Springdale, Pennsylvania, Site

U.S. DEPARTMENT OF ENERGY | Legacy Management

SITE CERTIFICATION SUMMARY

This Site Certification Summary provides information about the **Springdale, Pennsylvania, Site**. The U.S. Department of Energy Office of Legacy Management is responsible for long-term stewardship of the site under the **Formerly Utilized Sites Remedial Action Program**.

Site Description and History

The Springdale, Pennsylvania, Site (formerly the C.H. Schnorr site, which is commonly misspelled as "Schnoor") is located at 644 Garfield Street in Springdale, Pennsylvania, just northeast of Pittsburgh. The site includes a building on Garfield Street as well as approximately 2.5 acres surrounding the building. During the 1940s, the Springdale site was used to machine extruded uranium for the Hanford (Washington) Pile Project. The original site consisted of a concrete block building and a loading dock. Over the years, the building was enlarged, and a new loading dock was added. During the uranium-machining period, materials were reportedly received through the Garfield Street entrance and stored near the loading dock. See Figure 1 for a floor plan of the site.

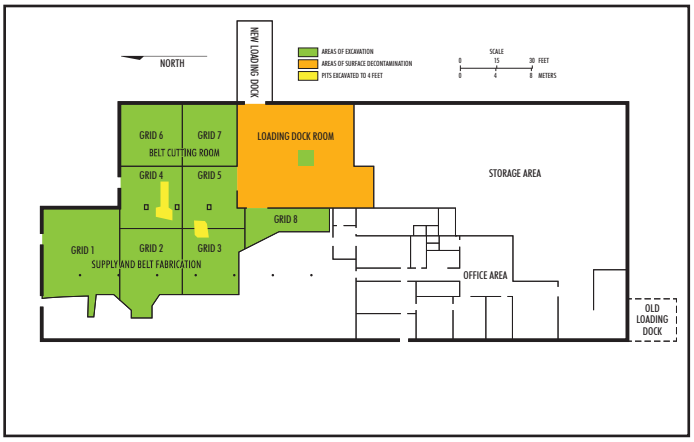

Figure 1. Floor plan of the Springdale site with excavation and surface decontamination areas. (Click image to enlarge.)

Site Remediation Timeline

October 1980 — The U.S. Department of Energy (DOE) and Argonne National Laboratory conducted a radiological scanning survey of the site.

1989 and 1990 — DOE performed more comprehensive surveys of the site.

1992 — The site was designated for remedial action under the Formerly Utilized Sites Remedial Action Program (FUSRAP).

October 11-13, 1993 — DOE conducted an additional radiological survey of the concrete building's interior.

October and December 1993 — Bechtel National Inc. performed additional radiological surveys to supplement and refine existing information, which detected radioactive contamination in the belt-cutting and belt-fabrication areas of the building.

November 14-17, 1993 — DOE characterized subsurface contamination beneath the building's concrete floors and surface contamination on concrete near the new loading dock.

August to October 1994 — Remedial action was conducted to meet DOE and U.S. Environmental Protection Agency guidelines.

September to October 1994 — Oak Ridge National Laboratory independently verified that surveys, sampling, and analysis conducted during remediation provided a complete and accurate description of the radiological status of the property.

September 12, 1996 — A notice of cleanup certification for the site was published in the *Federal Register*.

Fiscal Year 2004 — DOE published a notice of cleanup certification for the site in the Federal Register.

Certification Docket Contents

The Certification Docket documents the successful remediation of radioactively contaminated areas at the Springdale site. The docket includes documents supporting DOE certification that the subject property is in compliance with applicable radiological guidelines and standards. In addition, the certification docket provides documents certifying that the use of the property will not result in any measurable radiological hazard to the general public.

Remedial Action

Remedial activities at the Springdale site were performed from August to October 1994 as part of FUSRAP. See the Fact Sheet for details.

FUSRAP objectives for the site were to:

- Identify and evaluate all sites used to support former nuclear development activities.
- Remove or otherwise control contamination above current DOE guidelines.
- Achieve and maintain compliance with applicable criteria for the protection of human health and the environment.

Remediation activities at the Springdale site (September 1994).

