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Technical Update of Hydrogeological and Groundwater Quality Conditions in the Northwest Site Area

October 30, 1997 Meeting

General Electric Company - Wilmington, NC
NC DWQ - Groundwater Section
NC DWQ - Water-Quality Section
NC Division of Radiation Protection

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Technical Update of Hydrogeological and Groundwater Quality Conditions in the Northwest Site Area

October 30, 1997 Meeting

Background:

- GE stored calcium fluoride (CaF_2) material in trenches in remote NW area of site.
- GE has removed >99% of source material and area is being free-released per NRC guidelines.
- Last update meeting with DWQ and DRP on status of CaF_2 recovery efforts on December 16, 1996.
- Groundwater contamination by organic compounds (primarily cis-1,2-DCE) was identified in OB-5 (previously identified as area G).
- DWQ requested additional information regarding the extent of groundwater contamination by inorganic and organic contaminants in February 5, 1997 letter and during meeting on February 12, 1997.
- GE provided a proposed schedule to DRP in letter dated March 5, 1997.
- Assessment activities are continuing.

Tab No.	Topics of Discussion
I.	Locations of Source Areas
II.	Assessment Activities Completed Since Previous Update
III.	Hydrogeologic Framework
IV.	Groundwater Quality - Inorganic Constituents
V.	Groundwater Quality - Organic Compounds
VI.	Preliminary Groundwater Flow Modeling Results
VII.	Conclusions
VIII.	Planned Assessment Activities
IX.	Proposed Schedule

Appendix A. Analytical Results - CAF-Series Wells (Inorganic Analyses)
Appendix B. Analytical Results - CAF-Series Wells (Organic Analyses)
Appendix C. Analytical Results - Exploratory Borings
Appendix D. Analytical Results - Surface-Water, Shallow Wellpoint, and Soil Samples

I. Locations of Source Areas (Exhibit 1)

Summary:

- Areas located in remote northwest portion of GE-Wilmington, NC site.
- Former NW-CaF_2 storage area approximately 1 acre in size.
- Area to north of study area currently undeveloped and is used for a private hunting reserve.
- No human receptors downgradient of study area.
- Nearest domestic well (field pitcher-type pump) is approximately 2,000 ft east (and crossgradient) of study area.

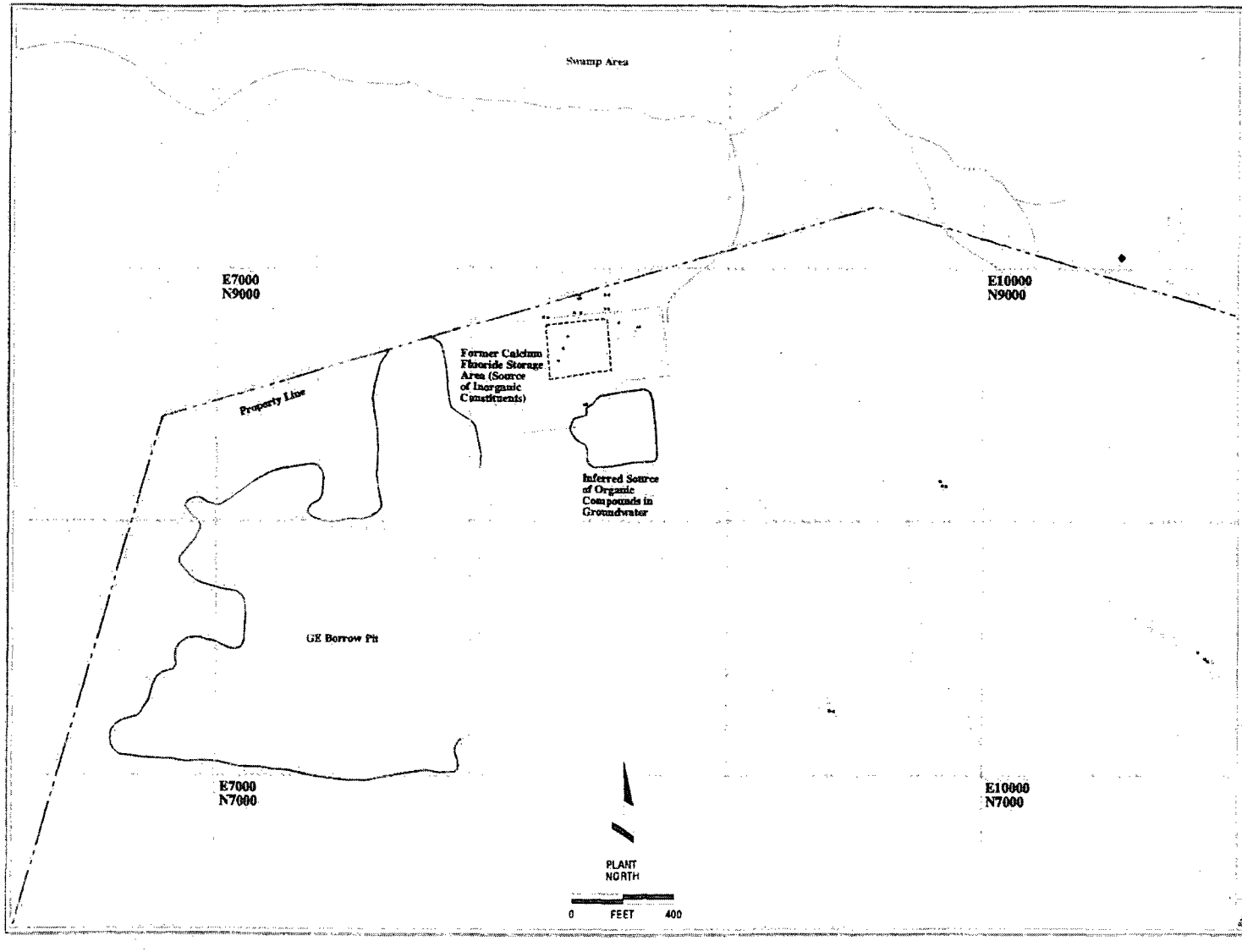


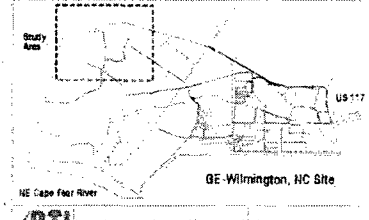
Exhibit 1. Location Map of Northwest Site Area

GE - Wilmington, NC

EXPLANATION

- Location of existing onsite monitoring well.
- ◆ Location of private offsite well.

Base map was developed using an existing Geographic Information System (GIS) database of this area of the GE-Wilmington site. This included the GE property line, the original fenced calcium fluoride storage area, and the locations of monitoring wells. The corner coordinates of the new fence were obtained from Perigon Drawing number 7043E95 (Calcium Fluoride Pit Premobilization Site Plan) dated 10/20/95 (scale of 1" to 20'). The parking area was obtained from an AUTOCAD file of this same document and converted into the GIS. The land features (roads, borrow pits, streams, and marshy areas) were obtained from an orthophoto map of New Hanover County (Map 3211 prepared by Westinghouse Landmark GIS based on February 1994 photography registered to NC state plane coordinate system, 1983 North American datum). Delineation of historic cleared areas (e.g., GE sand borrow pit) based on 1980 aerial photograph of Castle Hayne, NC 7.5 minute quadrangle.



RTI Map Preparation Date: 10/24/97 Map No. 6103/047/01F

II. Assessment Activities Completed Since Previous Update

Summary:

- Continued quarterly monitoring of CAF-series monitoring wells (Appendix A).
- Sampling and analysis of groundwater from CAF-series wells for VOCs (Appendix B).
- Nine exploratory borings (six onsite, three offsite) have been drilled for collection/analysis of discrete porewater samples for VOCs and inorganic constituents (Exhibit 2 and Appendix C).
- Fourteen offsite shallow wellpoints (from swamp area) have been installed and samples analyzed for VOCs and inorganic constituents (Exhibit 2 and Appendix D).
- Seven shallow offsite soil samples (from swamp area) have been collected for analysis for inorganic constituents (Exhibit 2 and Appendix D).
- Seven (three onsite, four offsite) surface-water samples have been collected for analysis for VOCs and inorganic constituents (Exhibit 2 and Appendix D).
- Three CAF-series monitoring wells have been installed in the former NW-CaF_2 storage area and samples of soil, groundwater, and discrete porewater samples have been analyzed for estimation of the uranium distribution coefficient (K_d) in groundwater.
- Evaluation of CaF_2 residue at former storage area for survey and release activities; evaluation of final release options is continuing.

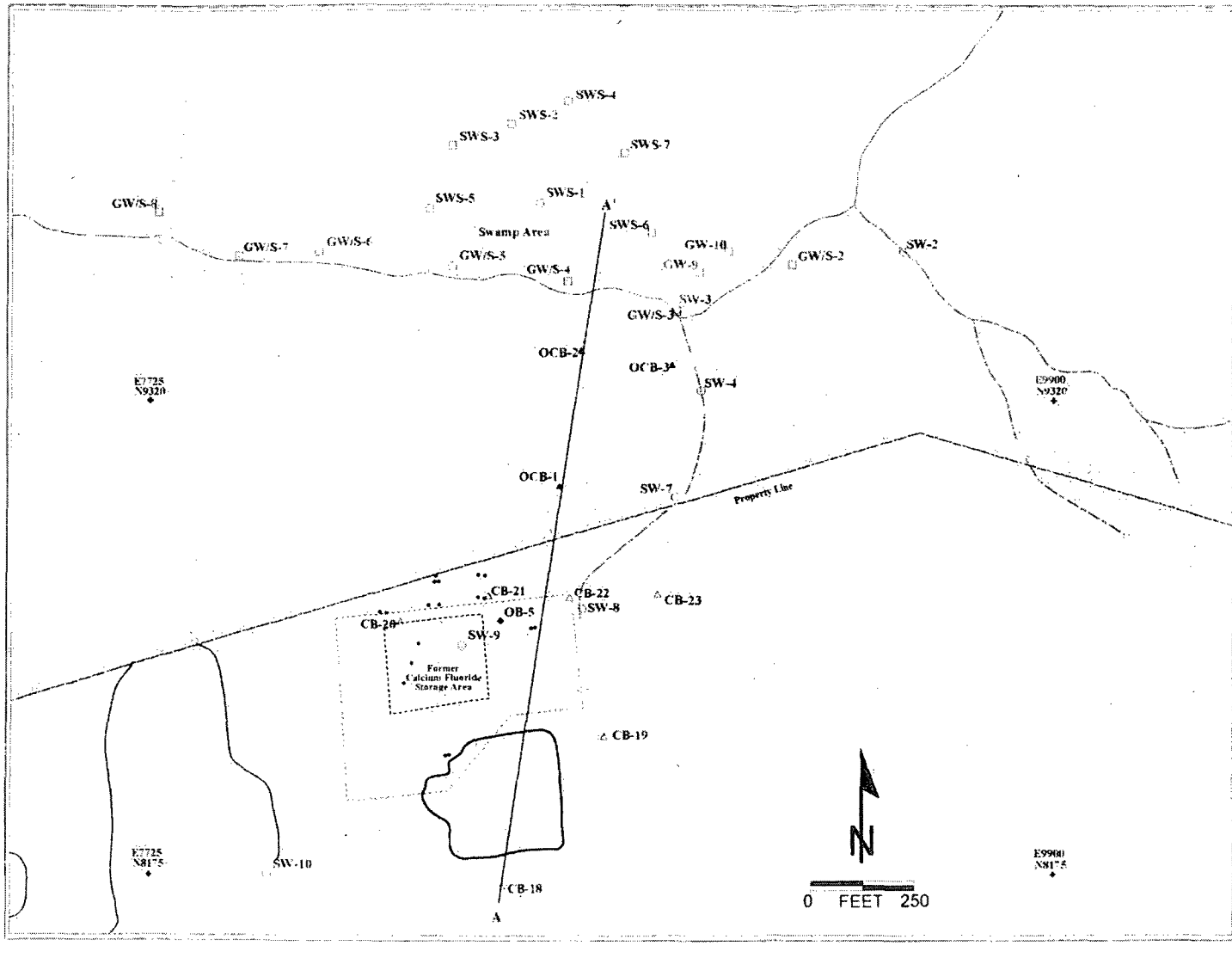


Exhibit 2

Locations of Sampling Points

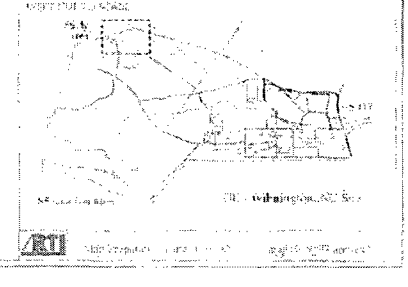
Northwest Site Area Assessments

GE - Wilmington, NC Site

EXPLANATION

- Approximate location of surface water samples (represents seeps, springs, streams) with sample ID numbers.
- Approximate location of shallow well-point and soil samples with sample ID numbers.
- Existing OB-series well (OB-5)
- Existing CAF-series monitoring wells
- Location of offsite exploratory borings (OCB-series)
- Location of onsite exploratory borings (CB-series)
- Stream location based on field reconnaissance
- Unpaved area / gravel roads
- Cross section A - A' (Refer to Exhibit 3)

Note: No surface water sample locations identified as SW-5 or SW-6. Location of CB-20 is approximate. Survey pending.



III. Hydrogeologic Framework

Summary:

- The study area is located on the eastern flank of a relic sand dune (Exhibit 1).
- There are no significant continuous clay layers or low permeability zones beneath the former NW-CaF_2 storage area. Clayey units have been encountered to the south of the former storage area (Exhibit 3).
- A zone of intermittent calcareous sandstone layers is present beneath the area beginning at approximately -20 ft mean sea level. There is some evidence that the top of this rocky layer dips to the east-northeast (Exhibit 3).
- A zone of highly organic silty sand is present beneath the study area at approximately 15 to 18 ft above mean sea level (Exhibit 6).
- Groundwater flow is predominately to the north - northeast (Exhibit 4), although its direction may vary slightly under heavy recharge events.
- A groundwater divide is present south of the study area.
- Groundwater beneath the study area discharges into the low-lying swamp area located to the north.
- Two pairs of small-diameter piezometers installed in the swamp area indicate a vertical upward gradient (i.e., confirms swamp is a discharge area).
- The surface sediments in the swamp area consist of highly organic peat.
- Groundwater in the swamp area likely travels very slowly due to the very low hydraulic gradient.

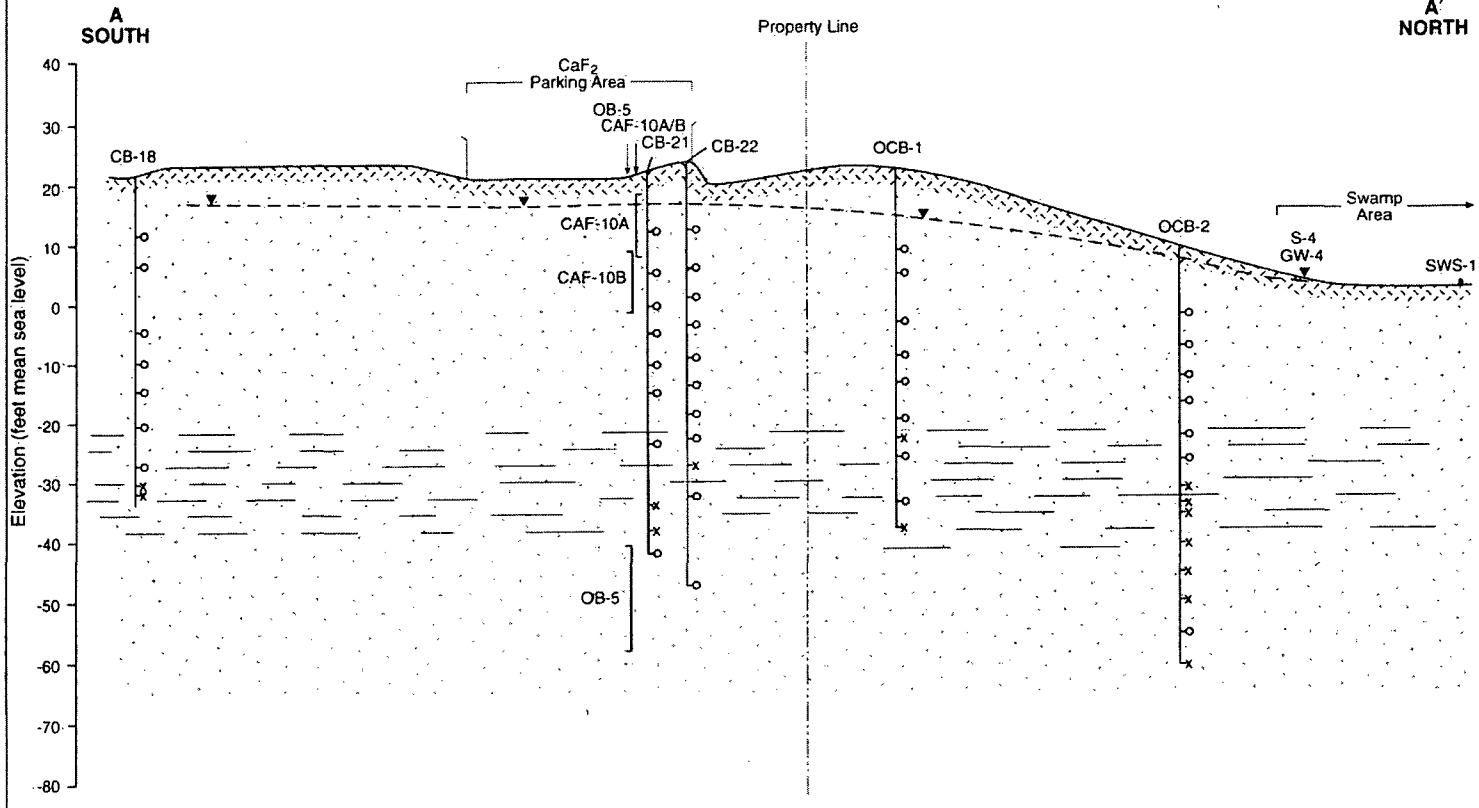


Exhibit 3. Geologic Cross Section A-A'

Northwest Site Area

EXPLANATION

- Tan to brown fine to medium quartz sand with intermittent clay and highly organic sand stringers
- Fine sand with intermittent calcareous sandstone layers, grading to green-gray glauconitic silty fine sand
- Inferred water table
- Screened interval for monitoring wells
- Exploratory boring with locations of porewater samples
  - o = sample collected
  - x = no sample collected/refusal of sample probe
- GE property line
- Land surface

Horizontal scale: 1" = 150'
Vertical scale: 1" = 20'

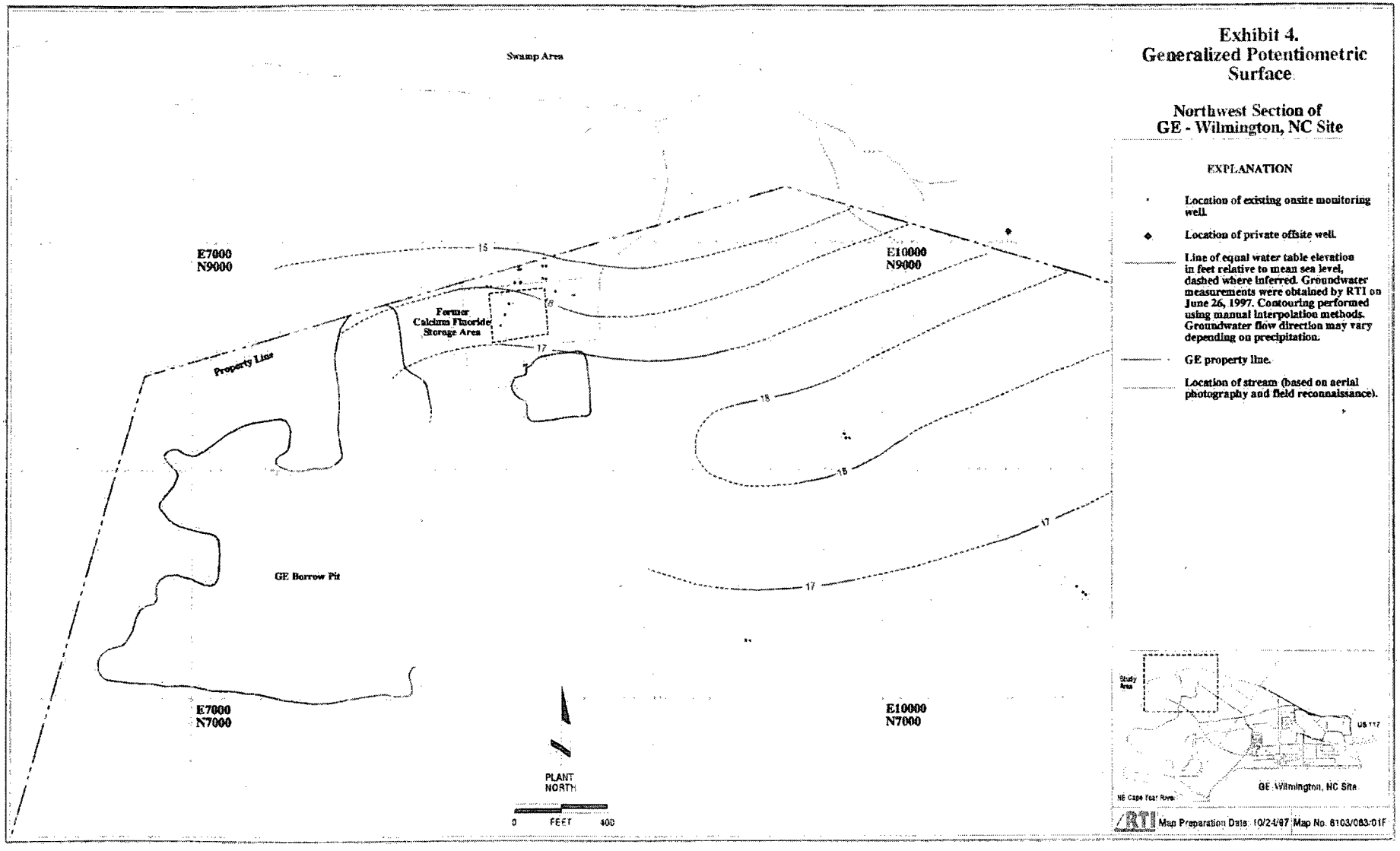


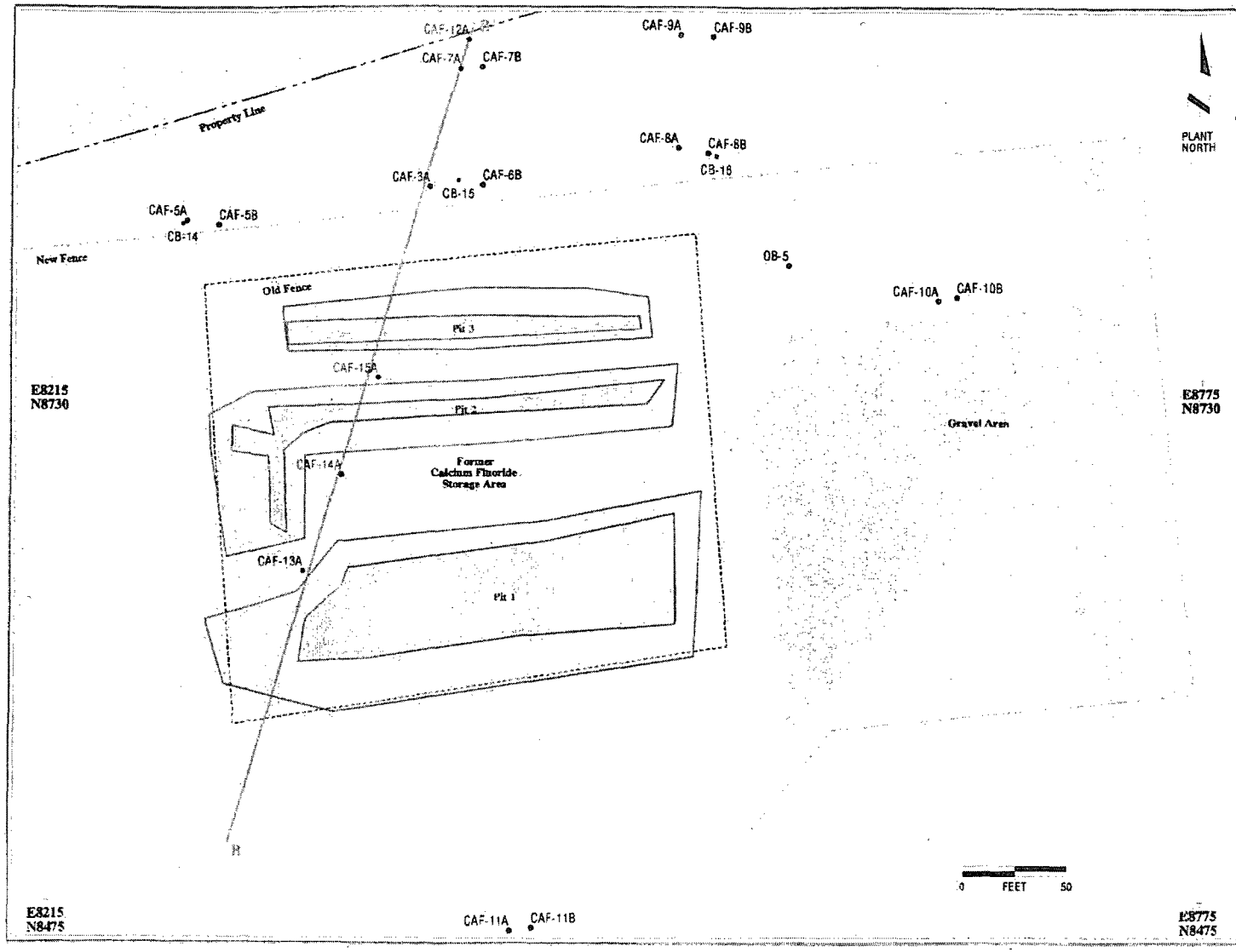
Exhibit 4.
Generalized Potentiometric Surface

Northwest Section of GE - Wilmington, NC Site

EXPLANATION

- Location of existing onsite monitoring well.
- Location of private offsite well.
- Line of equal water table elevation in feet relative to mean sea level, dashed where inferred. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.
- GE property line.
- Location of stream (based on aerial photography and field reconnaissance).

