

ENGINEERS
AND
CONSTRUCTORS



MORRISON KNUDSEN CORPORATION

MK-FERGUSON GROUP

WELDON SPRING SITE REMEDIAL ACTION PROJECT
7295 HIGHWAY 94 SOUTH
ST. CHARLES, MISSOURI 63304
PHONE: (314) 441-8086

May 9, 1995

U. S. Department of Energy
Weldon Spring Site
Remedial Action Project
ATTN: Mr. Stephen H. McCracken
Project Director
7295 Highway 94 South
St. Charles MO 63304

SUBJECT: Contract No. DE-AC05-8600R21548
REVISED SAMPLING PLAN FOR SOUTHEAST DRAINAGE
RE-CREATION OF ORAU DATA

REFERENCE: Letter from James R. Powers to Stephen H.
McCracken, Soils Review Sampling Plan for the
Southeast Drainage and Sampling Notification,
dated April 19, 1995

Dear Mr. McCracken:

The PMC has received verbal comments on the Soils Review Sampling Summary for the Southeast Drainage. These comments have been incorporated into a revised version of this sampling plan, which is attached for your use. Draft letters of transmittal to the Environmental Protection Agency and Missouri Department of Natural Resources are also attached.

If you have any questions, please contact Ken Warbritton or Julie Reitingner of my staff.

Sincerely,

James R. Powers
Project Director

JRP/nek

Attachments as stated

cc: Walker K. Love

ENGINEERS
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CONSTRUCTORS

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April 19, 1995

U.S. Department of Energy
Weldon Spring Site
Remedial Action Project
ATTN: Mr. Stephen H. McCracken
Project Manager
7295 Highway 94 South
St. Charles, MO 63304

SUBJECT: Contract No. DE-AC05-86OR21548
SOILS REVIEW SAMPLING PLAN FOR THE SOUTHEAST
DRAINAGE AND SAMPLING NOTIFICATION

Dear Mr. McCracken:

Enclosed is a brief overview of the soils review sampling that will be conducted in the Southeast Drainage. This activity has been planned to support scoping activities for any removal actions in the Southeast Drainage. The sampling will determine whether specific radiologically contaminated locations identified in the Oak Ridge Associated Universities soil survey of 1985 can be located, and if so, whether these soils remain at elevated concentrations.

Sampling will begin on April 4, 1995. Sampling notification for this event, as required by the FFA, was made on March 31, 1995 by Walter Anderson.

If you have any questions, please contact Julie Reitingner at ext. 3522.

Sincerely,

James R. Powers
Project Director

JRP/jmr/kmp

Enclosure: as stated

cc: Walker K. Love

Department of Energy
Oak Ridge Operations Office
WSSRAP
7295 Hwy 94 South
St Charles, MO 63303

Mr. Larry Erickson
Missouri Dept. of Natural Resources
P.O. Box 176
Jefferson City, MO 65401

A sampling summary titled, Soils Review Sampling for the Southeast Drainage, is attached for your review. The purpose of this activity was to re-create the 1985 sampling effort originally undertaken by Oak Ridge Associated Universities. The objective for sampling was to determine whether the radiological concentrations in soils and the locations of elevated concentrations remain. In addition, we obtained a few composite samples to analyze for a select group of site-related chemical contaminants. This sampling will be used to support scoping of the EE/CA for the Southeast Drainage.

If you have any questions relating to this plan, please contact Ken Lawver at 314/926-7003.

S. McCracken

Department of Energy
Oak Ridge Operations Office
WSSRAP
7295 Hwy 94 South
St Charles, MO 63303

Mr Dan Wall
U.S. Environmental Protection Agency
Region VII
726 Minnesota Ave.
Kansas City, KS 66101

Dear Mr. Wall:

A sampling summary titled, Soils Review Sampling for the Southeast Drainage, is attached for your review. The purpose of this activity was to re-create the sampling effort originally undertaken in 1985 by Oak Ridge Associated Universities. The objective for sampling was to determine if the radiological concentrations in soils and locations of elevated concentrations remain. In addition, we obtained a few composite samples to analyze for a select group of the site related chemical contaminants. This sampling will be used to support scoping of the EE/CA for the Southeast Drainage.