Post-Remediation Sampling

After each portion of the property was decontaminated, a radiological survey of that area was conducted to confirm that all radioactive contamination above the cleanup criteria had been removed. Survey techniques included transferable and nontransferable contamination measurements, gamma walkover scans, external gamma-radiation exposure rate measurements, and soil sampling.

Gamma-radiation exposure rates at 26 locations around the site ranged from 8.6 to 12.2 microroentgen per hour (µR/h), including a background of 8.50 µR/h. All results were below the DOE guideline of 20 µR/h above background for building interiors.

Final verification walkover surveys revealed two "hot spots," or areas of greater radiological contamination, less than one square meter (m^2) each. DOE Order 5400.5, *Radiation Protection of the Public and the Environment*, allows for the development of hot spot limits for areas of 25 m^2 or less, provided that the average radionuclide concentration for the 100 m^2 area is below the DOE guideline. The uranium-238 results for these two hot spots were much lower than the hot spot limit.

For more detailed results of the post-remediation sampling, please see the Site Certification Data Summary Worksheet on pages 4-5. For a more detailed map of the site and sampling locations, please see the Site Overview Map on page 6.

Because the remedial activities at the Springdale site took place before October 1997, residual contamination guidelines from DOE Order 5400.5 were met. Sites remediated after October 1997 must meet the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 9601 et seq.), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300).

Current Site Conditions

Post-remedial action surveys have shown, and DOE has certified, that the locations that have been remediated comply with DOE standards and criteria. An independent radiological verification survey also verified that the residual uranium contamination at the Springdale site is below DOE FUSRAP guidelines for unrestricted use. DOE has been responsible for long-term stewardship for the Springdale site since 1995. The stewardship requirements and protocols are captured in the Long-Term Stewardship Plan for Completed FUSRAP Sites, which is available on the DOE Office of Legacy Management website (www.energy.gov/lm/springdale-pennsylvania-site).

Springdale, Pennsylvania, Site (September 2005).

ADDITIONAL INFORMATION

Documents related to FUSRAP activities at the Springdale, Pennsylvania, Site are available on the LM website at lmpublicsearch.lm.doe.gov/SitePages w/default.aspx?sitename=Springdale.

For other information on site history or current long-term stewardship activities, please contact us at:

U.S. Department of Energy
Office of Legacy Management
2597 Legacy Way
Grand Junction, CO 81503

Email:
FUSRAPinfo@lm.doe.gov
public.affairs@lm.doe.gov

DOE Office of Legacy Management
(970) 248-6070

www.energy.gov/lm

www.facebook.com/OfficeofLegacyManagement

www.linkedin.com/showcase/office-of-legacy-management

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Springdale, Pennsylvania, Site Certification Data Summary Worksheet

Three tables in the Springdale Certification Docket provide the evidence used to certify the site as clean.

When the tables refer to the "Certification Docket," that is the "Certification Docket for the Remedial Action Performed at the C.H. Schnoor Site, Springdale, Pennsylvania, in 1994" (dated November 1996).

Summary of Post-Remedial Action Radiological Survey Results for the C.H. Schnoor Site

Table 4-2 in Certification Docket (page II-165)

		Direct Surface Contamination				Transferable Contamination			
		Alpha		Beta/Gamma		Alpha		Beta/Gamma	
Location	**Area**	**Sample Activity Range (dpm/100cm^2)[a]**	**Number of Measurements**	**Average Activity (dpm/100 cm^2)[a]**	**Number of Measurements**	**Sample Activity Range (dpm/100cm^2)[c]**	**Number of Measurements**	**Sample Activity Range (dpm/100 cm^2)[c]**	**Number of Measurements**
Center Column									
	North Face	37-138	6	2,095	7	<4	1	<31	1
	South Face	37-138	6	993	6	<4	1	43	1
	East Face	<32-120	6	2,509	10	<4	1	<31	1
	West Face	<17-46	6	1,820	6	<6	1	<31	1
North Column									
	North Face	<32-92	6	2,840	4	6	1	<31	1
	South Face	<32-203	6	1,323	4	<4	1	<31	1
	East Face	<17-175	6	855	4	<6	1	<31	1
	West Face	28-129	6	2,288	3	4	1	<31	1
Concrete Footing									
	North 1 m2	28-175	6	2,702	8	16	1	<31	1
	Center 1 m2	<17-101	6	2,151	7	7	1	<31	1
	South 1 m2	<32-157	6	2,867	9	7	1	<31	1
Loading Dock Room		<8-225b		<437-7,339b		<4-9		<30-40	

