

ATTACHMENT 1

FACILITY DESCRIPTION AND SITE MAPS

SECTION 2

Facility Description, History, Features, and Flood Control

2.1 OVERVIEW

In the late 1950's, the United States Air Force commissioned site assessments for three Titan Intercontinental Ballistic Missile complexes in southern Idaho. The facilities were constructed, but the Titan was a liquid-fueled rocket that was soon replaced by the safer, solid-fuel Minuteman in the 1960's. The site may or may not have had missiles installed; sources differ. Site A was decommissioned in 1966 and scrap salvage rights were sold to a private entity for a two-year period starting in 1966. In about 1971, the site was sold outright to a second private salvage company, which subsequently sold the site to Wes-Con, Inc. Wastes were first received at the facility in about 1973. Envirosafe Services of Idaho, Inc. (ESII) purchased the Site A facility from the prior owner, Wes-Con, Inc., in 1981, and continued disposing wastes until January, 1983. A total of 16,125 cubic yards of space were potentially used for disposal from 1973 to 1983. Facility closure in 1996/1997 resulted in another 18,750 tons of debris and excavated soils being disposed at the site.

There are distinct periods in the facility's life when various operations may have altered environmental conditions at the site.

An Era of Undocumented Activities

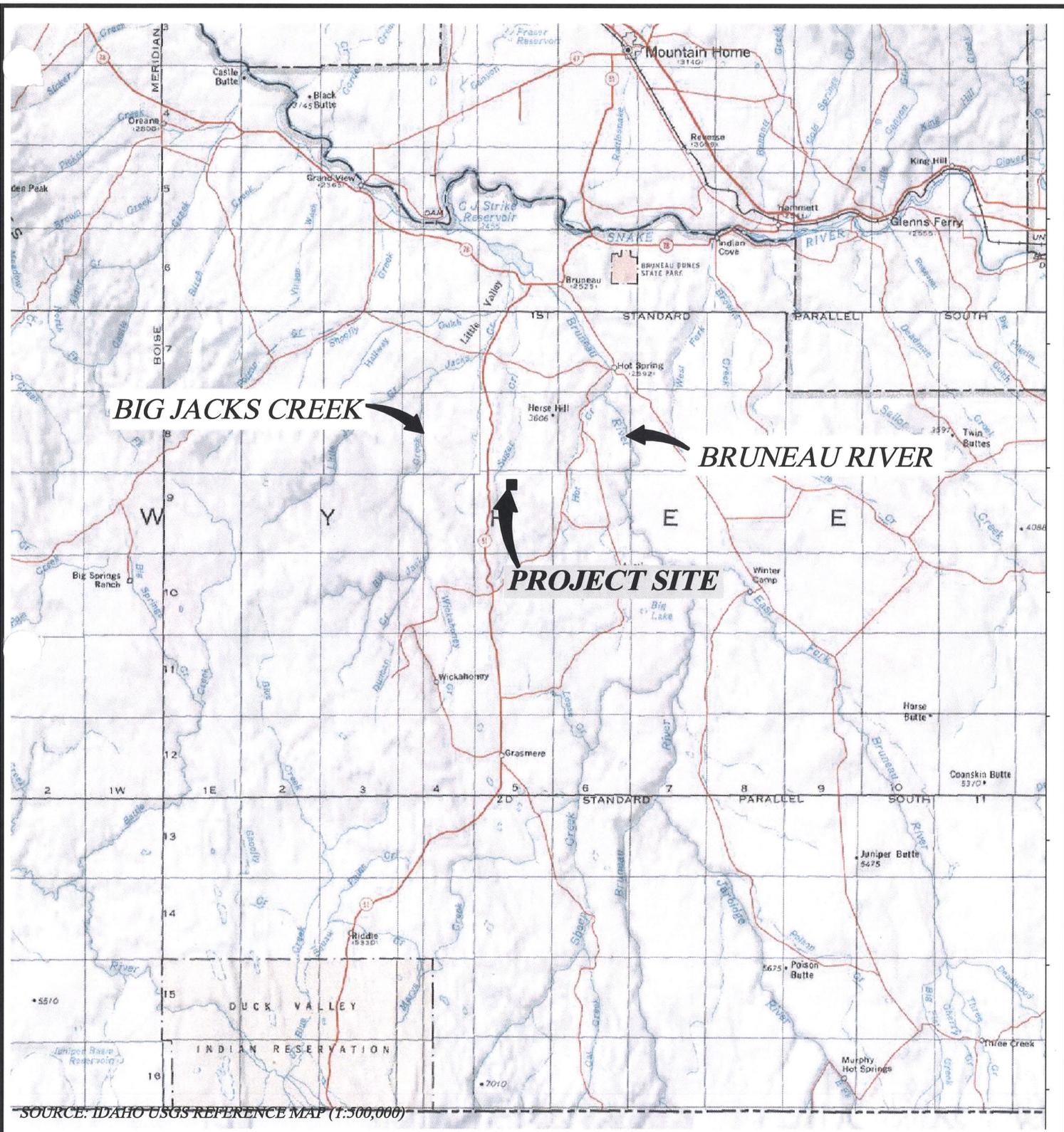
- Missile site construction period; late 50's to early 60's.
- Missile site operations period; early 60's.
- Missile site decommissioning by U.S. Air Force in 1966.
- Salvage lease operations from 1966 to 1968.
- Continuing salvage operations under private ownership from 1971 to 1973.