Exhibit 5.
Location Map of Former NW Calcium Fluoride Storage Area Monitoring Points



EXPLANATION

CAF-11A — Monitoring well location and ID.

CB-15 — Exploratory boring location and ID.

Cross section line (refer to Exhibit 6 for B-B').

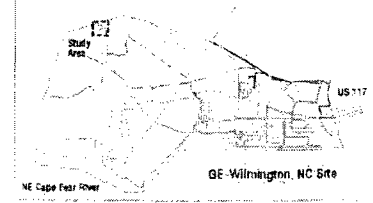
Approximate excavated pit bottom area.

Approximate excavated pit slope area.

Pit location and configuration based on information provided by NFS in AUTOCAD drawing 800-C0040-D dated 8/13/97.

Base map was developed using an existing Geographic Information System (GIS) database of this area of the GE-Wilmington site. This included the GE property line, the original fenced calcium fluoride storage area, and the location of the new CAF-series monitoring wells.
The corner coordinates of the new fence were obtained from Perigon Drawing number 7043F95 (Calcium Fluoride Pit Premobilization Site Plan) dated 10/20/95 (scale of 1" to 20'). The parking area was obtained from an AUTOCAD file of this same document and converted into the GIS.

GE coordinate system.



RTI Map Preparation Date: 10/16/97 Map No. 6103/C87/01F

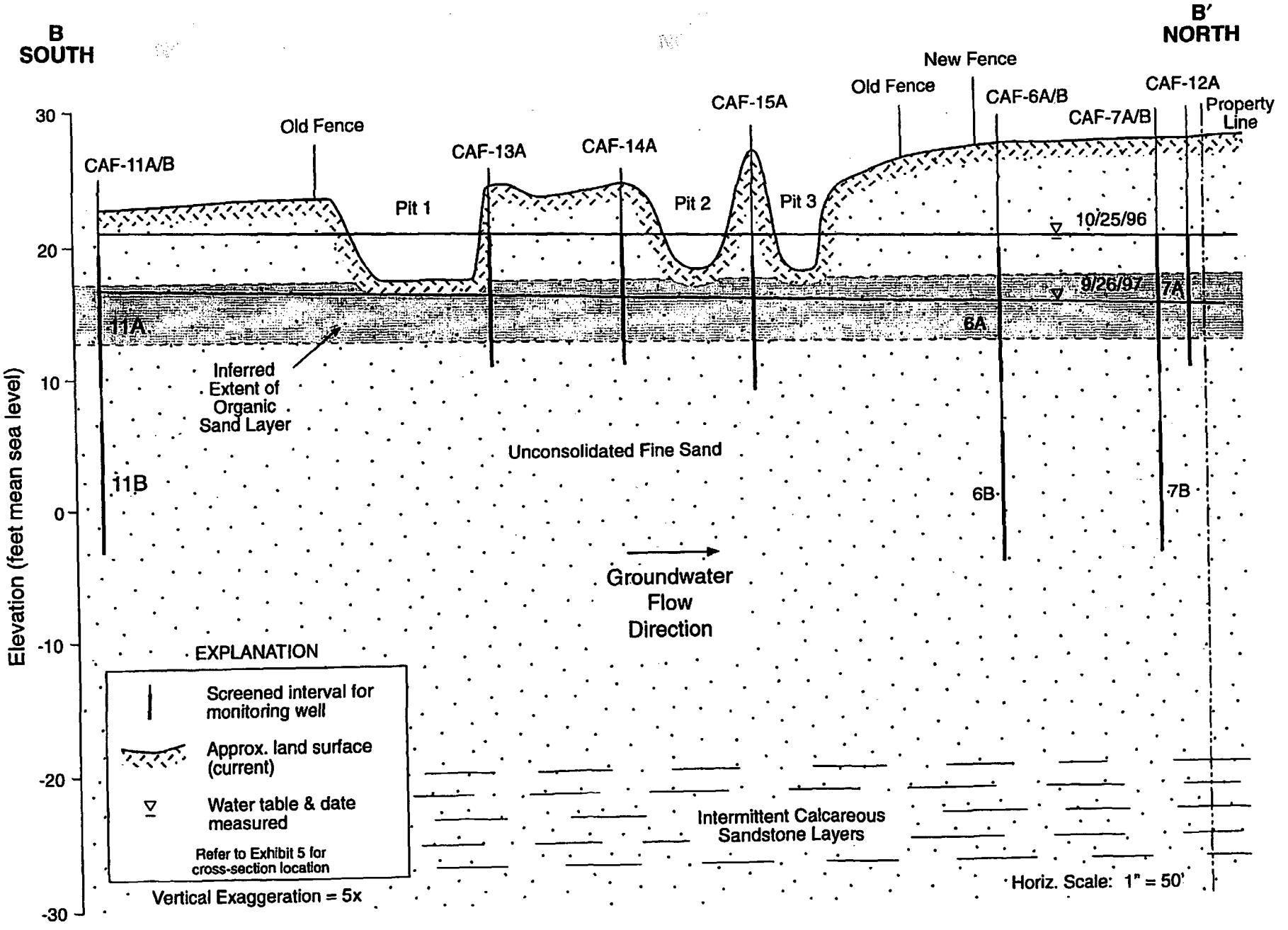


Exhibit 6. Hydrogeologic Cross Section of Former NW CaF_2 Storage Area (B-B′).

IV. Groundwater Quality - Inorganic Constituents

Summary:

- Fluoride-contaminated groundwater is present beneath the former CaF_2 storage area.
- Fluoride is detected in wells downgradient of former NW-CaF_2 storage area. Levels are typically higher in CAF-B series wells (Exhibits 7 - 10).
- Fluoride contamination apparently limited to the unconsolidated aquifer above -20 feet MSL (Exhibit 11).
- Fluoride not detected above NC 2L standards in swamp or surface-water samples (Exhibit 12).
- Uranium contaminated groundwater is present beneath former CaF_2 storage area (Exhibits 15 and 17).
- Uranium levels typically higher in CAF-A series wells (Exhibit 16).
- Trends and distribution of gross alpha activity in CAF-series wells similar to those observed for total uranium (Exhibits 18 - 22).

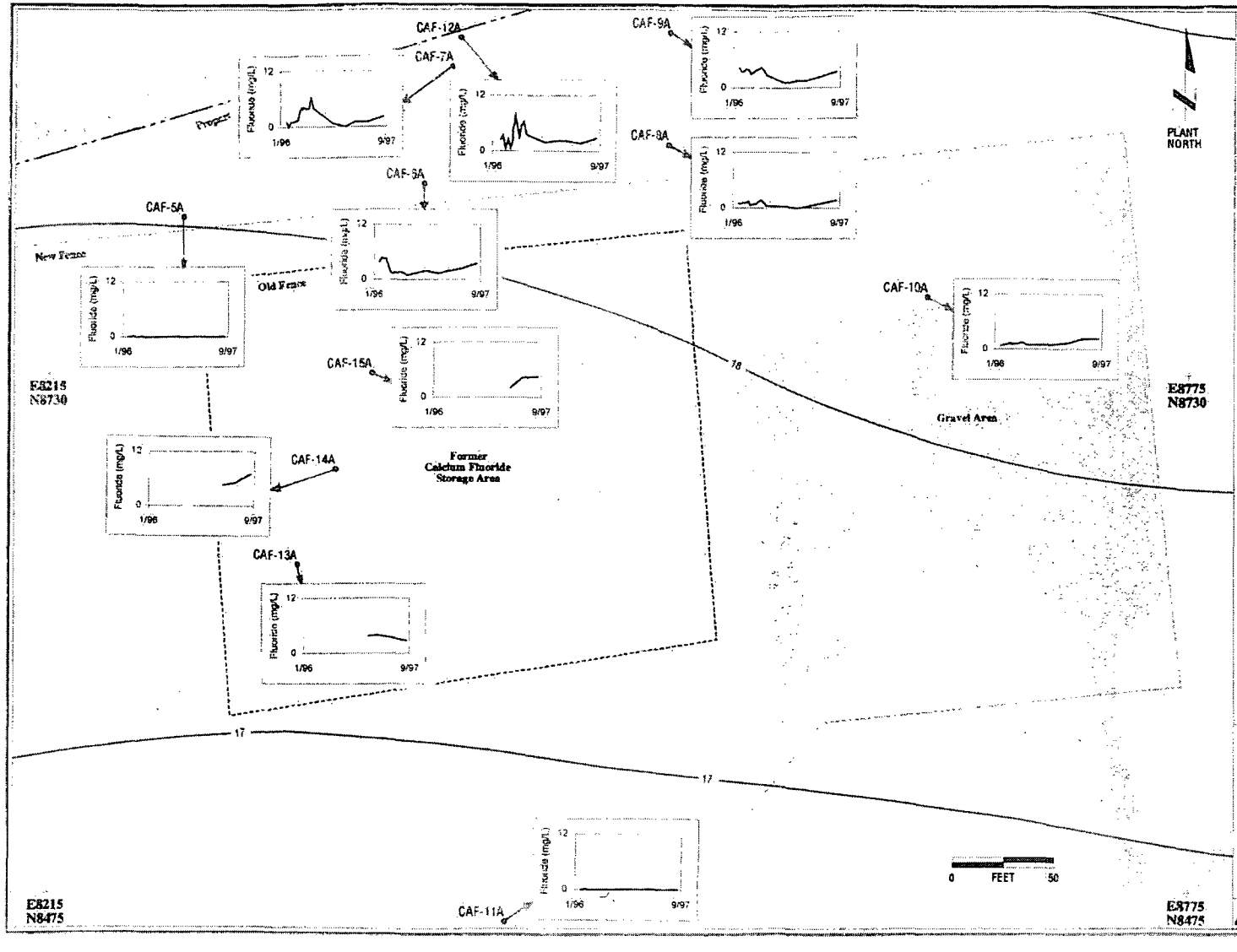


Exhibit 7. Trends for Fluoride in CAF-A Series Wells - Former Calcium Fluoride Storage Area

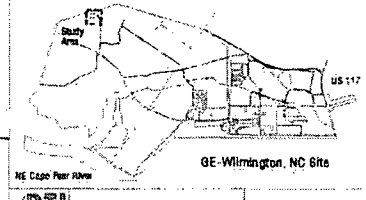
EXPLANATION

CAF-11A — Monitoring well location and ID.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

GE coordinate system.

Analytical results used to prepare the concentration trends are in Appendix A.



GE-Wilmington, NC Site

RTI Map Preparation Date: 10/10/97 Map No. 8103/060a/01F

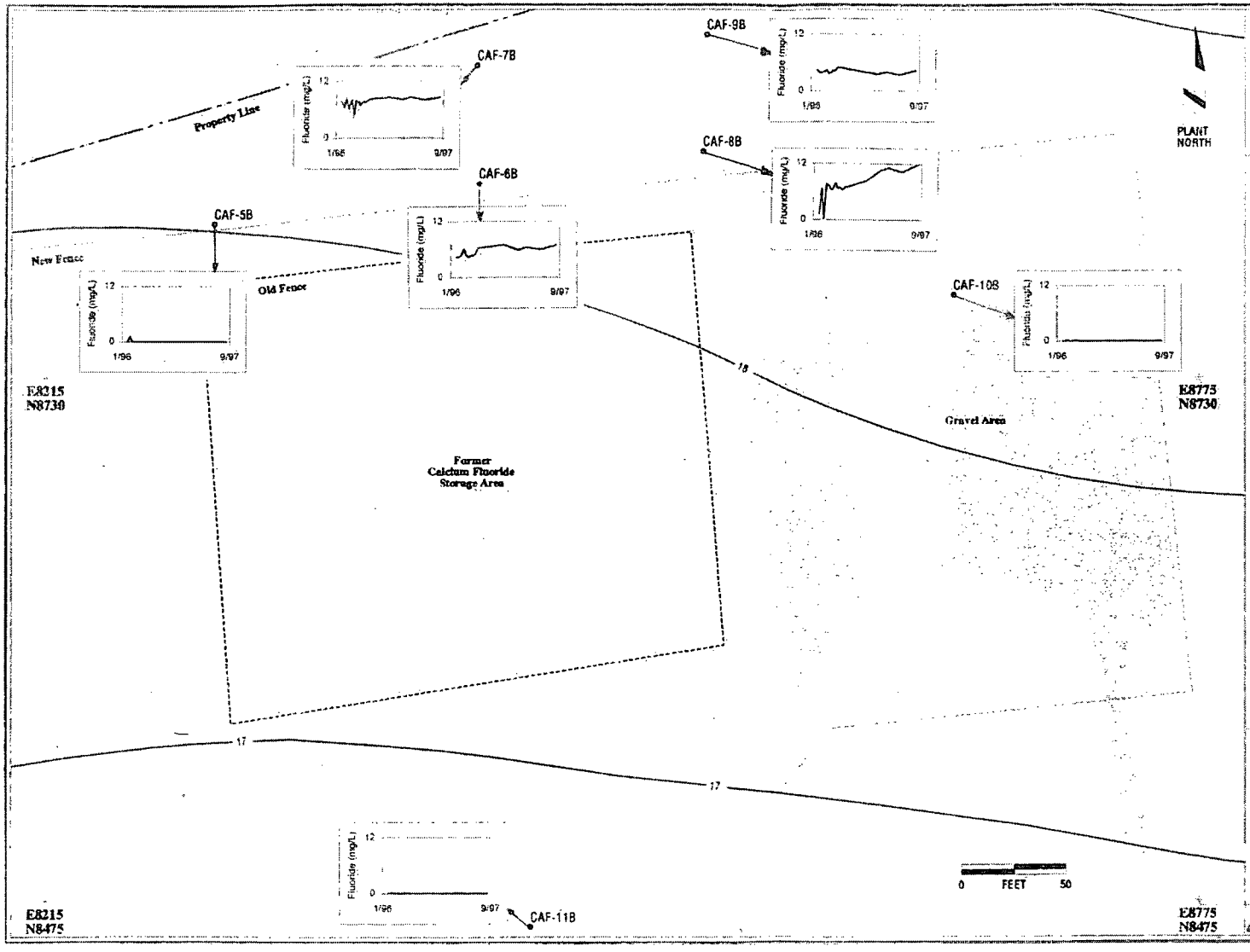


Exhibit 8.
Trends for Fluoride in CAF-B Series Wells - Former Calcium Fluoride Storage Area

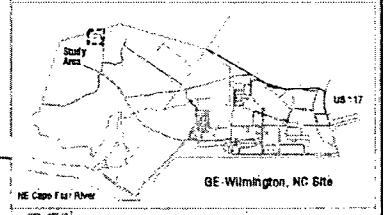
EXPLANATION

CAF-11B — Monitoring well location and ID.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

GE coordinate system.

Analytical results used to prepare the concentration trends are in Appendix A.



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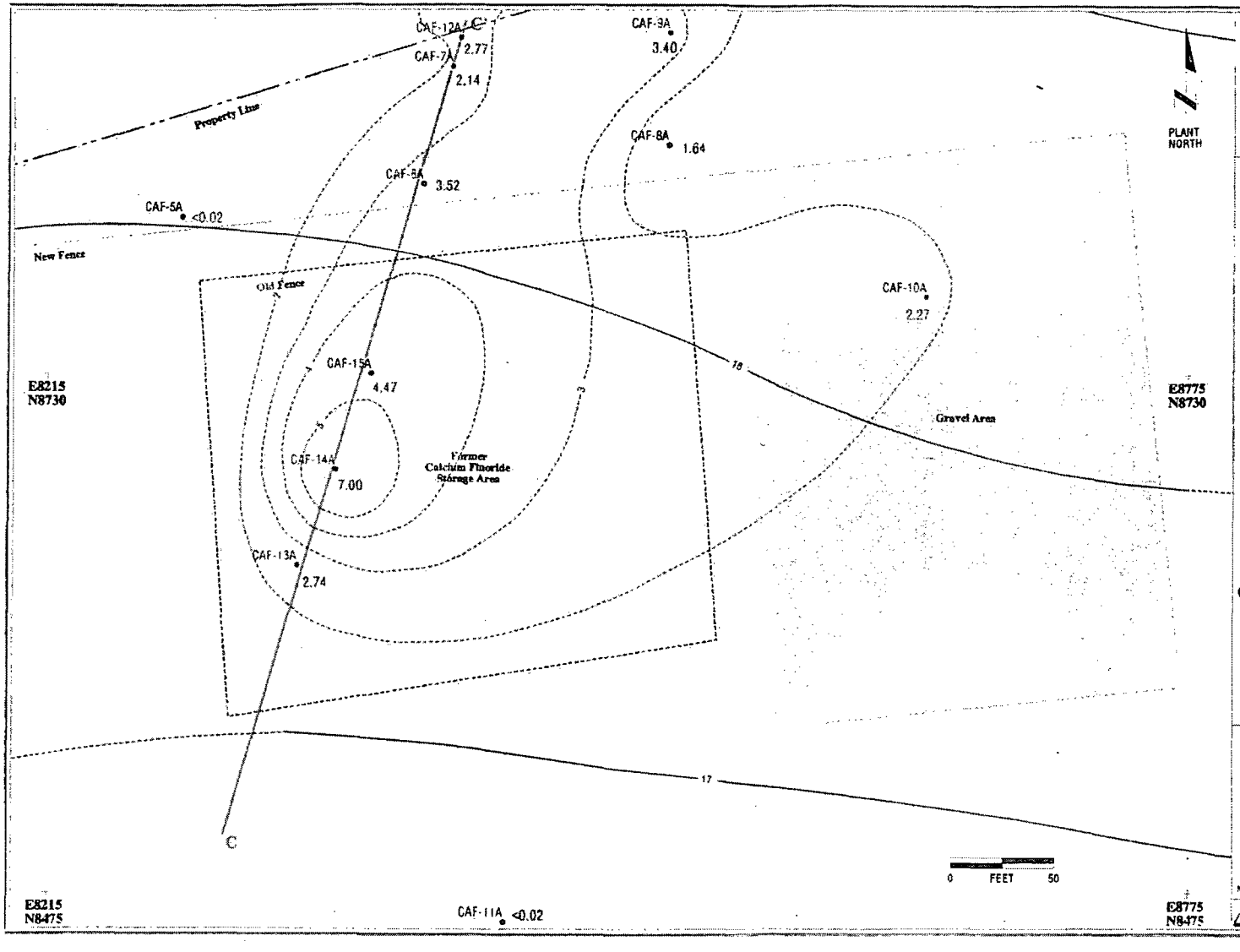


Exhibit 9. Distribution of Fluoride in Groundwater from CAF-A Series Wells - Former Calcium Fluoride Storage

EXPLANATION

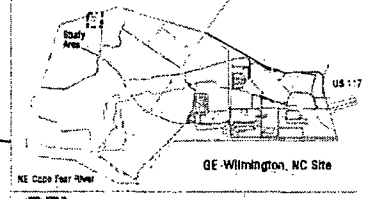
1.64 — Fluoride concentration measured in unfiltered groundwater (mg/L). Groundwater samples collected August 11-12, 1997.

Inferred line of equal fluoride concentration (mg/L) measured in groundwater from CAF-A series wells. Contouring performed using manual interpolation methods; alternate interpretations could be made, particularly as new analytical data are available. Contour interval is 1 mg/L.

Analytical results reported provided by RTI Earth and Mineral Sciences Department.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

C — C' Cross section C - C' (Refer to Exhibit 11)



GE Wilmington, NC Site

RTI Map Preparation Date: 10/14/97 Map No. 8103/064a/01F

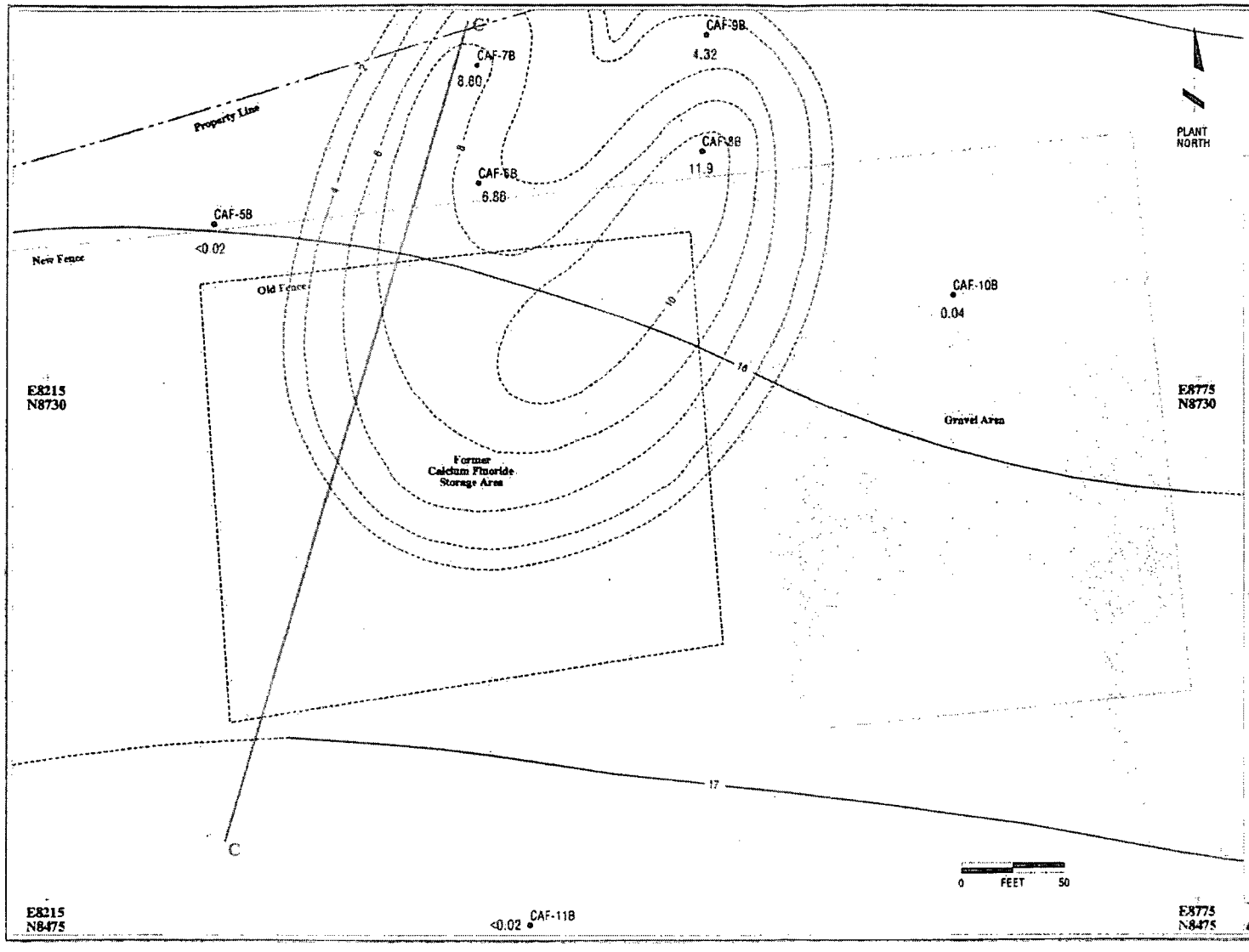


Exhibit 10. Distribution of Fluoride in Groundwater from CAF-B Series Wells - Former Calcium Fluoride Storage

EXPLANATION

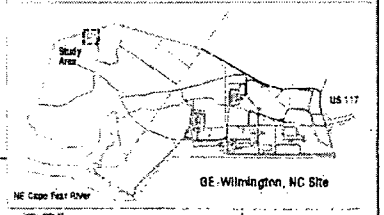
4.32 Fluoride concentration measured in unfiltered groundwater (mg/L). Groundwater samples collected August 11-12, 1997.

Inferred line of equal fluoride concentration (mg/L) measured in groundwater from CAF-B series wells. Contouring performed using manual interpolation methods; alternate interpretations could be made, particularly as new analytical data are available. Contour interval is 1 mg/L.

