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Br2

June 15, 2010

Mr. Dennis R. Lawyer
Health Physicist
Division of Nuclear Materials Safety
US Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406-1415

RECEIVED
REGION 1
2010 JUN 18 AM 11:09

Re: NRC License No. 06-00221-08, Docket Number: 030-03759

Subject: Decommissioning of Bethany, Connecticut Site Only

Dear Mr. Lawyer:

As you suggested during inspection on August 26, 2009, we are submitting the enclosed report which describes:

- Soil scoping samples for outdoor areas of this site;
- Remediation activities based on the scoping sample results; and
- A proposed sampling plan based on MARSSIM methodology for NRC review.

Once this sampling plan is reviewed by your office we can proceed with sample collection and finalize the decommissioning process. We would appreciate your prompt review and input to us on this decommissioning so that we can finish it before cold weather sets in.

Please note that Chemtura hired Radiation Safety Associates (RSA), Inc. as a consultant for this project and they prepared this report. If you have any questions or issues concerning the report (sampling results, sampling plan, etc.), please directly contact Mr. K. Paul Steinmeyer, RSA (Tel: 860-228-0487 and E-mail: kpstein@radpro.com).

In addition, I would like to inform you that there are no principal activities for about two years at the Middlebury facility except for receiving, shipping and storage of radioactive test substances for studies conducted at outside contract laboratories. We are exploring various options regarding this facility and I will inform you accordingly. If you have any questions, please contact me.

Sincerely,

Jayanta K. Nag
Radiation Safety Officer

572999

NMSS/RGN1 MATERIALS-002

Chemtura Bethany Site

- Pre-Decommissioning Sampling and Remediation and Waste Disposal
- Pre- and Post-Remediation Scoping Survey Results
- Final Status Sampling Plan

Radiation Safety Associates, Inc.
June 11, 2010

INDEX

Executive Summary 3

1. Introduction 5

2. Facility Description 5

3. Purpose 7

4. Proposed Sampling Plan for Final Radiological Status 8

   A. Data Quality Objectives (DQO) 8
   B. Acceptance Criteria 8
   C. Reference Area 9
   D. Existing Corral 11
   E. Peach Tree Area 23
   F. Apple Tree Area 31
   G. Grape Area 34

5. Waste Disposal 36

6. Conclusion 38

Attachment A. Chemical analysis of soil and CIH review

Attachment B. Energy Solutions Work Plan

Attachment C. Disposal records for the 2003 shipment of 4 tons of soil and about 700 pounds of contaminated wood and trash.

Attachment D. Manifests for the 2008 waste shipment.

EXECUTIVE SUMMARY

Based on input from Dennis Lawyer of the U.S. Nuclear Regulatory Commission during an inspection on August 26, 2009, Chemtura is proposing a sampling plan for the outdoor areas of the Bethany, Connecticut site based on the MARSSIM methodology. Plants and trees at four very specific and well-defined areas of the 8.6-acre Chemtura-Bethany site were used in experiments involving compounds labeled with carbon 14 (C-14). These outdoor areas of interest are:

1. Existing Corral,
2. Peach tree area,
3. Apple tree area, and
4. Grape area.

These areas are identified on the photograph in Figure 1.

Existing Corral. Soil contamination was initially found in the corral that exceeded federal and state limits for C-14 in soil. The contaminated soil was removed and more scoping samples were taken in the area. All these sample results were less than the applicable limits for C-14 in soil. Based on this information, a final MARSSIM-compliant sampling plan is proposed in this document for NRC's review.

Peach Tree Area. One peach tree in the orchard had been used for a study and had been sprayed with a compound containing C-14. The tree and some soil were removed during the post-study decontamination. Some soil sampling was done at that time but the as-left soil concentrations do not meet current release standards. Re-sampling showed the presence of C-14 in excess of federal and state limits. Soil was removed from the contaminated area and more scoping samples were taken in the area. All these sample results were less than the applicable limits for C-14 in soil. Based on this information, a final MARSSIM-compliant sampling plan is proposed in this document for NRC's review.