An Era of Documented Activities

- Wes-Con waste disposal operations from 1973 to 1981. Envirosafe Services of Idaho waste disposal operations from 1981 to 1983. See waste disposal lists in Appendix B.
- Facility closure in 1996/1997. See discussion below and the closure certification report on file at Idaho Department of Environmental Quality.
- Post-closure period from 1998 to present. Documented in facility inspections and routine environmental reports.

Site A is located 18 miles south of Bruneau, Idaho in Owyhee County about 2 miles east of Highway 51 on Missile Base Road (see Figure 1-1 location map). A topographic map showing a distance of 1,000 feet around the facility boundary is presented in Figure 1-2. All of the land within 1,000 feet of the facility is owned by the U.S. Government and managed by the Bureau of Land Management as open range. USEI owns approximately 82.5 acres that incorporates the 30-acre missile base. See Drawing 2005-1 (inserted into this application) for property boundary and other site features.

The underground missile base complex at Site A consisted of three missile silos with adjoining liquid oxygen (LOX) propellant, equipment, and exhaust terminals. A separate domed powerhouse and control center, and two radar antenna silos (see Figure 1-3) completed the main features of the complex. All of the silos, tubes, terminals and shafts were reinforced concrete cylinders. The vertical structures were reportedly poured as continuous concrete units. The missile silos were approximately 44 feet in diameter and 157 feet deep. The LOX tubes were 37 feet in diameter by 28 feet deep, and the equipment terminal was 42 feet in diameter by 68 feet deep. The radar shafts were approximately 28 feet in diameter by 67 feet deep, and the elevator shaft was approximately 38 feet in diameter by 70 feet deep. A series of reinforced concrete tunnels 40 to 60 feet below land surface connected the various structures, the powerhouse and missile crew facilities. On the surface there were two sewage stabilization ponds, a helicopter pad, and a series of miscellaneous openings, including smaller silos/shafts (exhaust vents, escape hatches, aiming tubes, etc.). Site closure work in 1996/1997 sealed access to the subsurface and removed on-site structures.



ROWN AND CALDWELL
Boise, Idaho

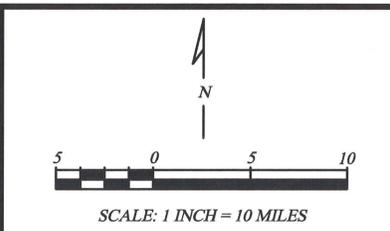
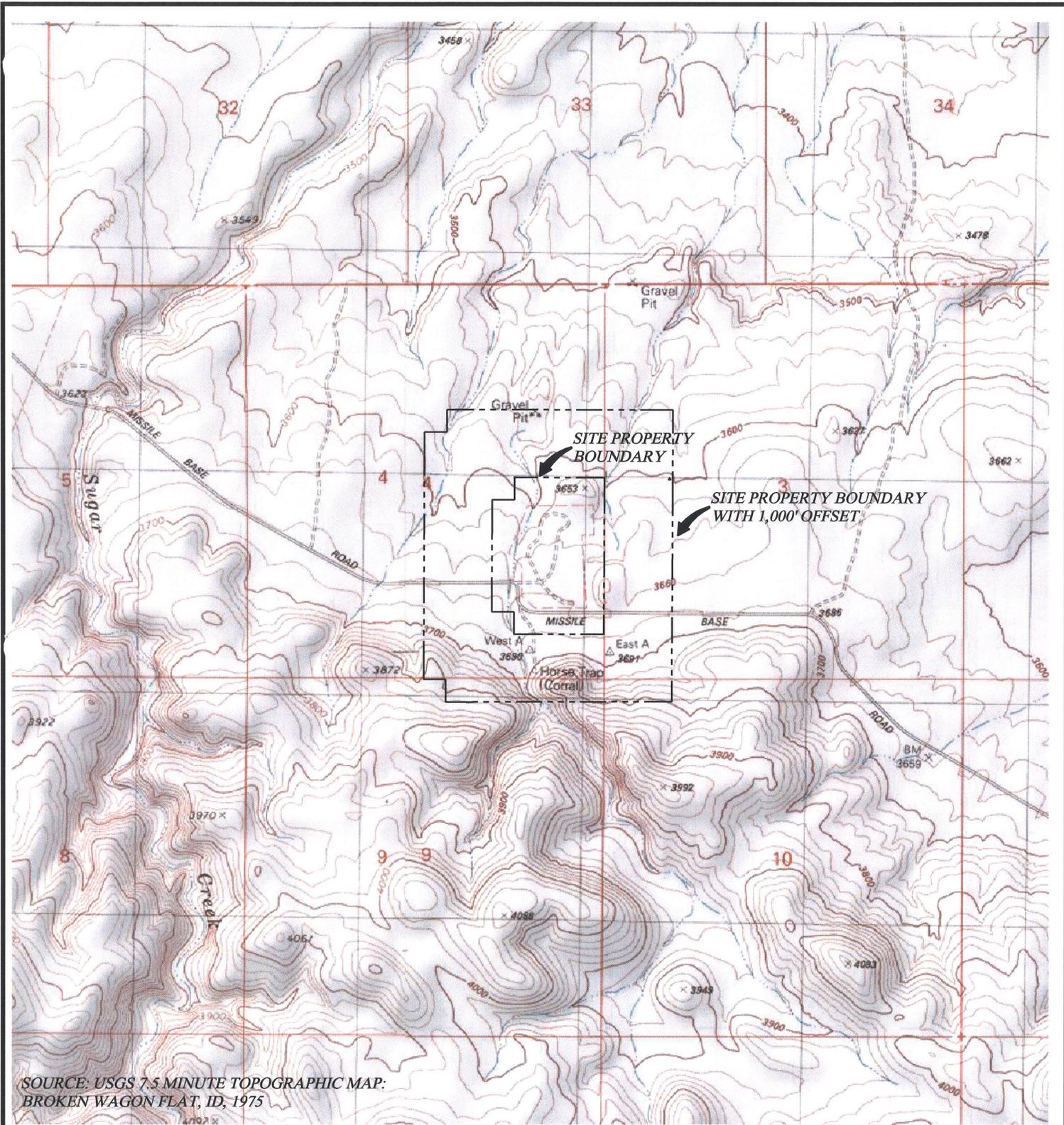


