

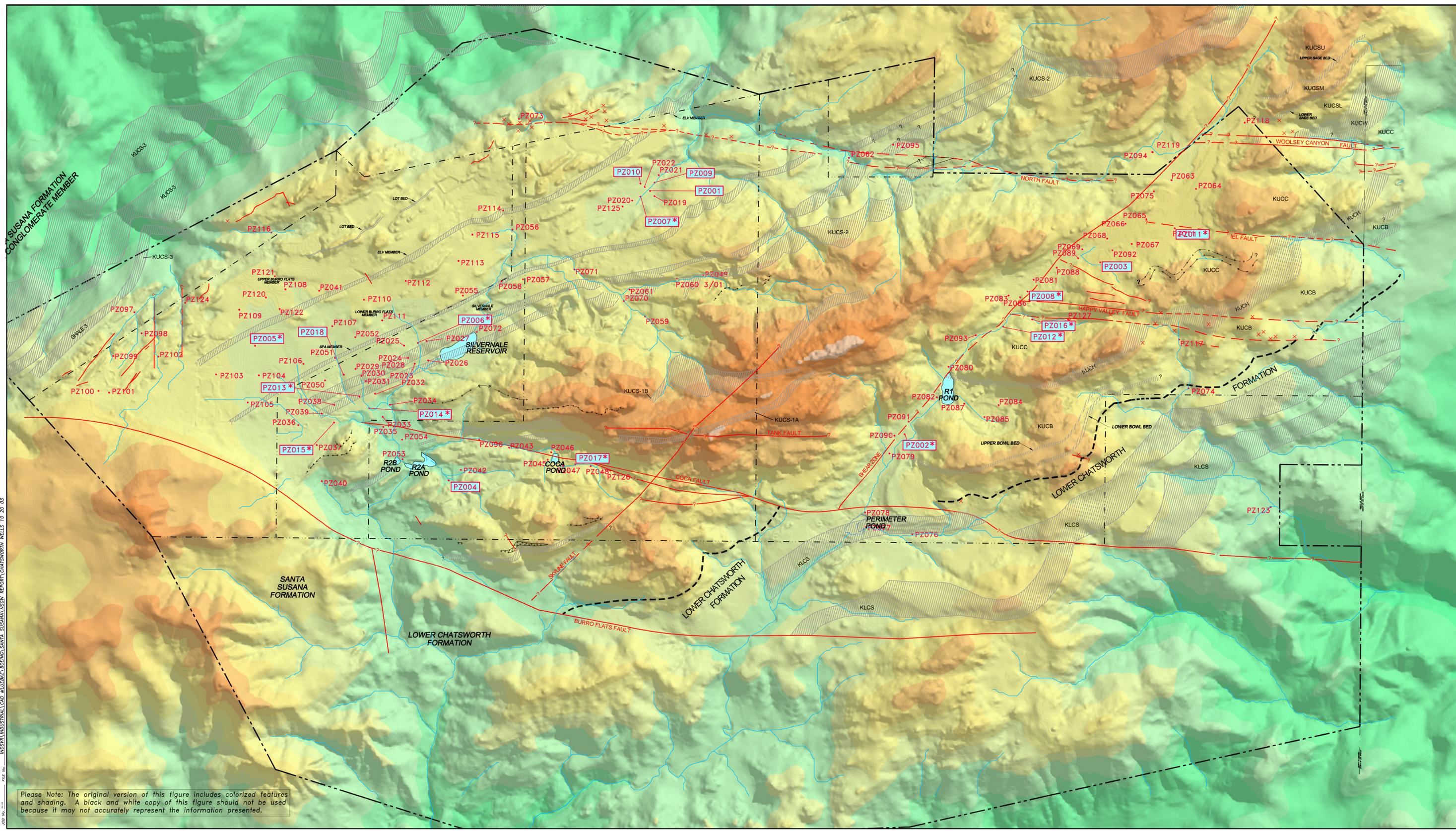
PLATES

- 3-1 Near-Surface Groundwater Piezometer Locations
- 3-2 Near-Surface Groundwater Monitoring Network (Wells and Piezometers)
- 3-3 Well/Piezometer Locations with Transducers

- 4-1 Near-Surface Groundwater Extent and Water Table Surface, March 2001
- 4-2 Near-Surface Groundwater Extent and Water Table Surface, November 2001
- 4-3 Near-Surface Groundwater Extent and Water Table Surface, February 2002
- 4-4 Near-Surface Groundwater Extent and Water Table Surface, May 2003
- 4-5 Cross-Sections of Near-Surface Groundwater
- 4-6 Locations of Near-Surface Groundwater Occurrence within Alluvium
- 4-7 Hydrographs of Pond Surface Water and Wells/Piezometers
- 4-8 Hydrographs of Instrumented Wells/Piezometers
- 4-9 Stiff Diagrams of Near-Surface Groundwater Monitoring Wells

- 5-1 Location of RFI Sites and Composite of Lateral Extent of Near-Surface Groundwater
- 5-2 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for Halogenated Ethenes
- 5-2a Isoconcentration Contours of TCE in Near-Surface Groundwater (Plan View and Cross-Section)
- 5-3 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for Halogenated Ethanes
- 5-4 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for Halogenated Methanes
- 5-5 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for Non-Halogenated VOCs
- 5-6 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for Halogenated Benzenes and Halogenated Propene/Propanes
- 5-7 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for 1,4-Dioxane
- 5-8 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for SVOCs