Apple Tree Area. In June of 1983, two apple trees were used in a study in which their leaves and fruit were painted (not sprayed) with a compound containing C-14. The trees were contained in enclosures to keep birds away. The following year a small amount of radioactivity was found under the bark. No radioactivity was found in the leaves the following year. The trees were cut down and disposed as radioactive waste. While the trees have long since been removed and disposed as radioactive waste, two iron posts that supported these two experimental apple trees, each containing a few turns of yellow tape, were located. While no words remain visible on the tape, it is the same width as radioactive material warning tape that has been used for many years. When compared to a photograph taken at the time of the experiment, large trees and features of a building in the background confirm the location of the apple tree experiment. Scoping samples were taken in the area. All these sample results were less than the applicable limits for C-14 in soil. Based on this information, a final MARSSIM-compliant sampling plan is proposed in this document for NRC's review.

Grape Area.
In September 1979, a grape vine was treated with a C-14-labeled compound as part of an agrochemical research study. The ground was covered with plastic before spraying the plants. During the experiment, only four rows of grape arbors were in place. During the initial phase of this decommissioning survey some scoping samples were randomly taken from two rows in the area. These sample results were less than the applicable limits for C-14 in soil. Based on this information, a final MARSSIM-compliant sampling plan is proposed in this document for NRC's review. Chemtura will include the first four (western-most) rows of grapes in this sampling plan. Additional rows of grape vines were subsequently planted to the east of the original four rows, but this took place after the study in question. The additional rows that now exist were not part of the study.

1. INTRODUCTION

Chemtura is licensed by the U.S. Nuclear Regulatory Commission (NRC) for possession of radioactive material for research and development, license number 06-00221-08. The license was initially issued to Uniroyal Chemical Company, Inc., which became Crompton & Knowles in 1996. Crompton & Knowles became Crompton Corporation in 1999 and finally Crompton Corporation became Chemtura Corporation in 2005.

2. FACILITY DESCRIPTION

The Chemtura-Bethany site is located at the junction of Amity Road (Route 63) and Old Mill Road in Bethany, Connecticut. The 8.6-acre site includes four greenhouses, a headhouse and associated indoor areas, and four very specific and well-defined outdoor areas where plants and trees were treated with C-14-labeled compounds.

These outdoor areas of interest during this decommissioning are:

A. Existing Corral,
B. Peach tree area,
C. Apple tree area, and
D. Grape area.

These areas are identified on the photograph in Figure 1 below.

