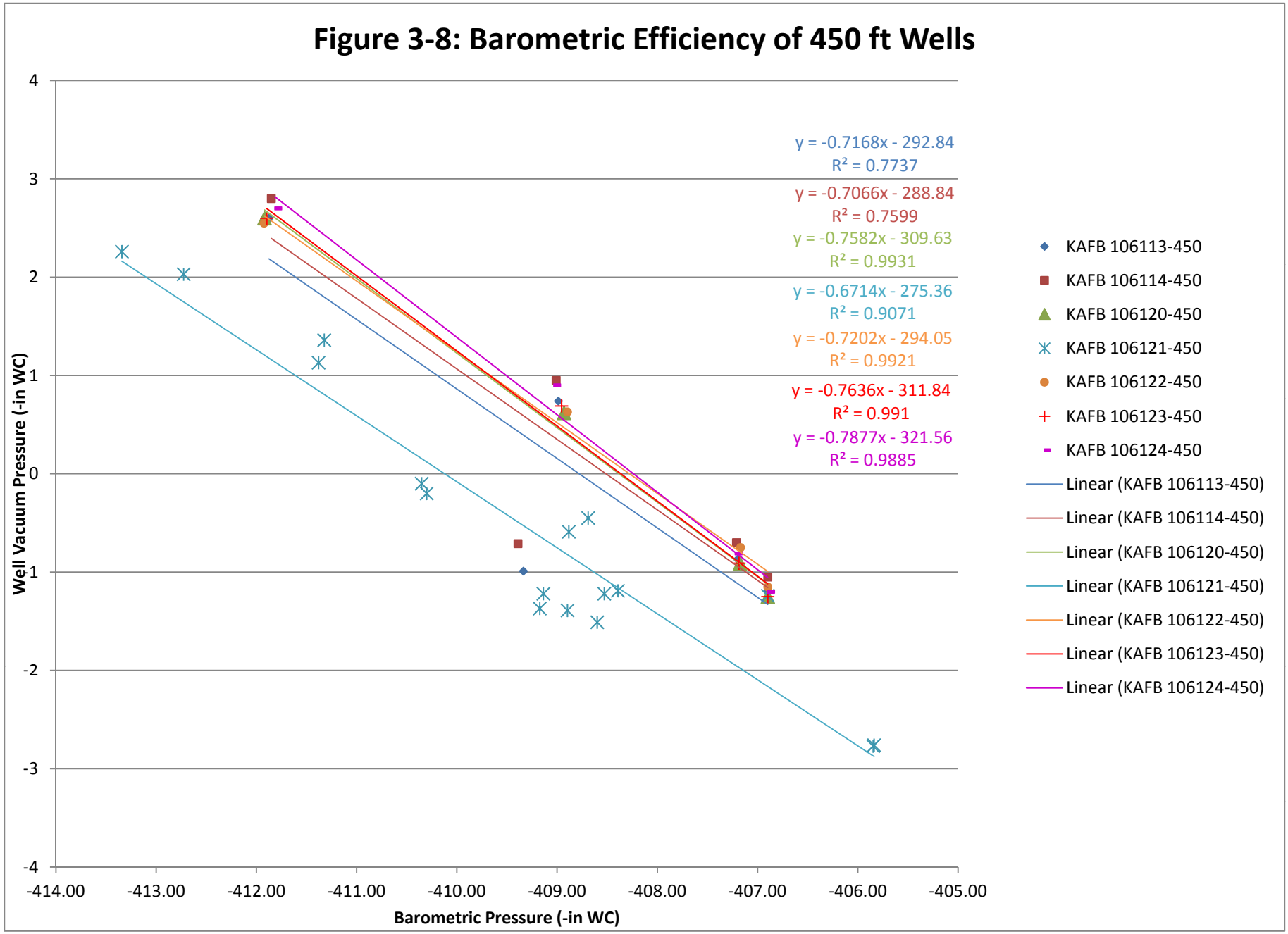
Figure 3-8: Barometric Efficiency of 450 ft Wells
Well Vacuum Pressure (-in WC)
Barometric Pressure (-in WC)
4
3
2
1
0
-1
-2
-3
-4
-414.00
-413.00
-412.00
-411.00
-410.00
-409.00
-408.00
-407.00
-406.00
-405.00
y = -0.7168x - 292.84
R² = 0.7737
y = -0.7066x - 288.84
R² = 0.7599
y = -0.7582x - 309.63
R² = 0.9931
y = -0.6714x - 275.36
R² = 0.9071
y = -0.7202x - 294.05
R² = 0.9921
y = -0.7636x - 311.84
R² = 0.991
y = -0.7877x - 321.56
R² = 0.9885
KAFB 106113-450
KAFB 106114-450
KAFB 106120-450
KAFB 106121-450
KAFB 106122-450
KAFB 106123-450
KAFB 106124-450
Linear (KAFB 106113-450)
Linear (KAFB 106114-450)
Linear (KAFB 106120-450)
Linear (KAFB 106121-450)
Linear (KAFB 106122-450)
Linear (KAFB 106123-450)
Linear (KAFB 106124-450)

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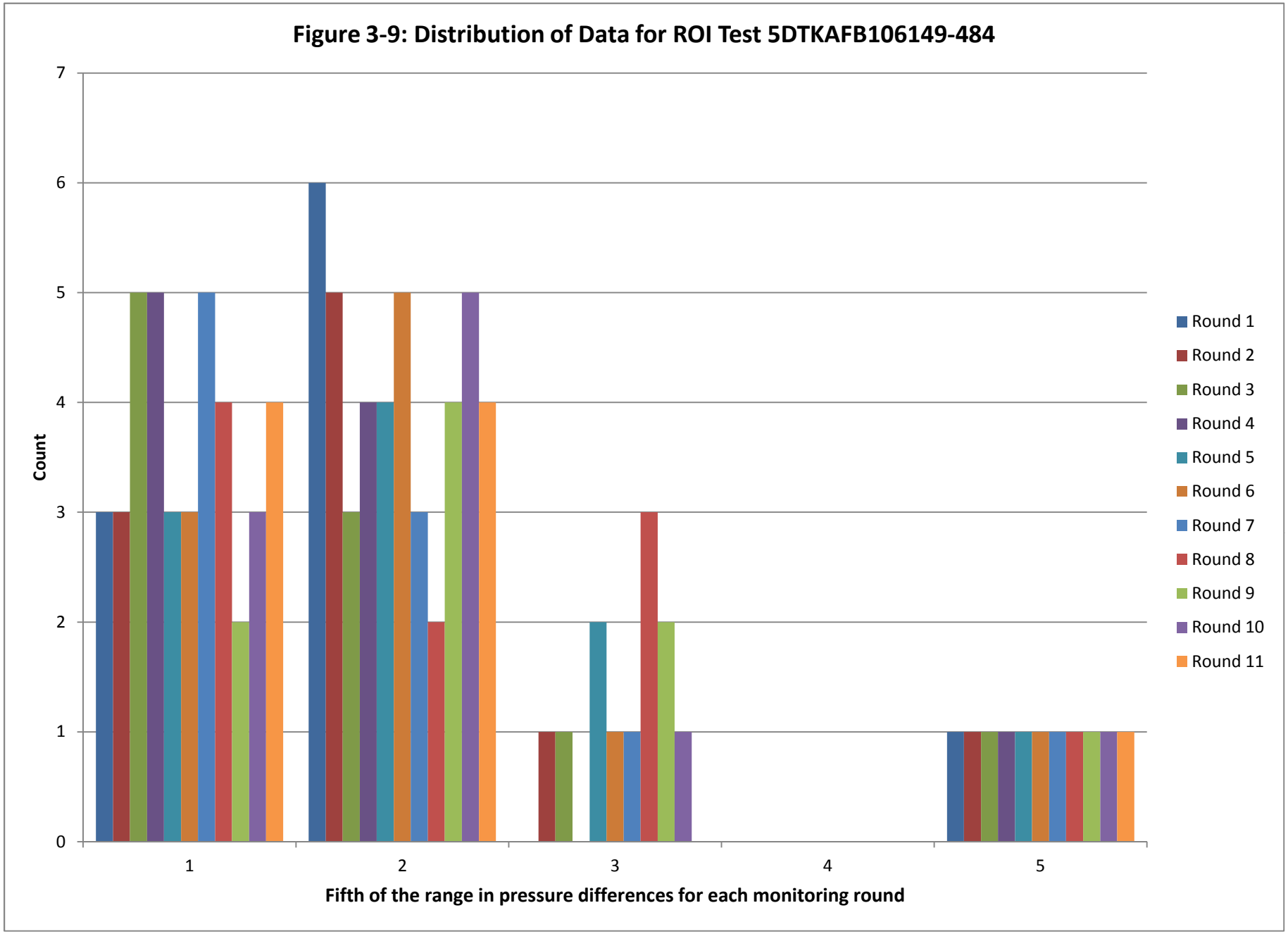
Figure 3-9: Distribution of Data for ROI Test 5DTKAFB106149-484
Count
0
1
2
3
4
5
6
7
1
2
3
4
5
Fifth of the range in pressure differences for each monitoring round
Round 1
Round 2
Round 3
Round 4
Round 5
Round 6
Round 7
Round 8
Round 9
Round 10
Round 11

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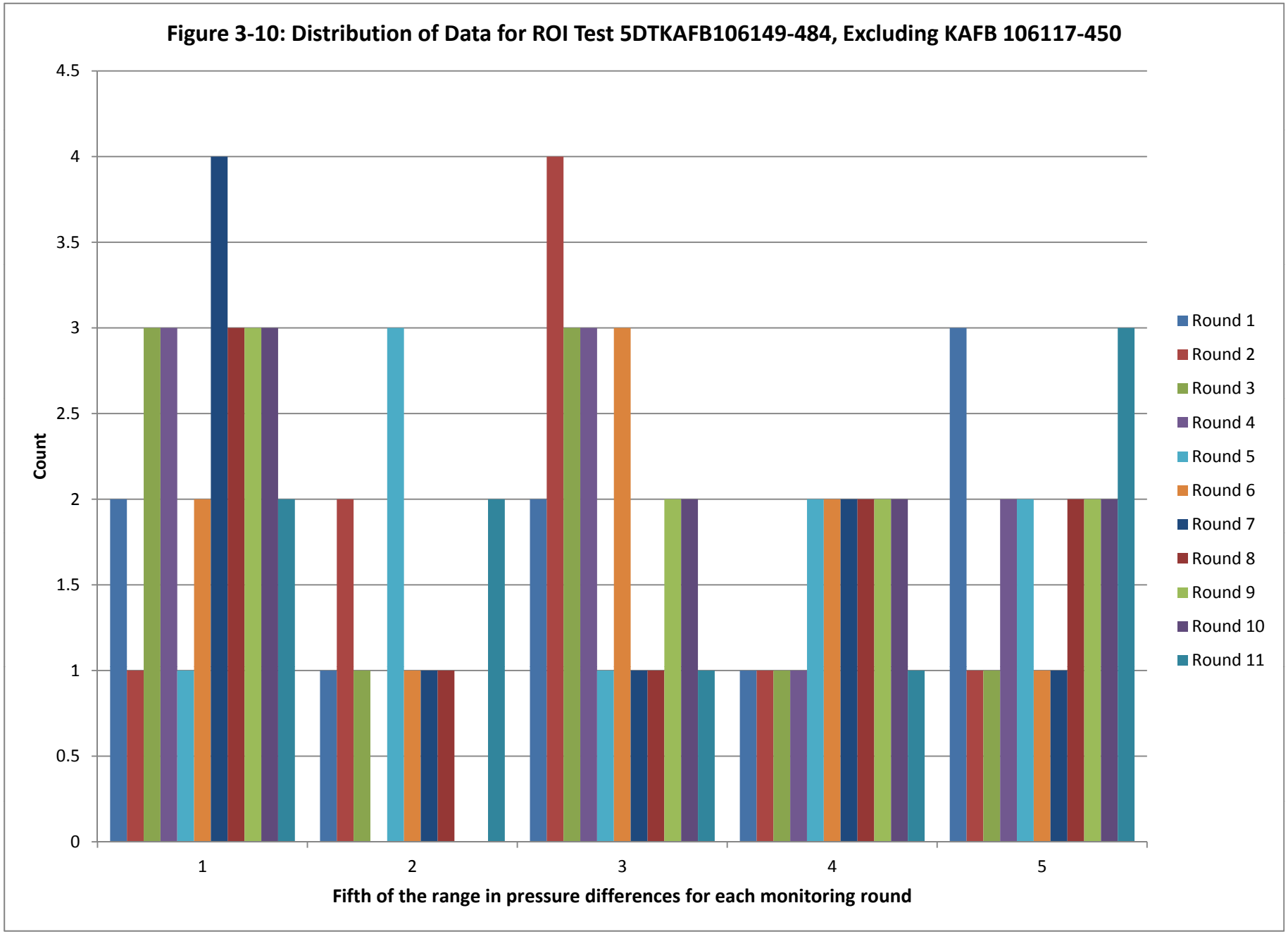
Figure 3-10: Distribution of Data for ROI Test 5DTKAFB106149-484, Excluding KAFB 106117-450
Count
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
1
2
3
4
5
Fifth of the range in pressure differences for each monitoring round
Round 1
Round 2
Round 3
Round 4
Round 5
Round 6
Round 7
Round 8
Round 9
Round 10
Round 11

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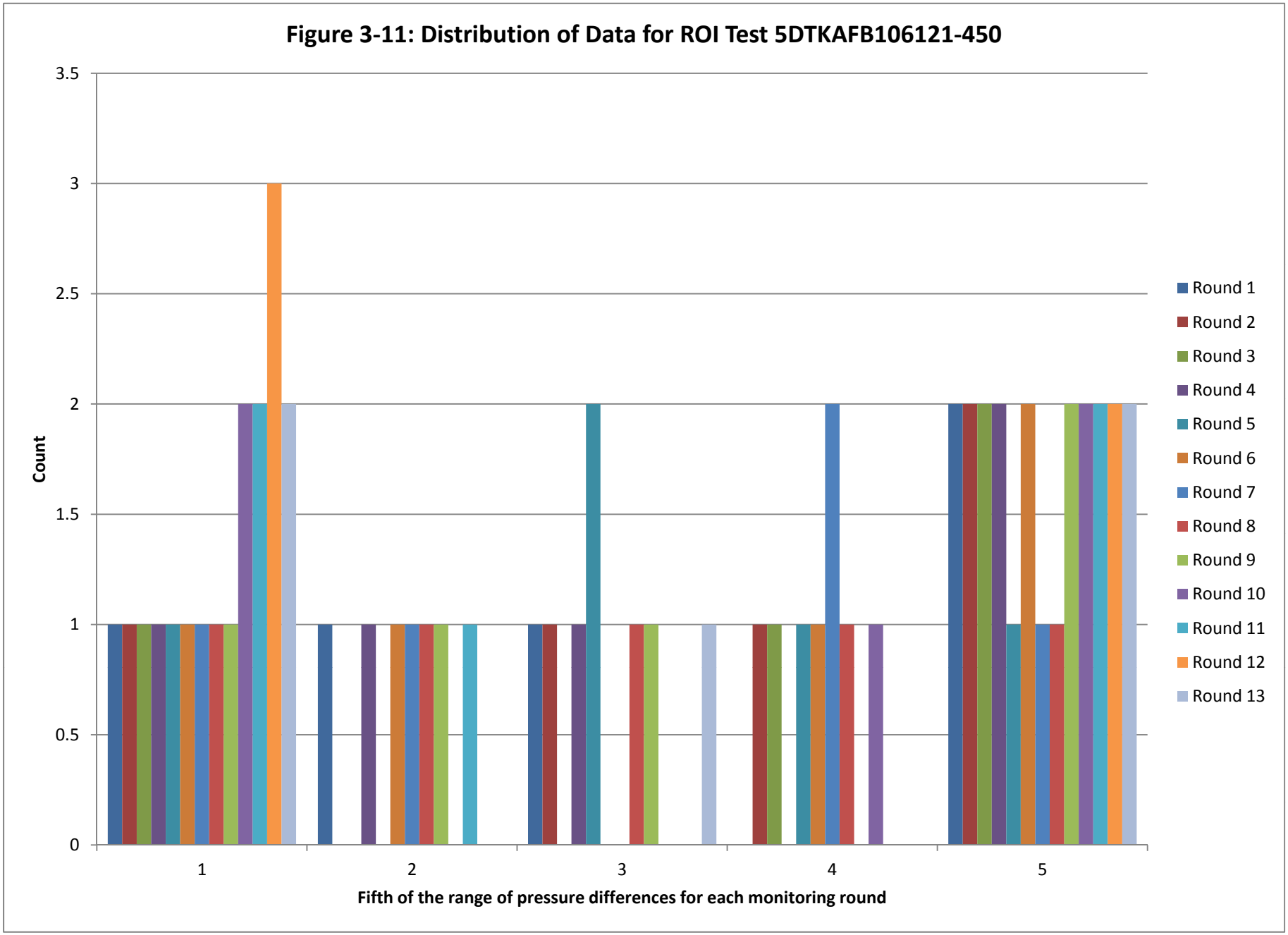
Figure 3-11: Distribution of Data for ROI Test 5DTKAFB106121-450
3.5
3
2.5
2
1.5
1
0.5
0
Count
1
2
3
4
5
Fifth of the range of pressure differences for each monitoring round
Round 1
Round 2
Round 3
Round 4
Round 5
Round 6
Round 7
Round 8
Round 9
Round 10
Round 11
Round 12
Round 13

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# SECTION 4 FIGURES

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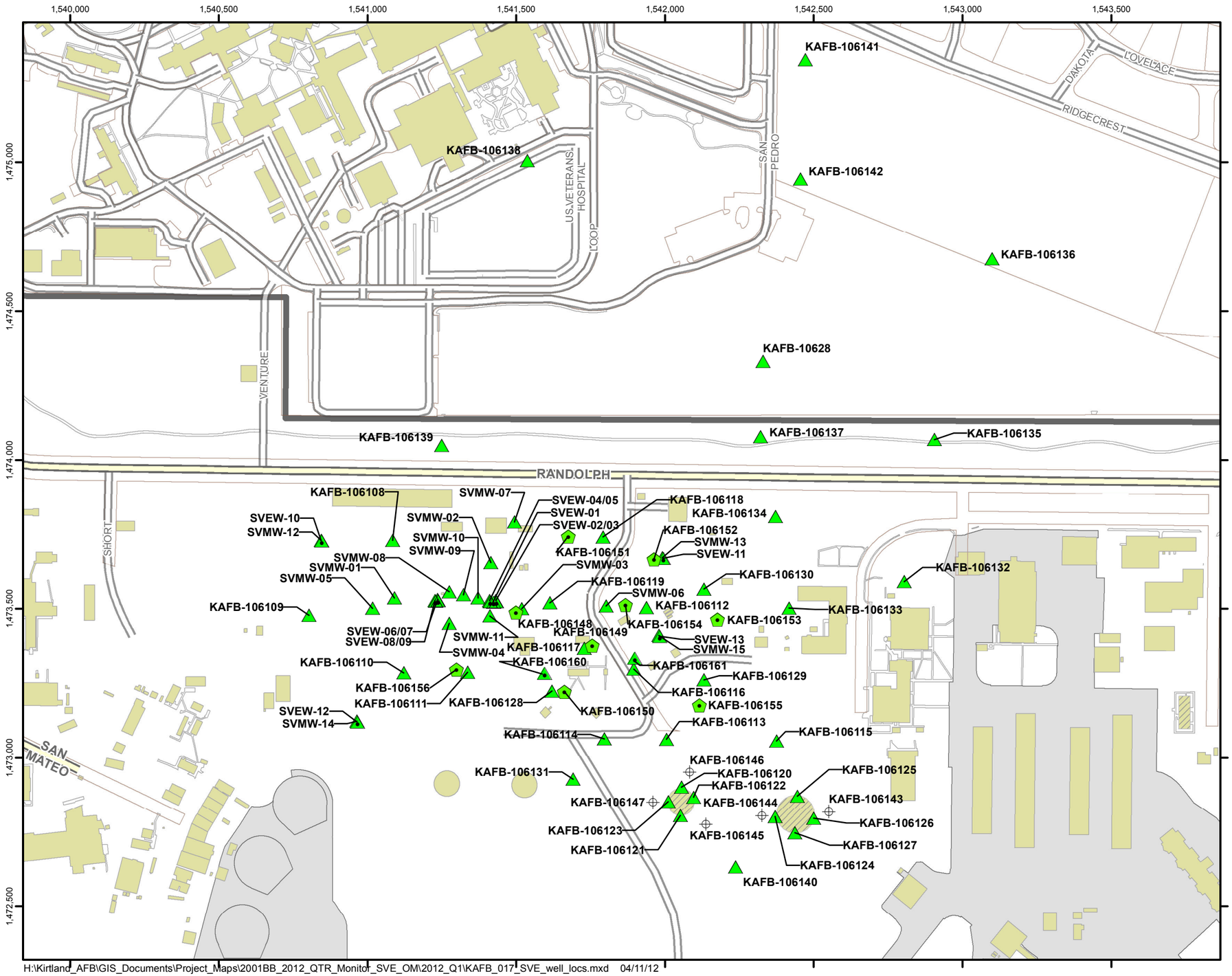
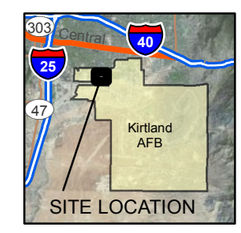



## Legend

- Borehole
- Pneulog Cluster
- SVE Extraction Well
- SVM Cluster
- Interstate
- Major Road
- Road
- Parcels
- Existing Structure
- Previously Existing Structure
- Runway
- Sidewalk
- Installation Boundary




Revision Date: 04/11/12

N

0 175 350 700

Feet

1 inch = 350 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-1

SVE AND SVM
WELL LOCATIONS

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_017_SVE_well_locs.mxd 04/11/12

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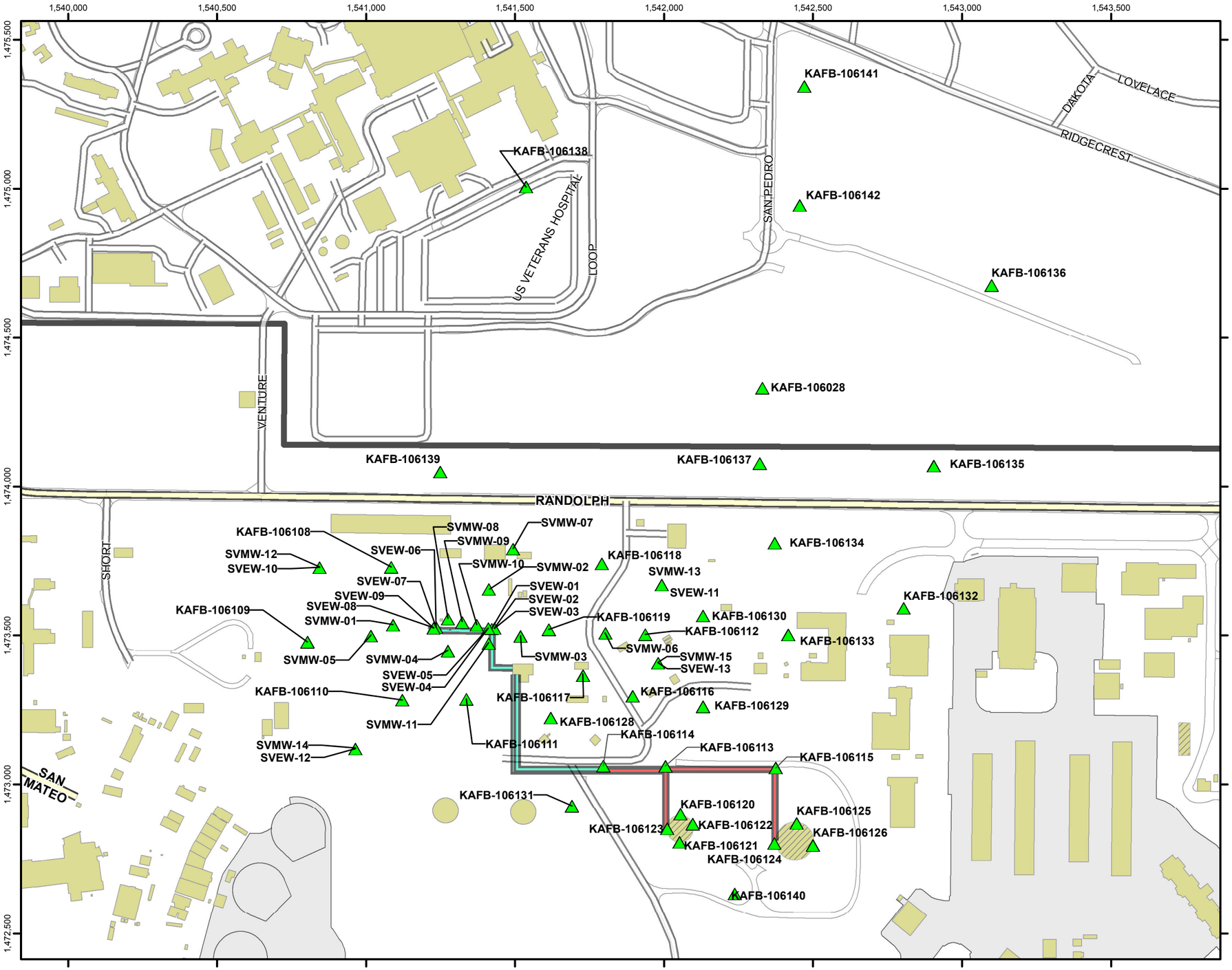
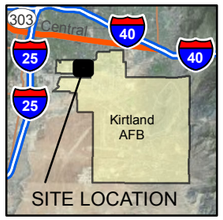



## Legend

- SVE/SVM Well
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Interstate
- Major Road
- Road
- Structure
- Runway
- Installation Boundary




Revision Date: 05/22/12

N

0 175 350 700

Feet

1 inch = 350 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-2

VOC VAPOR
SAMPLE LOCATIONS

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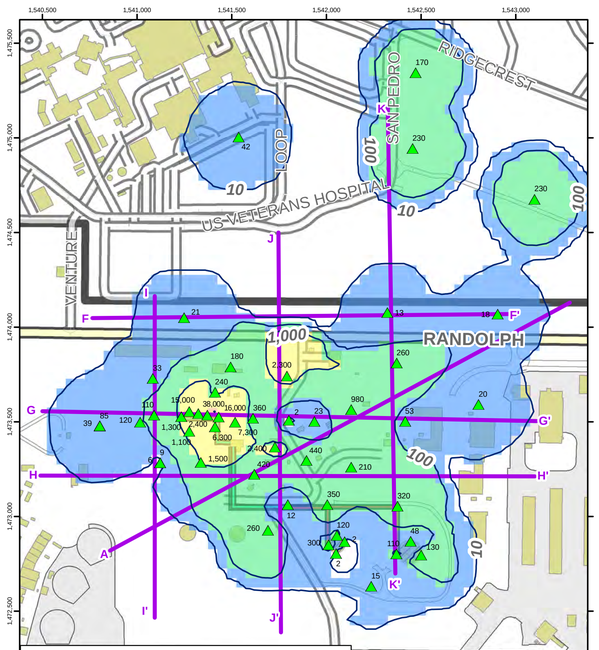
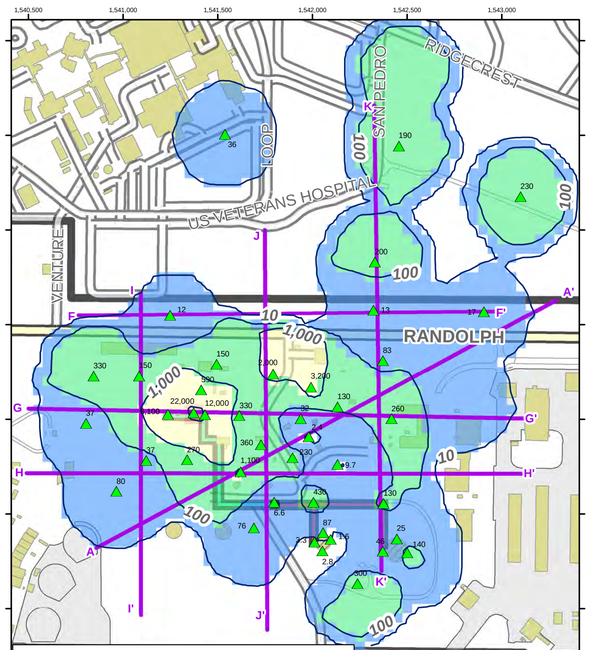
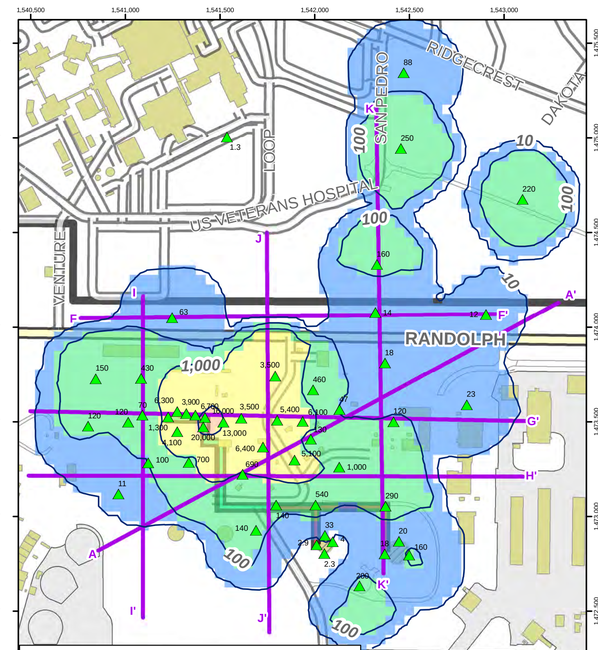


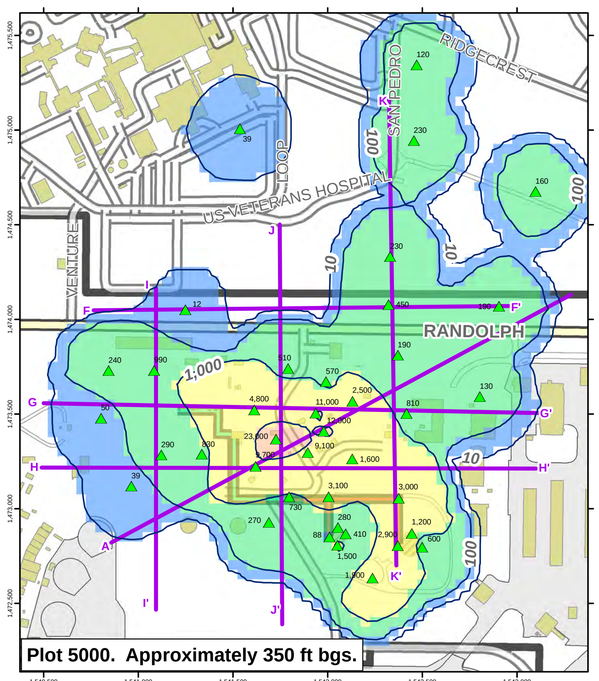

Plot 5300. Approximately 50 ft bgs.



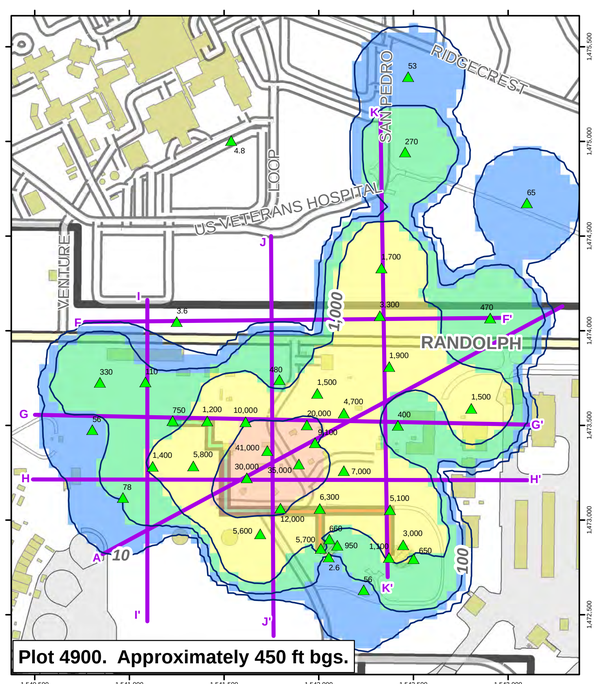

Plot 5200. Approximately 150 ft bgs.




Plot 5100. Approximately 250 ft bgs.




Plot 5000. Approximately 350 ft bgs.




Plot 4900. Approximately 450 ft bgs.

Note:
The vadose zone VOC plume was gridded in three dimensions using inverse distance weighting in RockWorks and then concentration plan-view maps were "cut" at respective elevations. Ground elevations range from 5314 to 5364 ft above mean sea level across the ST-106/SS-111 investigation area.

SVE well locations are presented with the total vapor VOC concentration in ppmv for each elevation. Sample results within 25 ft of the elevation are posted. For example, plot 5000 includes sample results within the 5025 to 4075 ft interval. Locations are not shown at elevations where there is no sample result for the elevation interval.

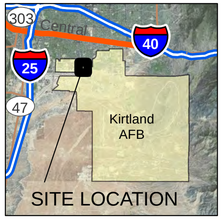
See Figure 4-2 for SVE well locations with ID numbers.

## Legend

- SVE/SVM Well with Vapor VOC Concentration (ppmv)
- VOC Concentration Contour (ppmv)
- Cross-Section Line

VOC Concentration (ppmv)

- 10 - 100
- 100 - 1000
- 1000 - 10,000
- >10,000
- Installation Boundary
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Highway
- Major Road
- Road
- Existing Structure
- Previously Existing Structure
- Runway




Revision Date: 05/22/12

N

0 400 800 1,600

Feet

1 inch = 400 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-3

TOTAL VOC VAPOR PLUME
FOOTPRINTS BY ELEVATION
MARCH 2012

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_063_Lab_VOC_plan_Dsize.mxd 05/22/12

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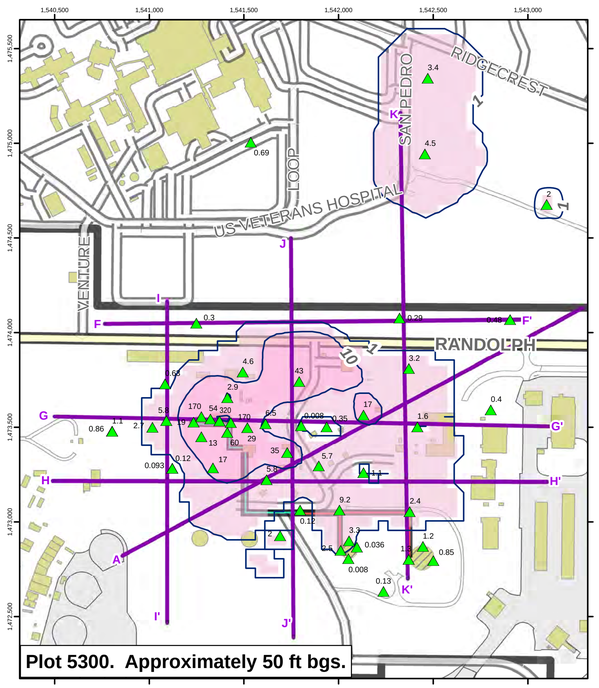
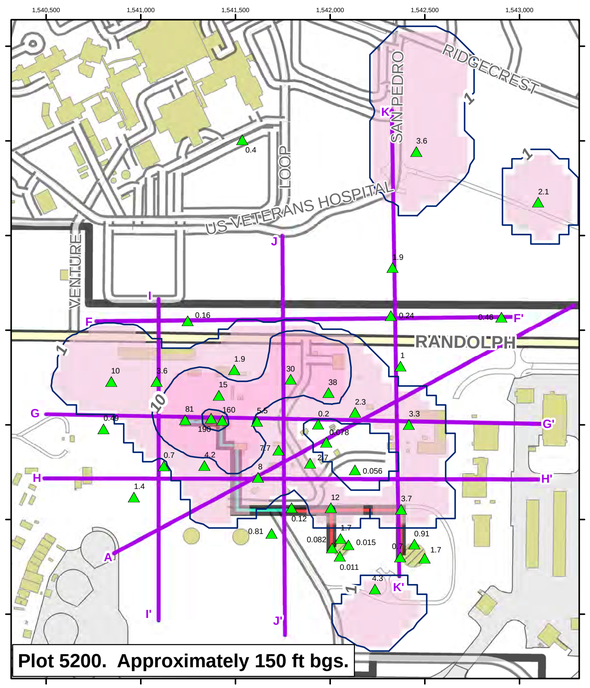
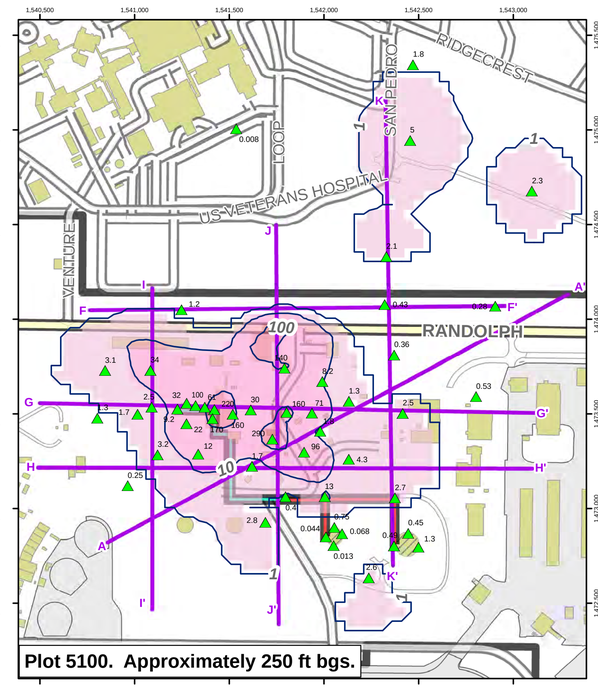
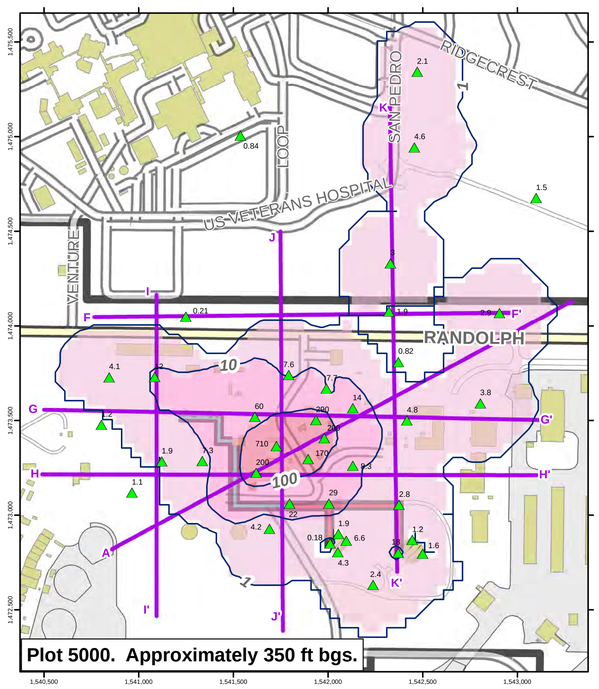


Note:
The vadose zone benzene plume was gridded in three dimensions using inverse distance weighting in RockWorks and then concentration plan-view maps were "cut" at respective elevations. Ground elevations range from 5314 to 5364 ft above mean sea level across the ST-106/SS-111 investigation area.

SVE well locations are presented with the benzene concentration in ppmv for each elevation. Sample results within 25 ft of the elevation are posted. For example, plot 5000 includes sample results within the 5025 to 4075 ft interval. Locations are not shown at elevations where there is no sample result for the elevation interval.

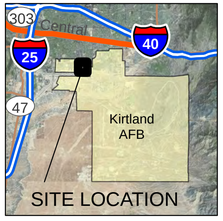
See Figure 4-2 for SVE well locations with ID numbers.

## Legend

- SVE Well with Benzene Vapor Concentration (ppmv)
- Benzene Vapor Concentration Contours (ppmv)

Benzene Concentration (ppmv)

- 0 - 1
- 1.0 - 10
- 10 - 100
- 100 - 960
- Cross-Section Line
- Installation Boundary
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Highway
- Major Road
- Road
- Existing Structure
- Previously Existing Structure
- Runway




Revision Date: 05/21/12

N

0 400 800 1,600

Feet

1 inch = 400 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-4

BENZENE VAPOR PLUME FOOTPRINTS BY ELEVATION
MARCH 2012

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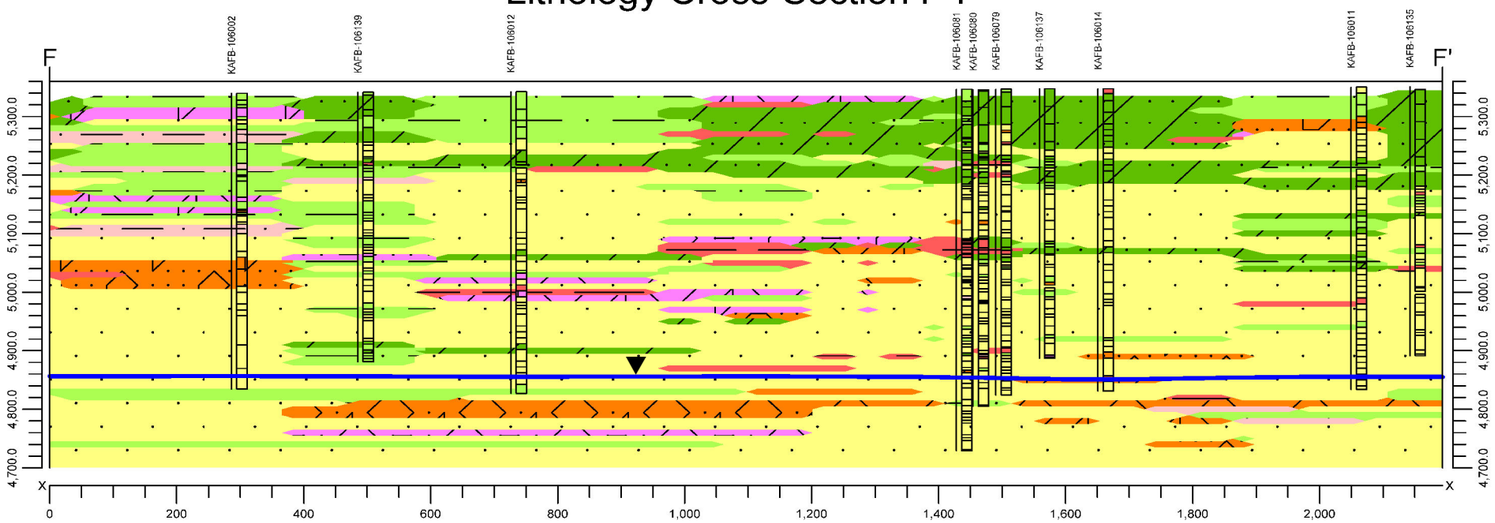
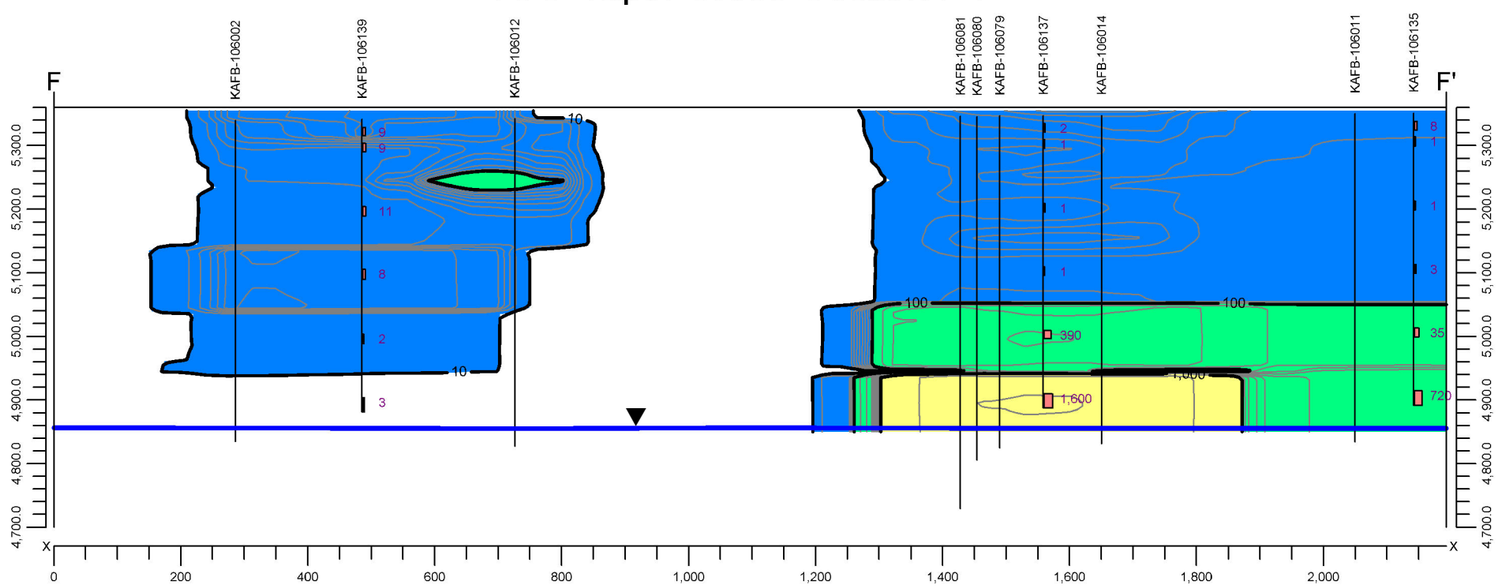
## Lithology Cross-Section F-F'




## VOC Vapor Cross-Section F-F'




**Lithology Index**

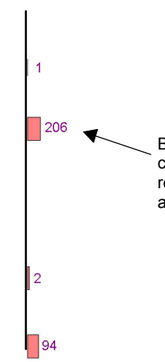
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

**Lab TPH Vapor Concentration (ppmv)**

- 0.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0
- 1,000.0 - 10,000.0
- 10,000.0 - 100,000.0

Water Table

**Borehole Detail**




Bar graph and number correspond to sample result for the location at that depth.

Note: No vertical exaggeration.
See Figure 4-3 for cross-section location map.

Revision Date: 05/22/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-5

LITHOLOGY AND TOTAL VOC VAPOR CROSS-SECTIONS F-F'

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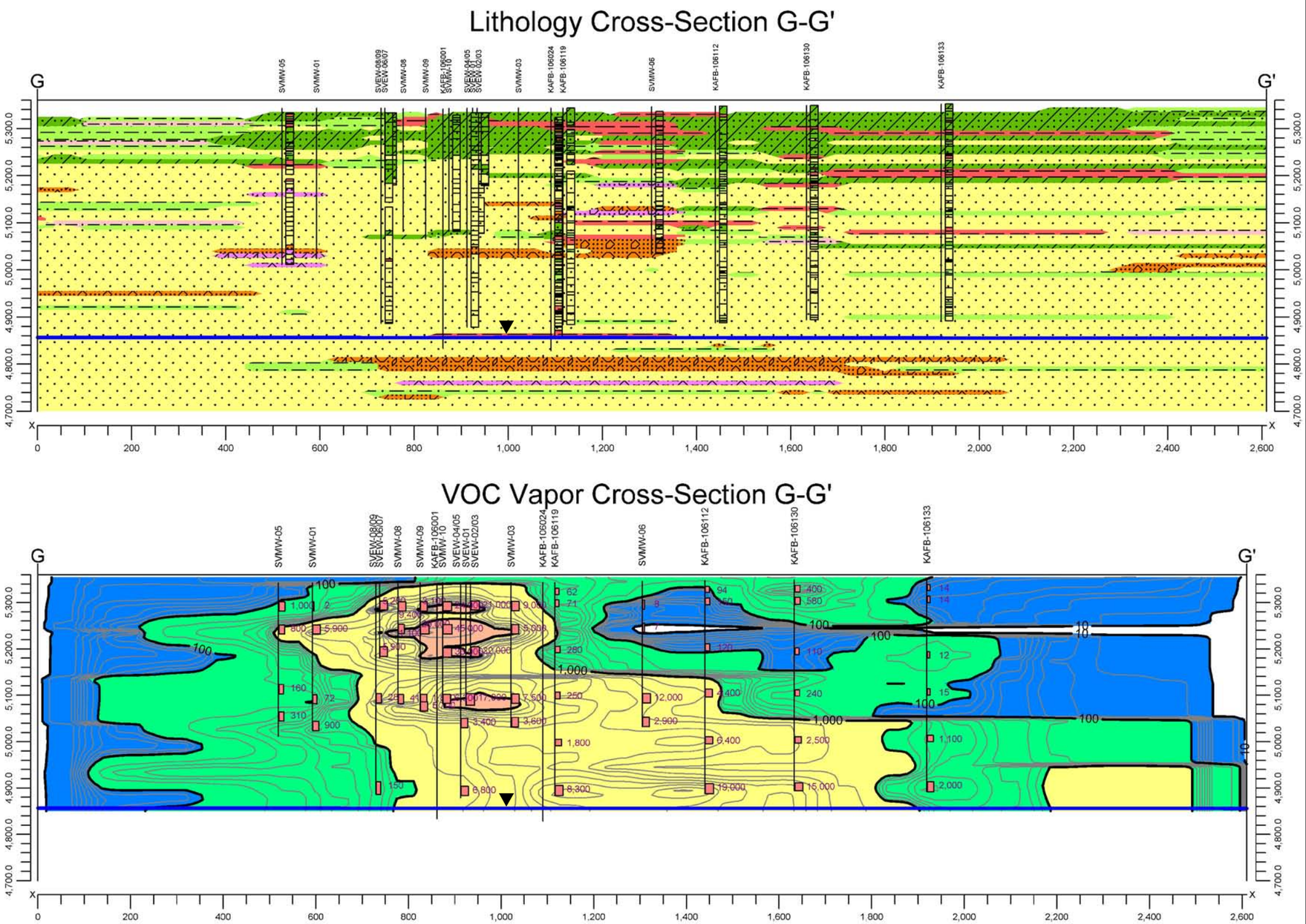



Lithology Index

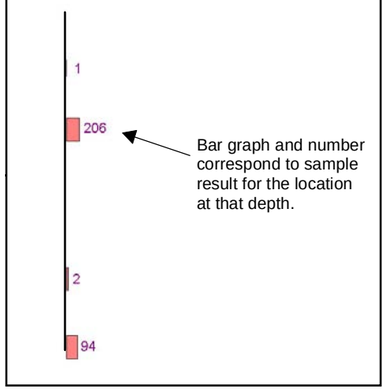
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

Lab TPH Vapor Concentration (ppmv)

- 0.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0
- 1,000.0 - 10,000.0
- 10,000.0 - 100,000.0

Water Table

Borehole Detail




Note: No vertical exaggeration.
See Figure 4-3 for cross-section location map.

