

February 25, 2002

Mr. John T. Buckley
U.S. Nuclear Regulatory Commission
TWFN, 7F27
Washington, DC 20555

Transmittal
Revision Inserts
Final Status Survey Report
Adjacent Land Area
Kaiser Aluminum & Chemical Corporation
Tulsa, Oklahoma

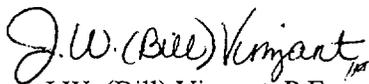
Dear Mr. Buckley:

Pursuant to our February 21, 2002 telephone conference call, Kaiser Aluminum & Chemical Corporation (Kaiser) is submitting one copy of the revision inserts to the Final Status Survey Report (FSSR) for the Tulsa, Oklahoma site. The revision inserts address the Nuclear Regulatory Commission's technical comments provided to Kaiser during the conference call. As such, please remove and replace the following select report sections in your copy of the FSSR:

- Text pages 22, 28, 31, 32, and 34;
- Table 4-C, page 13 of 13;
- Table 4-D, page 2 of 2;
- Table 4-1;
- Table 4-7, page 2 of 2; and
- Figure 3-3.

If you have any questions concerning the enclosure, please do not hesitate to call me at (225) 231-5116.

Sincerely,



J.W. (Bill) Vinzant, P.E.
Manager, Corporate Environmental Affairs

JWV:tls

Enclosures

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NMSS01 Public

4.3.7 Survey Unit 2F (Table 4-7 and Figure 4-7)

4.3.7.1 Scans

A 100-percent scan of the excavation bottom and sidewalls did not identify any areas of elevated contact gamma radiation. Scans of adjacent areas identified several areas of elevated contact gamma radiation. These areas, located in Grids 63 and 43, were subsequently remediated and re-surveyed. The final status survey did not identify any areas of elevated contact gamma radiation.

4.3.7.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-7. Net exposure rates averaged 6 $\mu\text{R/hr}$ with a standard deviation of 2 $\mu\text{R/hr}$.

4.3.7.3 Thorium Concentrations in Soil

Table 4-7 lists analytical results for surface and core samples taken. Fifty-eight samples were taken in the survey unit and all but two were less than the acceptance criteria (Figure 4-7). The average net concentration of Th-232 for Survey Unit 2F was 0.348 $\rho\text{Ci/g}$ with a standard deviation of 0.931 $\rho\text{Ci/g}$. For those samples that exceeded the acceptance criteria, a weighted average calculation was performed to ensure that the unit met release criteria. The resulting weighted average was 1.16 $\rho\text{Ci/g}$ net. The samples included in the weighted average calculation for Survey Unit 2F were the elevated samples within a contiguous 20m² portion of grids 45 and 46, and the sample results for the surrounding 80m². The result is a weighted average over a contiguous 100m² area of grids 45 and 46.

4.3.8 Survey Unit 3 (Table 4-8 and Figure 4-8)

4.3.8.1 Scans

A 100-percent scan of the excavation bottom and sidewalls did not identify any areas of elevated contact gamma radiation. Scans of adjacent areas did not identify any areas of elevated contact gamma radiation.

4.3.8.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-8. Net exposure rates averaged 1 $\mu\text{R/hr}$ with a standard deviation of 1 $\mu\text{R/hr}$.

4.3.8.3 Thorium Concentrations in Soil

Table 4-8 lists the results of surface and core samples taken. Seventeen samples were taken in the survey unit and all were less than the acceptance criteria (Figure 4-8). The average net concentration of Th-232 for Survey Unit 3 was 0.063 $\rho\text{Ci/g}$ with a standard deviation of 0.109 $\rho\text{Ci/g}$.

4.3.19.1 Scans

A 100-percent scan of the excavation bottom and sidewalls did not identify any areas of elevated contact gamma radiation. Scans of adjacent areas did not identify any areas of elevated contact gamma radiation.

4.3.19.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-19. Net exposure rates averaged $-2 \mu\text{R/hr}$ with a standard deviation of $1 \mu\text{R/hr}$.