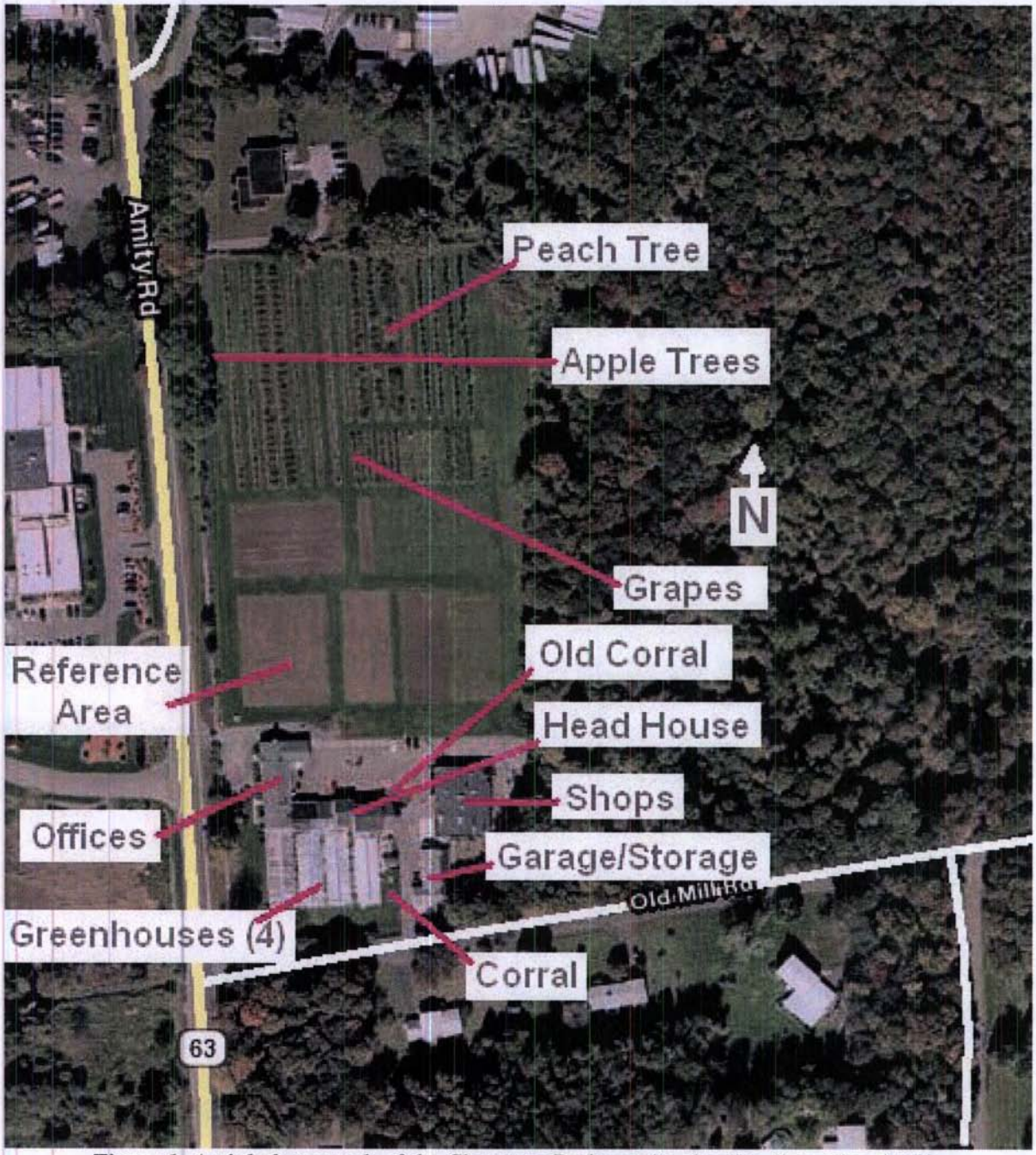


Figure 1. Aerial photograph of the Chemtura Bethany site showing the major details.

3. PURPOSE

The purpose of this document is three fold.

A. Describe the initial round of soil scoping surveys of the four outdoor areas that were utilized for experiments involving C-14 compounds;
B. Describe the remediation activities and waste disposal undertaken based on the results of these initial scoping surveys;
C. Present the results of the second round of scoping samples taken in the remediated areas;
D. Submit a sampling plan for regulatory approval that will represent the final radiological status of this site.

If contamination is found during the final status sampling, additional remediation followed by additional sampling will be undertaken.

Once all soil concentrations are within the regulatory guideline values, Chemtura will petition NRC to confirm that its site in Bethany, Connecticut, meets the criterion for unrestricted radiological release and remove this site from the license.

The results of the final radiological status survey results from the buildings at the Bethany site will be transmitted to NRC at the same time that the final status of the outdoor areas is reported.

4. PROPOSED SAMPLING PLAN FOR FINAL RADIOLOGICAL STATUS

A. Data Quality Objectives (DQO)

Based on a thorough and exhaustive search of the records, Carbon-14 is the only isotope used at the Chemtura Bethany site. Therefore the results of all measurements were compared to the C-14 limit. These DQO data for Carbon-14 are summarized in the tables below.

As part of the DQO process the objective of the survey and the null and alternate hypotheses should be clearly stated. In demonstrating that this objective is met, the null hypothesis, H_0, tested is that residual contamination exceeds the release criterion; the alternative hypothesis, H_a, is that residual contamination meets the release criterion.

Since the beta-emitting contaminant that is presumed to be present in the buildings and soil of the facility is presumed present in background, the Wilcoxon Rank Sum (WRS) test is used to determine the number of data points needed for statistical tests. The acceptable decision error rates were determined during the DQO process. The Type I error (α) was specified as 0.05 and Type II decision error (β) was set at 0.05. The shift, Δ, also referred to as the lower bound of the gray region (LBGR), was set at 50% of the Derived Concentration Guideline Level (DCGL). The square roots of the DCGLs were taken as the standard deviation values used for calculation of the sample sizes for measurement of total contamination.

C-14	NRC DCGL (pCi/g)	Δ (LBGR) (pCi/g)	σ (pCi/g)	Δ/σ	Number of Samples required per survey unit by the WRS Test
Soil	12	6	3.5	1.7	15

Table 1. Carbon-14 DCGL and related data for soil (from Federal Register Vol. 64, No. 234, Tue. Dec. 7, 1999, p. 68395).