Analytical results reported provided by RTI Earth and Mineral Sciences Department.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

C C' Cross section C - C' (Refer to Exhibit 11)



RTI Map Preparation Date: 10/15/97 Map No. 6103/064b/01F

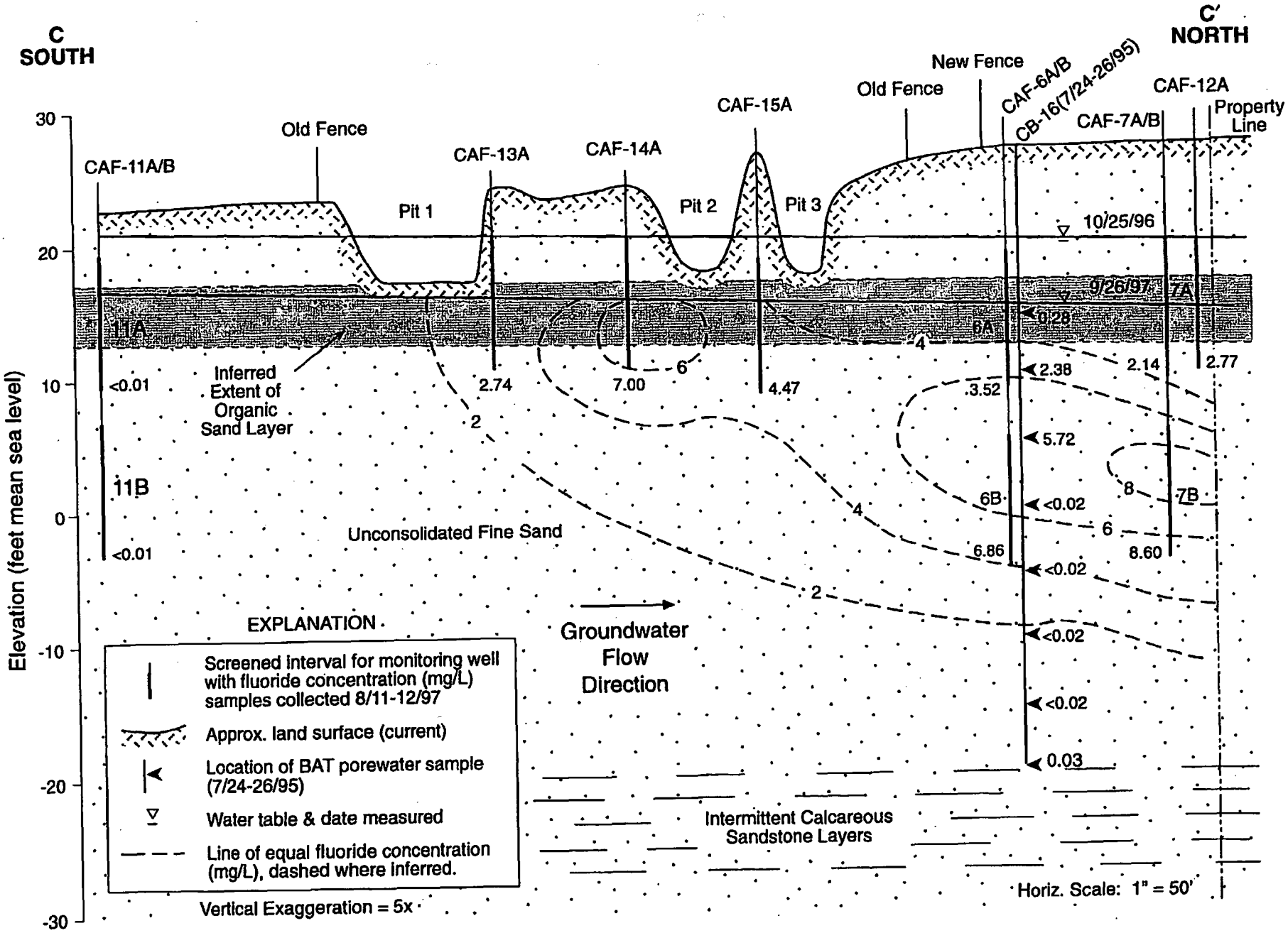


Exhibit 11. Vertical Distribution of Fluoride Beneath Former NW-CaF_2 Storage Area (C-C').

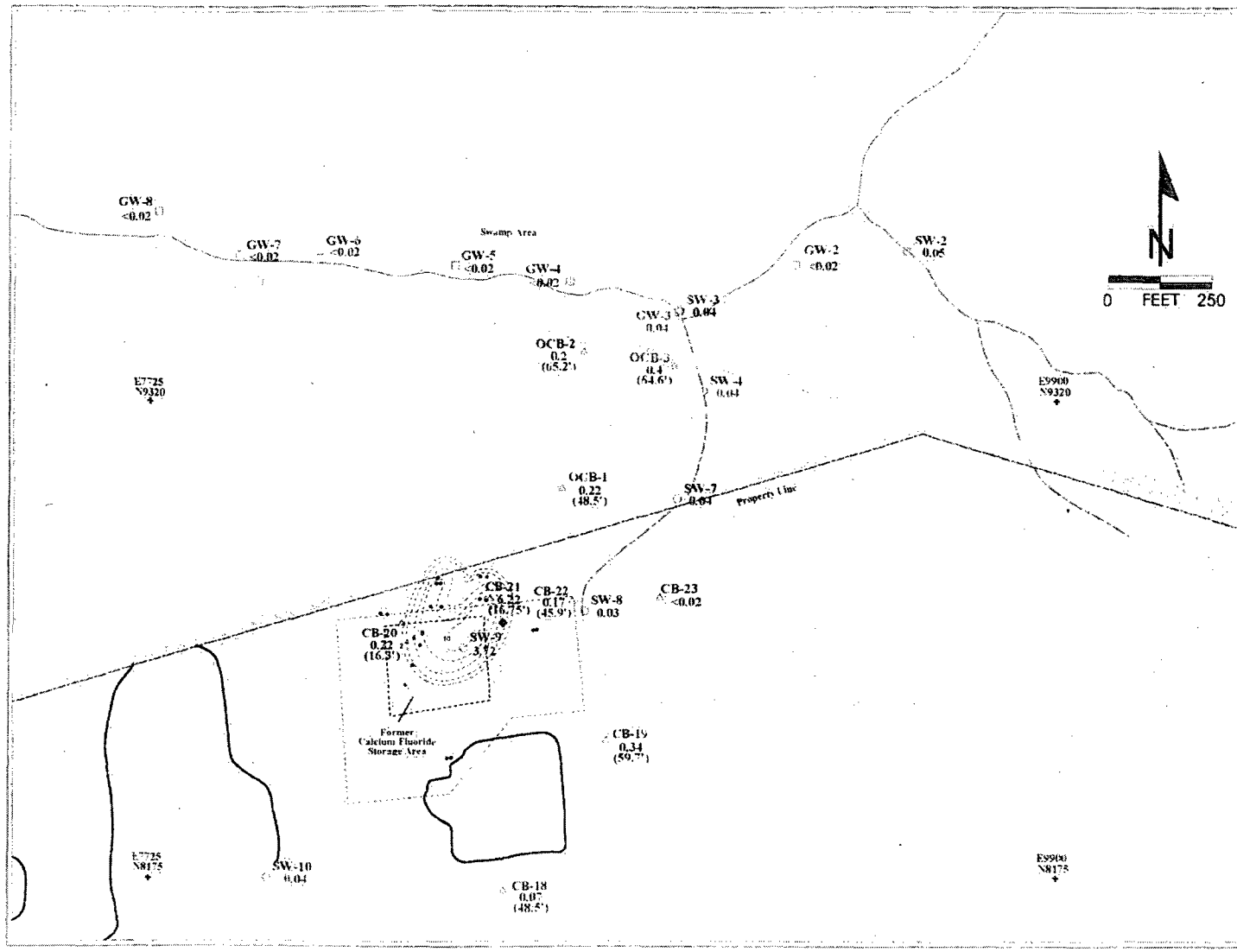


Exhibit 12

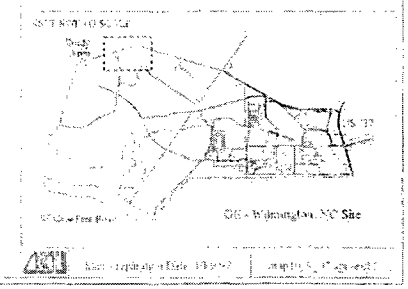
Distribution of Fluoride in Groundwater and Surface-Water Samples - NW Site Area and Adjacent Property

GE - Wilmington, NC Site

EXPLANATION

- ○ Approximate location of surface water samples (represents seeps, springs, streams) with sample ID numbers and fluoride concentration (mg/L). Refer to Appendix D for analytical results.
- □ Approximate location of shallow well-point samples with sample ID numbers and fluoride concentration (mg/L). Refer toAppendix D for analytical results.
- ◆ Existing OB-series Well (OB-5)
- ● Existing CAF-series monitoring wells. Refer to Appendix A for analytical results.
- △ Locations of existing offsite (OCB-series) and onsite (CB-series) exploratory borings with highest measured fluoride concentration (mg/L) and corresponding depth interval (BLS). Results from exploratory borings provided in Appendix C.

Inferred extent of fluoride in CAF-B series monitoring wells (mg/L) (August 11 - 12, 1997). Refer to Exhibit 10 for additional detail.Refer to Exhibit 9 for extent of fluoride in CAF-A series wells.



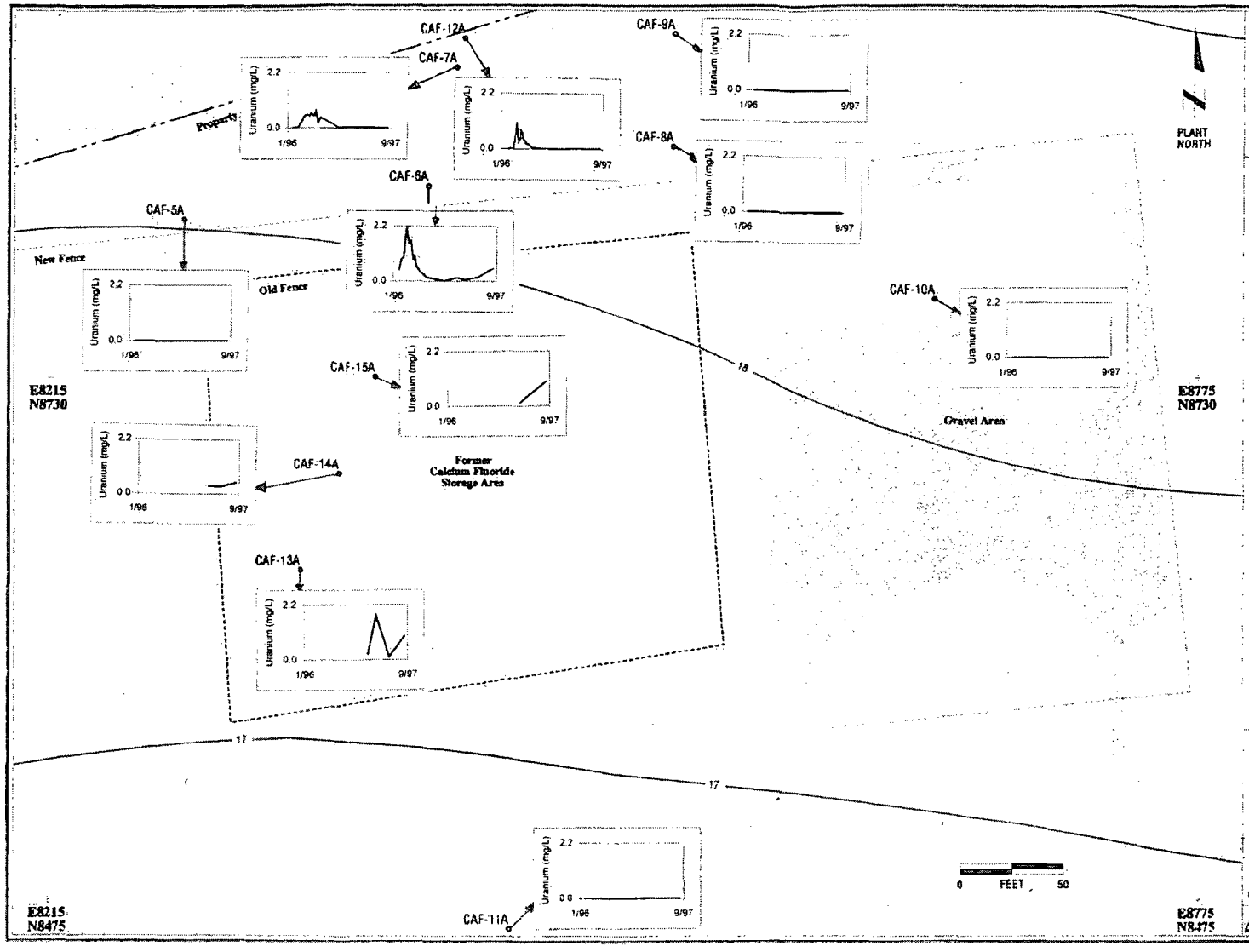


Exhibit 13. Trends for Total Uranium in CAF-A Series Wells - Former Calcium Fluoride Storage Area

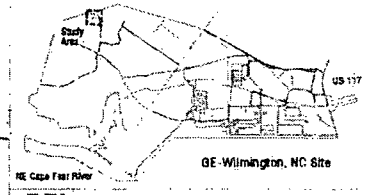
EXPLANATION

CAF-11A ● Monitoring well location and ID.

—— Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

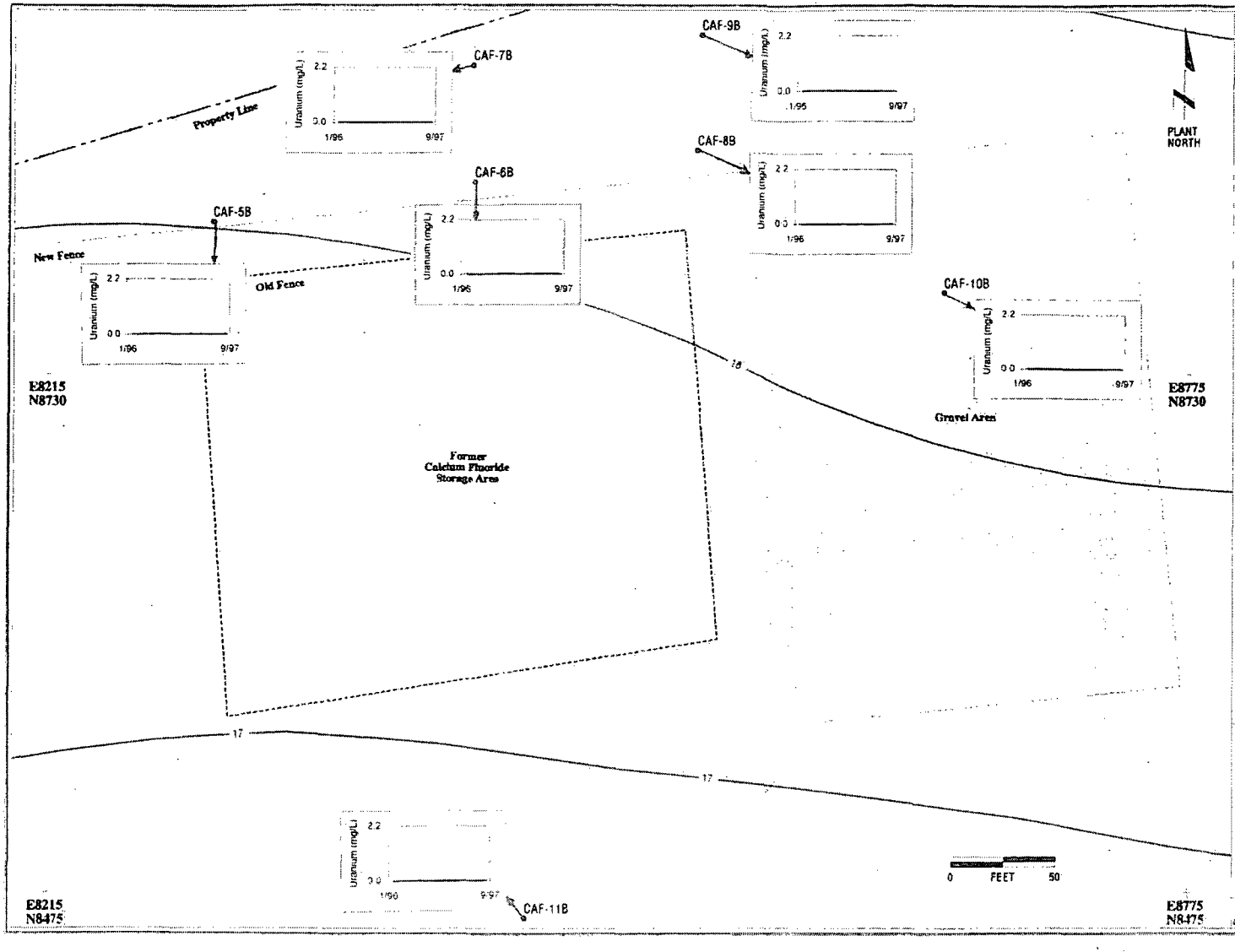
GE coordinate system.

Analytical results used to prepare the concentration trends are in Appendix A.



RTI Map Preparation Date: 10/13/97 Map No. 5103/061a/01F

Exhibit 14.
Trends for Total Uranium in CAF-B Series Wells - Former Calcium Fluoride Storage Area



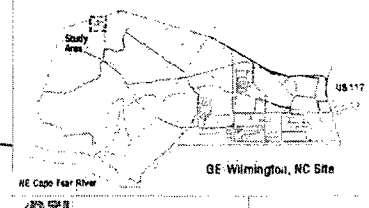
EXPLANATION

CAF-11B — Monitoring well location and ID.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

GE coordinate system.

Analytical results used to prepare the concentration trends are in Appendix A.



RTI Map Preparation Date: 10/13/97 Map No. 6103/061b/01F

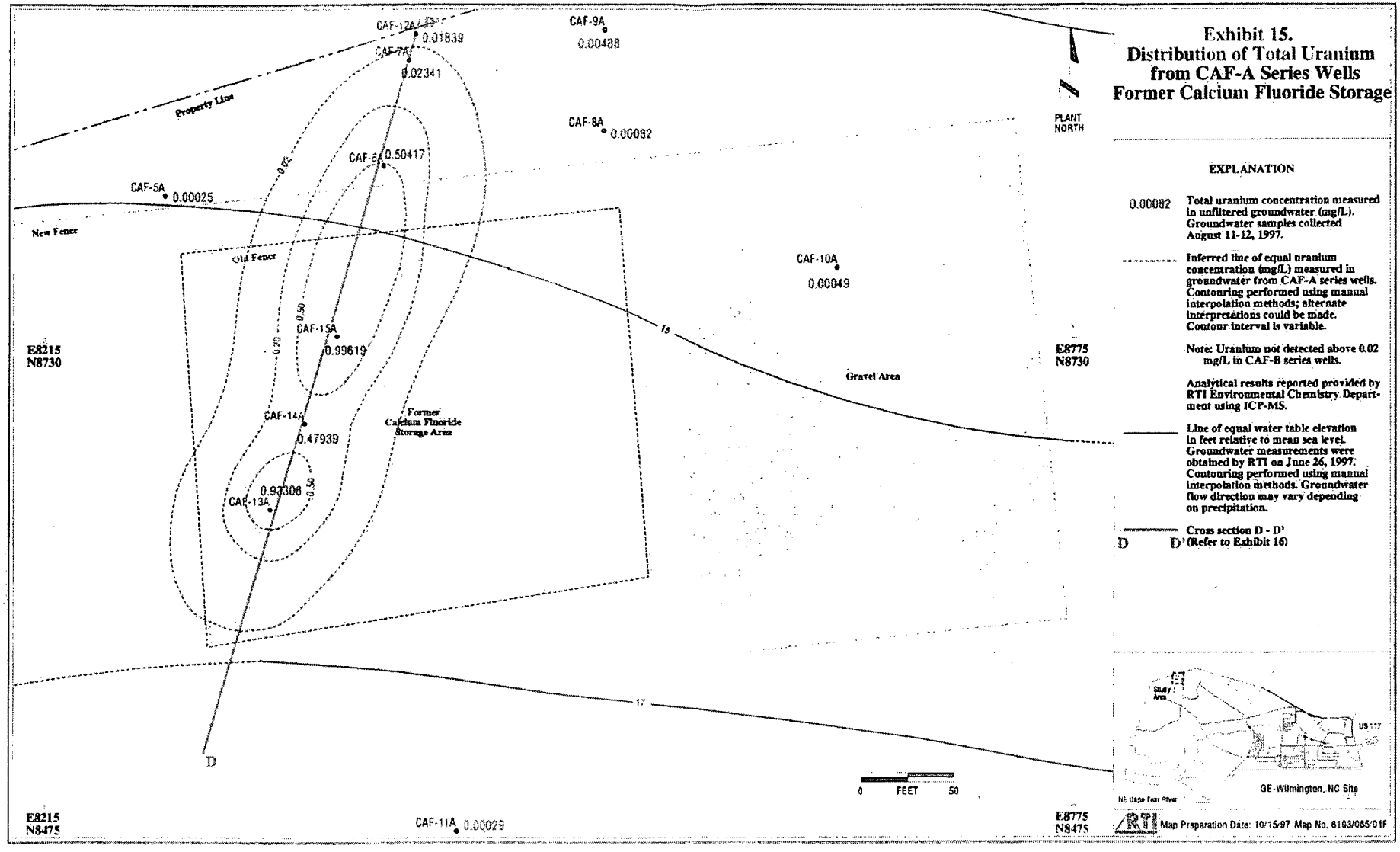


Exhibit 15.
Distribution of Total Uranium from CAF-A Series Wells Former Calcium Fluoride Storage

EXPLANATION

0.00082 — Total uranium concentration measured in unfiltered groundwater (mg/L). Groundwater samples collected August 11-12, 1997.

Inferred line of equal uranium concentration (mg/L) measured in groundwater from CAF-A series wells. Contouring performed using manual interpolation methods; alternate interpretations could be made. Contour interval is variable.

Note: Uranium not detected above 0.02 mg/L in CAF-B series wells.

Analytical results reported provided by RTI Environmental Chemistry Department using ICP-MS.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

D — D' Cross section D - D' (Refer to Exhibit 16)

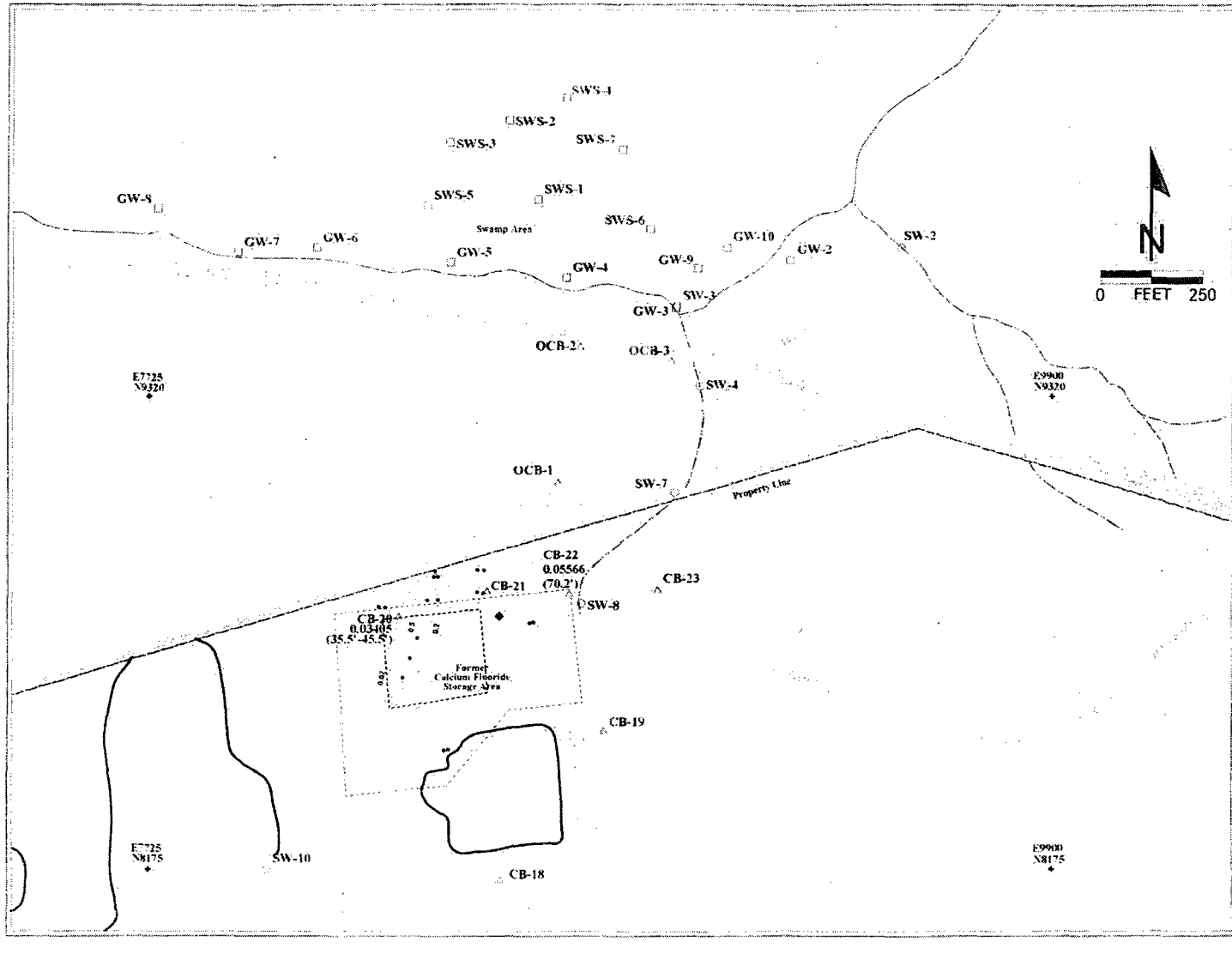


Exhibit 17

Distribution of Total Uranium Above 0.02 mg/L in Groundwater and Surface-Water Samples

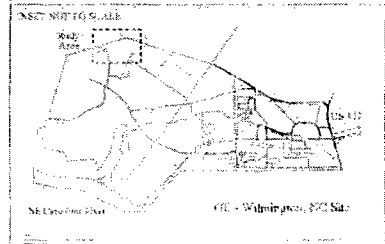
Northwest Site Area and Adjacent Property

GE - Wilmington, NC Site

EXPLANATION

- Inferred extent of total uranium above 0.02 mg/L in CAF-A series monitoring wells (mg/L) (August 11-12, 1997). Refer to Exhibit 15 for additional detail.
- Approximate location of surface water samples (represents seeps, springs, streams) with ID numbers. Refer to Appendix D for analytical results.
- Approximate location of shallow well-point samples with ID numbers. Refer to Appendix D for analytical results.
- Existing OB-series well (OB-5)
- Existing CAF-series monitoring wells. Refer to Appendix A for analytical results.
- Locations of existing offsite (OCB-series) and onsite (CB-series) exploratory borings. Highest measured total uranium concentration (mg/L) and corresponding depth interval shown for borings CB-20 and CB-22.