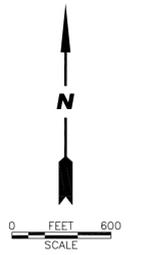
- 5-9 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for N-Nitrosodimethylamine
- 5-10 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for Perchlorate
- 5-11 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for Petroleum Hydrocarbons
- 5-12 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for Poly-Chlorinated Biphenyls
- 5-13 Analytical Results for Near-Surface Groundwater Wells and Piezometers Sampled for Metals



LEGEND

- PROPERTY BOUNDARY
- - - AREA BOUNDARY
- ~ PERENNIAL POND
- PZ075• NEAR-SURFACE GROUNDWATER PIEZOMETER
- ▨ FINER GRAINED UNIT
- FAULT LOCATION
- - - INFERRED FAULT LOCATION BASED ON ONE OR A NUMBER OF THE FOLLOWING: DISPLACEMENT OF GEOLOGIC CONTACT, LINEAR TOPOGRAPHIC FEATURE ASSOCIATED WITH A DISPLACED GEOLOGIC CONTACT AND/OR SMALL SCALE STRUCTURES OBSERVED IN CORE
- X SMALL-SCALE FAULT
- PZ018 CORED LOCATION
- * INDICATES LOCATION ALSO GEOPHYSICALLY LOGGED

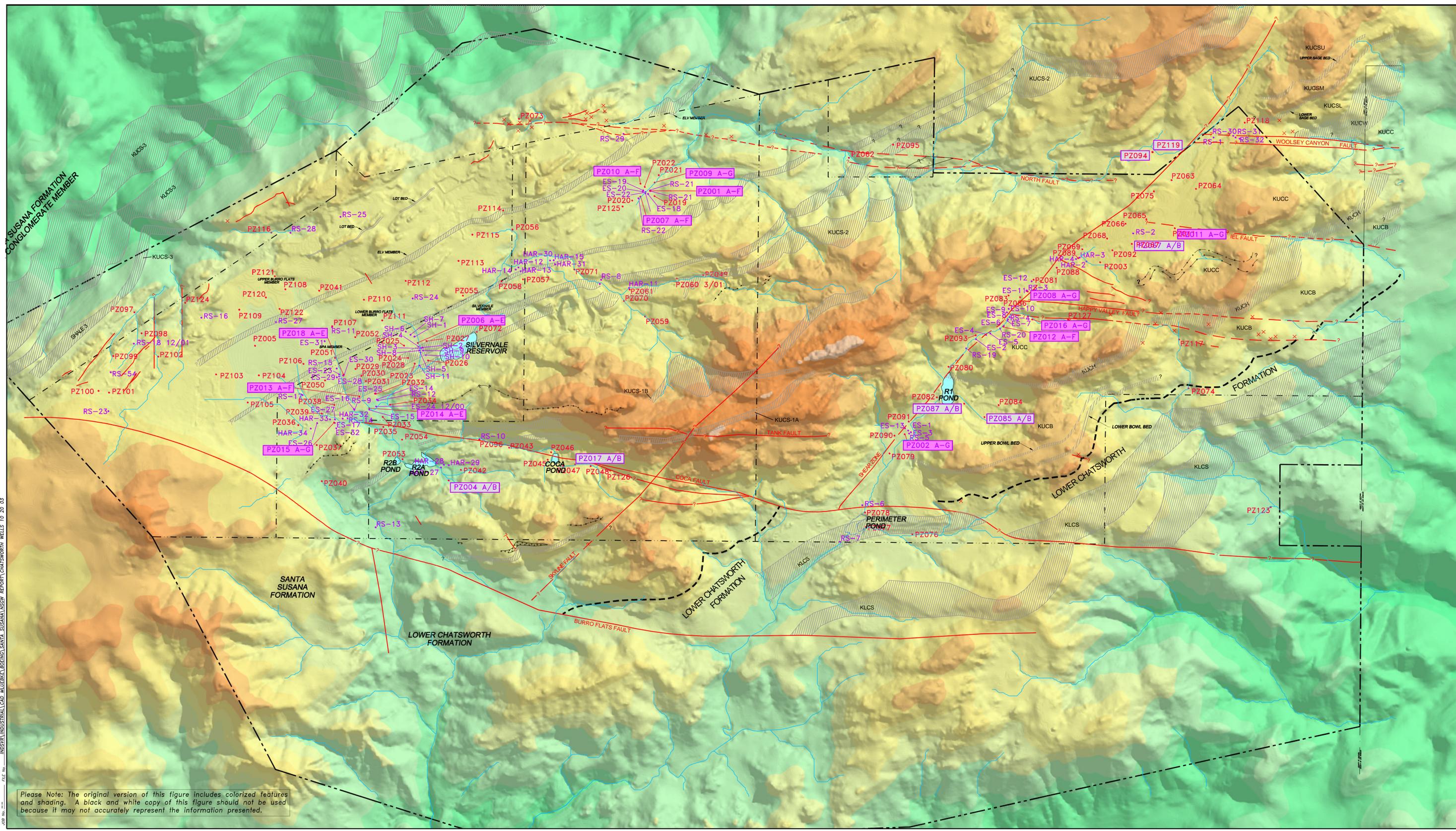
NOTE:
FOR COLOR SCALE ON TOPOGRAPHY
SEE FIGURE 2-1.



Please Note: The original version of this figure includes colored features and shading. A black and white copy of this figure should not be used because it may not accurately represent the information presented.