FIGURE 1-1
SITE LOCATION MAP
US ECOLOGY IDAHO SITE A
BRUNEAU, IDAHO
OWYHEE COUNTY



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP:
BROKEN WAGON FLAT, ID, 1975

CROWN AND CALDWELL
Boise, Idaho

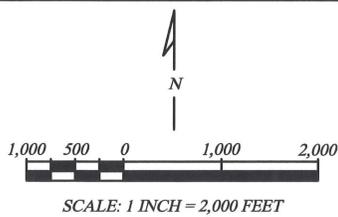
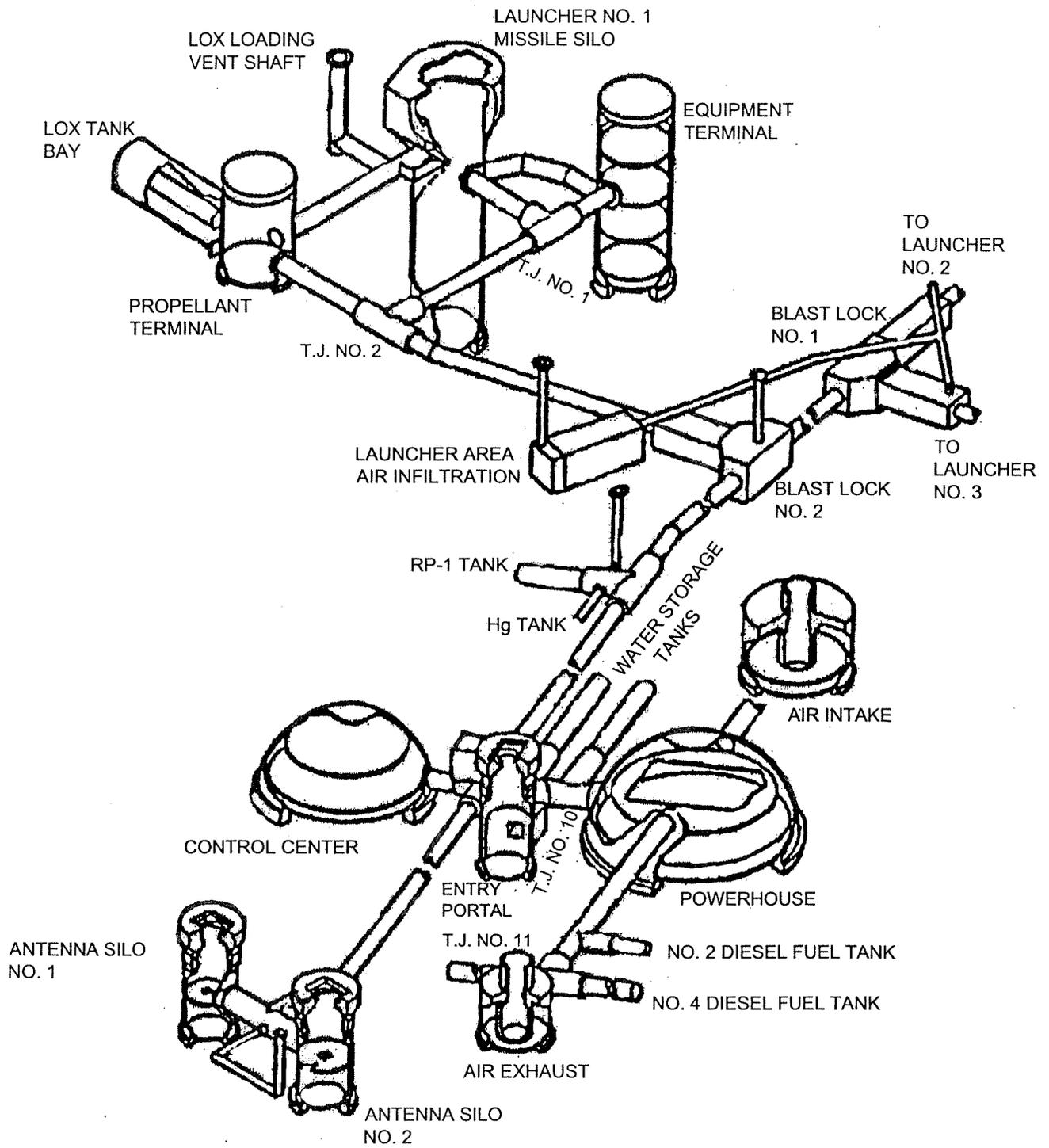