Revision Date: 05/22/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-6

LITHOLOGY AND TOTAL VOC VAPOR CROSS-SECTIONS G-G'

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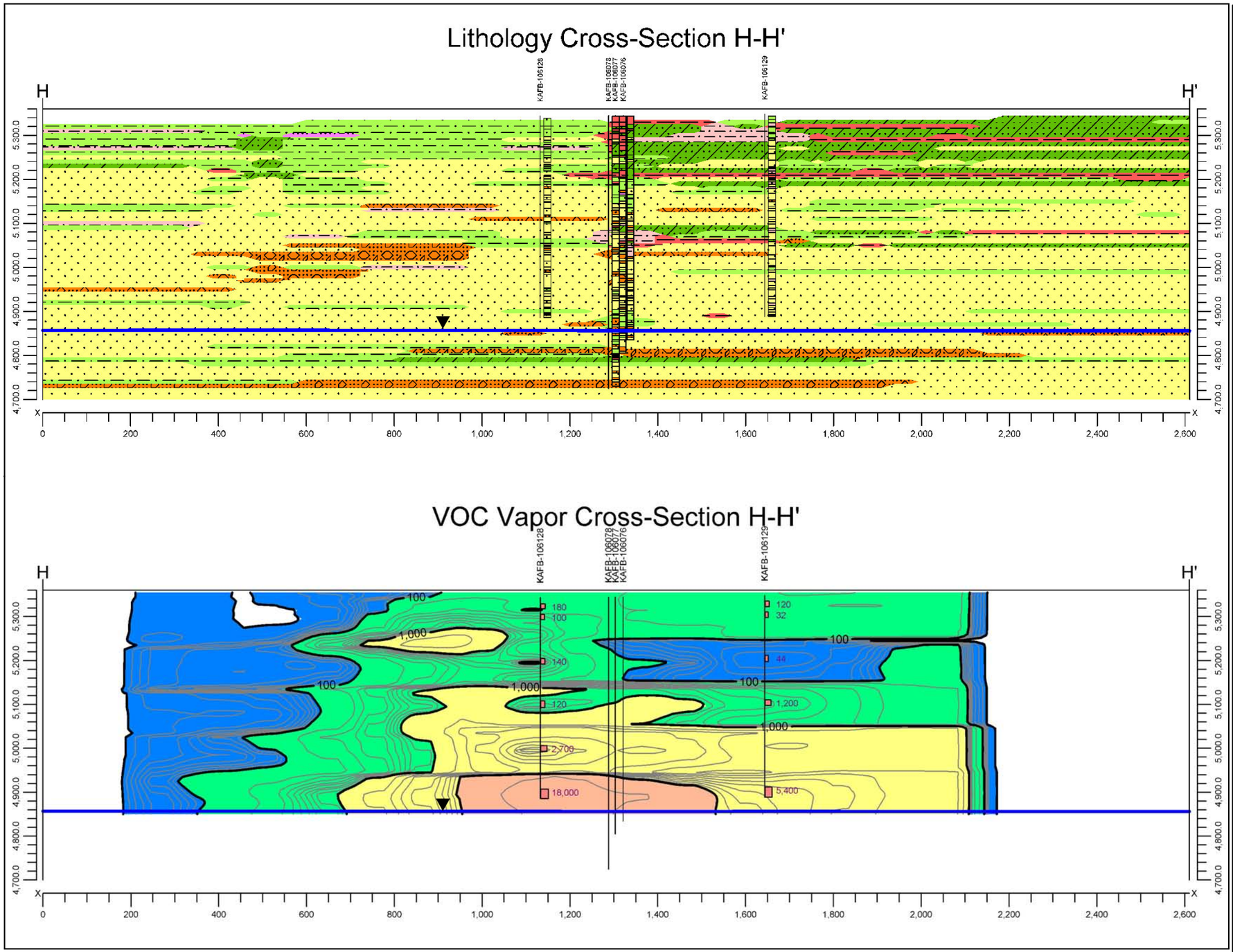



Lithology Index

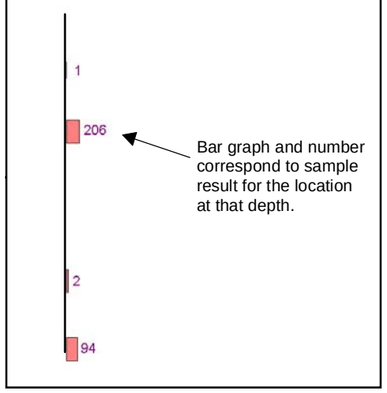
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

Lab TPH Vapor Concentration (ppmv)

- 0.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0
- 1,000.0 - 10,000.0
- 10,000.0 - 100,000.0

Water Table

Borehole Detail




Note: No vertical exaggeration.
See Figure 4-3 for cross-section location map.

Revision Date: 05/22/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-7

LITHOLOGY AND TOTAL VOC VAPOR CROSS-SECTIONS H-H'

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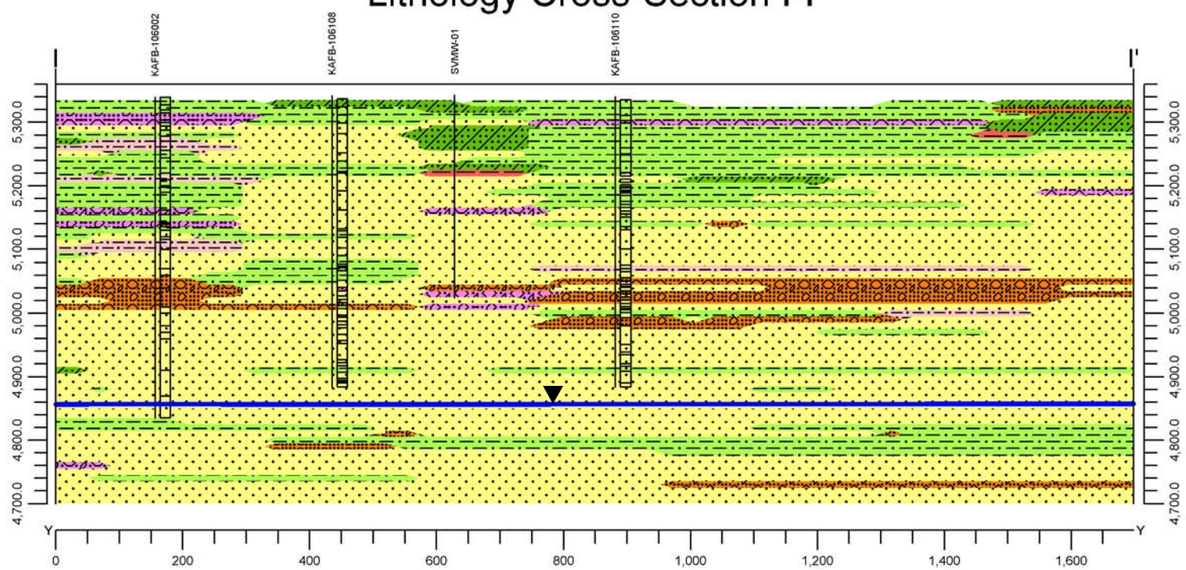
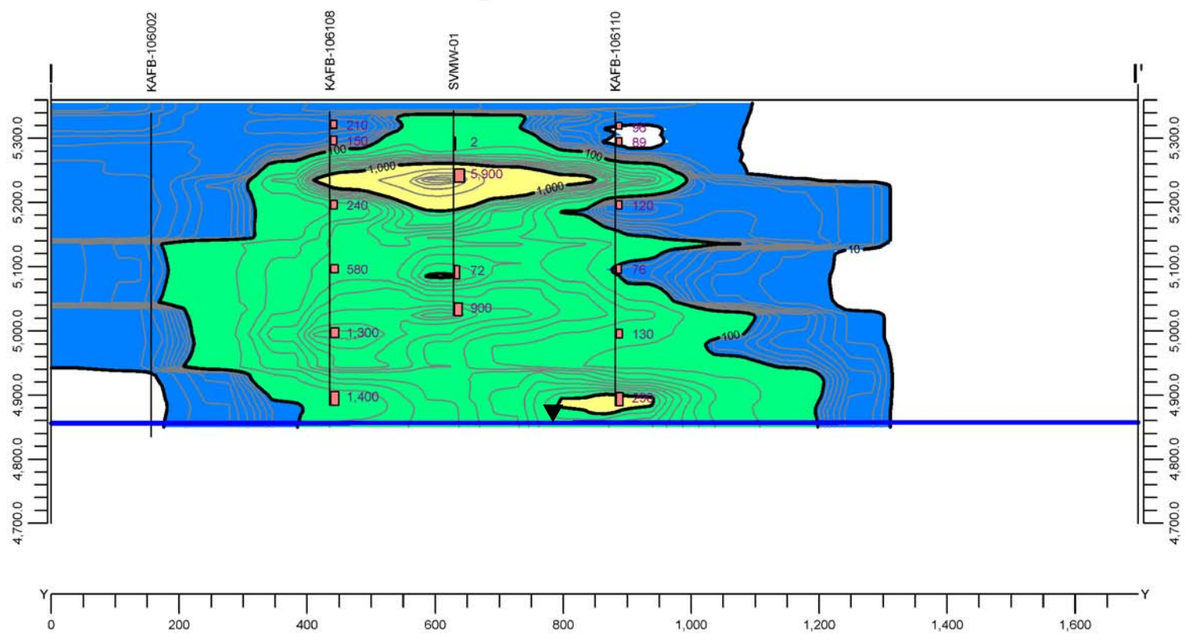
## Lithology Cross-Section I-I'




## VOC Vapor Cross-Section I-I'




**Lithology Index**

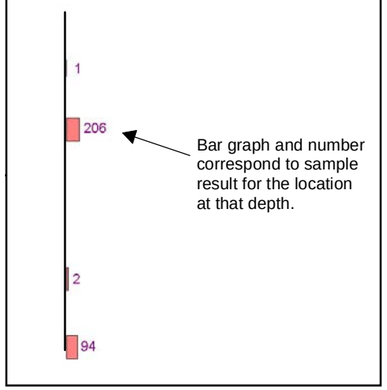
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

**Lab TPH Vapor Concentration (ppmv)**

- 0.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0
- 1,000.0 - 10,000.0
- 10,000.0 - 100,000.0

Water Table

**Borehole Detail**




Note: No vertical exaggeration.
See Figure 4-3 for cross-section location map.

Revision Date: 05/22/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-8

LITHOLOGY AND TOTAL VOC VAPOR CROSS-SECTIONS I-I'

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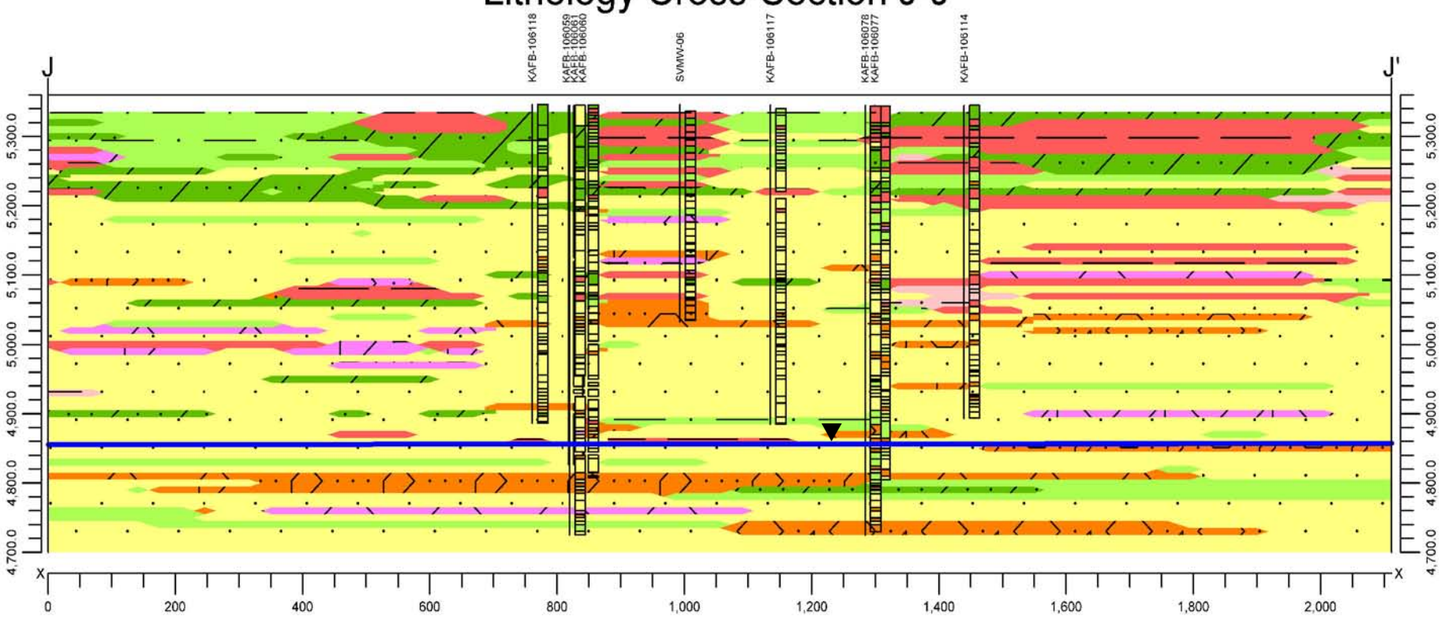
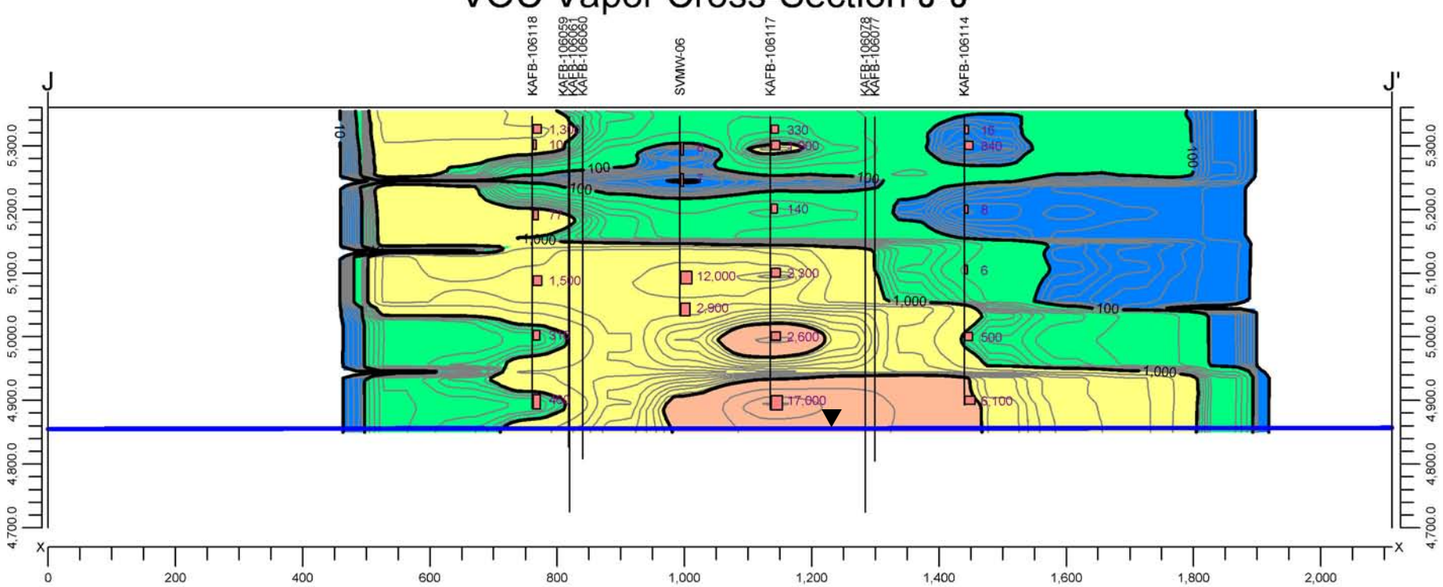
## Lithology Cross-Section J-J'




## VOC Vapor Cross-Section J-J'




Lithology Index

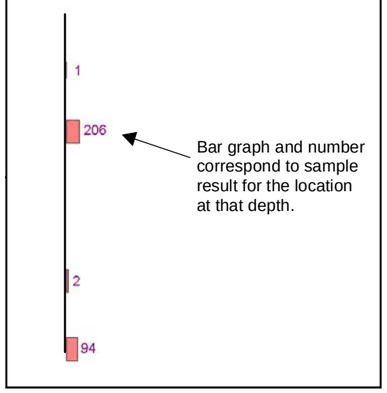
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

Lab TPH Vapor Concentration (ppmv)

- 0.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0
- 1,000.0 - 10,000.0
- 10,000.0 - 100,000.0

Water Table

Borehole Detail




Note: No vertical exaggeration.
See Figure 4-3 for cross-section location map.

Revision Date: 05/22/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-9

LITHOLOGY AND TOTAL VOC VAPOR CROSS-SECTIONS J-J'

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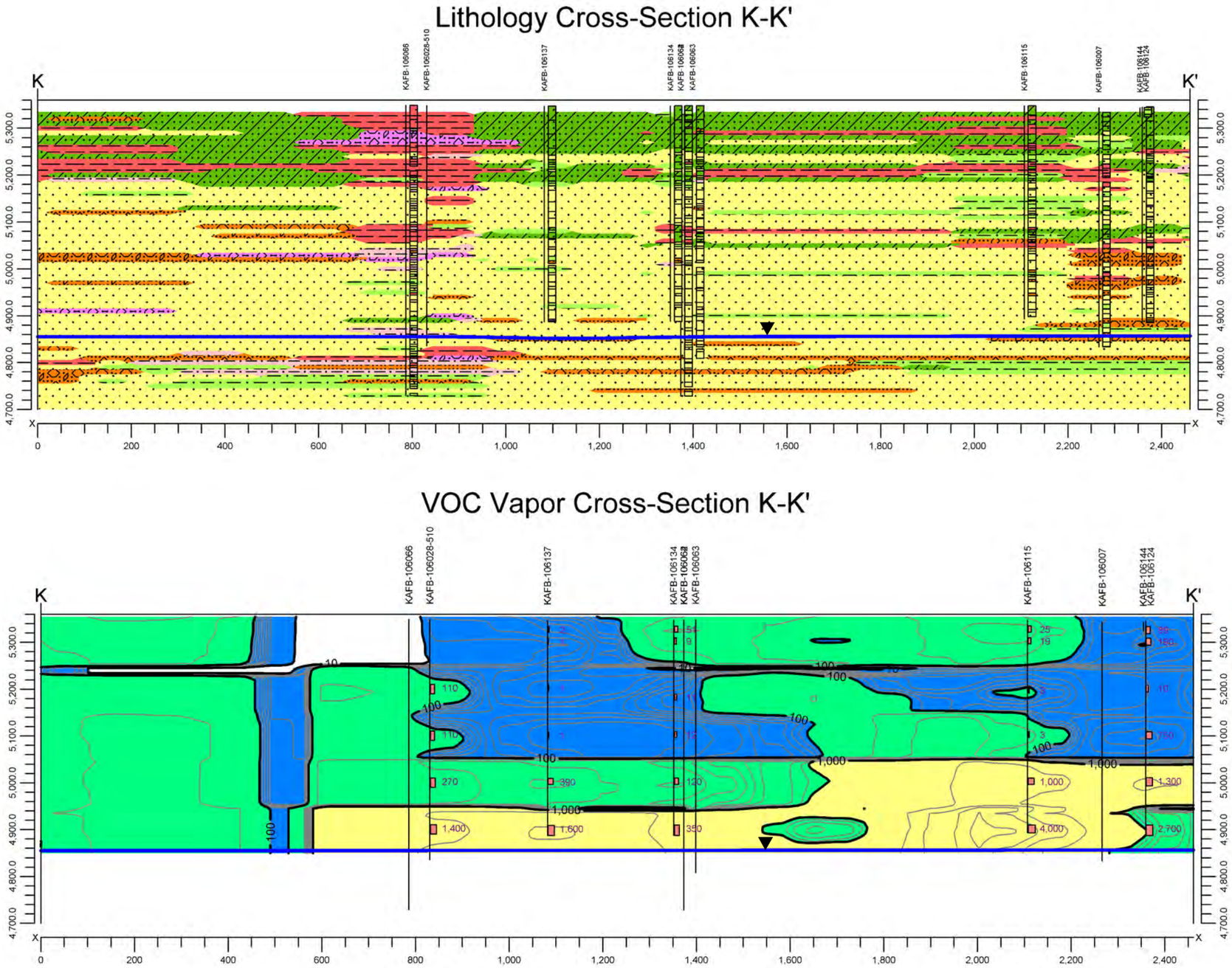



Lithology Index

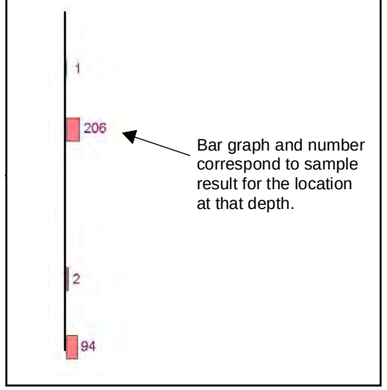
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

Lab TPH Vapor Concentration (ppmv)

- 0.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0
- 1,000.0 - 10,000.0
- 10,000.0 - 100,000.0

Water Table

Borehole Detail




Note: No vertical exaggeration.
See Figure 4-3 for cross-section location map.

Revision Date: 05/22/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-10

LITHOLOGY AND TOTAL VOC VAPOR CROSS-SECTIONS K-K'

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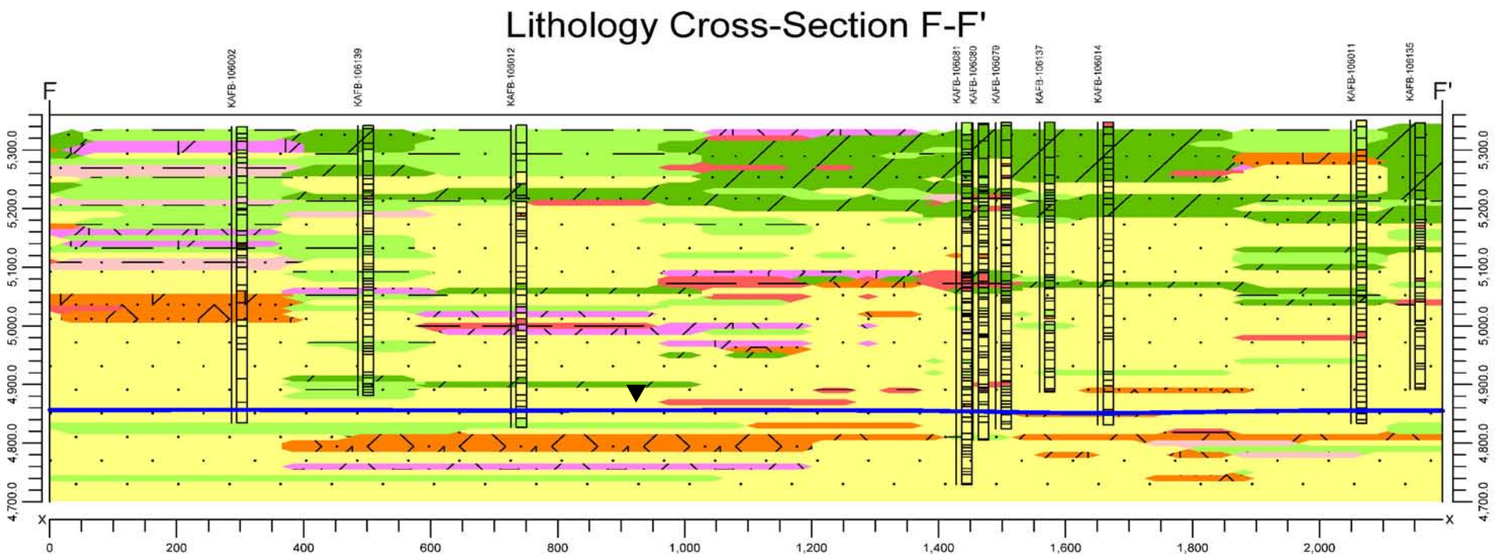
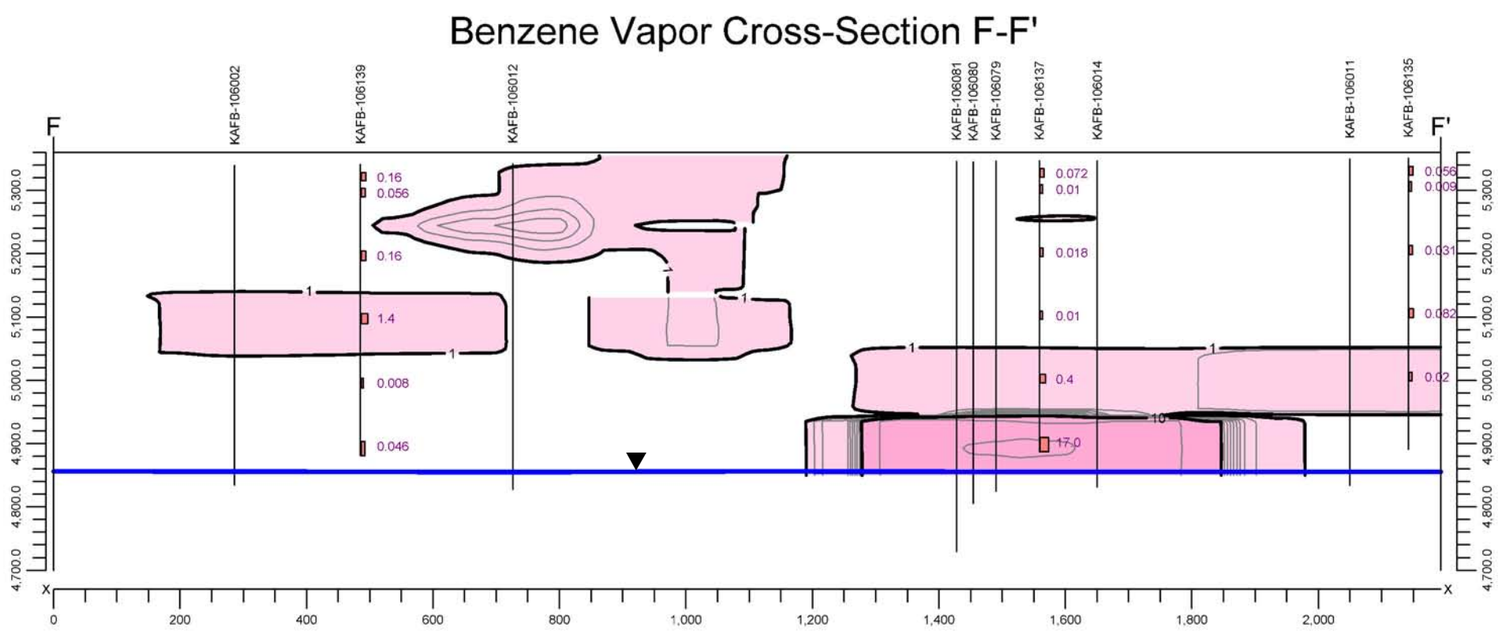



Lithology Index

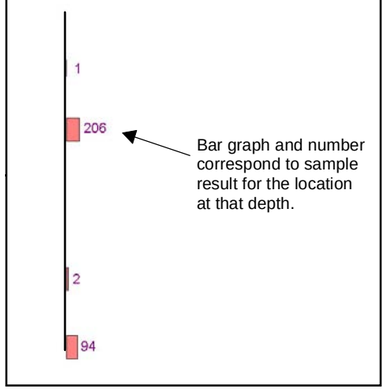
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

Benzene Vapor Concentration (ppmv)

- 1.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0

Water Table

Borehole Detail




Note: No vertical exaggeration.
See Figure 4-4 for cross-section location map.

Revision Date: 05/22/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-11

LITHOLOGY AND BENZENE VAPOR CROSS-SECTIONS F-F'

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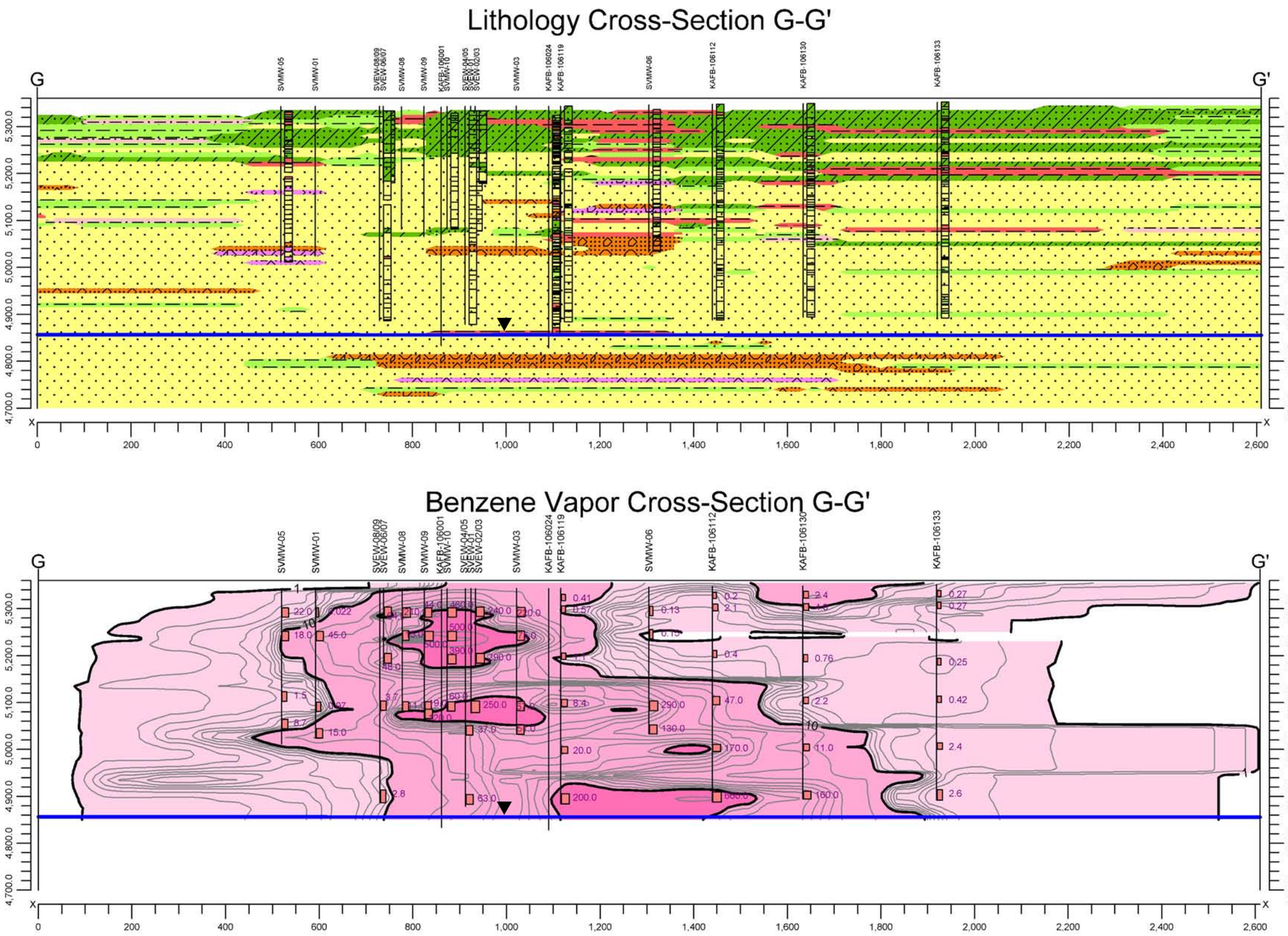



Lithology Index

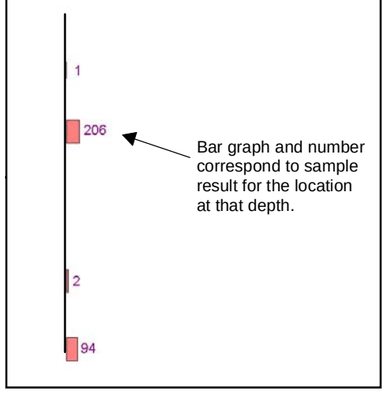
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

Benzene Vapor Concentration (ppmv)

- 1.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0

Water Table

Borehole Detail




Note: No vertical exaggeration.
See Figure 4-4 for cross-section location map.

Revision Date: 05/22/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-12

LITHOLOGY AND BENZENE VAPOR CROSS-SECTIONS G-G'

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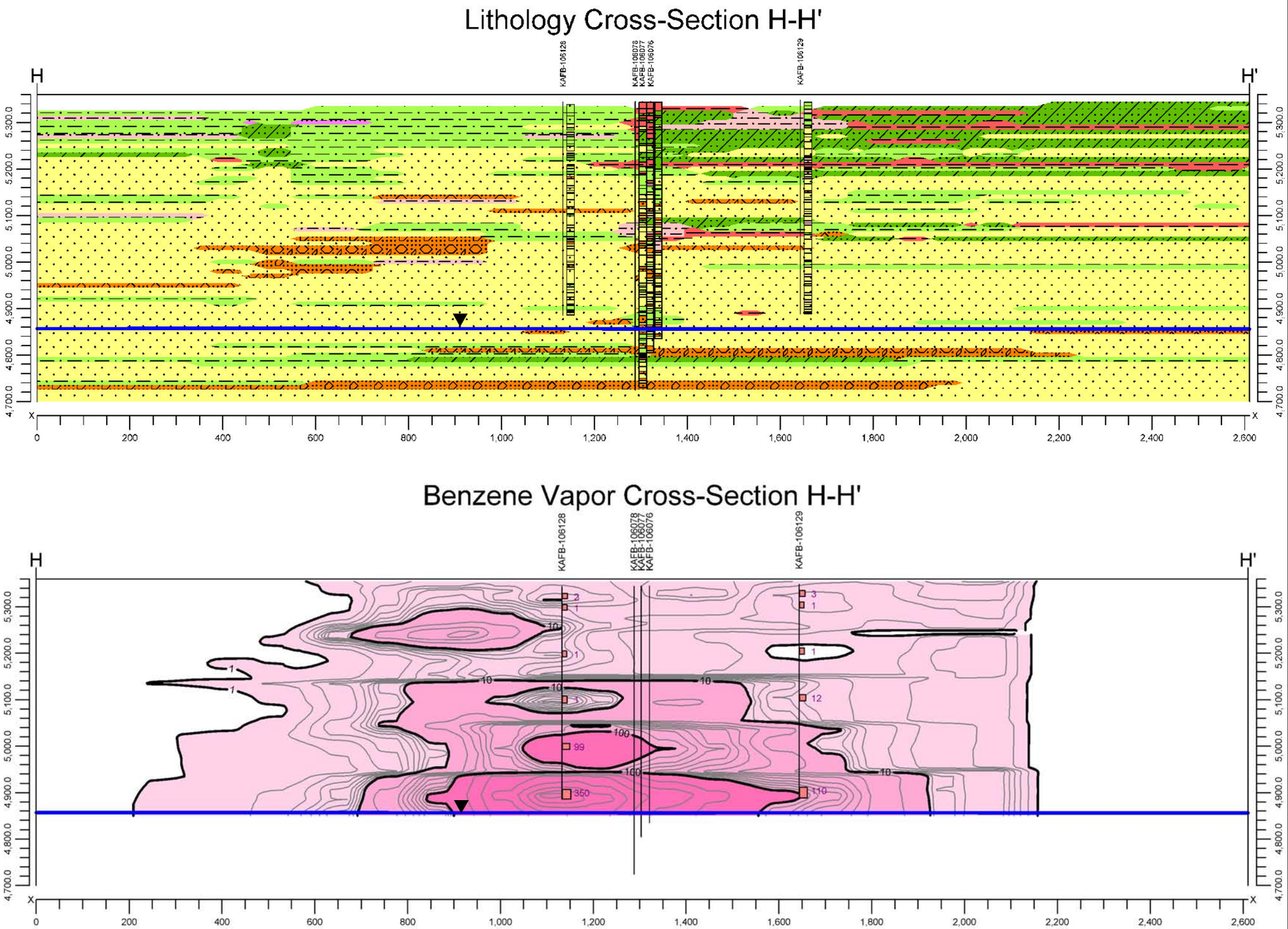



Lithology Index

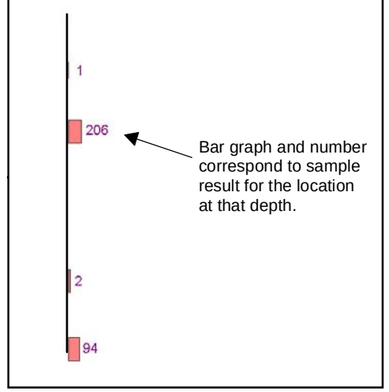
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

Benzene Vapor Concentration (ppmv)

- 1.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0

Water Table

Borehole Detail




Note: No vertical exaggeration.
See Figure 4-4 for cross-section location map.

Revision Date: 05/22/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-13

LITHOLOGY AND BENZENE VAPOR CROSS-SECTIONS H-H'

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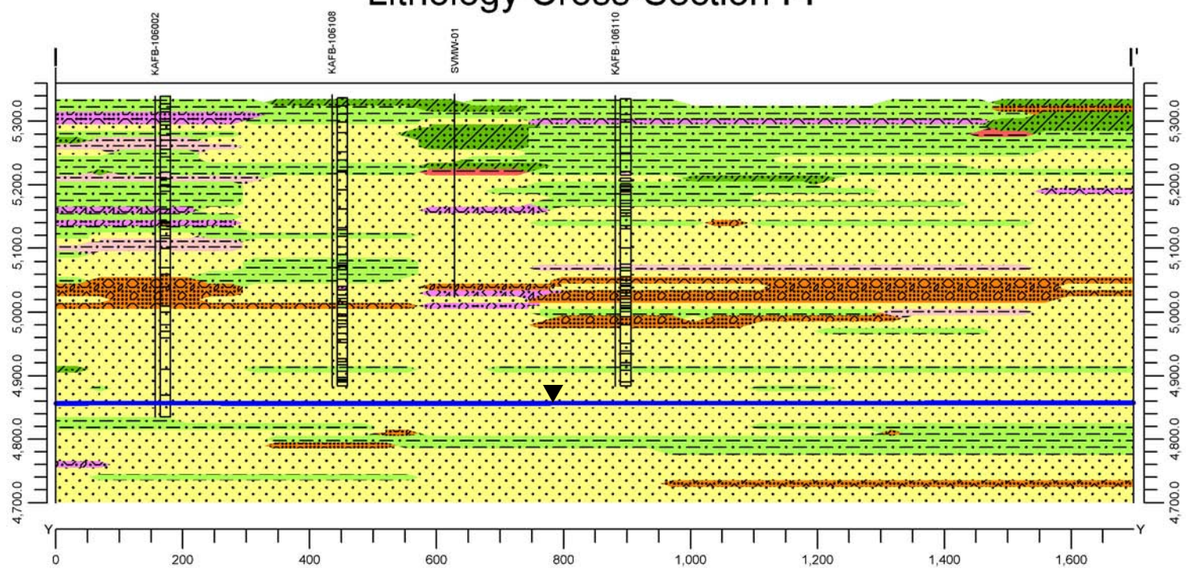
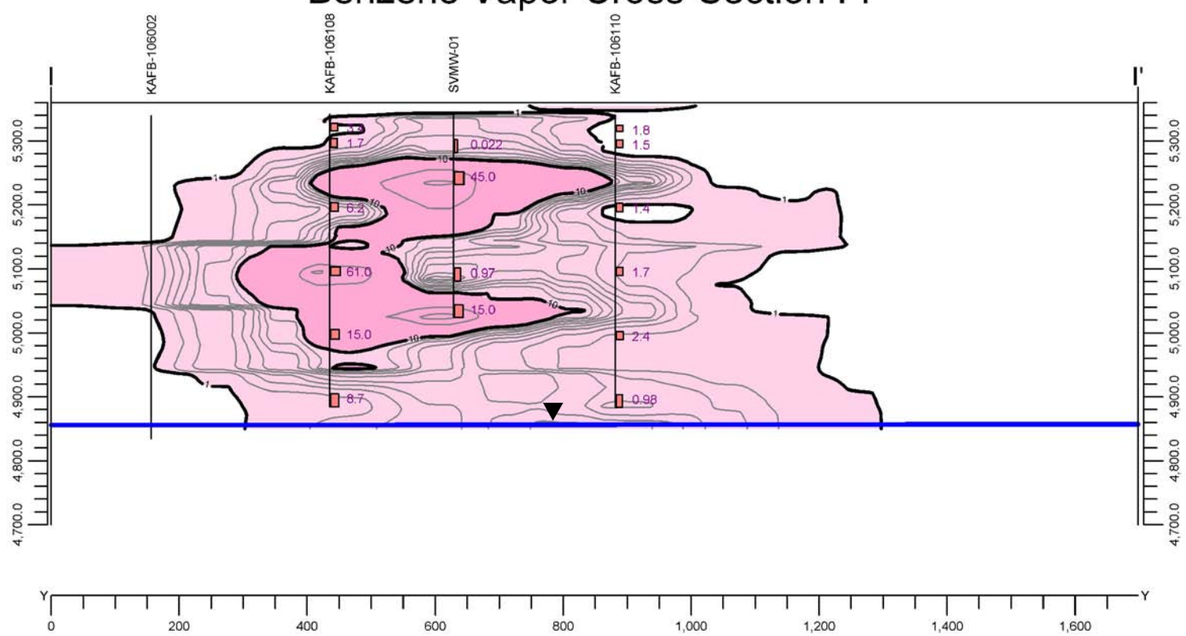
## Lithology Cross-Section I-I'




## Benzene Vapor Cross-Section I-I'




**Lithology Index**

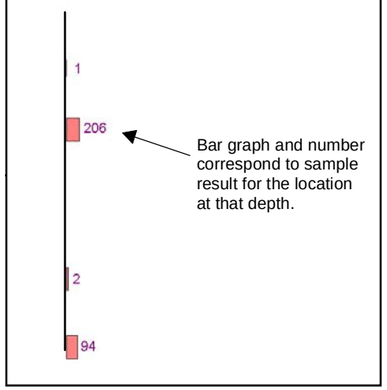
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

**Benzene Vapor Concentration (ppmv)**

- 1.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0

Water Table

**Borehole Detail**




Note: No vertical exaggeration.
See Figure 4-4 for cross-section location map.

Revision Date: 05/23/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-14

LITHOLOGY AND BENZENE VAPOR CROSS-SECTIONS I-I'

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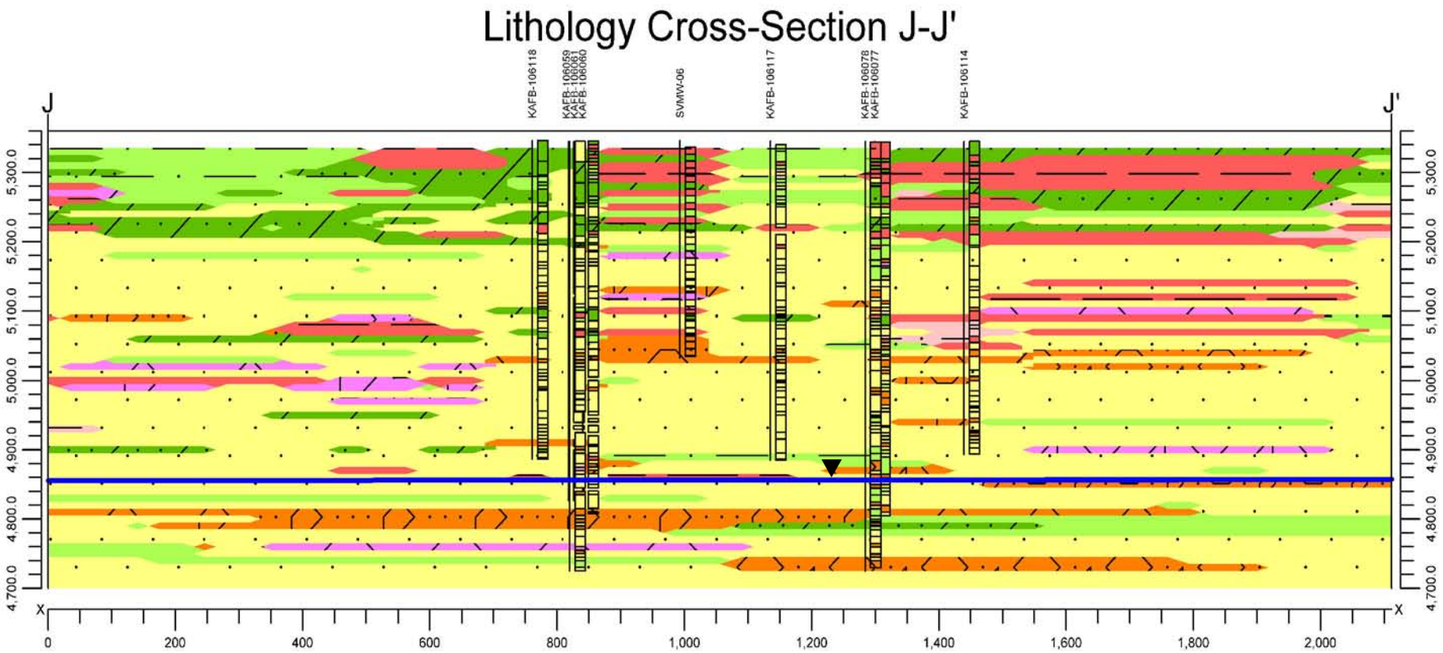
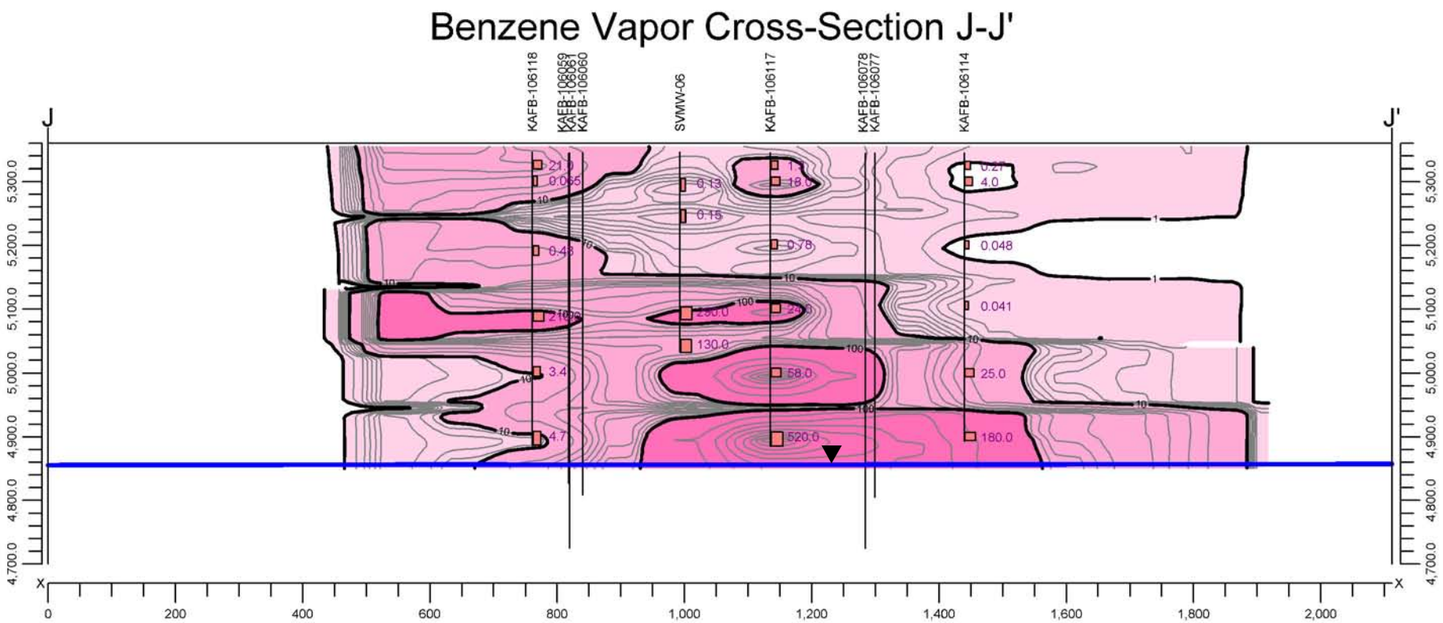



Lithology Index

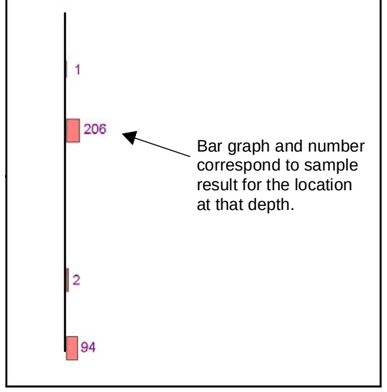
- Clay
- Clayey sand
- Gravel
- Sand
- Silt
- Silty Gravel
- Silty Sand

Benzene Vapor Concentration (ppmv)

- 1.0 - 10.0
- 10.0 - 100.0
- 100.0 - 1,000.0

Water Table

Borehole Detail




Note: No vertical exaggeration.
See Figure 4-4 for cross-section location map.