If you have any questions relating to this plan, please contact Ken Lawver at 314/926-7003.

S. McCracken

SOILS REVIEW SAMPLING FOR THE
SOUTHEAST DRAINAGE

The Southeast Drainage is a natural drainageway with intermittent flow that traverses the Weldon Spring Conservation Area from the Weldon Spring Chemical Plant to the Missouri River (Fig. 1). During past operations at the chemical plant, the Southeast Drainage received discharges from sanitary and process sewers and overflow from the raffinate pits. As a result, sediments and surface and subsurface soils in the drainage are contaminated with uranium, thorium, and radium.

In 1985, the Oak Ridge Associated Universities (ORAU) surveyed the Southeast Drainage. A systematic survey was conducted at 100 meter intervals along the drainage where surface and subsurface soil samples were taken. In addition, a walkover survey with a sodium iodide survey meter was conducted and at locations where elevated readings were found, surface and subsurface samples were taken.

This survey identified several localized areas where radiological compound concentrations were above DOE's residual contamination guidelines. The Southeast Drainage is classified as vicinity properties DA4 and DOC7 (Figure 2), which are additional areas outside the main chemical plant boundary that contain elevated radionuclides.

A sampling plan will be used to determine radiological concentrations at soil locations previously demarcated by ORAU. The sampling activities planned are:

- Identify ORAU locations within the drainage using the ORAU monuments and a survey interval identification system.
- Conduct sodium iodide spot surveys to find and delineate specific boundaries of ORAU areas.
- Collect soil and sediment samples from elevated locations and analyze for U-238, Ra-226, Ra-228, Th-230, and Th-232.
- Collect soil and sediment samples from elevated radiological locations and analyze for specific chemical compounds.