4.3.19.3 Thorium Concentrations in Soil

Table 4-19 lists analytical results for surface and core samples. Two samples were taken in the survey unit and all were less than the acceptance criteria (Figure 4-19). The average net concentration of Th-232 for Survey Unit 4K was 0.185 pCi/g with a standard deviation of 0.262 pCi/g .

4.3.20 Survey Unit 4L (Table 4-20 and Figure 4-20)

4.3.20.1 Scans

A 100-percent scan of the excavation bottom and sidewalls did not identify any areas of elevated contact gamma radiation. Scans of adjacent areas identified several areas of elevated contact gamma radiation. These areas, located in Grids 192, 193, and 198, were subsequently remediated and re-surveyed. The final status survey did not identify any areas of elevated contact gamma radiation.

4.3.20.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-20. Net exposure rates averaged $1 \mu\text{R/hr}$ with a standard deviation of $1 \mu\text{R/hr}$.

4.3.20.3 Thorium Concentrations in Soil

Table 4-20 lists analytical results for surface samples. Fifteen samples were taken in the survey unit and all but one were less than the acceptance criteria (Figure 4-20). The average net concentration of Th-232 for Survey Unit 4L was 0.613 pCi/g with a standard deviation of 0.761 pCi/g . For the sample that exceeded the acceptance criteria, a weighted average calculation was performed to ensure that the unit met release criteria. The resulting weighted average was 1.38 pCi/g net .

4.3.25 Survey Unit 6B (Table 4-25 and Figure 4-25)

4.3.25.1 Scans

A 100-percent scan of the excavation bottom and sidewalls did not identify any areas of elevated contact gamma radiation. Scans of adjacent areas did not identify any areas of elevated contact gamma radiation.

4.3.25.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-25. Net exposure rates averaged 1 $\mu\text{R/hr}$ with a standard deviation of 1 $\mu\text{R/hr}$.

4.3.25.3 Thorium Concentrations in Soil

Table 4-25 lists analytical results for surface and core samples. Twenty samples were taken in the survey unit and all but one, in Grid 163, were less than the acceptance criteria (Figure 4-25). The average net concentration of Th-232 for Survey Unit 6B was 0.402 $\rho\text{Ci/g}$ with a standard deviation of 0.722 $\rho\text{Ci/g}$. A weighted average calculation demonstrated that the survey unit met the acceptance criteria. The resulting weighted average was 0.507 $\rho\text{Ci/g}$ net.

4.3.26 Survey Unit 6C (Table 4-26 and Figure 4-26)

4.3.26.1 Scans

A 100-percent scan of the excavation bottom and sidewalls did not identify any areas of elevated contact gamma radiation. Scans of adjacent areas did not identify any areas of elevated contact gamma radiation.

4.3.26.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-26. Net exposure rates averaged 0 $\mu\text{R/hr}$ with a standard deviation of 0 $\mu\text{R/hr}$.

4.3.26.3 Thorium Concentrations in Soil

Table 4-26 lists analytical results for surface and core samples. Four samples were taken in the survey unit and all were less than the acceptance criteria (Figure 4-26). The average net concentration of Th-232 for Survey Unit 6C was 0.065 $\rho\text{Ci/g}$ with a standard deviation of 0.082 $\rho\text{Ci/g}$.

4.3.27 Survey Unit 7A (Table 4-27 and Figure 4-27)

4.3.27.1 Scans

A 100-percent scan of the excavation bottom and sidewalls did not identify any areas of elevated contact gamma radiation. Scans of adjacent areas identified several areas of elevated contact gamma radiation. These areas, located in Grids 70, 73, 75, 77, 78, 80, 82, and parts of 116-120, were subsequently remediated and re-surveyed. The final status survey did not identify any areas of elevated contact gamma radiation.

4.3.27.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-27. Net exposure rates averaged 1 $\mu\text{R/hr}$ with a standard deviation of 2 $\mu\text{R/hr}$. Exposure rate readings for this survey unit vary from -1 to 7 $\mu\text{R/hr}$ above background.