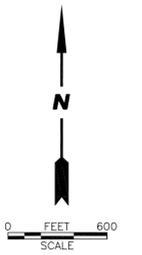
MWH
SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA
NOVEMBER 2003
NEAR-SURFACE GROUNDWATER
PIEZOMETER LOCATIONS
PLATE 3-1

INDUSTRIAL/CAD MILLER/KEL/BOEING/SANTA SUSANA/MSM REPORT CHATSWORTH WELLS 10 20 03



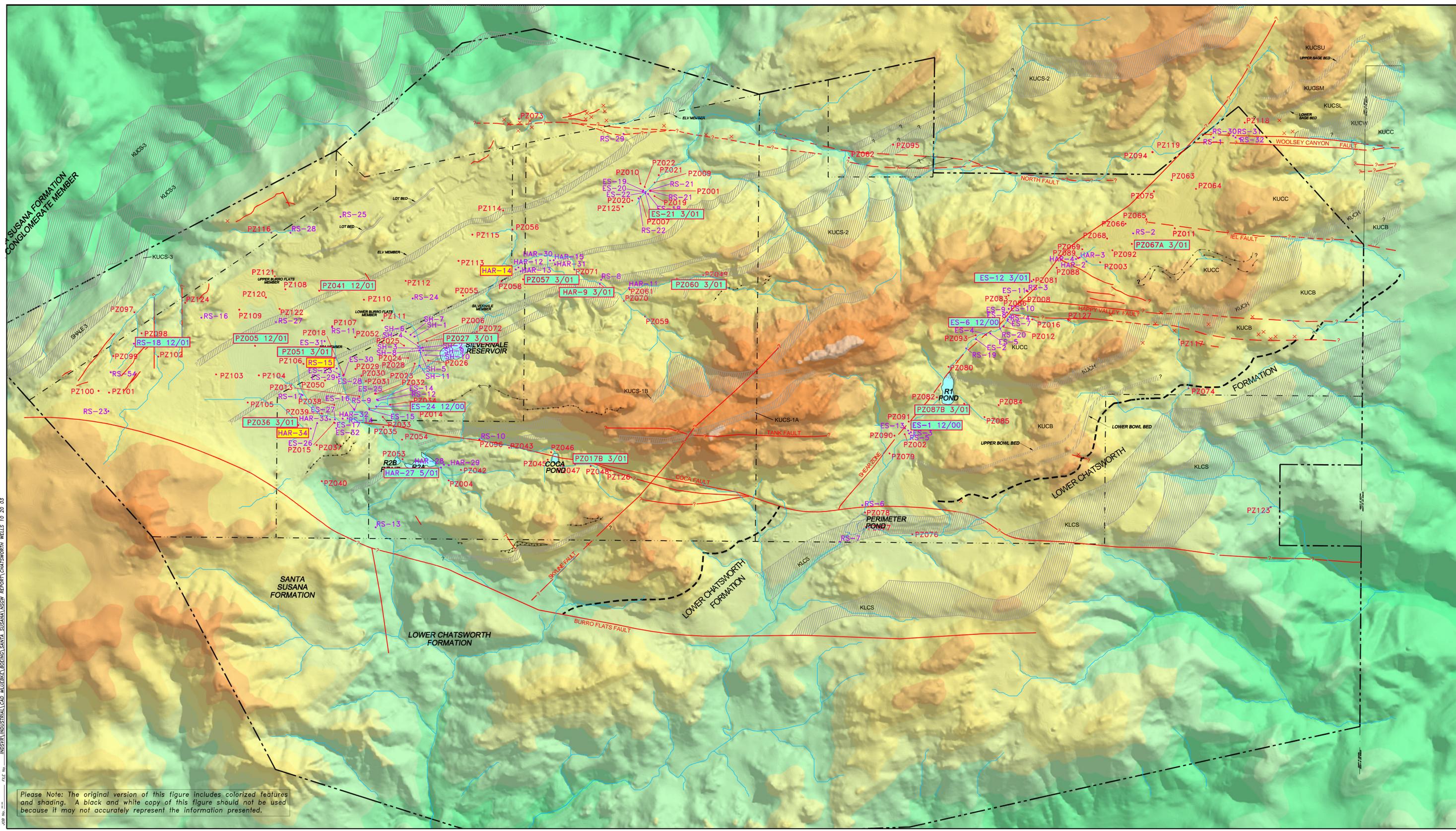
- LEGEND**
- PROPERTY BOUNDARY
 - - - AREA BOUNDARY
 - PERENNIAL POND
 - PZ075+ NEAR-SURFACE GROUNDWATER PIEZOMETER
 - RS-27+ NEAR-SURFACE GROUNDWATER MONITORING WELL
 - FINER GRAINED UNIT
 - FAULT LOCATION
 - INFERRED FAULT LOCATION BASED ON ONE OR A NUMBER OF THE FOLLOWING: DISPLACEMENT OF GEOLOGIC CONTACT, LINEAR TOPOGRAPHIC FEATURE ASSOCIATED WITH A DISPLACED GEOLOGIC CONTACT AND/OR SMALL SCALE STRUCTURES OBSERVED IN CORE
 - SMALL-SCALE FAULT
 - PAIRED PIEZOMETERS
 - MULTI-LEVEL PIEZOMETERS
 - A-E 5 PORTS
 - A-F 6 PORTS
 - A-G 7 PORTS

NOTE:
FOR COLOR SCALE ON TOPOGRAPHY SEE FIGURE 2-1.