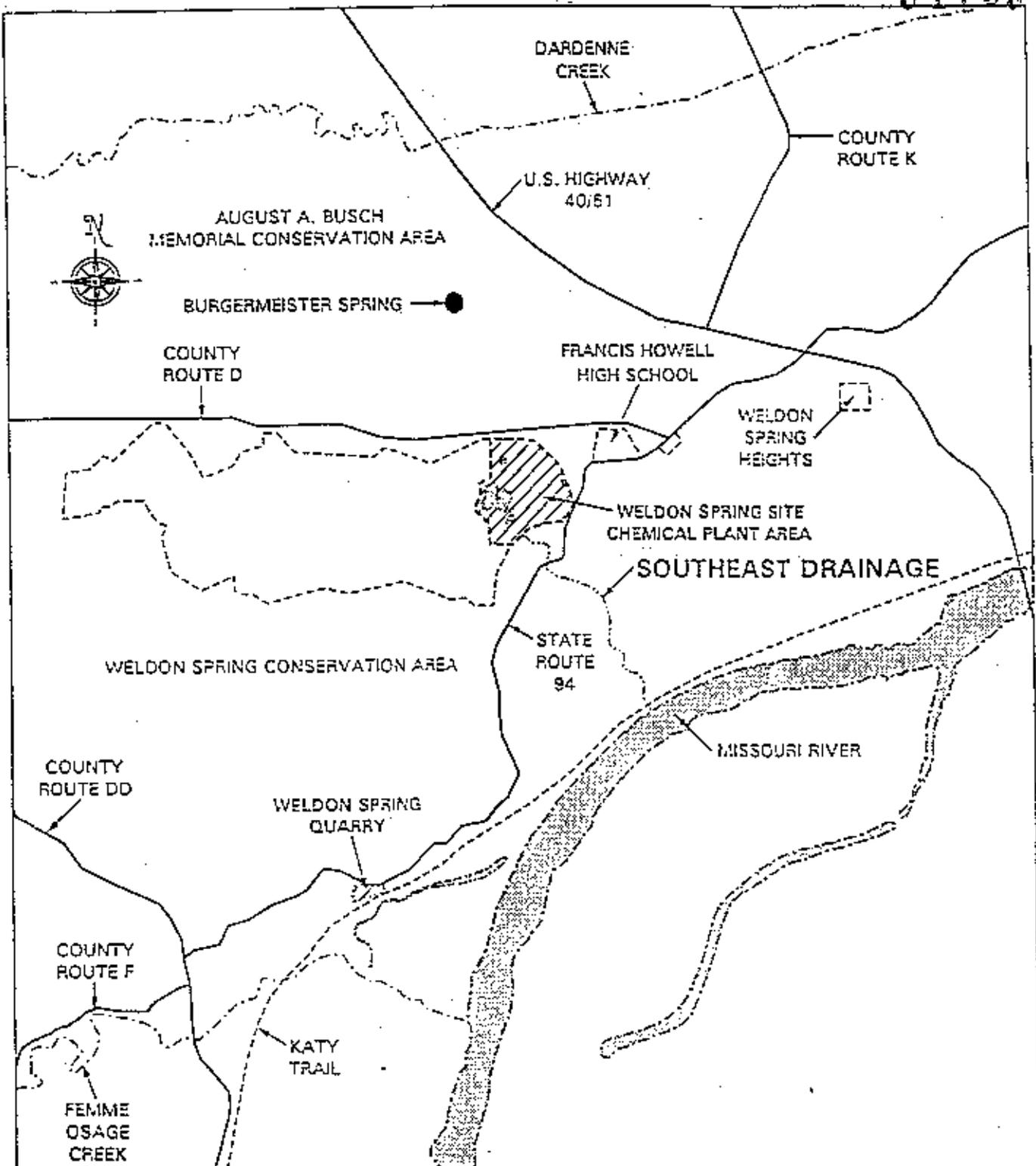
A portable sodium iodide detector will be used to conduct a walkover survey of several ORAU soil locations. At each ORAU location where elevated meter readings are found, a scan will be made within the contiguous area to delineate the boundaries of the specific spot. Surface and subsurface soil samples will be collected using a stainless steel split spoon auger or trowel.

SOILS REVIEW SAMPLING FOR THE
SOUTHEAST DRAINAGE

Surface samples will be collected from ground surface to 6 in. in depth. Subsurface samples will be collected from 6 in. to 12 in. in depth, or to bedrock, if less than 12 in.

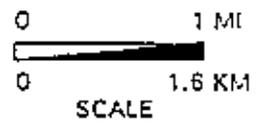
In addition to soil samples collected from elevated locations, six random sample locations will be selected from other drainage locations and will be used as controls to provide readings and concentrations for non-elevated locations.

Soils from each location will be analyzed by gamma spectrometry for U-238, Ra-226, Ra-228, Th-230, and Th-232. Soil samples from several locations will be composited and analyzed for nitroaromatics, PCB's, selected metals, fluoride, sulfate and nitrate.

