Site Summary – Building 4373

Site Identification:

Building 4373
Systems for Nuclear Auxiliary Power (SNAP) Critical Facility
Includes Site 4848, Pad at Building 4373

Operational Use/History:

- Constructed in 1956.[1]
- Building 4373 was designed as a solid propellant mixing and casting facility; however, there is no evidence that it was ever used for this purpose.[1]
- Ownership transferred from Rocketdyne to Atomics International Division in 1957.[1]
- One test cell was modified for critical assembly research supporting the SNAP program by adding two feet of additional concrete shielding to two walls and installing a high-efficiency particulate air (HEPA) filter bank.[1]
- In 1962 the SNAP critical tests concluded, and the facility was modified again to include a NaK test loop to support the SNAP Experimental Reactor. The other test loop programs carried out here were RuK test loops, boiling mercury test loops and boiling potassium loops.[1]
- The facility has since been used intermittently for storage of non-radiological materials.[1]
- Demolished in 1999.

Site Description:

- Building 4373 contained five test bays (three concrete and two steel framed) enclosing 3,030 square feet. The concrete test bays had 12-inch thick walls and the two steel-framed bays have transite, plywood and sheet metal siding and roofing.[1] The building was initially connected to a leach field system until it was closed and abandoned once the site-wide sewage treatment system was installed and operational in the early 1960s.[2]
- Serviced by 4848, Pad at Building 4373.

Relevant Site Information:

- Most nuclear or radioactive materials handled at Building 4373 were fully encapsulated. Only fissile material and activation foils produced low levels of radioactivity.[1]
- One incident was reported that may have resulted in a release to the environment:

- On August 22, 1995, a Health Physicist (HP) found three radioactive pre-filters in the ventilation system on the roof of Building 4373. These were thought to have been in continuous use from 1957 to 1962 when airborne Cs-137 levels were elevated due to weapons testing. The filters were removed and the ventilation system was surveyed and released (A0664).

Radiological Surveys:

- Rocketdyne performed a radiological survey in 1988 to determine if any radiological materials had been left behind to such an extent that decontamination or further survey was required. The survey covered Buildings 4373, 4374 and 4375, and included ambient gamma exposure rate measurements, surface smears and soil samples.[1]
  - Average ambient gamma exposure rates (not adjusted for background): 10.3 µR/hr for the Building 4373 interior, 9.3 µR/hr for the Building 4374 interior, and 12.6 µR/hr for the surrounding area compared to background measurements between 14.0 and 16.2 µR/hr (Nuclear Regulatory Commission (NRC) limit is 5.0 µR/hr above background).
  - Removable alpha measurements: -0.063 dpm/100cm^2 average and 2.8 dpm/100cm^2 maximum (limit is 1000 dpm/100cm^2).
  - The removable beta measurements were: -0.47 dpm/100cm^2 average and 10.1 dpm/100cm^2 maximum (limit is 1000 dpm/100cm^2).
  - The total beta activity measurements found no detectable activity.
  - Survey results found that the areas were acceptably clean by the Department of Energy (DOE) and NRC guidelines and that no further inspection was required.
- During the 1996 Area IV Radiological Characterization Survey, soil samples were taken at three different locations in the vicinity of Building 4373. None of the measurements were distinguishable from background and all the measurements were below the acceptable concentration levels established by Boeing and presented in document N001SRR140131.[3]
- Boeing performed a radiological survey of the soil surrounding the septic system in 2000.[3] All removable and total contamination measurements of the septic tank were non-detect. All soil sampled showed no contamination levels above background. All measurements met limits for unrestricted use.[4]
  - Removable alpha: <20 dpm/100 cm^2.
  - Removable beta: <100 dpm/100 cm^2.
  - Total alpha: no detectable activity.
  - Total beta: no detectable activity.
  - Ambient gamma: 8 – 10 µR/hr.