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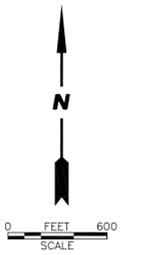
INDUSTRIAL/CAD MILLER/KEL/BOEING/SANTA SUSANA/MSGW REPORT CHATSWORTH WELLS 10 20 03



LEGEND

- PROPERTY BOUNDARY
- - - AREA BOUNDARY
- PERENNIAL POND
- PZ075, RS-27 NEAR-SURFACE GROUNDWATER PIEZOMETER
- NEAR-SURFACE GROUNDWATER MONITORING WELL
- FINER GRAINED UNIT
- FAULT LOCATION
- INFERRED FAULT LOCATION BASED ON ONE OR A NUMBER OF THE FOLLOWING: DISPLACEMENT OF GEOLOGIC CONTACT, LINEAR TOPOGRAPHIC FEATURE ASSOCIATED WITH A DISPLACED GEOLOGIC CONTACT AND/OR SMALL SCALE STRUCTURES OBSERVED IN CORE
- SMALL-SCALE FAULT
- RS-15 TRANSDUCER DEPLOYED FROM DECEMBER 2000 THROUGH MARCH 2001
- PZ011 TRANSDUCER DEPLOYED THROUGH JUNE 2003 DATE SHOWN INDICATES MONTH AND YEAR WHEN INSTRUMENT STARTED RECORDING DATA

NOTE:
FOR COLOR SCALE ON TOPOGRAPHY SEE FIGURE 2-1.



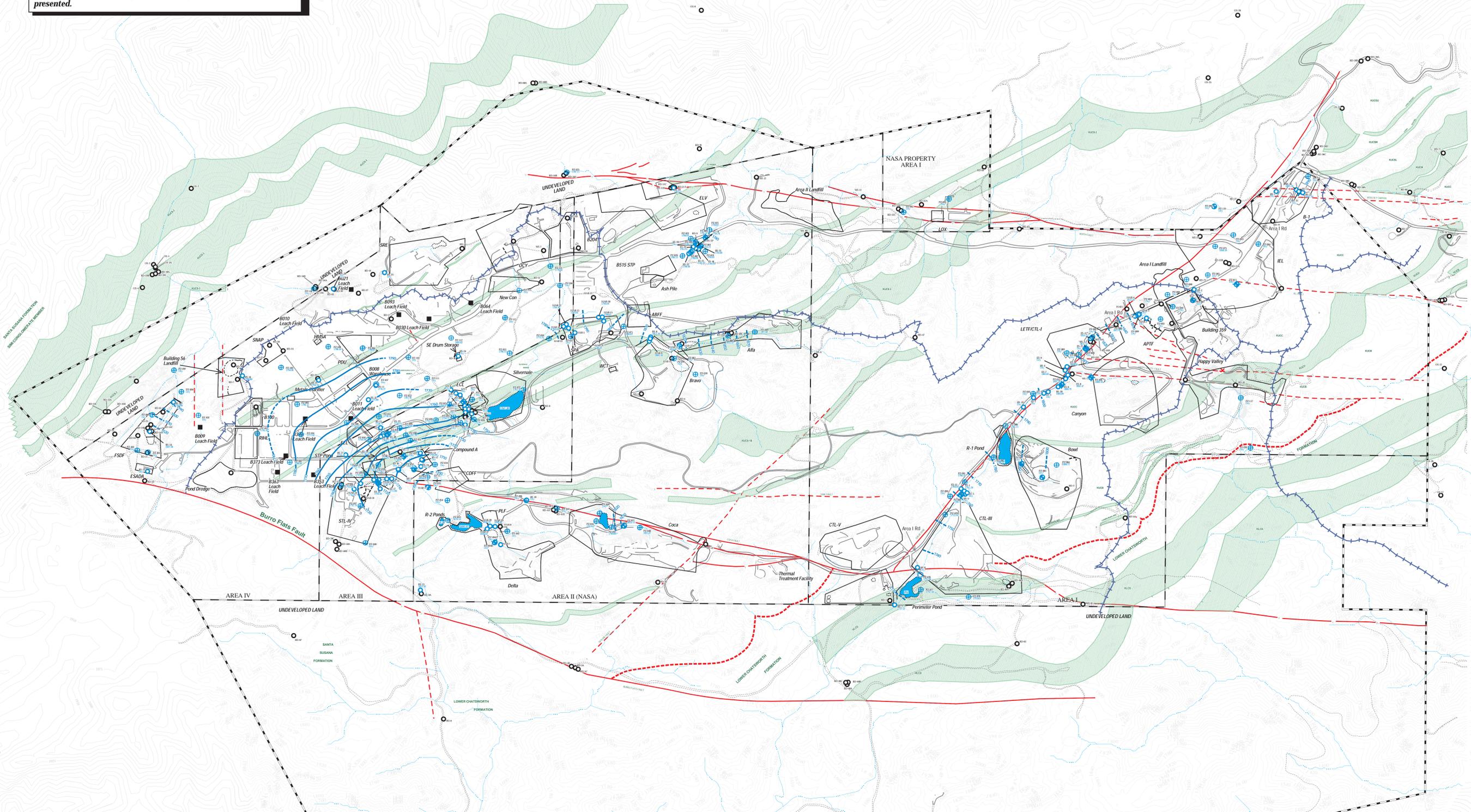
Please Note: The original version of this figure includes colored features and shading. A black and white copy of this figure should not be used because it may not accurately represent the information presented.

MWH
SANTA SUSANA FIELD LABORATORY
VENTURA COUNTY, CALIFORNIA
NOVEMBER 2003

WELL/PIEZOMETER LOCATIONS WITH TRANSDUCERS
PLATE 3-3

INDUSTRIAL/CAD MILLER/KEL/BOEING/SANTA SUSANA/MSM REPORT CHATSWORTH WELLS 10 20 03

Please Note: The original version of this figure includes colored features and shading. A black and white copy of the figure should not be used because it may not accurately represent the information presented.