4.3.27.3 Thorium Concentrations in Soil

Table 4-27 lists analytical results for surface samples. One-hundred-eight samples were taken in the survey unit and all but one were less than the acceptance criteria (Figure 4-27). The average net concentration of Th-232 for Survey Unit 7A was 0.268 $\rho\text{Ci/g}$ with a standard deviation of 0.524 $\rho\text{Ci/g}$. For the sample that was over, a weighted average calculation was performed to ensure that the unit passed. The resulting weighted average was 1.19 $\rho\text{Ci/g}$ net.

4.3.28 Survey Unit 7B (Table 4-28 and Figure 4-28)

4.3.28.1 Scans

A 100-percent scan of the excavation bottom and sidewalls did not identify any areas of elevated contact gamma radiation. Scans of adjacent areas identified several areas of elevated contact gamma radiation. These areas, located in Grid 87 and parts of Grids 87, 129, 130, and 132, were subsequently remediated and resurveyed. The final status survey did not identify any areas of elevated contact gamma radiation.

4.3.28.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-28. Net exposure rates averaged 1 $\mu\text{R/hr}$ with a standard deviation of 0 $\mu\text{R/hr}$.

4.3.30.3 Thorium Concentrations in Soil

Table 4-30 lists analytical results for surface and core samples. Six samples were taken in the survey unit and all were less than the acceptance criteria (Figure 4-30). The average net concentration of Th-232 for Survey Unit 7D was 0.381 $\rho\text{Ci/g}$ with a standard deviation of 0.336 $\rho\text{Ci/g}$.

4.3.31 Survey Unit 7E (Table 4-31 and Figure 4-31)

4.3.31.1 Scans

A 100-percent scan of the excavation bottom and sidewalls did not identify any areas of elevated contact gamma radiation. Scans of adjacent areas did not identify any areas of elevated contact gamma radiation.

4.3.31.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-31. Net exposure rates averaged 1 $\mu\text{R/hr}$ with a standard deviation of 1 $\mu\text{R/hr}$.

4.3.31.3 Thorium Concentrations in Soil

Table 4-31 lists analytical results for surface and core samples. Nine samples were taken in the survey unit and all were less than the acceptance criteria (Figure 4-31). The average net concentration of Th-232 for Survey Unit 7E was 0.476 $\rho\text{Ci/g}$ with a standard deviation of 0.747 $\rho\text{Ci/g}$. For the sample that was over, a weighted average calculation was performed to ensure that the unit passed. The resulting weighted average was 0.461 $\rho\text{Ci/g}$ net.

4.3.32 Affected Areas Not Requiring Remediation (Table 4-32) (Figure 4-32)

4.3.32.1 Scans

Scans of core samples were performed in accordance with Ref. 9, ESC/HPM 3-6 Gross Gamma Surveys of Soil Cores. The areas that were investigated are depicted in Figure 4-32.

4.3.32.2 Exposure Rates

Net exposure rate measurements are presented in Table 4-32. Net exposure rates averaged 1 $\mu\text{R/hr}$ with a standard deviation of 2 $\mu\text{R/hr}$.

4.3.32.3 Thorium Concentrations in Soil

Table 4-32 lists analytical results for core samples. A total of 311 samples were taken in the areas and all were less than the acceptance criteria. (Figure 4-32). The average net concentration of Th-232 for the affected areas was 0.162 $\rho\text{Ci/g}$ with a standard deviation of 0.399 $\rho\text{Ci/g}$.

Table 4-C
Scan Surveys of Open Excavations
Kaiser Adjacent Land Remediation Project
Survey Units 1 - 7E