Revision Date: 05/23/12

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 4-15

LITHOLOGY AND BENZENE VAPOR CROSS-SECTIONS J-J'

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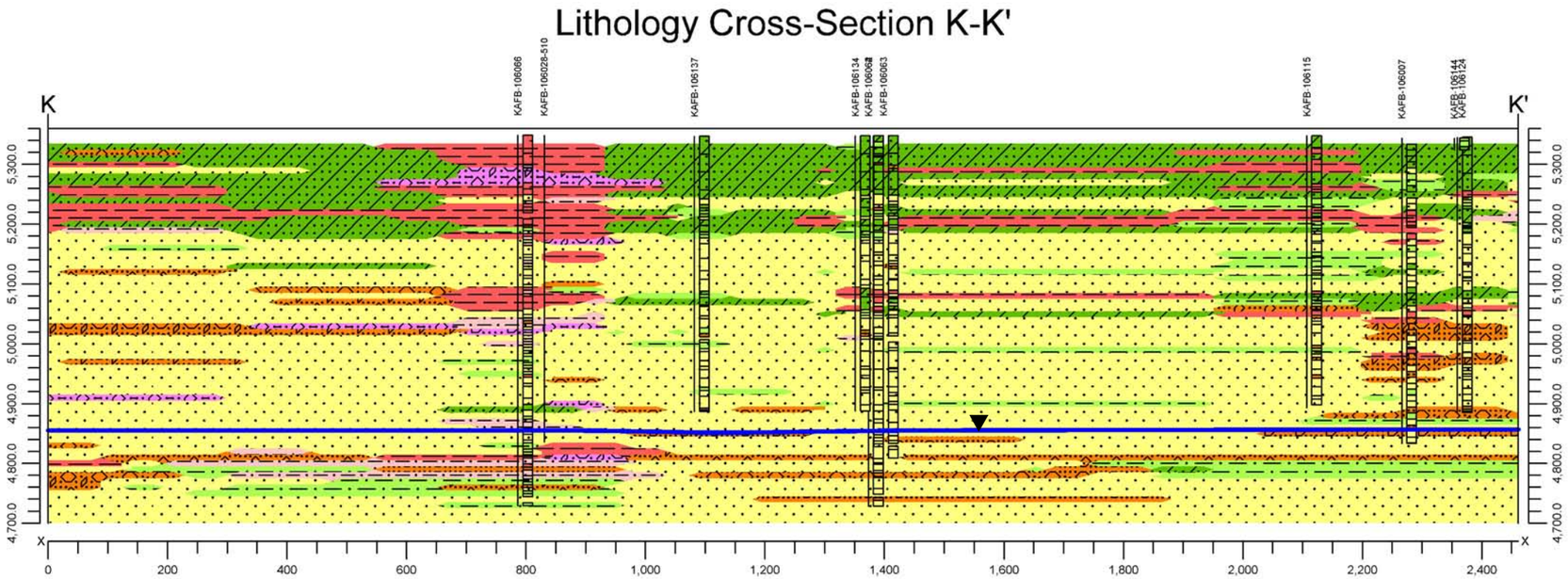


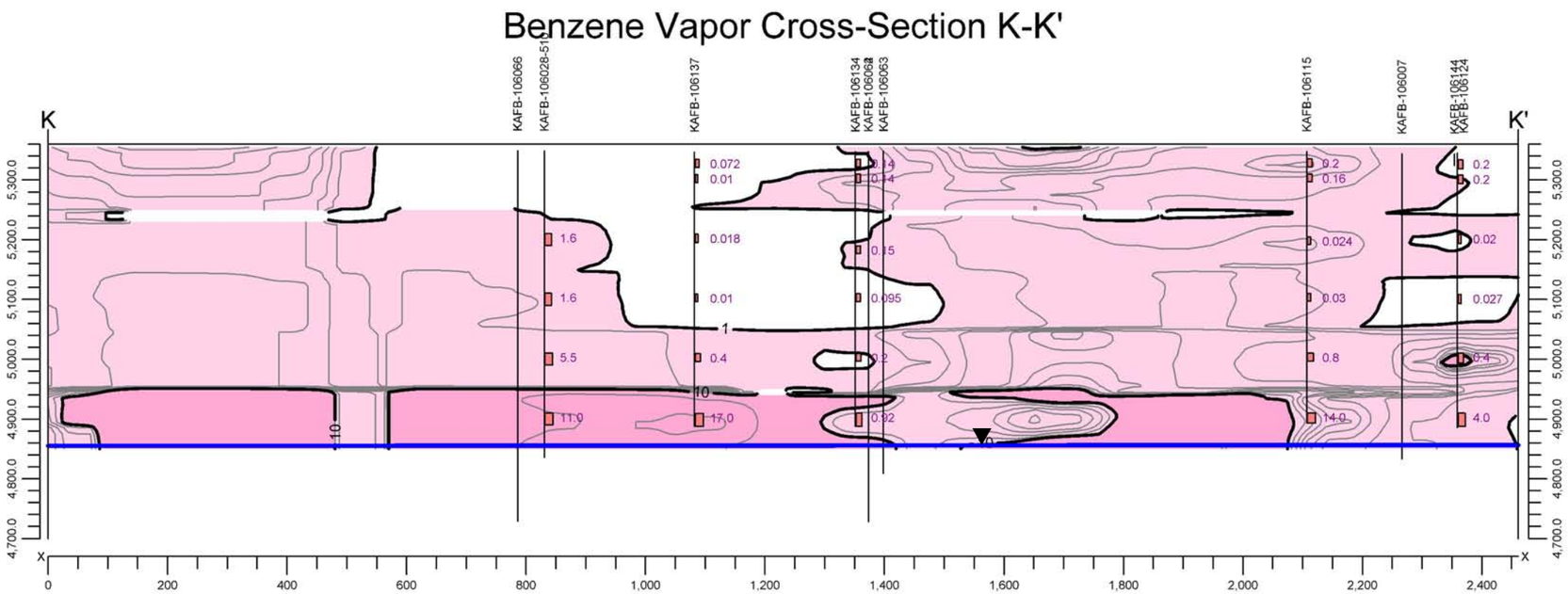


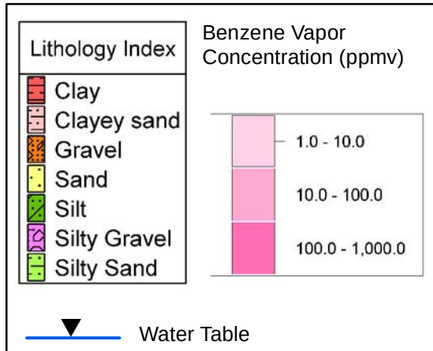


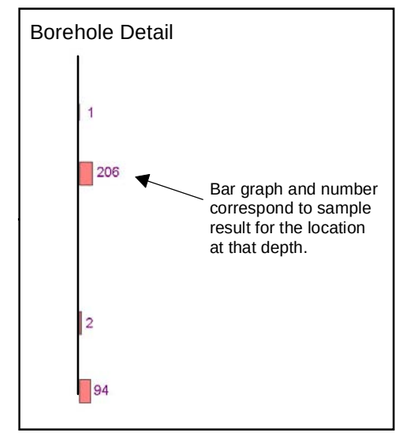


Note: No vertical exaggeration.
See Figure 4-61 for cross-section location map.

Revision Date: 05/23/12

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FIGURE 4-16

LITHOLOGY AND BENZENE VAPOR CROSS-SECTIONS K-K'

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_075_BZ_vapor_cross_section_KK.mxd 05/23/12

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# SECTION 5 FIGURES

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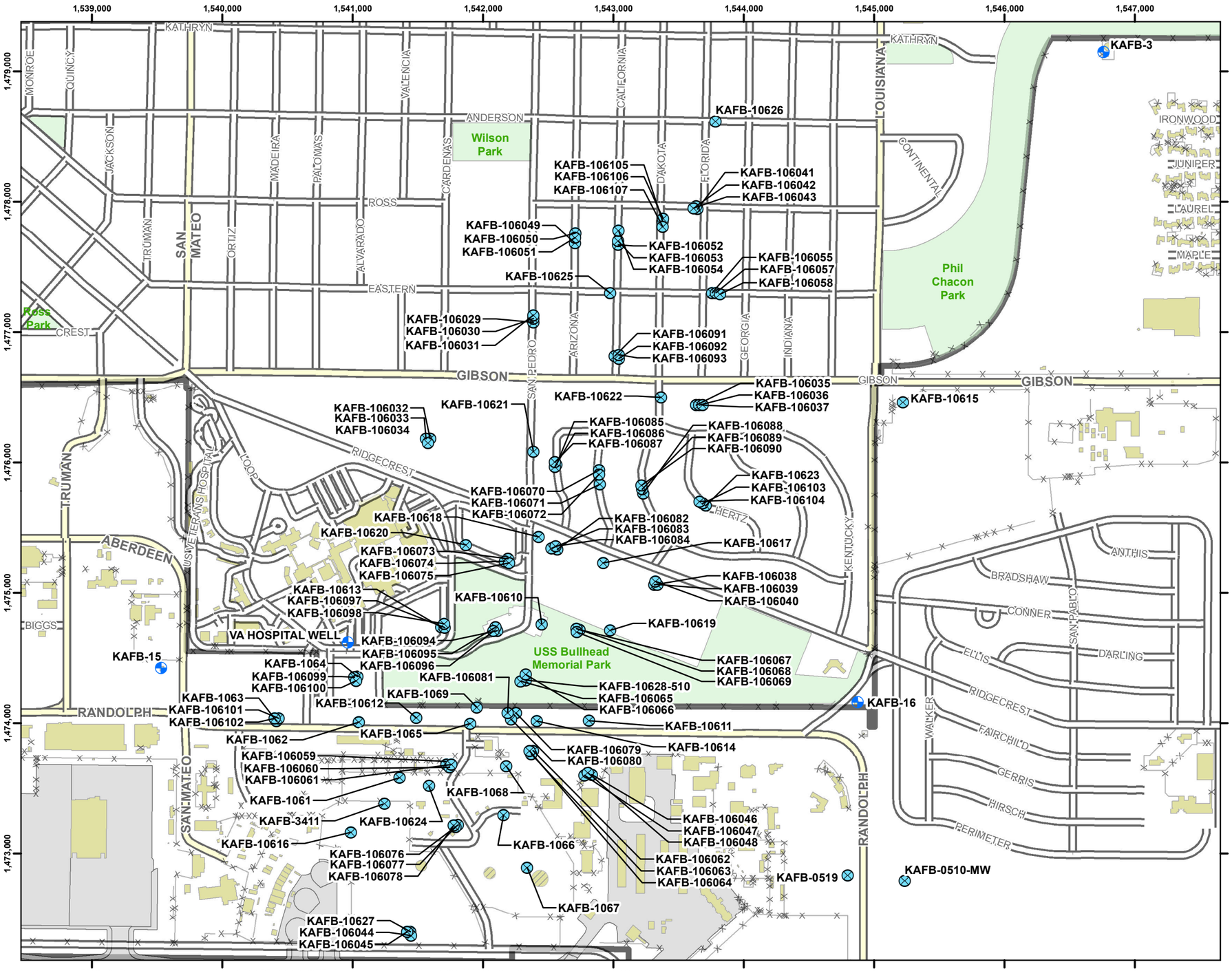
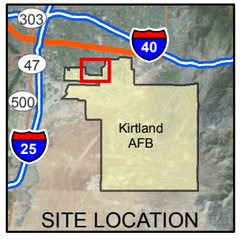



## Legend

- Monitor Well
- Water Supply Well
- Fence
- Interstate
- Major Road
- Road
- Existing Structure
- Previously Existing Structure
- Runway
- Park
- Installation Boundary




N

Revision Date: 04/11/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-1

MONITORING WELL LOCATIONS

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_019_GW_locs.mxd 04/11/12

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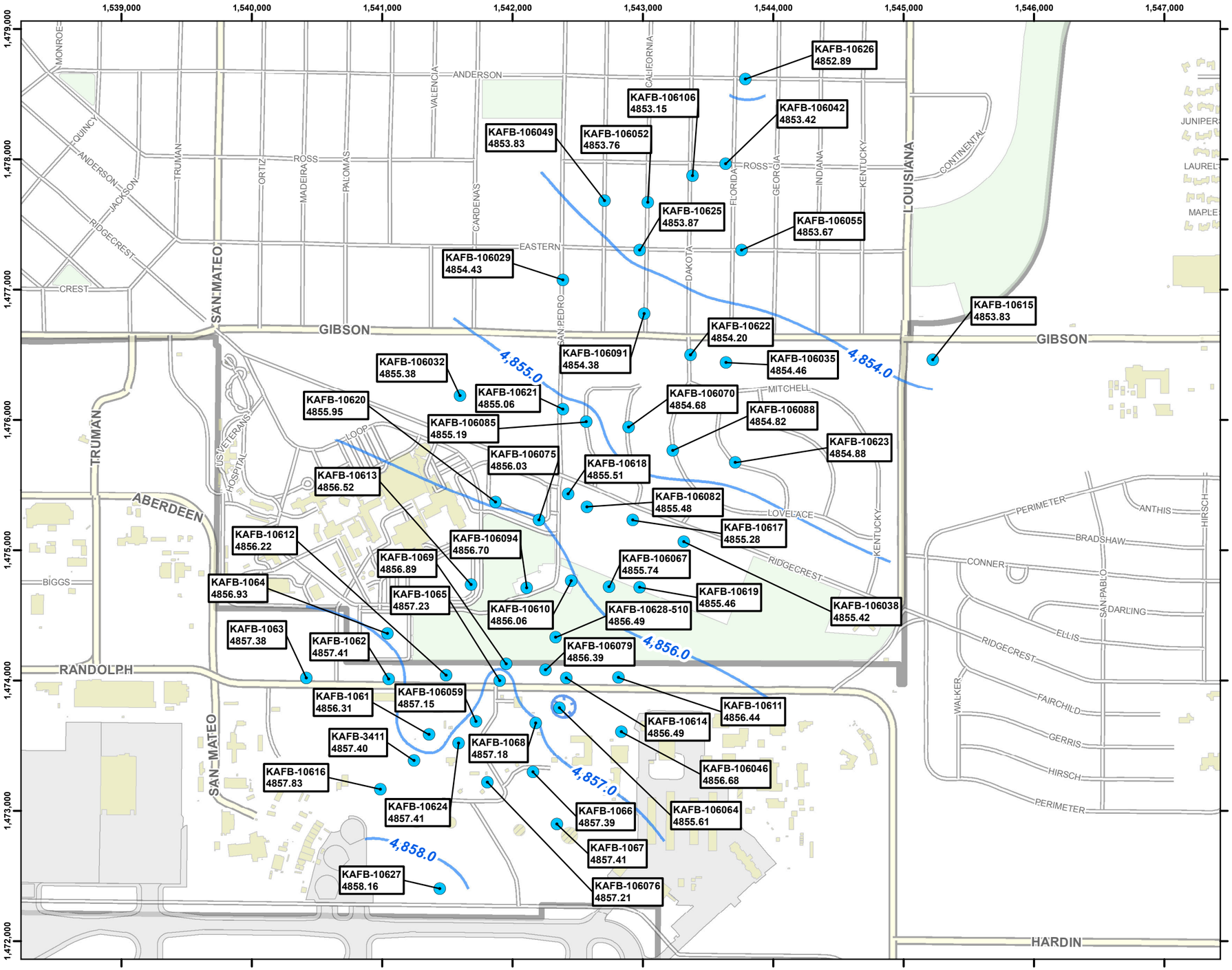
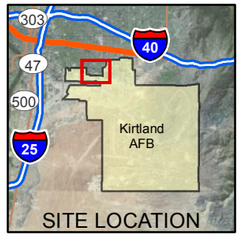



## Legend

- Monitor Well With January 2012 Groundwater Elevation
- Groundwater Level Contour (ft msl)
- Groundwater Depression
- Major Road
- Road
- Previously Existing Structure
- Existing Structure
- Runway
- Park
- Installation Boundary

Note: Groundwater level contours were interpolated using ordinary kriging with a range of 7900 ft using a spherical variogram and a nugget of zero.




Revision Date: 04/16/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-2

SHALLOW GROUNDWATER CONTOURS
CORRECTED FOR NAPL THICKNESS
JANUARY 2012

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_011_SWL_Contour_Shallow_2012_Jan.mxd 04/16/12

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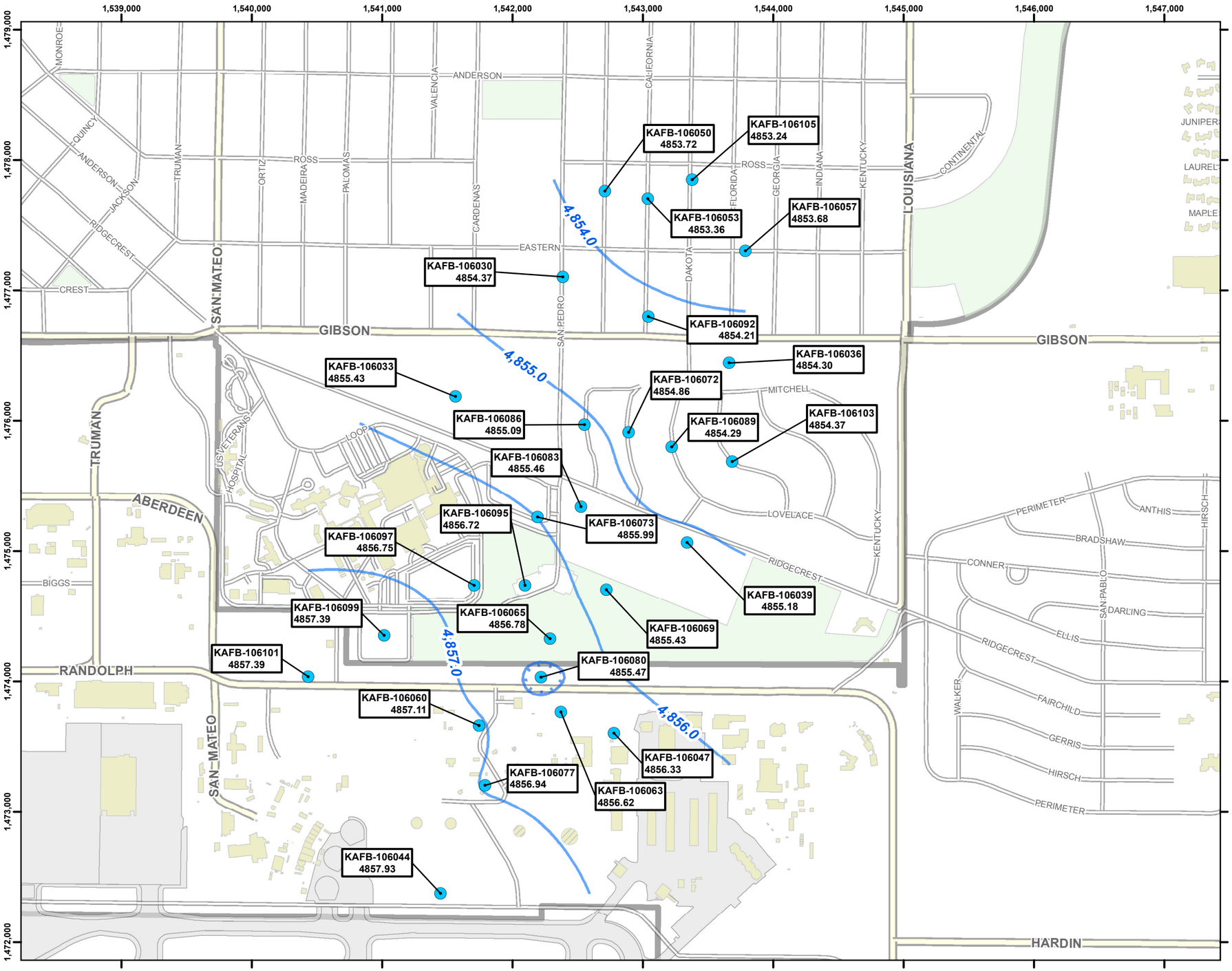
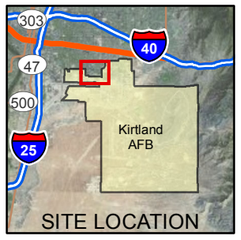



## Legend

- Monitor Well With January 2012 Groundwater Elevation
- Groundwater Level Contour (ft msl)
- Groundwater Depression
- Major Road
- Road
- Previously Existing Structure
- Existing Structure
- Runway
- Park
- Installation Boundary

Note: Groundwater level contours were interpolated using ordinary kriging with a range of 6400 ft using a spherical variogram and a nugget of zero.




N

Revision Date: 04/16/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-3

INTERMEDIATE GROUNDWATER CONTOURS, CORRECTED FOR NAPL THICKNESS, JANUARY 2012

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_020_SWL_Contour_Interm_2012_Jan.mxd 04/16/12

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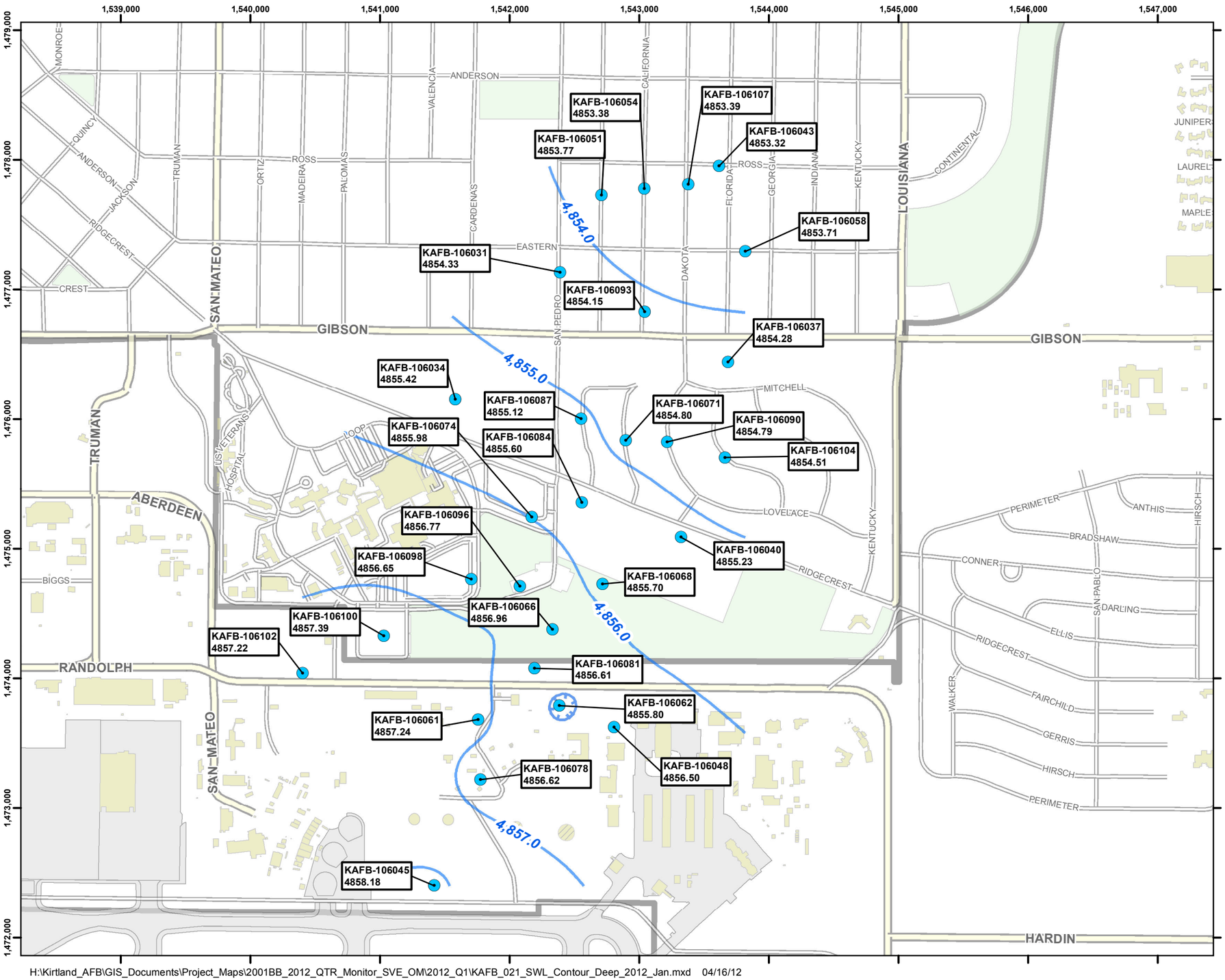
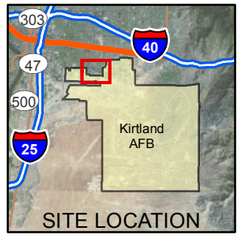



## Legend

- Monitor Well With January 2012 Groundwater Elevation
- Groundwater Level Contour (ft msl)
- Groundwater Depression
- Major Road
- Road
- Existing Structure
- Previously Existing Structure
- Runway
- Park
- Installation Boundary

Note: Groundwater level contours were interpolated using ordinary kriging with a range of 6500 ft using a spherical variogram and a nugget of zero.




N

Revision Date: 04/16/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-4

DEEP GROUNDWATER CONTOURS
CORRECTED FOR NAPL THICKNESS
JANUARY 2012

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_021_SWL_Contour_Deep_2012_Jan.mxd 04/16/12

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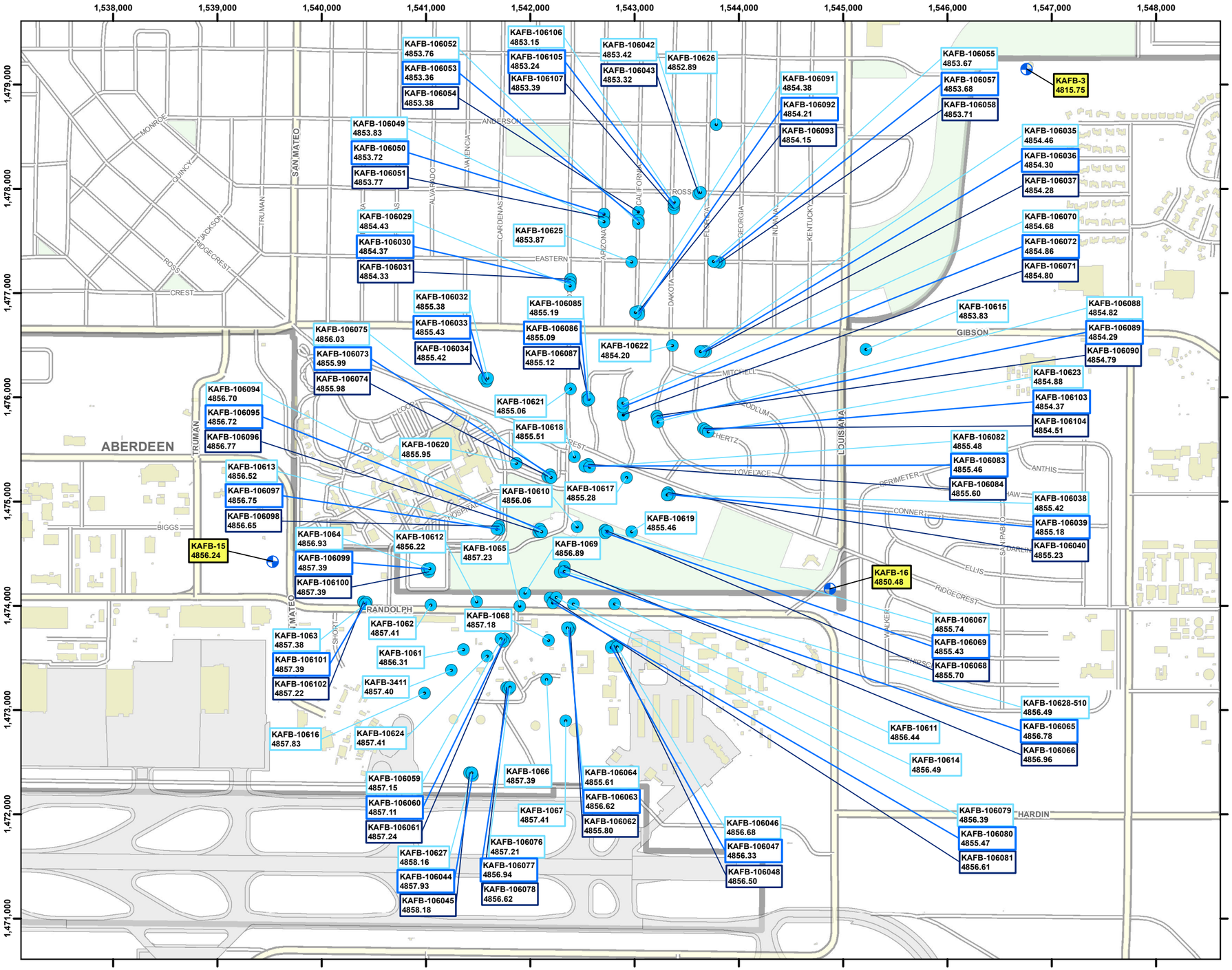



## Legend

- Water Supply Well with August 2011 Static (Non-Pumping) Groundwater Elevation
- Monitor Well With December 2011 Groundwater Elevation
- Major Road
- Road
- Structure
- Runway
- Park
- Installation Boundary

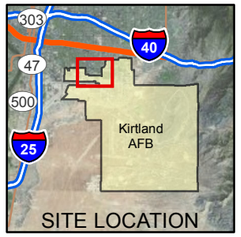
**Well Screened in Shallow Zone of Aquifer**

**Well Screened in Intermediate Zone of Aquifer**

**Well Screened in Deep Zone of Aquifer**

**Water Supply Well**

Note: Water supply well water elevations are from August, 2011.




N

Revision Date: 05/22/12

0 400 800 1,600

Feet

1 inch = 1,000 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-5

COMPREHENSIVE POSTING OF
JANUARY 2012
WATER LEVEL ELEVATIONS

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_023_SWL_2012_Jan.mxd 05/22/12

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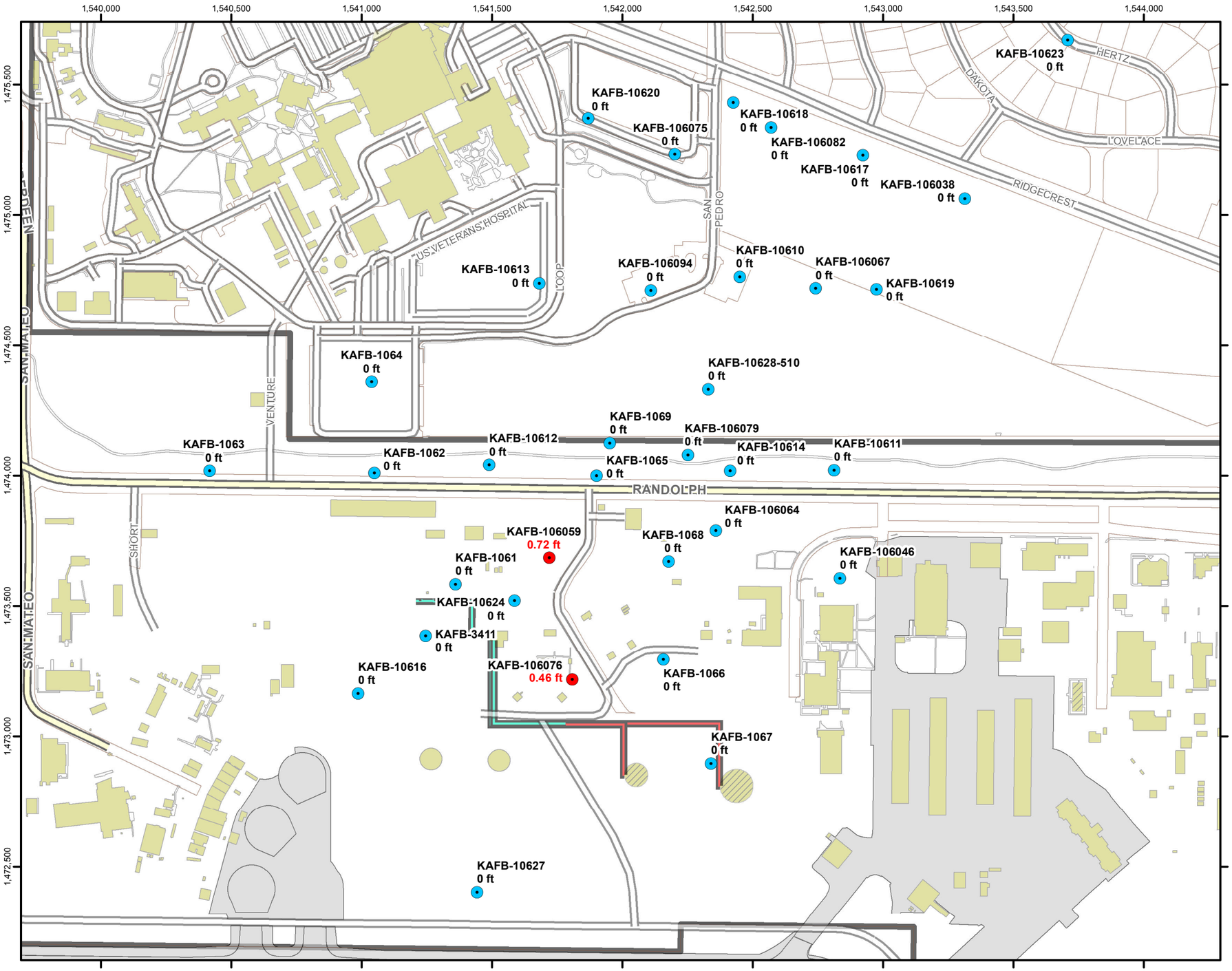
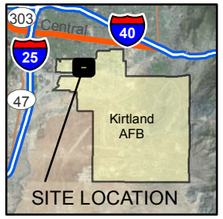



## Legend

- Monitor Well With NAPL
- Monitor Well Without NAPL
- Interstate
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Parcels
- Existing Structure
- Previously Existing Structure
- Runway
- Sidewalk
- Installation Boundary




Revision Date: 04/16/12

N

0 200 400 800

Feet

1 inch = 400 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-6

NAPL THICKNESS
SHALLOW GROUNDWATER
JANUARY 2012

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_022_NAPL_2012_Jan.mxd 04/16/12

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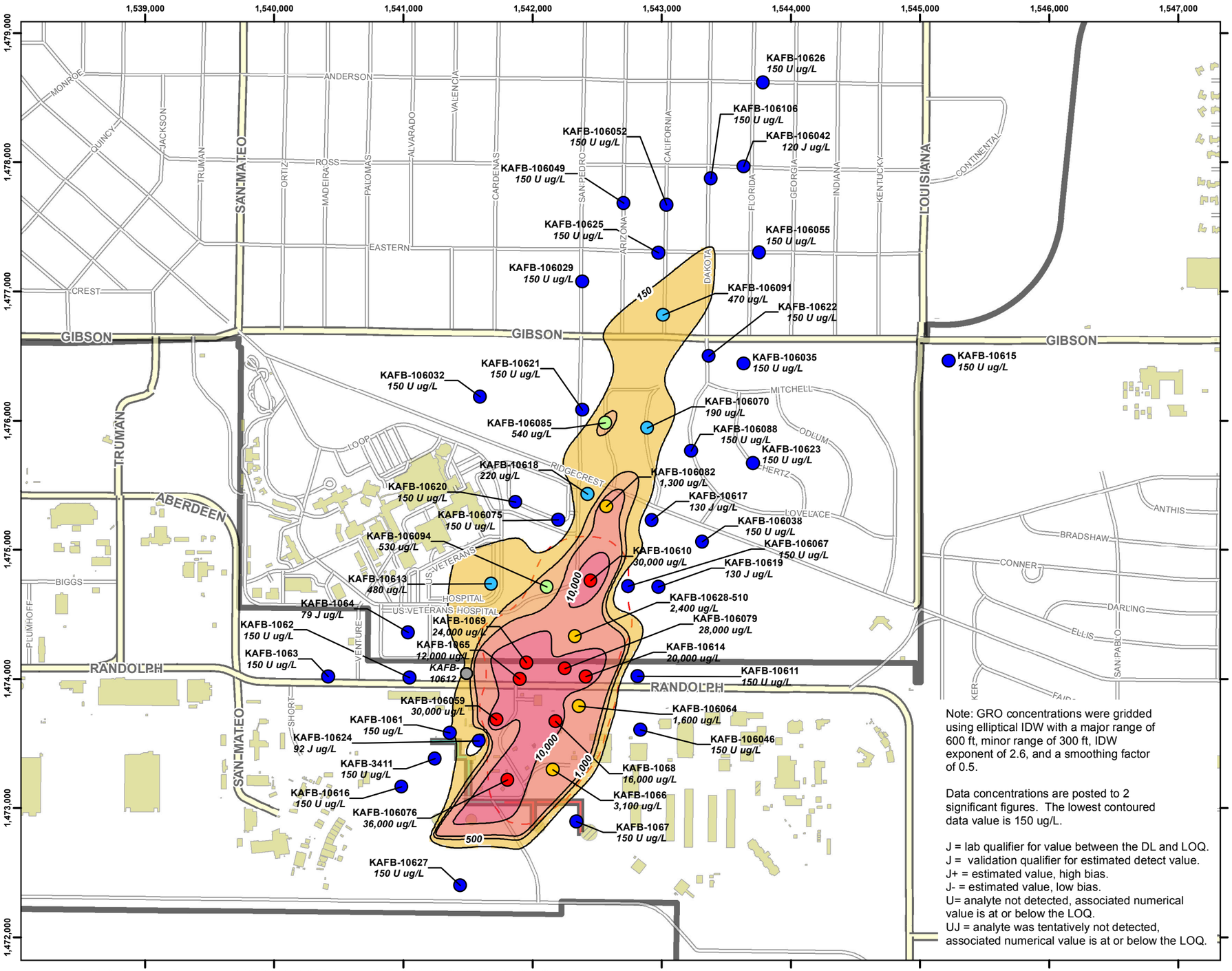



## Legend

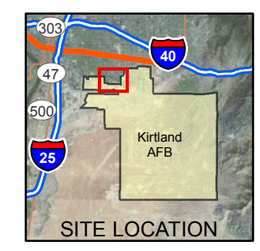
**GRO Result (ug/L)**

- 52 - 150
- 160 - 500
- 510 - 1,000
- 1,100 - 10,000
- 11,000 - 60,000
- Not Sampled
- GRO Concentration Contour (ug/L)

**GRO Concentration (ug/L)**

- 79 - 150
- 150 - 500
- 500 - 1,000
- 1,000 - 10,000
- 10,000 - 36,000
- Historical Area of Observed NAPL (July 2009)

- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 05/10/12

N

0 400 800 1,600

Feet

1 inch = 807 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: GRO concentrations were gridded using elliptical IDW with a major range of 600 ft, minor range of 300 ft, IDW exponent of 2.6, and a smoothing factor of 0.5.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is 150 ug/L.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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FIGURE 5-7

GASOLINE RANGE ORGANICS CONCENTRATIONS IN SHALLOW GROUNDWATER

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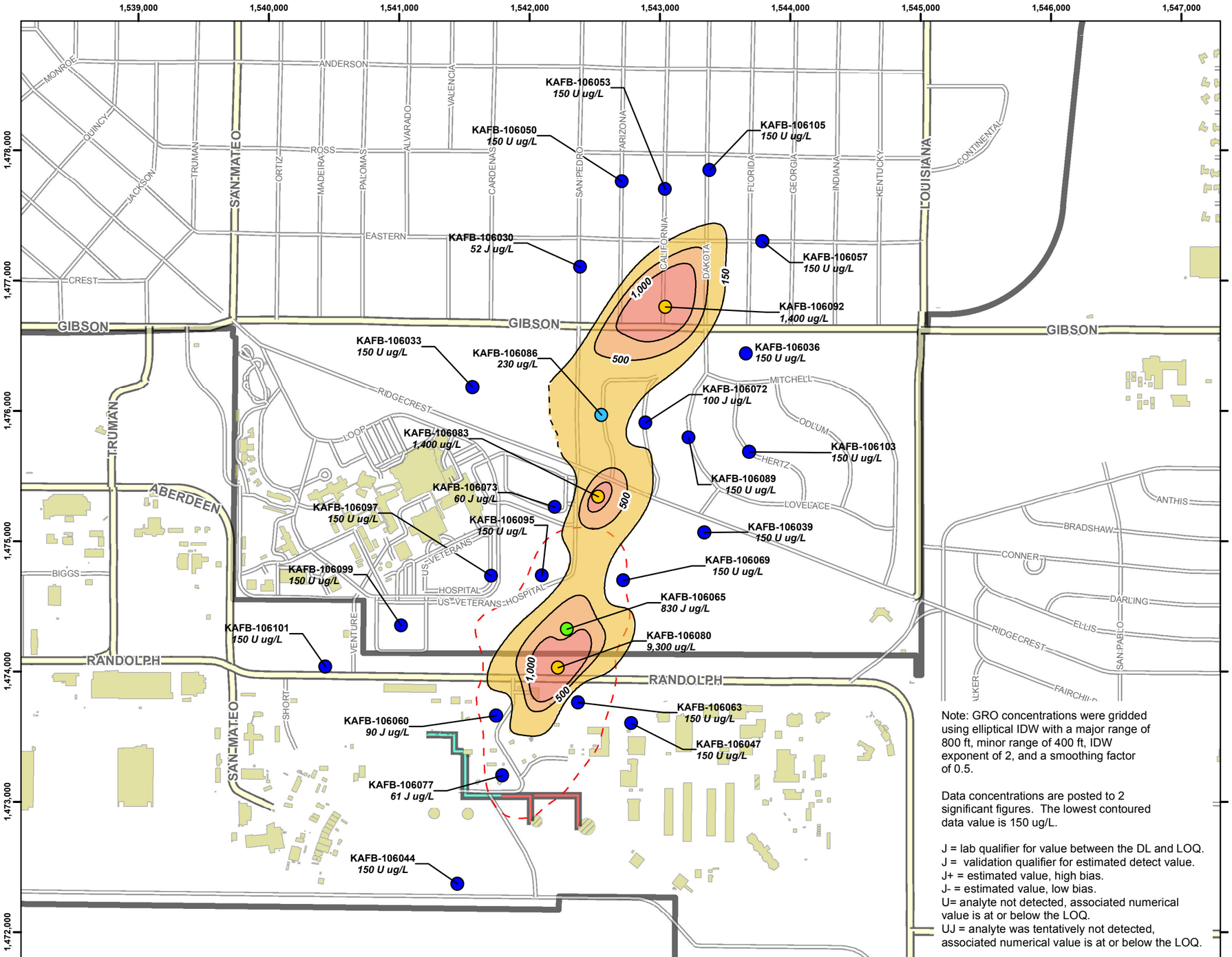



## Legend

GRO Result (ug/L)

- 52 - 150
- 160 - 500
- 510 - 1,000
- 1,100 - 9,300

GRO Concentration Contour (ug/L) (line is dashed where approximated)

**<VALUE>**

- 52 - 150
- 150 - 500
- 500 - 1,000
- 1,000 - 10,000

Historical Area of Observed NAPL (July 2009)

Major Road

Road

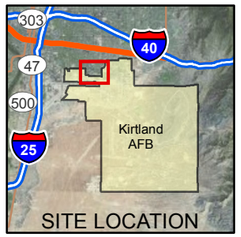
Aboveground Fuel Transfer Lines

Underground Fuel Transfer Lines

Previously Existing Structure

Existing Structure

Installation Boundary




Revision Date: 04/28/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: GRO concentrations were gridded using elliptical IDW with a major range of 800 ft, minor range of 400 ft, IDW exponent of 2, and a smoothing factor of 0.5.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is 150 ug/L.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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FIGURE 5-8

GASOLINE RANGE ORGANICS CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_037_GW_GRO_intermediate.mxd 04/28/12

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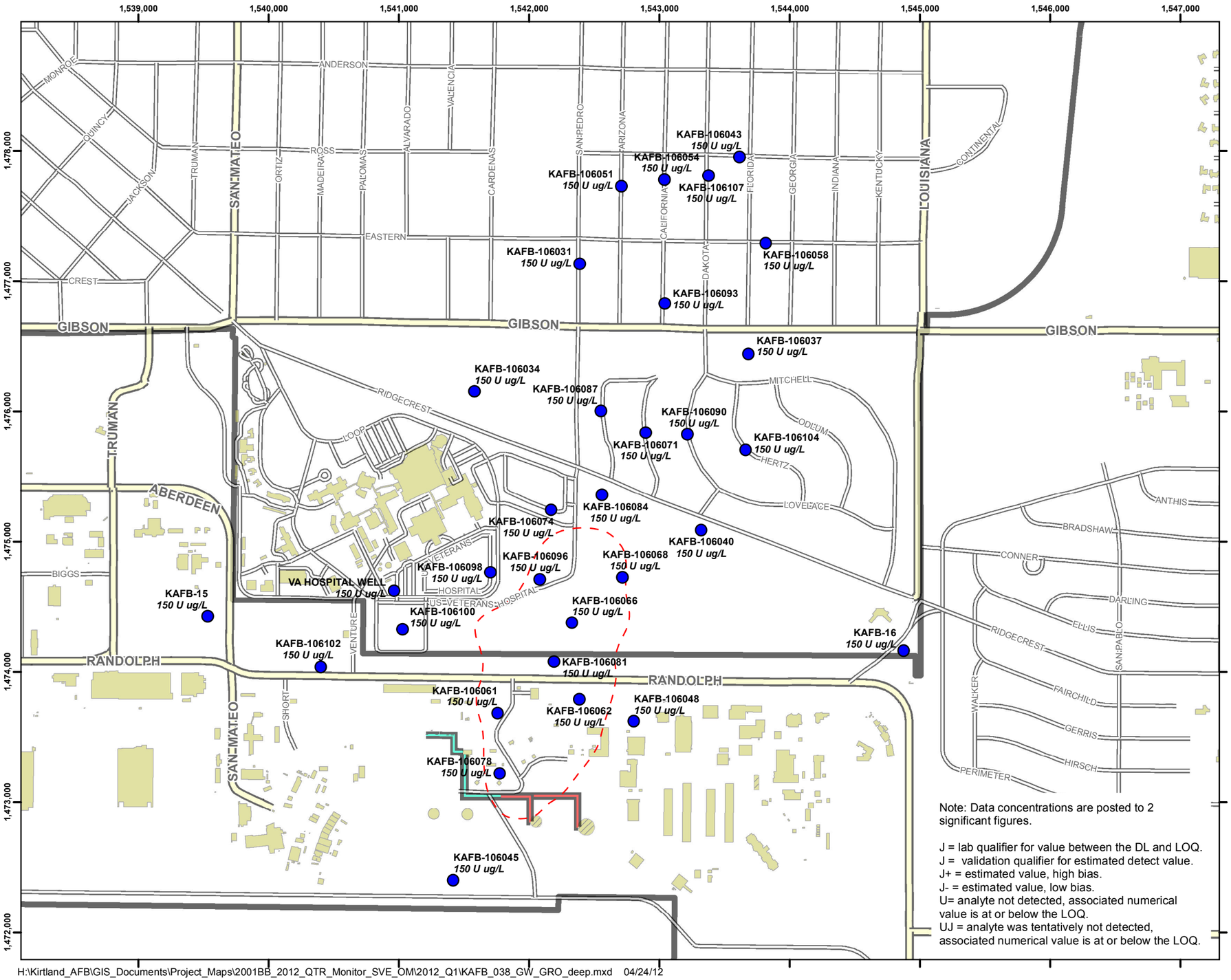
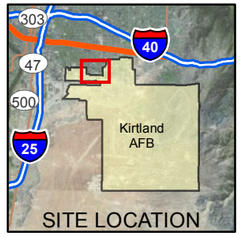



## Legend

GRO Result (ug/L)

- 150
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 04/24/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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FIGURE 5-9

GASOLINE RANGE ORGANICS CONCENTRATIONS IN DEEP GROUNDWATER

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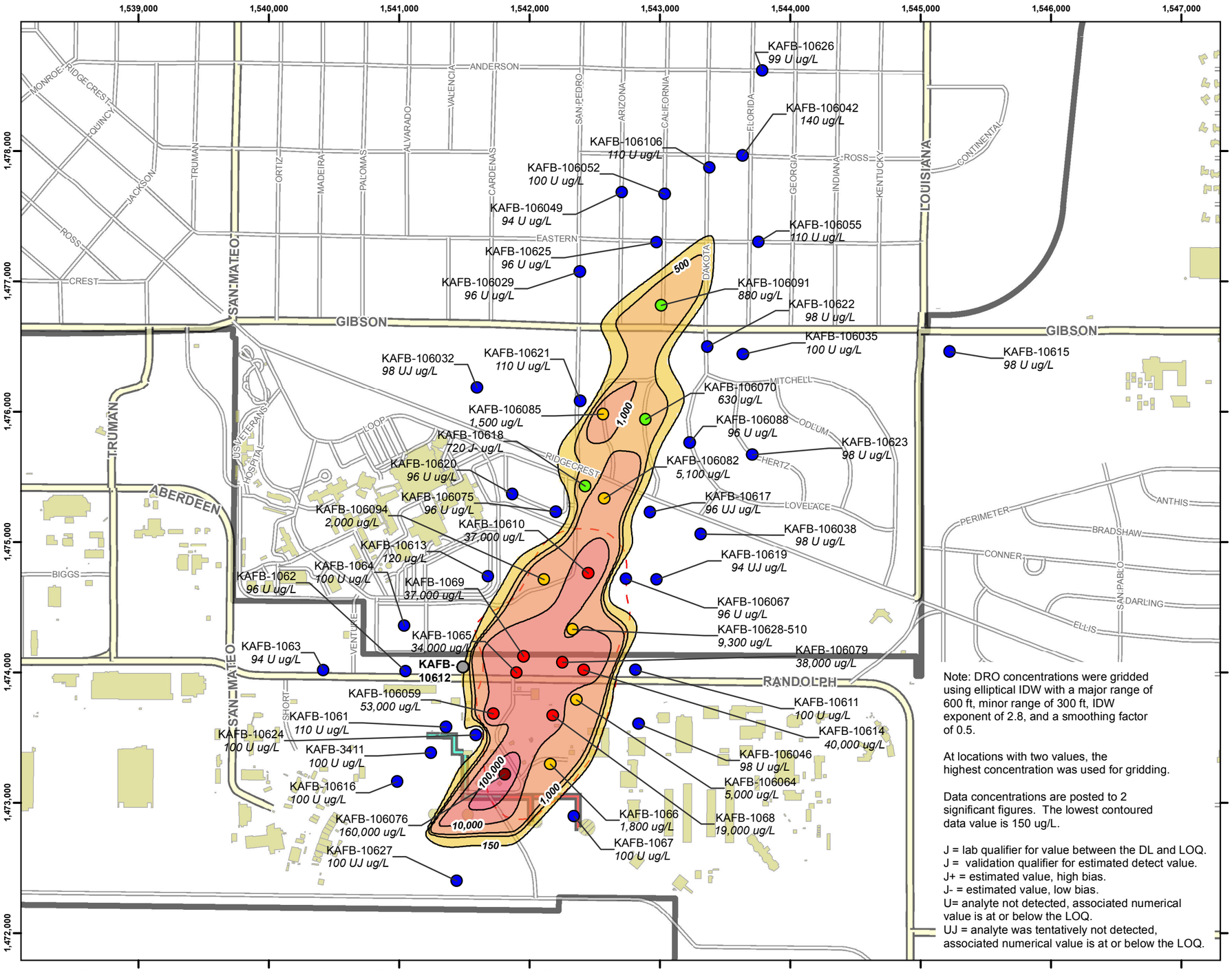



## Legend

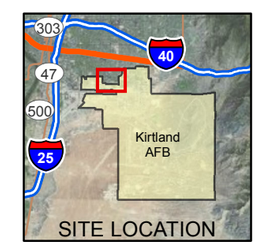
**DRO Result (ug/L)**

- 94 - 150
- 160 - 500
- 510 - 1,000
- 1,100 - 10,000
- 11,000 - 100,000
- 110,000 - 160,000
- Not Sampled
- DRO Concentration Contour (ug/L)

DRO Concentration (ug/L)

- 47 - 150
- 150 - 500
- 500 - 1,000
- 1,000 - 10,000
- 10,000 - 100,000
- 100,000 - 160,000
- Historical Area of Observed NAPL (July 2009)

- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: DRO concentrations were gridded using elliptical IDW with a major range of 600 ft, minor range of 300 ft, IDW exponent of 2.8, and a smoothing factor of 0.5.