LEGEND

- Existing Near-Surface Groundwater Well
- Existing Chatsworth Formation Groundwater Well
- ⊕ Completed Alluvium Piezometer
- ⊕ Completed Standard Piezometer
- ⊕ Completed Paired Piezometer
- ⊕ Completed Multilevel Piezometer
- ~ Approximate Location of Surface Water Divide
- ~ RFI Site Boundary

WATER ELEVATIONS (feet above mean sea level)

- NM = Not Measured
- NE = Non-Existing (during measurement event)
- Water was detected in the well/piezometer. However, it was determined based on well construction details that this was water trapped in the endcap. Therefore, this water level does not represent the groundwater table that is being contoured.
- Water level elevation not used since it was determined that this reading was not monitoring first water in the area.

NOTE: (1) ? - Identifies locations in the geology where uncertainties exist. These uncertainties may or may not be important or resolvable. Resolving the uncertainties will be evaluated based on their potential importance in the overall understanding of the effect of these features on groundwater flow and contaminant transport.

~ Approximate Near-Surface Groundwater Elevation Contours in Feet Above Mean Sea Level (Dashed Where Inferred)

RFI SITES

- AREA I**
- SWMU 4.1 - Old B-1 Area (B-1)
 - SWMU 4.2 - Area I Landfill
 - SWMUs 4.3, 4.4 and AOC - Instrument and Equipment Laboratories (EL)
 - SWMUs 4.5, 4.6 - LOX Plant Former Sump/Clarifier & Drum Disposal Area (LOX)
 - SWMU 4.7 - Component Test Laboratory III (CTL-III) Area
 - SWMU 4.8 - Thermal Treatment Facility (TTF) RCRA Permitted Unit
 - SWMU 4.9, AOC - Advanced Propulsion Test Facility (APTFF) Area
 - SWMU 4.12 - Laser Engineering Test Facility (LETFF)/Component Test Lab I (CTL-I) Area
 - SWMU 4.14 - Canyon Area
 - SWMU 4.15 and AOC - Bowl Area (Bowl) and Building 901 Leachfield
 - SWMU 4.16 - Area I Reservoir (R-1 Pond)
 - SWMU 4.17 - Perimeter Pond
 - AOC - Building 359 Sump (B-359)
 - AOC - Happy Valley Area
 - AOC - Component Test Laboratory V (CTL-V)
- AREA II**
- SWMU 5.1 - Area II Landfill

AREA II (cont.)

- SWMU 5.2 - ELV Final Assembly, Building 206 (ELV)
 - SWMU 5.5 and AOC - Building 204 Underground Storage Tanks (B204)
 - SWMU 5.6 - Former Incinerator Ash Pile (Ash Pile)
 - SWMUs 5.7, 5.8 - Hazardous Waste Storage Area/Waste Coolant Tank (WCT)
 - SWMUs 5.9, 5.10, 5.11 - Alfa Area
 - SWMUs 5.12, 5.13, 5.14, 5.15 - Alfa/Bravo Skim Pond and Bravo Area
 - SWMUs 5.16, 5.19 - Coca Area
 - SWMUs 5.20, 5.21, 5.22 - Propellant Load Facility (PLF)
 - SWMU 5.23 - Delta Area
 - SWMU 5.26 - R-2A and R-2B Ponds
 - AOC - Building 515 Sewage Treatment Plant (B515 STP)
 - AOC - Storage Propellant Area (SPA)
 - AOC - Alfa/Bravo Fuel Farm (ABFF)
 - AOC - Coca/Delta Fuel Farm (CDDF)
- AREA III**
- SWMUs 6.1, 6.3, AOC - Engineering Chemistry Laboratory (ECL) Area
 - SWMU 6.4 - Compound A Facility
 - SWMU 6.5 - Systems Test Laboratory IV (STL-IV) Area
 - SWMU 6.8 - Silverdale Reservoir

AREA III (cont.)

- SWMU 6.9 - Environmental Effects Laboratory (EEL)
 - AOC - Sewage Treatment Plant (STP) Pond Area
- AREA IV**
- SWMU 7.1 - Building 56 Landfill (B56 Landfill)
 - SWMU 7.3 - Former Sodium Disposal Facility (FSDF)
 - SWMU 7.4 - Old Conservation Yard (Old Con)
 - SWMU 7.5 - Building 100 Trench (B100)
 - SWMU 7.7 - Rockwell International Hot Laboratory (RHL)
 - SWMU 7.8 - New Conservation Yard (New Con)
 - SWMU 7.9 - ESADA Chemical Storage Area (ESADA)
 - SWMU 7.10 - Former Coal Gasification PDU (PDU)
 - AOC - Hazardous Materials Storage Area (HMSA)
 - AOC - Metals Laboratory Clarifier
 - AOC - Pond Dredge Area
 - AOC - Sodium Reactor Experiment (SRE) Complex
 - AOC - SE Drum Storage Yard
 - AOC - SNAP Facility
 - Leach Fields (as individual RFI sites)

Base Map Legend

- Surface Water Ponds
- SSL Property Boundary
- Administrative Area Boundary
- A/C Cutting
- Dirt Road
- Possible Ponds (approx. location)

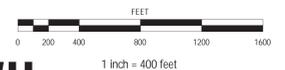
Geology Legend

- Shale Units (KUCS, KUCS-1A, KUCS-1B, KUCS-2, KUCS-3)
- Faults
- Faults (Approximate)
- Estimated Contact Line

