

SECTION D
CATEGORICAL EXCLUSION (CX) DETERMINATION RFO/CX030-92

Proposed Action: Treatability Studies at NRT and IT Corporation

Location: Rocky Flats Plant, Golden, CO

Proposed by: U.S. Department of Energy, Rocky Flats Office

Description of the Proposed Action:

Rocky Flats Plant proposes to perform two different treatability studies on contaminated soils found on the plant site. The projects are described below.

NRT Project: The NRT Project would be a treatability study to test the effectiveness of a vendor's technology in removing plutonium from soil. The project would involve obtaining samples of contaminated soil at RFP, shipping the samples to the Nuclear Remediation Technologies Corporation (NRT) in San Diego where the tests would be performed, receiving the used and unused samples back from NRT, and disposing of the samples.

Approximately 100 pounds of surface soil would be collected by shovel from an area 300-to-400-yards east of the 903 pad in OU2 (Figure 1). The sampling activity would result in a composite soil sample contaminated at a level of about 100 pCi/gram (0.0001 μ Ci/gram). The soil sampling area would be wetted with de-ionized water prior to sampling to minimize the chances of resuspending any radioactive contamination. In addition, workers taking the samples would wear personal protective equipment, including a full-face respirator. The samples would be packaged and shipped to NRT in accordance with the requirements of the RFP Traffic Department, DOE and DOT.

All testing would occur in the laboratories of NRT in San Diego. The process that would be tested uses physical separation as its key operation. Water or a proprietary liquid would be added to the soil sample to make a slurry. The slurry would be put into an agitator and agitated to a point at which the soil particles rub against each other sufficiently hard that plutonium particles are knocked off the larger soil particles and collect on the smaller soil particles, or fines. The fines would be screened or filtered from the coarser particles. If it is successful, the process would result in a reduction in the volume of radioactive material because only the fines would be considered radioactive while the coarser particles could be disposed of as non-radioactive. If the process works as planned, the test materials returning to RFP would be non-radioactive soil and radioactive fines which would be low-level waste. If the process is unsuccessful, or only partially successful, the returning material would consist of contaminated soil and fines that would be low-level waste.

Sample collection is scheduled to start in mid-August 1992. At the end of testing, which is expected to take about six months, all used and unused soil samples would be returned to RFP for proper disposal. Liquids used in the test would be disposed of by NRT in accordance with their permits.

IT Corporation: The IT study would be undertaken in support of the OU1 Feasibility Study (an IAG deliverable). The study would involve collection of soil samples at RFP, shipping the samples to the laboratory of IT Corporation in Oak Ridge, Tennessee, sample testing, and return of the used and unused samples to RFP for proper disposal.

Soil samples would be collected from boreholes within SWMUs 119.1 and 119.2 in OU1, south and southeast of the subcontractor support (trailer) yard in the southeast corner of the plantsite (Figure 2). Two types of soil samples would be taken from the boreholes: undisturbed core samples and bulk samples. Approximately 40 core samples, each three-inches in diameter and 24-inches long, would be collected by drilling bore holes. Approximately 40 one-gallon bulk samples would be taken from the drill cuttings of the boreholes. The core and bulk samples would be shipped to the laboratory in Tennessee for testing in accordance with all applicable RFP, DOE and DOT requirements.

Initially, the soil samples would go through physical, chemical and biological characterization processes to identify their makeup. Then, one or more of the following four types of bench-top tests would be performed:

1. Soil flushing to test the ability of a variety of soil flushing agents to remove contaminants from soil in a column.
2. Bio-treatability (Microtox) testing to determine the amount of biological activity during flushing.
3. Radio-frequency heating testing to determine amounts of energy adsorbed, temperatures required to recover contaminants, mass balance, heating rates versus frequency and power, and impedance requirements for efficient operation.
4. Soil gas extraction, limited to the evaluation of the results of the tests described above and the results of a soil gas extraction system to be tested at OU2.

None of the sample collection activities outlined in these proposals would take place within a wetland or 100-year floodplain. The cost of the NRT project is expected to be \$5,000. The anticipated cost of the IT proposal is \$400,000.

Categorical Exclusions to be applied:

B3.1 Site characterization and environmental monitoring, including siting, construction, operation, and dismantlement or closing (abandonment) of characterization and monitoring devices and siting, construction, and operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis. Activities covered include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. Specific activities include, but are not limited to: (f) Sampling and characterization of water, soil, rock, or contaminants. (10 CFR 1021, Appendix B to Subpart D)

B3.6 Indoor bench-scale research projects and conventional laboratory operations (for example, preparation of chemical standards and sample analysis) within existing laboratory facilities. (10 CFR 1021, Appendix B to Subpart D)

DOE NEPA REGULATIONS SECTION D
CATEGORICAL EXCLUSION DETERMINATION - RFO/CX030-92
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I have determined that the proposed action meets the requirements for a categorical exclusion as defined in the Section D of 10 CFR 1021. Therefore, I approve the categorical exclusion of the proposed action from further NEPA review and documentation.