B. Acceptance Criteria

These surveys were accomplished in accordance with the requirements stated in 10 CFR 20.1402. Guidance for this decommissioning was taken from NUREG-1757, Vol. 1, Rev. 1 (Consolidated NMSS Decommissioning Guidance – Decommissioning Process for Materials Licensees) and from MARSSIM (the Multi Agency Radiological Site Survey and Investigation Manual). Acceptance criteria were established based on the NRC recommendations (*Federal Register* Vol. 63, No. 222, Wed. Nov. 18, 1998, p. 64134 and Vol. 64, No. 234, Tues. Dec. 7, 1999, p. 68395) for release of facilities for unrestricted use following decommissioning, for the isotope potentially present in the buildings and soil surveyed. Chemtura's viewpoint is that the soil release criterion, especially considering the State of Connecticut's reduction of the limit by 24%, is sufficiently low. Therefore, applying additional ALARA constraints to the soil contamination limit is not warranted. The release criteria used for this project are summarized in Tables 3 below. The federal limits are the concentrations of each radionuclide that, if present in soil, could deliver a dose of 25 mrem per year to the person likely to receive the highest dose from all pathways. The State of Connecticut has determined that this release criterion should be

19 mrem per year instead of 25 mrem per year upon which the NRC values are based. Therefore the limits have also been reduced by a factor of 19 ÷ 25 = 0.76 to show compliance with State rules.

	NRC Value[1]	State Limit
C-14	12	9.12

Table 3. Derived Concentration Guideline Levels (DCGLs) for soil contamination (pCi/g)

C. Reference Area

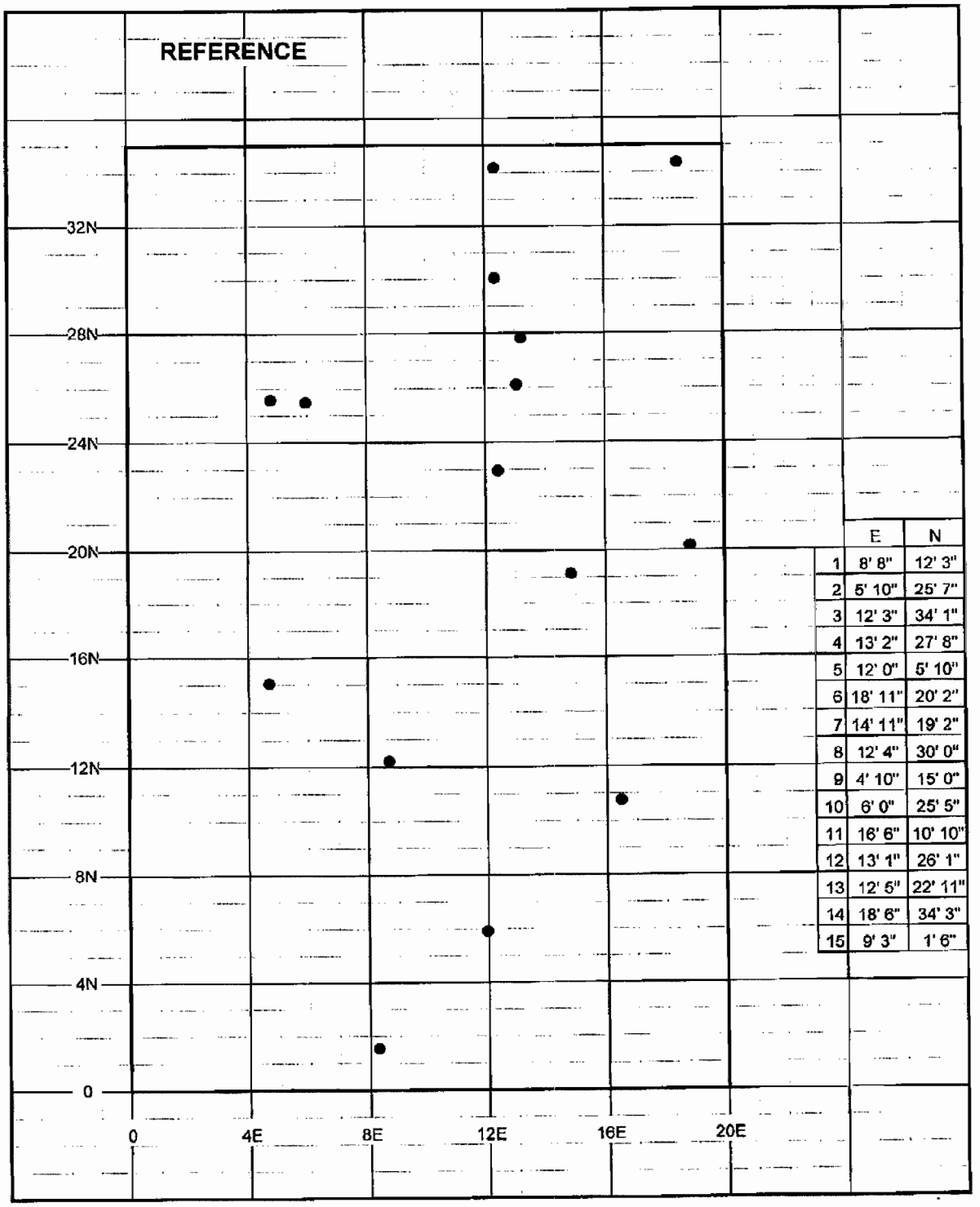
In order to quantify any background contribution from C-14, a reference area (as suggested in MARSSIM) was selected. See Figure 1 and the sample grid, Figure 2 below. This is located just north of the Amity Road entrance to the Bethany Site. See the map in Figure 1. It is 35 feet square (1,225 ft^2), which is roughly the average area of the four outdoor sites known to have been used for C-14 work.