NOTE: *Guidelines for residual contamination come from Table I-1 on page I-8 of the Certification Docket (also Table 2-1 on page II-148)*

[a]Must be less than 5,000 dpm/100cm^2

[b]Must be less than 15,000 dpm/100cm^2. The radiological standard for the loading dock was different than the radiological standard for the columns and footing because the sampling methods differed. The loading dock area was 85 m^2, and an average value per square meter was calculated from five readings within each square. The columns and footing were <1 m^2, and a weighted average was calculated for one-square meter around each contaminated location. *See pages II-161 and II-164 in Certification Docket.*

[c]Must be less than 1,000 dpm/100cm^2

–continued to page 5–

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Springdale, Pennsylvania, Site Certification Data Summary Worksheet

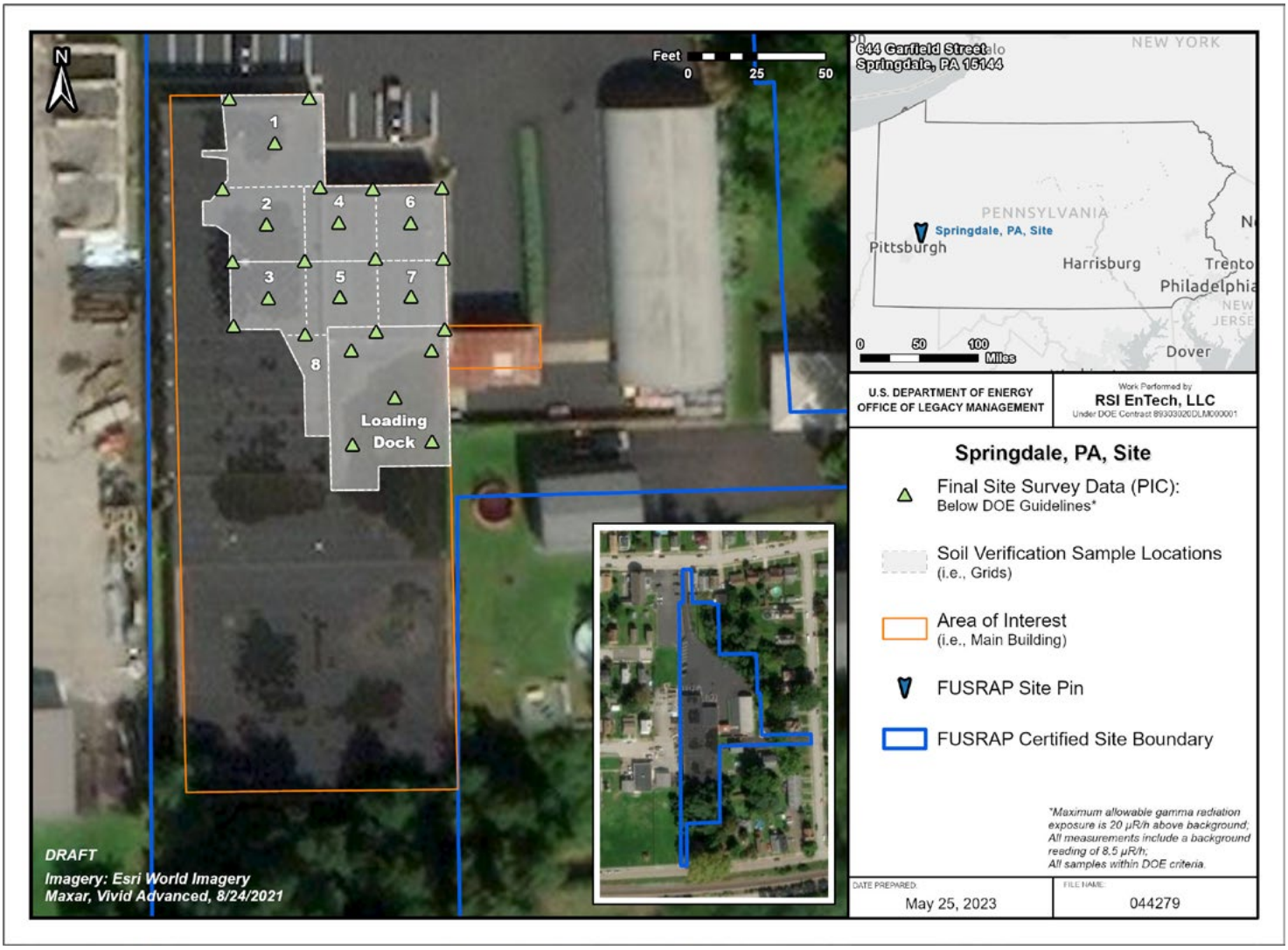
Soil Verification Samples			
Table 4-3 in Certification Docket (page II-170)			
	Concentration (pCi/g ± 2 sigma)		
Sample Location	**Uranium-238[a]**	**Radium-226[b]**	**Thorium-232[b]**
Grid #1	6.6 ± 3.40	1.20 ± 0.34	0.88 ± 0.33
Grid #2	<3.50	1.30 ± 0.35	1.10 ± 0.39
Grid #3	<5.00	1.10 ± 0.32	1.00 ± 0.35
Grid #4	4.80 ± 2.70	0.76 ± 0.23	0.84 ± 0.23
Grid #5	<4.10	1.30 ± 0.32	0.96 ± 0.37
Grid #6	19.80 ± 12.70	1.50 ± 0.36	0.81 ± 0.42
Grid #7	1.70 ± 2.30	1.60 ± 0.48	1.30 ± 0.45
Grid #8	<5.40	1.40 ± 0.37	0.83 ± 0.30
Wall Face (0.5-1.0 ft)	11.60 ± 7.30	<0.27	0.71 ± 0.22
Wall Face (1.0-1.5 ft)	26.60 ± 16.50	<0.37	1.40 ± 0.38
Wall Face (1.5-2.0 ft)	29.40 ± 18.10	<0.29	1.20 ± 0.44
North Pit	19.10 ± 11.80	<0.24	0.65 ± 0.19
South Pit	19.20 ± 3.20	<0.28	0.69 ± 0.22
Loading Dock	1.50 ± 1.60	1.30 ± 0.21	1.50 ± 0.24
Hot Spots[c]			
South Pit	169.00 ± 103.00	<0.32	0.67 ± 0.20
Base of Central Column	267.00 ± 162.00	<0.42	0.65 ± 0.22