At locations with two values, the highest concentration was used for gridding.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is 150 ug/L.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

Revision Date: 05/04/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-10

DIESEL RANGE ORGANIC CONCENTRATIONS IN SHALLOW GROUNDWATER

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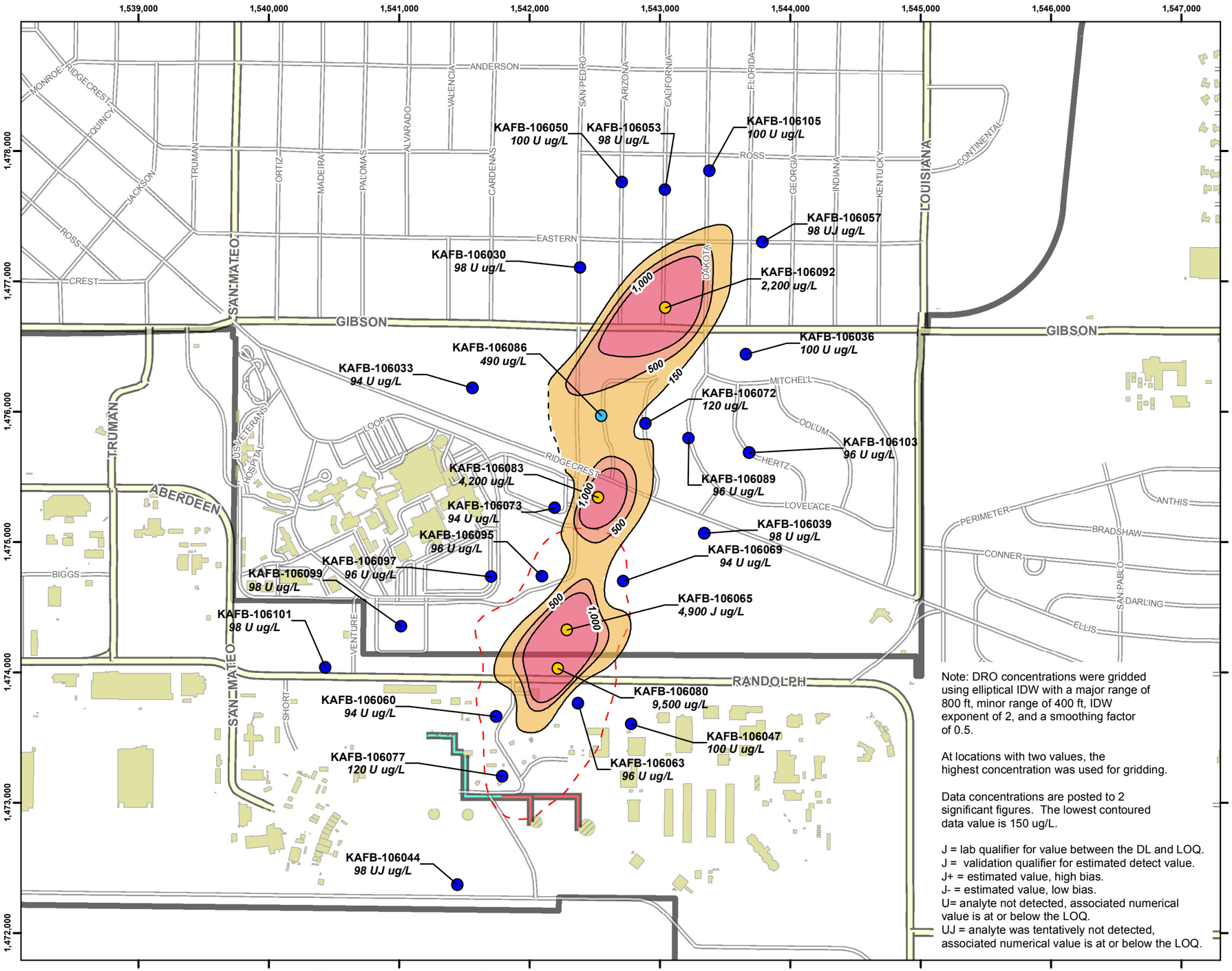



## Legend

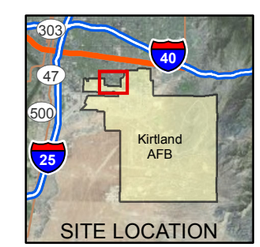
**DRO Result (ug/L)**

- 94 - 150
- 160 - 500
- 510 - 1,000
- 1,100 - 9,500
- DRO Concentration Contour (ug/L) (line is dashed where approximated)

DRO Concentration (ug/L)

- 47- 150
- 150 - 500
- 500 - 1,000
- 1,000 - 9,600
- Historical Area of Observed NAPL (July 2009)

- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: DRO concentrations were gridded using elliptical IDW with a major range of 800 ft, minor range of 400 ft, IDW exponent of 2, and a smoothing factor of 0.5.

At locations with two values, the highest concentration was used for gridding.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is 150 ug/L.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

N

0 400 800 1,600

Feet
1 inch = 800 feet

Revision Date: 04/28/12

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-11

DIESEL RANGE ORGANIC CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_056_GW_DRO_intermediate.mxd 04/28/12

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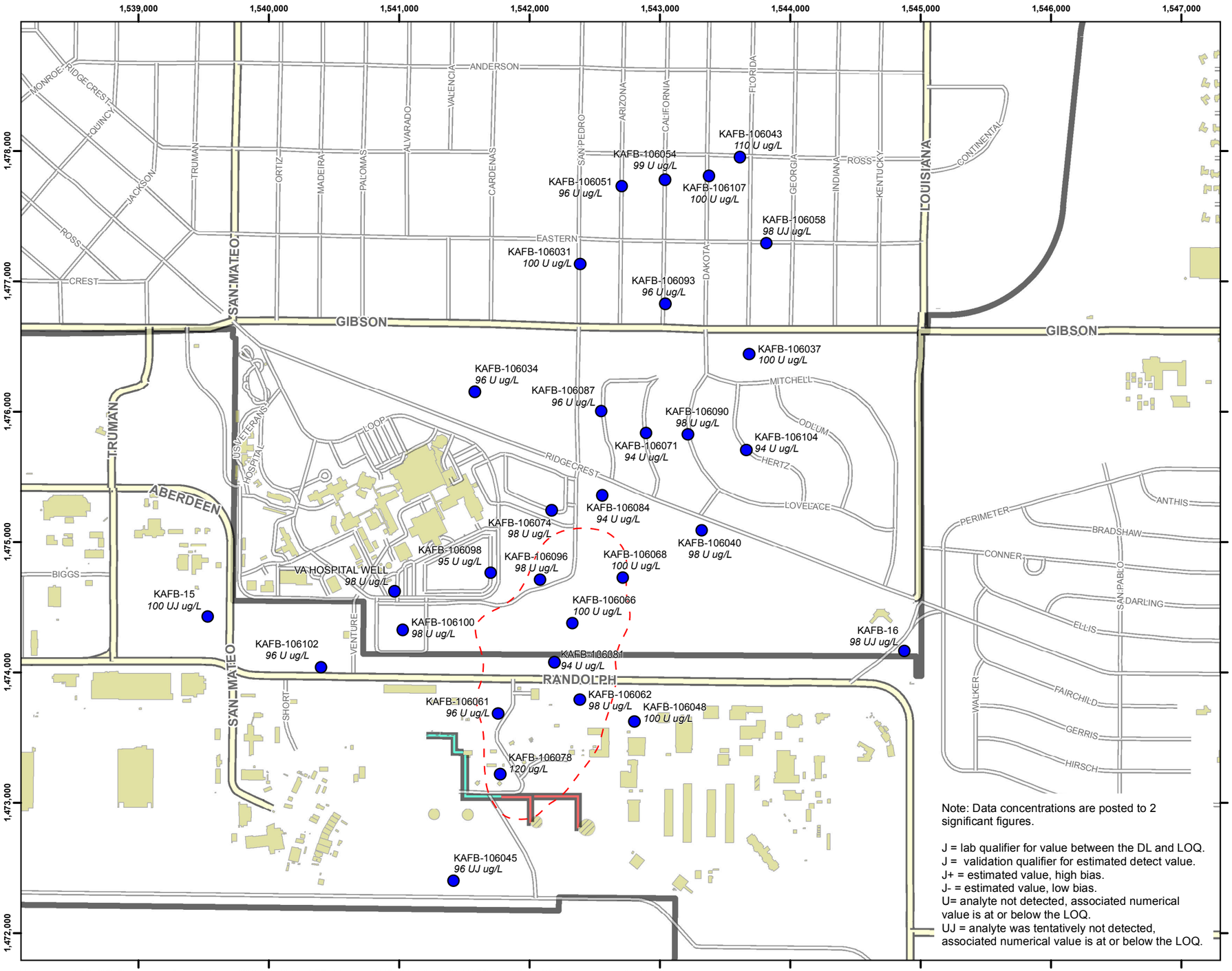
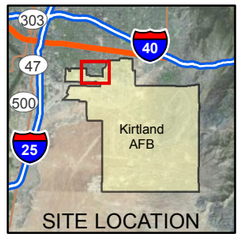



## Legend

**DRO Result (ug/L)**

- 94 - 120
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/04/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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FIGURE 5-12

DIESEL RANGE ORGANIC CONCENTRATIONS IN DEEP GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_057_GW_DRO_deep.mxd 05/04/12

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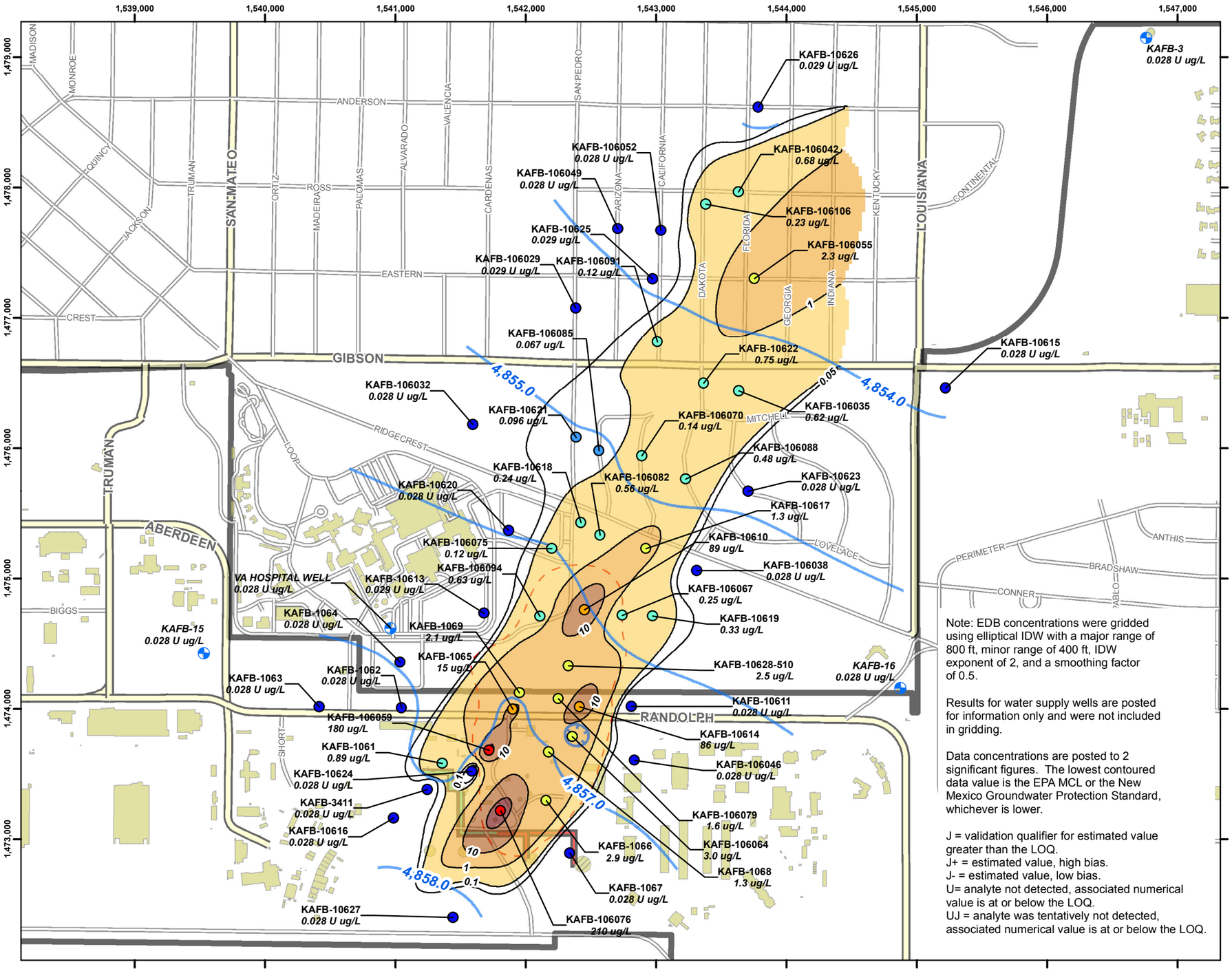



Note: EDB concentrations were gridded using elliptical IDW with a major range of 800 ft, minor range of 400 ft, IDW exponent of 2, and a smoothing factor of 0.5.

Results for water supply wells are posted for information only and were not included in gridding.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is the EPA MCL or the New Mexico Groundwater Protection Standard, whichever is lower.

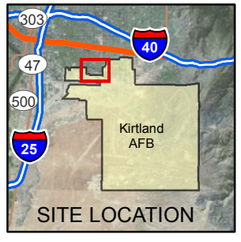
J = validation qualifier for estimated value greater than the LOQ.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

## Legend

- Water Supply Well
- EDB Result (ug/L)
  - 0.028 - 0.050
  - 0.051 - 0.10
  - 0.11 - 1.0
  - 1.1 - 10
  - 11 - 100
  - 110 - 210
- Groundwater Contour (ft msl)
- Groundwater Depression
- EDB Concentration Contour (ug/L)
- Major Road
- Road
- Aboveground Fuel Transfer Line
- Underground Fuel Transfer Line
- Previously Existing Structure
- Existing Structure
- Installation Boundary

**EDB Concentration (ug/L)**

- 0.01- 0.1
- 0.1 - 1
- 1.0 - 10
- 10 - 100
- 100 - 210
- Historical Area of Observed NAPL (July 2009)




Revision Date: 04/28/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-13

1,2-DIBROMOETHANE (EDB) CONCENTRATIONS IN SHALLOW GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_039_GW_EDB_shallow.mxd 04/28/12

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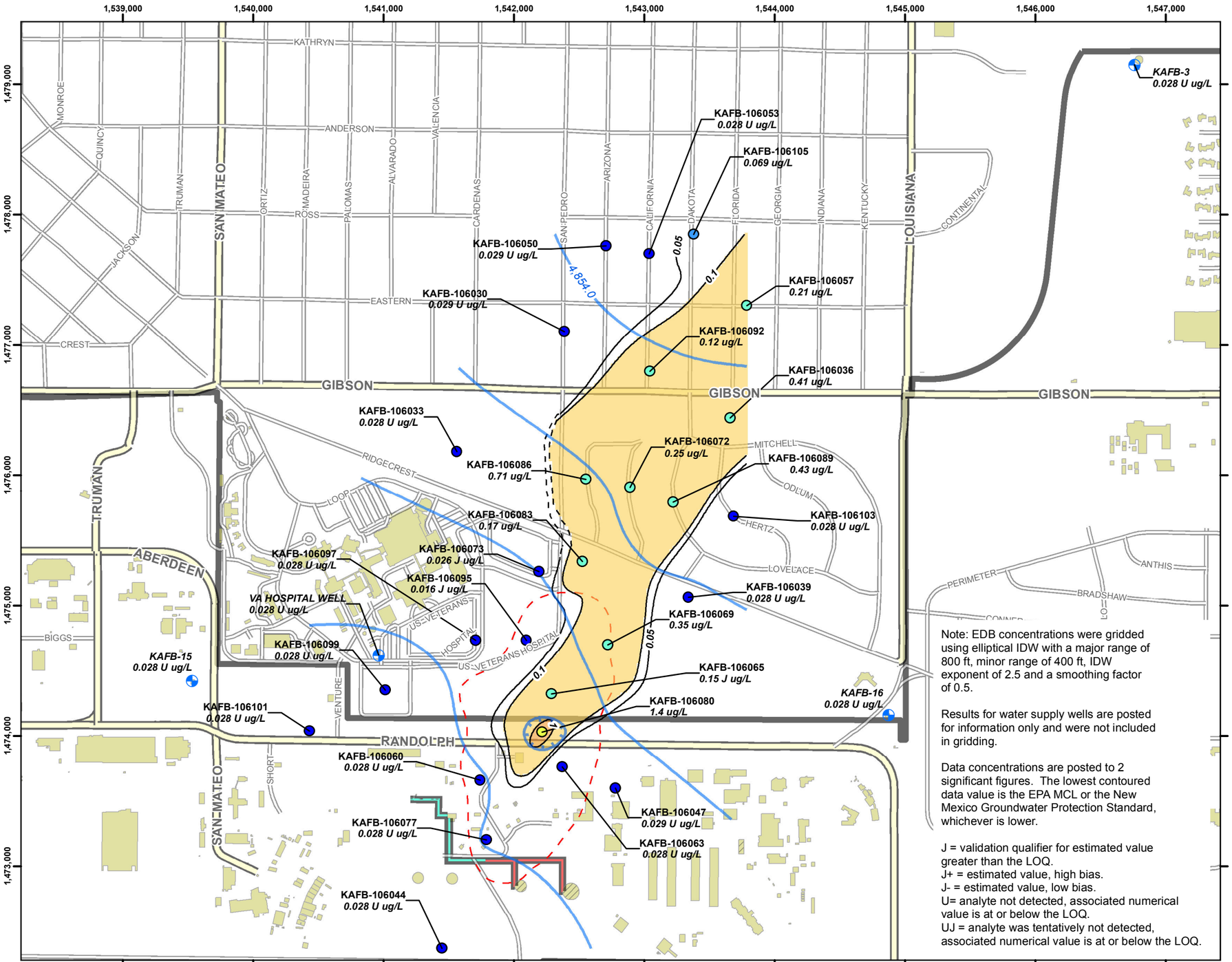
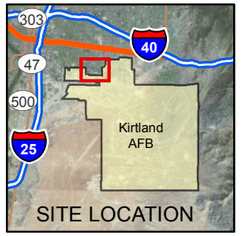



## Legend

- Water Supply Well
- EDB Result (ug/L)
  - 0.016 - 0.050
  - 0.051 - 0.10
  - 0.11 - 1.0
  - 1.1 - 1.4
- GRO Concentration Contour (ug/L) (line is dashed where approximated)
- EDB Concentration (ug/L)
  - 0.01 - 0.1
  - 0.1 - 1.0
  - 1.0 - 1.4
- Groundwater Level Contour (ft msl)
- Groundwater Depression
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Line
- Aboveground Fuel Transfer Line
- Existing Structure
- Previously Existing Structure
- Installation Boundary




Note: EDB concentrations were gridded using elliptical IDW with a major range of 800 ft, minor range of 400 ft, IDW exponent of 2.5 and a smoothing factor of 0.5.

Results for water supply wells are posted for information only and were not included in gridding.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is the EPA MCL or the New Mexico Groundwater Protection Standard, whichever is lower.

J = validation qualifier for estimated value greater than the LOQ.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

Revision Date: 04/28/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-14

1,2-DIBROMOETHANE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_058_GW_EDB_intermediate.mxd 04/28/12

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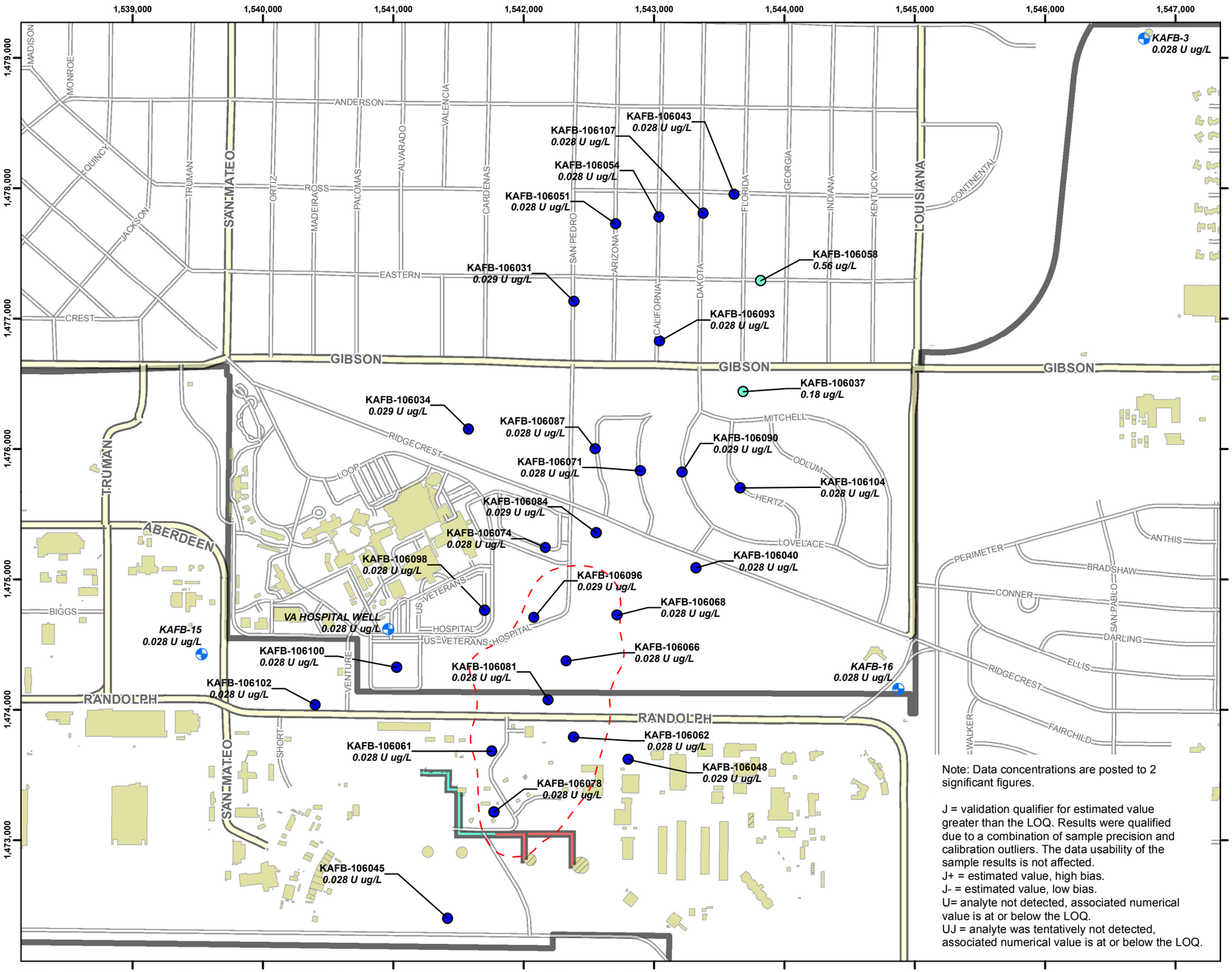



Note: Data concentrations are posted to 2 significant figures.

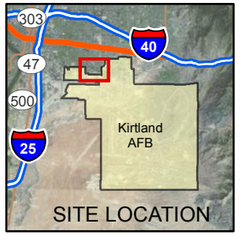
J = validation qualifier for estimated value greater than the LOQ. Results were qualified due to a combination of sample precision and calibration outliers. The data usability of the sample results is not affected.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

## Legend

- Water Supply Well

EDB Result (ug/L)

- 0.028 - 0.050
- 0.051 - 0.10
- 0.11 - 0.56
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Structure
- Previously Existing Structure
- Installation Boundary




Revision Date: 04/28/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-15

1,2-DIBROMOETHANE CONCENTRATIONS IN DEEP GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_059_GW_EDB_deep.mxd 04/28/12

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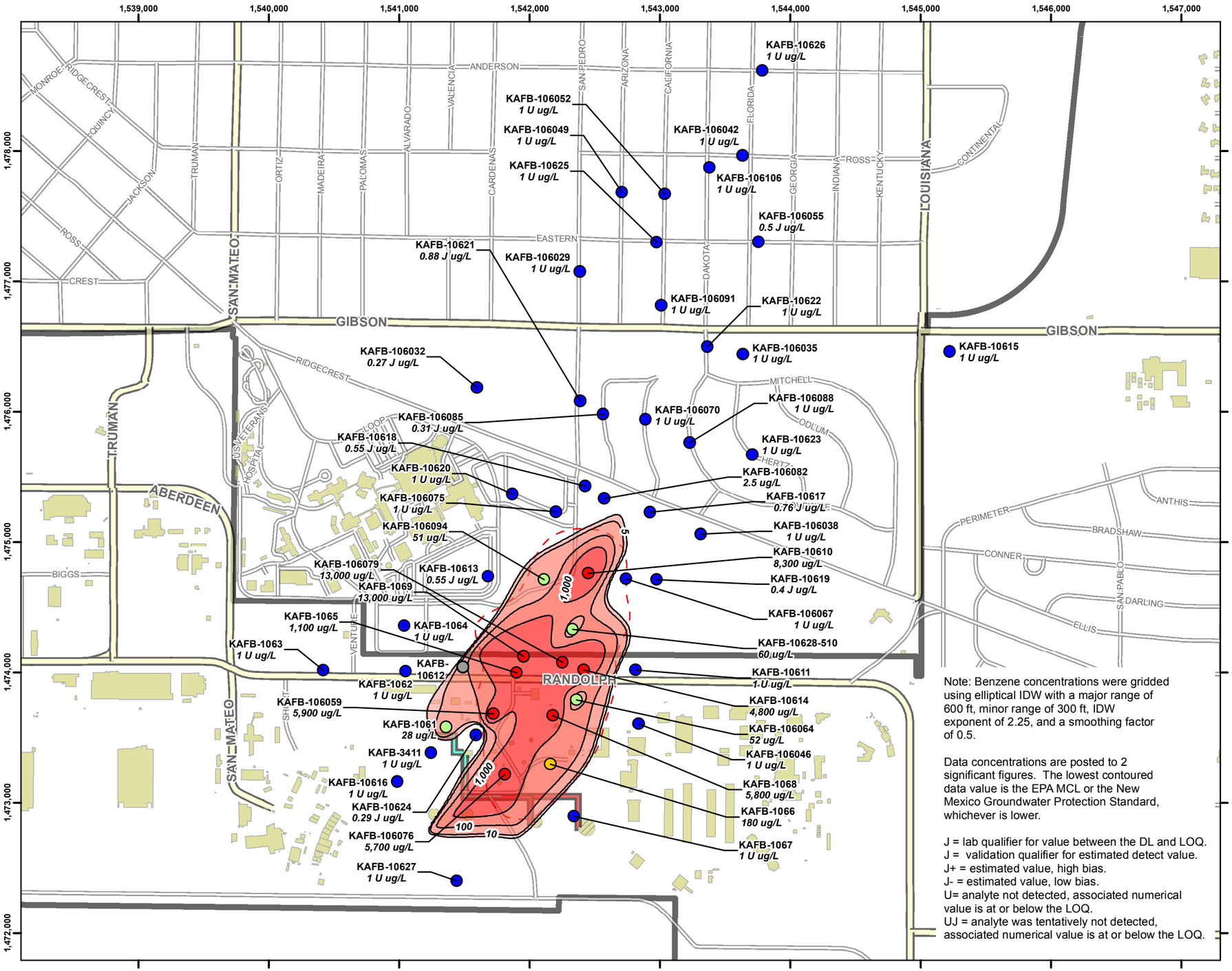



Note: Benzene concentrations were gridded using elliptical IDW with a major range of 600 ft, minor range of 300 ft, IDW exponent of 2.25, and a smoothing factor of 0.5.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is the EPA MCL or the New Mexico Groundwater Protection Standard, whichever is lower.

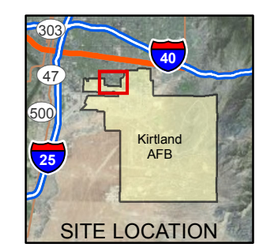
J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

## Legend

Benzene Result (ug/L)
- 0.27 - 5.0
- 5.1 - 10
- 11 - 100
- 110 - 1,000
- 1,100 - 13,000
- Not Sampled
- Benzene Concentration Contour (ug/L)

Benzene Concentration (ug/L)
- 0.27 - 5
- 5 - 10
- 10 - 100
- 100 - 1,000
- 1,000 - 13,000
- Historical Area of Observed NAPL (July 2009)

- Major Road
- Road
- Aboveground Fuel Transfer Line
- Underground Fuel Transfer Line
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/04/12

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-16

BENZENE CONCENTRATIONS IN SHALLOW GROUNDWATER

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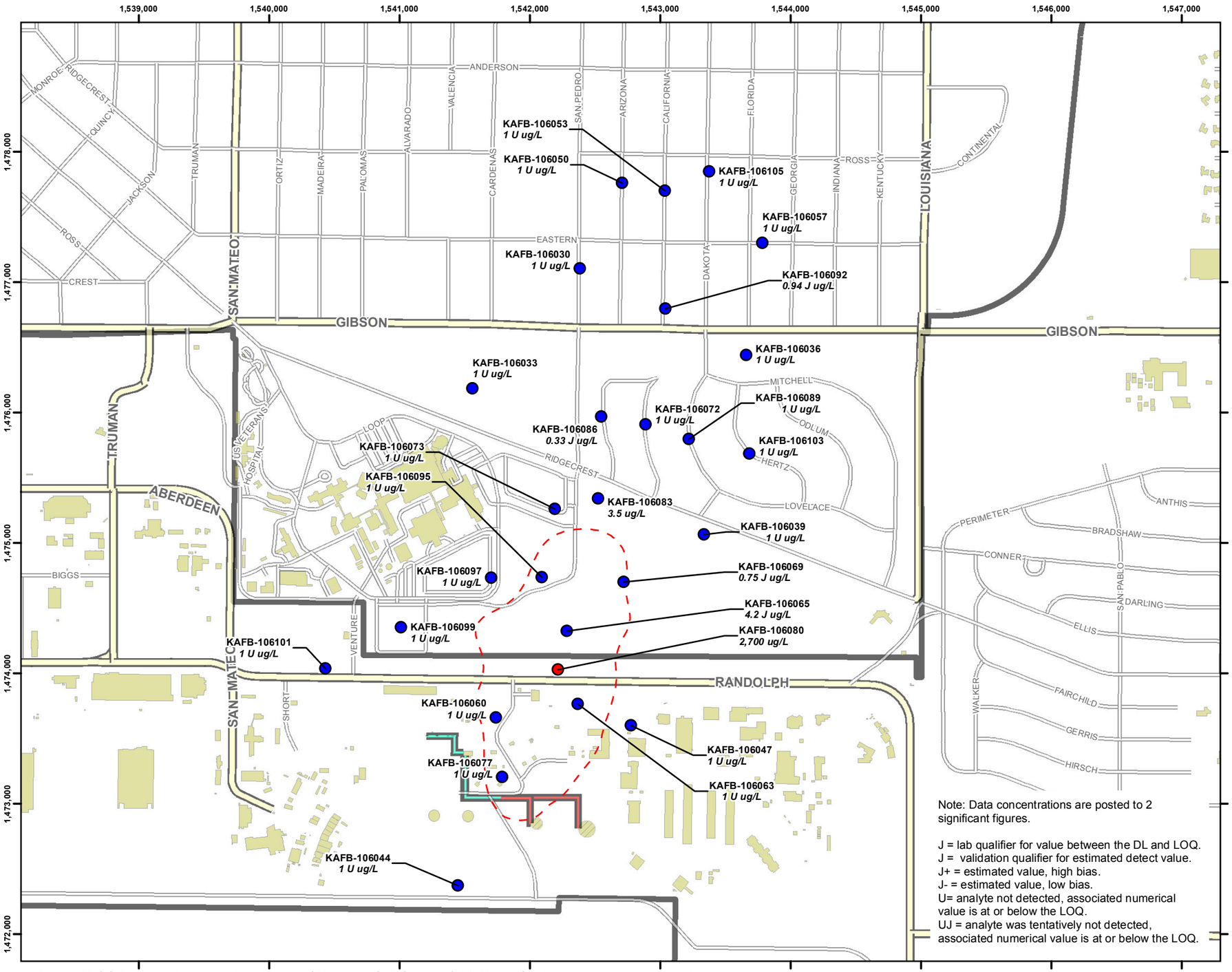


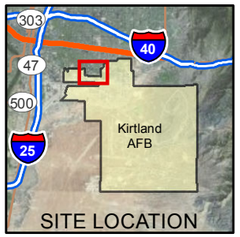

Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

## Legend

**Benzene Result (ug/L)**

- 0.33 - 5.0
- 5.1 - 10
- 11 - 100
- 110 - 1,000
- 1,100 - 2,700
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

0 400 800 1,600

Feet
1 inch = 800 feet

Revision Date: 04/26/12

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-17

BENZENE
CONCENTRATIONS IN
INTERMEDIATE GROUNDWATER

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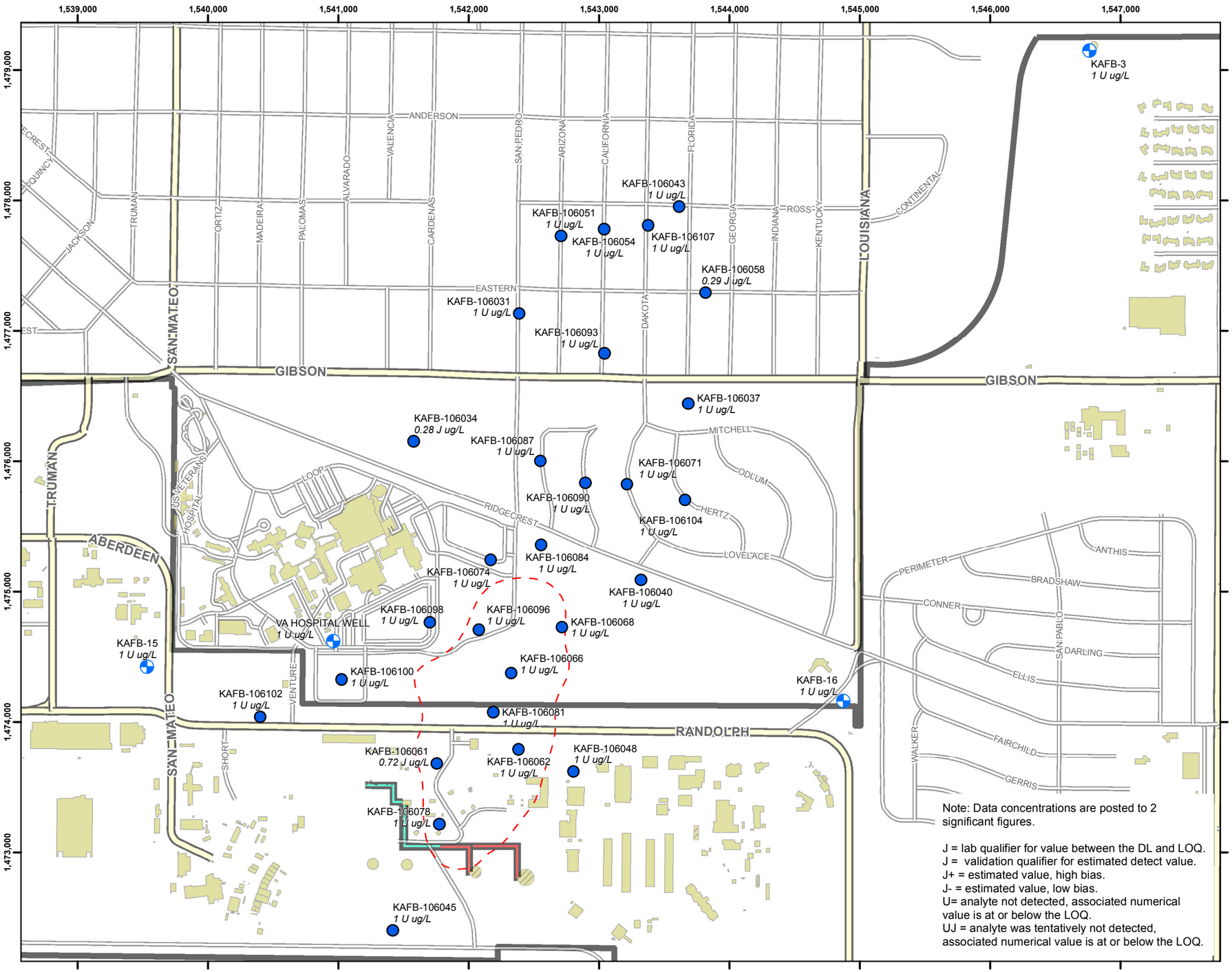
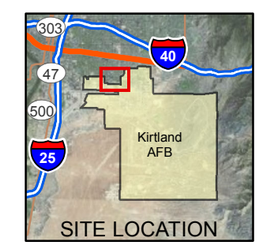



## Legend

- Water Supply Well

**Benzene Result (ug/L)**

- 0.28 - 1.0
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/10/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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FIGURE 5-18

BENZENE CONCENTRATIONS IN DEEP GROUNDWATER

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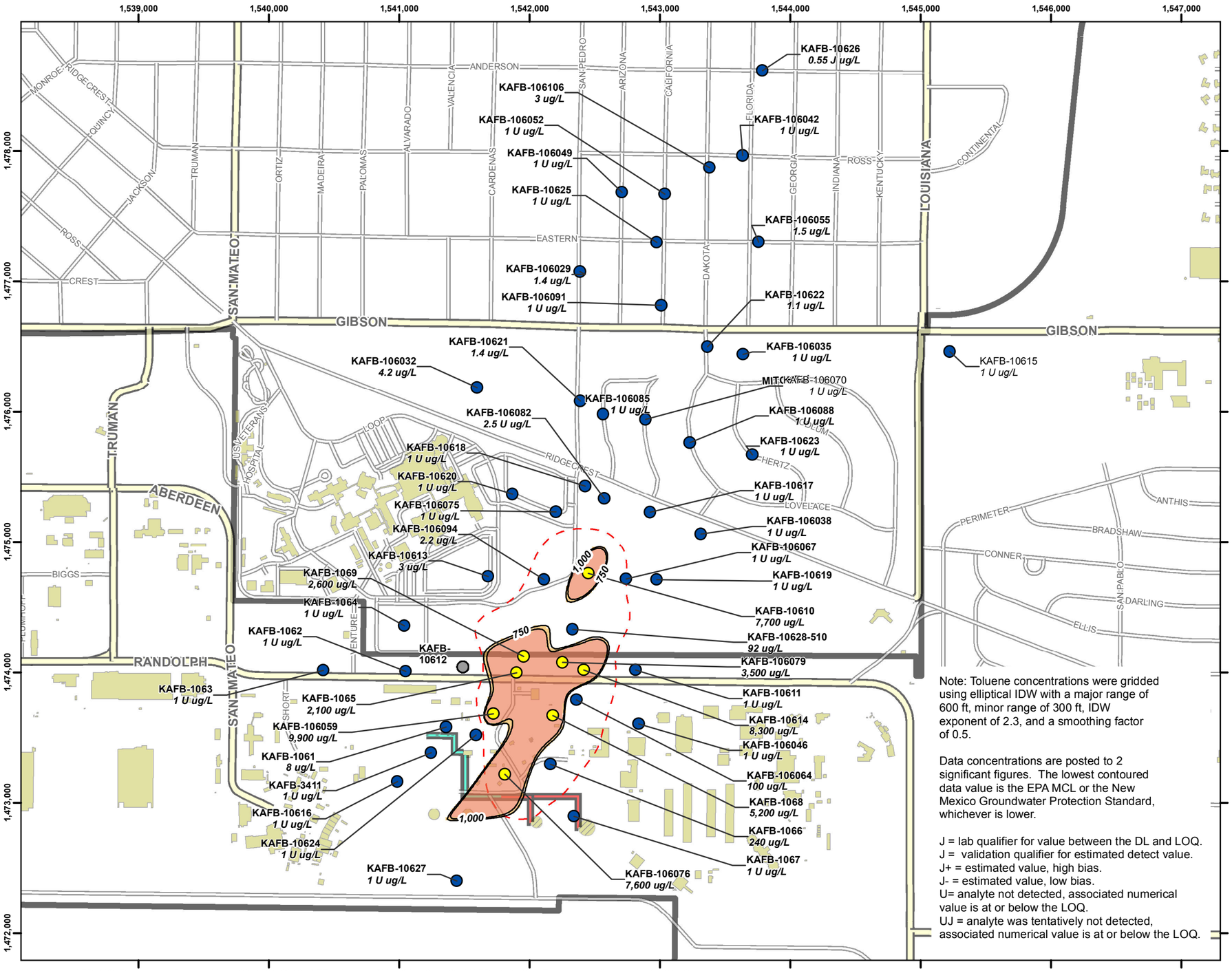



## Legend

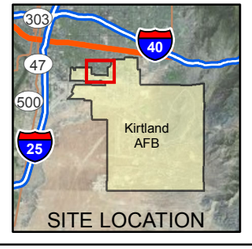
Toluene Result (ug/L)

- 0.55 - 750
- 760 - 1,000
- 1,100 - 10,000
- Not Sampled
- Toluene Concentration Contour (ug/L)

Toluene Concentration (ug/L)

- 0.5 - 750
- 750 - 1,000
- 1,000. - 9,900
- Historical Area of Observed NAPL (July 2009)

- Major Road
- Road
- Aboveground Fuel Transfer Line
- Underground Fuel Transfer Line
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Toluene concentrations were gridded using elliptical IDW with a major range of 600 ft, minor range of 300 ft, IDW exponent of 2.3, and a smoothing factor of 0.5.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is the EPA MCL or the New Mexico Groundwater Protection Standard, whichever is lower.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

Revision Date: 05/04/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-19

TOLUENE CONCENTRATIONS IN SHALLOW GROUNDWATER

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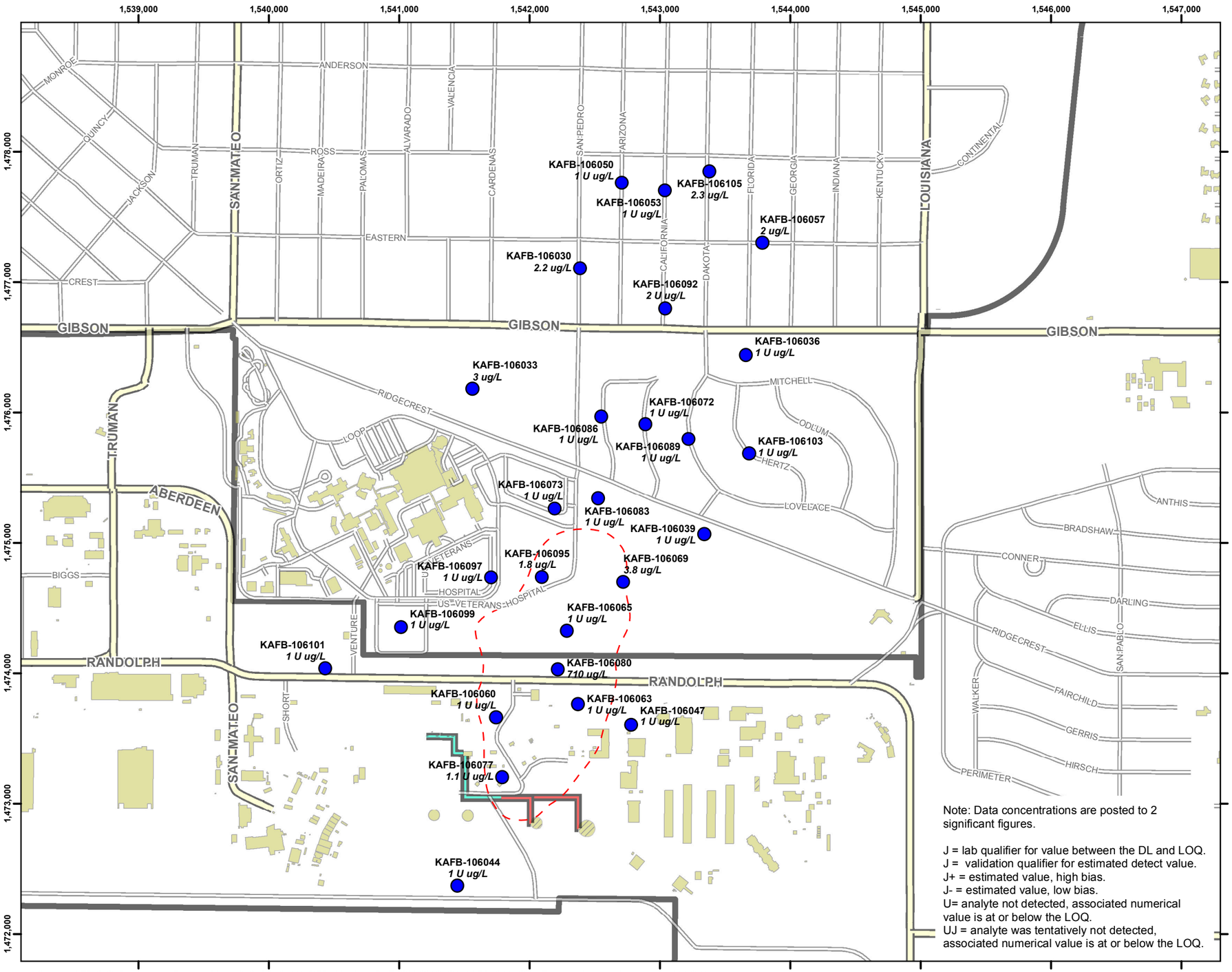
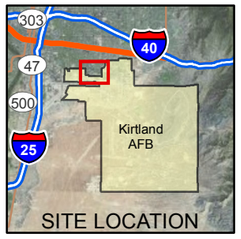



## Legend

Toluene Result (ug/L)

- 1.0 - 710
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 04/29/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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FIGURE 5-20

TOLUENE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

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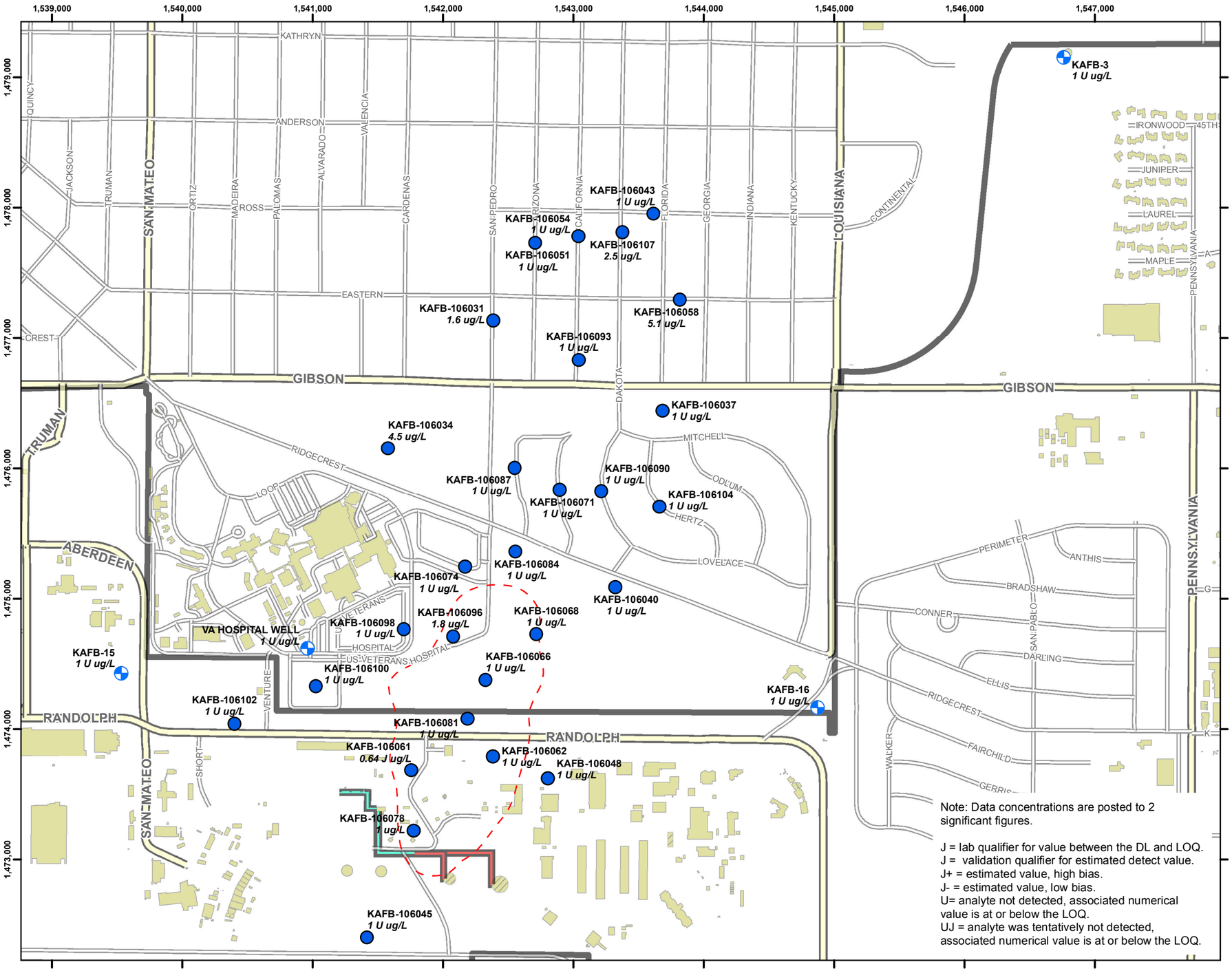
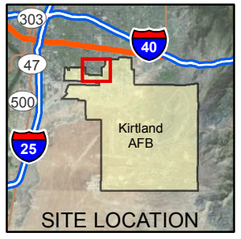



## Legend

- Water Supply Well

Toluene Result (ug/L)

- 0.64 - 6.0
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/10/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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FIGURE 5-21