Note: Total uranium concentrations at sample locations shown are below 0.02 mg/L (except as noted) and are based on unfiltered samples except for confirmatory samples from OCB-3 (at 22.1ft BLS). The initial samples from this location contained excessive organic silt and slightly higher uranium levels. Uranium concentrations above 0.02 mg/L in the samples from CB-20 and CB-22 are likely due to excessive organic silt. Analytical results for exploratory borings are provided in Appendix C.



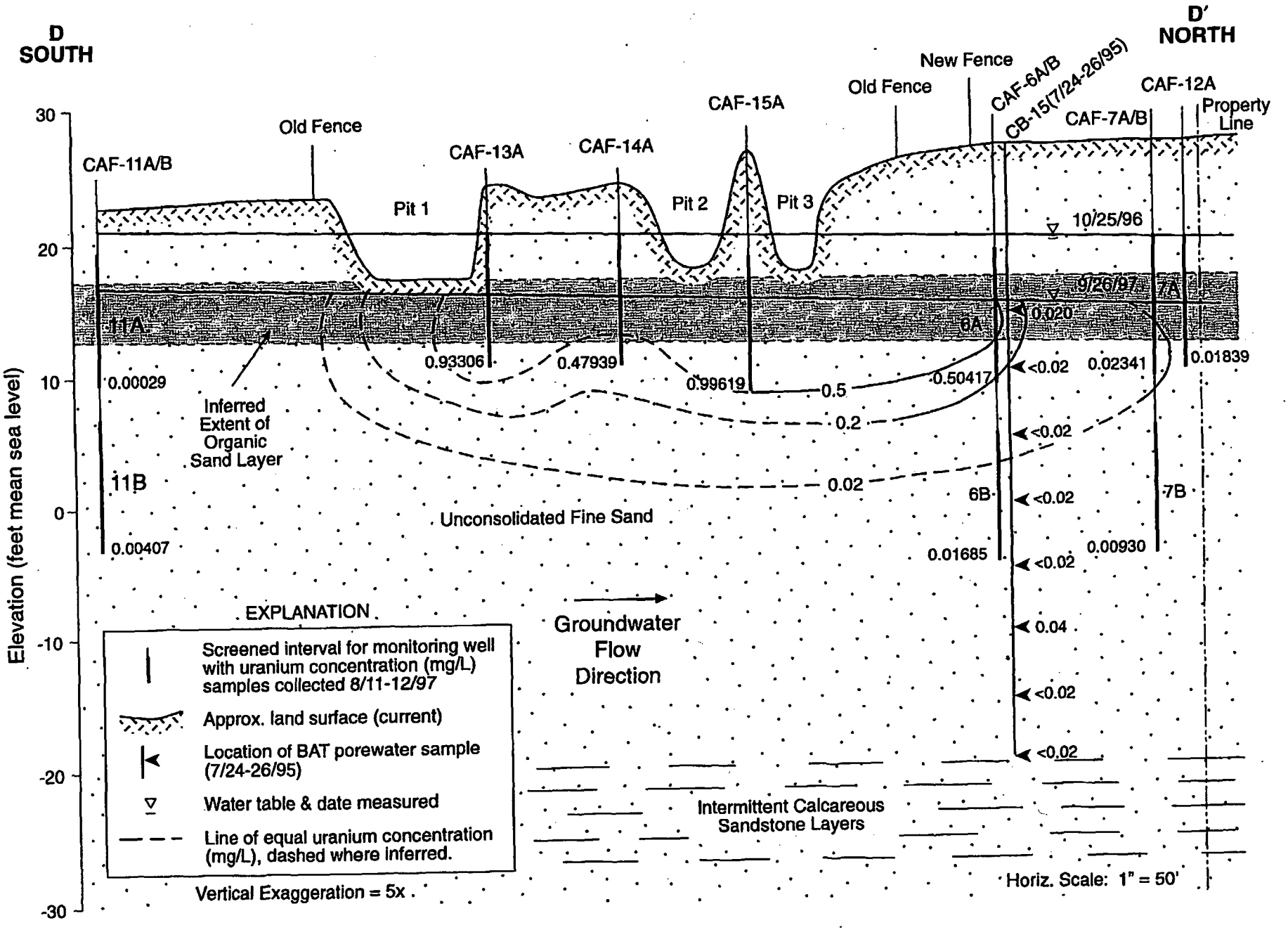


Exhibit 16. Vertical Distribution of Uranium Beneath Former NW-CaF_2 Storage Area (D-D').

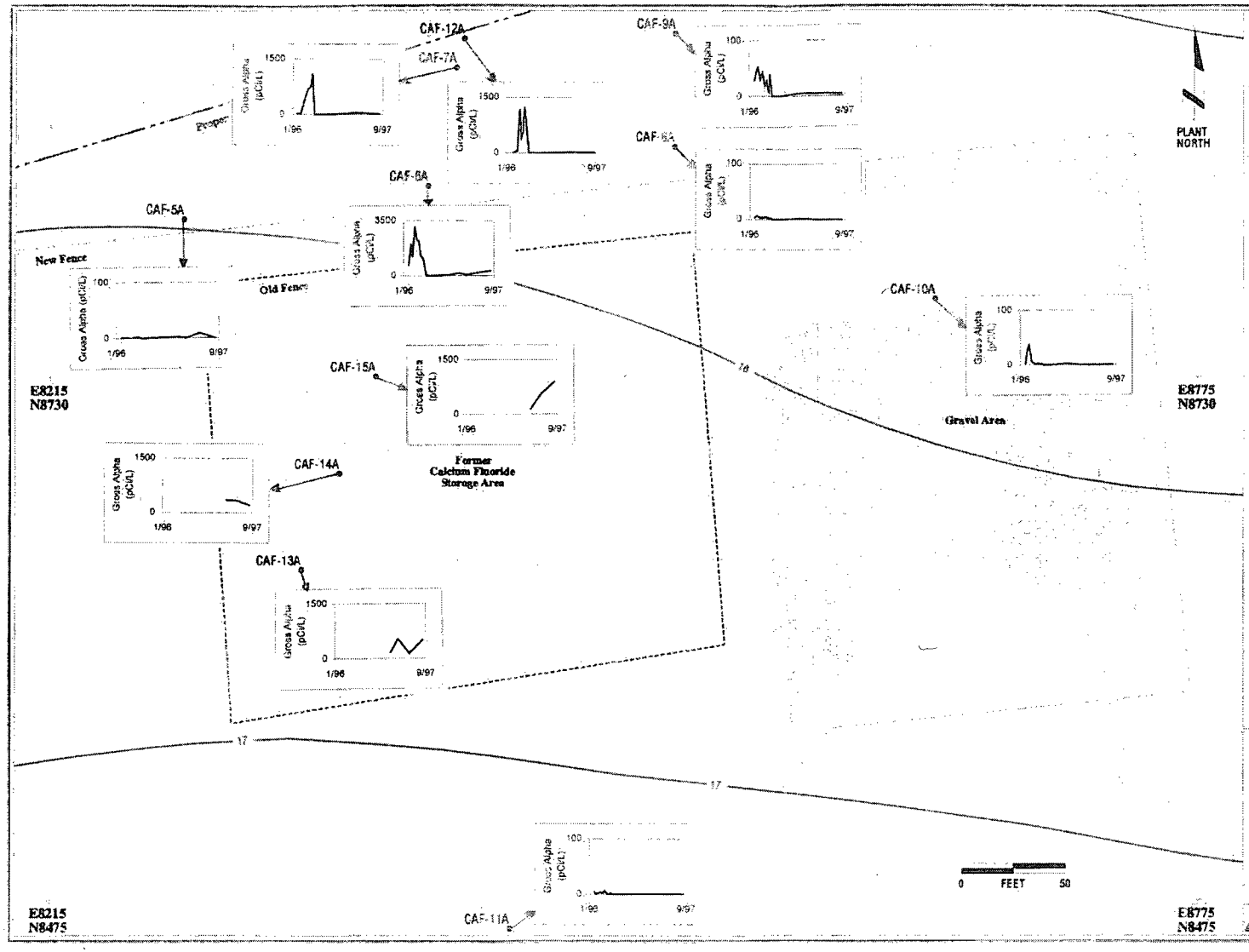


Exhibit 18.
Trends for Gross Alpha Activity in CAF-A Series Wells - Former Calcium Fluoride Storage Area

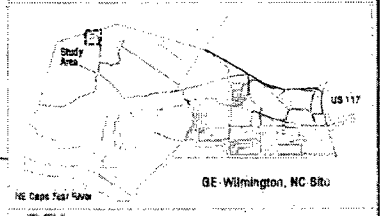
EXPLANATION

CAF-11A — Monitoring well location and ID.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

GE coordinate system.

Analytical results used to prepare the concentration trends are in Appendix A.



GE-Wilmington, NC Site

RTI Map Preparation Date: 10/13/97 Map No. 6103/082a/01F

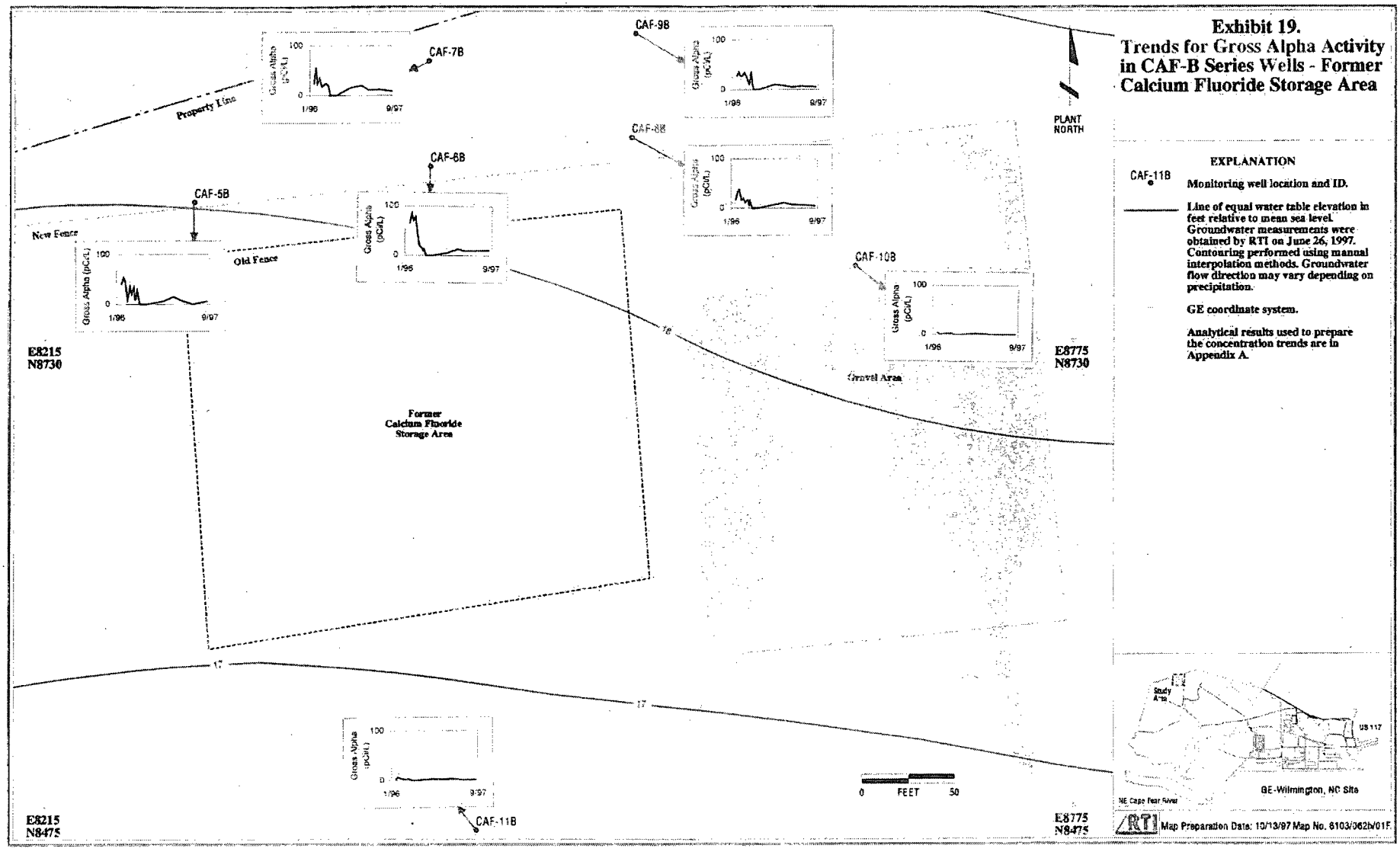


Exhibit 19.
Trends for Gross Alpha Activity in CAF-B Series Wells - Former Calcium Fluoride Storage Area

EXPLANATION

CAF-11B — Monitoring well location and ID.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

GE coordinate system.

Analytical results used to prepare the concentration trends are in Appendix A.

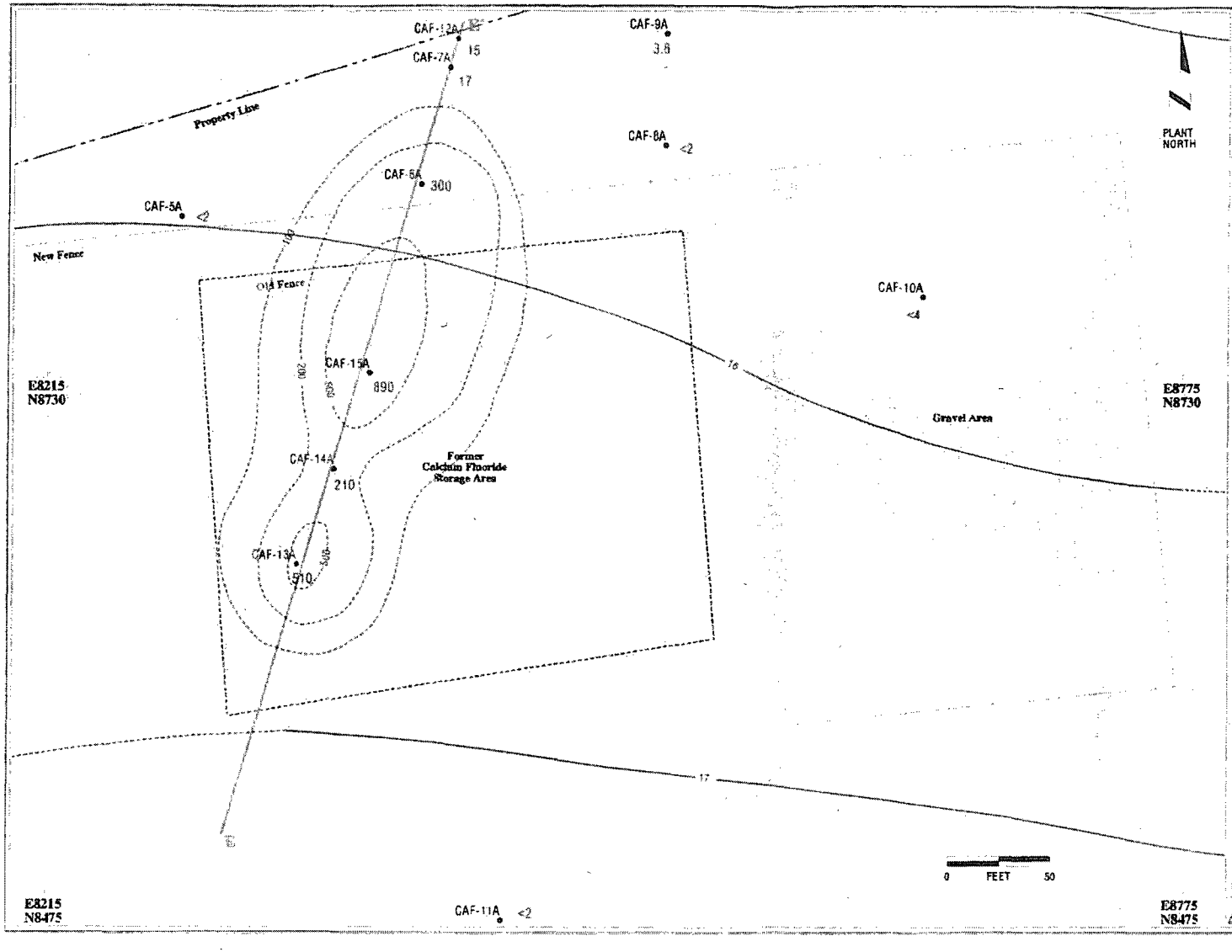


Exhibit 20. Distribution of Gross Alpha Activity from CAF-A Series Wells - Former Calcium Fluoride Storage

EXPLANATION

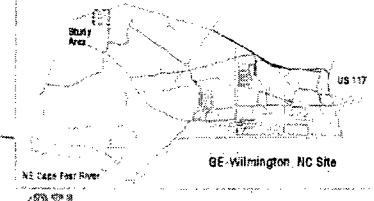
3.6 — Gross alpha activity measured in unfiltered groundwater (pCi/L). Groundwater samples collected August 11-12, 1997.

Inferred line of equal gross alpha activity concentration (pCi/L) measured in groundwater from CAF-A series wells. Contouring performed using manual interpolation methods; alternate interpretations could be made, particularly as new analytical data are available. Contour interval is variable.

Analytical results reported provided by Teledyne-Brown Engineering.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

E — E' Cross section E - E' (Refer to Exhibit 22)



RTI Map Preparation Date: 10/15/97 Map No. B103/066a/01F

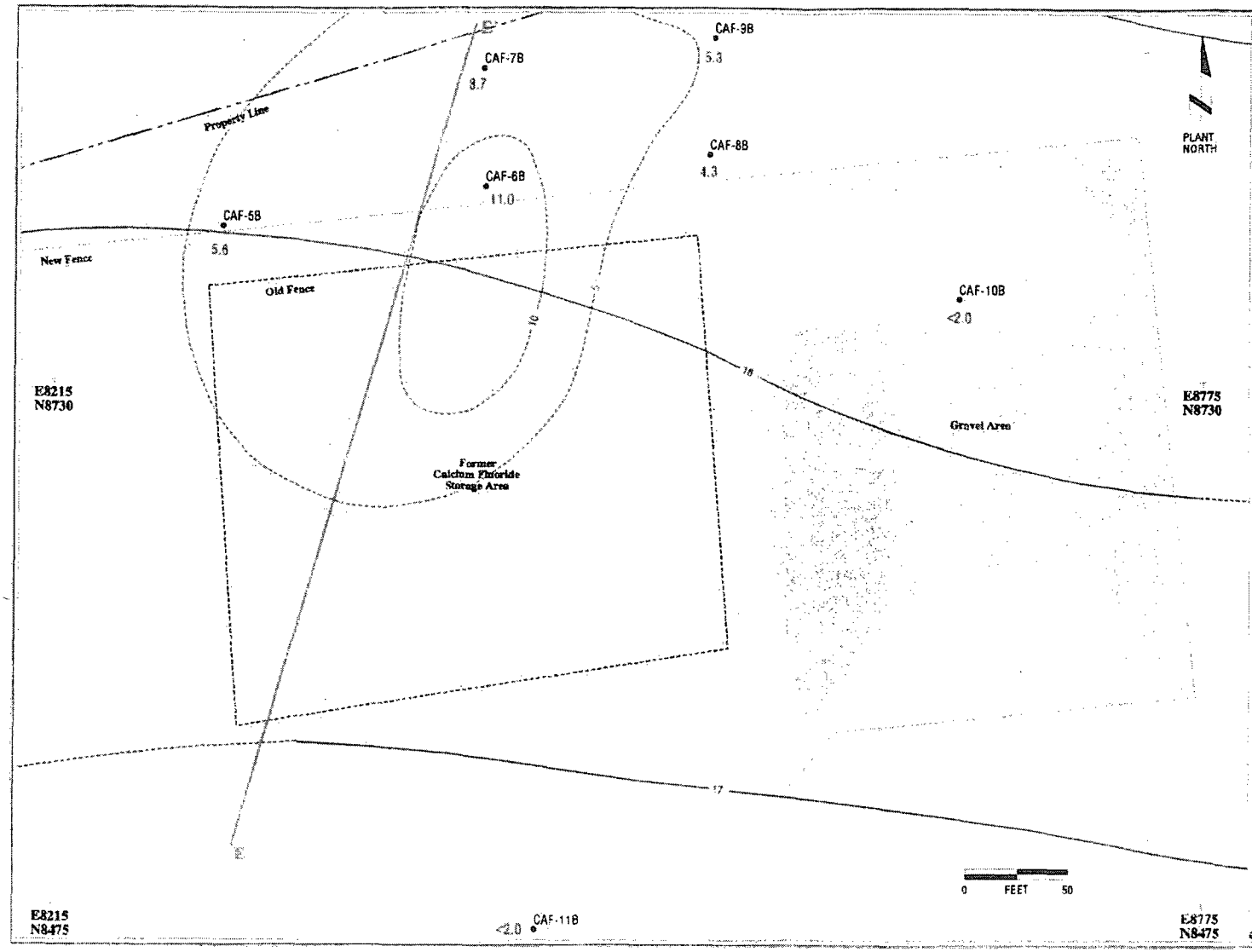


Exhibit 21. Distribution of Gross Alpha Activity from CAF-B Series Wells - Former Calcium Fluoride Storage

EXPLANATION

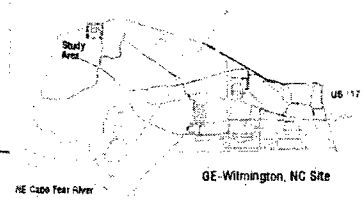
4.3 Gross alpha activity measured in unfiltered groundwater (pCi/L). Groundwater samples collected August 11-12, 1997.

Inferred line of equal gross alpha activity concentration (pCi/L) measured in groundwater from CAF-B series wells. Contouring performed using manual interpolation methods; alternate interpretations could be made, particularly as new analytical data are available. Contour interval is 5 pCi/L.

Analytical results reported provided by Teledyne-Brown Engineering.

Line of equal water table elevation in feet relative to mean sea level. Groundwater measurements were obtained by RTI on June 26, 1997. Contouring performed using manual interpolation methods. Groundwater flow direction may vary depending on precipitation.

E E' Cross section E - E' (Refer to Exhibit 22)



GE-Wilmington, NC Site

RTI Map Preparation Date: 10/15/97 Map No. 8103/088b/01F

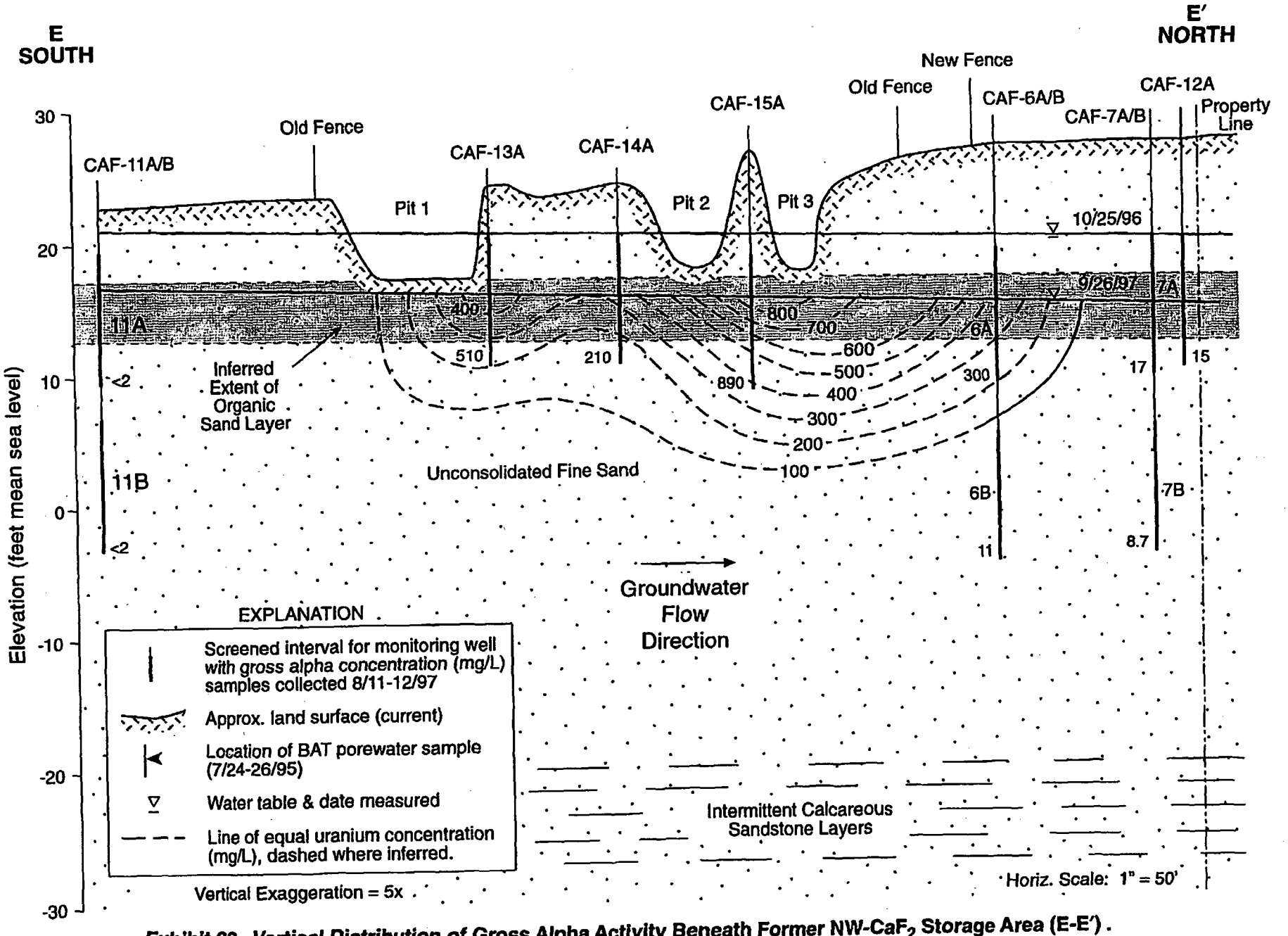


Exhibit 22. Vertical Distribution of Gross Alpha Activity Beneath Former NW-CaF_2 Storage Area (E-E').