Location	Length × Width	Area
Existing Corral	36 × 16	576
Peach tree area	25 × 17	425
Apple tree area	40 × 24	960
Grape area	75 × 38	2,850
		Σ = 4,811, Avg. = 1,203 ft^2

Table 2. Dimensions of exterior areas to be investigated.

A MARSSIM-compliant sampling plan has been applied to this area in the same fashion as will be applied to the four areas of interest described below. That sampling plan consists of 15 sample points, randomly selected based on MARSSIM guidelines. Proposed sample locations are shown in Figure 2 below. Two samples will be obtained at each point: one at 0" to 6" and the second from 6" to 12". A total of 30 soil samples will be collected from this location.

[1] From 63FR64134 table I footnote 1.



	E	N
1	8' 8"	12' 3"
2	5' 10"	25' 7"
3	12' 3"	34' 1"
4	13' 2"	27' 8"
5	12' 0"	5' 10"
6	18' 11"	20' 2"
7	14' 11"	19' 2"
8	12' 4"	30' 0"
9	4' 10"	15' 0"
10	6' 0"	25' 5"
11	16' 6"	10' 10"
12	13' 1"	26' 1"
13	12' 5"	22' 11"
14	18' 6"	34' 3"
15	9' 3"	1' 6"

Figure 2. Random sample grid indicating the sample points for the Reference area using the MARSSIM method as described in section 5.5.2.5 "Land Areas." This area is 35 feet wide by 35 feet long (1,225 ft^2). Chemtura proposes to take samples at 0" to 6" and from 6" to 12" below the current grade level from the 15 indicated sample points.

D. EXISTING CORRAL

Description

Chemtura had fenced off an area approximately 16 feet by 40 feet just to the east of the greenhouses. This was surrounded by a locked 4-foot high chain link fence. At the time of this work it had been largely overgrown with weeds and wisteria. See Figure 3.

Figure 3. The Existing Corral prior to remediation.

Soil Scoping Samples

Initially (October 31, 2007), 12 soil samples were taken from the locations and at the depths shown in Table 4 and Figure 4 below. These indicated that soil contamination exceeded State and Federal free-release limits.

Table 4. Initial scoping sample results from the Existing Corral. Samples 3, 5, 6, 9, 11 and 12 exceed the 12 pCi/g NRC limit and the State limit for ^{14}C in soil. Sample 1 exceeds the 9.12 pCi/g State limit.

