Group R

Group R Map

Building 4011

Includes Building 4403, Traffic Dispatch
Includes Building 4711, Substation

Building 4171

Building 4172

Building 4500

Site 4521

Building 4611

Building 4612

Fuel Tank 4735

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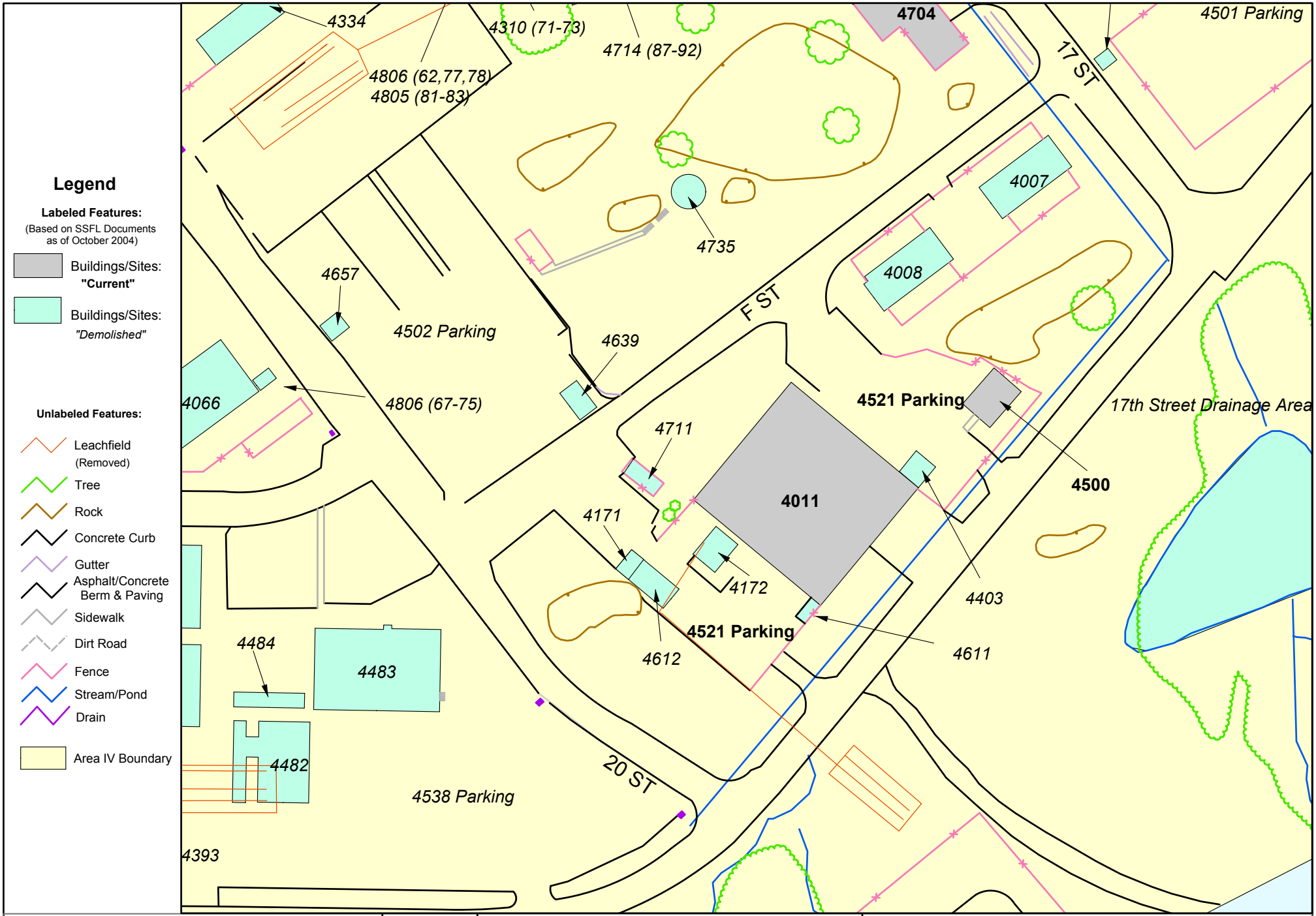
Legend
Labeled Features:
(Based on SSFL Documents as of October 2004)
Buildings/Sites: "Current"
Buildings/Sites: "Demolished"
Unlabeled Features:
Leachfield (Removed)
Tree
Rock
Concrete Curb
Gutter
Asphalt/Concrete Berm & Paving
Sidewalk
Dirt Road
Fence
Stream/Pond
Drain
Area IV Boundary
4334
4806 (62,77,78)
4805 (81-83)
4310 (71-73)
4714 (87-92)
4704
4501 Parking
17 ST
4007
4735
4008
4657
4502 Parking
F ST
4639
4066
4806 (67-75)
4521 Parking
17th Street Drainage Area
4711
4500
4011
4171
4172
4403
4521 Parking
4612
4611
4484
4483
4482
20 ST
4538 Parking
4393
DRAWN BY:
Sapere CONSULTING INC
DATE:
May 2005
N
W
E
S
1 inch equals 100 feet
0 40 80 160 240
Feet
Site Summary Group R
AREA IV
Santa Susana Field Laboratory, CA