TOLUENE CONCENTRATIONS IN DEEP GROUNDWATER

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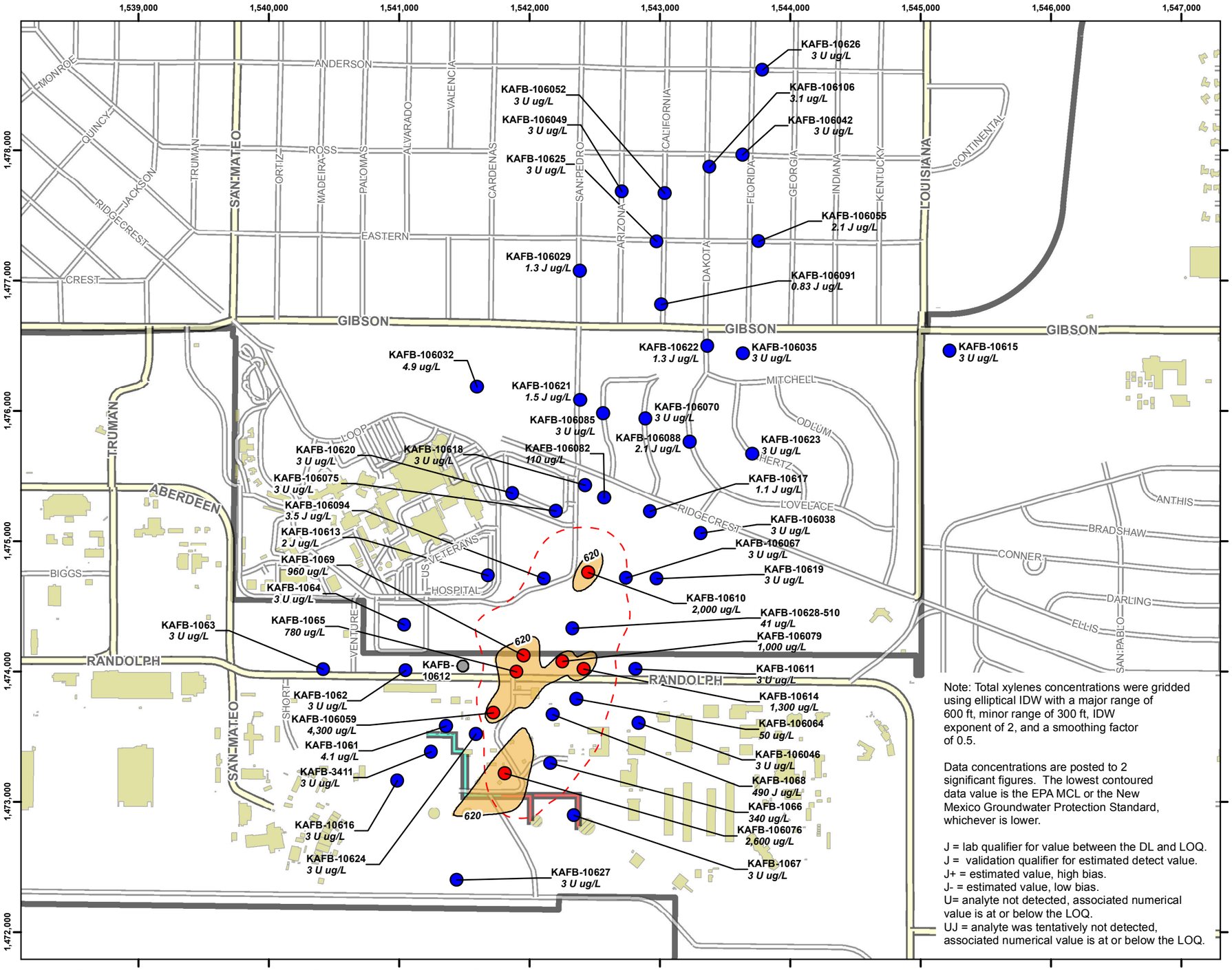


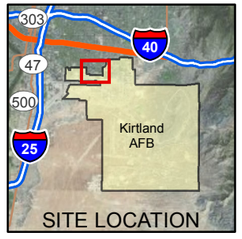

## Legend

Total Xylenes Result (ug/L)

- 0.83 - 620
- 630 - 4,300
- Not Sampled
- Total Xylenes Concentration Contour (ug/L)
- Historical Area of Observed NAPL (July 2009)

Total Xylenes Concentration (ug/L)

- 0.83 - 620
- 620 - 4,300
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Total xylenes concentrations were gridded using elliptical IDW with a major range of 600 ft, minor range of 300 ft, IDW exponent of 2, and a smoothing factor of 0.5.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is the EPA MCL or the New Mexico Groundwater Protection Standard, whichever is lower.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

Revision Date: 05/04/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-22

TOTAL XYLENES CONCENTRATIONS IN SHALLOW GROUNDWATER

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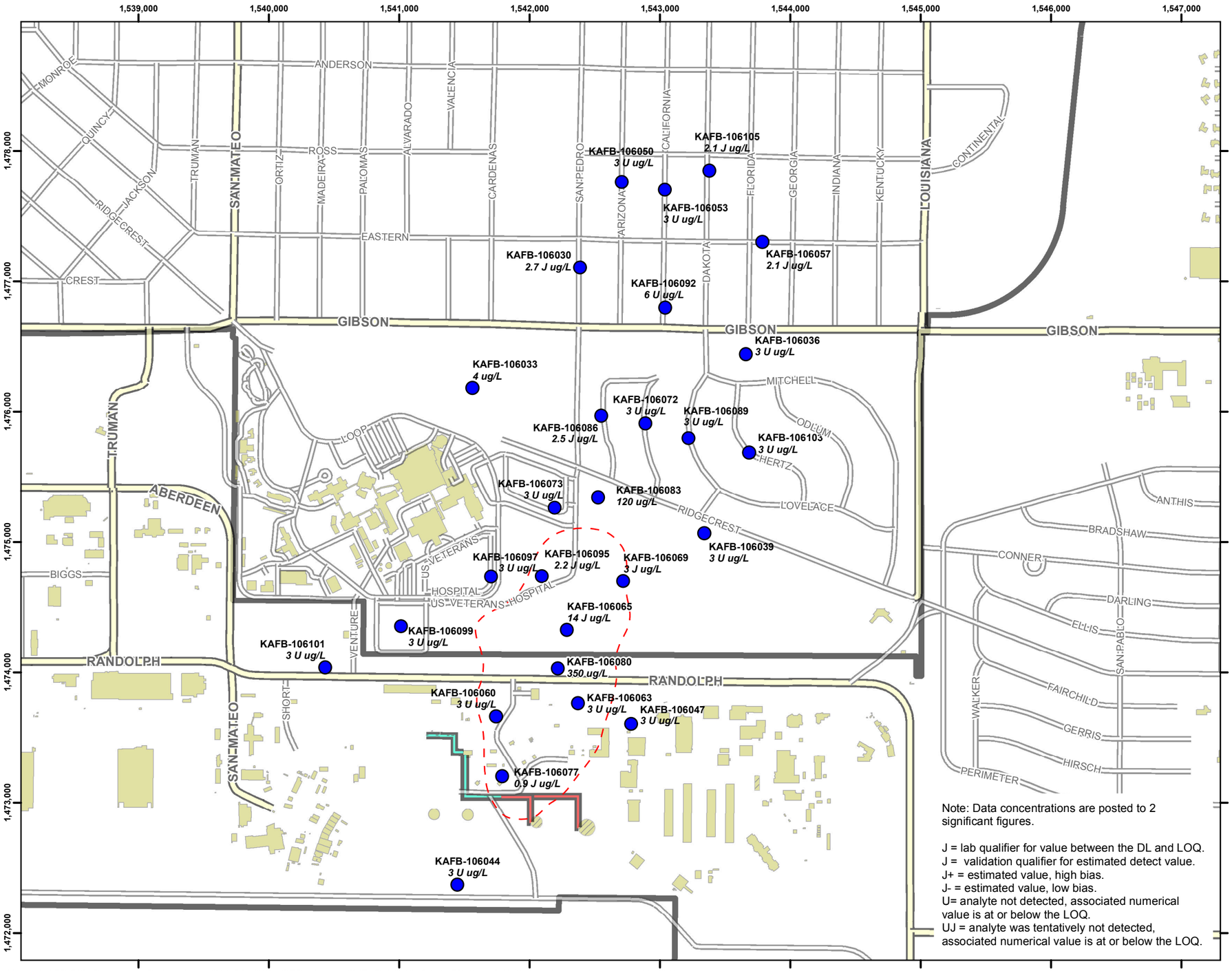
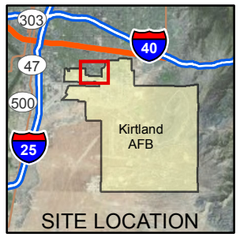



## Legend

Total Xylenes Result (ug/L)

- 0.90 - 350
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 04/29/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-23

TOTAL XYLENES CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_047_GW_Xylene_intermediate.mxd 04/29/12

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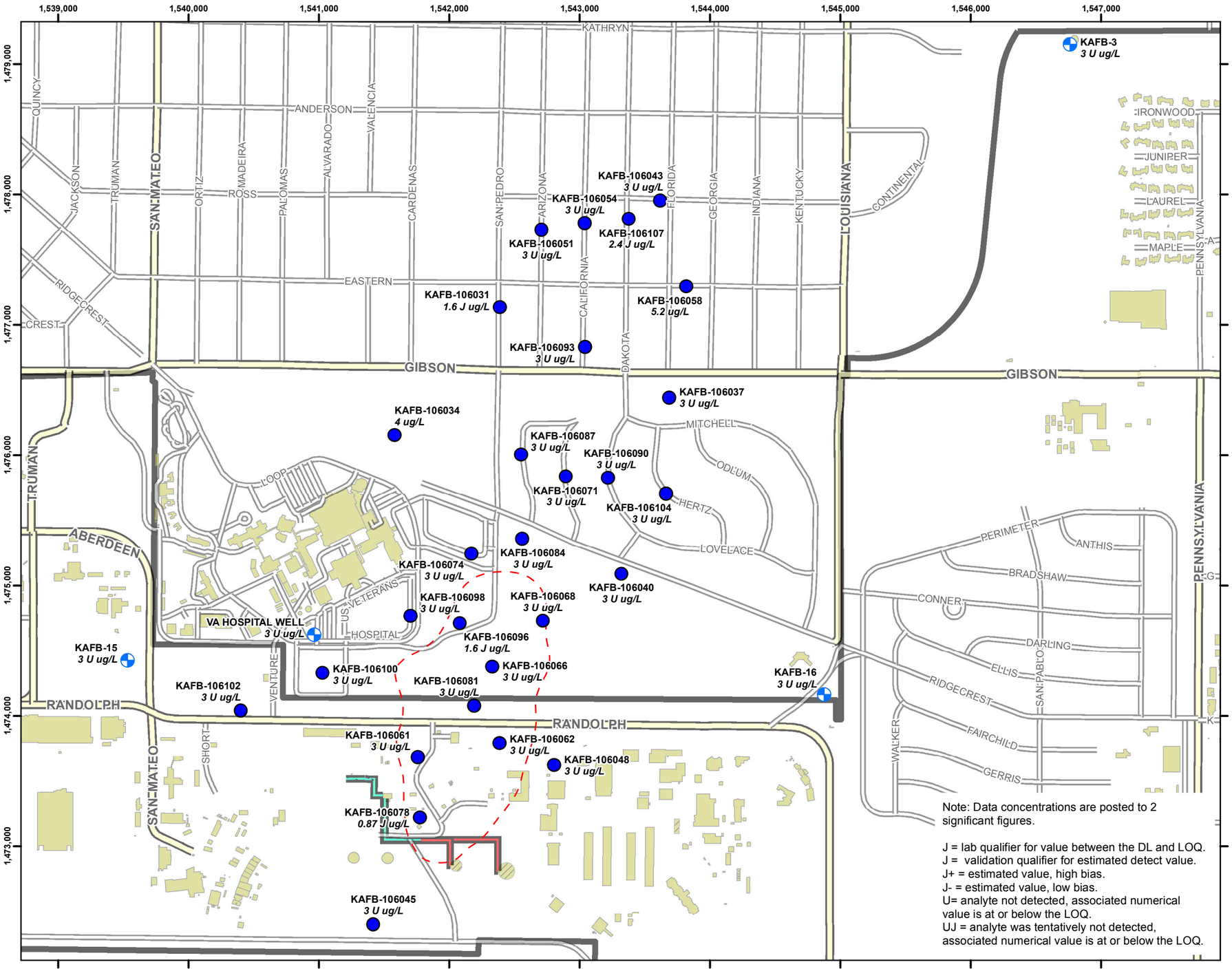
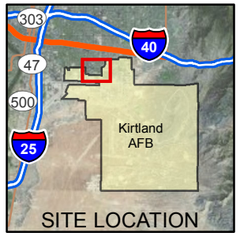



Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

## Legend

- Water Supply Well
- Total Xylenes Result (ug/L)
  - 0.87 - 5.2
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/10/12

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-24

TOTAL XYLENES CONCENTRATIONS IN DEEP GROUNDWATER

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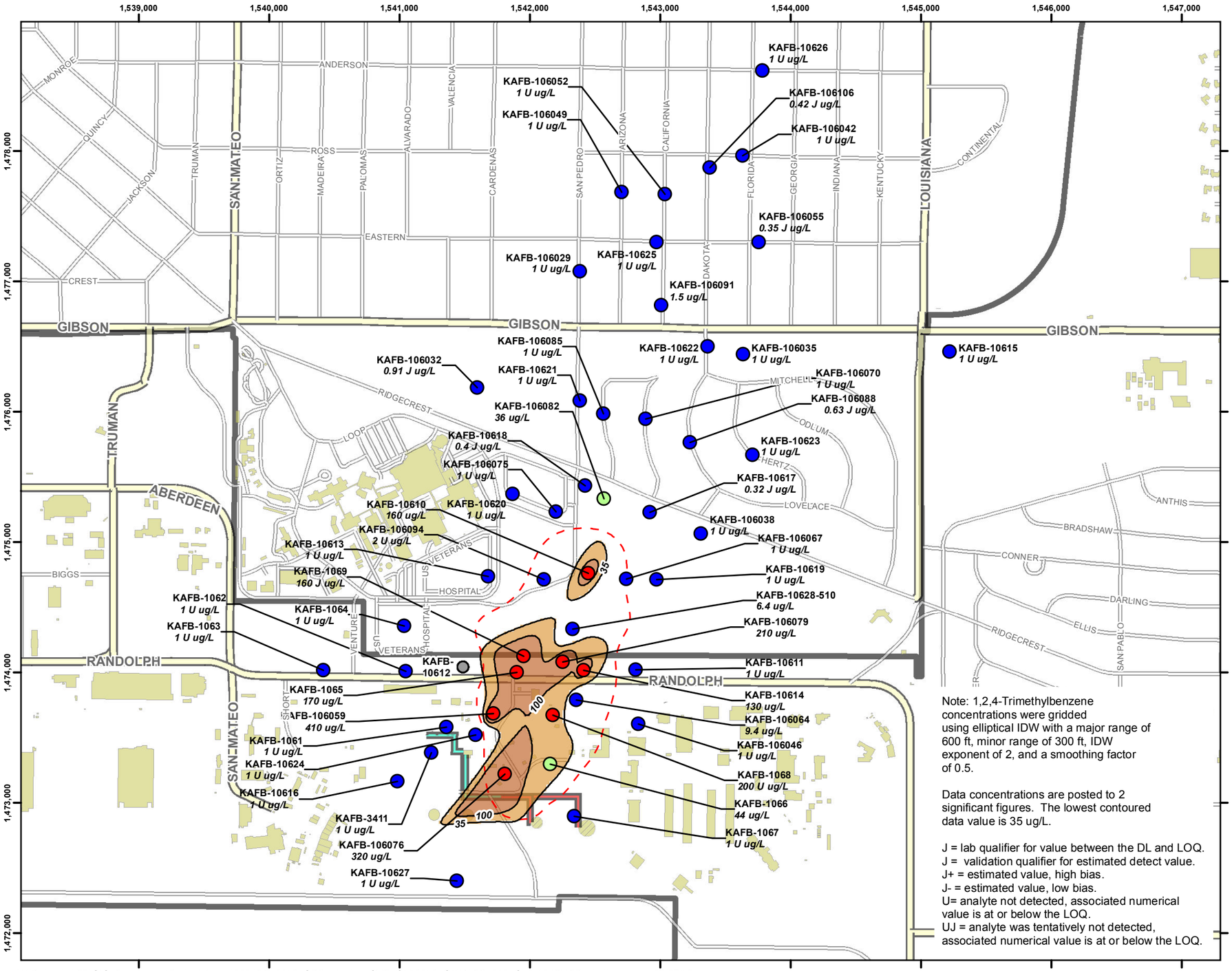



Note: 1,2,4-Trimethylbenzene concentrations were gridded using elliptical IDW with a major range of 600 ft, minor range of 300 ft, IDW exponent of 2, and a smoothing factor of 0.5.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is 35 ug/L.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

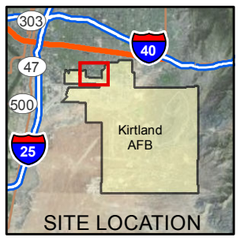
## Legend

1,2,4-Trimethylbenzene Result (ug/L)

- 0.32 - 35
- 36 - 100
- 110 - 410
- Not Sampled
- 1,2,4-Trimethylbenzene Concentration Contour (ug/L)
- Historical Area of Observed NAPL (July 2009)

1,2,4-Trimethylbenzene Concentration (ug/L)

- 0.46 - 35
- 35 - 100
- 100 - 410
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

0 400 800 1,600
Feet
1 inch = 800 feet

Revision Date: 05/07/12

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-25

1,2,4-TRIMETHYLBENZENE CONCENTRATIONS IN SHALLOW GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_049_GW_124TMBZ_shallow.mxd 05/07/12

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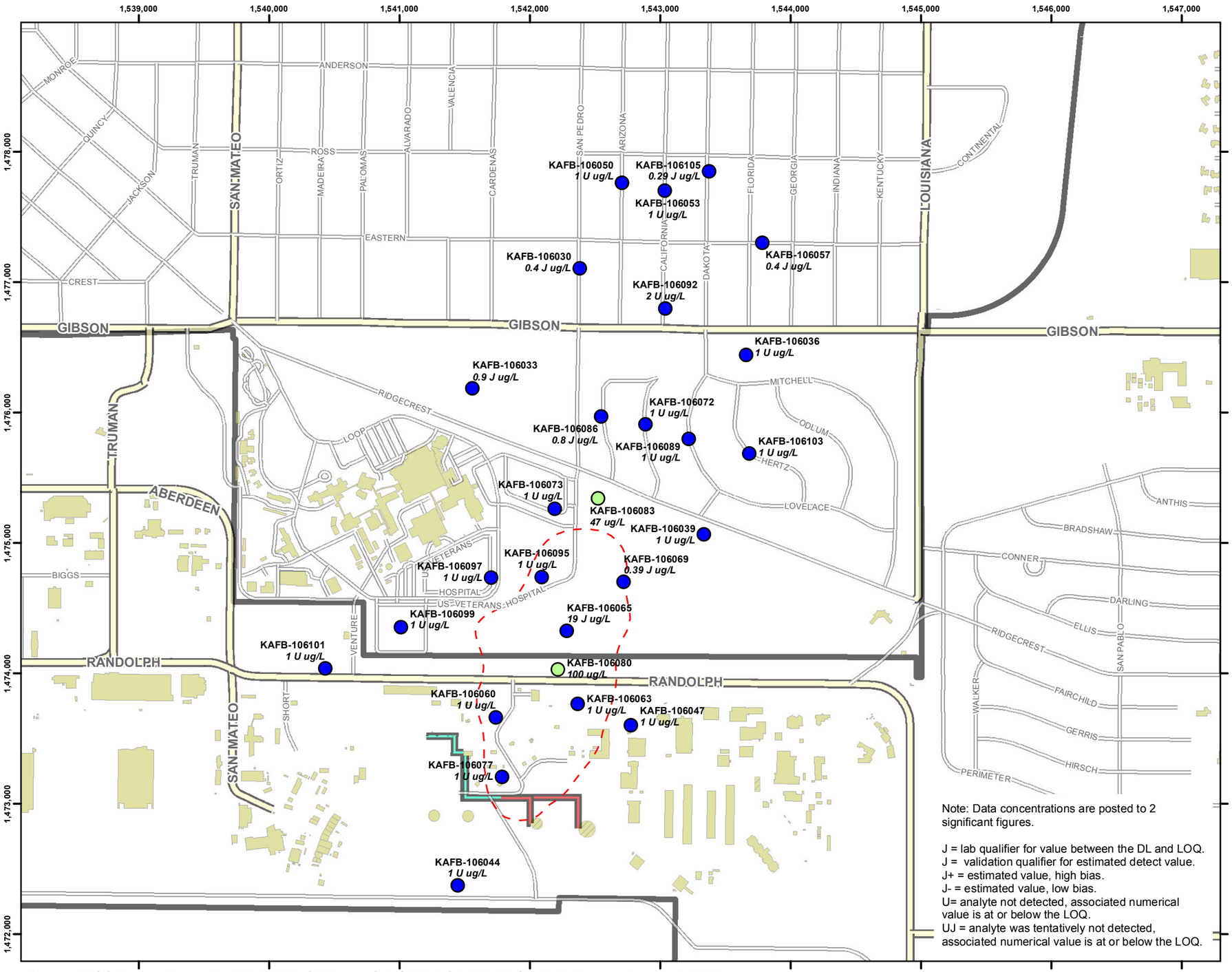
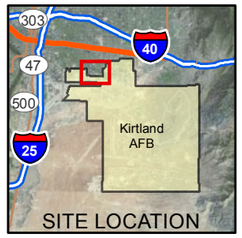



## Legend

1,2,4-Trimethylbenzene Result (ug/L)

- 0.29 - 35
- 36 - 100
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 04/26/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-26

1,2,4-TRIMETHYLBENZENE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_050_GW_124TMBZ_intermediate.mxd 04/26/12

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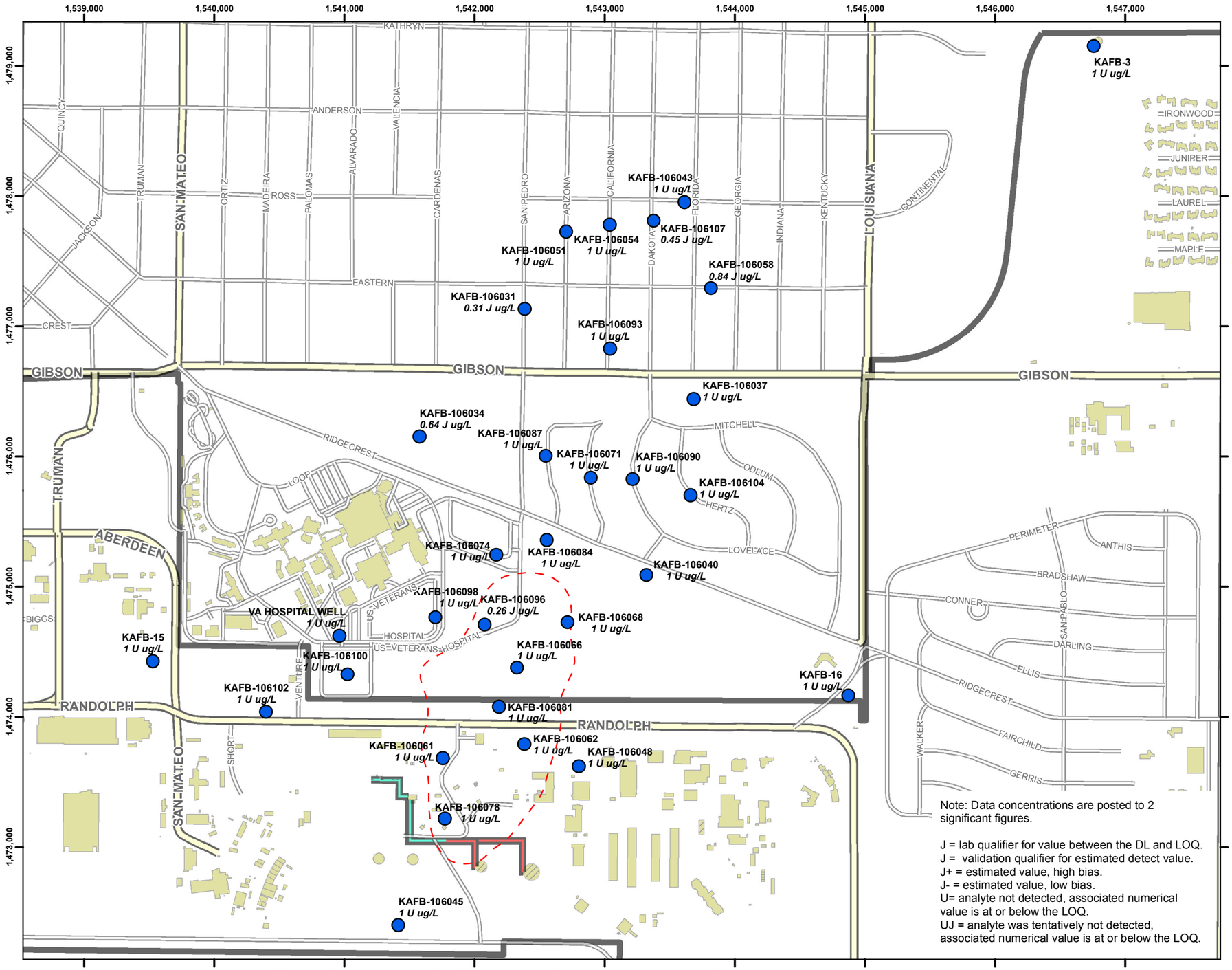
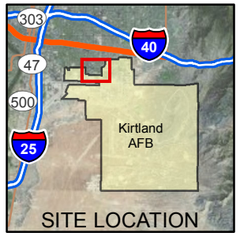



## Legend

1,2,4-Trimethylbenzene Result (ug/L)

- 0.26 - 1.0
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/10/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-27

1,2,4-TRIMETHYLBENZENE CONCENTRATIONS IN DEEP GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_051_GW_124TMBZ_deep.mxd 05/10/12

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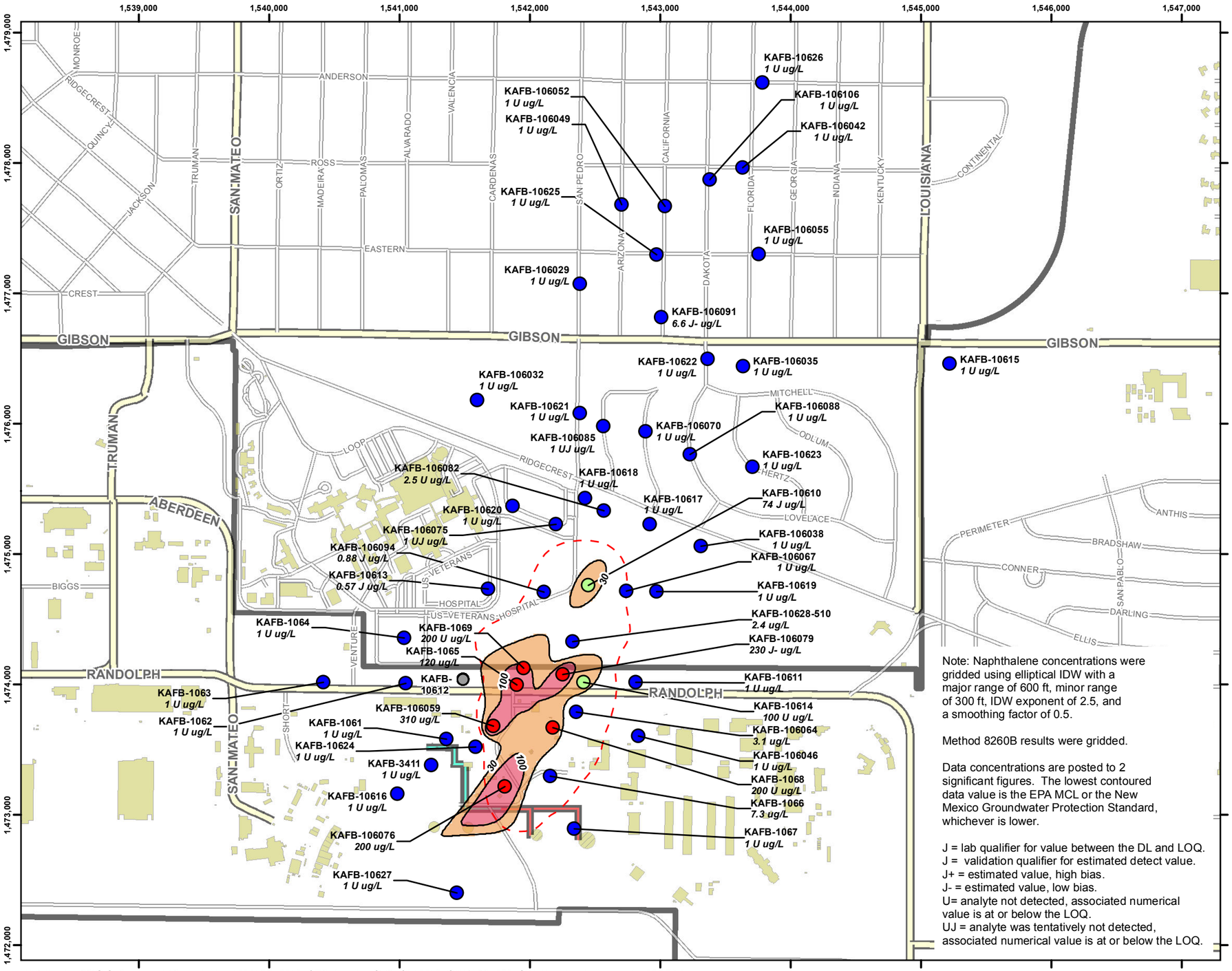



Note: Naphthalene concentrations were gridded using elliptical IDW with a major range of 600 ft, minor range of 300 ft, IDW exponent of 2.5, and a smoothing factor of 0.5.

Method 8260B results were gridded.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is the EPA MCL or the New Mexico Groundwater Protection Standard, whichever is lower.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

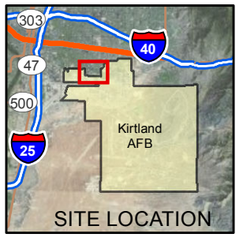
## Legend

Naphthalene Result (ug/L)

- 0.57 - 30
- 31 - 100
- 110 - 310
- Not Sampled
- Naphthalene Concentration Contour (ug/L)
- Historical Area of Observed NAPL (July 2009)

Naphthalene Concentration (ug/L)

- 0.5 - 30
- 30 - 100
- 100 - 304
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 05/07/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-28

NAPHTHALENE CONCENTRATIONS IN SHALLOW GROUNDWATER

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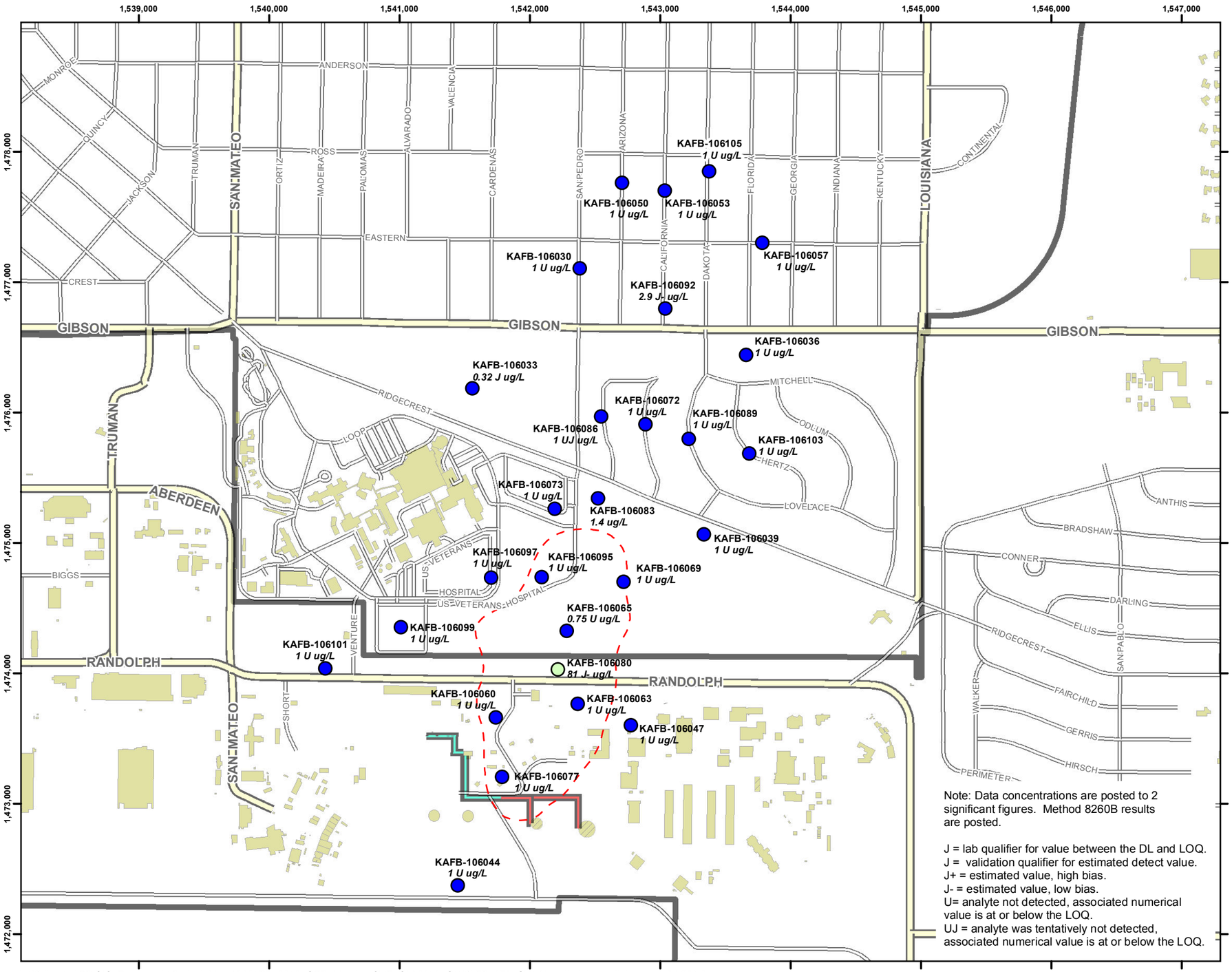
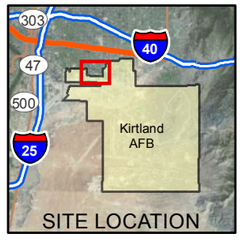



## Legend

Naphthalene Result (ug/L)

- 0.32 - 30
- 31 - 100
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 04/26/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures. Method 8260B results are posted.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-29

NAPHTHALENE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

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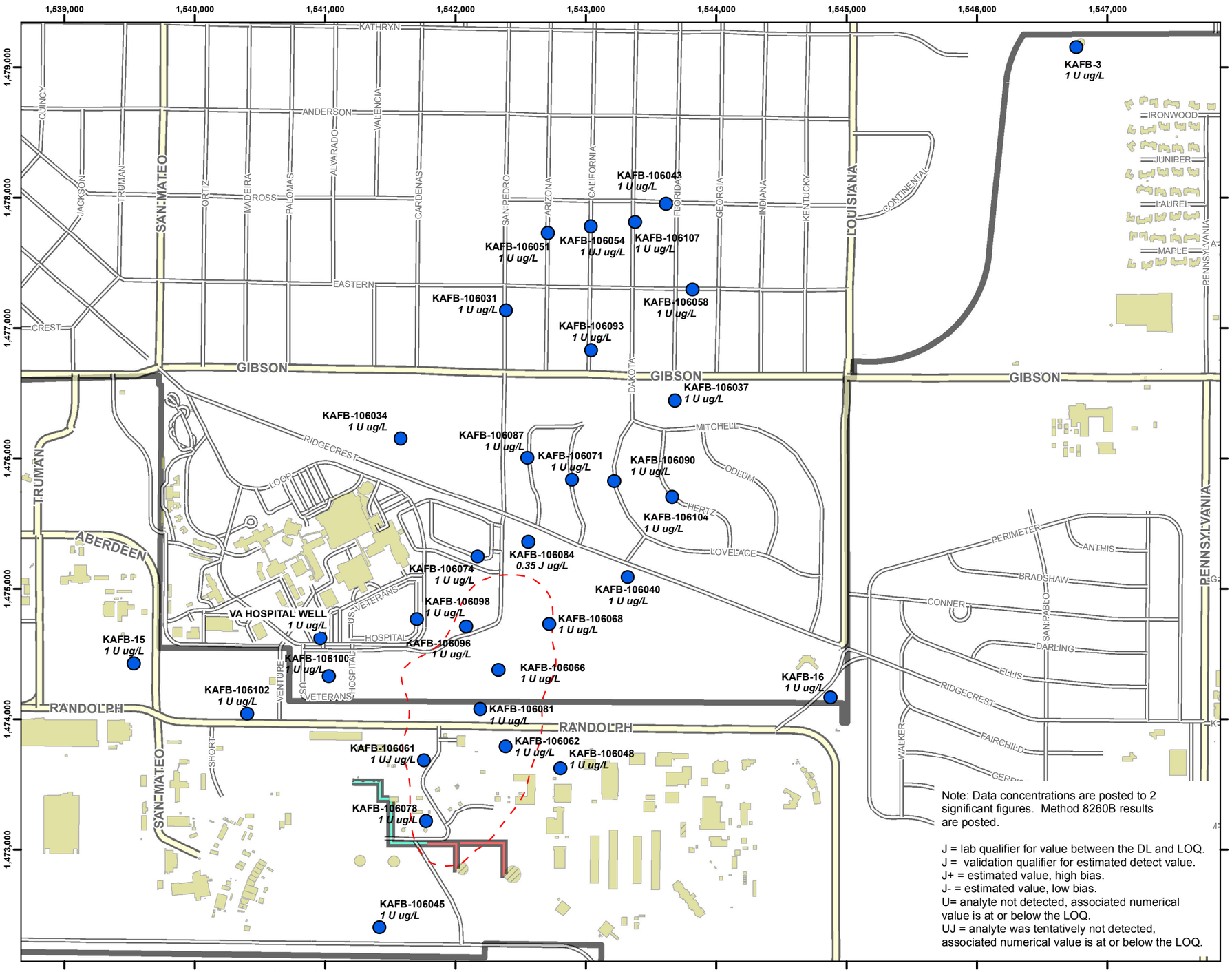


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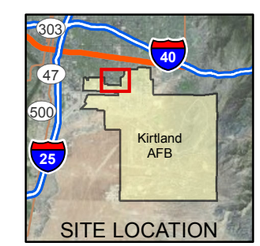
## Legend

Naphthalene Result (ug/L)

- 0.35 - 1.0
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/10/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures. Method 8260B results are posted.

J = lab qualifier for value between the DL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U= analyte not detected, associated numerical value is at or below the LOQ.
UJ = analyte was tentatively not detected, associated numerical value is at or below the LOQ.

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FIGURE 5-30

NAPHTHALENE CONCENTRATIONS IN DEEP GROUNDWATER

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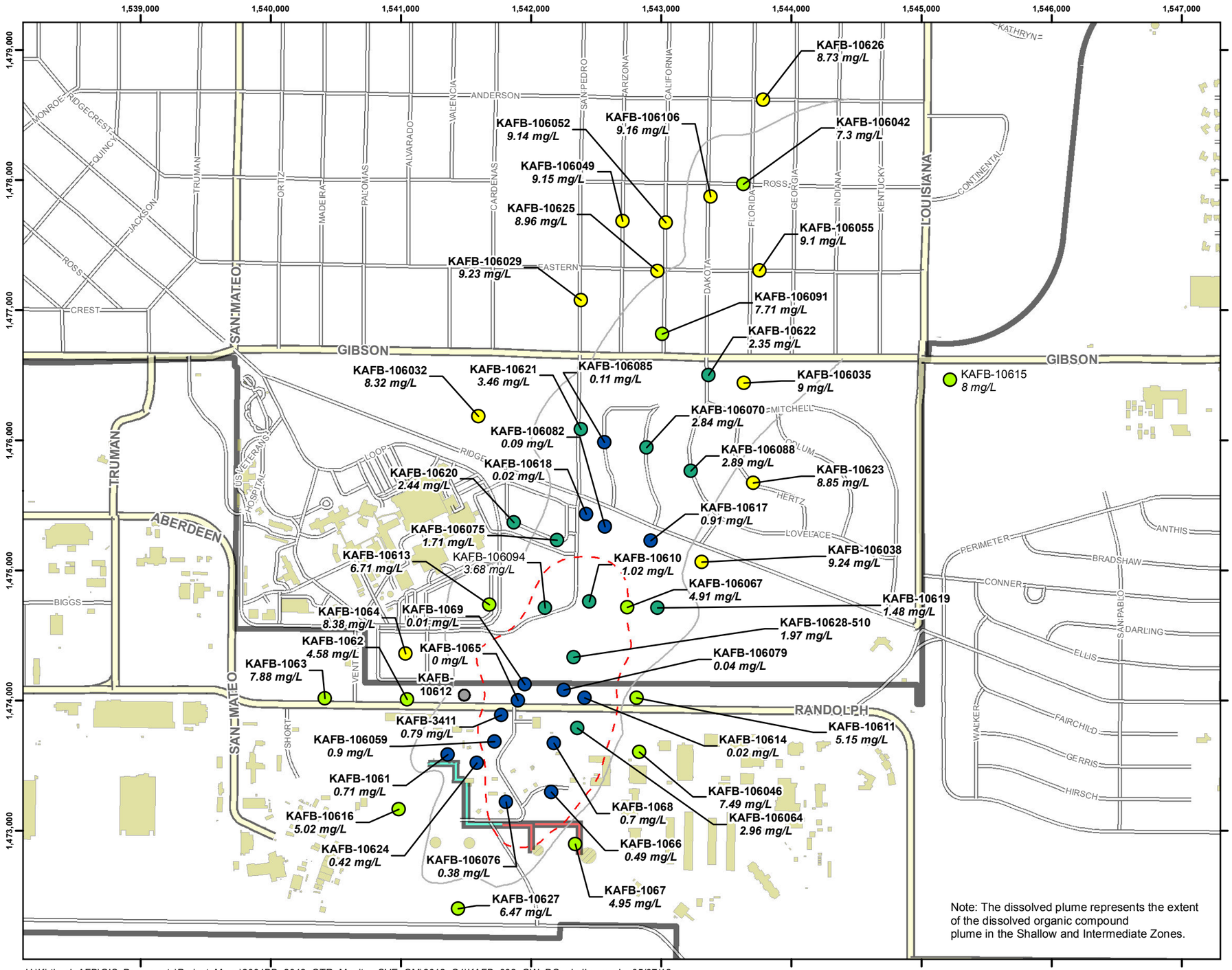


Note: The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

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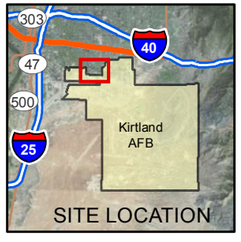
## Legend

Dissolved Oxygen (mg/L)

Shallow Groundwater

- 0.00 - 1.00
- 1.01 - 4.00
- 4.01 - 8.00
- 8.01 - 9.24
- Not Sampled
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2011
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 05/07/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-31

DISSOLVED OXYGEN CONCENTRATIONS IN SHALLOW GROUNDWATER

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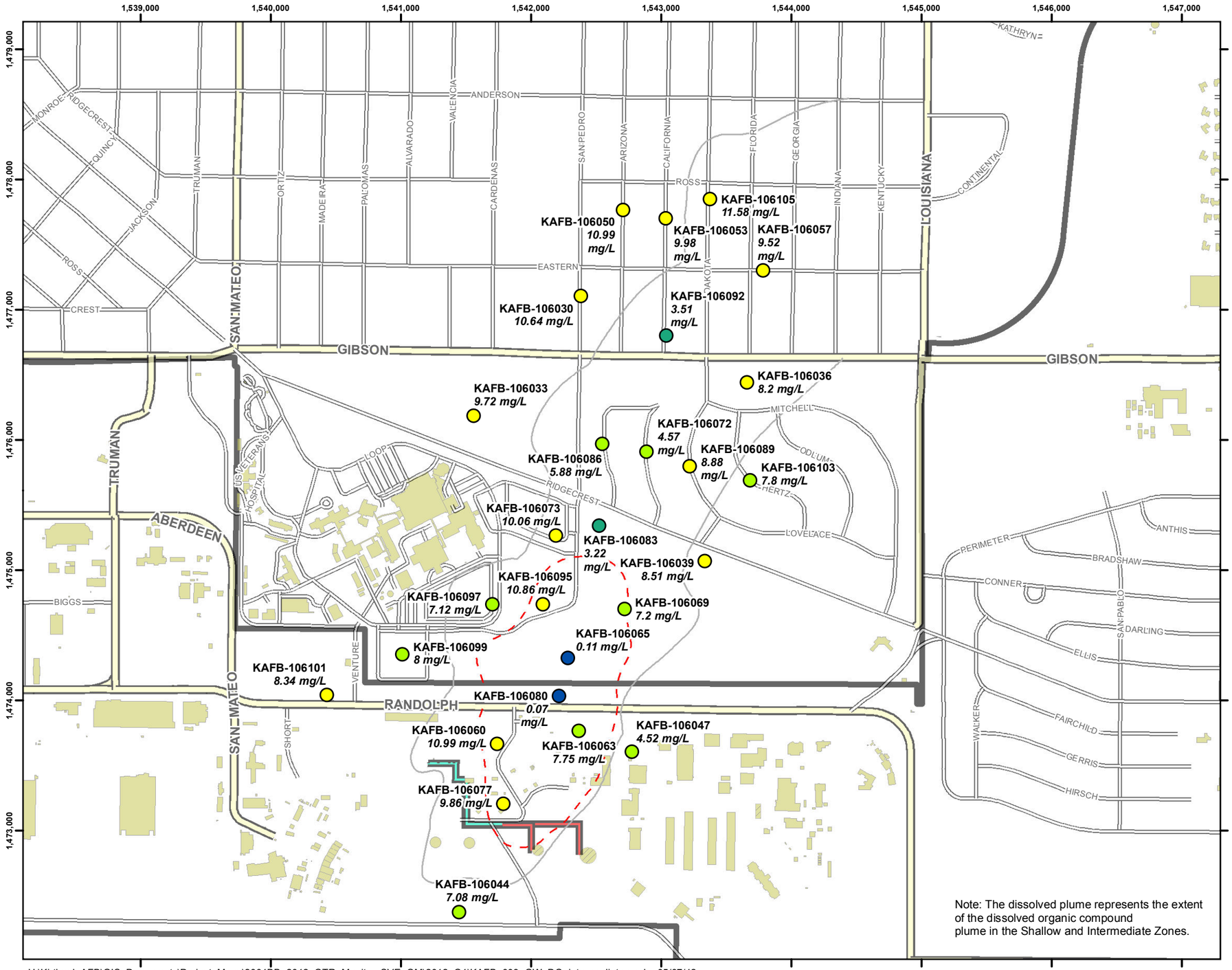


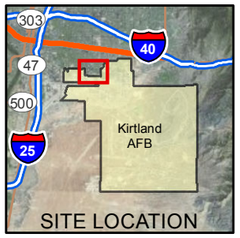

Note: The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

## Legend

Dissolved Oxygen (mg/L)

Intermediate Groundwater

- 0.07 - 1.00
- 1.01 - 4.00
- 4.01 - 8.00
- 8.01 - 11.58
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/07/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

2012 QUARTERLY REPORT 01
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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-32

DISSOLVED OXYGEN CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

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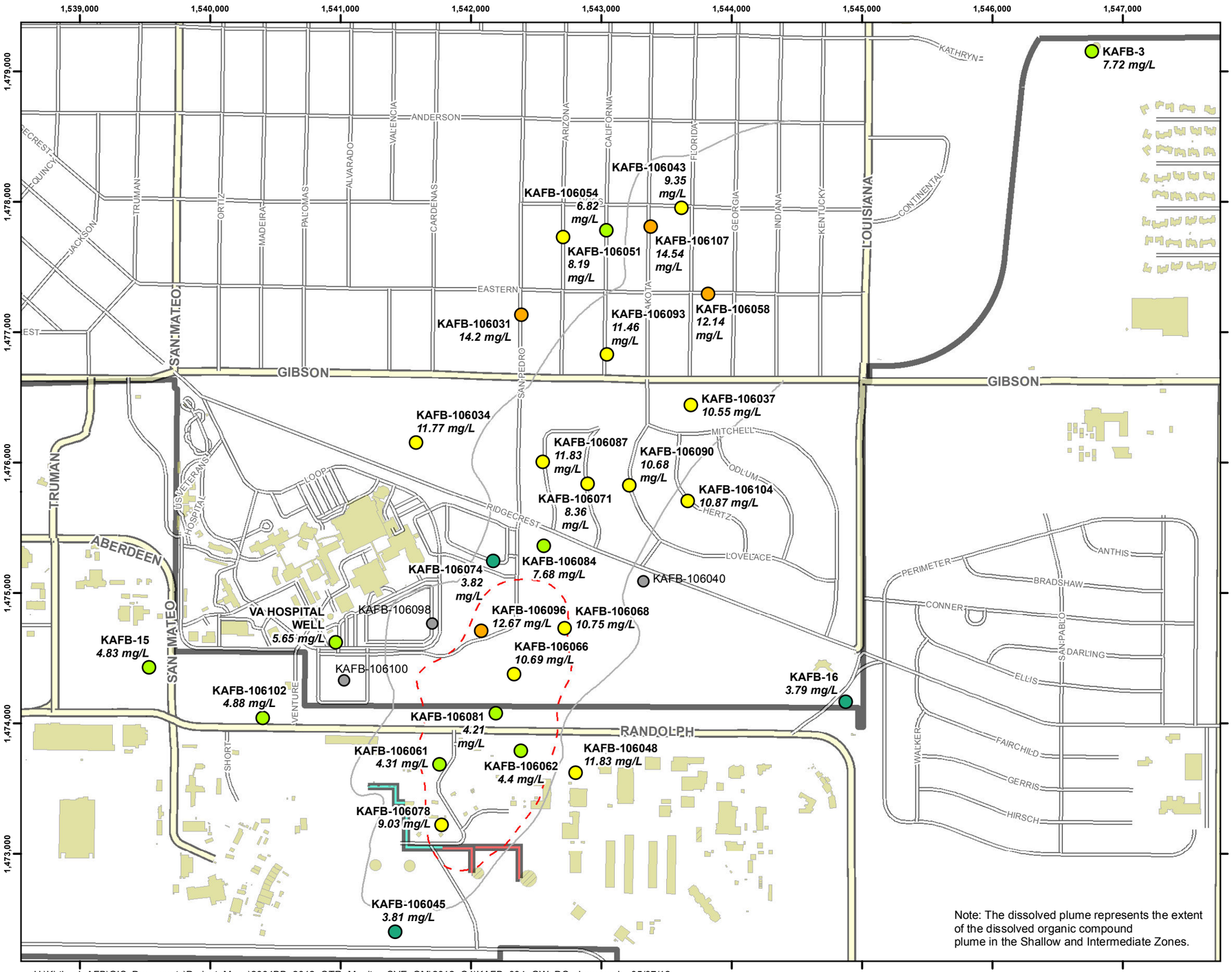