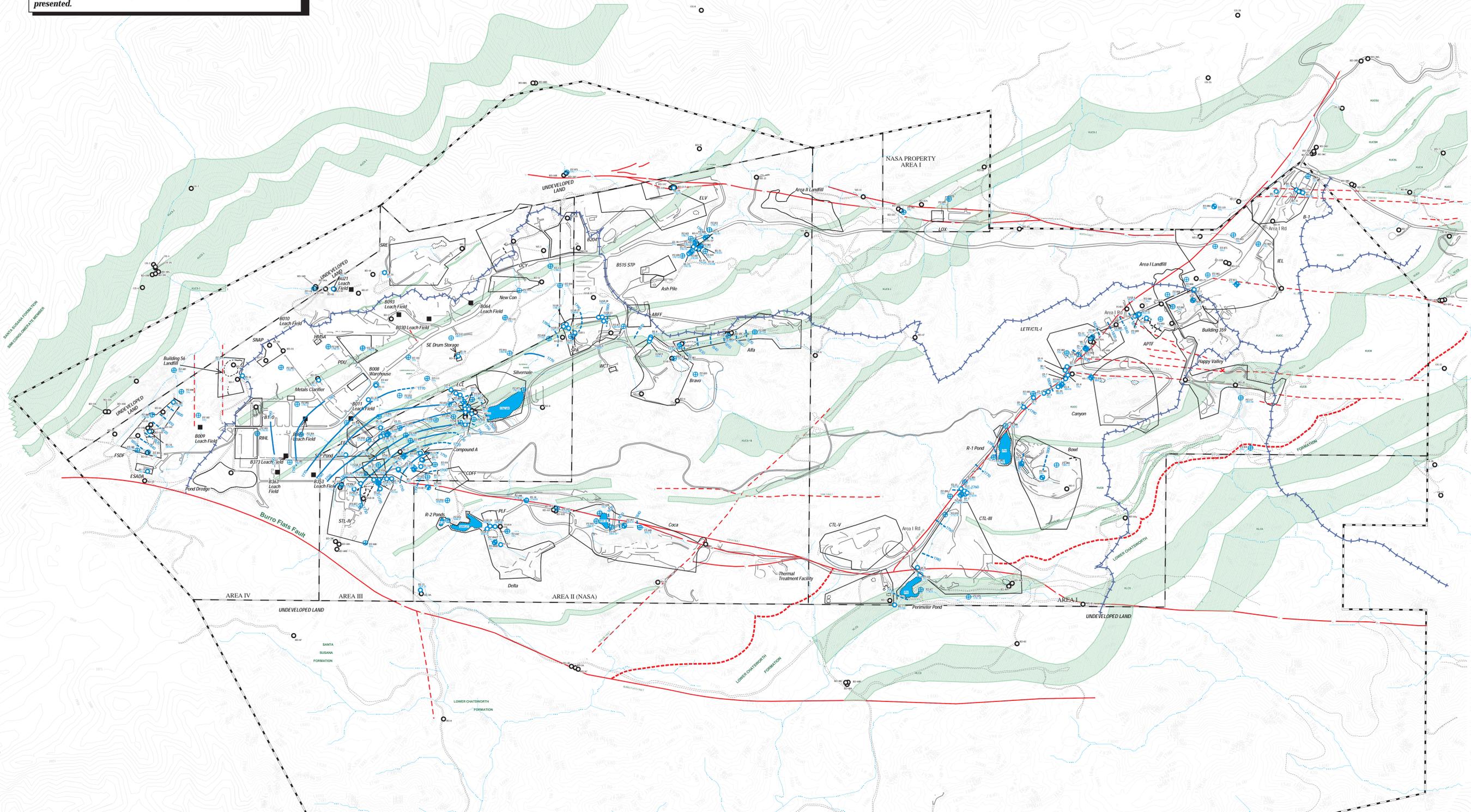
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NEAR-SURFACE GROUNDWATER ELEVATION CONTOUR MAP, NOVEMBER 2001

Santa Susana Field Laboratory



Please Note: The original version of this figure includes colored features and shading. A black and white copy of the figure should not be used because it may not accurately represent the information presented.



LEGEND

- Existing Near-Surface Groundwater Well
- Existing Chatsworth Formation Groundwater Well
- Completed Alluvium Piezometer
- Completed Standard Piezometer
- Completed Paired Piezometer
- Completed Multilevel Piezometer
- Approximate Location of Surface Water Divide
- RFI Site Boundary

WATER ELEVATIONS (feet above mean sea level)

- NM = Not Measured
- NE = Non-Existing (during measurement event)
- Water was detected in the well/piezometer. However, it was determined based on well construction details that this was water trapped in the endcap. Therefore, this water level does not represent the groundwater table that is being contoured.
- Water level elevation not used since it was determined that this reading was not monitoring first water in the area.

NOTE: (1) ? - Identifies locations in the geology where uncertainties exist. These uncertainties may or may not be important or resolvable. Resolving the uncertainties will be evaluated based on their potential importance in the overall understanding of the effect of these features on groundwater flow and contaminant transport.

Approximate Near-Surface Groundwater Elevation Contours in Feet Above Mean Sea Level (Dashed Where Inferred)

RFI SITES

- AREA I**
- SWMU 4.1 - Old B-1 Area (B-1)
 - SWMU 4.2 - Area I Landfill
 - SWMUs 4.3, 4.4 and AOC - Instrument and Equipment Laboratories (EL)
 - SWMUs 4.5, 4.6 - LOX Plant Former Sump/Clarifier & Drum Disposal Area (LOX)
 - SWMU 4.7 - Component Test Laboratory III (CTL-III) Area
 - SWMU 4.8 - Thermal Treatment Facility (TTF) RCRA Permitted Unit
 - SWMU 4.9, AOC - Advanced Propulsion Test Facility (APT) Area
 - SWMU 4.12 - Laser Engineering Test Facility (LET) Component
 - Test Lab I (CTL-I) Area
 - SWMU 4.14 - Canyon Area
 - SWMU 4.15 and AOC - Bowl Area (Bowl) and Building 901 Leachfield
 - SWMU 4.16 - Area I Reservoir (R-1 Pond)
 - SWMU 4.17 - Perimeter Pond
 - AOC - Building 359 Sump (B-359)
 - AOC - Happy Valley Area
 - AOC - Component Test Laboratory V (CTL-V)
- AREA II**
- SWMU 5.1 - Area II Landfill