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Site Summary – Building 4011

Site Identification:

Building 4011
Warehouse Support
Administration and Services Building
Development Support Shop
Manufacturing Support Shop
Machine Shop/QA.
Radiation Instrument Calibration Laboratory
Includes Building 4403, Traffic Dispatch
Includes Building 4711, Substation

Operational Use/History:

- Constructed in 1958.
- Building 4011 was used to support various non-nuclear programs until 1984.
- From 1984 to 1996 the north section of the building was used for calibration and repair of radiation instrumentation.
- The Property Inventory and Control Department used the south section of the building.
- Building 4011 is currently used to house communications equipment.

Site Description:

- Building 4011 is a 15,120-square-foot building that was constructed out of steel.[1]
- Building 4011 had an associated leachfield. The leachfield was removed in 2000.[2]
- Serviced by Substation 4711.
- Serviced by Traffic Dispatch Building 4403.

Relevant Site Information:

- Radioactive sources for calibration were handled at the facility but most were sealed and checked annually to ensure no leakage occurred. The potential contaminants of concern are Cs-137, Co-60, Sr-90, Eu-152, Eu-154, thorium and uranium.[1]
- There were three Radiological Incidents associated with Building 4011 that could have resulted in a release to the environment:
    - On April 28, 1960, to the west of the building, an Organic Moderated Reactor Experiment (OMRE) shipping cask leaked during a leak test and spilled radioactive liquid on the ground (mixed fission products) (A0531).
    - On April 13, 1985, a calibration source came loose from an actuator rod resulting in an exposure of Cs-137. A radiation survey indicated no contamination on any part of the rod (A0318).

  - On December 6, 1994, the 28 Ci Cs-137 calibration source dislocated from the release pull rod. A radiation survey indicated normal background levels in the source containment box and on the release pull rod (A0658).
- Following removal of the septic tank, field line, tank, tank sludge, and the soils surrounding the tank, samples for gamma emitting radionuclides were collected and the remaining soil was found to be clean.[2]

Radiological Surveys:

- In 1988, the lot across the street from the building was surveyed because it was often used as a dumpsite for dirt and had the potential for contamination. The field was surveyed for mixed fission products by measuring ambient gamma exposure rates.[3]
  - Ambient gamma limit: < 5 µR/hr above background (background was 15.3 µR/hr).
  - Maximum ambient gamma exposure rate: 13 µR/hr.
  - Survey results were below the acceptable limits.
- A soil sample collected at the northwest corner of the building during the 1996 Area IV Radiological Characterization Survey found elevated Cs-137. The level was 0.53 pCi/g.[4]
- In 1998, Rocketdyne performed a final comprehensive radiological survey to measure total or removable surface activity on the walls, floors, ceilings, structural surfaces, concrete pads, sink traps and the roof.[1,5]
  - The walls, floors and ceilings were surveyed for total and removable alpha and beta activity and maximum alpha and beta activity. Floors were surveyed for ambient gamma readings in µR/hr at one meter.
    - The limit criteria for surface contamination of alpha and beta-gamma emitters was (in dpm/100cm^2):
      - Sr-90, Th-natural, Th-232: <1,000 total and <200 removable
      - U-natural, U-235, U-238, and associated decay products: <5,000 total and <1,000 removable.
      - Beta-gamma emitters: <5,000 total and <1,000 removable.
    - Samples were collected from sludge in the sink traps for gamma spectroscopy analyses. The sludge was contaminated with low levels of uranium and the sink and trap were removed and disposed. An additional sludge sample was taken from a location several feet into the line and the sample met release criteria.
    - Ambient gamma limit: <5.0 µR/hr at one meter from the surface.
  - Survey results were below the acceptable limits.
- The California Department of Health Services (DHS) performed verification surveys in 1998 and concurred that the facility met release criteria.[6,7]
- The Environmental Protection Agency (EPA) conducted an oversight verification survey in 2001 for alpha, beta, beta-gamma radiation (total and removable) and gamma radiation. Surveys were performed to a quality level equal to a final status survey as defined by the Multi-Agency Radiation Survey and Site Investigation

Manual (MARSSIM). The contaminants of concern (COCs) for Building 4011 were mixed fission products, uranium, transuranic compounds, and activation and corrosion products. EPA also collected concrete core samples which were analyzed for photon-emitting isotopes.[8]

- Acceptable limits for the survey were consistent with Nuclear Regulatory Commission (NRC) Regulatory Guide 1.86 and the proposed sitewide release criteria.
- Survey results were below the acceptable limits.
- EPA field measurements confirmed the conclusions reached by Rocketdyne.