Survey Unit	Quadrant ID	Scan of quadrant			Comments
		average	min.	max	
(cpm) ¹					
7C	89-D	4582	4457	4679	
7C	89-C	4265	4200	4315	
7C	100-C	4571	4456	4687	
7C	100-D	3845	3756	3966	
7C	99-A	4159	4056	4299	
7C	99-B	4278	4137	4358	
7C	99-C	3845	3794	4018	
7C	90-D	4125	4056	4279	
7C	90-E	4215	4165	4322	
7C	90-F	4135	4057	4211	
7C	90-G	3981	3835	4019	
7C	91-C	4091	3899	4143	
7C	91-D	4123	3912	4567	
7C	133-C	3648	3145	3848	
7C	103-A	4157	3982	4258	
7C	103-B	4752	4577	4899	
7C	135-B	4210	4032	4355	
7C	135-A	4679	4675	4788	
7C	89-A	4315	4167	4535	
7C	127-A	3899	3748	3945	
7C	127-C	2546	2457	2578	
7C	135-D	3364	3247	3366	
7D	106-A	4815	3784	5549	Background for unit at 4100.
7D	106-B	3987	3766	4579	
7D	193-A	4827	4487	5017	
7D	193-B	3907	3548	4218	
7D	192-A	4967	4573	5022	
7D	192-B	4199	3876	4297	
7E	209-B	4257	4018	4577	Background for unit at 3900.
7E	209-A	4311	4009	4616	
7E	189-A	4176	3987	4573	
7E	189-B	4938	4573	5127	
7E	210-A	3918	3748	4372	
7E	210-B	3879	3648	4138	
7E	210-F	3846	3491	4019	

Note: All survey measurements were taken with Ludlum 2221 (SN: 75448) with 44-10 (SN: 112016)

1. Gross counts per minute readings

Table 4-D
Scan Surveys of Grids Not Requiring Excavation
Kaiser Adjacent Land Remediation Project

Grid Number	Scan of grid			Comments
	average	min.	max	
	(cpm) ¹			
174	3699	3512	3849	Background for unit at 3700.
177	3699	3154	4315	Background for unit at 3800.
178	3794	3266	4288	Background for unit at 3800.
180	3918	3649	4578	Background for unit at 3800.
181	3966	3648	4200	Background for unit at 3800.
182	3788	3564	4099	Background for unit at 3700.
183	4157	3867	4311	Background for unit at 4000.
184	3987	3802	4019	Background for unit at 3900.
185	4019	3934	4148	Background for unit at 3900.
186	3957	3873	4021	Background for unit at 3900.
187	4456	4215	4457	Background for unit at 3900.
188	4357	4155	4336	Background for unit at 3900.
190	4019	3903	4056	Background for unit at 3900.
191	4875	4788	4879	Background for unit at 3900.
194	4219	4078	4620	Background for unit at 3900.
195	4348	4215	4378	Background for unit at 3900.
196	4012	3799	4219	Background for unit at 3900.
197	4211	4169	5013	Background for unit at 4000.
199	4105	4222	5117	Background for unit at 4000.
200	4065	4167	4655	Background for unit at 3900.
201	4427	4218	4771	Background for unit at 4100.
202	3902	3455	4257	Background for unit at 3800.
203	3899	3678	4239	Background for unit at 3800.
204	3946	3456	4205	Background for unit at 3800.
205	4002	3849	4217	Background for unit at 3900.
206	4319	4251	4457	Background for unit at 3900.
207	4297	4159	4367	Background for unit at 3900.
208	4267	4155	4359	Background for unit at 3900.
211	4711	4603	4852	Background for unit at 3900.
212	4289	4123	4460	Background for unit at 3900.
214	4308	4257	4467	Background for unit at 3900.
218	4425	3987	4687	Background for unit at 3900.
219	4127	3849	4601	Background for unit at 3900.
217	4109	4009	4315	Background for unit at 3900.

Note: All survey measurements were taken with Ludlum 2221 (SN: 75448) with 44-10 (SN: 112016)

1. Gross counts per minute readings

Table 4-1
Exposure Rates and Soil Concentrations
Kaiser Adjacent Land Remediation Survey Unit 1