FIGURE 1-2
TOPOGRAPHY AND LAND USE
WITHIN 1,000 FEET OF SITE A
US ECOLOGY IDAHO SITE A
BRUNEAU, IDAHO
OWYHEE COUNTY

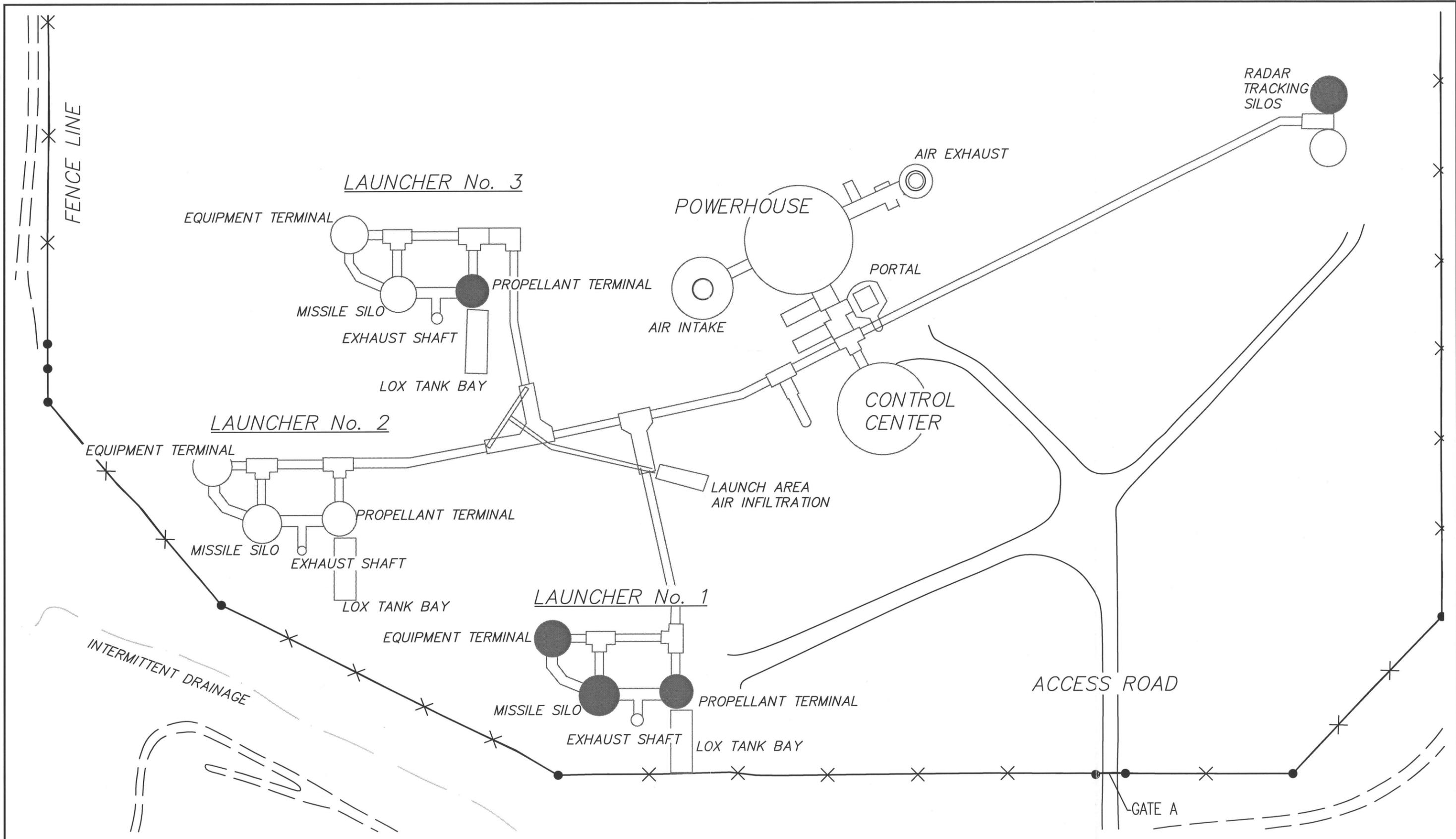


BROWN AND CALDWELL
Boise, Idaho



FIGURE NOT TO SCALE

FIGURE 1-3
FACILITY SCHEMATIC
US ECOLOGY IDAHO SITE A
BRUNEAU, IDAHO
OWYHEE COUNTY



LEGEND

● DISPOSAL UNIT LOCATIONS (1973-1983)

N

500 250 0 500 1,000

SCALE: 1 INCH = 1,000 FEET

BROWN AND CALDWELL
Boise, Idaho

FIGURE 1-4
DISPOSAL UNIT LOCATIONS
SITE A BRUNEAU, IDAHO
OWYHEE COUNTY

From 1973 to 1983, Missile Silo Number 1 was completely filled with wastes, and the Silo 1 LOX tube and the equipment terminal were partially filled. Radar Antenna Silo Number 2 and Missile Silo number 3 LOX terminal were also partially filled (see Figure 1-4 for sub-unit locations and see Appendix B for a list of wastes disposed).

Missile Silo Number 1 was capable of holding about 9,000 cubic yards based on its interior dimensions. The Silo 1 LOX tube was capable of holding about 1,125 cubic yards. The equipment terminal was capable of holding about 3,500 cubic yards, although the presence of an elevator shaft and four levels of equipment floors would have made it difficult to efficiently fill. The radar antenna silo could hold about 1,540 cubic yards. In total, the structures filled at the site had a maximum capacity of 15,165 cubic yards.

Reports by Baker/TSA and by PRC Environmental Management, Inc. concerning waste disposal practices were based on a review of site records, aerial photographs and personal interviews. These sources indicate that liquid wastes and some sludge waste were often solidified using local sandy soils before the wastes were placed into the site structures. Some containers may have been disposed directly and may have contained free liquids. A leachate sump was installed at Propellant Terminal A-3 before wastes were disposed. This location was used for wastes from Shell Oil and “in-situ” solidification was used as a management method. This consisted of “replacing a soil bed [presumably a layer of soil within the silo] and discharging the waste liquid onto the bed for absorption.” Reportedly, very little liquid was generated in the sump, and it was abandoned and filled as part of the site closure work in 1996/1997.

Wes Con submitted a Part A notification for the facility in 1980, and the facility received an interim status designation. In November 1985, ESII submitted a closure plan for the facility to the U.S. Environmental Protection Agency Region X. Events from 1980 to 1990 are more fully summarized in Appendix D, which is an excerpt from the PRC Environmental, Inc. RCRA Facility Assessment, completed in 1991. A facility Closure, Post-Closure, Corrective Action Management Unit Permit was