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FIGURE 5-33

DISSOLVED OXYGEN CONCENTRATIONS IN DEEP GROUNDWATER

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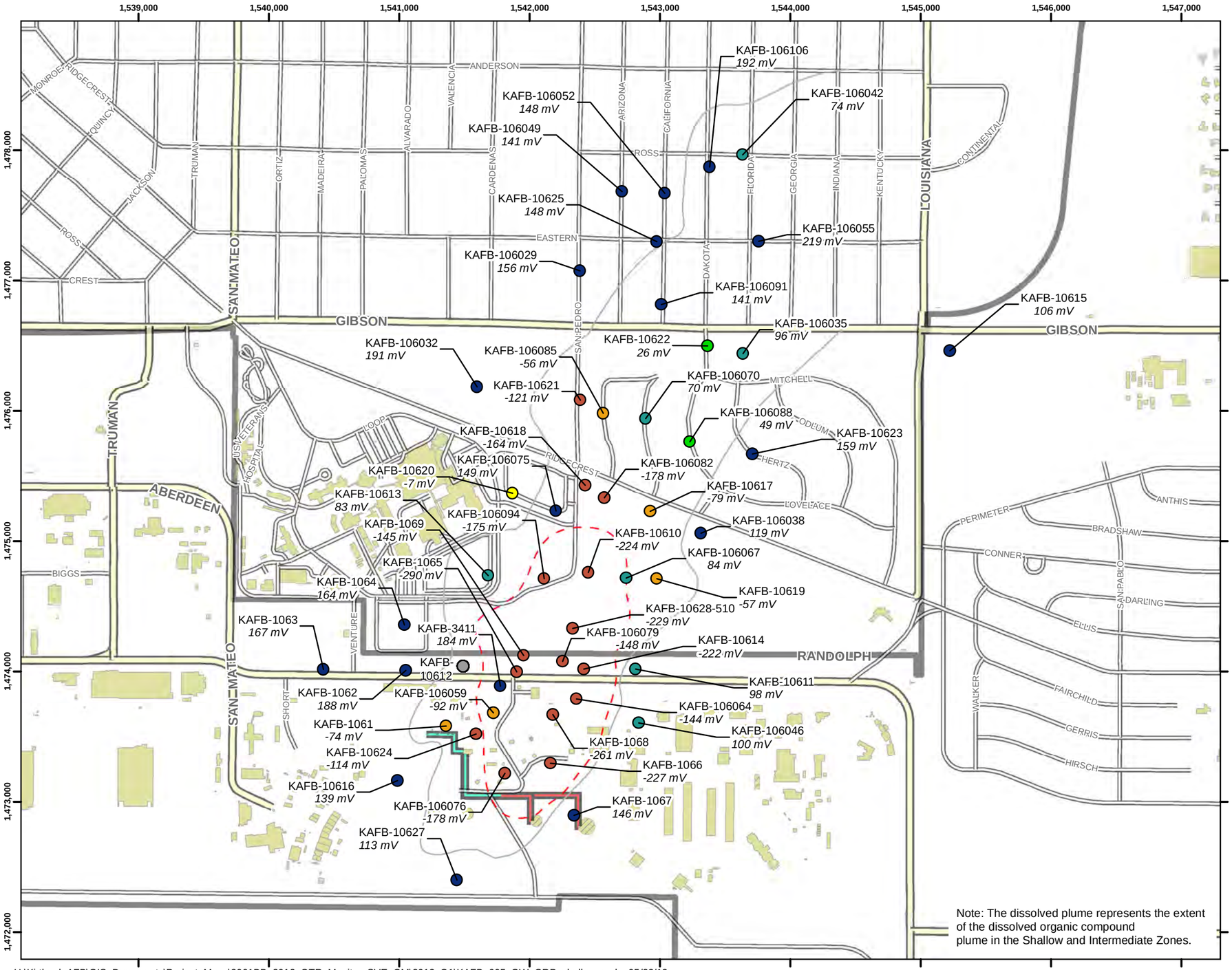


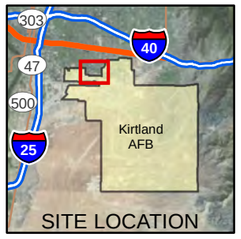

Note: The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

**Legend**

Oxidation-Reduction Potential (mV)

Shallow Groundwater

- -269 - -100
- -99 - -50
- -49 - 0
- 1 - 50
- 51 - 100
- 101 - 219
- Not Sampled
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 05/23/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-34

OXIDATION-REDUCTION POTENTIAL IN SHALLOW GROUNDWATER

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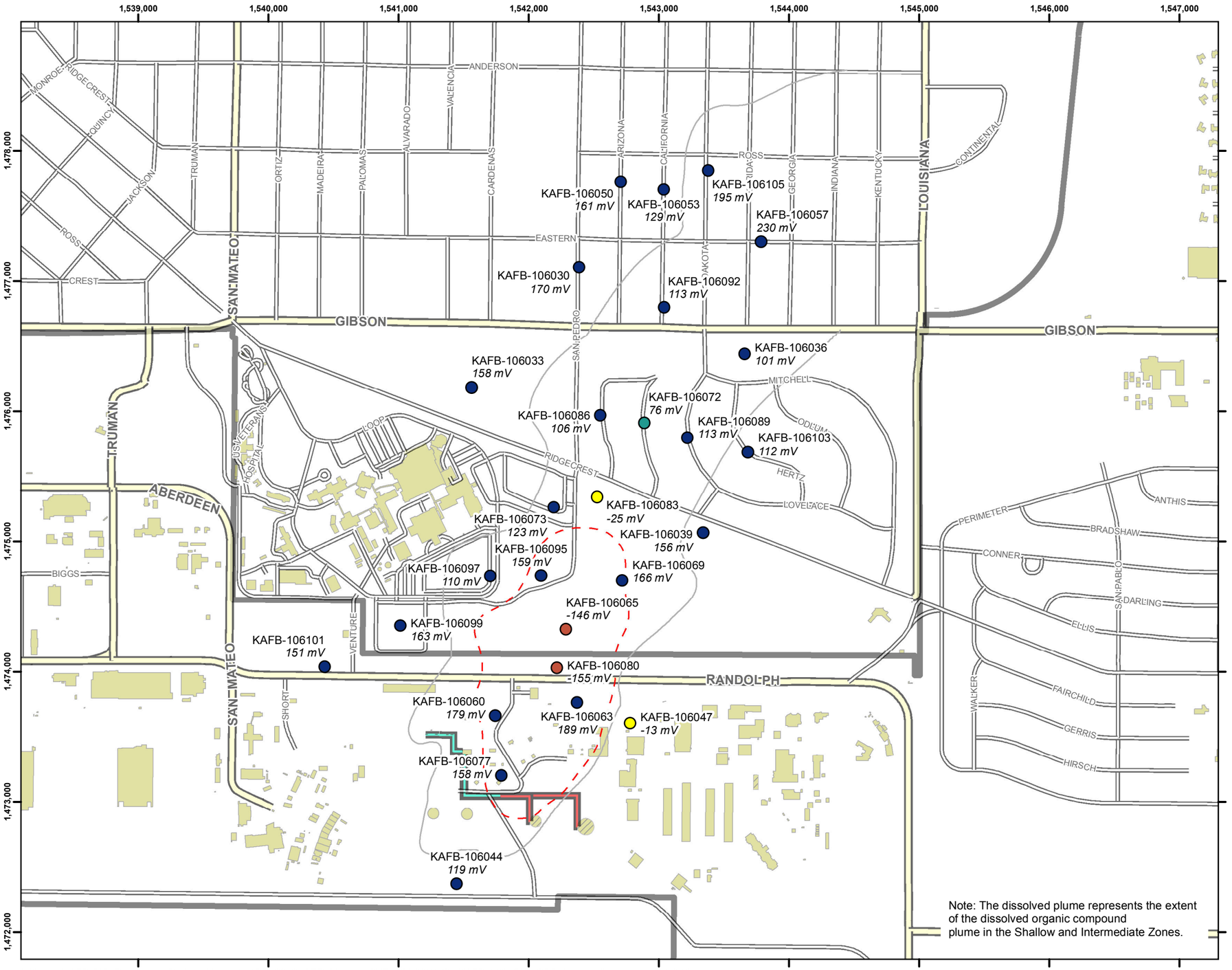


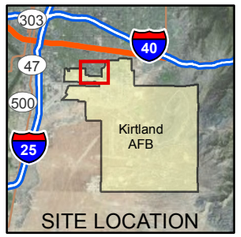

Note: The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

**Legend**

**Oxidation-Reduction Potential (mV)**

**Intermediate Groundwater**

- -155- -100
- -99 - -50
- -49 - 0
- 0 - 50
- 51 - 100
- 101 - 230
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 04/29/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-35

OXIDATION-REDUCTION POTENTIAL IN INTERMEDIATE GROUNDWATER

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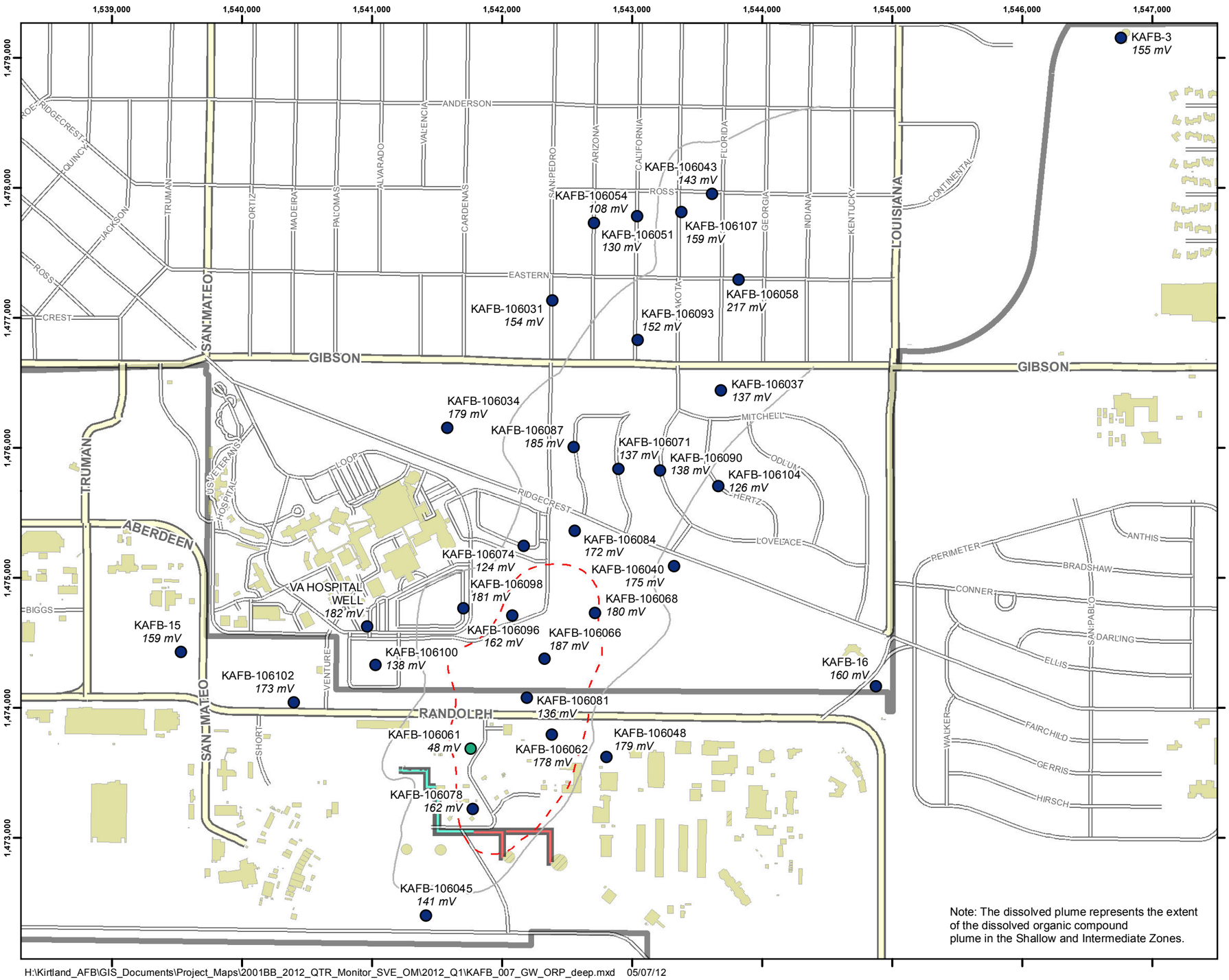


Note: The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

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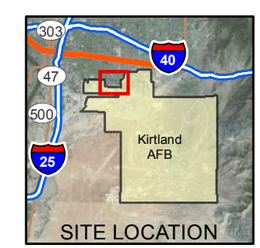
**Legend**

Oxidation-Reduction Potential (mV)

Deep Groundwater

- 48 - 100
- 101 - 217
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 05/07/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-36

OXIDATION-REDUCTION POTENTIAL IN DEEP GROUNDWATER

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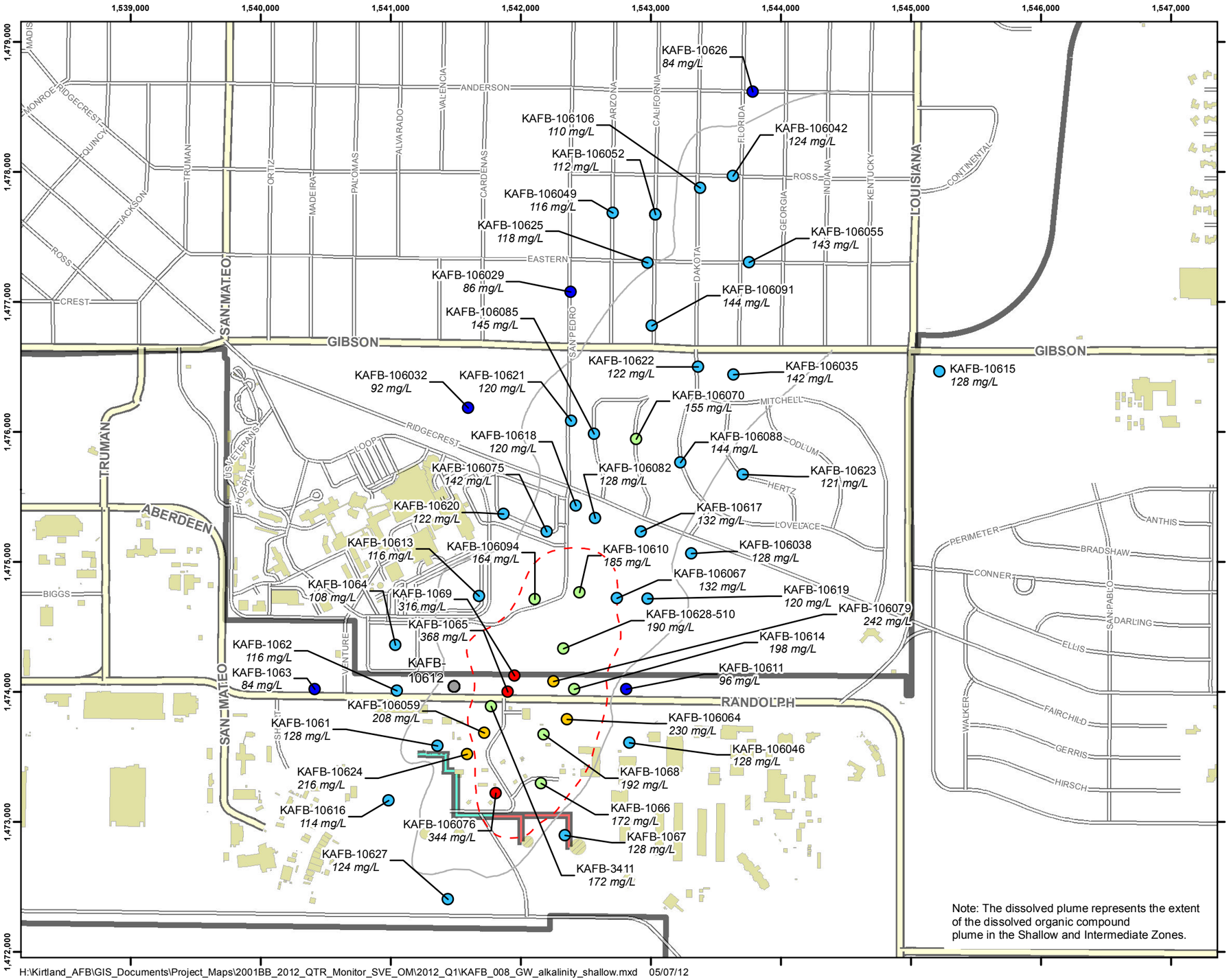
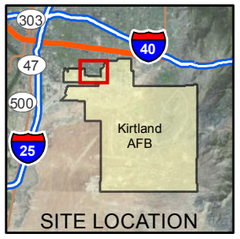



## Legend

Alkalinity (mg/L)

Shallow Groundwater

- 84 - 100
- 101 - 150
- 151 - 200
- 201 - 250
- 251 - 368
- Not Sampled
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/07/12

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-37

ALKALINITY, BICARBONATE (as $CaCO_3$), CONCENTRATIONS IN SHALLOW GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_008_GW_alkalinity_shallow.mxd 05/07/12

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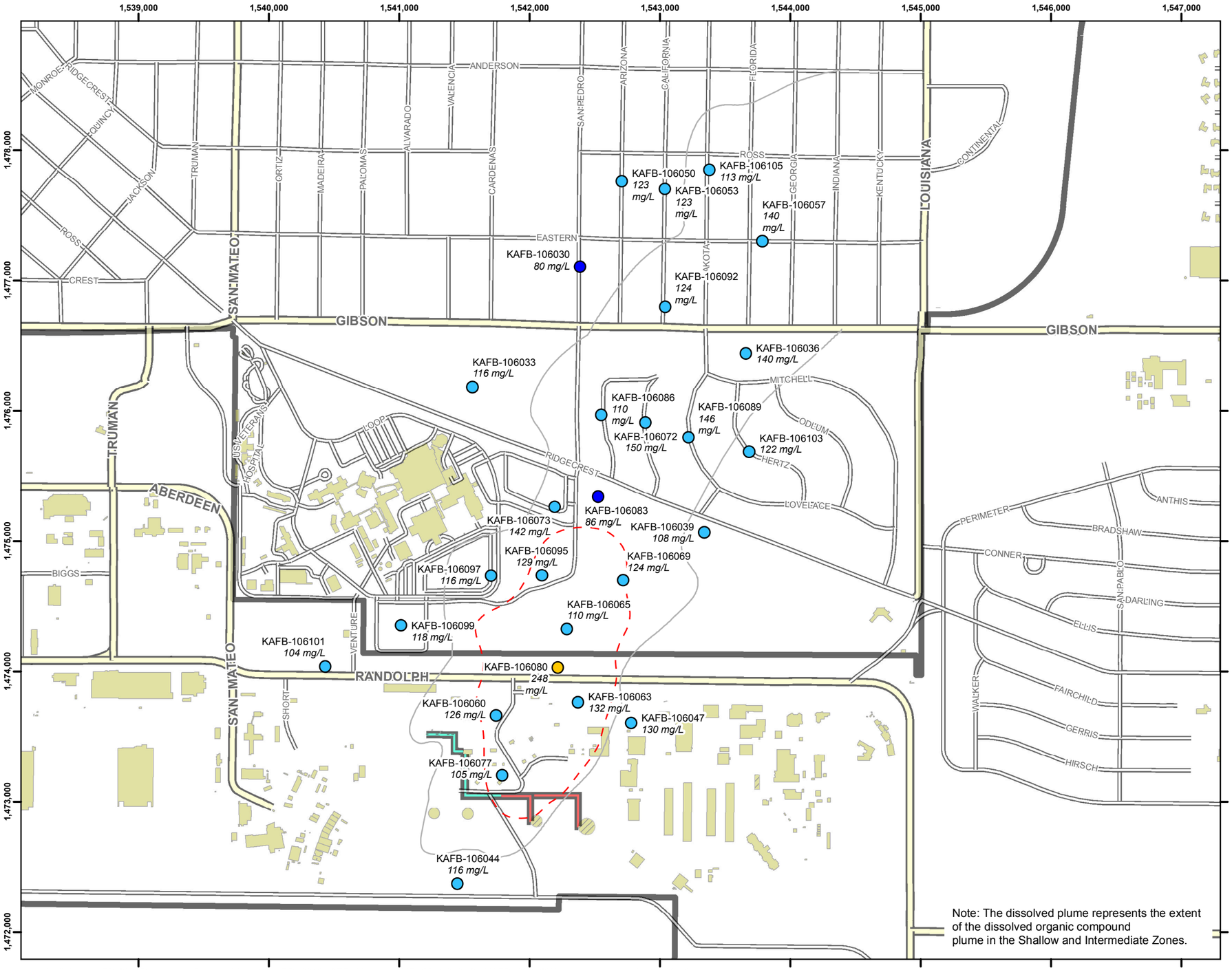
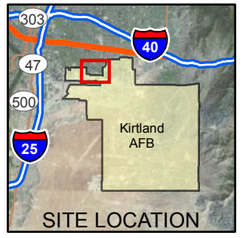



## Legend

Alkalinity (mg/L)

Intermediate Groundwater

- 80 - 100
- 101 - 150
- 151 - 200
- 201 - 248
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 04/29/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-38

ALKALINITY, BICARBONATE (as $CaCO_3$), CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_009_GW_alkalinity_int.mxd 04/29/12

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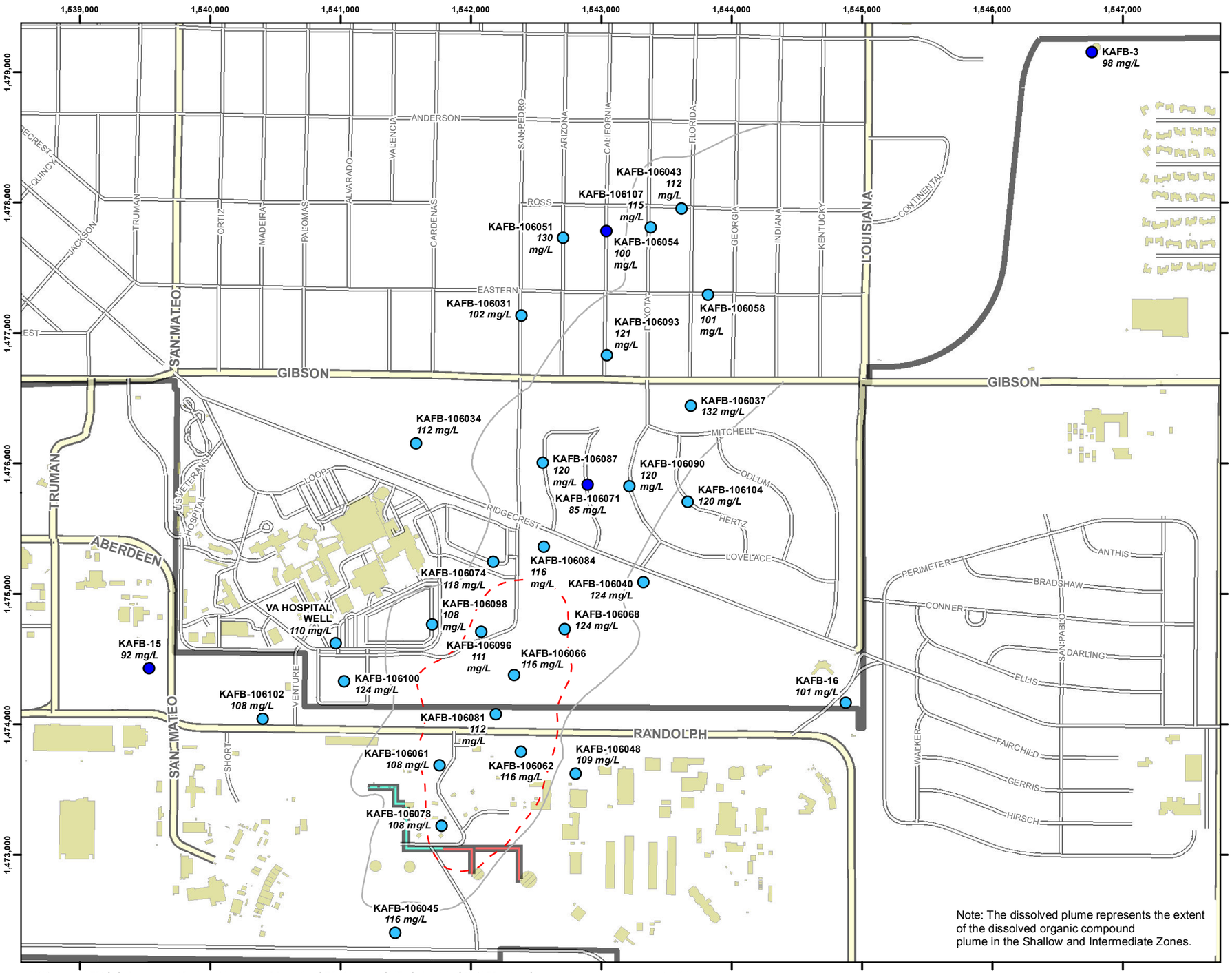
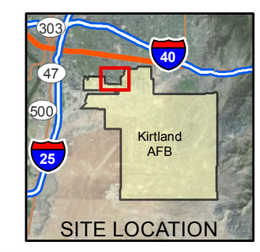



## Legend

Alkalinity (mg/L)

Deep Groundwater

- 85 - 100
- 101 - 132
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 05/07/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-39

ALKALINITY, BICARBONATE (as $CaCO_3$), CONCENTRATIONS IN DEEP GROUNDWATER

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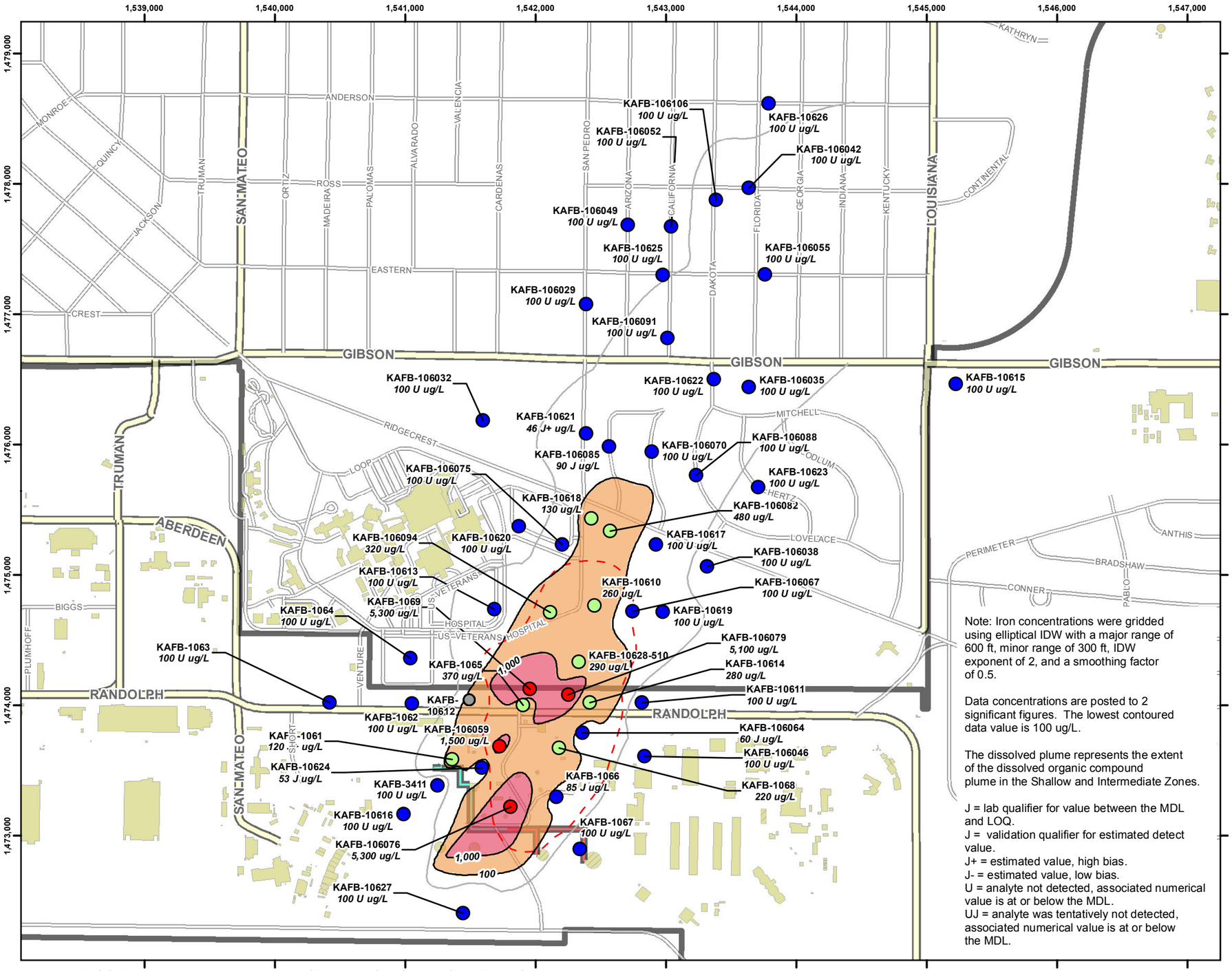
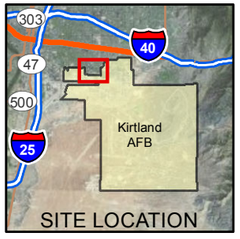



## Legend

Iron Result (ug/L)
- 41 - 100
- 110 - 1,000
- 1,100 - 5,300
- Not Sampled
- Iron Concentration Contour (ug/L)
- Historical Area of Observed NAPL (July 2009)

Iron Concentration (ug/L)
- 46 - 100
- 100- 1,000
- 1,000 - 5,300
- Dissolved Plume March 2012

- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Iron concentrations were gridded using elliptical IDW with a major range of 600 ft, minor range of 300 ft, IDW exponent of 2, and a smoothing factor of 0.5.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is 100 ug/L.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

Revision Date: 05/07/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-40

IRON CONCENTRATIONS
IN SHALLOW GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_025_GW_Fe_shallow.mxd 05/07/12

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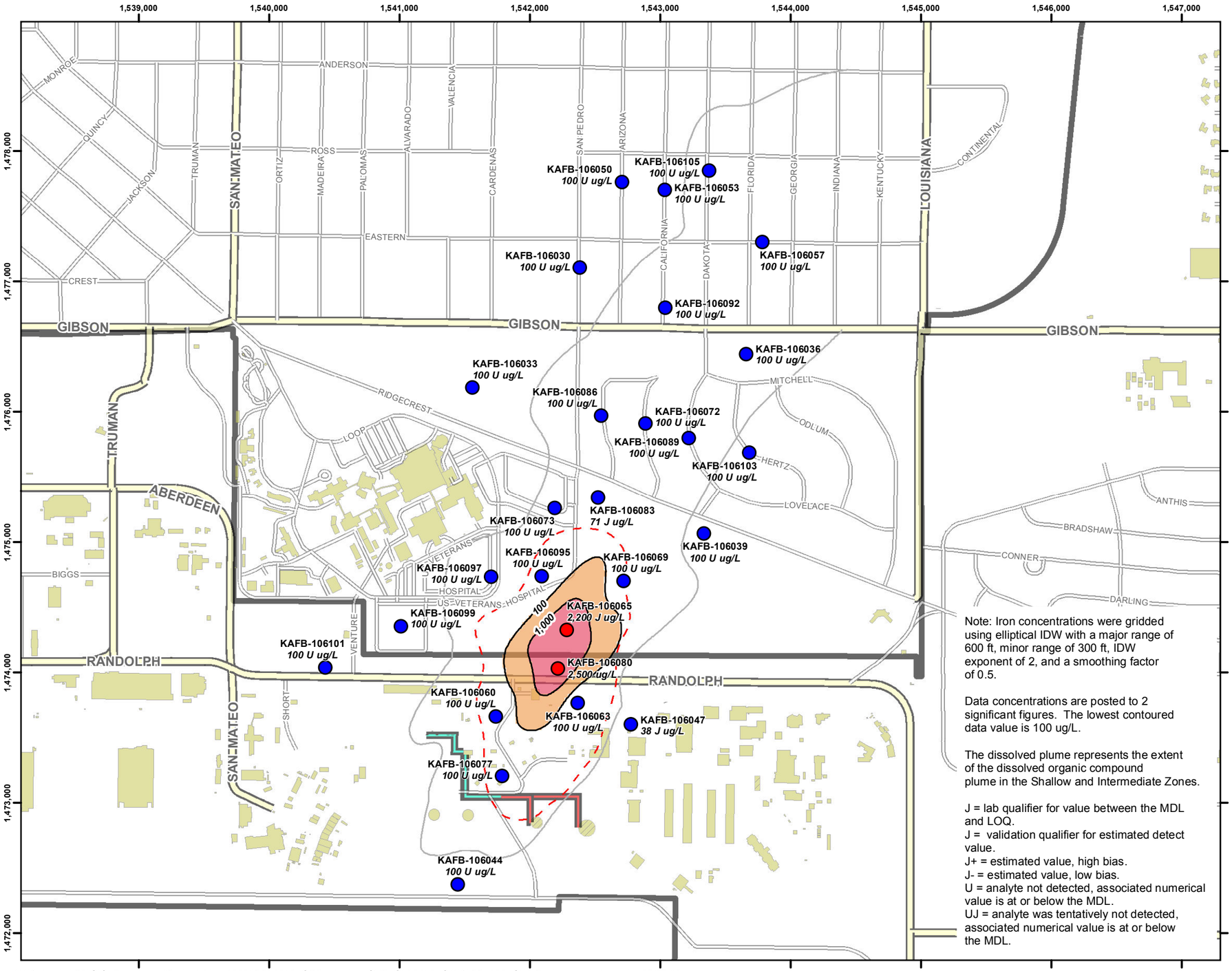



Note: Iron concentrations were gridded using elliptical IDW with a major range of 600 ft, minor range of 300 ft, IDW exponent of 2, and a smoothing factor of 0.5.

Data concentrations are posted to 2 significant figures. The lowest contoured data value is 100 ug/L.

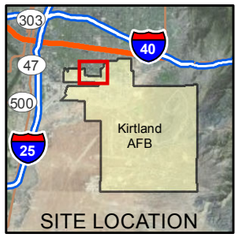
The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

## Legend

Iron Result (ug/L)
- 38 - 100
- 110 - 1,000
- 1,100 - 2,500
- Iron Concentration Contour (ug/L)

Iron Concentration (ug/L)
- 42- 100
- 100 - 1,000
- 1,000 - 2,500
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




N

Revision Date: 05/07/12

0 400 800 1,600
Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

2012 QUARTERLY REPORT 01
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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-41

IRON CONCENTRATIONS
IN INTERMEDIATE GROUNDWATER

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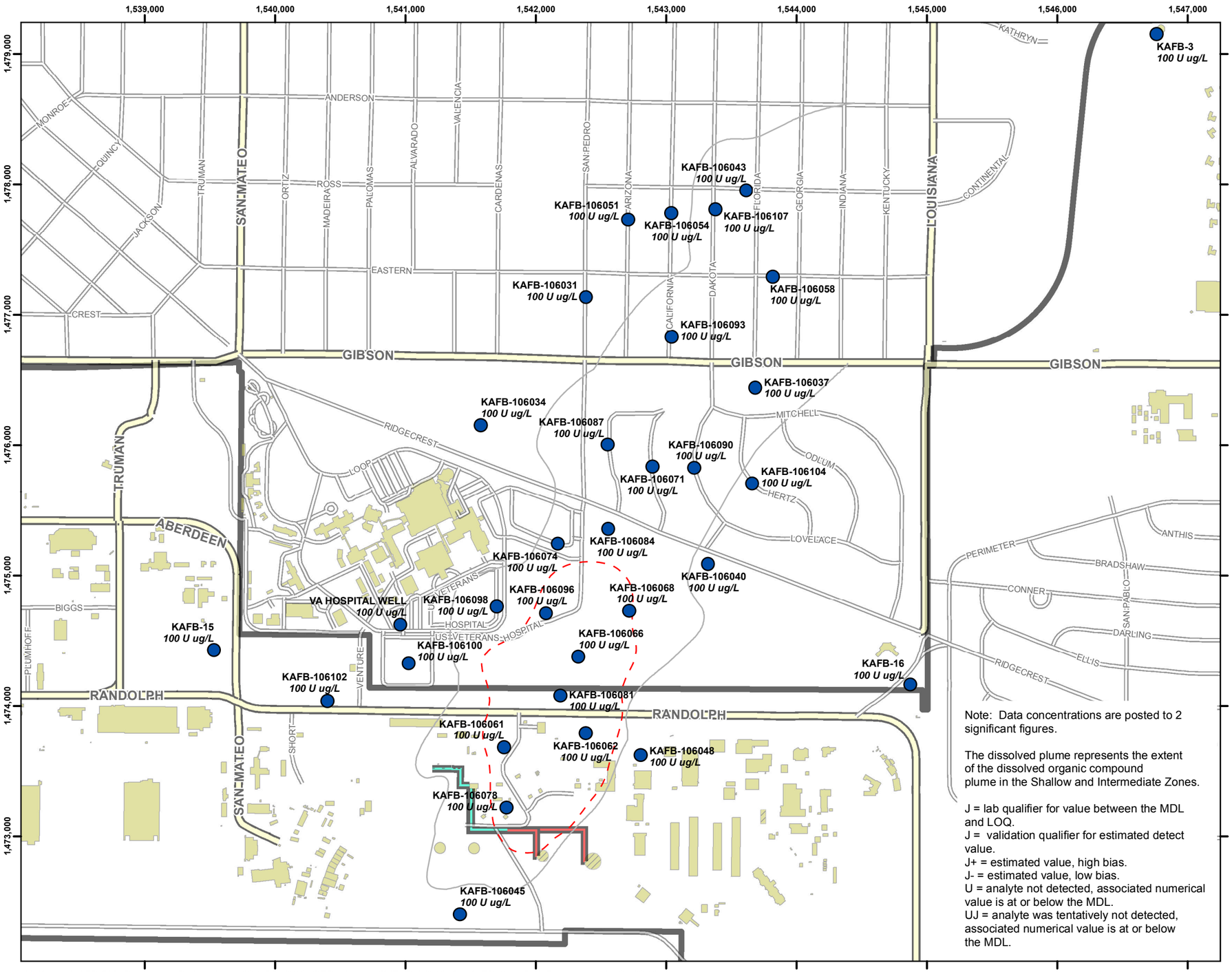
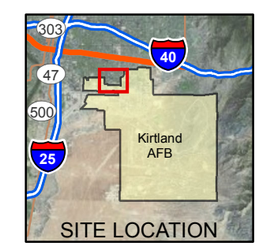



## Legend

Iron Result (ug/L)

- 100
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 04/29/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

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FIGURE 5-42

IRON CONCENTRATIONS
IN DEEP GROUNDWATER

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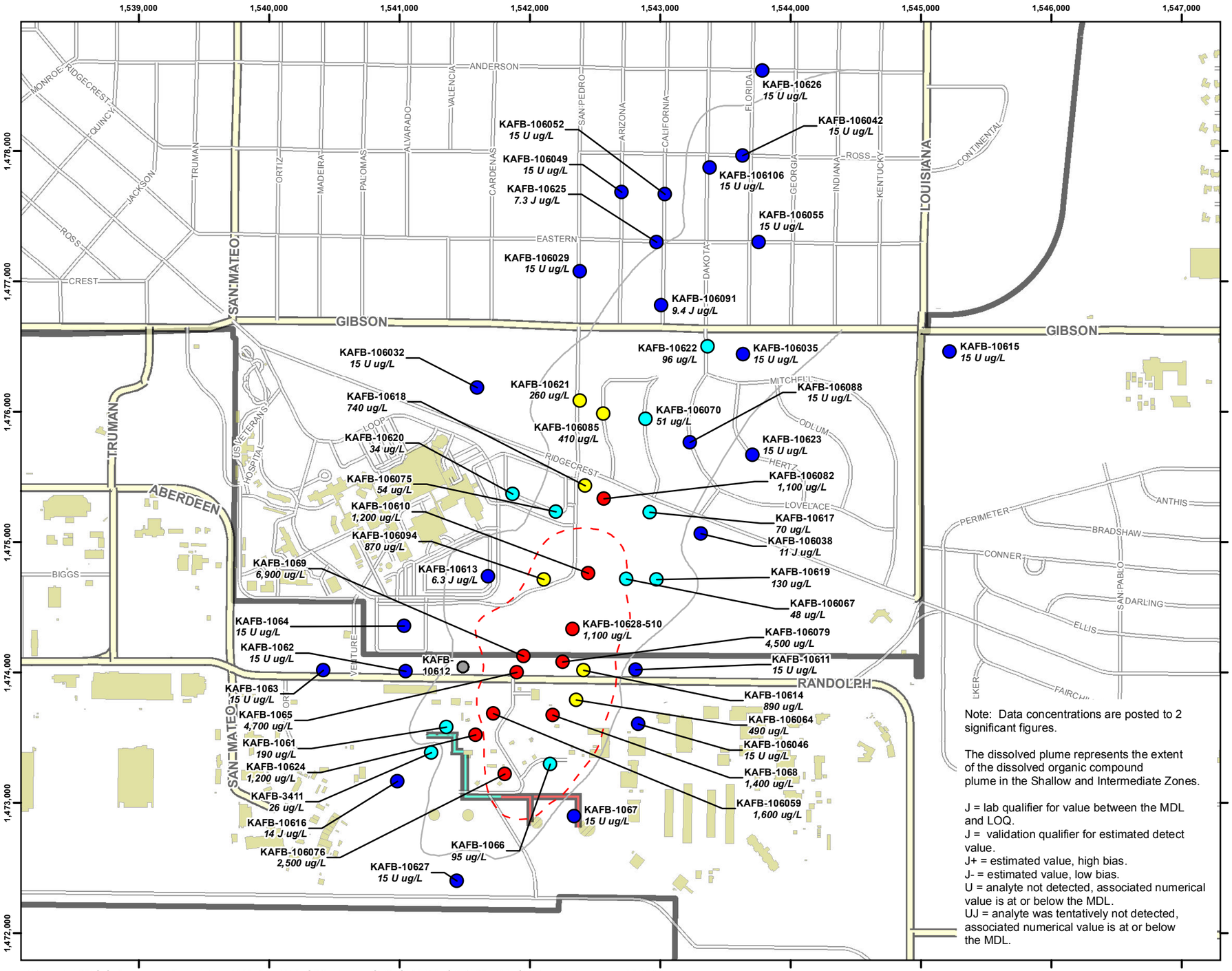
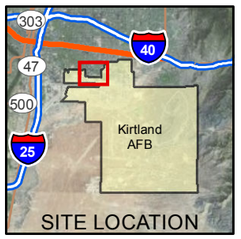



## Legend

**Manganese Result (ug/L)**

- 6.3 - 15
- 16 - 200
- 210 - 1,000
- 1,100 - 6,900
- Not Sampled
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

Revision Date: 05/07/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-43

MANGANESE CONCENTRATIONS IN SHALLOW GROUNDWATER

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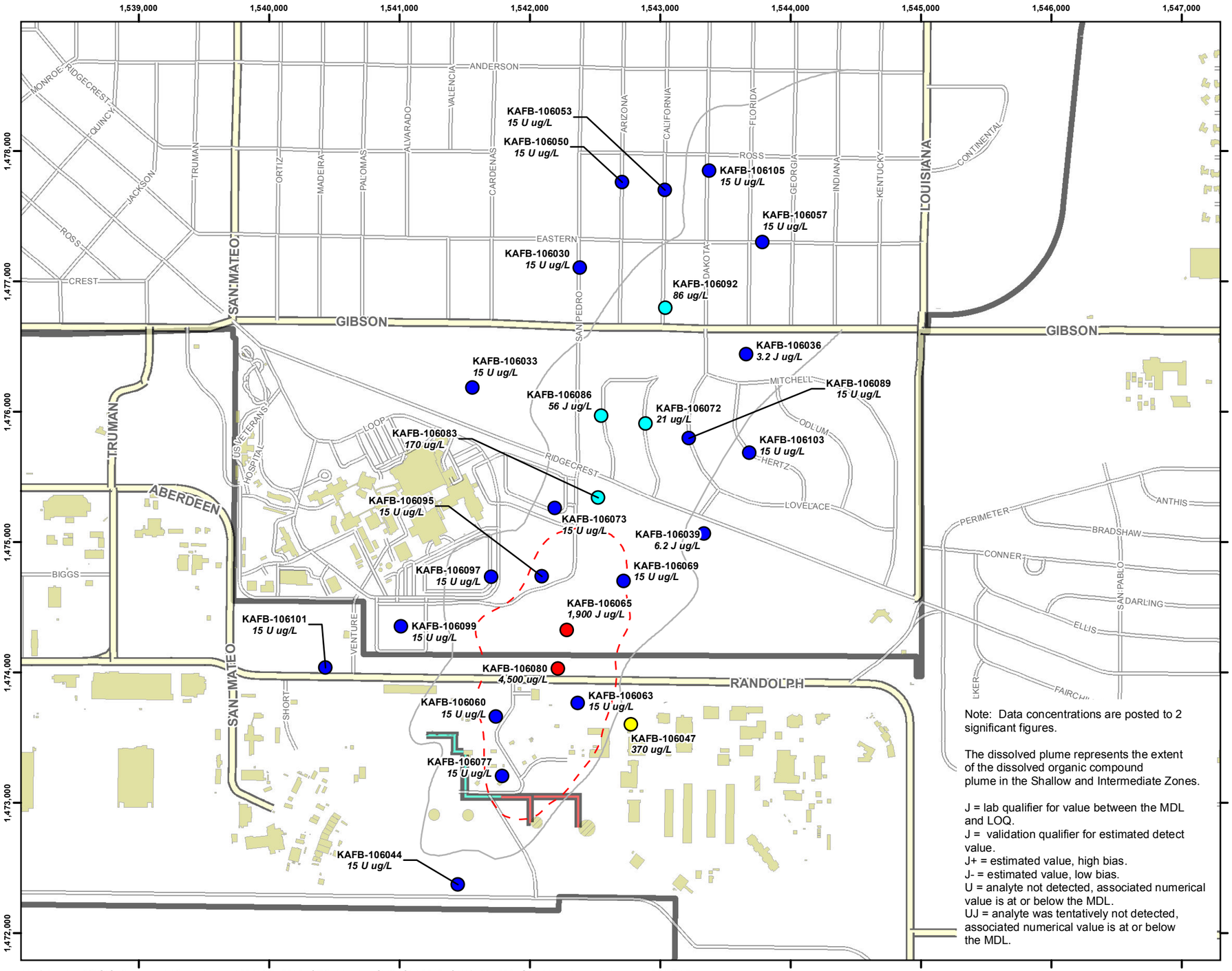
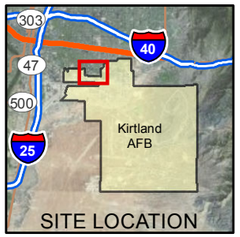



## Legend

**Manganese Result (ug/L)**

- 3.2 - 15
- 16 - 200
- 210 - 1,000
- 1,100 - 4,500
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

N

Revision Date: 05/07/12

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-44

MANGANESE CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

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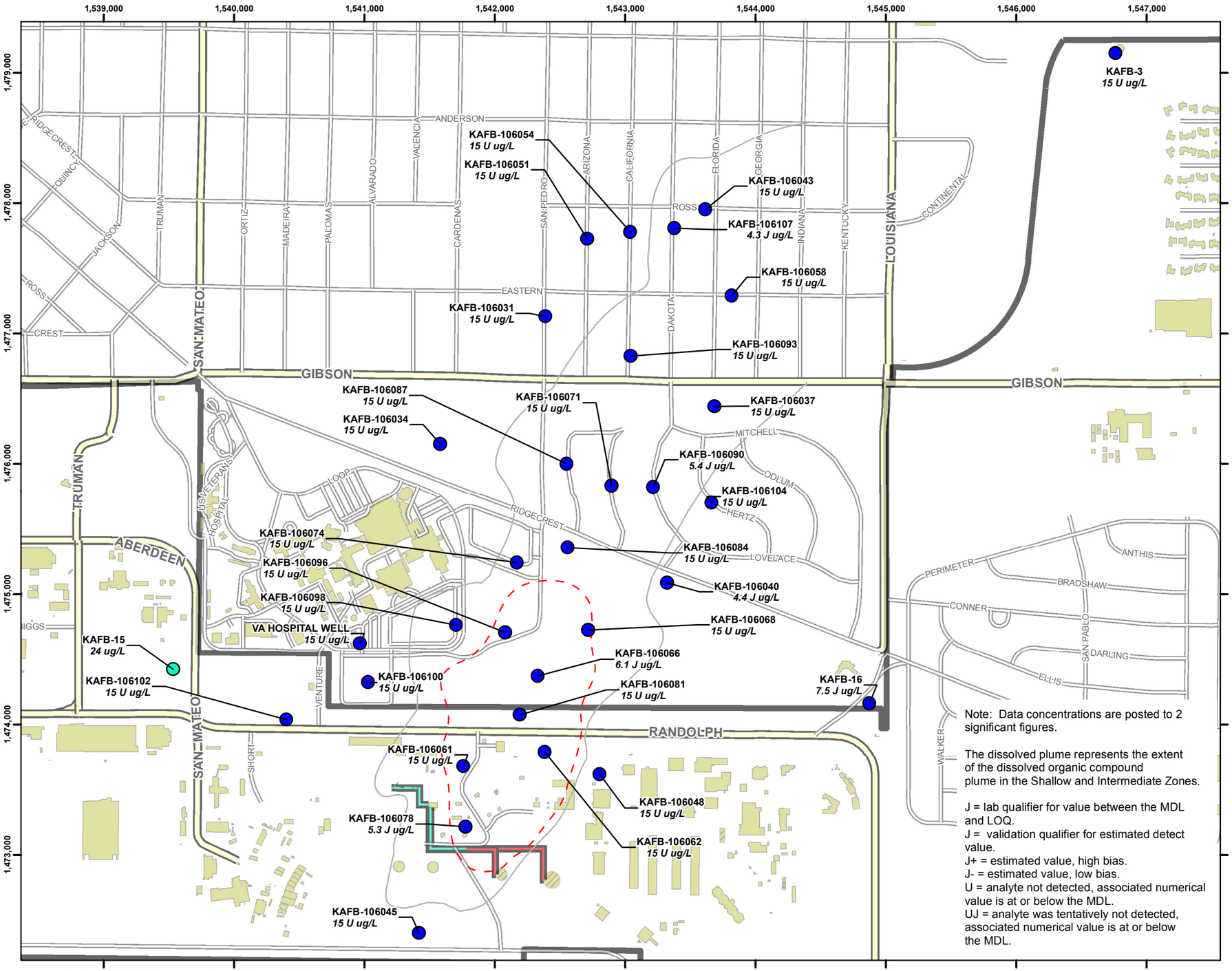
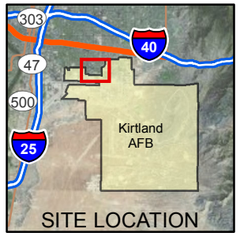