Sample Location	Sample Type	Analytical Results Gross Conc. Th-232 (pCi/g)	Net Conc. Th-232 (pCi/g)	Uncert. (+/- pCi/g)	Detection Limit (pCi/g)	Unity (-)	Net Exposure Rate (μR/hr)	Grid Block Average Net Th-232 /Unity/ Exp. Rate
52A	FS	5.32E-01	0.00E+00	1.10E-01	3.88E-01	0.00	2	
52B	CS	1.02E+00	0.00E+00	1.58E-01	4.53E-01	0.00	1	1.15E-01
52C	FS	1.56E+00	4.60E-01	1.31E-01	2.34E-01	0.21	1	0.05
52D	CS	6.19E-01	0.00E+00	9.80E-02	3.33E-01	0.00	-2	1
53A	FS	1.16E+00	6.00E-02	1.33E-01	5.21E-01	0.03	4	
53B	CS	5.60E-01	0.00E+00	5.60E-01	5.19E-01	0.00	-1	1.50E-02
53C	FS	6.05E-01	0.00E+00	9.20E-02	2.77E-01	0.00	4	0.01
53D	CS	6.41E-01	0.00E+00	7.20E-02	2.80E-01	0.00	-1	2
54A	FS	8.35E-01	0.00E+00	1.00E-01	2.32E-01	0.00	4	
54B	CS	1.18E+00	8.00E-02	1.61E-01	3.61E-01	0.04	-1	2.00E-02
54C	FS	8.17E-01	0.00E+00	9.40E-02	2.24E-01	0.00	4	0.01
54D	CS	9.63E-01	0.00E+00	1.35E-01	3.94E-01	0.00	-1	2
55A	FS	7.96E-01	0.00E+00	9.30E-02	1.77E-01	0.00	4	
55B	FS	6.63E-01	0.00E+00	1.08E-01	2.98E-01	0.00	-1	5.25E-02
55C	FS	1.31E+00	2.10E-01	1.54E-01	3.53E-01	0.09	5	0.02
55D	CS	9.30E-01	0.00E+00	8.20E-02	3.25E-01	0.00	1	2
57A	FS	1.17E+00	7.00E-02	1.57E-01	4.39E-01	0.03	3	
57B	FS	1.27E+00	1.70E-01	1.38E-01	2.39E-01	0.08	1	1.30E-01
57C	FS	1.38E+00	2.80E-01	1.29E-01	4.01E-01	0.13	1	0.06
57D	FS	9.51E-01	0.00E+00	9.90E-02	1.96E-01	0.00	1	2
58A	FS	9.95E-01	0.00E+00	1.37E-01	4.13E-01	0.00	1	
58B	FS	1.28E+00	1.80E-01	8.40E-02	2.39E-01	0.08	1	2.65E-01
58C	FS	1.66E+00	5.60E-01	8.00E-02	1.83E-01	0.25	1	0.12
58D	FS	1.42E+00	3.20E-01	7.00E-02	3.03E-01	0.14	1	1
59A	FS	7.26E-01	0.00E+00	1.12E-01	2.44E-01	0.00	1	
59B	FS	6.99E-01	0.00E+00	7.70E-02	3.45E-01	0.00	-1	0.00E+00
59C	CS	6.75E-01	0.00E+00	1.78E-01	3.36E-01	0.00	-2	0.00
59D	CS	8.04E-01	0.00E+00	1.24E-01	3.79E-01	0.00	-2	-1
60A	FS	9.34E-01	0.00E+00	1.18E-01	3.92E-01	0.00	-2	
60B	FS	8.21E-01	0.00E+00	1.13E-01	4.47E-01	0.00	-2	0.00E+00
60C	FS	5.63E-01	0.00E+00	1.04E-01	3.81E-01	0.00	1	0.00
60D	FS	7.66E-01	0.00E+00	7.00E-02	3.57E-01	0.00	1	-1
166A	FS	2.03E+00	9.30E-01	6.40E-02	1.40E-01	0.42	1	
166B	FS	1.67E+00	5.70E-01	6.10E-02	1.08E-01	0.26	-2	3.75E-01
166C	CS	9.05E-01	0.00E+00	1.24E-01	3.79E-01	0.00	-2	0.17
166D	CS	7.08E-01	0.00E+00	7.60E-02	2.34E-01	0.00	-2	-1
Degrees of Freedom:	35	9.89E-01	1.08E-01			0.05	1	Average
		3.65E-01	2.14E-01			0.10	2	Std Deviation
		5.32E-01	0.00E+00			0.00	-2	Minimum
		2.03E+00	9.30E-01			0.42	5	Maximum
t value		9.18E-01	0.00E+00			0.00	1	Median
1.690		1.09E+00	1.68E-01			0.08	1	μ _α 95%CL
2.031		1.11E+00	1.80E-01			0.08	1	μ _α 97.5%CL

The following foot notes apply to tables 4-1 to 4-32

Notes:

t value taken from Table 1 in Appendix B of NUREG/CR-5849.