NOTE: *Guidelines for residual contamination come from Table I-1 on page I-8 of the Certification Docket (also Table 2-1 on page II-148)*
[a]Must be less than 100 pCi/g
[b]Must be less than 15 pCi/g
[c]DOE order 5400.5 allows for the development of hot spot limits provided that the average radionuclide concentration for the 100-m^2 area is below the DOE guideline. For these two hot spots, the concentration of Uranium-238 must be less than 500 pCi/g. *See page II-169 of the Certification Docket.*

Post-Remedial Action Gamma Radiation Exposure Rates		
Table 4-1 in Certification Docket (page II-163)		
Grid	**Coordinates**	**Exposure Rate (µR/h)[ab]**
Y	-10	11.65
P	-10	11.86
T	-5	12.20
O	0	10.29
U	4	10.84
Z	0	11.13
Y	8	10.26
U	12	10.54
Q	8	10.59
Y	15	10.21
Q	16	9.61
M	12	11.52
I	16	10.44
I	8	10.44
M	4	10.67
I	0	10.67
E	4	10.51
A	8	10.99
E	12	10.44
A	16	10.99
A	0	10.83
C	18	10.00
L	18	8.60
C	28	10.00
L	28	10.00
G	23	8.60

NOTE: *Guidelines for residual contamination come from Table I-1 on page I-8 of the Certification Docket (also Table 2-1 on page II-148)*
[a]Maximum allowable gamma radiation exposure in any building = 20µR/h above background level
[b]All measurements include a background reading of 8.5 µR/h

Springdale, Pennsylvania, Site Map



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