#	Location and Depth	ID#	Result (pCi/g)
1	Corral SW 0-6	S80	**10.7***
2	Corral SW 6-12	S81	0.00
3	Corral mid W 0-6	S82	**14***
4	Corral mid W 6-12	S83	0.00
5	Corral NW 0-6	S84	**34.3***
6	Corral NW 6-12	S85	**22.6***
7	Corral SE 0-6	S86	2.88
8	Corral SE 6-12	S87	2.07
9	Corral mid E 0-6	S88	**18.9***
10	Corral mid E 6-12	S89	5.0
11	Corral NE 0-6	S90	**43.1***
12	Corral NE 6-12	S91	**23.4***

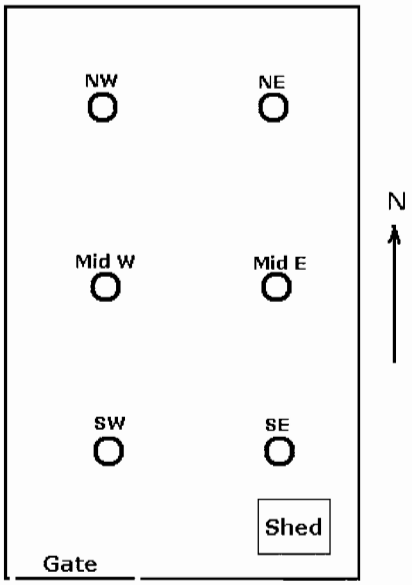


Figure 4. Scoping sample locations in the Corral.

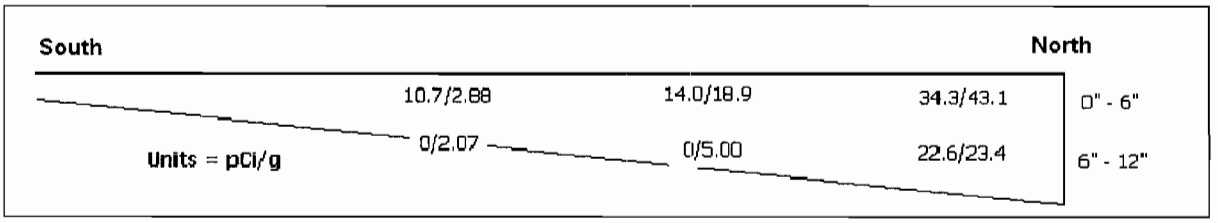


Figure 5. Section through the Corral showing that contamination levels increased from south to north, and the depth of the contamination also increased to the north.

A second set of soil scoping samples was obtained to gauge the depth and extent of the contamination in the corral. These were obtained on November 30, 2007. Samples S96 and S97 were taken in two existing sample holes, but the samples were taken from a depth of 12 to 15 inches. The results and locations are shown below in Table 5 and Figure 6.

Sample #	Description	Results (pCi/g)
S96	Corral NE hole 12-15"	7.79
S97	Corral NW hole 12-15"	3.97
S98	Corral mid E out 0-6"	1.06
S99	Corral mid E out 6-12"	0.265
S100	Corral mid N out 8-14"	0.00
S101	Corral mid W out 0-6"	0.522
S102	Corral mid W out 6-12"	0.268

Table 5. Results of a second set of soil scoping sample analyses from the Existing Corral before remediation.

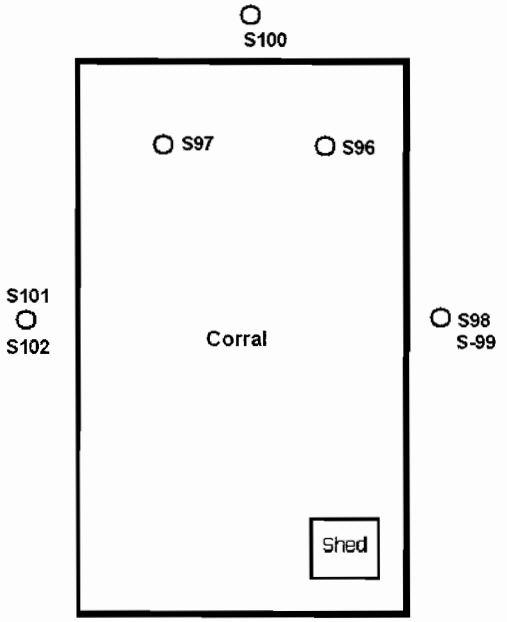


Figure 6. Sample locations for the second set of soil scoping samples from the Existing Corral.

Based on these scoping sample results, it was determined that the contaminated area was defined by the line of the chain link fence.