Date: 8/7/92

Signature: 
Terry A. Vaeth
Title: Manager, Rocky Flats Office

Project Sponsor:

Date: 8/5/92

Signature: 
Frazer R. Lockhart
Title: Director, Environmental Restoration Division

I have reviewed this determination and find that a categorical exclusion is the appropriate level of NEPA documentation.

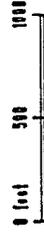
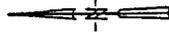
Date: August 5, 1992

Signature: 
Patricia M. Powell
Title: NEPA Compliance Officer

ADS number: 1012 (EM)
EC8692

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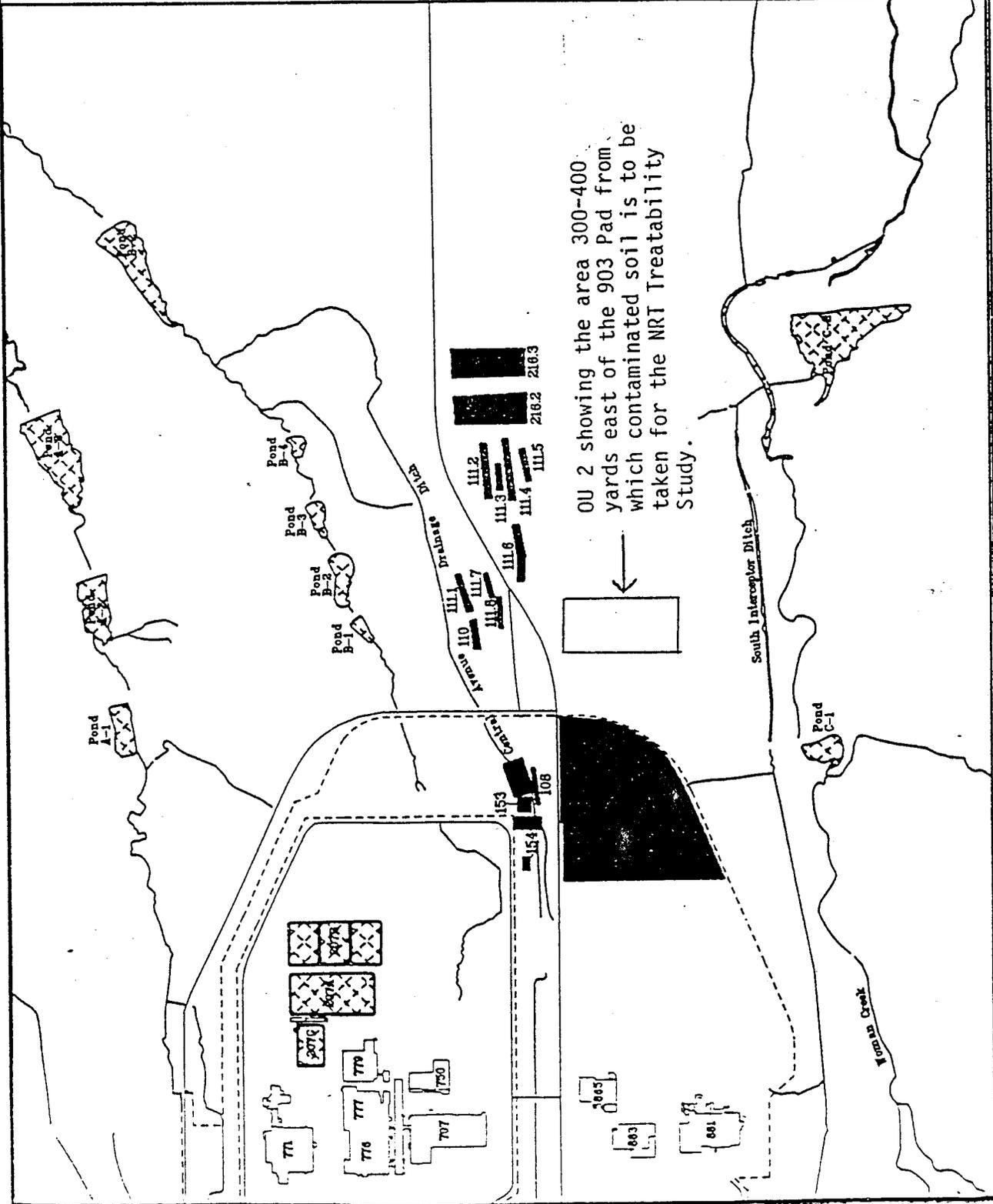
- Paved roads
- Streams, ditches, and other drainage features
- Security fence
- Individual hazardous substance sites (IHSS)
- Ponds/lakes
- Buildings or structures



Environmental Restoration
Technical Support Document

Operable Unit 2
903 Pad, Mound
East Trenches

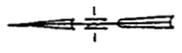
Figure 4 Date: 4-30-92



OU 2 showing the area 300-400 yards east of the 903 Pad from which contaminated soil is to be taken for the NRT Treatability Study.