subsequently issued with an effective date of November 6, 1995. The entire missile base structure (Figures 1-3 and 1-4) was designated as a corrective action management unit (CAMU) at that time. Following the initial submittal of the 2005 permit renewal application, the Idaho Department of Environmental Quality determined that the inactive missile silos used for hazardous waste disposal at Site A would be regulated as closed landfills. See Appendix E.

Closure work and corrective action minimized the need for further maintenance and controls, and minimized future impacts to human health and environment quality. Numerous areas of concern were identified and addressed during closure and corrective action. Waste materials were identified, contained, removed or stabilized. Approximately 18,750 tons of soil, debris and solidified wastes were disposed at the site, effectively filling most of the structures. Openings to the surface were sealed to prevent direct contact with any waste materials and to minimize environmental release of hazardous constituents. Further details are provided below in Section 2.4.

2.2 FACILITY DESCRIPTION

Site A is located in a semiarid climate that receives approximately 8 inches of rain per year (Grand View, Idaho, data). Evapotranspiration rates are approximately 70 inches per year. The ground surface at the facility slopes gently to the north with about 50 feet of topographic relief across the 2,000 foot distance from the north to south property line. The area is sparsely vegetated with native grasses, shrubs, and sagebrush. The land surrounding the facility is owned by the US Government and managed by the Bureau of Land Management. The land is classified as open range and used for occasional livestock grazing.

The waste management area is secured by a 6-foot-high chain link fence topped with three strands of barbed wire, and two locked chain link security gates. One gate is located on the east side of the site, and the other gate is located on the west side. An access road enters the site through the gate located on the west side of the site.

Site topography and existing run-on control are shown in Drawing 2005-2 (inserted into this application). There are no permanent surface water bodies within the boundaries of the facility. An intermittent drainage exists to the west of the facility. Calculations (provided in Appendix A) indicate that the intermittent drainage does not pose a flood threat to the facility. The nearest surface waters that flow year-round are the Bruneau River (Elevation – 2600' msl), approximately 11 miles away, and Big Jacks Creek (Elevation 3300' msl), approximately 7 miles away (Figure 1-1). Neither of these permanent surface water bodies are a threat to flood the facility.