Background value of 1.1 pCi/g Th-232 subtracted from Gross Th-232 result.

Background value of 9 μR/hr subtracted from Gross Exposure Rate measurements.

FS = Final soil sample.

CS = Core sample.

Uncertainty represents the 95 percent confidence level, 2 sigma.

Unity is calculated by summing the fractions of Th-232, Th-228, and Th-230 activity concentrations divided by their respective acceptance criteria, i.e., ((Th-232 + Th-228) / 10 pCi/g) + (Th-230 / 14 pCi/g).

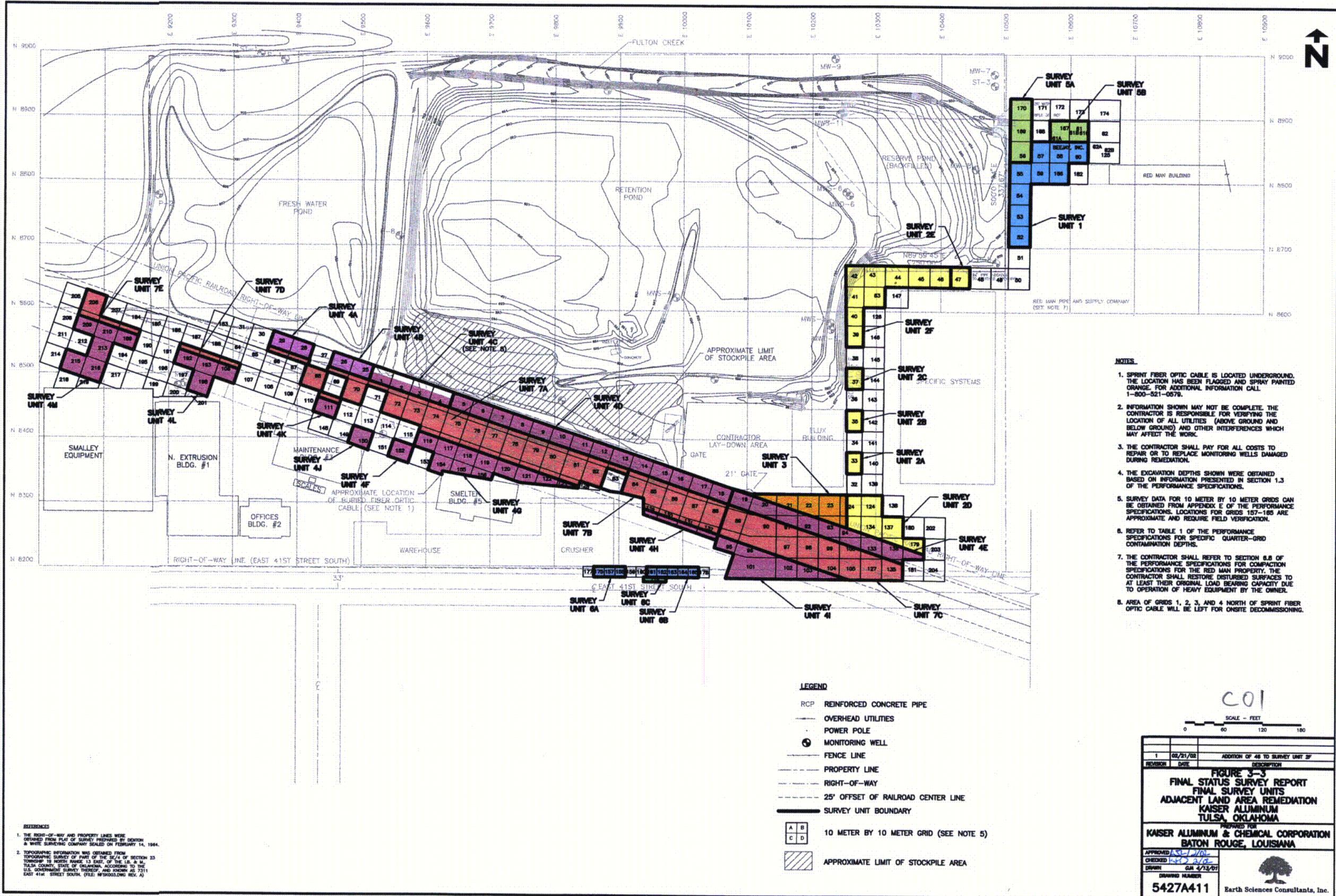
The average of Net Th-232, Unity and Exposure Rate are calculated for each final survey grid.