Status:

- DHS released the facility for unrestricted use December 16, 1998.[6]
- Building 4011 is currently used to house communications equipment for Area IV.

References:

1- Rocketdyne Report, N001SRR140128, "Building T011 Final Survey Procedure," April 19, 1994.
2- Boeing Data Package, no document number, "Septic and Leachfield Survey Data 011, 353, and 373."
3- ETEC Document, GEN-ZR-0011, "Radiological Survey of the T056 Landfill; Area from 23rd Street to Building T100; and an Area Across from Building T011," August 26, 1988.
4- Rocketdyne Document, A4CM-ZR-0011, Rev. A, "Area IV Radiological Characterization Survey," August 15, 1996.
5- Boeing Internal Document, no document number, "Final Radiological Survey Data Package for Building 011, SSFL," by James Barnes, July 28, 1998.
6- DHS/RHB, Untitled letter, from D. Wesley (DHS/RHB) to J. Barnes, December 16, 1998.
7- Untitled letter, from Gerard Wong to James Barnes, September 17, 1998.
8- U.S. EPA Report, no document number, "Final Oversight Verification and Confirmation Radiological Survey Report for Buildings T-011, T-019, T-055, and T-100," December 20, 2002.
9- Historical Site Photographs from Boeing Database.
10- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.

Photograph – Building 4011

Site Summary – Building 4171

Site Identification:

Building 4171
X-Ray Building

Operational Use/History:

- Constructed in the middle 1960s.
- Building 4171 was used for storage of miscellaneous electronic equipment.[2]
- Demolished in 2000.[3]

Site Description:

- Building 4171 was located south of F Street, adjacent to 19th Street.[3]

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Building 4171.[4]

Radiological Surveys:

- Radiological surveys specific to Building 4171 have not been conducted.

Status:

- Building 4171 was demolished in 2000.[2]

References:

1- Personnel Interview, Phil Rutherford, November 13, 2003.
2- Personnel Interview, Dan Trippeda, September 15, 2003.
3- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
4- Review of Radiation Safety Records Management System, 2003.

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Site Summary – Building 4172

Site Identification:

Building 4172
X-Ray Building

Operational Use/History:

- Constructed in the early 1970s.[1]
- Building 4172 was used as an X-ray room and for storage of sealed sources that were checked every six months to ensure no leakage occurred.[2]
- Demolished in 2000.[3]

Site Description:

- Building 4172 was located adjacent to Building 4011, between 18th and 19th Streets and F Street.

Relevant Site Information:

- Use Authorization Series 68, originally dated January 30, 1975, first permitted X-Radiography in this building.[4] Operations where subsequently permitted under Use Authorization Series 93, edition C, June 30, 1978.[2] Both of these authorizations permitted the use of sealed sources for radiography.[4]
- On April 13, 1977, a radiographer was exposed to radiation from a non-shielded source inside the X-ray room. It is unlikely any environmental contamination resulted from this incident (A0057).
- Building 4172 was mistakenly listed on an NRC license. The building was deleted from that license in December of 1982.

Radiological Surveys:

- No leaking sealed sources were ever detected during the biannual leak check program.[2] It is likely that a routine survey was performed in Building 4172 prior to demolition; however, record of such survey could not be located in the Radiation Safety Records Management System.[5]

Status:

- Building 4172 was demolished in 2000.[1]

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Personnel Interview, Phil Rutherford, November 13, 2003.
3- Personnel Interview, Dan Trippeda, September 15, 2003.
4- Rockwell International Internal Letter, 754-WTG-082-084, "Use Authorization Series 93," J. E. Harris to J. D. Moore, June 21, 1982.
5- Review of Radiation Safety Records Management System, 2003.
6- Historical Site Photographs from Boeing Database.

Photograph – Building 4172

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Site Summary – Building 4500

Site Identification:

Building 4500
Gas Bottle Dock (Near Building 4011)
Compressed Gas Bottle Storage Dock

Operational Use/History:

- Constructed in the middle1960s.
- Building 4500 was used as a storage area for portable gas containers, including argon, nitrogen, helium and various calibration gasses.[1]
- By 1998, it was listed as "foundation only," and left unused. [2,3]
- The walls and foundation of Building 4500 are still in place.

Site Description:

- Building 4500 was a small shed built on a concrete pad.[2]

Relevant Site Information:

- Building 4500 was used as a drop-off and pick-up point for suppliers. The high-pressure gas cylinders that were stored in Building 4500 were used through Area IV.
- There are no Use Authorizations and no Incident Reports associated with Building 4500.[4]

Radiological Surveys:

- Radiological surveys specific to Building 4500 have not been conducted.