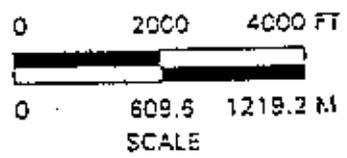
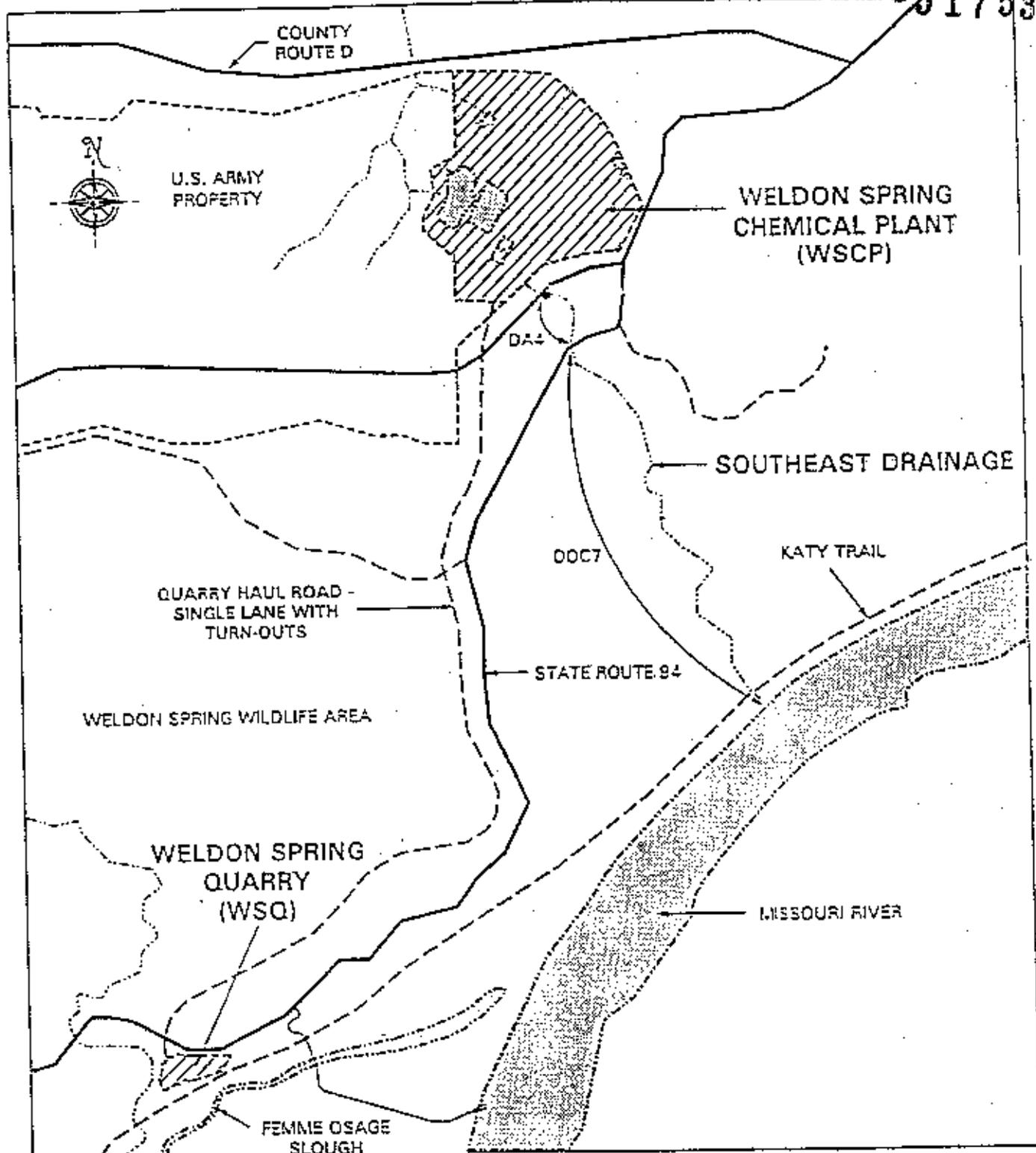


LOCATION OF THE SOUTHEAST DRAINAGE AND THE WELDON SPRING CHEMICAL PLANT AREA

FIGURE 1



REPORT NO.	PROJECT NO.	A/VP/019/0395	
CREATOR:	JR	DRAWN BY:	GLN
		DATE:	3/27/95



VICINITY PROPERTY DA4 & DOC7
 VICINITY LOCATIONS
 SOUTHEAST DRAINAGE

FIGURE 2

REPORT NO.:	ORIG. NO.:	AN/P/020/0385	
CREATOR:	JR	DRAWN BY:	GLN
		DATE:	3/27/95