**Table 4-7
Exposure Rates and Soil Concentrations
Kaiser Adjacent Land Remediation Survey Unit 2F**

Sample Location	Sample Type	Analytical Results Gross Conc. Th-232 (pCi/g)	Net Conc. Th-232 (pCi/g)	Uncert. (+/- pCi/g)	Detection Limit (pCi/g)	Unity (-)	Net Exposure Rate (μR/hr)	Grid Block Average Net Th-232 / Unity / Exp. Rate
45A	FS	1.03E+00	0.00E+00	1.58E-01	5.69E-01	0.00	4	3.00E-01 0.14 4
45B	FS	1.06E+00	0.00E+00	1.99E-01	5.06E-01	0.00	4	
45C	FS	2.00E+00	9.00E-01	1.84E-01	4.60E-01	0.41	4	
45D	FS	1.32E+00	2.20E-01	1.62E-01	5.54E-01	0.10	3	1.26E+00 0.57 3
45E	FS	1.00E+00	0.00E+00	1.85E-01	3.88E-01	0.00	3	
45F	FS	2.19E+00	1.09E+00	1.50E-01	4.86E-01	0.49	3	
45G	FS	1.06E+00	0.00E+00	8.30E-02	2.58E-01	0.00	2	
45H	FS	6.27E+00	5.17E+00	2.73E-01	3.37E-01	2.33	2	
46A-1	CS	5.56E+00	4.46E+00	2.82E-01	3.99E-01	2.01	4	
46A-2	CS	1.25E+00	1.50E-01	1.62E-01	3.64E-01	0.07	4	
46A	CS	1.25E+00	1.50E-01	1.50E-01	5.25E-01	0.07	4	
46C	CS	1.23E+00	1.27E-01	1.27E-01	4.45E-01	0.06	0	
46B	CS	1.82E+00	7.16E-01	7.16E-01	2.51E+00	0.32	3	3.58E-01 0.16 1
46D	CS	8.17E-01	0.00E+00	0.00E+00	0.00E+00	0.00	-1	
Wgt. Avg. Final Survey Grid 45/46:		2.25E+00	1.16E+00			0.52		
Degrees of Freedom:	60	1.34E+00	3.48E-01			0.16	6	Average
		9.79E-01	9.31E-01			0.42	2	Std Deviation
		6.89E-01	0.00E+00			0.00	-1	Minimum
		6.27E+00	5.17E+00			2.33	10	Maximum
t value		1.06E+00	0.00E+00			0.00	6	Median
1.671		1.55E+00	5.47E-01			0.25	6	μ _α 95%CL
2.000		1.59E+00	5.86E-01			0.26	6	μ _α 97.5%CL

Notes:

An elevated area evaluation was performed for an approximate 100 m² contiguous area of characterization grids 45 and 46. The elevated area inside Grids 45/46 was 20m² with Th-232 activity concentration = 5.92 pCi/g. The average Th-232 activity concentration in the remaining surrounding 80 m² area of Grid 45/46 = 1.33 pCi/g.
 Weighted Average = (20m²/100m²) x elevated measurement + (80m²/100m²) x average of non-elevated measurements.
 The average and standard deviation calculation for the entire survey unit include the weighted average calculated for Grid 45/45.
 Refer to page 22 for an explanation of the weighted average area that was selected.