V. Groundwater Quality - Organic Compounds

Summary:

- Minor VOC contamination detected in eastern CAF-series wells.
- VOCs not detected in surface-water samples (Exhibits 23 and 25).
- TCE and cis-1,2-DCE detected in groundwater downgradient of inferred source area and north of GE property line (Exhibits 23 and 25).
- Highest TCE levels detected in a zone -10 to -20 feet mean sea level (Exhibit 24).
- Cis-1,2-DCE detected deeper than TCE in rocky section of aquifer (Exhibit 26).
- TCE not detected in shallow wellpoint samples in swamp area.
- Cis-1,2-DCE detected in two shallow wellpoint samples at interface of swamp area/dune deposits.
- The extent of VOC contamination at depth in the swamp area has not been characterized at this time.
- Characterization of the extent and nature of VOCs at the inferred source is underway.

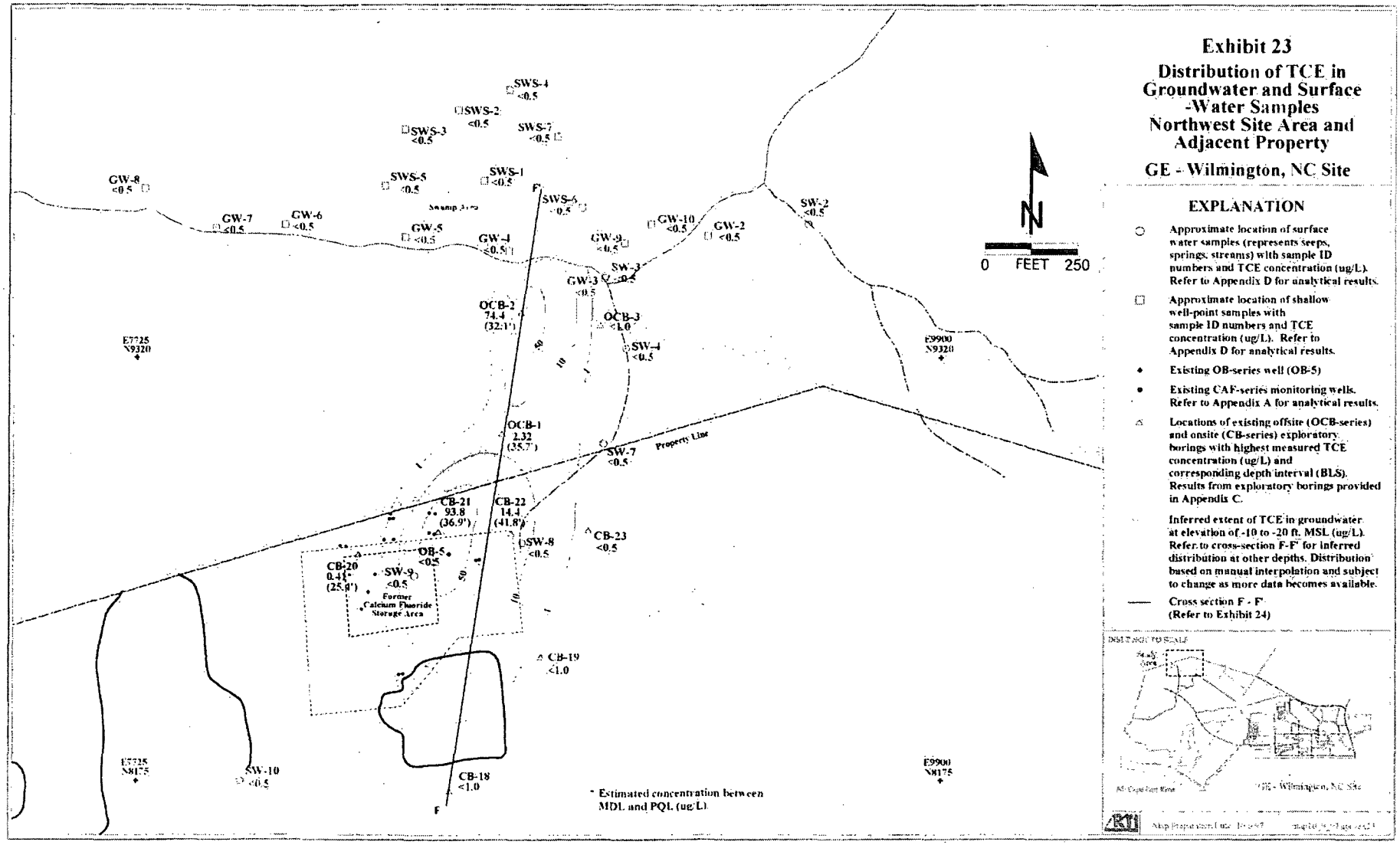


Exhibit 23

Distribution of TCE in Groundwater and Surface -Water Samples Northwest Site Area and Adjacent Property

GE - Wilmington, NC Site

EXPLANATION

- ○ Approximate location of surface water samples (represents seeps, springs, streams) with sample ID numbers and TCE concentration (ug/L). Refer to Appendix D for analytical results.
- □ Approximate location of shallow well-point samples with sample ID numbers and TCE concentration (ug/L). Refer to Appendix D for analytical results.
- ◆ Existing OB-series well (OB-5)
- ● Existing CAF-series monitoring wells. Refer to Appendix A for analytical results.
- △ Locations of existing offsite (OCB-series) and onsite (CB-series) exploratory borings with highest measured TCE concentration (ug/L) and corresponding depth interval (BLS). Results from exploratory borings provided in Appendix C.
- Inferred extent of TCE in groundwater at elevation of -10 to -20 ft. MSL (ug/L). Refer to cross-section F-F' for inferred distribution at other depths. Distribution based on manual interpolation and subject to change as more data becomes available.
- —— Cross section F - F' (Refer to Exhibit 24)

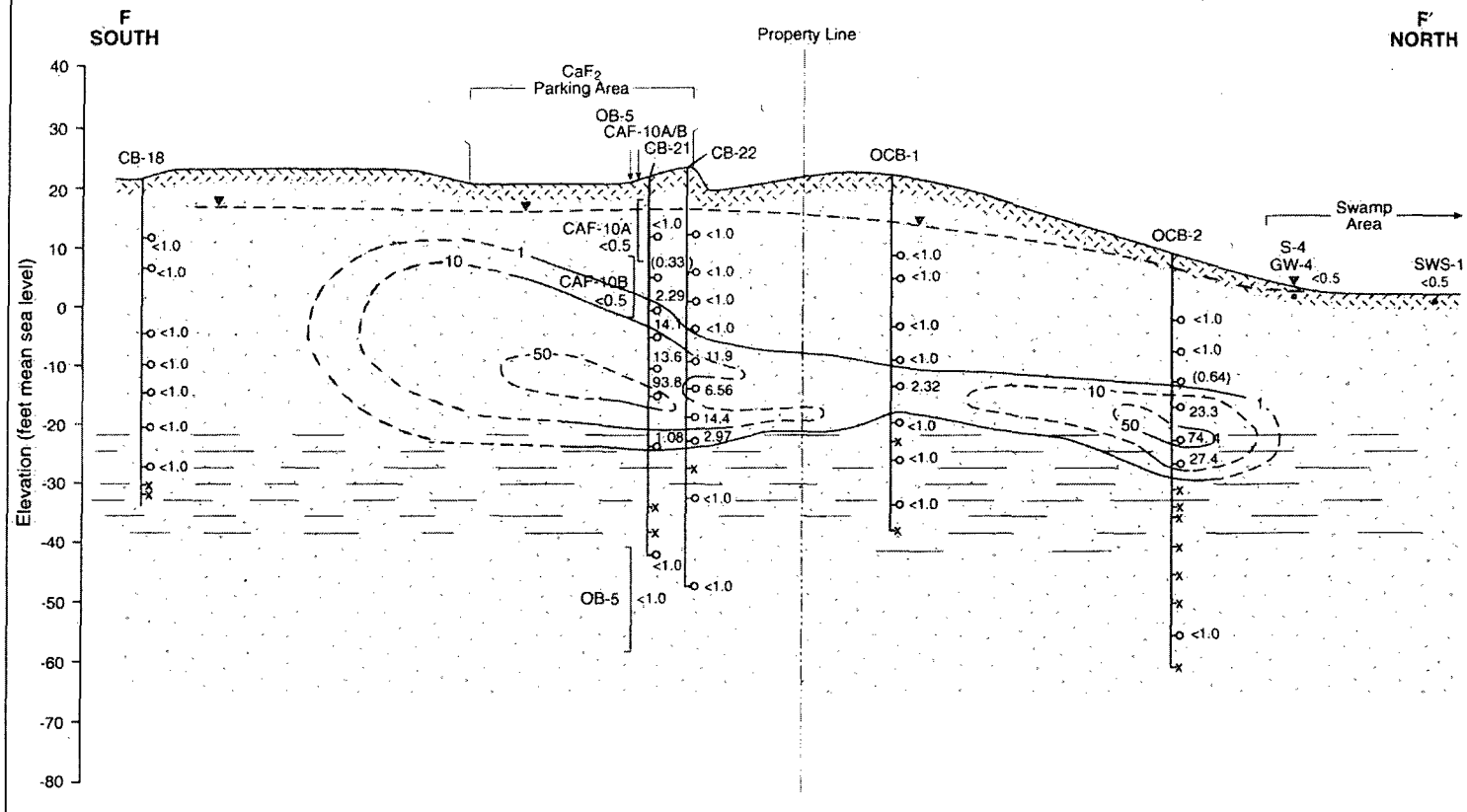


Exhibit 24. Vertical Distribution of TCE Along F-F' GE-Wilmington, NC Site.

EXPLANATION

- Tan to brown fine to medium quartz sand with intermittent clay and highly organic sand stringers
- Fine sand with intermittent calcareous sandstone layers, grading to green-gray glauconitic silty fine sand
- Inferred water table
- Screened interval for monitoring wells
- Exploratory boring with locations of porewater samples
  - o = sample collected
  - x = no sample collected/refusal of sample probe

NOTE: Values in parentheses are estimated concentrations between the MDL and PQL.

- Line of equal TCE concentration (µg/L) along F-F' (dashed where inferred)
- GE property line
- Land surface

Horizontal scale: 1" = 150'
Vertical scale: 1" = 20'

Refer to Exhibit 23 for location of cross-section.

Note: Distribution based on manual interpolation methods using data collected through October 15, 1997. Alternate interpretations may be made as new data become available.

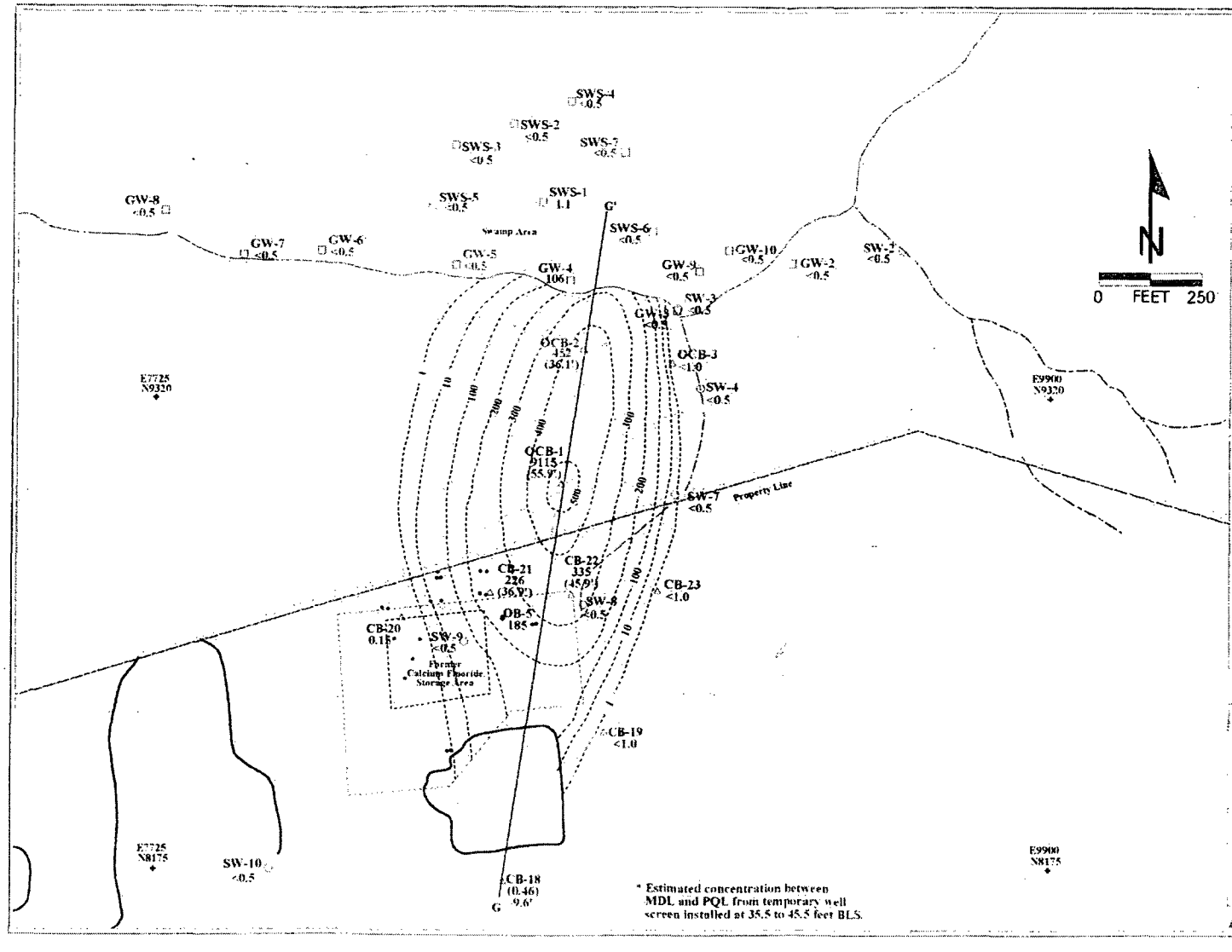


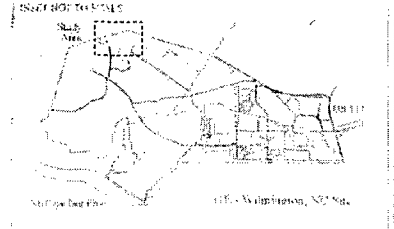
Exhibit 25

Distribution of Cis-1,2-DCE in Groundwater and Surface-Water Samples-Northwest Site Area and Adjacent Property

GE - Wilmington, NC Site

EXPLANATION

- ○ Approximate location of surface water samples (represents seeps, springs, streams) with sample ID numbers and cis-1,2-DCE concentration (ug/L). Refer to Appendix D for analytical results.
- □ Approximate location of shallow well-point samples with sample ID numbers and cis-1,2-DCE concentration (ug/L). Refer to Appendix D for analytical results.
- ◆ Existing OB-series well (OB-5)
- ● Existing CAF-series monitoring wells. Refer to Appendix A for analytical results.
- △ Locations of existing offsite (OCB-series) and onsite (CB-series) exploratory borings with highest measured cis-1,2-DCE concentration (ug/L) and corresponding depth interval (BLS). Results from exploratory borings provided in Appendix C.
- Inferred extent of cis-1,2-DCE in groundwater at elevation of -10 to -20 ft. MSL (ug/L). Refer to cross-section G-G' for inferred distribution at other depths. Distribution based on manual interpolation and subject to change as additional data becomes available.
- — Cross-section G-G' (Refer to Exhibit 25).



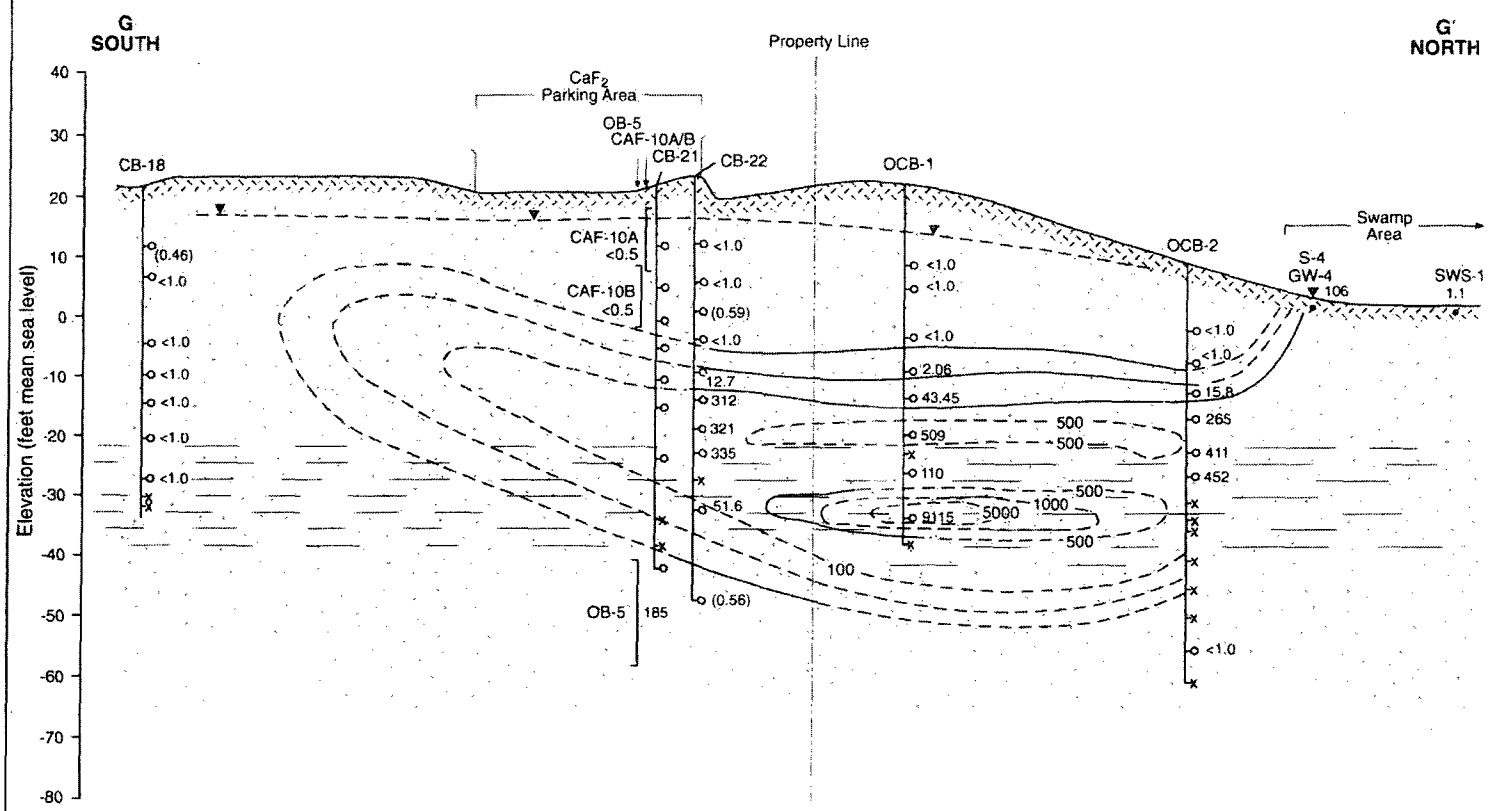


Exhibit 26. Vertical Distribution of Cis-1,2-DCE Along G-G' GE-Wilmington, NC Site.

EXPLANATION

- Tan to brown fine to medium quartz sand with intermittent clay and highly organic sand stringers
- Fine sand with intermittent calcareous sandstone layers, grading to green-gray glauconitic silty fine sand
- Inferred water table
- Screened interval for monitoring wells
- Exploratory boring with locations of porewater samples
  - o = sample collected
  - x = no sample collected/refusal of sample probe

NOTE: Values in parentheses are estimated concentrations between the MDL and PQL.

- Line of equal cis-1,2-DCE concentration (µg/L) along G-G' (dashed where inferred)
- GE property line
- Land surface

Horizontal scale: 1" = 150'
Vertical scale: 1" = 20'

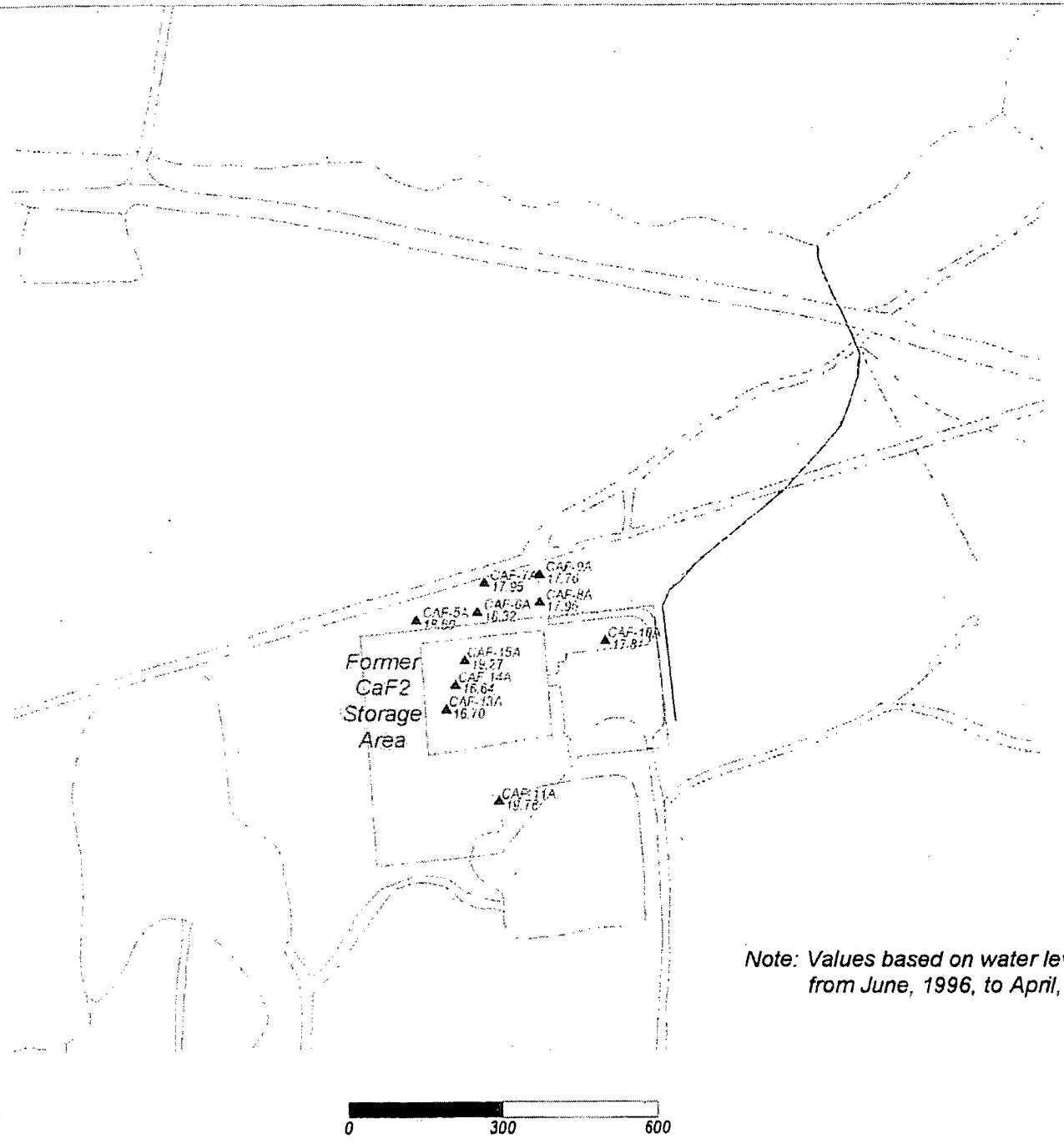
Refer to Exhibit 25 for location of cross-section.

Note: Distribution based on manual interpolation methods using data collected through October 15, 1997. Alternate interpretations may be made as new data become available.