## Legend

**Manganese Result (ug/L)**

- 4.3 - 15
- 16 - 200
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

N

Revision Date: 05/10/12

0 400 800 1,600
Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-45

MANGANESE CONCENTRATIONS IN DEEP GROUNDWATER

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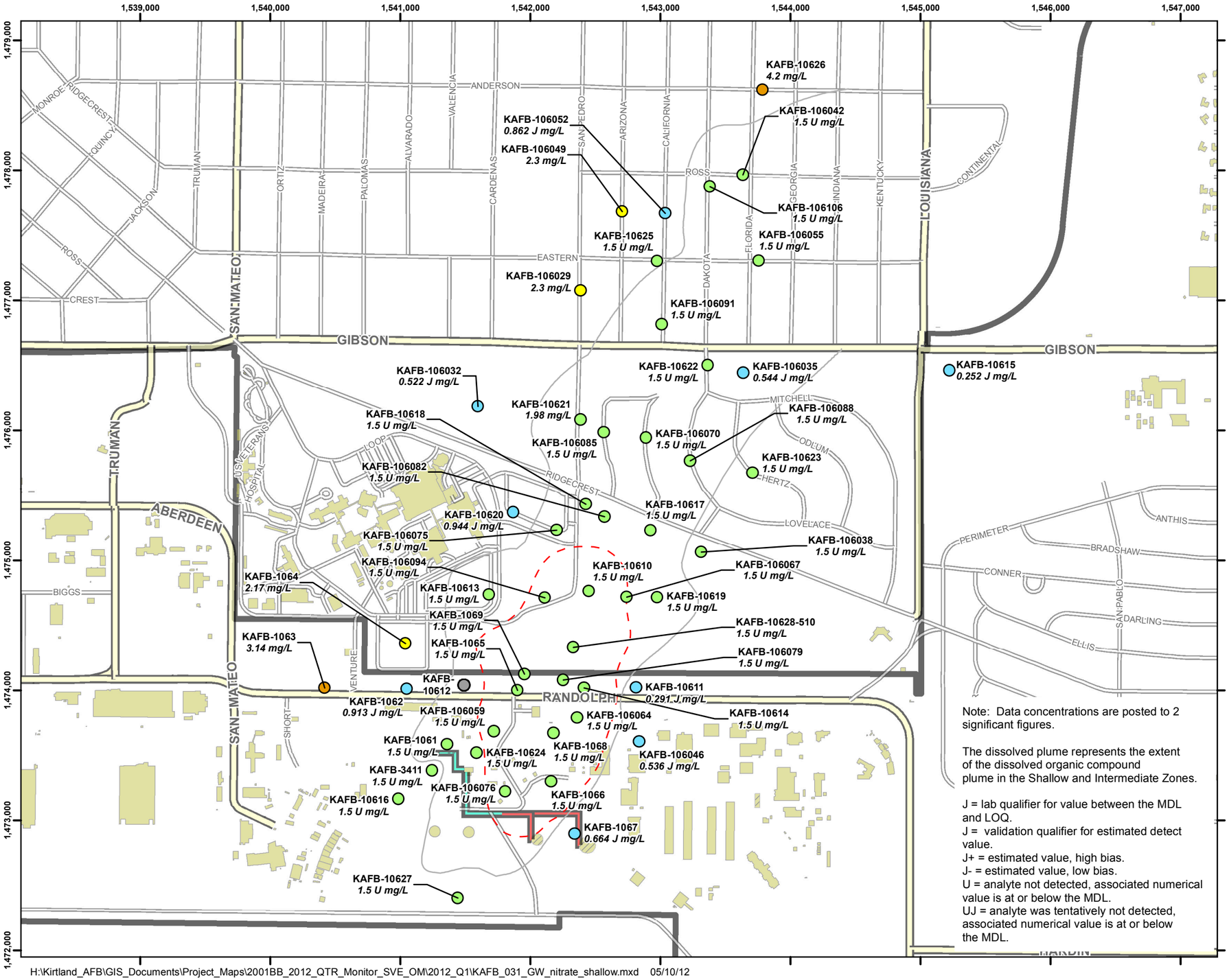


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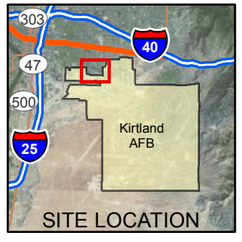
## Legend

**Nitrogen Result (mg/L)**

- 0.25 - 1.0
- 1.1 - 2.0
- 2.1 - 3.0
- 3.1 - 4.2
- Not Sampled
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

Revision Date: 05/10/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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FIGURE 5-46

NITROGEN (NITRATE-NITRITE) CONCENTRATIONS IN SHALLOW GROUNDWATER

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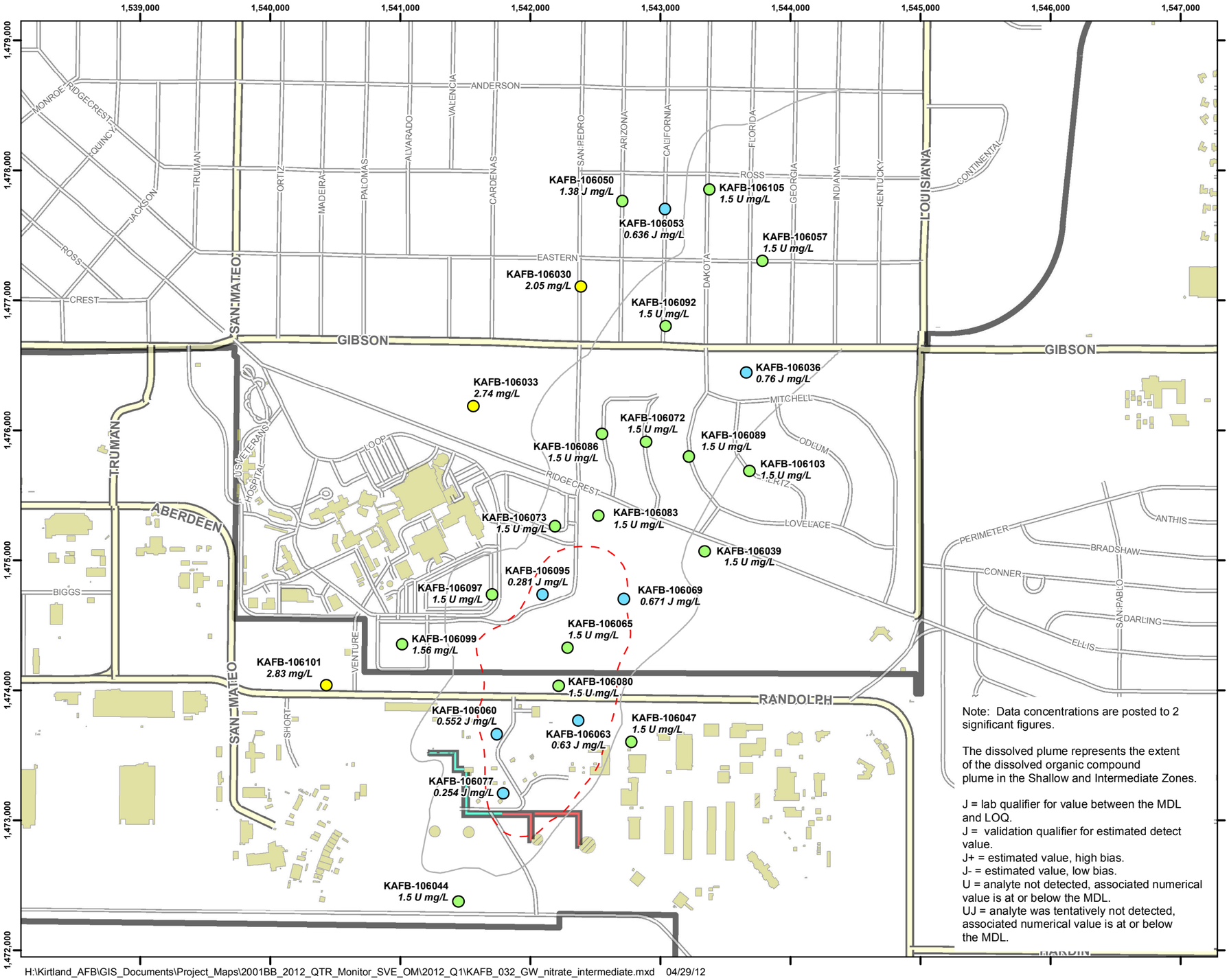
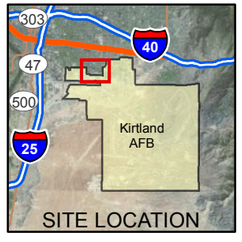



## Legend

**Nitrogen Result (mg/L)**

- 0.25 - 1.0
- 1.1 - 2.0
- 2.1 - 3.0
- Dissolved Plume March 2012
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 04/29/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-47

NITROGEN (NITRATE-NITRITE) CONCENTRATIONS IN INTERMEDIATE GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_032_GW_nitrate_intermediate.mxd 04/29/12

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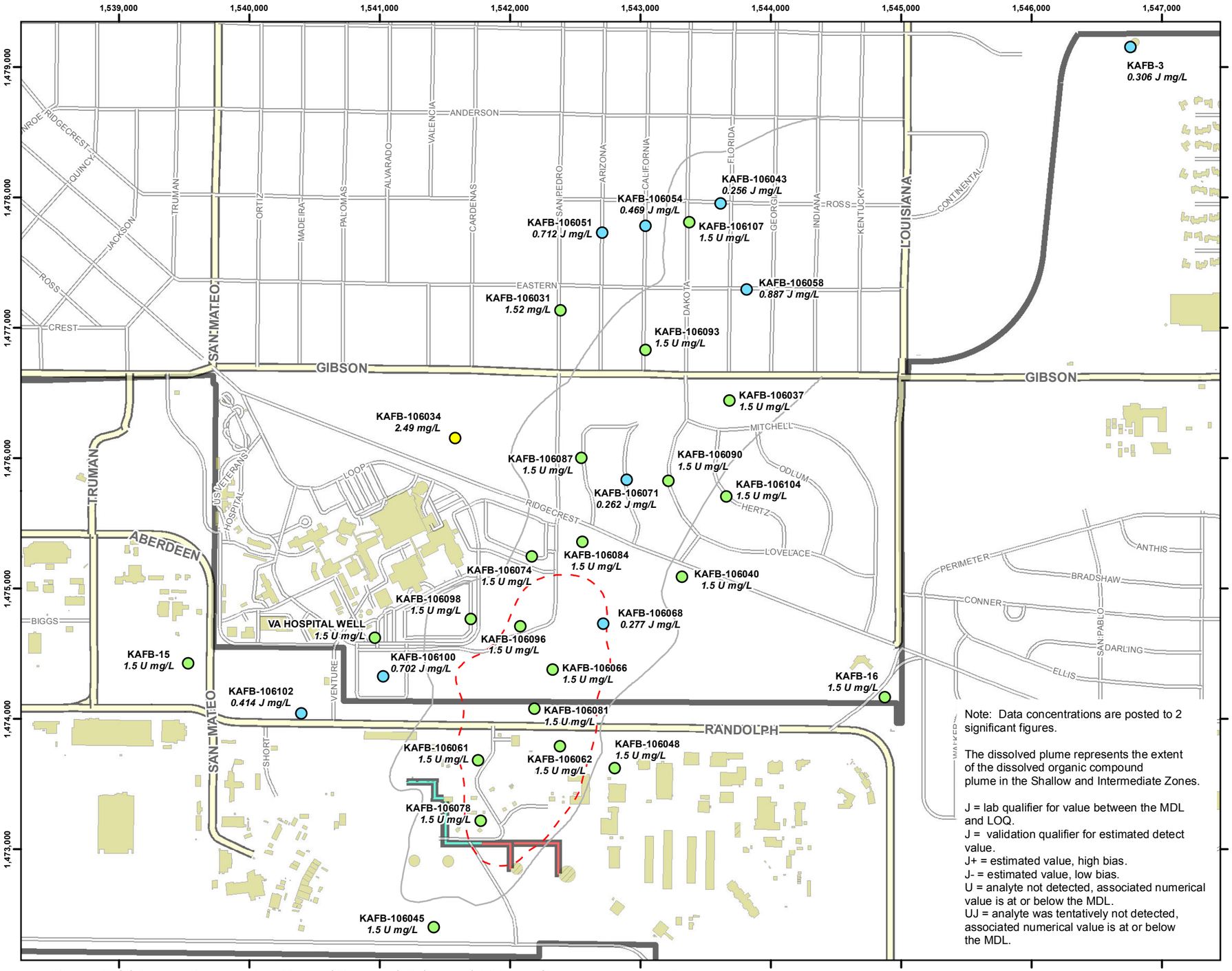
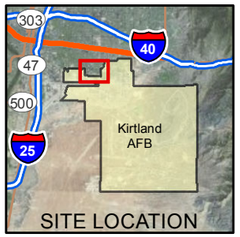



## Legend

**Nitrogen Result (mg/L)**

- 0.25 - 1.0
- 1.1 - 2.0
- 2.1 - 3.0
- Dissolved Plume March 2012
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Revision Date: 05/07/12

N

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-48

NITROGEN (NITRATE-NITRITE) CONCENTRATIONS IN DEEP GROUNDWATER

H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_033_GW_nitrate_deep.mxd 05/07/12

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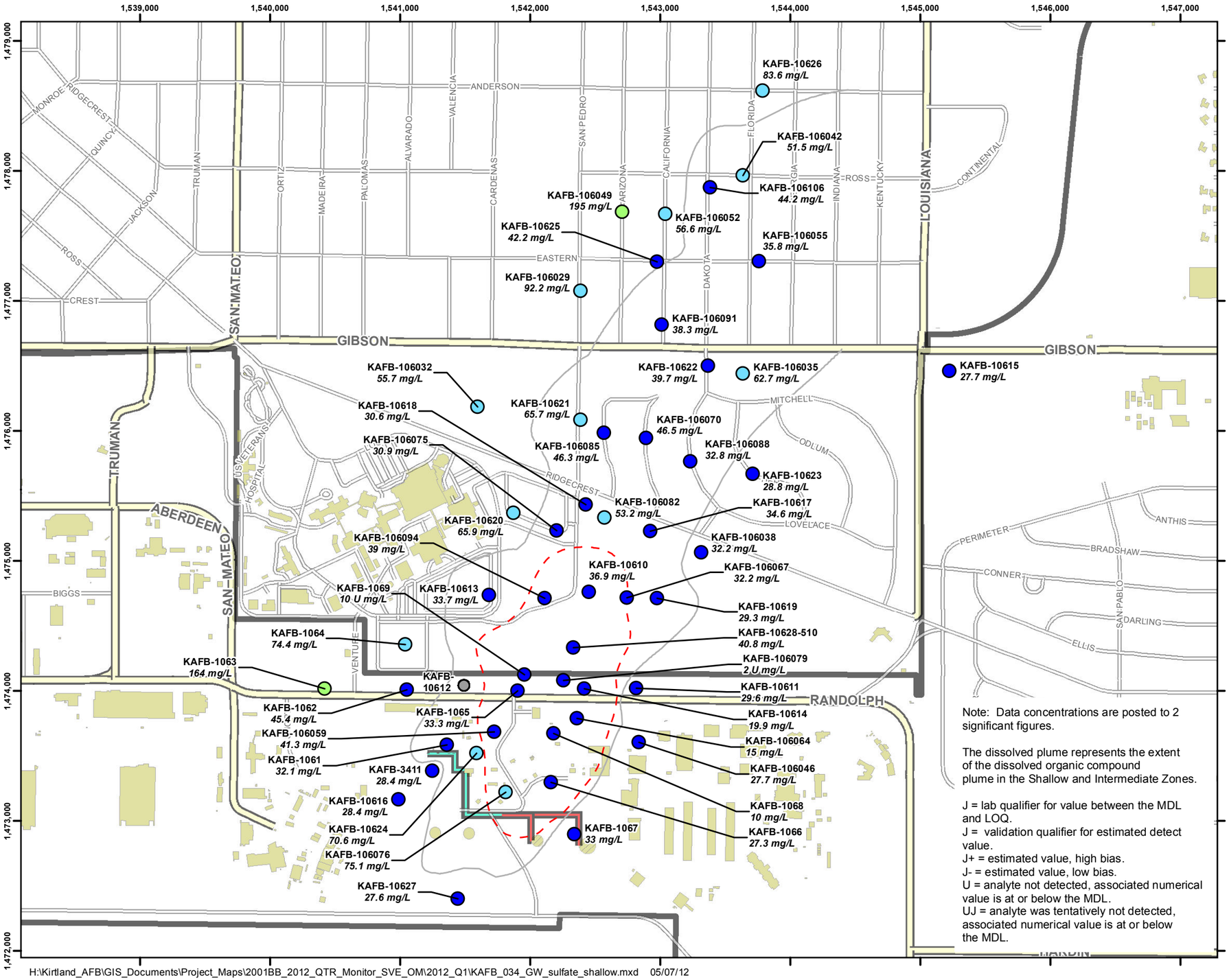
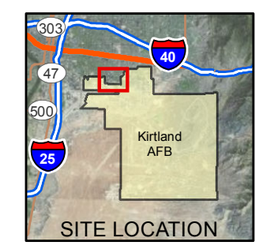



H:\Kirtland_AFB\GIS_Documents\Project_Maps\2001BB_2012_QTR_Monitor_SVE_OM\2012_Q1\KAFB_034_GW_sulfate_shallow.mxd 05/07/12

## Legend

**Sulfate Result (mg/L)**

- 2.0 - 50
- 51 - 100
- 100 - 200
- Not Sampled
- Historical Area of Observed NAPL (July 2009)
- Dissolved Plume March 2012
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

Revision Date: 05/07/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-49

SULFATE CONCENTRATIONS
IN SHALLOW GROUNDWATER

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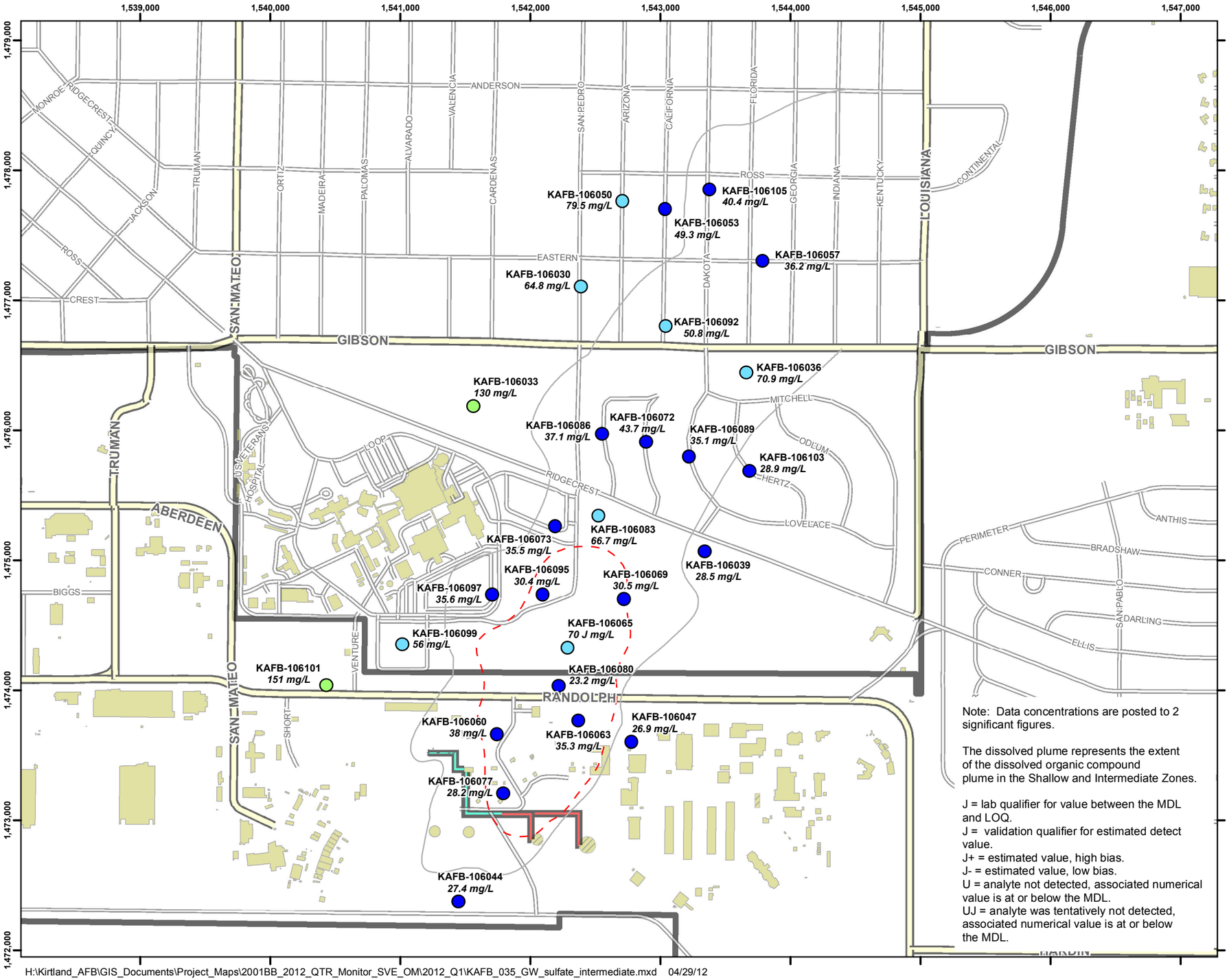
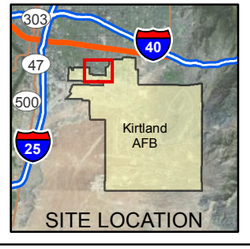



## Legend

**Sulfate Result (mg/L)**

- 23 - 50
- 51 - 100
- 100 - 200
- Dissolved Plume March 2012
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

Revision Date: 04/29/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-50

SULFATE CONCENTRATIONS
IN INTERMEDIATE GROUNDWATER

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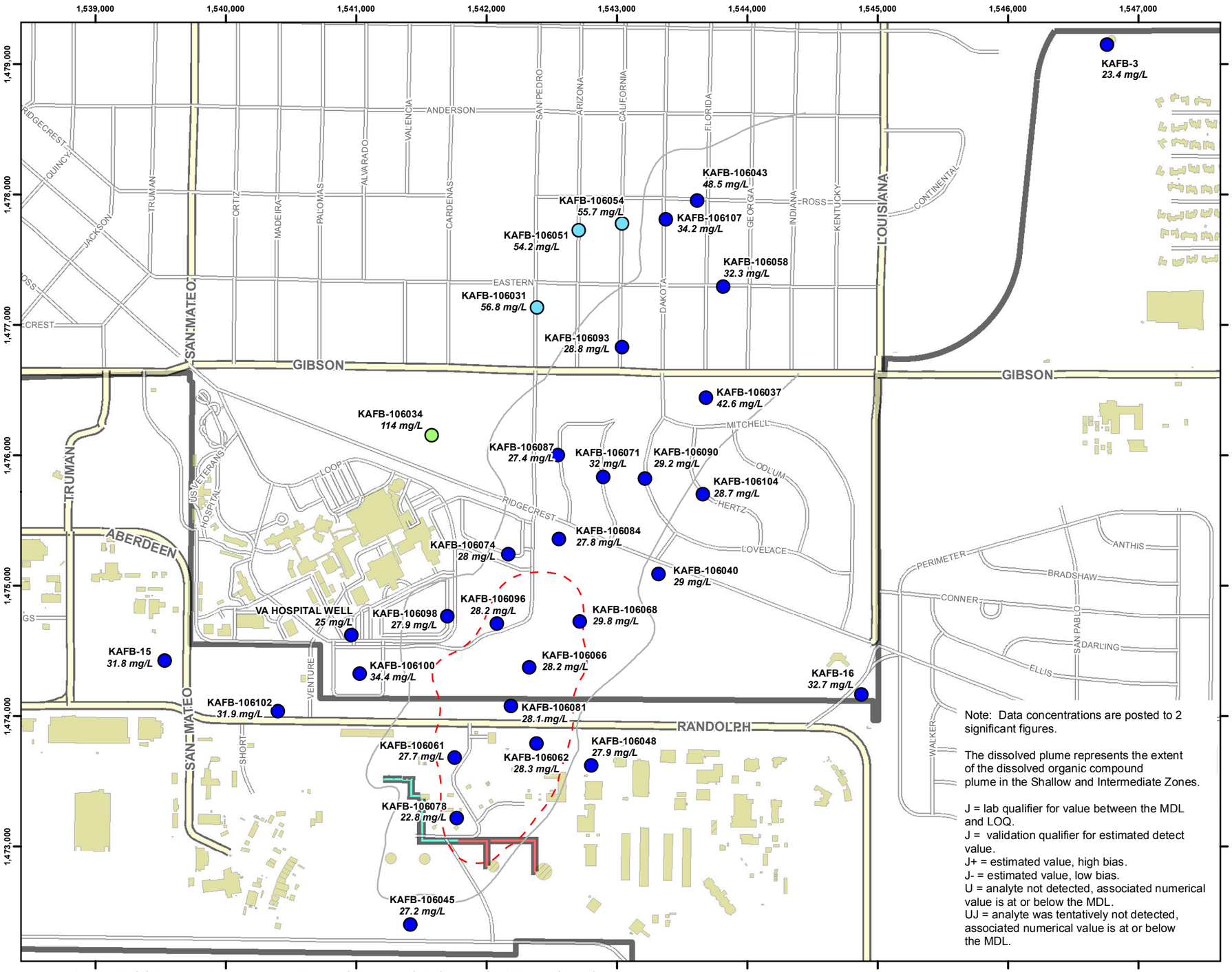
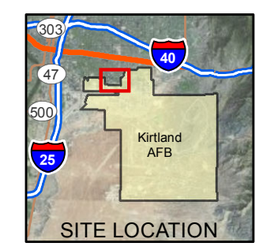



## Legend

**Sulfate Result (mg/L)**

- 22 - 50
- 51 - 100
- 100 - 200
- Dissolved Plume March 2012
- Historical Area of Observed NAPL (July 2009)
- Major Road
- Road
- Aboveground Fuel Transfer Lines
- Underground Fuel Transfer Lines
- Previously Existing Structure
- Existing Structure
- Installation Boundary




Note: Data concentrations are posted to 2 significant figures.

The dissolved plume represents the extent of the dissolved organic compound plume in the Shallow and Intermediate Zones.

J = lab qualifier for value between the MDL and LOQ.
J = validation qualifier for estimated detect value.
J+ = estimated value, high bias.
J- = estimated value, low bias.
U = analyte not detected, associated numerical value is at or below the MDL.
UJ = analyte was tentatively not detected, associated numerical value is at or below the MDL.

Revision Date: 05/07/12

N

0 400 800 1,600

Feet
1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

2012 QUARTERLY REPORT 01
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-51

SULFATE CONCENTRATIONS IN DEEP GROUNDWATER

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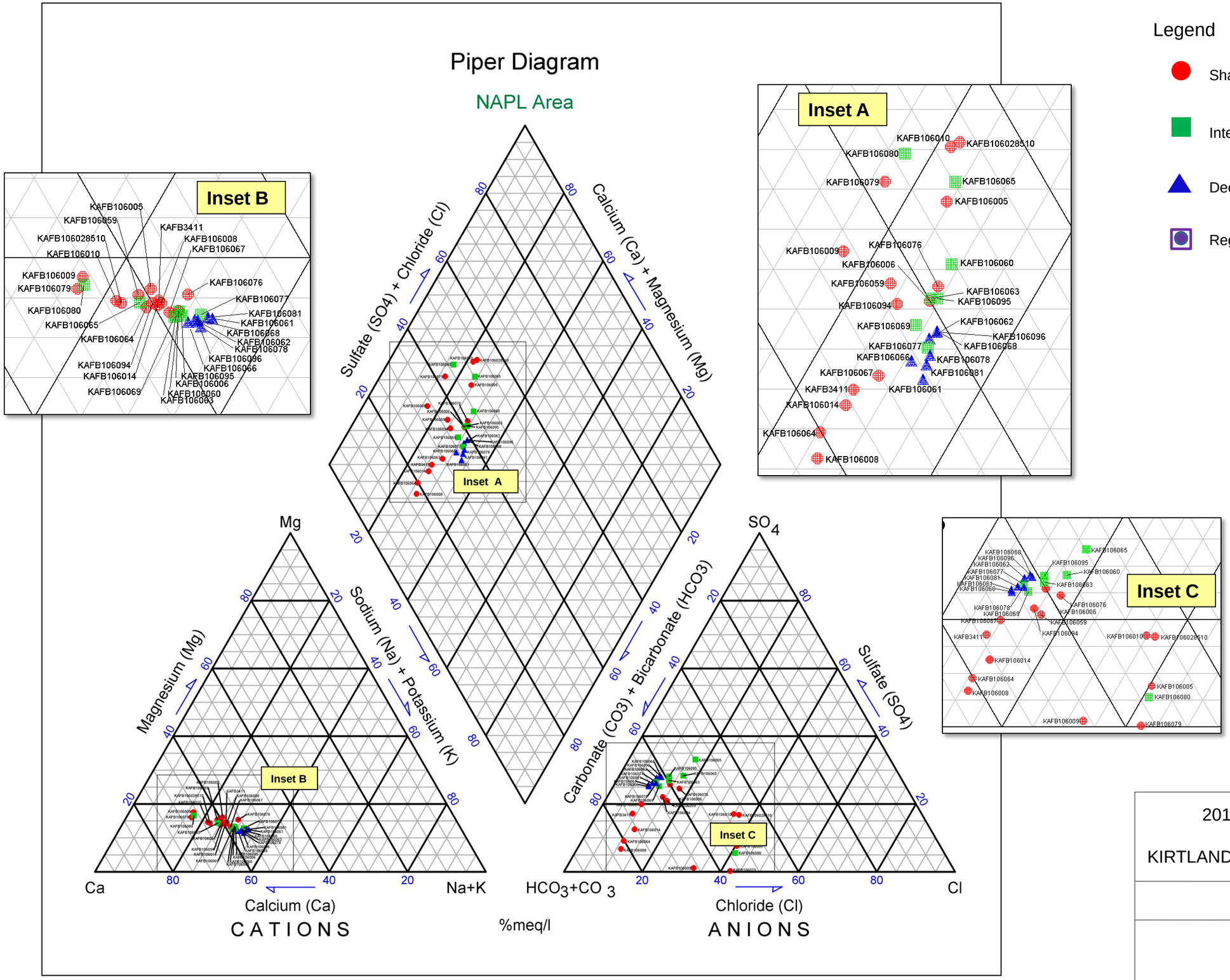


Legend

- Shallow Well
- Intermediate Well
- Deep Well
- Regional Well

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-52

PIPER DIAGRAM
NAPL AREA

KAFB_061_Piper_Stiff.ppt

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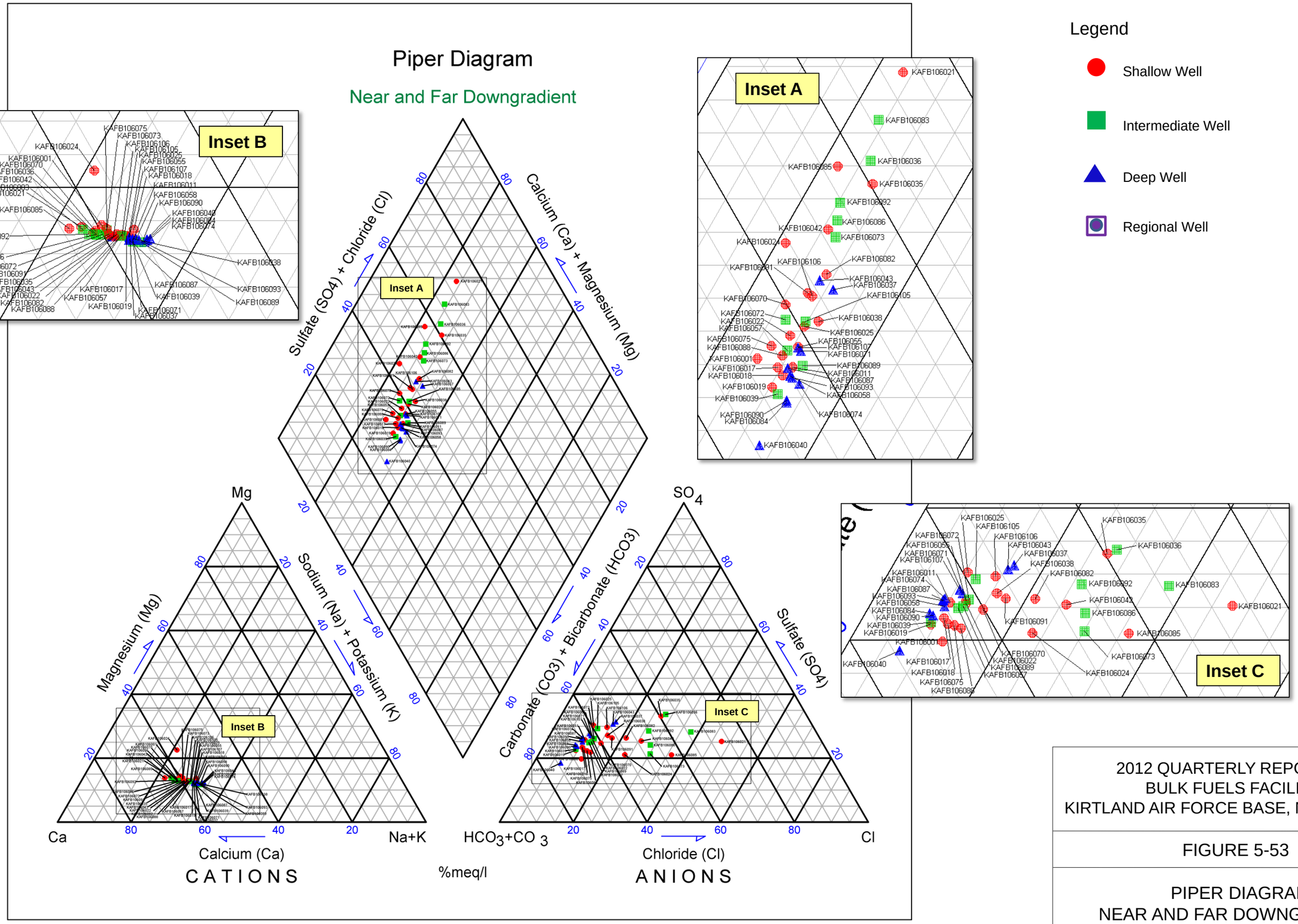


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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-53

PIPER DIAGRAM
NEAR AND FAR DOWNGRADIENT

KAFB_061_Piper_Stiff.ppt

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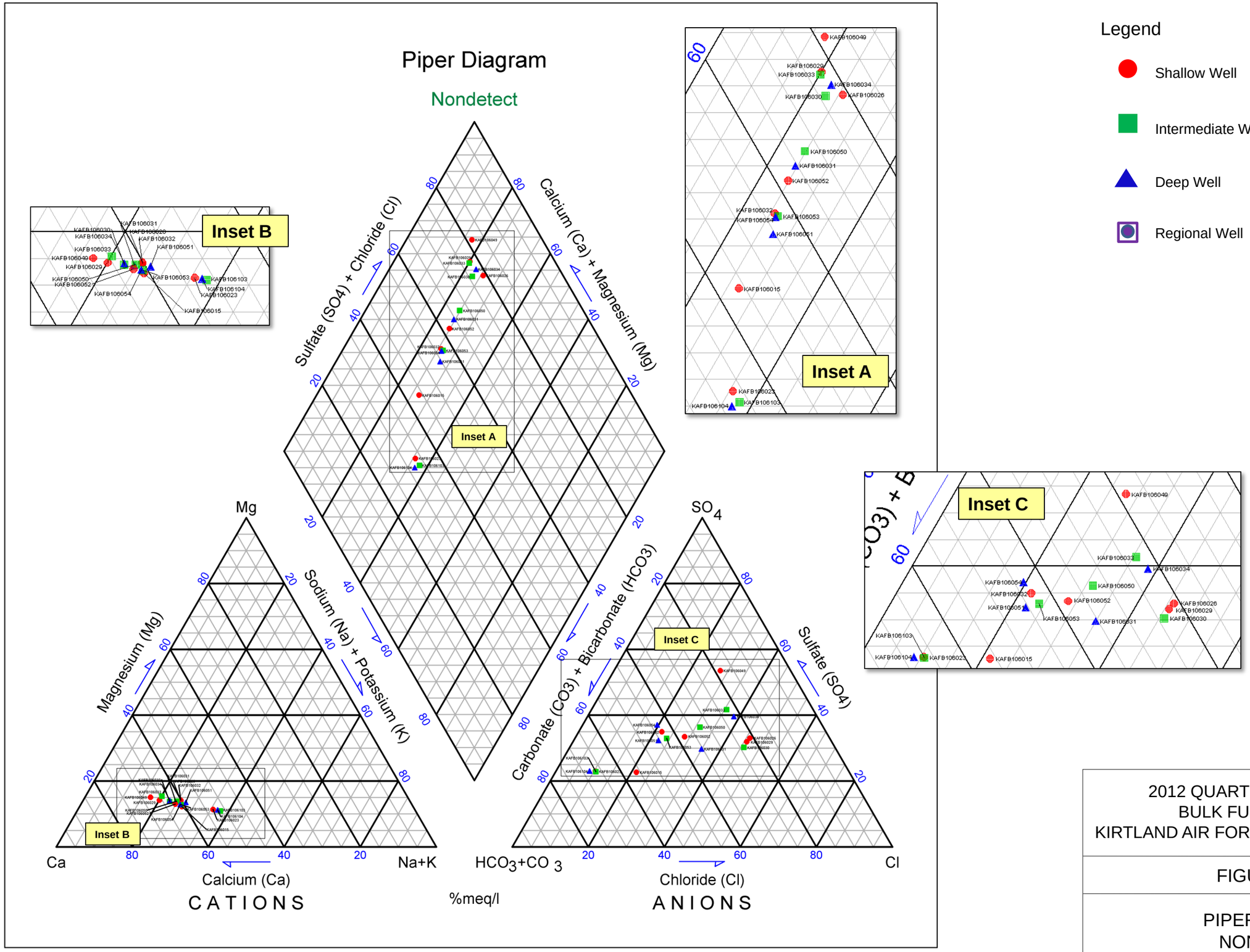


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FIGURE 5-54

PIPER DIAGRAM
NONDETECT

KAFB_061_Piper_Stiff.ppt

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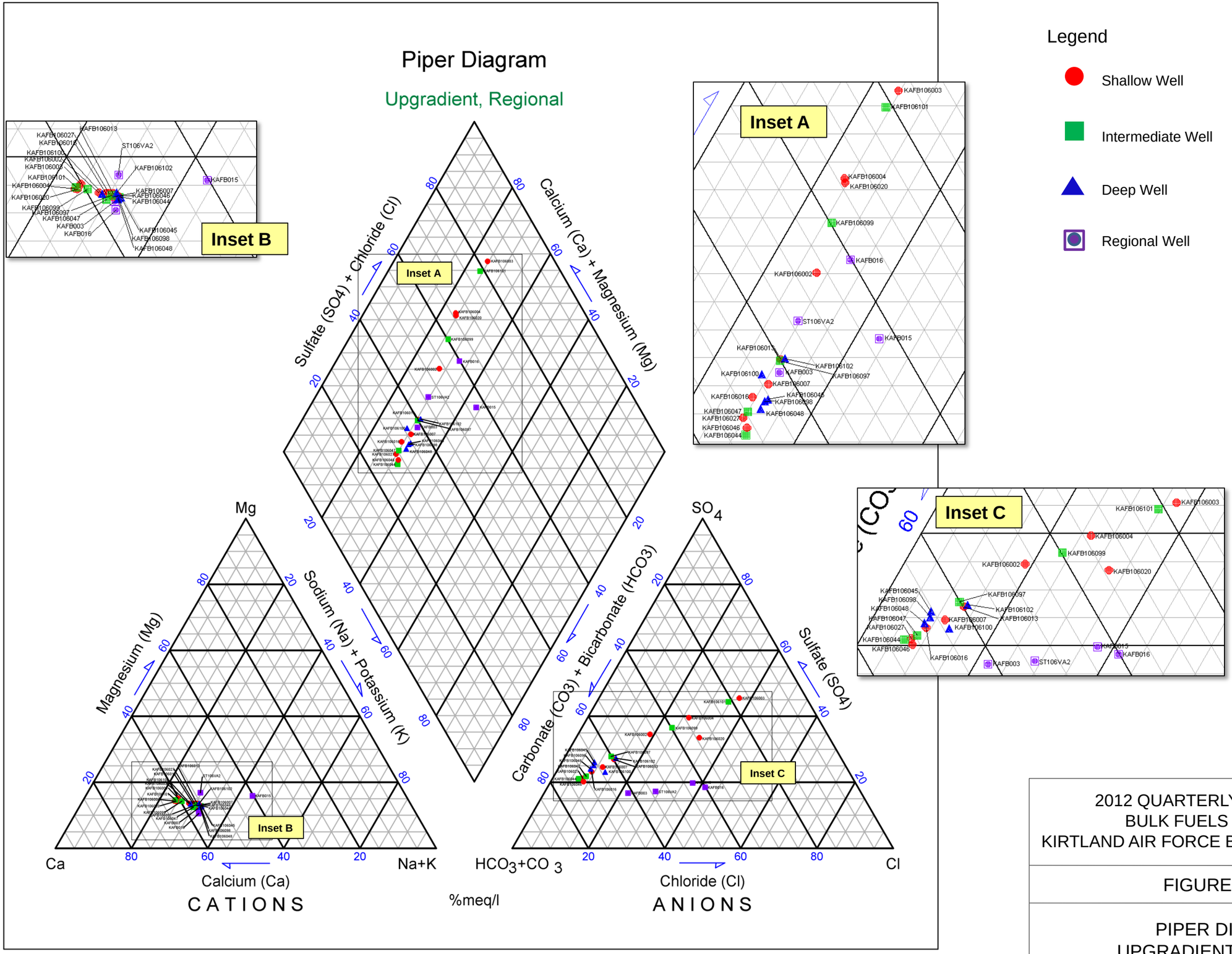


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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-55

PIPER DIAGRAM
UPGRADIENT, REGIONAL

KAFB_061_Piper_Stiff.ppt

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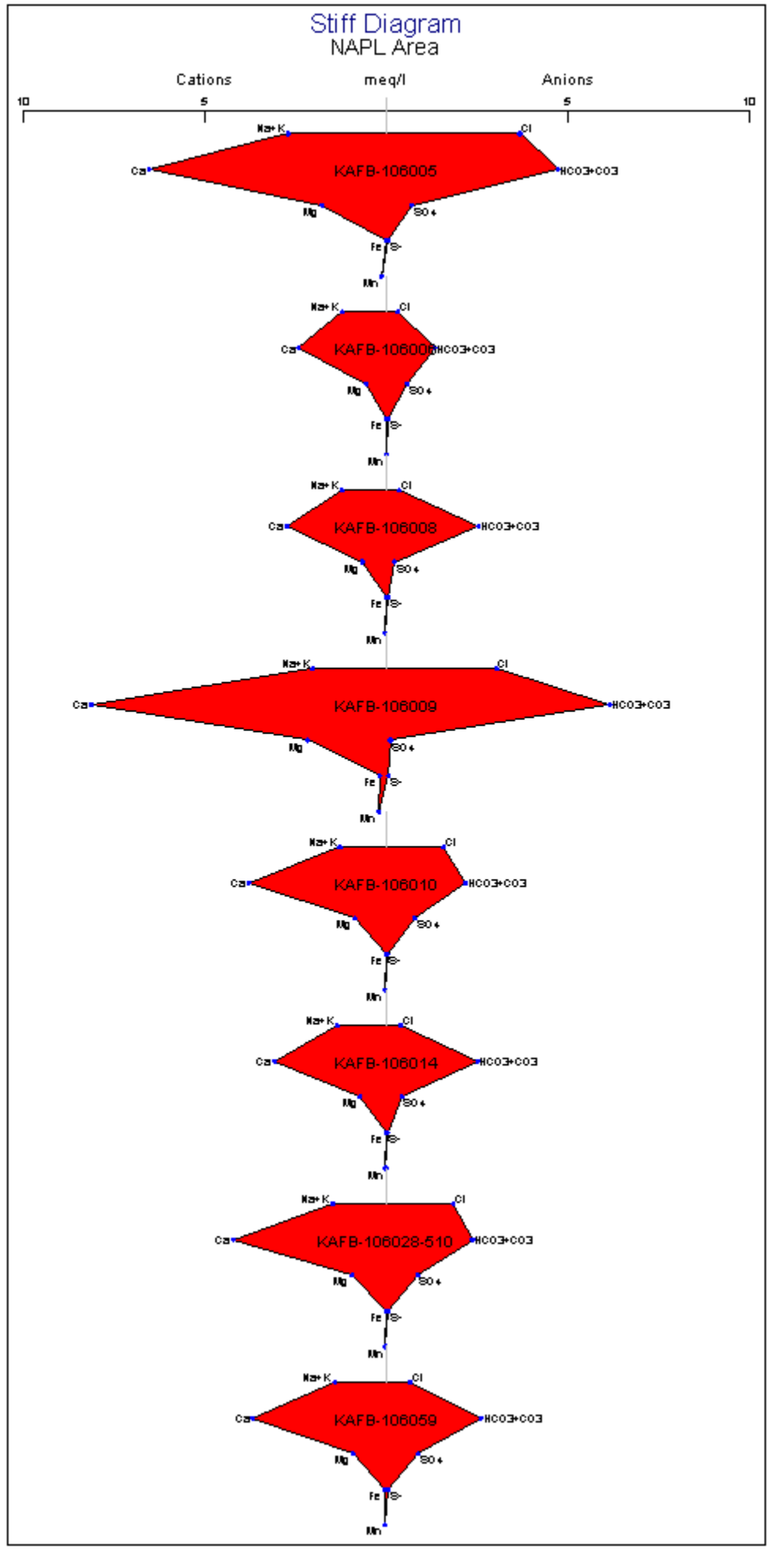


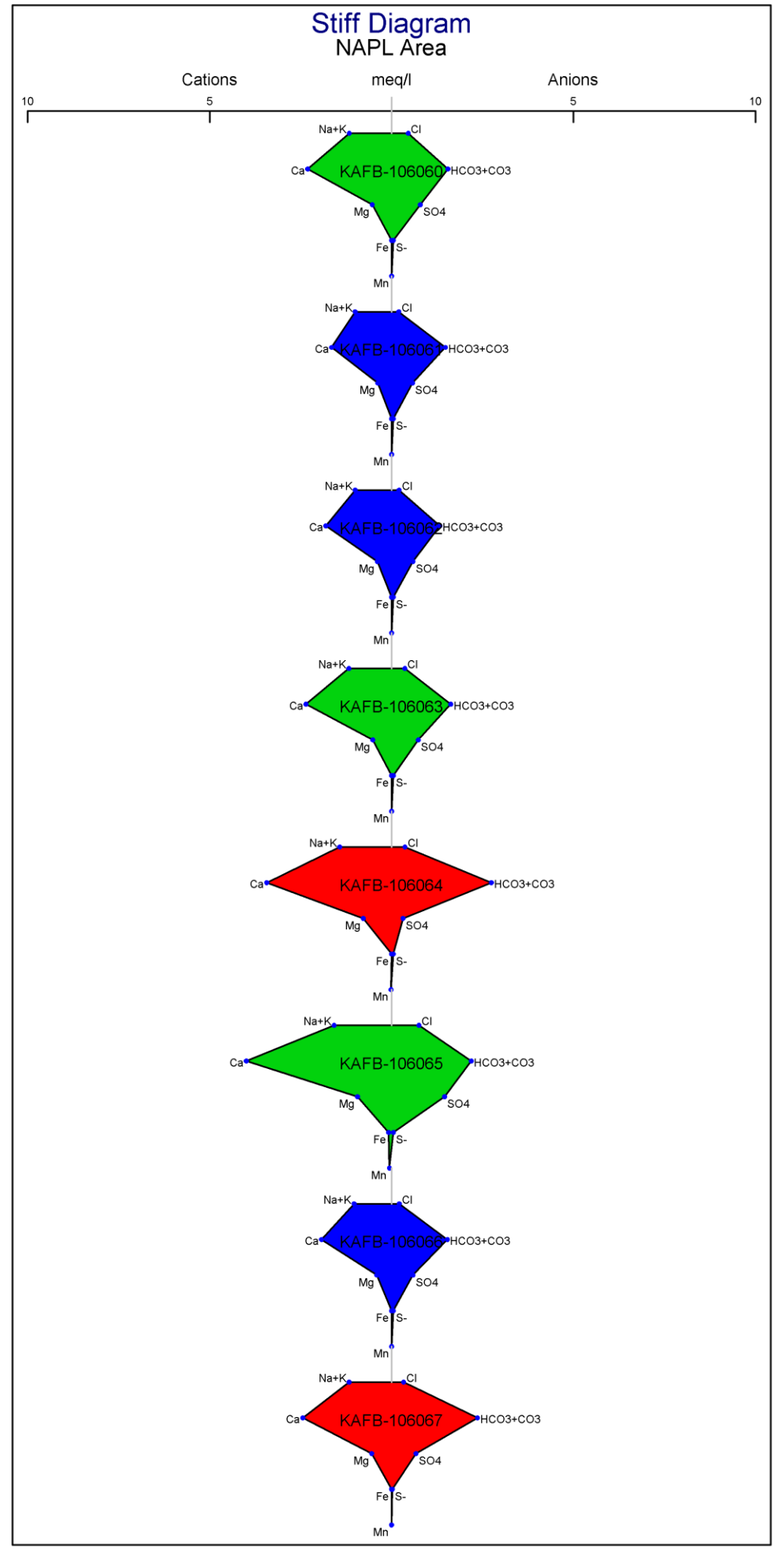


## Legend

- Shallow Well
- Intermediate Well
- Deep Well
- Regional Well

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-56

STIFF DIAGRAMS
NAPL AREA
PART 1

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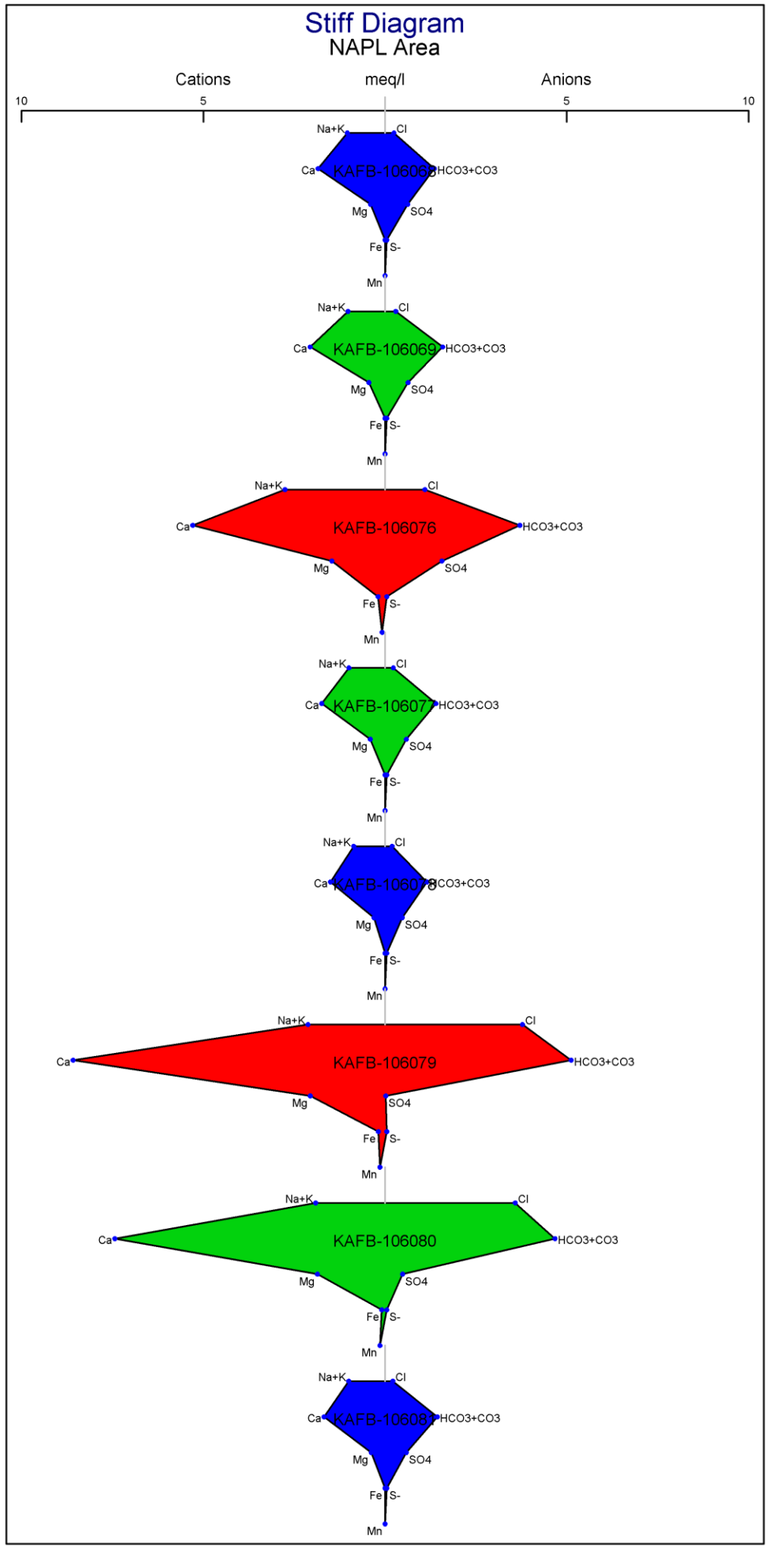