Following site closure work in 1996/1997 all above-ground buildings were removed, openings to below-ground structures were closed and the site was regraded for drainage control. Drawing 2005-2 shows drainage paths for surface water.

Currently, the facility is routinely inspected by US Ecology Idaho personnel. The inspections include routine checks of security measures (fence, gate, signs, etc.) and disposal unit condition (cover, water infiltration, security, etc.). Monitoring wells are inspected during semi-annual sampling events.

2.3 TOPOGRAPHIC MAPS

Maps and figures of USEI Site A are provided in Drawings 2005-1, 2005-2, and Figures 1-1 through 1-4 and include information about the facility required by 40 CFR 270.14(b)(19). The following items are located on the drawings and figures:

- Facility Location
- Land use within 1,000 feet of the facility (all land within 1,000 feet is federal property managed by the Bureau of Land Management for grazing.)
- Map scale and date
- 100-year floodplain area (none exists)
- Surface waters, including intermittent streams
- Surrounding land uses (all agricultural)
- A wind rose (Mountain Home AFB data)
- Orientation of the map
- Legal boundaries of the facility
- Access controls (fence and gates)
- Injection and withdrawal wells on-site and off-site (none exist on-site or within 4 miles off-site)
- Buildings (none exist), roadways, and stormwater/runoff controls (managed through general site grading due to desert conditions.)
- Barriers for drainage or flood control (provided through general site grading due to desert environment)

- Location of operational units (no units are operational, closed units are shown on map and in figures)
- Groundwater monitoring wells (existing and closed wells are shown)
- Point of compliance for groundwater monitoring

2.4 FLOODPLAIN STANDARD

The facility is located away from any major flood-prone zones (EPA, 1984). Because maps of the area are not available from the Federal Insurance Administration (FIA), calculations were performed by ESII in 1993 to evaluate the potential for flooding of the facility from the intermittent drainage located just west of the facility using the 100-year storm of 24-hour duration. Calculations and profiles provided in Appendix A are equivalent to the FIA procedures and indicate that the past waste management units at this facility are not in the 100-year floodplain. The results indicate that the intermittent drainage does not pose a flood threat to the facility.

Surface water run-on from the upslope area south of the facility is diverted around the facility by a series of open channels and diversion berms constructed along Missile Base Road (Drawing 2005-2). These run-on control facilities divert overland surface water flow away from the facility to natural drainage ways. Inspections since closure indicate that run-on and flooding have not occurred.

2.5 FACILITY CLOSURE

U.S. EPA issued a RCRA Facility Assessment (RFA) Report in 1991 that identified fifteen (15) potential solid waste management units (SWMUs) and fourteen (14) areas of concern (AOCs) associated with the Site A facility. In 1996/1997 a site closure plan was implemented that addressed each unit and area. A health-based approach was used to determine the appropriate level of cleanup, and specific procedures for assessment of sampling data were included in the 1995 Closure, Post-Closure, and Corrective Action Management Unit Permit. Thirty different locations were addressed using these procedures. The overall carcinogenic health risk was calculated in a range of 3.02×10^{-7} to 1.84×10^{-5} . The PCB carcinogenic risk was calculated to be $<1 \times 10^{-6}$. The overall hazard quotient ranged from 2.53×10^{-3} to 9.03×10^{-4} . (ESII Site A Corrective Action Certification Report, Section 2.6.5, March 1997)

All underground areas were inspected and 13 areas of interest were identified. Free liquids identified in sumps, containers, tanks and eligible units were sampled and ultimately solidified for disposal on-site or off-site. Appendix F contains text and a table from the closure certification report, which summarizes action taken at underground areas of interest.

A radiation survey indicated that there was not radioactive contamination on site.

Under the CAMU permit, units that would receive a hazardous waste facility cap/cover system during closure were eligible for disposal of wastes generated during corrective action. These units received debris, soils, and wastes which had a PCB concentration less than 50 mg/kg. These CAMU-eligible units consisted of:

- Radar Silos 1 and 2
- Radar Vent Shaft (a.k.a. Radar Electric Vault)
- Missile Silo 1
- Silo 1 LOX Vent
- Silo 1 Equipment Terminal
- Missile Silo 3
- Silo 3 LOX Vent
- Silo 3 Equipment Terminal

The following narrative summarizes closure and corrective action:

SWMU 1 The Missile Silo Unit 1 was filled to grade, closed, capped, and regraded.

SWMU 2 The Silo 1 LOX Terminal was filled to grade, closed, capped, and regraded.