VI. Preliminary Groundwater Flow Modeling Results

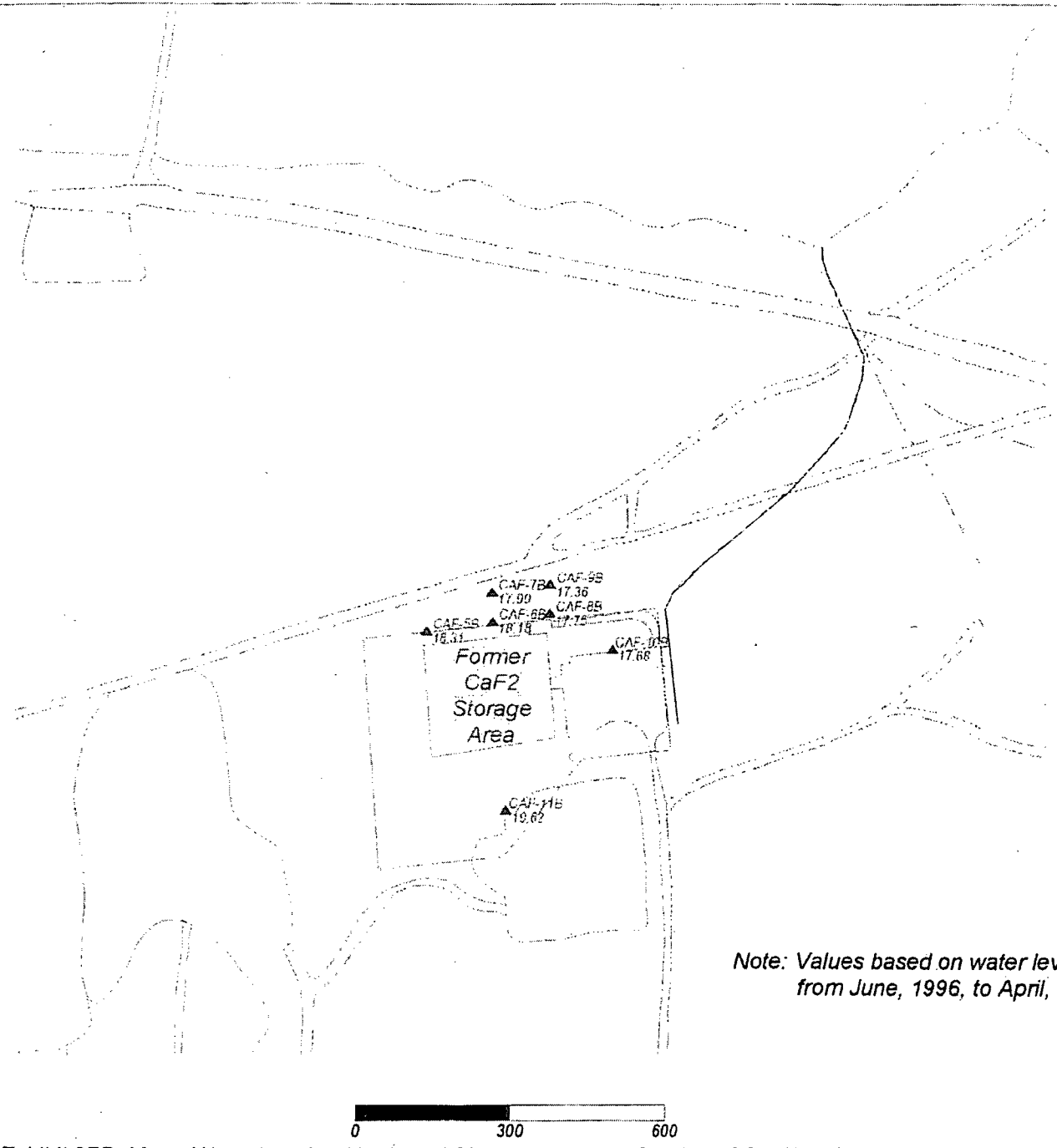
Summary:

- Calibrated steady-state numerical groundwater flow model (MODFLOW) developed for study area.
- Good agreement with observed vs calculated heads in study area (Exhibits 27 to 29).
- Evaluations of the fate and transport of inorganic constituents and VOCs in groundwater are in progress.



Note: Values based on water levels measured from June, 1996, to April, 1997.

Exhibit 27A. Mean Water Levels - Northwest Site Area - Upper Section of Aquifer (CAF-A Series Wells)



Note: Values based on water levels measured from June, 1996, to April, 1997.

Exhibit 27B. Mean Water Levels - Northwest Site Area - Lower Section of Aquifer (CAF-B Series Wells)

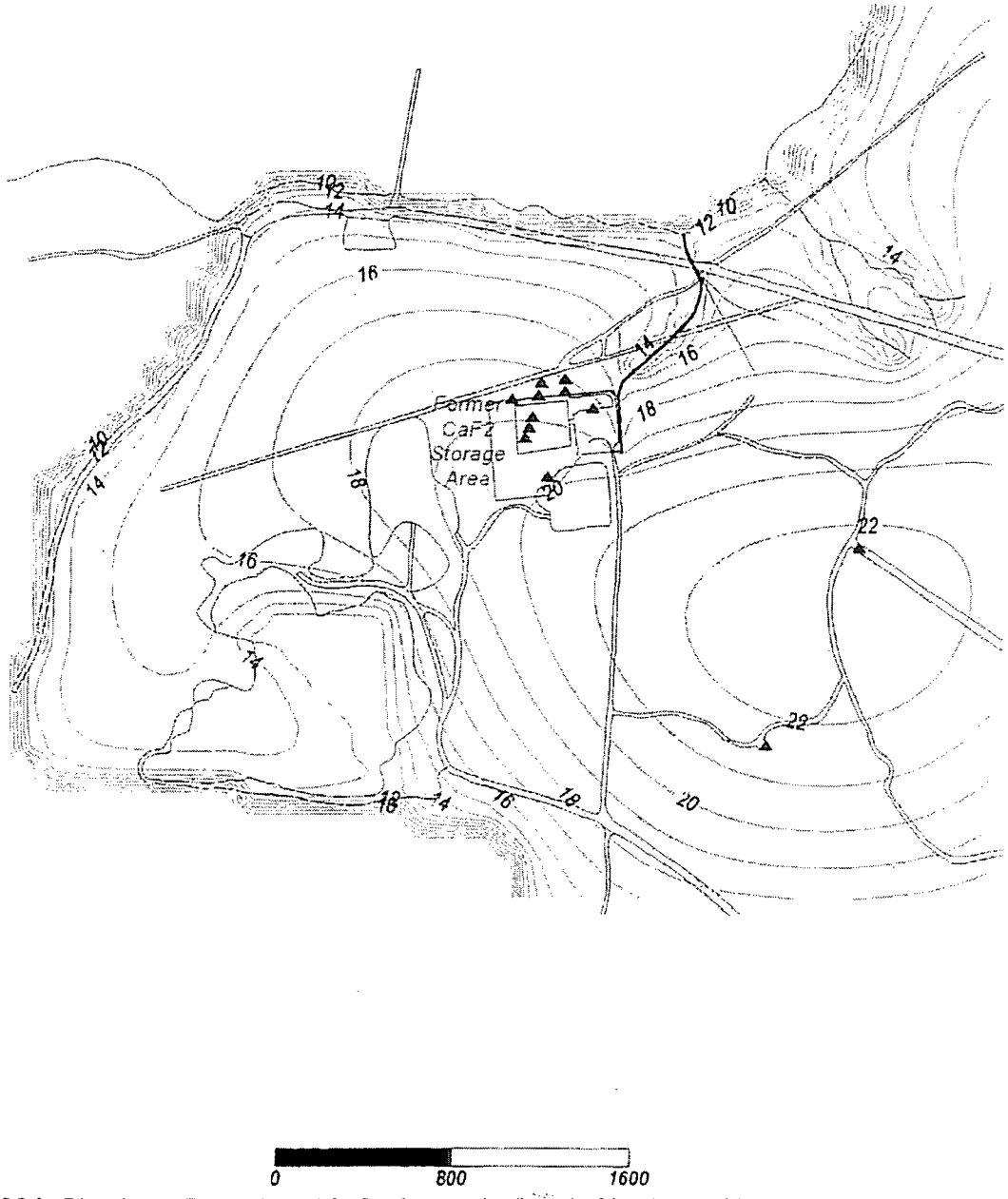
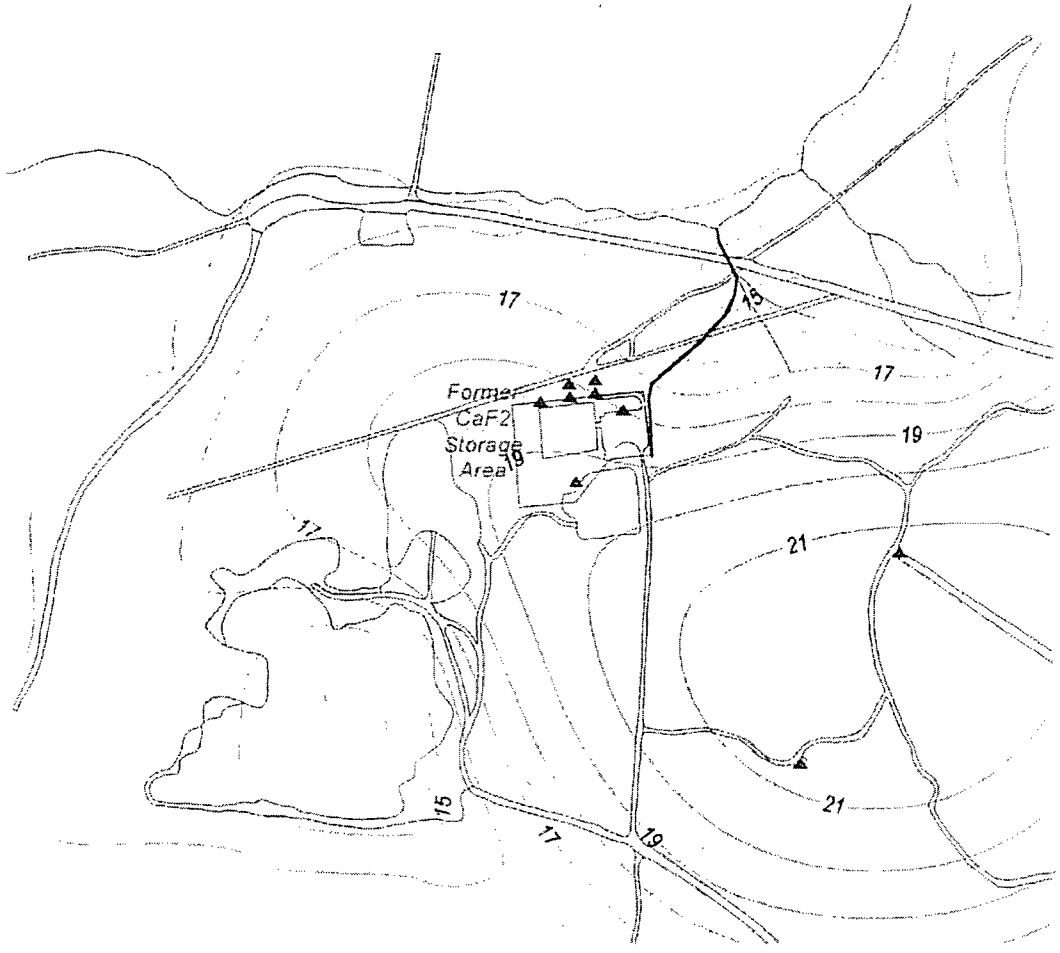


Exhibit 28A. Simulated Potentiometric Surface - Northwest Site Area - Upper Section of Aquifer



0 800 1600

Exhibit 28B. Simulated Potentiometric Surface - Northwest Site Area - Lower Section of Aquifer

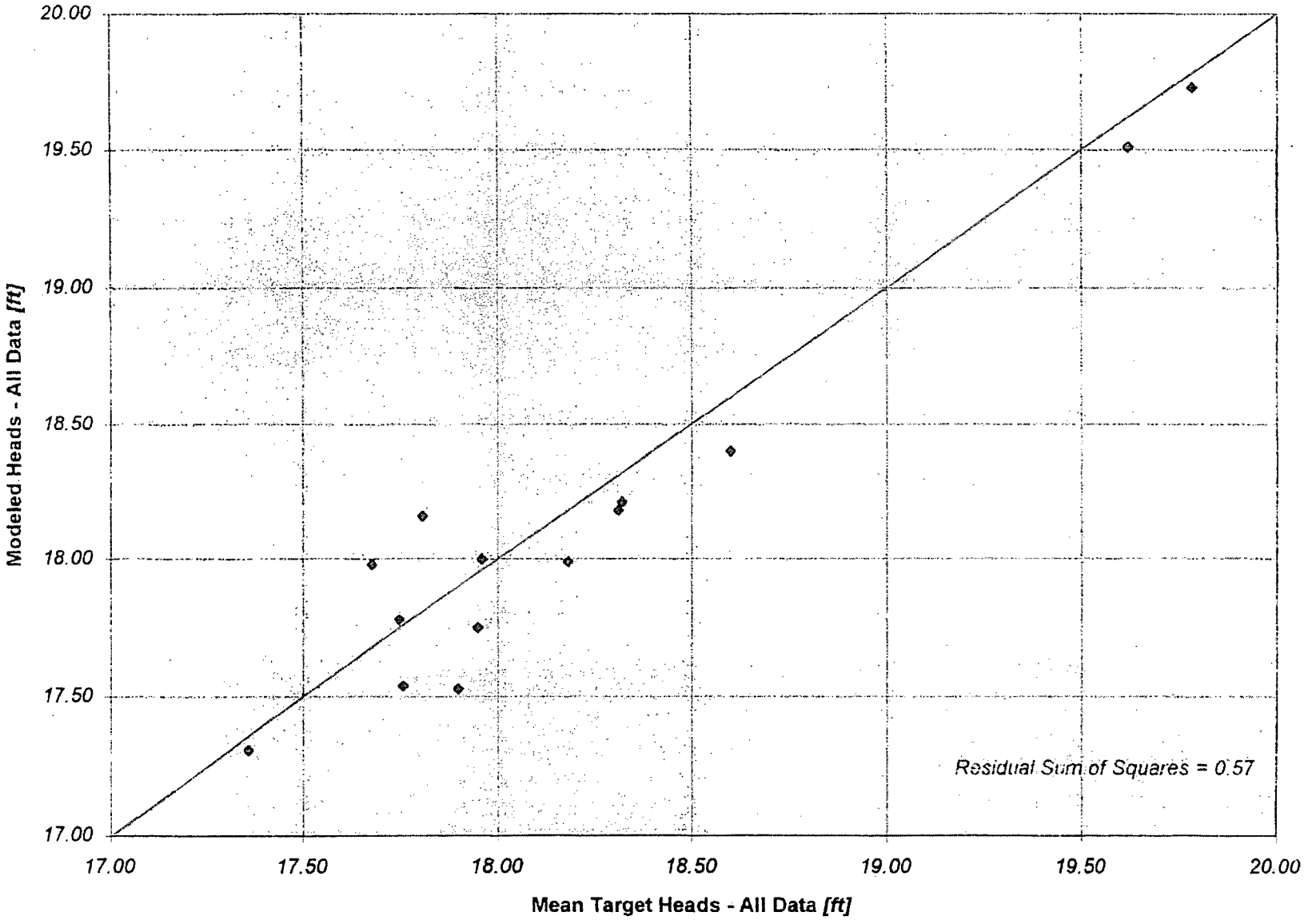


Exhibit 29A. Modeled Heads vs. Mean Target Heads - All Data - Northwest Site Area

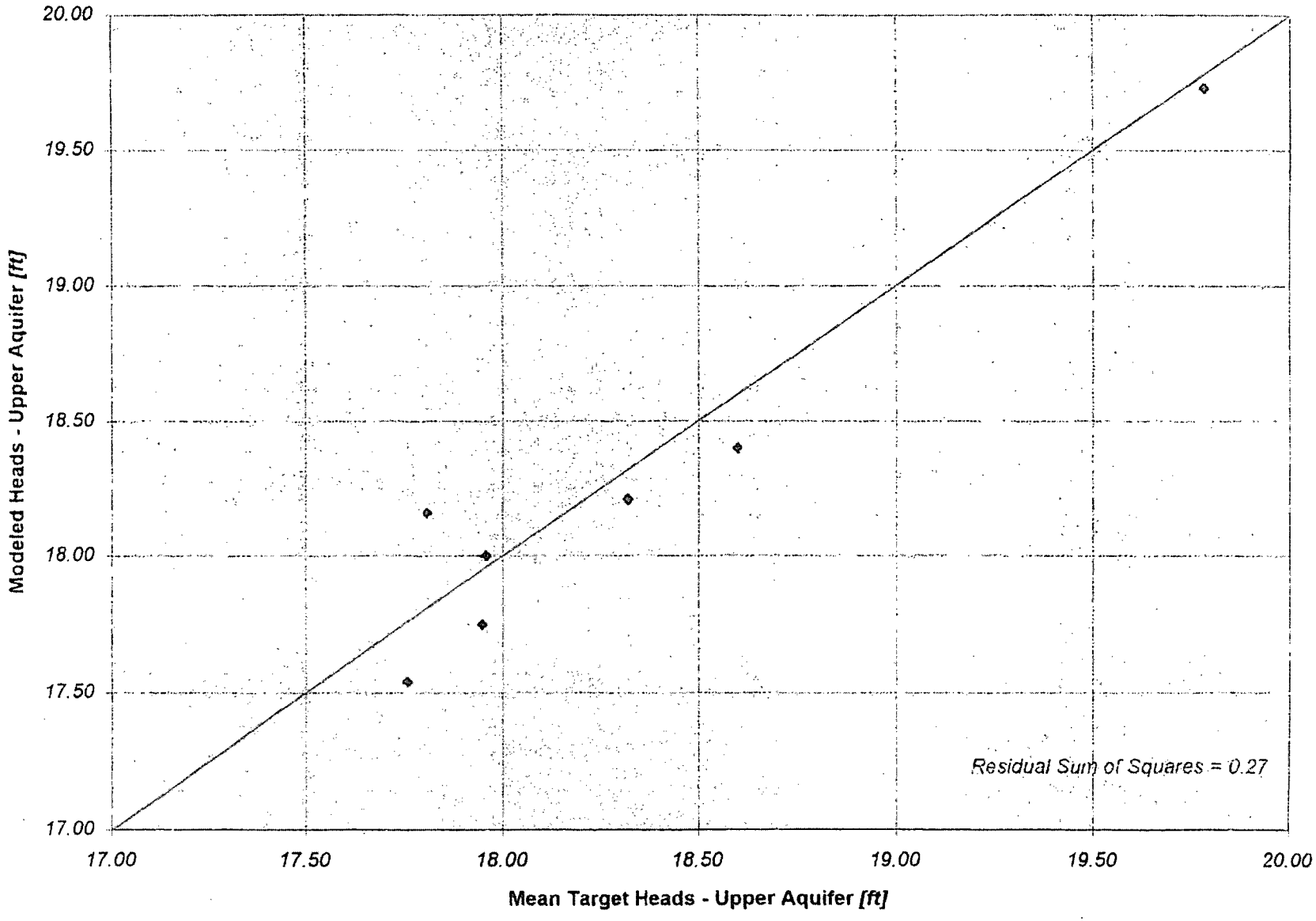


Exhibit 29B. Modeled Heads vs. Mean Target Heads - Upper Section of Aquifer - Northwest Site Area

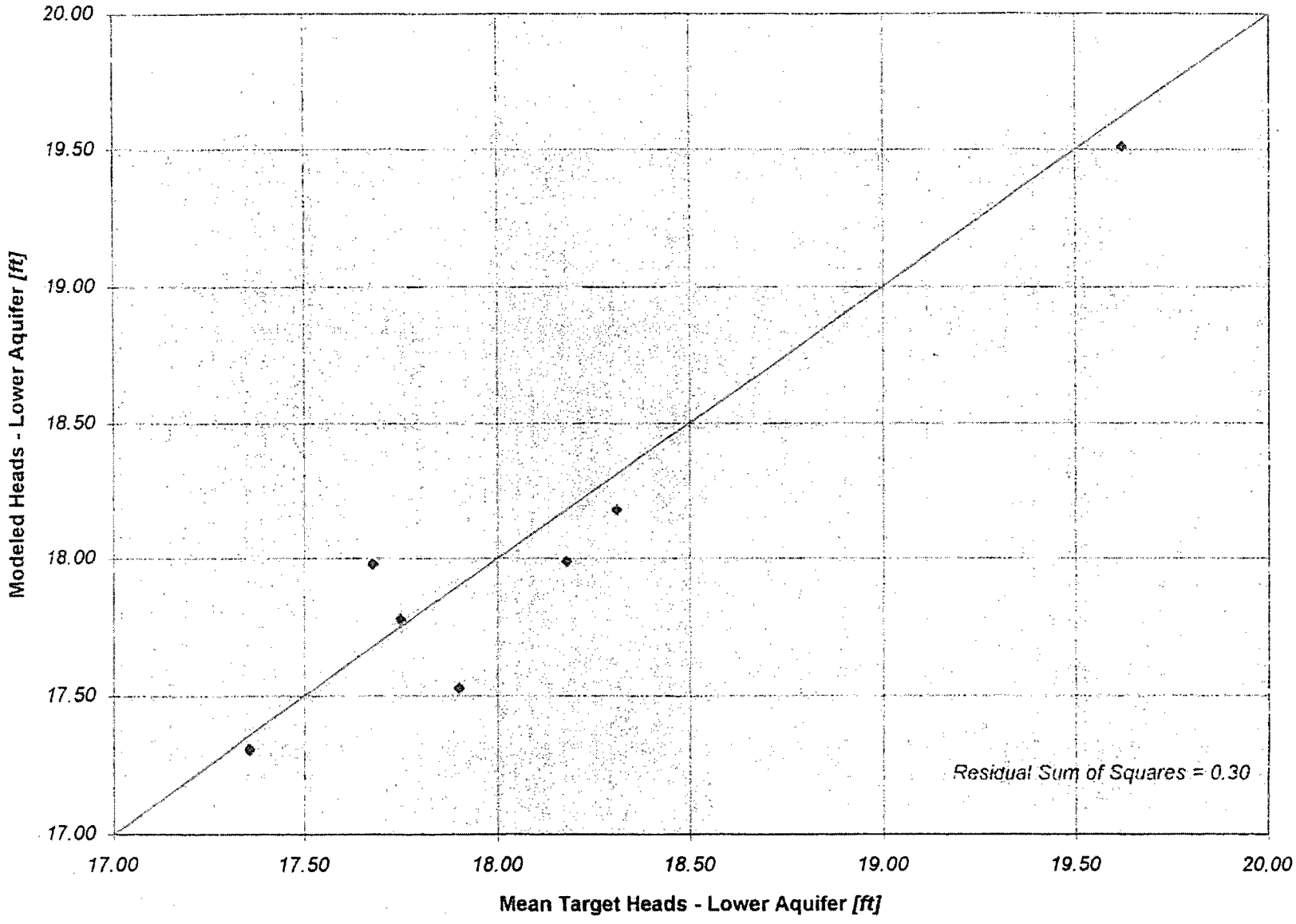


Exhibit 29C. Modeled Heads vs. Mean Target Heads - Lower Section of Aquifer - Northwest Site Area

VII. Conclusions

- Assessment activities to define horizontal and vertical extents of contamination are continuing.
- The source of the inorganic contamination (CaF_2 material) has been removed and the area is undergoing survey and release procedures under regulations of the Nuclear Regulatory Commission.
- The extent of groundwater contamination by inorganic constituents is relatively well defined. Additional assessment is necessary for determination of the extent of groundwater contamination by organic compounds.
- Characterization of the source of groundwater contamination by organic compounds is planned for the near future.
- There are no identified human receptors for the contaminated groundwater and the contamination identified poses no risk to human health. Little impact to the swamp area is currently expected based on the levels of contamination identified to date.
- Additional modeling is necessary to determine the fate and transport of organic and inorganic groundwater contamination in the area.
- Natural attenuation of residual inorganic contaminant plumes through biodegradation, dilution, and irreversible sorption is the most likely remedial option being considered at this time..

VIII. Planned Assessment Activities

Planned Onsite Assessment Activities:

- Source area characterization (soil vapor survey - Exhibit 30).
- Installation of a monitoring well upgradient of the inferred source area for organic compounds (Exhibit 31).
- Additional fate and transport modeling of organic and inorganic contaminants.
- Continued periodic monitoring of monitoring wells in the area.
- Additional evaluation of potential ecological toxicity of contaminants identified.

Planned Offsite Assessment Activities (Exhibit 31):

- Determination of vertical extent of groundwater contamination by organic compounds at location OCB-1.
- Additional offsite exploratory borings to define lateral extent of groundwater contamination by organic compounds.
- Collection of additional shallow wellpoint samples from swamp area north of GE site.