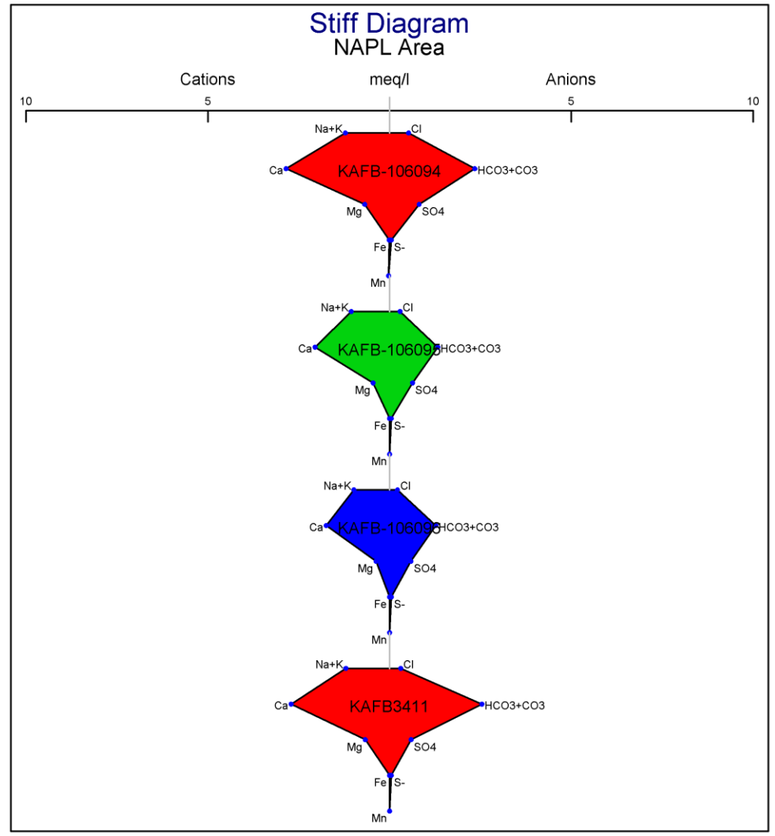


## Legend

- Shallow Well
- Intermediate Well
- Deep Well
- Regional Well

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-57

STIFF DIAGRAMS
NAPL AREA
PART 2

KAFB_061_Piper_Stiff_Diagrams.ppt

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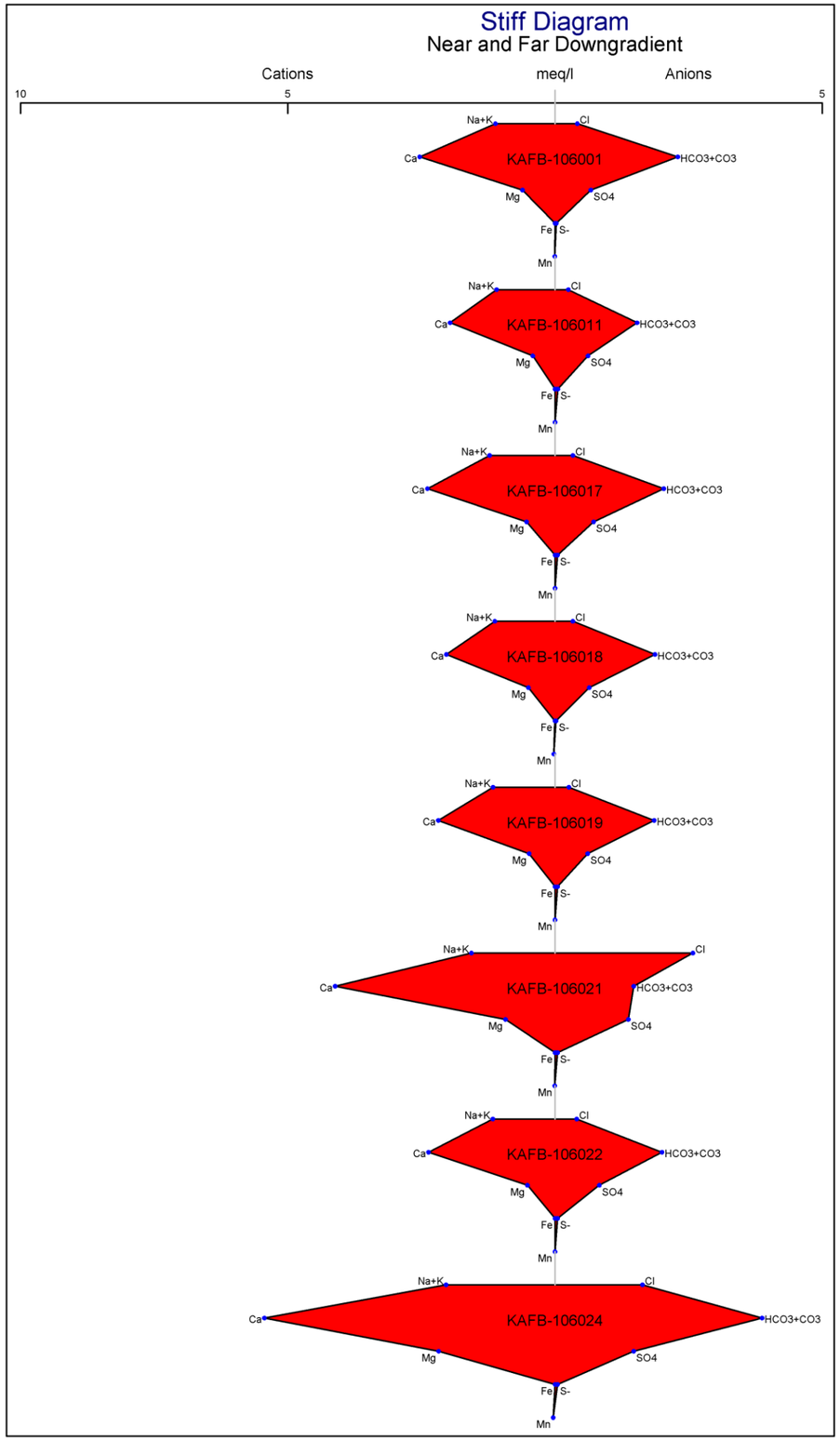


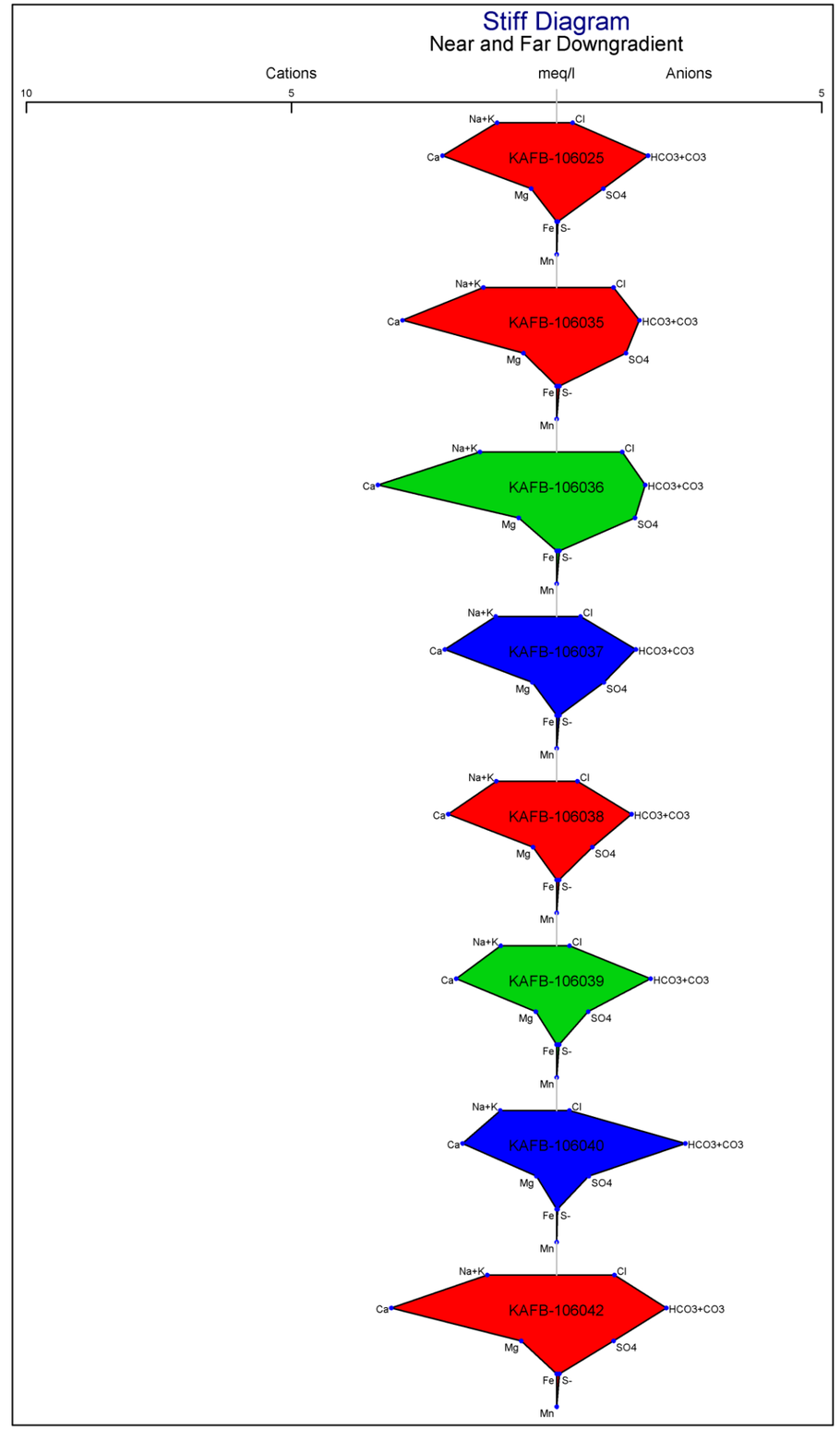


## Legend

- Shallow Well
- Intermediate Well
- Deep Well
- Regional Well

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-58

STIFF DIAGRAMS
NEAR AND FAR DOWNGRADIENT
PART 1

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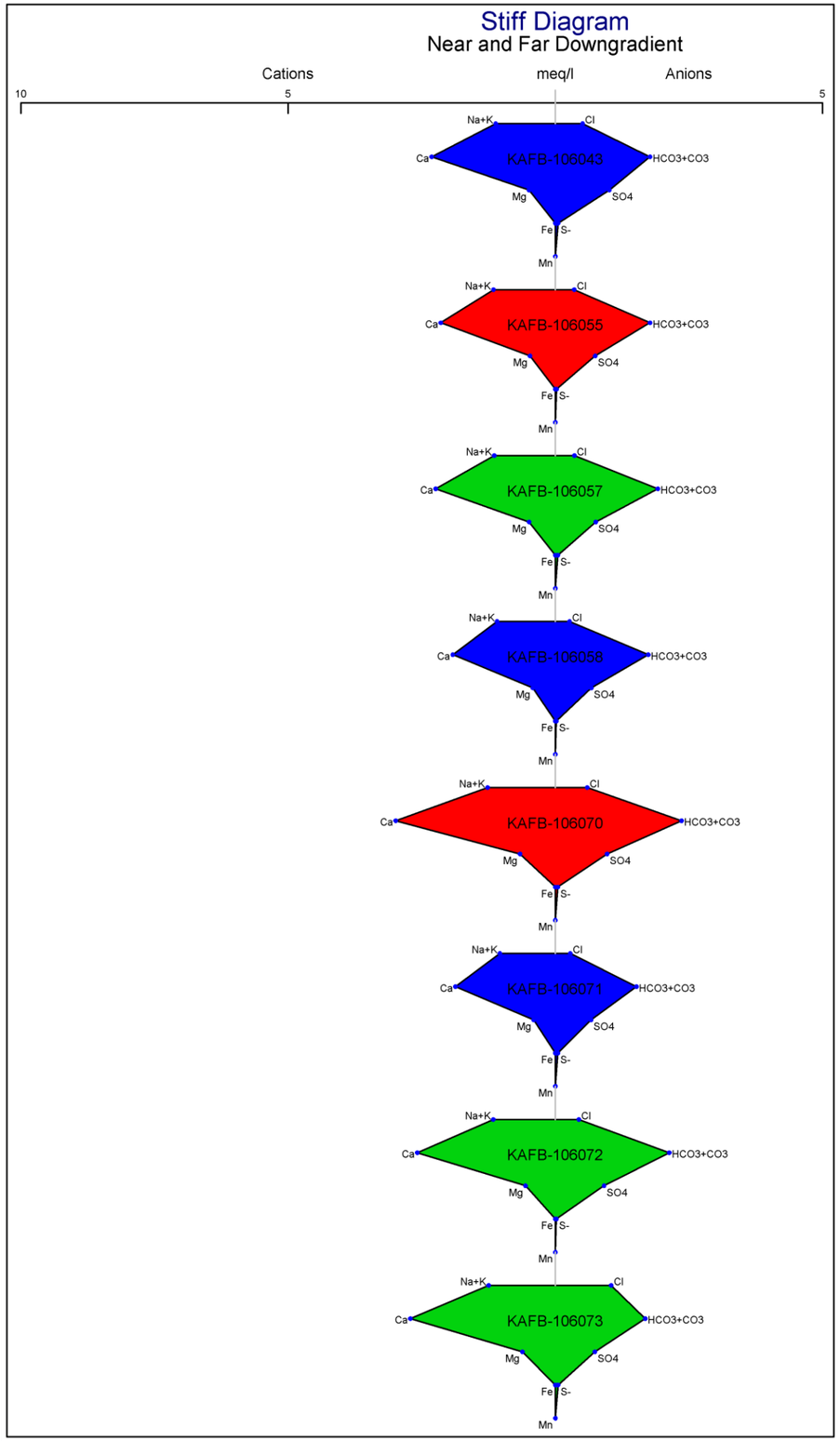


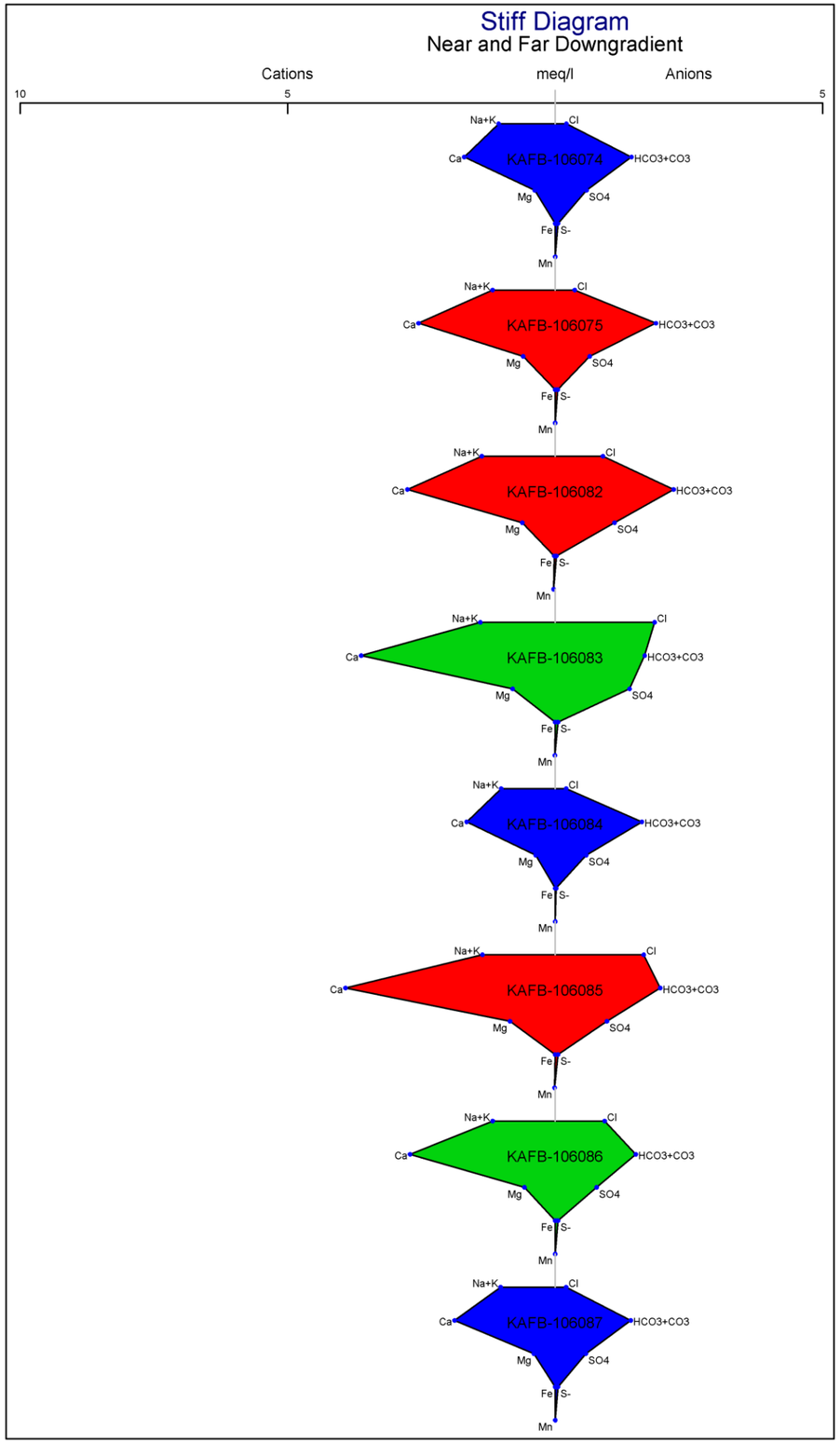


## Legend

- Shallow Well
- Intermediate Well
- Deep Well
- Regional Well

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-59

STIFF DIAGRAMS
NEAR AND FAR DOWNGRADIENT
PART 2

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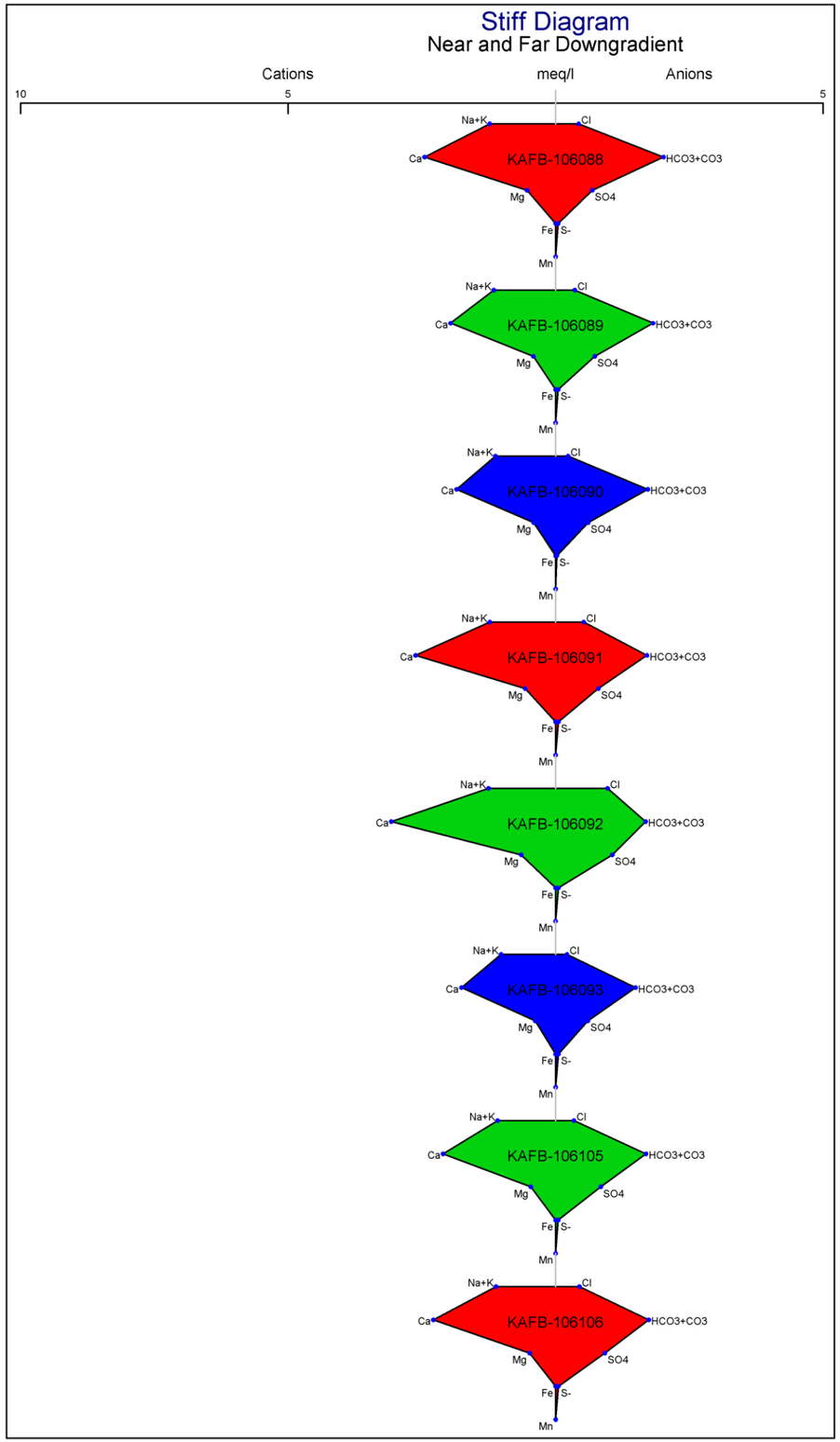


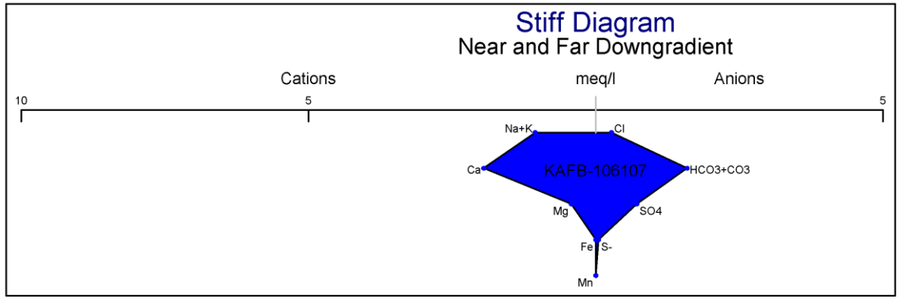


## Legend

- Shallow Well
- Intermediate Well
- Deep Well
- Regional Well

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-60

STIFF DIAGRAMS
NEAR AND FAR DOWNGRADIENT
PART 3

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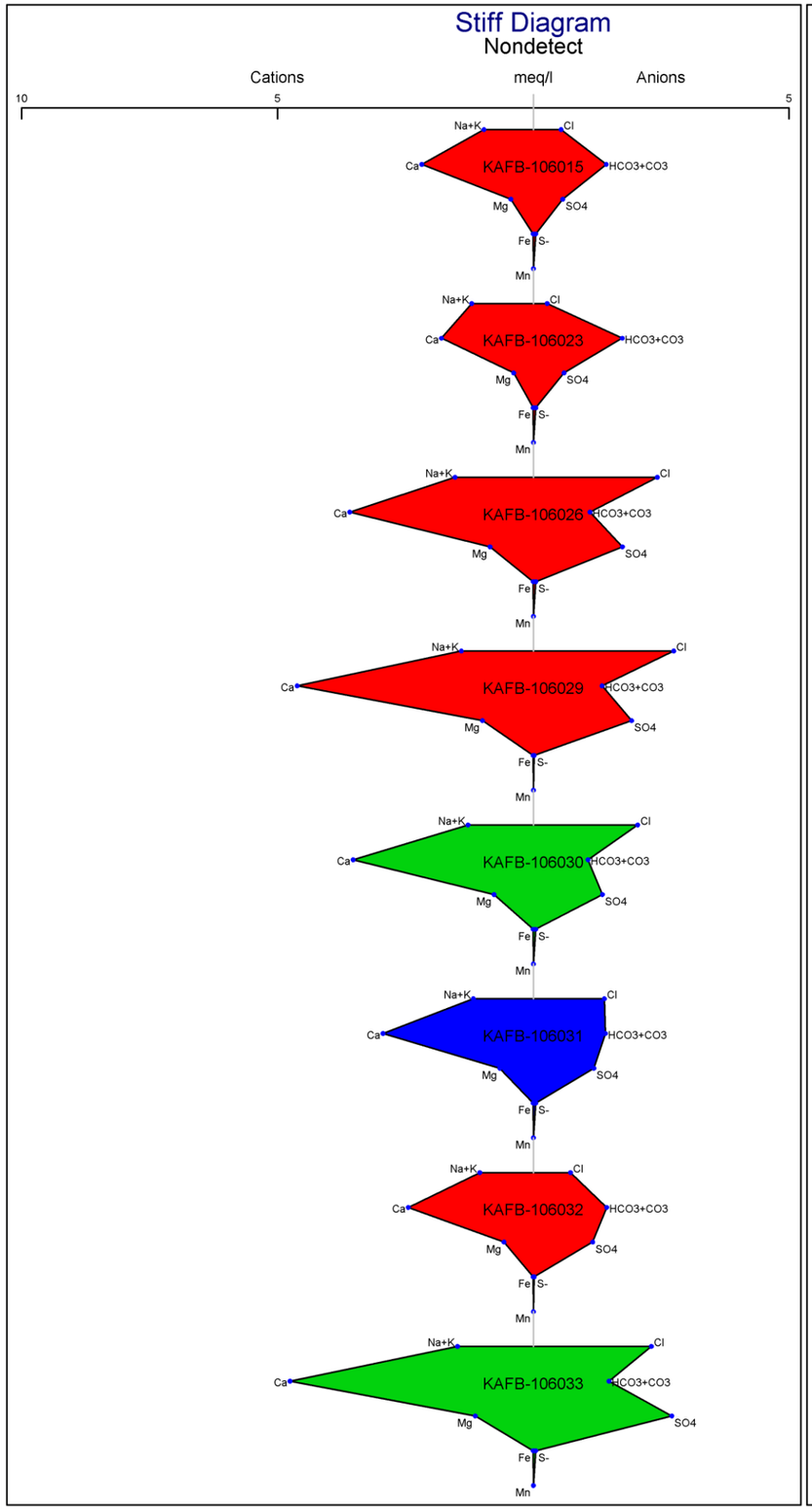


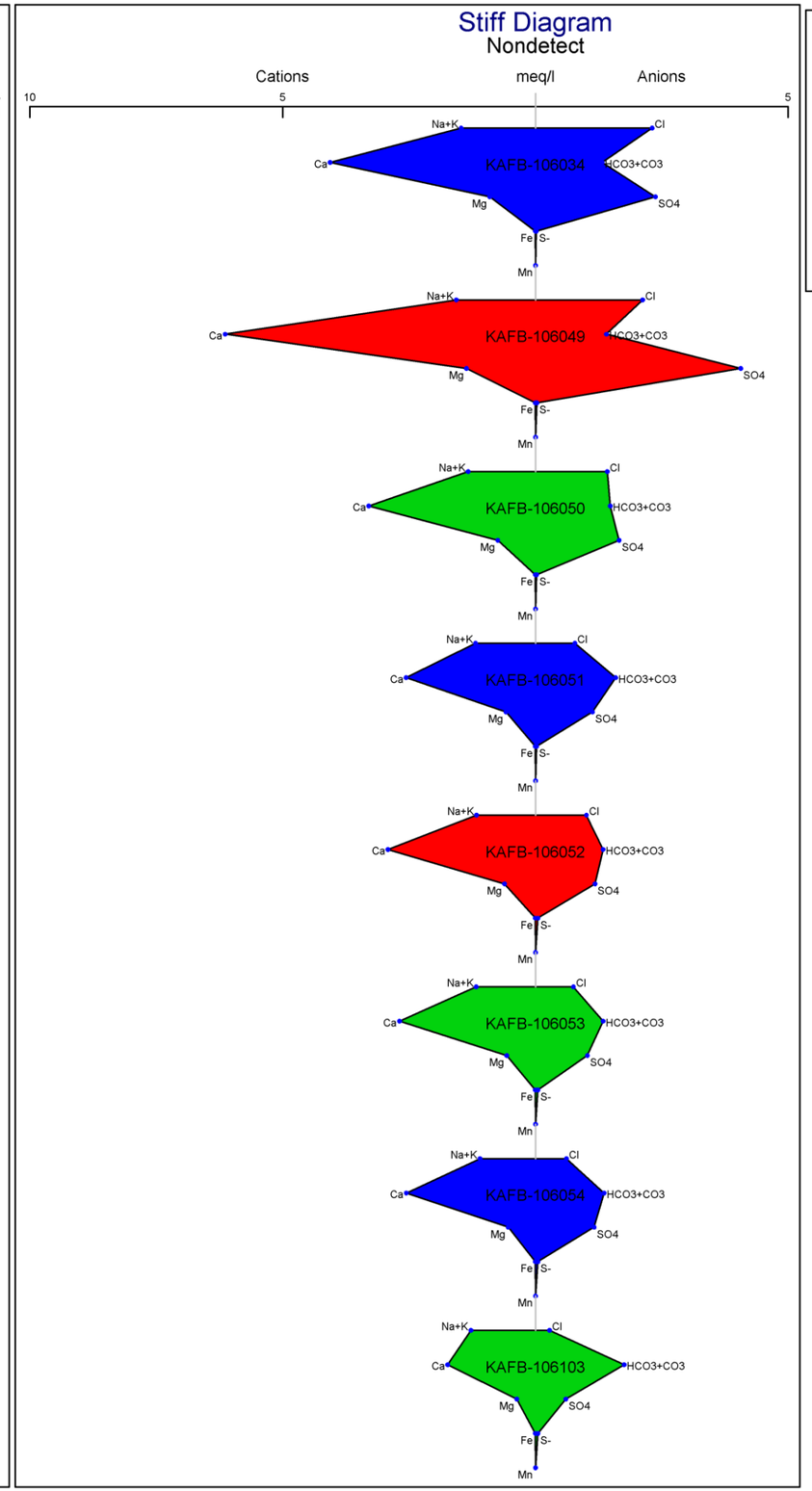


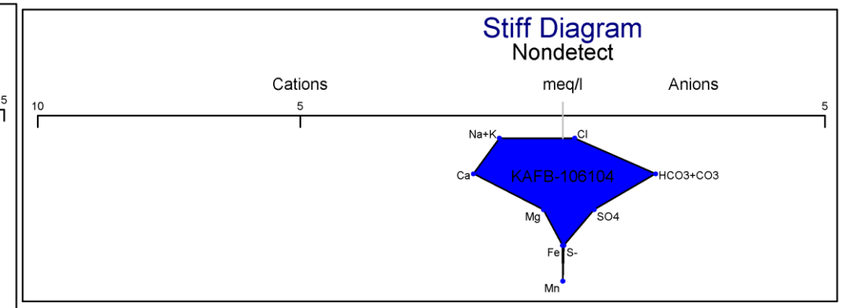


## Legend

- Shallow Well
- Intermediate Well
- Deep Well
- Regional Well

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-61

STIFF DIAGRAMS
NONDETECT

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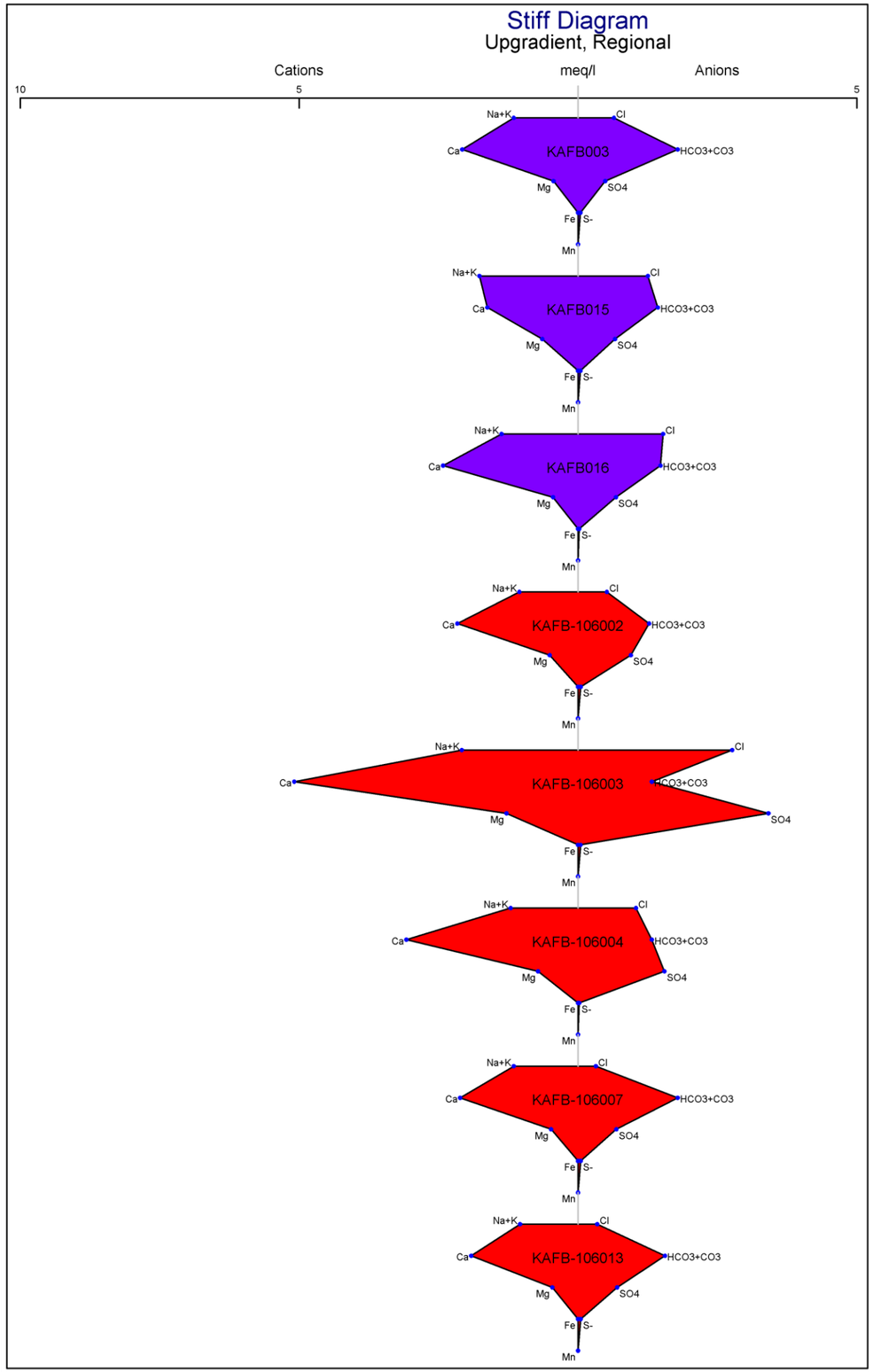


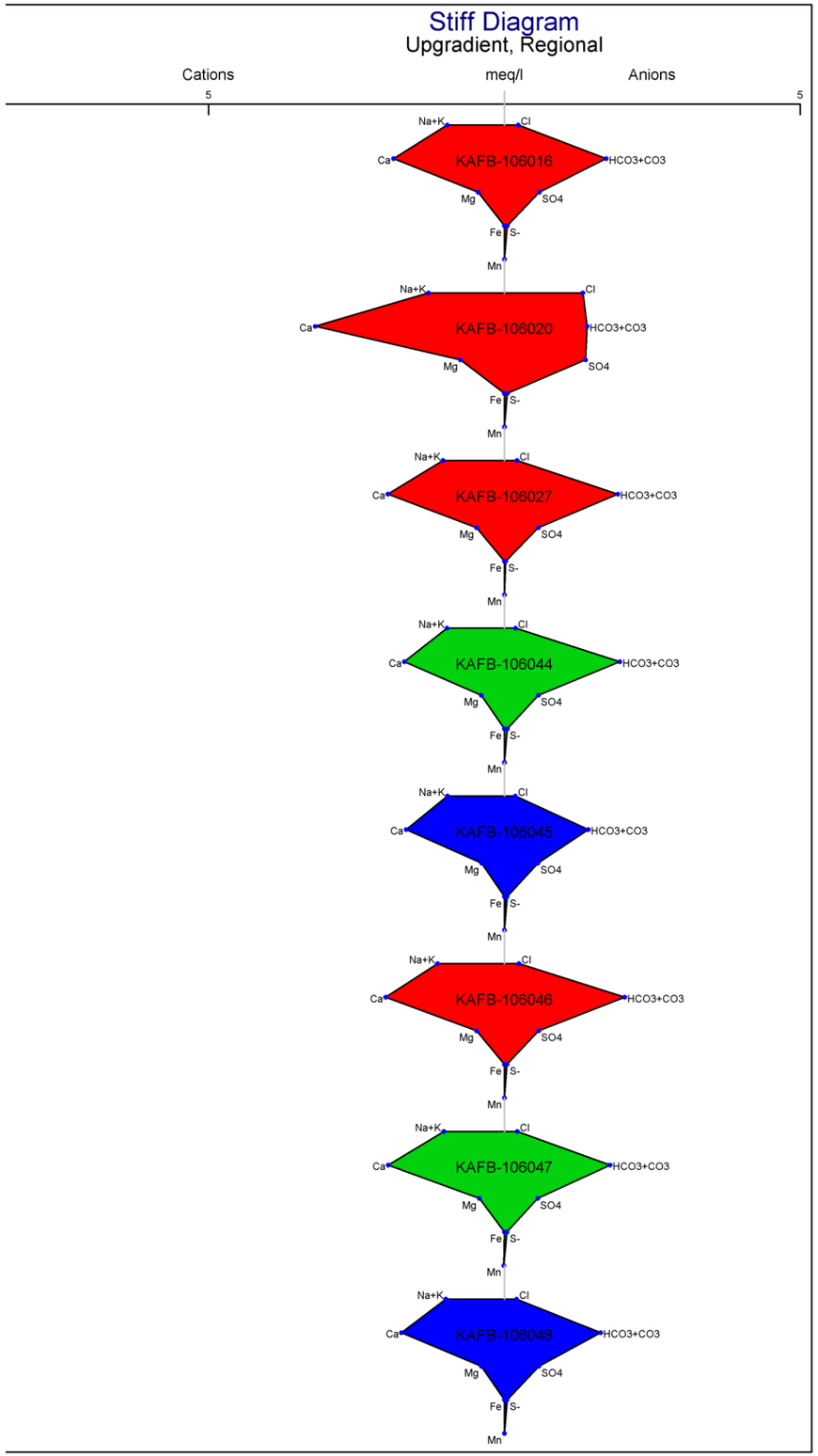


## Legend

- Shallow Well
- Intermediate Well
- Deep Well
- Regional Well

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-62

STIFF DIAGRAMS
UPGRADIENT, REGIONAL
PART 1

KAFB_061_Piper_Stiff_Diagrams.ppt

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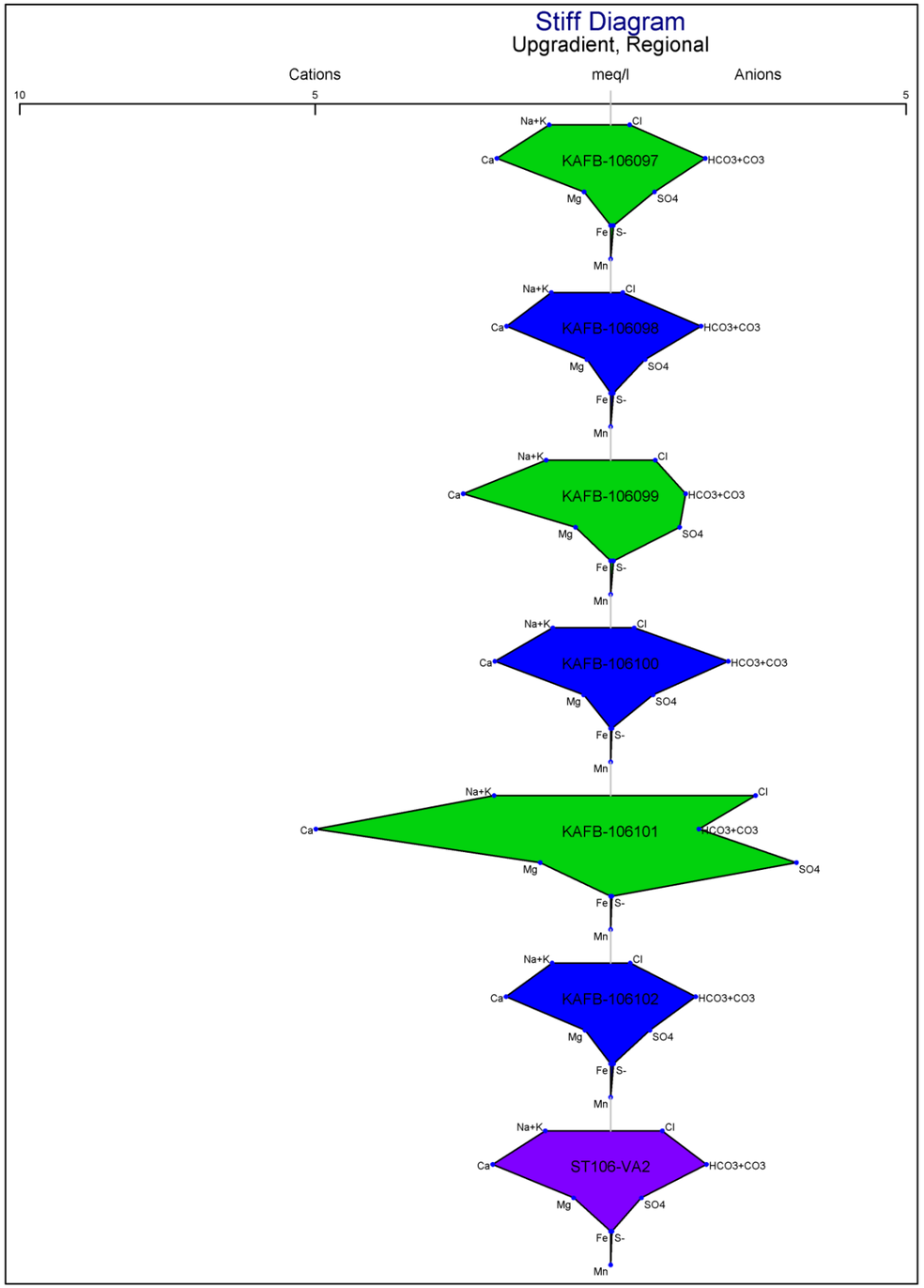


## Legend

- Shallow Well
- Intermediate Well
- Deep Well
- Regional Well

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BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 5-63

STIFF DIAGRAMS
UPGRADIENT, REGIONAL
PART 2

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# SECTION 7 FIGURES
# CROSS-SECTIONS

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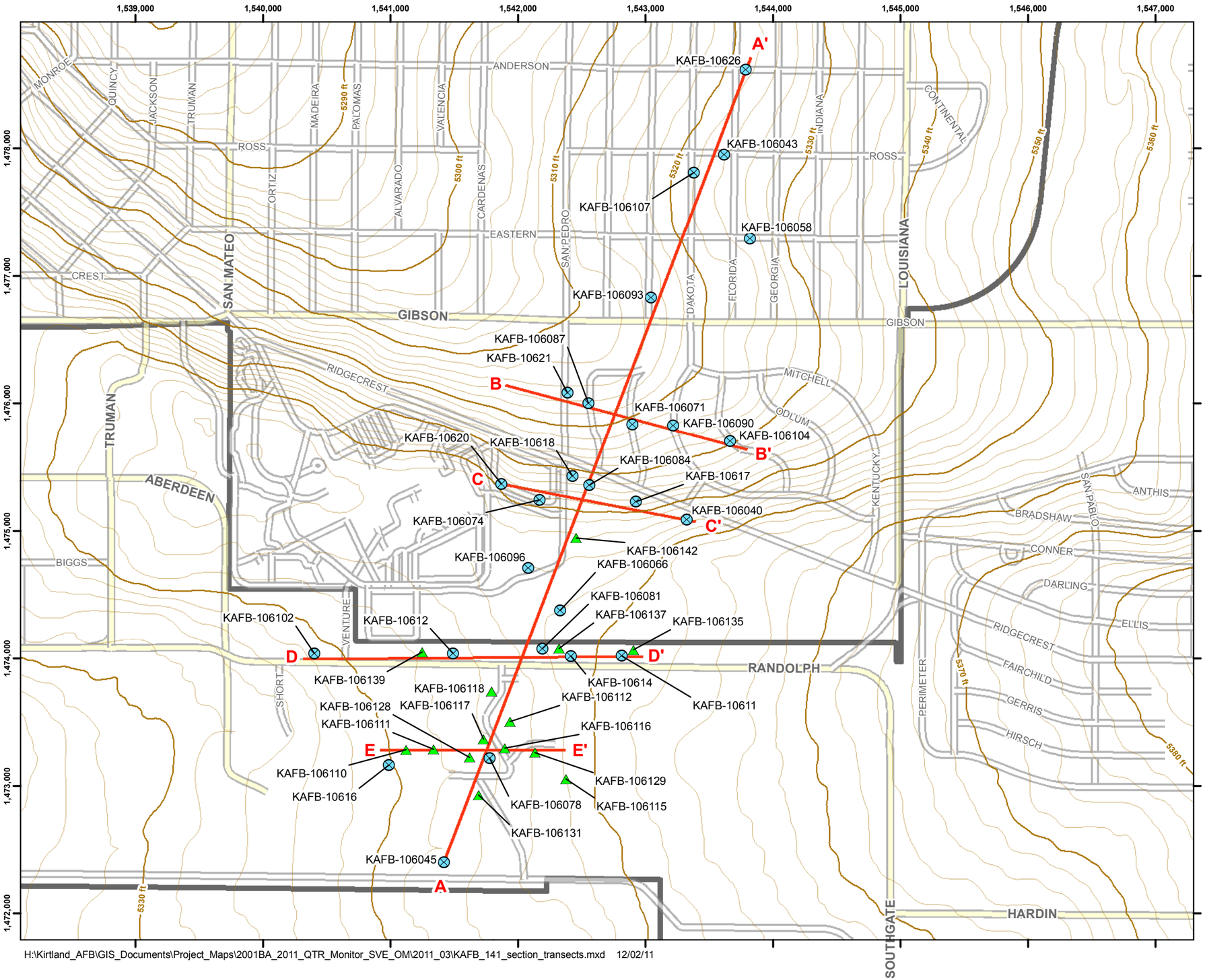
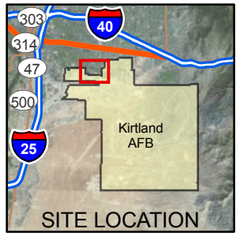



## Legend

- Monitor Well
- SVM Cluster
- Topographic Contour 2' Interval
- Topographic Contour 10' Interval
- Cross Section Transect
- Interstate
- Major Road
- Road
- Installation Boundary




N

Revision Date: 12/02/11

0 400 800 1,600

Feet

1 inch = 800 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

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KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 7-1

NMED CROSS SECTION TRANSECTS

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