- NOTES:**
- SPRINT FIBER OPTIC CABLE IS LOCATED UNDERGROUND. THE LOCATION HAS BEEN FLAGGED AND SPRAY PAINTED ORANGE. FOR ADDITIONAL INFORMATION CALL 1-800-821-0576.
 - INFORMATION SHOWN MAY NOT BE COMPLETE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL UTILITIES (ABOVE GROUND AND BELOW GROUND) AND OTHER INTERFERENCES WHICH MAY AFFECT THE WORK.
 - THE CONTRACTOR SHALL PAY FOR ALL COSTS TO REPAIR OR TO REPLACE MONITORING WELLS DAMAGED DURING REMEDIATION.
 - THE EXCAVATION DEPTHS SHOWN WERE OBTAINED BASED ON INFORMATION PRESENTED IN SECTION 1.3 OF THE PERFORMANCE SPECIFICATIONS.
 - SURVEY DATA FOR 10 METER BY 10 METER GRIDS CAN BE OBTAINED FROM APPENDIX E OF THE PERFORMANCE SPECIFICATIONS. LOCATIONS FOR GRIDS 157-185 ARE APPROXIMATE AND REQUIRE FIELD VERIFICATION.
 - REFER TO TABLE 1 OF THE PERFORMANCE SPECIFICATIONS FOR SPECIFIC QUARTER-GRID CONTAMINATION DEPTHS.
 - THE CONTRACTOR SHALL REFER TO SECTION 6.8 OF THE PERFORMANCE SPECIFICATIONS FOR COMPACTION SPECIFICATIONS FOR THE RED MAN PROPERTY. THE CONTRACTOR SHALL RESTORE DISTURBED SURFACES TO AT LEAST THEIR ORIGINAL LOAD BEARING CAPACITY DUE TO OPERATION OF HEAVY EQUIPMENT BY THE OWNER.
 - AREA OF GRIDS 1, 2, 3, AND 4 NORTH OF SPRINT FIBER OPTIC CABLE WILL BE LEFT FOR ONSITE DECOMMISSIONING.

- LEGEND**
- RCP REINFORCED CONCRETE PIPE
 - OVERHEAD UTILITIES
 - POWER POLE
 - MONITORING WELL
 - FENCE LINE
 - PROPERTY LINE
 - RIGHT-OF-WAY
 - 25' OFFSET OF RAILROAD CENTER LINE
 - SURVEY UNIT BOUNDARY
 - 10 METER BY 10 METER GRID (SEE NOTE 5)
 - APPROXIMATE LIMIT OF STOCKPILE AREA

REFERENCES

- THE RIGHT-OF-WAY AND PROPERTY LINES WERE OBTAINED FROM PLAT OF SURVEY PREPARED BY DODD & WHITE SURVEYING COMPANY SEALED ON FEBRUARY 14, 1964.
- TOPOGRAPHIC INFORMATION WAS OBTAINED FROM TOPOGRAPHIC SURVEY OF PART OF THE S.E. 1/4 OF SECTION 23 TOWNSHIP 19 NORTH RANGE 13 EAST, OF THE S.W. 1/4 IN THE TULSA COUNTY, STATE OF OKLAHOMA, ACCORDING TO THE U.S. GOVERNMENT SURVEY THEREOF, AND KNOWN AS 7311 EAST 41st STREET SOUTH, (TULSA, MISSOURI) REG. A)

COI

SCALE - FEET

0 60 120 180

1	02/21/02	ADDITION OF 46 TO SURVEY UNIT 2F
REVISION	DATE	DESCRIPTION

FIGURE 3-3
FINAL STATUS SURVEY REPORT
FINAL SURVEY UNITS
ADJACENT LAND AREA REMEDIATION
KAISER ALUMINUM
TULSA, OKLAHOMA

PREPARED FOR
KAISER ALUMINUM & CHEMICAL CORPORATION
BATON ROUGE, LOUISIANA

APPROVED: *[Signature]*
 CHECKED: *[Signature]*
 DRAWN: GA 2/13/01

DRAWING NUMBER
5427A411

Earth Sciences Consultants, Inc.