U.S. Department of Energy
Rocky Flats Plant

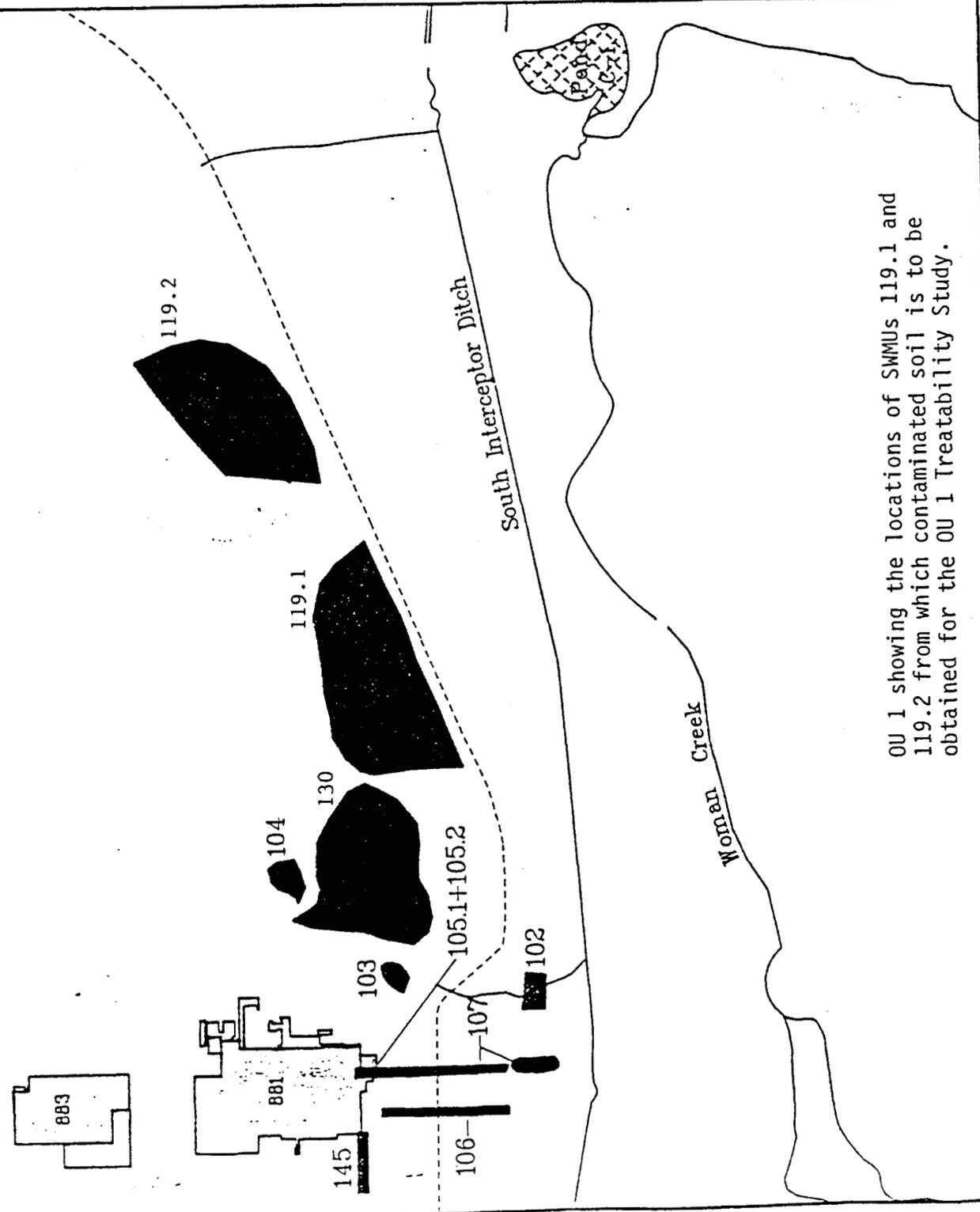
-  Streams, ditches, and other drainage features
-  Security fence
-  Individual hazardous substance sites (IHSS)
-  Ponds/lakes
-  Buildings or structures



Environmental Restoration
Technical Support Document

Operable Unit 1
881 Hillside

Figure 2 Date: 4-30-92



OU 1 showing the locations of SMUs 119.1 and 119.2 from which contaminated soil is to be obtained for the OU 1 Treatability Study.