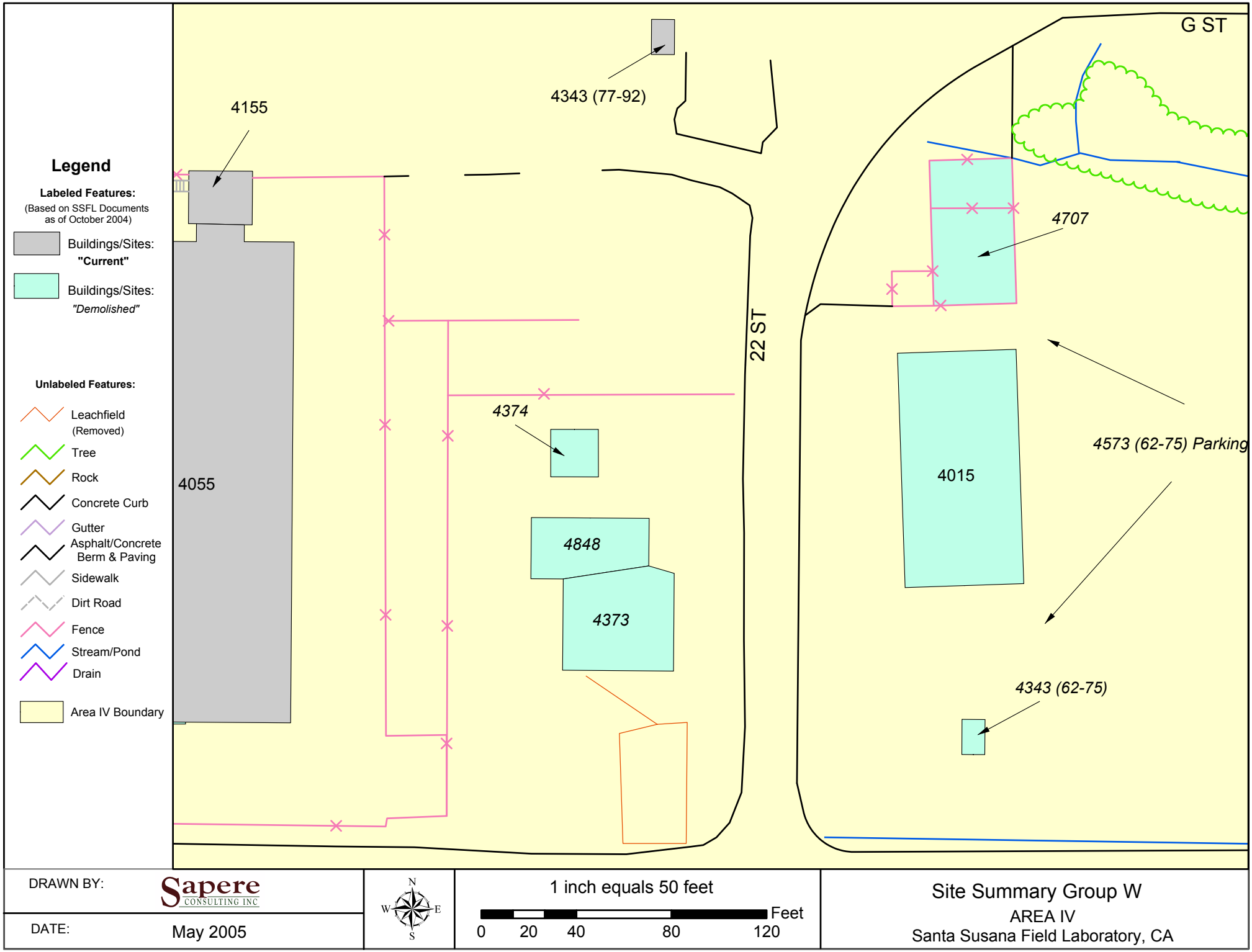
Status:

- The California Department of Health Services (DHS) released Building 4373 for unrestricted use in May 1995.[4]

- The facility was demolished in 1999. The septic tank was removed in 2000.

References:

1- ETEC Document, GEN-ZR-0012, "Radiological Survey of Buildings T373 and T375," August 8, 1988.
2- Boeing Internal Document, no document number, "Radiation Survey Report, Building B373-Septic Tank," December 7, 2000.
3- Rocketdyne Report, A4CM-ZR-0011, "Area IV Radiological Characterization Survey Final Report," August 15, 1996.
4- DHS/RHB, Letter, "Untitled" from G. Wong (DHS/RHB) to P. Rutherford, May 9, 1995.
5- SSFL Area IV, ETEC Industrial Planning Maps, 1962-1992.
6- Review of Radiation Safety Records Management System, 2003.


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
4155
4343 (77-92)
G ST
4707
22 ST
4374
4055
4573 (62-75) Parking
4015
4848
4373
4343 (62-75)
DRAWN BY:
Sapere CONSULTING INC
DATE:
May 2005
N
W
E
S
1 inch equals 50 feet
0 20 40 80 120
Feet
Site Summary Group W
AREA IV
Santa Susana Field Laboratory, CA