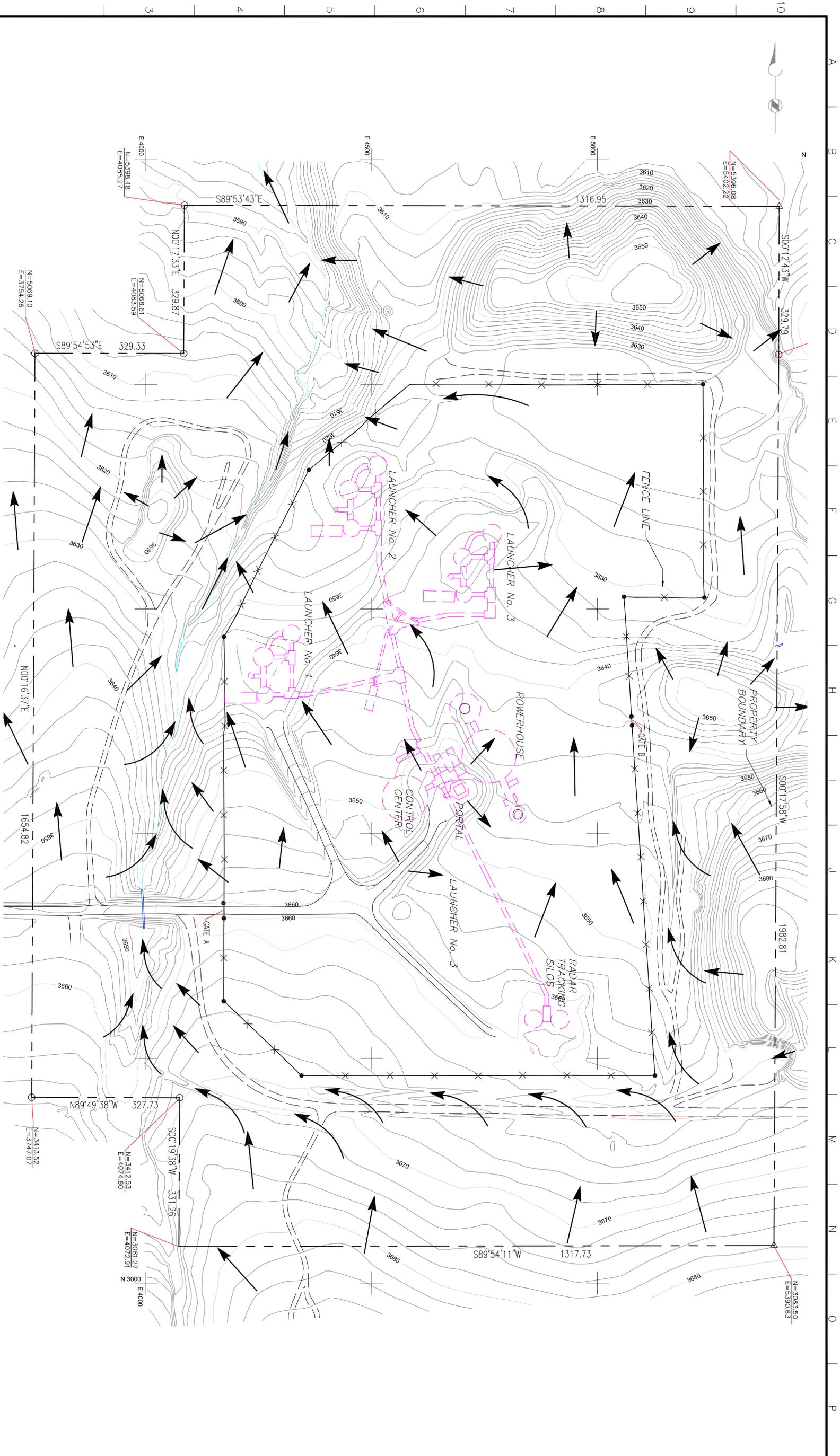
SWMU 3 The Silo 1 Equipment Terminal was filled to grade, closed, capped, and regraded.

- SWMU 4 The Silo 2 LOX Terminal was inspected, the sump contents were solidified and left in place, and the terminal opening was closed, capped and regraded.
- SWMU 5 The Silo 2 Equipment Terminal was inspected and sump contents were solidified and left in place. The terminal opening was closed, capped, and regraded.
- SWMU 6 The Silo 3 LOX Terminal leachate collection system was filled and closed. The terminal was filled to grade, closed, capped and regraded.
- SWMU 7 The Silo 3 Equipment Terminal sump contents were removed, solidified, and left in place. The terminal was filled to grade, closed, capped and regraded.
- SWMU 8 Soils were sampled and excavated from this area. Excavated soils (about 815 tons) were disposed in the Silo 1 Equipment Terminal, the Silo 1 LOX Vent, Missile Silo 1 and Missile Silo 3.
- SWMU 9 At the hazardous waste mixing pad near missile launching Unit 2, the soils were sampled and excavated. The surface soils and concrete pads (amounting to about 725 tons) were disposed in Missile Silo 3.
- SWMU 10 The Radar Silo 1 was filled to grade, closed, capped and regraded.
- SWMU 11 The Radar Silo 2 was filled to grade, closed, capped and regraded.
- SWMU 12 The contaminated soils at Radar Silos R1 and R2 were sampled and excavated. About 1,145 tons of soils and pavement were disposed in the Radar Silos.