AREA II (cont)

- SWMU 5.2 - ELV Final Assembly, Building 206 (ELV)
 - SWMU 5.5 and AOC - Building 204 Underground Storage Tanks (B204)
 - SWMU 5.6 - Former Incinerator Ash Pile (Ash Pile)
 - SWMU 5.7 - Hazardous Waste Storage Area/Waste Coolant Tank (WCT)
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 - SWMU 5.16, 5.19 - Coca Area
 - SWMU 5.20, 5.21, 5.22 - Propellant Load Facility (PLF)
 - SWMU 5.23 - Delta Area
 - SWMU 5.26 - R-2A and R-2B Ponds
 - AOC - Building 515 Sewage Treatment Plant (B515 STP)
 - AOC - Storage Propellant Area (SPA)
 - AOC - Alfa/Bravo Fuel Farm (ABFF)
 - AOC - Coca/Delta Fuel Farm (CDDF)
- AREA III**
- SWMUs 6.1, 6.3, AOC - Engineering Chemistry Laboratory (ECL) Area
 - SWMU 6.4 - Compound A Facility
 - SWMU 6.5 - Systems Test Laboratory IV (STL-IV) Area
 - SWMU 6.8 - Silverdale Reservoir

AREA III (cont)

- SWMU 6.9 - Environmental Effects Laboratory (EEL)
 - AOC - Sewage Treatment Plant (STP) Pond Area
- AREA IV**
- SWMU 7.1 - Building 56 Landfill (B56 Landfill)
 - SWMU 7.3 - Former Sodium Disposal Facility (FSDP)
 - SWMU 7.4 - Old Conservation Yard (Old Con)
 - SWMU 7.5 - Building 100 Trench (B100)
 - SWMU 7.7 - Rockwell International Hot Laboratory (RHL)
 - SWMU 7.8 - New Conservation Yard (New Con)
 - SWMU 7.9 - ESADA Chemical Storage Area (ESADA)
 - SWMU 7.10 - Former Coal Gasification PDU (PDU)
 - AOC - Hazardous Materials Storage Area (HMSA)
 - AOC - Metals Laboratory Clarifier
 - AOC - Pond Dredge Area
 - AOC - Sodium Reactor Experiment (SRE) Complex
 - AOC - SE Drum Storage Yard
 - AOC - SNAP Facility
 - Leach Fields (as individual RFI sites)

Base Map Legend

- Surface Water Ponds
- SSFL Property Boundary
- Administrative Area Boundary
- A/C Cutting
- Dirt Road
- Possible Ponds (approx. location)

Geology Legend

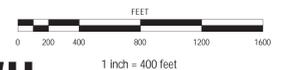
- Shale Units (KUCS, KUCS-1A, KUCS-1B, KUCS-2, KUCS-3)
- Faults
- Faults (Approximate)
- Estimated Contact Line

Notes:
 (1) Map coordinates in Spheroid, NAD 27, Zone V.
 (2) Geologic base map by MMH (in progress, 2002).

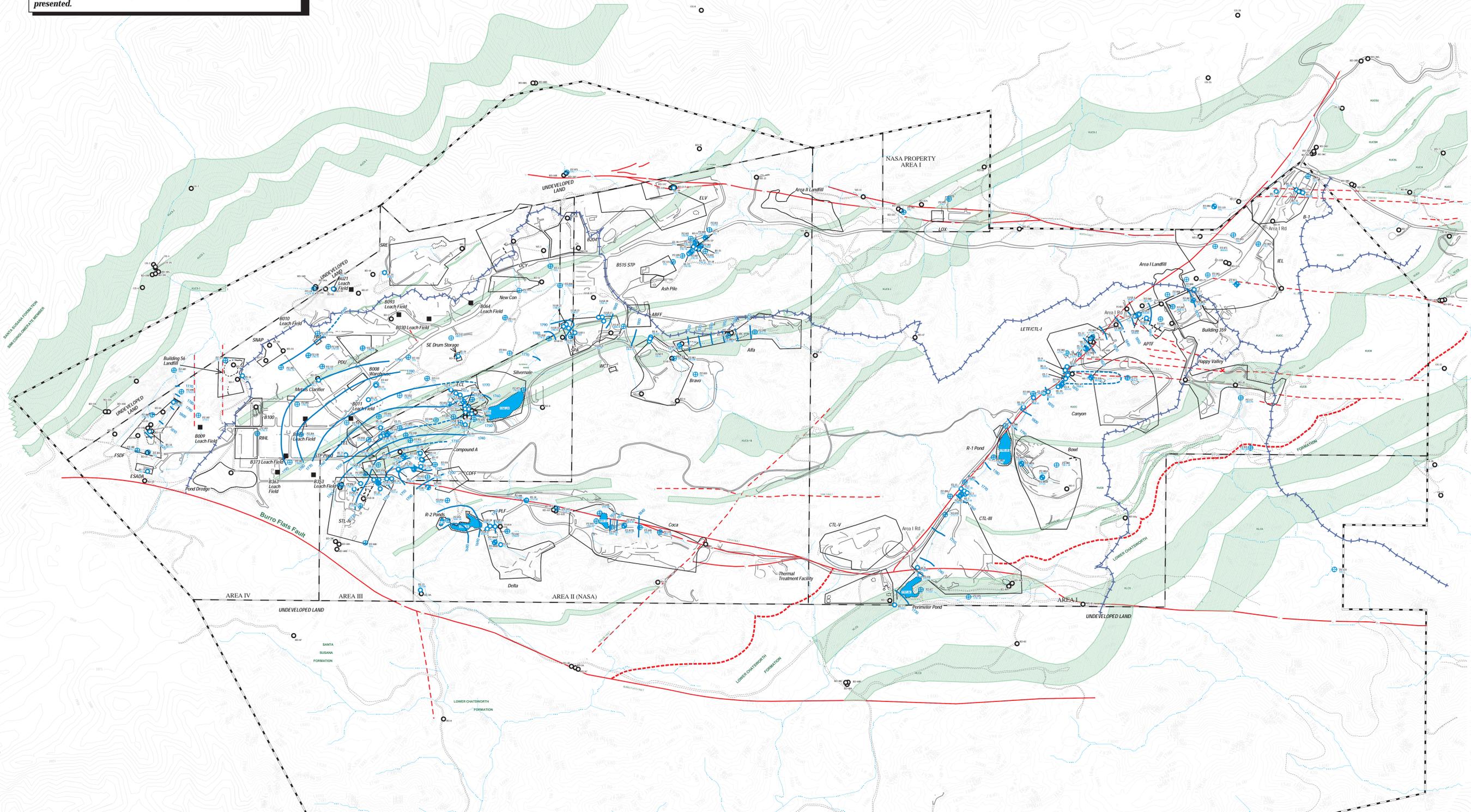
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NEAR-SURFACE GROUNDWATER ELEVATION CONTOUR MAP, FEBRUARY 2002