Wisteria

Wisteria had overgrown much of the corral, so samples were obtained and sent to Eberline[2] for analysis. No contamination in excess of the limits stated in Table 3 above was found. See the sample results in Table 6 below.

Sample #	Results (pCi/g)
W1	2.48
W2	3.26
W3	2.24
W4	2.17
W5	10.8
W6	4.16
W7	1.39
W8	0.57
W9	11.1
W10	2.36
W11	6.66
W12	2.25
W13	4.91
W14	0.88
W15	3.79
W16	3.48
W17	2.99
W18	1.62
W19	2.57
W20	3.76

Table 6. Wisteria sample results from the Corral.

[2] Eberline Analytical/Oak Ridge Laboratory, Oak Ridge, TN 37830.

Chain Link Fence

Wipe tests were made on the chain link fence before it was removed. No contamination was found. Wipe test locations and results are shown in Figure 7 and Table 7 below.

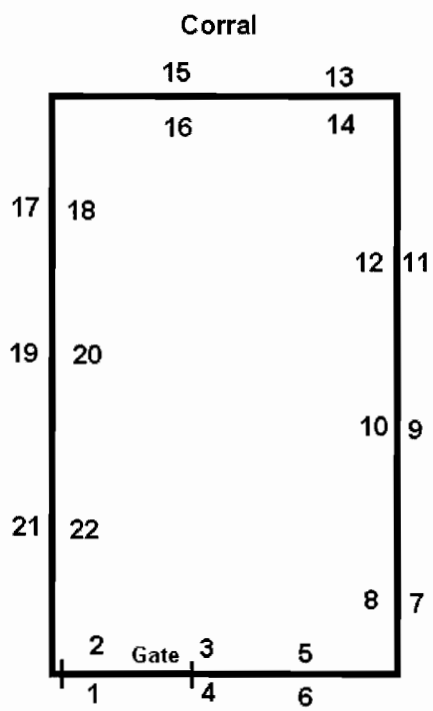


Figure 7. Sample locations for chain link fence wipes.

Sample #	Location	dpm/100 cm^2
1	Bottom	9.8
2	Top	25.8
3	Top	15.8
4	Bottom	17.0
5	Top	7.0
6	Bottom	9.2
7	Bottom	25.5
8	Top	5.4
9	Bottom	24.5
10	Top	20.2
11	Bottom	12.3
12	Top	0.0
13	Bottom	14.5
14	Top	0.0
15	Bottom	13.3
16	Top	0.0
17	Bottom	1.1
18	Top	10.3
19	Bottom	15.9
20	Top	35.7
21	Bottom	15.1
22	Top	20.2

Table7. Wipe test results from chain link fence around the Corral.

Direct measurements were also made on this fence using a G-M pancake type detector. No activity was indicated that was more than background plus 3σ. (Background count rate, R_b, = 50 cpm; $\sigma = \sqrt{50} = 7.07$ cpm; $R_b + 3\sigma = 71$ cpm.)

Concrete Fence Posts

Bulk samples of the concrete anchoring the corral fence posts were obtained and sent to Eberline for analysis. No significant concentrations of C-14 were found. The sample locations and results are displayed in Figure 8 and Table 8 below.

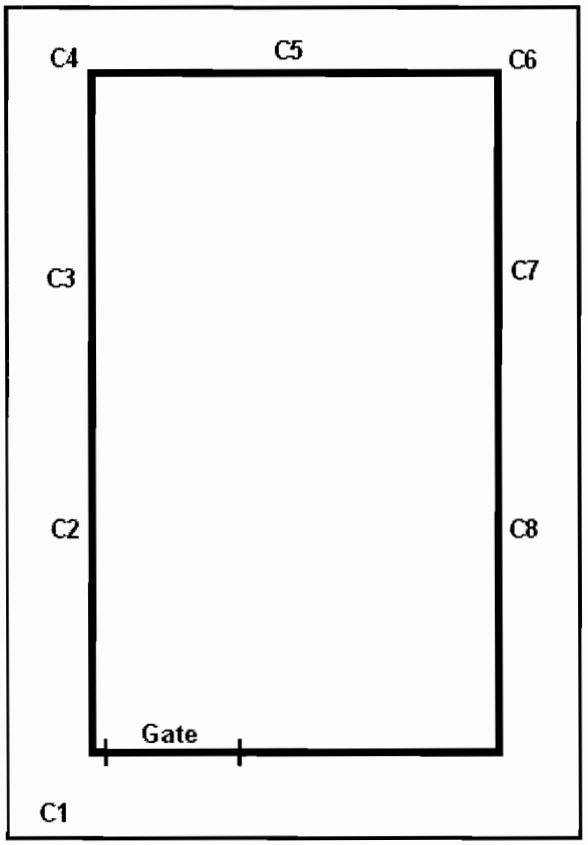


Figure 8. Sample locations for the concrete anchoring the Corral fence posts.