Status:

- The walls and foundation of Building 4500 are still in place.

References:

1- Personnel Interview, John Boggio, September 29, 2003.
2- Personnel Interview, Dan Trippeda, September 29, 2003.
3- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
4- Review of Radiation Safety Records Management System, 2003.
5- Historical Site Photographs from Boeing Database.

Photograph – Building 4500

Site Summary – Site 4521

Site Identification:

Site 4521
Parking Lot

Operational Use/History:

- Constructed prior to 1962.[1]
- Site 4521 served as a parking lot for personnel working in Building 4011 and the surrounding areas.
- Demolished in the middle 1960s.[1]

Site Description:

- Site 4521 was located near Building 4011.

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Site 4521.[2]

Radiological Surveys:

- Radiological surveys specific to Site 4521 have not been conducted.

Status:

- Site 4521 was demolished in the middle 1960s.[1]

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Review of Radiation Safety Records Management System, 2003.

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Site Summary – Building 4611

Site Identification:

Building 4611
Paint Spray Canopy

Operational Use/History:

- Constructed prior to 1962.
- Building 4611 was a non-radiological facility. It is assumed that this building was an open structure used for spray painting. A more detailed history could not be located.[1]
- On the 1962 Industrial Planning Map, Building 4611 is near 4011. Building 4611 is last labeled on the 1981 map, although it continues to be drawn on subsequent Industrial Planning Maps.[1]
- Building 4611 has been demolished.

Site Description:

- Building 4611 was located just west of Building 4011 and north of G Street.[1]

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Building 4611.[2]

Radiological Surveys:

- Radiological surveys specific to Building 4611 have not been conducted.

Status:

- Building 4611 has been demolished.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Review of Radiation Safety Records Management System, 2003.

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Site Summary – Building 4612

Site Identification:

Building 4612
Maintenance
Storage

Operational Use/History:

- Constructed prior to 1962.
- Building 4612 appears on the 1962 Industrial Planning Map. On the 1964 Industrial Planning Map, a new structure, Building 4171, is shown directly adjacent to Building 4612. Building 4612 is last labeled on the 1982 map, although it continues to be drawn on subsequent Industrial Planning Maps.[1]
- Building 4612 has been demolished, most likely in 2000, at the same time as Building 4171.

Site Description:

- Building 4612 was located west of Building 4011, just west of 19th Street.

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Building 4612.[2]

Radiological Surveys:

- Radiological surveys specific to Building 4612 have not been conducted.

Status:

- Building 4612 was demolished, most likely in 2000, when Building 4171 was demolished.

References:

1- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
2- Review of Radiation Safety Records Management System, 2003.

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Site Summary – Fuel Tank 4735

Site Identification:

4735 Fuel Tank
86,000-Gallon Fuel Oil Storage Day Tank

Operational Use/History:

- Constructed in 1977.[1]
- Fuel Tank 4735 stored fuel that was pumped by the pump station to the Sodium Component Test Installation (SCTI) facility. Building 4320, the Fuel Oil Pump Building, filled the tank from the Fuel Tank Farm. Carbon steel piping connected the facilities.[1]
- Bulk oil was removed in 1990 and Fuel Tank 4735 was cleaned in 1991.[1]
- Demolished with the Fuel Tank Farm in 1999.[1]

Site Description:

- Fuel Tank 4735 had a capacity of 86,000 gallons, was 26 feet in diameter and 24 feet tall. It was an above-ground vented structure constructed of carbon steel. A pump station was adjacent to the tank, and it contained a concrete pad with two pumps. The area was fenced.[1]

Relevant Site Information:

- There are no Use Authorizations and no Incident Reports associated with Fuel Tank 4735.[2]

Radiological Surveys:

- Radiological surveys specific to Fuel Tank 4735 have not been conducted.
- Portions of this area was covered as part of the 1994-1995 Area IV Radiological Characterization Survey.[3]
    - Background: 15.6 µR/hr.
    - Acceptable Limit: Less than 5 µR/hr above background.
    - Survey results were below the acceptable limits.

Status:

- The Fuel Tank Farm and associated piping was demolished in 1999.

References:

1- Rocketdyne Document, GEN-SP-00051, “Removal of Fuel Oil Storage and Distribution System,” November 2, 1998.
2- Review of Radiation Safety Records Management System, 2003.
3- Rocketdyne Document, A4CM-ZR-0011, Rev. A, “Area IV Radiological Characterization Survey,” August 15, 1996.
4- Historical Site Photographs from Boeing Database.
5- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.

Photograph – Fuel Tank 4735

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