Santa Susana Field Laboratory



Please Note: The original version of this figure includes colored features and shading. A black and white copy of the figure should not be used because it may not accurately represent the information presented.



LEGEND

- Existing Near-Surface Groundwater Well
- Existing Chatsworth Formation Groundwater Well
- Completed Alluvium Piezometer
- Completed Standard Piezometer
- Completed Paired Piezometer
- Completed Multilevel Piezometer
- Approximate Location of Surface Water Divide
- RFI Site Boundary

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- * = Water was detected in the well/piezometer. However, it was determined based on well construction details that this was water trapped in the endcap. Therefore, this water level does not represent the groundwater table that is being contoured.
- + = Water level elevation not used since it was determined that this reading was not monitoring first water in the area.
- a = Water level not collected in May 2003, April 2003 data used.

NOTE: (1) ? - Identifies locations in the geology where uncertainties exist. These uncertainties may or may not be important or resolvable. Resolving the uncertainties will be evaluated based on their potential importance in the overall understanding of the effect of these features on groundwater flow and contaminant transport.

Approximate Near-Surface Groundwater Elevation Contours in Feet Above Mean Sea Level (Dashed Where Inferred)

RFI SITES

- AREA I**
- SWMU 4.1 - Old B-1 Area (B-1)
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 - SWMU 4.8 - Thermal Treatment Facility (TTF) RCRA Permitted Unit
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 - SWMU 4.14 - Canyon Area
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 - AOC - Building 359 Sump (B-359)
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- SWMU 5.1 - Area II Landfill

AREA II (cont.)

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 - SWMU 5.23 - Delta Area
 - SWMU 5.26 - R-2A and R-2B Ponds
 - AOC - Building 515 Sewage Treatment Plant (B515 STP)
 - AOC - Storable Propellant Area (SPA)
 - AOC - Alfa/Bravo Fuel Farm (ABFF)
 - AOC - Coca/Delta Fuel Farm (CDFF)
- AREA III**
- SWMUs 6.1, 6.3, AOC - Engineering Chemistry Laboratory (ECL) Area
 - SWMU 6.4 - Compound A Facility
 - SWMU 6.5 - Systems Test Laboratory IV (STL-IV) Area
 - SWMU 6.8 - Silvernate Reservoir

AREA III (cont.)

- SWMU 6.9 - Environmental Effects Laboratory (EEL)
 - AOC - Sewage Treatment Plant (STP) Pond Area
- AREA IV**
- SWMU 7.1 - Building 56 Landfill (B56 Landfill)
 - SWMU 7.3 - Former Sodium Disposal Facility (FSDP)
 - SWMU 7.4 - Old Conservation Yard (Old Con)
 - SWMU 7.5 - Building 100 Trench (B100)
 - SWMU 7.7 - Rockwell International Hot Laboratory (RHL)
 - SWMU 7.8 - New Conservation Yard (New Con)
 - SWMU 7.9 - ESADA Chemical Storage Area (ESADA)
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 - AOC - Hazardous Materials Storage Area (HMSA)
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 - AOC - Sodium Reactor Experiment (SRE) Complex
 - AOC - SE Drum Storage Yard
 - AOC - SNAP Facility
 - Leach Fields (as individual RFI sites)

Base Map Legend

- Surface Water Ponds
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- Possible Ponds (approx. location)

Geology Legend

- Shale Units (KUCS, KUCS-1A, KUCS-1B, KUCS-2, KUCS-3)
- Faults
- Faults (Approximate)
- Estimated Contact Line

Notes:
 (1) Map coordinates in StatePlane, NAD 27, Zone V
 (2) Geologic base map by MWH (in progress, 2002)

DATE: 11/14/03 TASK: 0416
 FILE: rockplots\plotams\shallow_zone_comp_3_may03_n3.aml

NEAR-SURFACE GROUNDWATER ELEVATION CONTOUR MAP, MAY 2003

Santa Susana Field Laboratory