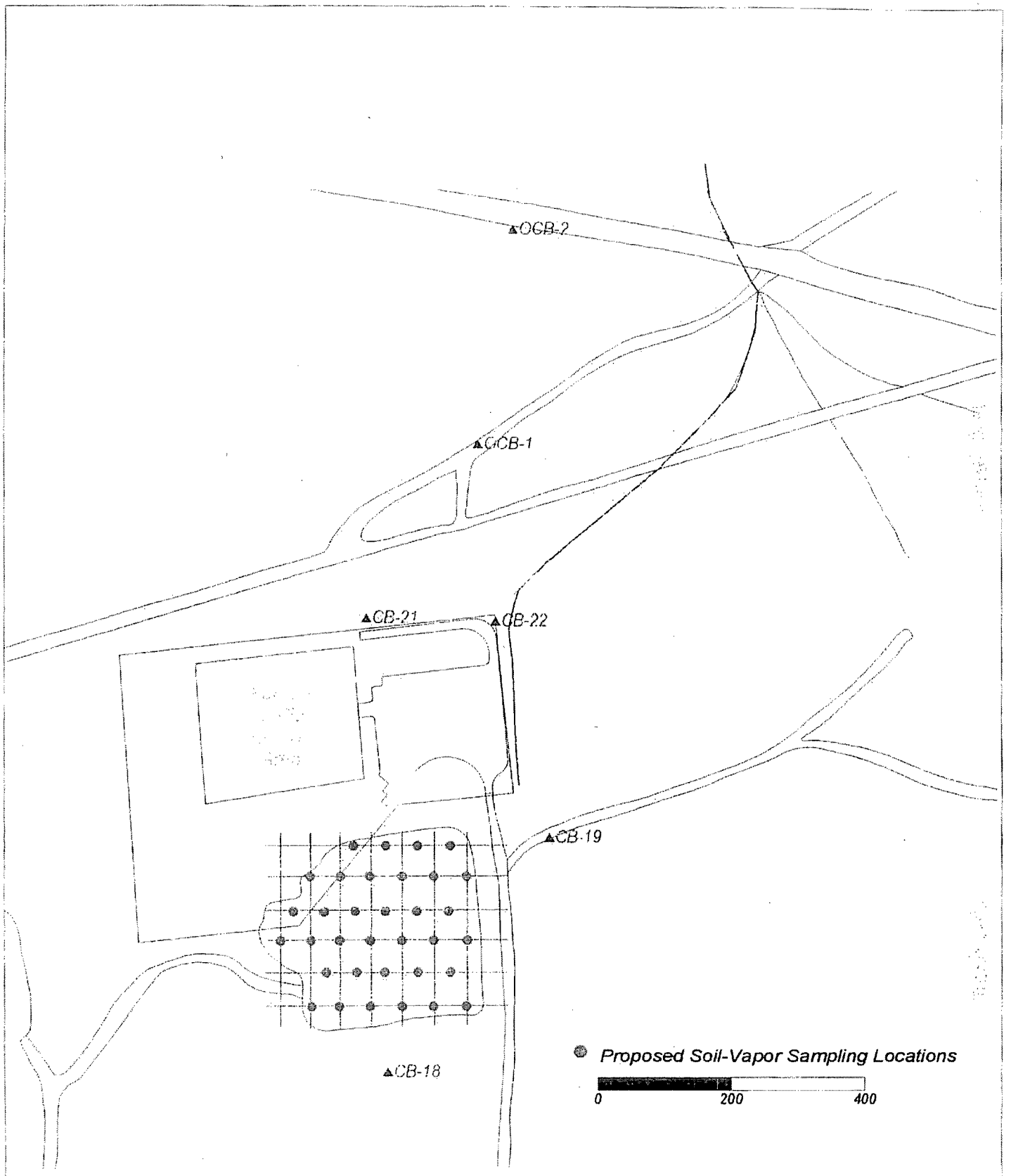


Exhibit 30. Proposed Passive Soil-Vapor Sample Locations

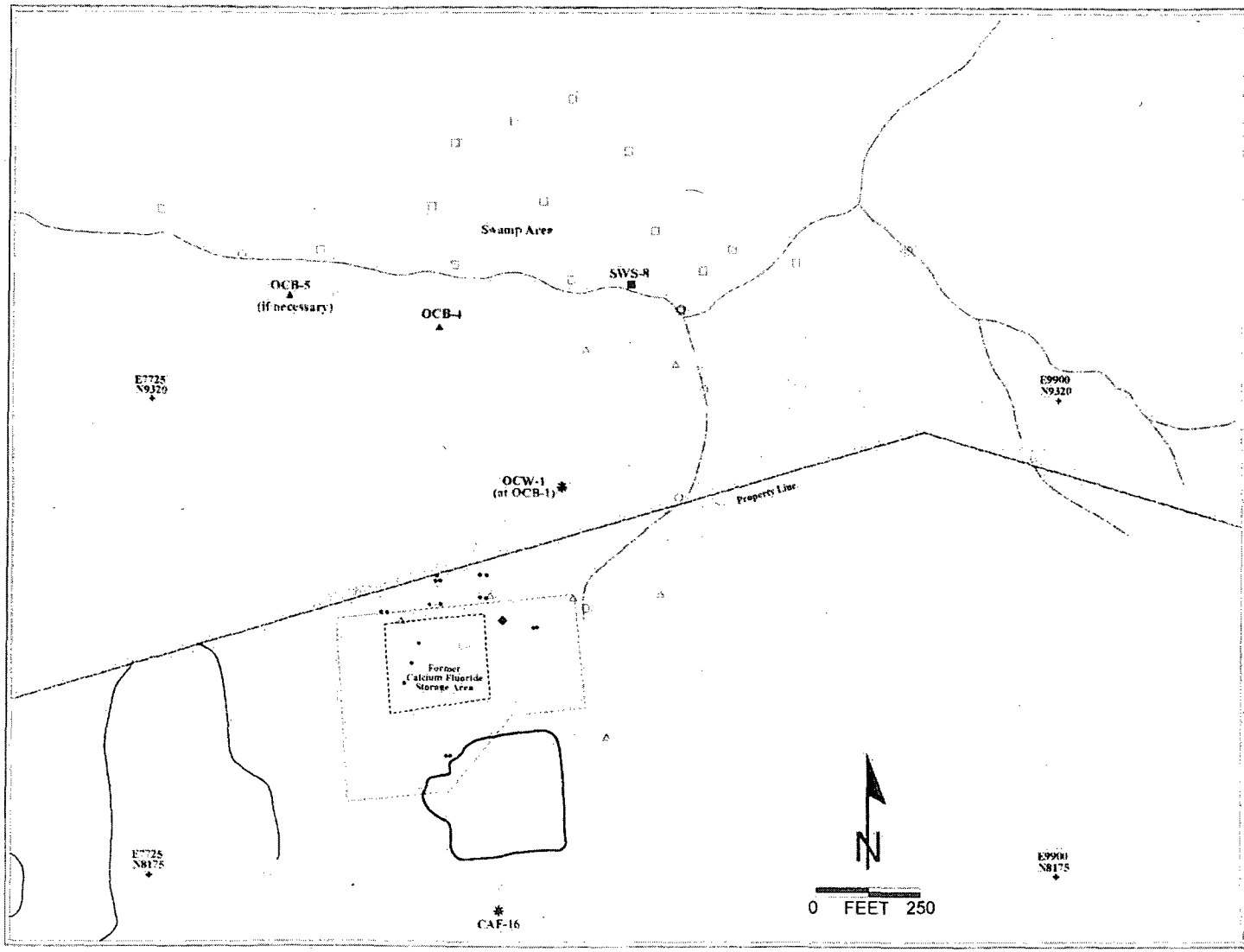


Exhibit 31

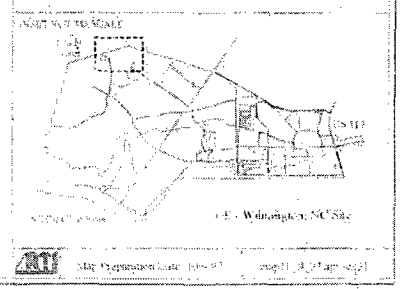
Recommended Locations of Additional Sampling Points - Northwest Site Area

GE - Wilmington, NC Site

EXPLANATION

- Approximate location of previously collected surface water samples (represents seeps, springs, streams) with sample ID numbers.
- Approximate location of previous shallow well-point and soil samples with sample ID numbers.
- Location of existing exploratory borings.
- Existing OB-series well (OB-5)
- Existing CAF-series monitoring wells.
- Recommended location of additional exploratory borings.
- Recommended location of additional shallow wellpoint sample.
- Recommended location of additional monitoring wells.
- Stream location based on field reconnaissance.

Note : Names of sampling locations subject to change.



IX. Proposed Schedule

Summary:

- Because the adjacent property is used as a hunting reserve, assessment activities during the fourth quarter of 1997 (hunting season) will be limited to onsite areas.
- Offsite assessment activities will continue in early 1998.
- Updates will be provided as appropriate.

Activities	Estimated Timeframe				
	1997	1998			
	4th Quarter	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Continue onsite assessment activities					
Continue NW-CaF_2 storage area survey and release					
Continue offsite assessment activities					
Prepare comprehensive site assessment (CSA) for organic and inorganic contamination					
Prepare corrective action plan (CAP)					

Appendix A. Analytical Results - CAF-Series Wells (Inorganic Analyses)

Technical Notes

Analytical results are for unfiltered groundwater samples collected by Research Triangle Institute (RTI). Depth to water indicates static groundwater level. Values for pH reflect stabilized field measurements during purging of the well.

Samples collected through 5/13/96 were analyzed by CompuChem Environmental Corporation, Research Triangle Park, NC (Radioactive Materials License No. 032-0734-2). Uranium analyses were performed using alpha spectrometry, fluoride analyses were performed using ion-selective probe, and gross alpha and beta were analyzed by gas proportional counter. CompuChem's reporting limit for fluoride was 0.1 mg/L. Total uranium activities reported by CompuChem were converted to concentrations (mg/L) by RTI.

Samples collected after 5/13/96 were analyzed by RTI's Environmental Chemistry and Earth and Mineral Sciences Departments (Radioactive Materials License No. 032-0131-1). Uranium analyses were performed using ICP-MS and fluoride analyses were performed using ion-selective probe. All results were reported in mg/L. Total uranium concentrations were converted to activities (pCi/L) by RTI. RTI's reporting limit for fluoride is 0.02 mg/L. RTI's detection limit is 0.00015 mg/L for total and isotopic uranium.

Gross alpha and beta analyses for samples collected on and after 10/24/96 were performed by Teledyne Brown Engineering in Westbrook, New Jersey by gas proportional counter. Uncertainty ranges for gross alpha and beta results reported by Teledyne are not shown for clarity.

Numerous blanks, matrix spikes, and duplicate samples were included in the analyses as part of the project's quality assurance protocols, but are not included herein. The results of the quality control samples substantiate the validity of the analytical data provided in this appendix.

CAF-5A and CAF-5B

CAF-5A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/1/96	BRL	0.00036	0.23	0.55	3.23	6.5	14.70	16.29
2/16/96	BRL	0.00037	0.18	0.70	0.45	6.0	14.57	16.42
2/26/96	0.156	0.00013	0.12	1.00	0.96	6.4	14.69	16.30
3/12/96	BRL	0.00011	0.08	0.74	2.15	5.9	14.87	16.12
3/28/96	BRL	0.00020	0.14	-0.36	-0.90	6.2	14.82	16.17
4/8/96	0.124	0.00011	0.07	0.35	3.26	6.2	14.51	16.48
4/22/96	0.201	0.00022	0.11	1.51	5.48	6.6	14.45	16.54
4/30/96	BRL	0.00021	0.13	1.08	9.41	6.9	14.63	16.36
5/6/96	BRL	0.00005	0.06	1.69	4.71	6.5	14.75	16.24
5/13/96	BRL	0.00015	0.08	0.94	2.86	5.6	14.80	16.19
5/28/96	BRL	BDL	BDL	NA	NA	5.6	15.02	15.97
6/10/96	BRL	0.00020	0.07	NA	NA	5.2	15.16	15.83
6/24/96	BRL	0.00020	0.07	NA	NA	5.2	14.87	16.12
7/8/96	0.03	0.00019	0.06	NA	NA	6.4	14.02	16.97
10/24/96	0.1	0.00048	0.16	1.90	18.00	6.0	10.30	20.69
1/6/97	BRL	BDL	BDL	2.10	11.00	5.5	12.89	18.10
2/25/97	0.12	BDL	BDL	BRL	6.50	4.6	12.77	18.22
5/12/97	BRL	0.00727	2.43	9.10	17.00	5.0	13.97	17.02
8/11/97	BRL	0.00025	0.07	BRL	6.8	4.9	14.62	16.37

CAF-5B								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/1/96	BRL	0.01281	12.74	40.26	26.15	6.4	14.77	16.07
2/16/96	1.08	0.00737	7.05	53.35	27.52	6.0	14.63	16.21
2/26/96	0.113	0.00507	5.28	46.41	24.18	6.4	14.81	16.03
3/12/96	BRL	0.00373	3.69	8.53	9.46	5.8	14.84	16.00
3/28/96	BRL	0.01406	13.96	35.94	26.67	6.4	14.85	15.99
4/8/96	BRL	0.00387	4.33	20.97	8.21	6.2	14.49	16.35
4/22/96	BRL	0.00379	4.18	33.74	17.46	6.6	14.58	16.26
4/30/96	BRL	0.00405	4.17	9.63	2.93	6.3	14.73	16.11
5/6/96	BRL	0.00673	7.16	11.98	3.59	6.4	14.75	16.09
5/13/96	BRL	0.00368	3.86	28.95	14.13	6.8	14.78	16.06
5/29/96	BRL	0.01180	3.87	NA	NA	6.2	15.12	15.72
6/10/96	BRL	0.01080	3.99	NA	NA	6.2	15.95	14.89
6/24/96	BRL	0.01099	3.61	NA	NA	6.2	14.87	15.97
7/8/96	BRL	0.01460	5.34	NA	NA	5.8	13.91	16.93
10/25/96	BRL	0.00840	2.79	5.50	11.00	6.0	10.55	20.29
1/7/97	BRL	0.01150	4.17	15.00	17.00	6.5	13.02	17.82
2/26/97	BRL	0.00807	2.69	7.40	14.00	6.9	12.81	18.03
5/12/97	BRL	BDL	BDL	BRL	BRL	6.1	14.02	16.82
8/11/97	BRL	0.00776	2.57	5.6	5.1	6.0	14.72	16.12

BRL = below reporting limit; BDL = below detection limit; NA = not analyzed.

CAF-6A and CAF-6B

CAF-6A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/2/96	3.84	0.47527	717.79	665.39	26.29	6.7	12.98	16.26
2/15/96	4.74	0.91086	1399.98	1975.38	37.31	6.6	12.90	16.34
2/27/96	4.51	0.94123	1425.46	1209.34	68.20	7.0	13.09	16.15
3/12/96	4.55	2.10466	3180.72	3053.57	87.31	6.5	13.11	16.13
3/28/96	2.52	1.50911	2265.42	2247.33	81.80	NA	13.08	16.16
4/9/96	1.47	1.59683	2403.82	2203.91	104.38	6.5	12.65	16.59
4/22/96	1.26	0.89309	1367.74	1247.96	43.44	7.2	12.91	16.33
5/1/96	1.54	0.98565	1511.02	1151.89	41.80	NA	13.10	16.14
5/6/96	1.39	0.81229	1251.12	1138.52	38.21	6.7	13.08	16.16
5/13/96	1.46	0.57823	887.12	865.93	51.00	6.7	13.19	16.05
5/30/96	1.70	0.39310	150.12	NA	NA	6.6	13.44	15.80
6/11/96	1.61	0.32900	125.39	NA	NA	6.4	13.39	15.85
6/25/96	1.37	0.27040	705.77	NA	NA	6.3	13.00	16.24
7/9/96	0.94	0.15400	58.33	NA	NA	5.8	12.23	17.01
10/25/96	1.9	0.01600	5.98	17.0	14.0	5.6	9.02	20.22
1/7/97	1.33	0.13600	51.51	170.0	63.0	6.2	11.43	17.81
2/26/97	1.82	0.05940	22.34	50.0	12.0	5.1	11.15	18.09
5/12/97	2.40	0.14736	55.16	180.0	20.0	6.7	12.49	16.75
8/11/97	3.52	0.50417	807.52	300.0	74.0	6.3	13.06	16.18

CAF-6B								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/2/96	4.24	0.01062	8.91	65.62	53.81	6.3	12.66	16.19
2/15/96	4.37	0.00850	7.29	84.97	70.41	6.3	12.57	16.28
2/27/96	4.7	0.00665	5.92	70.07	54.92	6.6	12.79	16.06
3/13/96	5.93	0.00562	5.11	77.87	53.24	6.0	12.79	16.06
3/28/96	4.71	0.02160	19.97	43.61	43.83	6.5	12.75	16.10
4/9/96	4.35	0.00971	9.00	21.16	27.65	6.4	12.34	16.51
4/22/96	4.71	0.00539	4.89	16.36	26.79	6.2	12.58	16.27
5/1/96	4.57	0.00550	4.79	14.70	14.80	6.7	12.75	16.10
5/6/96	4.92	0.01581	14.37	10.34	16.42	6.6	12.80	16.05
5/13/96	4.95	0.01691	16.53	12.89	16.58	6.7	12.81	16.04
5/29/96	6.27	0.02000	6.62	NA	NA	6.4	12.98	15.87
6/10/96	6.32	0.01797	12.65	NA	NA	6.3	13.15	15.70
6/25/96	6.41	0.01931	7.08	NA	NA	6.8	12.65	16.20
7/8/96	6.5	0.01990	7.16	NA	NA	6.6	11.83	17.02
10/25/96	6.96	0.01810	6.44	5.40	12.00	6.5	8.96	19.89
1/7/97	5.89	0.01700	6.09	13.00	15.00	6.8	11.15	17.70
2/25/97	6.37	0.01260	4.20	9.30	12.00	6.6	10.77	18.08
5/12/97	6	0.01567	5.23	10	16	6.4	12.16	16.69
8/11/97	6.86	0.01685	5.93	11.0	8.1	6.1	12.89	15.96

BRL = below reporting limit; BDL = below detection limit; NA = not analyzed.

CAF-7A and CAF-7B

CAF-7A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/2/96	0.983	0.01797	27.48	29.81	10.45	6.4	13.53	15.89
2/15/96	BRL	0.01644	24.87	31.90	10.24	6.0	13.47	15.95
2/27/96	0.972	0.01845	28.56	25.56	21.19	6.1	13.59	15.83
3/13/96	1.03	0.18568	279.84	259.20	27.08	6.1	13.65	15.77
3/28/96	1.22	0.34655	524.31	485.52	33.42	6.4	13.58	15.84
4/9/96	1.38	0.49076	751.47	641.56	36.59	4.4	13.16	16.26
4/22/96	3.43	0.52613	791.93	727.96	28.70	7.1	13.33	16.09
5/1/96	4.04	0.49110	749.96	744.67	11.88	7.3	13.52	15.90
5/6/96	3.76	0.47900	725.21	827.94	20.79	7.2	13.57	15.85
5/13/96	4.18	0.58512	894.38	1109.62	50.50	6.7	13.69	15.73
5/30/96	3.88	0.48030	183.23	NA	NA	6.5	13.95	15.47
6/11/96	3.88	0.67230	1498.47	NA	NA	6.5	14.06	15.36
6/25/96	6.1	0.21860	424.69	NA	NA	6.7	13.65	15.77
7/9/96	3.99	0.41900	717.57	NA	NA	6.5	12.75	16.67
10/25/96	0.7	0.00713	2.67	10.00	8.10	5.6	9.55	19.87
1/6/97	BRL	0.03650	13.83	34.00	27.00	6.1	12.01	17.41
2/26/97	1.01	0.04500	16.90	46.00	11.00	5.6	11.66	17.76
5/12/97	1.02	0.03294	12.26	38.00	22.00	6.2	12.97	16.45
8/11/97	2.14	0.02341	8.57	17.0	8.3	6.3	13.52	15.90

CAF-7B								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/2/96	7.63	0.00756	6.11	24.28	26.47	6.7	13.30	15.82
2/15/96	6.60	0.00687	5.82	55.54	44.09	6.2	13.26	15.86
2/27/96	8.16	0.00772	6.26	24.07	22.55	6.4	13.43	15.69
3/12/96	6.40	0.01127	9.10	34.91	23.83	6.3	13.47	15.65
3/28/96	7.98	0.00753	6.19	17.13	27.33	6.5	13.41	15.71
4/9/96	4.98	0.00652	5.29	20.01	17.72	6.4	13.00	16.12
4/22/96	7.88	0.00611	5.27	23.59	24.11	6.2	13.18	15.94
4/30/96	7.54	0.00591	4.70	24.24	14.27	6.5	13.52	15.60
5/6/96	7.66	0.00554	4.92	21.49	18.45	7.0	13.39	15.73
5/13/96	7.00	0.00618	5.08	20.84	22.74	6.4	13.56	15.56
5/29/96	7.69	0.00680	2.35	NA	NA	6.3	13.80	15.32
6/10/96	7.57	0.00640	2.12	NA	NA	6.2	13.94	15.18
6/25/96	8.0	0.00491	1.61	NA	NA	6.3	13.52	15.60
7/8/96	8.19	0.00514	1.70	NA	NA	6.2	12.62	16.50
10/24/96	8.61	0.00496	1.65	16.00	19.00	6.3	9.43	19.69
1/6/97	8.19	0.00780	2.59	20.00	25.00	6.3	11.81	17.31
2/25/97	8.65	0.00694	2.32	11.00	11.00	6.4	11.54	17.58
5/12/97	8.07	0.00739	2.48	12.00	18.00	6.5	11.56	17.56
8/11/97	8.60	0.00930	3.10	8.7	10.0	6.6	13.41	15.71

BRL = below reporting limit; BDL = below detection limit; NA = not analyzed.

CAF-8A and CAF-8B

CAF-8A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/1/96	0.95	0.00090	1.00	3.37	5.50	6.1	10.46	16.16
2/15/96	0.91	0.00074	0.78	6.41	6.13	6.0	10.38	16.24
2/26/96	1.15	0.00070	0.91	4.04	6.08	6.2	10.59	16.03
3/12/96	1.08	0.00104	0.97	3.19	3.92	6.0	10.50	16.12
3/27/96	1.37	0.00074	0.74	3.38	3.74	6.0	10.51	16.11
4/8/96	0.535	0.00046	0.57	3.66	8.49	5.7	10.10	16.52
4/22/96	0.761	0.00072	0.72	4.41	7.99	5.6	10.41	16.21
4/30/96	0.708	0.00064	0.75	0.76	3.84	5.9	10.55	16.07
5/6/96	0.857	0.00048	0.54	1.20	4.73	6.2	10.61	16.01
5/13/96	0.846	0.00049	0.61	2.03	5.55	5.6	10.74	15.88
5/28/96	1.44	0.00049	0.17	NA	NA	5.8	11.01	15.61
6/10/96	1.65	0.00080	0.24	NA	NA	5.8	11.07	15.55
6/24/96	1.14	0.00063	0.20	NA	NA	5.4	10.49	16.13
7/8/96	0.40	0.00039	0.13	NA	NA	5.4	9.70	16.92
10/24/96	0.29	0.00034	0.12	1.60	6.80	5.1	6.94	19.68
1/6/97	BRL	0.00046	0.15	1.30	4.10	5.5	9.11	17.51
2/25/97	0.28	0.00034	0.11	BRL	4.60	4.5	8.70	17.92
5/12/97	0.92	0.00055	0.18	BRL	17.00	6.2	10.09	16.53
8/11/97	1.64	0.00082	0.26	BRL	4.0	5.8	10.60	16.02

CAF-8B								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/1/96	1.19	0.00307	0.00	17.59	8.53	6.4	9.71	16.18
2/15/96	6.79	0.00263	2.71	33.85	15.36	6.5	9.71	16.18
2/26/96	0.11	0.00191	2.52	37.80	11.49	6.6	9.88	16.01
3/12/96	7.6	0.00001	1.95	16.49	9.52	6.4	9.78	16.11
3/27/96	7.23	0.00349	0.02	19.97	11.78	6.7	9.84	16.05
4/9/96	6.39	0.00198	3.31	10.75	9.03	6.4	9.39	16.50
4/22/96	6.89	0.00303	1.88	16.48	6.98	6.4	9.70	16.19
4/30/96	7.64	0.00266	2.69	16.18	6.80	6.7	9.84	16.05
5/6/96	7.72	0.00297	2.34	6.24	4.83	7.1	9.91	15.98
5/13/96	6.83	0.00301	2.47	14.29	8.14	6.5	10.05	15.84
5/29/96	6.82	0.00260	0.87	NA	NA	6.5	10.29	15.60
6/10/96	6.32	0.00280	0.91	NA	NA	6.4	10.88	15.01
6/25/96	6.98	0.00237	0.77	NA	NA	6.2	9.79	16.10
7/8/96	7.0	0.00214	0.71	NA	NA	6.4	9.02	16.87
10/24/96	8.3	0.00165	0.55	6.70	10.00	6.3	6.28	19.61
1/6/97	10.50	0.00201	0.67	11.00	13.00	6.3	8.38	17.51
2/25/97	11.10	0.00254	0.85	7.60	5.90	NA	8.02	17.87
5/12/97	10.20	0.00264	0.89	6.60	15.00	6.6	9.38	16.51
8/11/97	11.9	0.00588	2.30	4.3	4.8	6.1	9.91	15.98

BRL = below reporting limit; BDL = below detection limit; NA = not analyzed.