- SWMU 13 The PCB-contaminated soils at the Helicopter Pad were sampled, and results indicated that PCB concentrations exceeded 50 mg/kg. A total of 672 tons of soil were excavated in this area and transported for disposal at the TSCA landfill in Grand View, Idaho.
- SWMU 14 The large area of PCB-contaminated and TOX-contaminated soils along the northern fenced site boundary was sampled extensively, excavated, and disposed in Missile Silo 3, the Silo 3 LOX vent and the Silo 3 Equipment Terminal (approximately 7,590 tons).
- SWMU 15 PCB-contaminated soils at the former diesel fuel storage tank area were sampled and excavated. Approximately 1,415 tons of materials were disposed in the Radar Silos.
- SWMU 16 This unit was newly-discovered during site closure activities. Demolition of the existing office trailers and outbuildings revealed a sanitary drain line leading to an improvised septic tank, which was an old transformer body. Sludge analysis revealed concentrations of PCBs of 2%. The transformer carcass and 189 tons of excavated materials were transported for disposal at the TSCA landfill in Grand View, Idaho.
- Decon Pad The pad and sump used for decontaminating vehicles, equipment and personnel during site closure was inspected and sampled. Approximately 500 tons of materials were excavated and disposed in Missile Silo 3.
- AOC 1 Missile Launching Unit 1 Vent Shaft B1 was capped during closure activities.
- AOC 2 The Missile Launching Unit 2, Missile Silo 2, and Vent Shaft B2 were inspected. Any drummed material was removed and any liquid waste was solidified in place.

- AOC 3 The Missile Launching Unit 3, Missile Silo 3, and Vent Shaft B3 were capped during closure activities. Missile Silo 3 was filled to within 45 feet of the surface.
- AOC 4 Tunnels connecting the Missile Silo, liquid oxygen (LOX) propellant terminal, and equipment terminal at Missile Launching Units 1, 2, and 3 were inspected and any drummed material was removed, and any liquid waste was solidified in place.
- AOC 5 Potentially contaminated soils at Missile Launching Unit 1, 2, and 3 were sampled and excavated. Surface soils (about 470 tons) were disposed in Missile Silo 3.
- AOC 6 Soils adjacent to the Roadway between Missile Launching Units 1 and 2 were sampled and excavated. About 530 tons of excavated material was disposed in Missile Silo 3.
- AOC 7 The Hazardous Waste Mixing Pad at Missile Launching Unit 1 was tested and excavated during closure activities.
- AOC 8 The Open Electrical Shaft south of Radar Silos R1 and R2 was inspected and any drummed material removed, and any liquid waste solidified in place. The Radar Electric Vault was filled to grade, closed, capped, and regraded.
- AOC 9 Concrete Slab, Concrete Blocks, and surrounding soils at southwest corner of site were inspected and the soil was excavated and sampled. Excavated materials (478 tons) were disposed in the Radar Silos.
- AOC 10 Concrete Slab and surrounding soils along eastern site fence were inspected and the soil excavated and sampled. About 257 tons of excavated material was disposed in the Radar Silos.

- AOC 11 Stained gravel area along eastern site fence was inspected and sampled. About 180 tons of material was disposed in Missile Silo 3.
- AOC 12 Wastewater Treatment Lagoons were inspected, excavated, and sampled. A buried pre-cast concrete septic tank was discovered and samples tested negative for PCBs. All free liquids were solidified and a total of approximately 1,095 tons of surface soils, gunite, and concrete were disposed in Missile Silo 3.
- AOC 13 Defined in the RFA as property outside the property boundary, this area is managed by the Bureau of Land Management and was not addressed during closure.
- AOC 14 Site A underground command and power areas, shafts, vents, and passageways were inspected and any drummed material removed, and any liquid waste solidified in place.
- Miscellaneous Miscellaneous trash and debris including an office trailer was disposed in Silo 2 (218 tons). Other areas of pavement, small concrete pads and miscellaneous structures, such as the helicopter pad, were removed and disposed in eligible units.



BROWN AND CALDWELL

Boise, Idaho

SUBMITTED: _____ DATE: _____
 PROJECT MANAGER: BROWN AND CALDWELL
 APPROVED: _____ DATE: _____
 CHECKED: _____ DATE: _____

LINE IS 2 INCHES
 AT FULL SIZE
 (# NOT 2" SCALE ACCORDINGLY)

FILE: 0000
 DRAWN: DK
 DESIGNED: MEG
 CHECKED: _____

PLAN



REVISIONS

ZONE	REV.	DESCRIPTION	BY	DATE	APP.

LEGEND

DIRECTION OF SURFACE WATER FLOW

PERMIT DRAWING - NOT FOR CONSTRUCTION

DRAWING 2005-2
SITE DRAINAGE PATTERNS
US ECOLOGY IDAHO SITE A
BRUNEAU, IDAHO
OWYHEE COUNTY