CAF-9A and CAF-9B

CAF-9A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/2/96	4.2	0.00617	5.96	27.98	20.99	6.6	11.66	15.84
2/15/96	3.4	0.00323	3.23	45.19	31.27	6.6	11.55	15.95
2/26/96	3.44	0.00373	3.33	52.08	26.83	6.4	11.73	15.77
3/12/96	3.94	0.00221	2.31	30.29	17.64	6.0	11.75	15.75
3/27/96	3.92	0.00295	2.81	43.17	17.02	6.5	11.71	15.79
4/9/96	2.93	0.00262	2.09	19.12	12.13	6.4	11.39	16.11
4/22/96	3.22	0.00266	2.68	27.87	16.49	6.4	11.52	15.98
4/30/96	3.37	0.00187	2.02	9.43	3.13	6.5	11.69	15.81
5/6/96	3.62	0.00156	1.73	7.25	3.24	7.1	11.79	15.71
5/13/96	3.73	0.00185	1.90	40.13	26.50	6.2	11.91	15.59
5/28/96	4.08	0.00460	1.51	NA	NA	6.6	12.17	15.33
6/10/96	4.4	0.00500	1.65	NA	NA	6.4	12.33	15.17
6/24/96	3.80	0.00495	1.64	NA	NA	7.1	11.94	15.56
7/8/96	2.75	0.00360	1.19	NA	NA	6.4	10.91	16.59
10/24/96	1.06	0.00059	0.20	4.00	10.00	5.4	8.23	19.27
1/6/97	1.57	0.00117	0.39	5.00	8.50	6.2	10.38	17.12
2/25/97	1.53	0.00180	0.61	4.40	6.60	5.6	9.99	17.51
5/12/97	2.36	0.00332	1.12	5.10	15.00	6.4	11.27	16.23
8/11/97	3.40	0.00488	1.61	3.6	4.8	6.0	11.80	15.70

CAF-9B								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/2/96	4.39	0.00775	6.47	26.97	18.99	6.4	11.21	15.67
2/15/96	3.86	0.00397	3.39	34.90	16.73	5.8	11.12	15.76
2/26/96	3.8	0.00354	3.06	27.55	15.54	6.5	11.31	15.57
3/12/96	4.02	0.00349	2.90	26.85	20.94	6.0	11.29	15.59
3/27/96	4.30	0.00713	6.25	33.62	35.86	6.6	11.32	15.56
4/9/96	3.63	0.00409	3.45	27.11	18.04	6.4	10.85	16.03
4/22/96	3.79	0.00403	3.51	17.38	17.37	6.3	11.10	15.78
4/30/96	4.16	0.00342	2.99	11.33	5.98	6.6	11.27	15.61
5/6/96	4.30	0.00340	2.91	13.98	8.27	7.1	11.30	15.58
5/13/96	4.17	0.00429	3.61	35.77	14.63	6.5	11.49	15.39
5/29/96	4.87	0.00600	1.98	NA	NA	6.4	11.77	15.11
6/10/96	4.90	0.00630	2.08	NA	NA	6.4	11.89	14.99
6/25/96	4.82	0.00520	1.72	NA	NA	6.4	11.40	15.48
7/8/96	4.69	0.00532	1.76	NA	NA	6.1	10.53	16.35
10/25/96	3.96	0.00344	1.15	10.00	11.00	6.2	7.96	18.92
1/6/97	3.50	0.00299	1.00	7.40	9.30	6.1	9.93	16.95
2/25/97	3.94	0.00297	1.00	5.00	7.20	6.0	9.95	16.93
5/12/97	3.39	0.00322	1.08	7.20	16.00	6.4	10.85	16.03
8/11/97	4.32	0.00384	1.26	5.3	3.5	5.9	11.35	15.53

BRL = below reporting limit; BDL = below detection limit; NA = not analyzed.

CAF-10A and CAF-10B

CAF-10A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/1/96	0.73	0.00215	2.03	2.95	3.72	5.3	7.08	16.64
2/14/96	0.9	0.00568	4.29	26.22	22.94	5.3	7.27	16.45
2/26/96	1.05	0.00339	2.97	35.02	20.79	5.1	7.40	16.32
3/12/96	1.03	0.00130	1.40	5.68	3.96	5.1	7.07	16.65
3/27/96	1.33	0.00150	1.57	4.16	-0.68	5.2	7.29	16.43
4/8/96	0.963	0.00113	1.07	0.68	4.02	NA	6.79	16.93
4/22/96	1.16	0.00104	1.09	3.45	2.21	5.2	7.23	16.49
4/30/96	1.07	0.00059	0.75	1.13	-0.08	5.3	7.31	16.41
5/6/96	1.17	0.00088	0.74	-1.20	-0.07	5.2	7.39	16.33
5/13/96	1.15	0.00083	0.77	2.35	7.62	5.7	7.52	16.20
5/28/96	1.41	0.00058	0.20	NA	NA	5.2	7.83	15.89
6/10/96	1.43	0.00070	0.24	NA	NA	5.5	7.87	15.85
6/24/96	1.04	0.00061	0.20	NA	NA	6.2	7.17	16.55
7/8/96	0.90	0.00125	0.41	NA	NA	6.5	6.53	17.19
10/23/96	0.90	0.00093	0.31	2.20	5.80	6.3	4.68	19.04
1/6/97	1.12	0.00147	0.49	BDL	7.50	5.7	5.93	17.79
2/24/97	1.29	0.00101	0.35	BRL	6.00	5.6	5.40	18.32
5/9/97	2.23	0.00104	0.35	BRL	18.00	5.9	6.10	17.62
8/11/97	2.27	0.00049	0.12	BRL	9.5	5.8	7.45	16.27

CAF-10B								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/1/96	BRL	0.00028	0.09	3.92	2.34	5.3	7.58	16.47
2/14/96	BRL	0.00006	0.11	0.69	-0.55	5.3	7.61	16.44
2/26/96	0.162	0.00020	0.12	0.34	-0.53	5.1	7.91	16.14
3/12/96	BRL	0.00007	0.10	0.92	3.17	5.1	7.57	16.48
3/27/96	BRL	0.00005	0.12	1.65	0.11	5.2	7.76	16.29
4/8/96	0.106	0.00012	0.12	1.81	2.06	NA	7.31	16.74
4/22/96	0.109	0.00020	0.06	1.10	1.77	5.2	7.74	16.31
4/30/96	BRL	0.00018	0.11	2.21	-2.39	5.3	7.81	16.24
5/6/96	BRL	0.00020	0.14	-0.93	-1.22	5.2	7.89	16.16
5/13/96	BRL	0.00012	0.12	2.44	-0.85	5.7	8.05	16.00
5/28/96	BRL	0.00023	0.07	NA	NA	5.2	8.35	15.70
6/10/96	BRL	0.00050	0.17	NA	NA	5.5	8.33	15.72
6/24/96	BRL	0.00031	0.11	NA	NA	5.1	7.71	16.34
7/8/96	BRL	0.00016	0.05	NA	NA	5.1	7.10	16.95
10/23/96	0.05	0.00045	0.15	1.80	2.50	5.8	5.21	18.84
1/6/97	BRL	0.00019	0.06	1.60	2.00	4.9	6.50	17.55
2/24/97	0.08	0.00017	0.06	BRL	BRL	4.4	5.97	18.08
5/9/97	BRL	0.00033	0.11	BRL	15.00	4.9	7.37	16.68
8/11/97	0.04	0.00025	0.07	BRL	BRL	4.7	7.96	16.09

BRL = below reporting limit; BDL = below detection limit; NA = not analyzed.

CAF-11A and CAF-11B

CAF-11A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/1/96	BRL	0.00014	0.16	4.82	15.08	6.1	6.86	18.10
2/14/96	BRL	0.00020	0.18	-0.02	2.96	6.0	6.92	18.04
2/26/96	0.114	0.00005	0.08	1.83	6.46	6.4	7.29	17.67
3/12/96	BRL	0.00010	0.07	3.75	8.02	5.9	7.07	17.89
3/27/96	BRL	0.00007	0.08	1.46	6.10	5.6	7.21	17.75
4/8/96	BRL	0.00015	0.12	5.78	4.84	5.7	6.65	18.31
4/22/96	BRL	0.00008	0.10	0.55	0.93	5.7	7.25	17.71
4/30/96	BRL	0.00019	0.13	-0.01	2.38	5.7	7.30	17.66
5/6/96	BRL	0.00011	0.05	-0.01	1.13	5.7	7.37	17.59
5/13/96	BRL	0.00009	0.07	1.52	3.81	6.0	7.57	17.39
5/28/96	BRL	0.00040	0.13	NA	NA	5.6	7.87	17.09
6/10/96	BRL	BDL	BDL	NA	NA	5.7	7.90	17.06
6/24/96	BRL	0.00098	0.33	NA	NA	5.3	7.21	17.75
7/8/96	BRL	BDL	BDL	NA	NA	5.7	6.41	18.55
10/23/96	BRL	0.00146	0.49	BRL	10.00	5.6	3.80	21.16
1/6/97	BRL	BDL	BDL	BRL	9.70	5.7	5.21	19.75
2/25/97	0.09	BDL	BDL	BRL	5.60	5.3	4.77	20.19
5/12/97	BRL	0.00015	0.05	BRL	BRL	6.0	6.67	18.29
8/11/97	BRL	0.00029	0.10	BRL	8.4	5.3	7.32	17.64

CAF-11B								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/1/96	BRL	0.00029	0.19	1.67	4.29	5.2	6.96	17.94
2/14/96	BRL	0.00163	1.16	6.65	2.89	5.3	7.09	17.81
2/26/96	0.127	0.00171	1.28	4.87	3.63	5.4	7.39	17.51
3/12/96	BRL	0.00060	0.52	2.64	0.68	5.2	7.13	17.77
3/27/96	BRL	0.00091	0.67	2.43	1.76	5.3	7.31	17.59
4/8/96	BRL	0.00045	0.34	1.82	3.42	5.6	6.78	18.12
4/22/96	BRL	0.00077	0.66	2.23	1.27	5.1	7.35	17.55
4/30/96	0.115	0.00032	0.24	2.40	-0.85	5.2	7.42	17.48
5/6/96	BRL	0.00024	0.24	2.06	-2.46	5.2	7.48	17.42
5/13/96	BRL	0.00046	0.45	1.52	-0.38	5.7	7.60	17.30
5/28/96	BRL	0.00055	0.17	NA	NA	5.0	7.93	16.97
6/10/96	BRL	0.00070	0.24	NA	NA	5.1	7.98	16.92
6/24/96	BRL	0.00081	0.27	NA	NA	4.7	7.38	17.52
7/8/96	BRL	0.00052	0.17	NA	NA	4.8	6.54	18.36
10/23/96	BRL	0.00142	0.48	2.60	4.70	4.8	3.92	20.98
1/6/97	BRL	0.00075	0.25	1.60	3.20	4.9	5.23	19.67
2/25/97	0.06	0.00110	0.38	2.40	BRL	4.7	4.94	19.96
5/9/97	BRL	0.00182	0.60	BRL	21.00	4.9	6.57	18.33
8/11/97	BRL	0.00407	1.32	BRL	5.5	5.0	7.37	17.53

BRL= below reporting limit; BDL = below detection limit; NA = not analyzed.

CAF-12A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
2/15/96	2.62	0.00710	10.32	19.39	15.11	6.4	13.52	15.99
2/27/96	3.37	0.01517	23.91	34.60	20.91	5.5	13.72	15.79
3/13/96	0.69	0.02162	34.41	44.31	25.40	6.1	13.81	15.70
4/9/96	0.73	0.29550	446.92	415.74	27.06	6.4	13.35	16.16
4/22/96	2.29	0.43958	667.69	589.89	34.36	6.6	13.48	16.03
4/23/96	4.82	0.72208	1097.16	894.36	36.02	7.2	13.45	16.06
5/1/96	5.95	0.64296	982.84	1241.63	59.83	6.9	13.66	15.85
5/6/96	7.91	0.43992	660.99	1021.19	39.52	7.2	13.72	15.79
5/13/96	6.33	0.36166	555.96	751.20	45.13	6.7	13.85	15.66
5/30/96	3.00	0.19590	74.57	NA	NA	6.6	14.22	15.29
6/10/96	5.40	0.20250	76.80	NA	NA	6.9	14.11	15.40
6/25/96	6.33	0.09764	37.03	NA	NA	7.0	13.85	15.66
7/9/96	3.63	0.03930	14.89	NA	NA	6.6	12.93	16.58
10/25/96	1.90	0.00880	3.29	8.80	11.00	5.9	9.76	19.75
1/7/97	2.25	0.00876	3.30	10.0	15.0	6.7	12.22	17.29
2/25/97	2.24	0.02350	8.81	24.0	12.0	6.2	11.86	17.65
5/12/97	1.69	0.01391	5.08	14.0	26.0	6.4	13.15	16.36
8/11/97	2.77	0.01839	6.83	15.0	8.7	6.4	13.69	15.82

CAF-13A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
1/7/97	3.80	0.22100	84.31	160.0	40.0	6.6	6.55	19.11
2/26/97	3.99	1.78000	3950.73	530.0	92.0	6.4	6.31	19.35
5/13/97	3.51	0.09910	37.37	130.0	21.0	6.2	7.85	17.81
8/12/97	2.74	0.93306	1527.87	510.0	66.0	6.1	8.56	17.10

BRL = below reporting limit; BDL = below detection limit; NA = not analyzed.

CAF-14A and CAF-15A

CAF-14A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
3/5/97	4.63	0.33000	122.92	350.0	33.0	7.2	6.51	18.95
5/13/97	5.10	0.30945	115.80	340.0	15.0	7.2	7.68	17.78
8/12/97	7.00	0.47939	797.81	210.0	37.0	6.7	8.42	17.04

CAF-15A								
Date Sampled	Fluoride (mg/L)	Total U (mg/L)	Total U (pCi/L)	Gross Alpha (pCi/L)	Gross Beta (pCi/L)	pH	Depth to Water (ft)	Head (ft MSL)
3/5/97	2.01	0.13700	50.55	140.0	13.0	5.6	5.10	18.65
5/13/97	4.23	0.51637	192.51	550.0	38.0	7.1	6.20	17.55
8/12/97	4.47	0.99619	1609.59	890.0	110.0	6.7	6.95	16.80

BRL = below reporting limit; BDL = below detection limit; NA = not analyzed.

Appendix B. Analytical Results - CAF-Series Wells (Organic Analyses)

Analytical Results - Volatile Organic Compounds
CAF- Series Monitoring Wells

Well ID	Contamination Present (ppb)						
	TCE	cDCE	Ethylbenzene	Benzene	Xylenes	Toluene	Naphthalene
CAF-5A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-5B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-6A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-6B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-7A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-7B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-8A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-8B	1.23	32.0	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-9A	<0.5	0.18	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-9B	0.84	16.0	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-10A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-10B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-11A	<100	<100	513	<100	6690	<100	393
CAF-11B	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-12A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-13A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-14A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CAF-15A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Appendix C. Analytical Results - Exploratory Borings

Analytical Results - Onsite and Offsite Exploratory Borings
Borings (CB and OCB-Series)

Boring CB-18						
Depth (ft,BLS)	Elevation (ft,MSL)	Sample Number(s)	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)
9.6	11.67	CB-18-2	0.05	0.00073	<1.0	0.46
14.8	6.47	CB-18-3	0.02	0.00034	<1.0	<1.0
26.1	-4.83	CB-18-4	<0.02	0.00153	<1.0	<1.0
31.3	-10.03	CB-18-6	<0.02	0.00186	<1.0	<1.0
35.8	-14.53	CB-18-7	<0.02	0.00216	<1.0	<1.0
41.8	-20.53	CB-18-8/9	0.06	0.00046	<1.0	<1.0
48.5	-27.23	CB-18-10	0.07	0.00152	<1.0	<1.0

Boring CB-19						
Depth (ft,BLS)	Elevation (ft,MSL)	Sample Number(s)	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)
11.75	10.05	CB-19-2	<0.02	0.00020	<1.0	<1.0
16.75	5.05	CB-19-3	0.04	0.00023	<1.0	<1.0
22.33	-0.53	CB-19-4	<0.02	0.00050	<1.0	<1.0
27.0	-5.2	CB-19-5	0.04	0.00454	<1.0	<1.0
41.95	-20.15	CB-19-6/7	0.13	0.00207	<1.0	<1.0
59.7	-37.9	CB-19-9	0.34	0.00895	<1.0	<1.0

Boring CB-20									
Depth (ft,BLS)	Elevation (ft,MSL)	Sample Number(s)	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCA (µg/L)	Benzene (µg/L)	Toluene (µg/L)
16.3		CB-20-3	0.22	0.000916	<0.5	<0.5	<0.5	<0.5	<0.5
19.4		CB-20-4	0.20	0.0179	<0.5	<0.5	<0.5	<0.5	<0.5
22.8		CB-20-5	0.08	0.00998	<0.5	<0.5	<0.5	<0.5	<0.5
25.4	Pending	CB-20-6	<0.02	0.000587	(0.41)	<0.5	<0.5	<0.5	<0.5
32.5		CB-20-8/9	<0.02	0.006415	<0.5	<0.5	<0.5	<0.5	<0.5
34.9		CB-20-11	<0.02	0.00041	<0.5	<0.5	<0.5	<0.5	<0.5
35.5 - 45.5		CB-20-12/13	Pending	0.03405	<0.5	(0.15)	(0.16)	(0.15)	(0.13)

Boring CB-21							
Depth (ft,BLS)	Elevation (ft,MSL)	Sample Number(s)	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	trans-1,2-DCE (µg/L)
9.75	13.65	CB-21-2	3.60	0.00577	<1.0	2.80	<1.0
16.75	6.65	CB-21-3	6.22	0.00413	(0.33)	9.21	<1.0
22.5	0.9	CB-21-4	1.19	0.01024	2.29	66.4	(0.26)
27.0	-3.6	CB-21-5	<0.02	0.00876	14.1	186	<1.0
32.1	-8.7	CB-21-6	<0.02	0.00187	13.6	69.3	<1.0
36.9	-13.5	CB-21-8	2.47	0.00064	93.8	226	<1.0
45.5	-22.1	CB-21-9/10	0.965	0.01282	1.06	9.32	<1.0
64.1	-40.7	CB-21-11	0.5	0.00648	<1.0	<1.0	<1.0

Analytical Results - Onsite and Offsite Exploratory Borings
Borings (CB and OCB-Series)

Boring CB-22							
Depth (ft,BLS)	Elevation (ft,MSL)	Sample Number(s)	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCA (µg/L)
11.1	11.7	CB-22-2	<0.02	0.00024	<1.0	<1.0	<1.0
17.1	5.7	CB-22-3	<0.02	0.00099	<1.0	<1.0	<1.0
22.1	0.7	CB-22-4	<0.02	0.00129	<1.0	(0.59)	1.42
26.7	-3.9	CB-22-5	<0.02	0.00613	<1.0	<1.0	3.63
32.1	-9.3	CB-22-7	0.02	0.00017	11.9	12.7	11.7
36.9	-14.1	CB-22-8/9	0.03	0.001705	6.64	310	72.0
41.8	-19.0	CB-22-10	0.1	0.01208	14.4	321	<1.0
45.9	-23.1	CB-22-11	0.17	0.00533	2.97	335	<1.0
55.4	-32.6	CB-22-12	0.17	0.00551	<1.0	51.6	<1.0
70.2	-47.4	CB-22-13	0.17	0.05756	<1.0	(0.56)	<1.0

Boring CB-23							
Depth (ft,BLS)	Elevation (ft,MSL)	Sample Number(s)	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	sec-Butylbenzene (µg/L)
12.3	Pending	CB-23-1	<0.02	0.000322	<0.5	<0.5	<0.5
16.8		CB-23-2	<0.02	0.000203	<0.5	<0.5	(0.40)
22.0		CB-23-3	<0.02	0.0114	<0.5	<0.5	(0.29)
25.8		CB-23-4	<0.02	0.00315	<0.5	<0.5	(0.50)
36.1- 46.1		CB-23-5/6	<0.02	0.00181	<0.5	<0.5	<0.5

Analytical Results - Onsite and Offsite Exploratory Borings
Borings (CB and OCB-Series)

Boring OCB-1							
Depth (ft,BLS)	Elevation (ft,MSL)	Sample Number(s)	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCA (µg/L)
13.5	10.0	OCB-1-2	<0.02	0.00049	<1.0	<1.0	<1.0
17.2	6.3	OCB-1-3	<0.02	0.00026	<1.0	<1.0	<1.0
25.5	-2.0	OCB-1-4	<0.02	0.00063	<1.0	<1.0	<1.0
31.5	-8.0	OCB-1-5	<0.02	0.00057	<1.0	2.06	<1.0
35.7	-12.2	OCB-1-6/7	<0.02	0.00289	2.32	43.5	<1.0
42.1	-18.6	OCB-1-8	0.06	0.00479	<25	509	27.1
48.5	-25.0	OCB-1-10	0.22	0.00546	<1.0	110	<1.0
55.9	-32.4	OCB-1-11	0.1	0.00074	<100	9,115	<100

Boring OCB-2								
Depth (ft,BLS)	Elevation (ft,MSL)	Sample Number(s)	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)	1,1-DCA (µg/L)	trans-1,2-DCE (µg/L)
11.5	-1.1	OCB-2-2	0.05	0.00036	<1.0	<1.0	<1.0	<1.0
17.0	-6.6	OCB-2-3	0.04	0.00066	<1.0	<1.0	<1.0	<1.0
22.1	-11.7	OCB-2-4	0.03	0.00107	(0.64)	15.8	<1.0	<1.0
26.1	-15.7	OCB-2-6	0.04	0.00274	23.5	265	2.38	<1.0
32.1	-21.7	OCB-2-7/8	0.06	0.00039	74.4	411	<1.0	<1.0
36.1	-25.7	OCB-2-10	0.10	0.00088	27.4	452	2.45	(0.90)
65.2	-54.8	OCB-2-11	0.20	0.00026	<1.0	<1.0	<1.0	<1.0

Boring OCB-3						
Depth (ft,BLS)	Elevation (ft,MSL)	Sample Number(s)	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (µg/L)	cis-1,2-DCE (µg/L)
12.8	-1.1	OCB-3-2	0.05	0.00123	<1.0	<1.0
16.8	-5.1	OCB-3-4	0.10	0.00412	<1.0	<1.0
22.1	-10.4	OCB-3-5	0.08	0.08642	<1.0	<1.0
26.3	-14.6	OCB-3-6	0.10	0.000680	<1.0	<1.0
36.1	-24.4	OCB-3-7	0.21	0.000586	<1.0	<1.0
45.1	-33.4	OCB-3-8/9	0.14	0.000429	<1.0	<1.0
50.3	-38.6	OCB-3-10	0.13	0.00133	<1.0	<1.0
64.6	-52.9	OCB-3-11	0.40	0.00844	<1.0	<1.0

Appendix D. Analytical Results - Surface-Water, Shallow Wellpoint, and Soil Samples

Analytical Results - Surface-Water, Shallow Wellpoint, and Soil Samples

Shallow Wellpoint Samples									
Sample Location Number	Sample Date	Fluoride (mg/L)		Total Uranium (mg/L)		VOCs (Unfiltered Samples Only)			
		Unfiltered	Filtered	Unfiltered	Filtered	TCE (ug/L)	cis-1,2-DCE (ug/L)	Vinyl Chloride (ug/L)	Toluene (ug/L)
GW-1	3/17/97	<0.02*	0.04*	0.000859*	<0.00015*	--	--	--	--
	4/11/97	NS	NS	0.000317*	0.000514*	--	--	--	--
GW-2	3/17/97	<0.02	<0.02	0.00148	0.000281	--	--	--	--
	4/11/97	NS	NS	0.000804*	0.000354*	--	--	--	4.79*
GW-3	3/17/97	0.04	0.04	0.00665	0.000327	--	--	--	--
	4/11/97	NS	NS	0.00138*	0.000184*	--	--	--	--
GW-4	3/18/97	<0.02	0.03	0.000194	0.000242	--	76.8	--	406
	4/11/97	NS	NS	0.000445*	0.000408*	--	106*	--	1158*
GW-5	3/18/97	<0.02	<0.02	0.00018	<0.00015	--	--	--	--
	4/11/97	NS	NS	0.000303*	0.00115*	--	--	--	6.8*
GW-6	3/18/97	<0.02	<0.02	0.000173	<0.00015	--	--	--	42.6
GW-7	3/18/97	<0.02	<0.02	<0.00015	<0.00015	--	--	--	--
GW-8	3/18/97	<0.02*	<0.02*	<0.00015*	<0.00015*	--	--	--	--
GW-9	4/11/97	NS	NS	0.000706*	0.000216*	--	--	--	--
GW-10	4/11/97	NS	NS	<0.00015*	<0.00015*	--	--	--	--
SWS-1	8/19/97	NS	NS	<0.00015*	NS	--	1.1*	--	--
SWS-2	8/19/97	NS	NS	0.000417*	NS	--	--	--	--
SWS-3	8/19/97	NS	NS	0.000243*	NS	--	--	--	--
SWS-4	8/19/97	NS	NS	<0.00015*	NS	--	--	--	--
SWS-5	8/19/97	NS	NS	<0.00015*	NS	--	--	--	--
SWS-6	8/19/97	NS	NS	0.000274*	NS	--	--	--	--
SWS-7	8/19/97	NS	NS	0.000251*	NS	--	--	--	--

* Indicates concentration is a mean of duplicate samples. For non-detects, one-half of detection limit was used for calculation of mean.
NS=Not sampled -- Indicates compound not detected. Methyl ethyl ketone (MEK) and chloroform detected in several samples.
MEK and chloroform are interpreted to be laboratory/sampling artifacts in these samples and not groundwater contaminants.

Surface Water Samples							
Sample Location Number	Sample Date	Fluoride (mg/L)	Total Uranium (mg/L)	TCE (ug/L)	cis-1,2-DCE (ug/L)	Vinyl Chloride (ug/L)	Toluene (ug/L)
SW-1	3/13/97	0.04*	0.000252*	--	--	--	--
	4/10/97	NS	0.000128*	--	--	--	--
SW-2	3/13/97	0.05	0.000167	--	--	--	--
SW-3	3/13/97	0.04	0.000326	--	--	--	--
		NS	0.000203*	--	--	--	--
SW-4	3/13/97	0.04	0.000549	--	--	--	--
		NS	0.000297*	--	--	--	--
SW-7	3/13/97	0.04	0.000223	--	--	--	--
SW-8	3/13/97	0.03*	0.00012*	--	--	--	--
SW-9	3/13/97	3.72	0.270	--	--	--	--
SW-10	3/13/97	0.04	0.000495	--	--	--	--

* Indicates concentration is a mean of duplicate samples. For non-detects, one-half of detection limit was used for calculation of mean. NS=Not sampled. -- Indicates compound not detected.
Chloroform detected at 0.32 ug/L in sample from SW-8. Detection of chloroform in this sample is interpreted to be a laboratory/sampling artifact and not a groundwater contaminant.

Analytical Results - Surface-Water, Shallow Wellpoint, and Soil Samples

Shallow Soil Samples			
Sample Location Number	Sample Date	Total Uranium (mg/L)	Total Organic Carbon (%)
S-1	3/17/97	0.16190*	2.31*
S-2	3/17/97	0.21413	45.6
S-3	3/17/97	0.48861	12.7
S-4	3/18/97	0.30868	49.6
S-5	3/18/97	0.25823	38.6
S-6	3/18/97	0.06397	49.4
S-7	3/18/97	<0.0375	45.3
S-8	3/18/97	<0.0375*	9.82*