Sample #	Results (pCi/g)
C1 (bkgd)	0.66
C2	0.69
C3	0.00
C4	2.86
C5	1.93
C6	-.066
C7	0.00
C8	0.73

Table 8 . Sample results from the concrete anchoring the Corral fence posts.

Before remediation started, the wisteria, fence and fence posts were removed (Figure 9) and placed in normal waste for unrestricted disposal.

Corral Remediation

During the week of October 13-17, 2008, Energy Solutions undertook the removal of the soil that had been identified as contaminated. A complete chemical analysis (Attachment A, labeled "page 1 of 40" through "page 40 of 40") had been performed for Chemtura by Test America. The results were reviewed by a Certified Industrial Hygienist (CIH) who determined that the levels of all the materials tested for were below the RCRA standards for hazardous waste. The CIH review starts on the page after page 40 of 40 in Attachment A.

Energy Solutions submitted a Work Plan for this project and it was followed during the remediation process. The Work Plan is Attachment B to this report.

Figure 9. Wisteria and fence removal at the Corral.

Figure 10. Fencepost removal at the Corral. A technician is frisking the dirt-encrusted concrete.

Figure 11. The start of the Corral excavation facing southeast.

Figure 12. Removing one of the Super Sacks full of soil from the Corral area facing south.

Figure 13. The Corral site after excavation facing north.

Plan for Existing Corral Remediation

Based on the pattern of soil contamination shown in Figure 5 above, approximately 6 inches of soil was removed from the southern-most 10 feet of the Existing Corral; 12 inches from the next 10 feet, and 18 inches from the northern 20 feet. See Figure 13 above.

Figure 14. Sampling the Corral site after excavation.

Figure 15. Sample collection, identification and documentation..

Figure 16. Double rinsing the auger between samples.

Final Soil Scoping Sample Results

Fourteen soil scoping samples were obtained from the Corral after excavation. They were concentrated in the northern half of the plot since that's where the highest levels of contamination had been found. Figure 17 shows the locations of the samples and Table 9 contains the sample results.

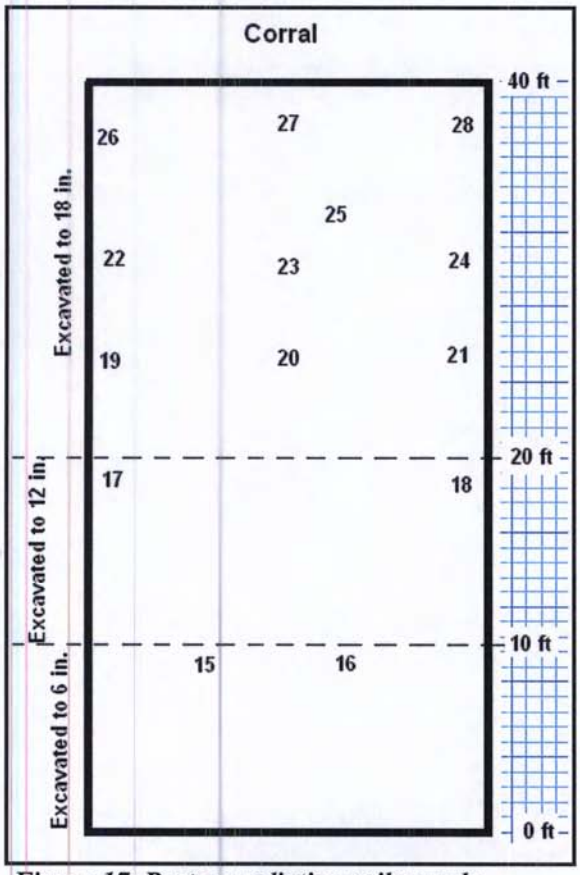


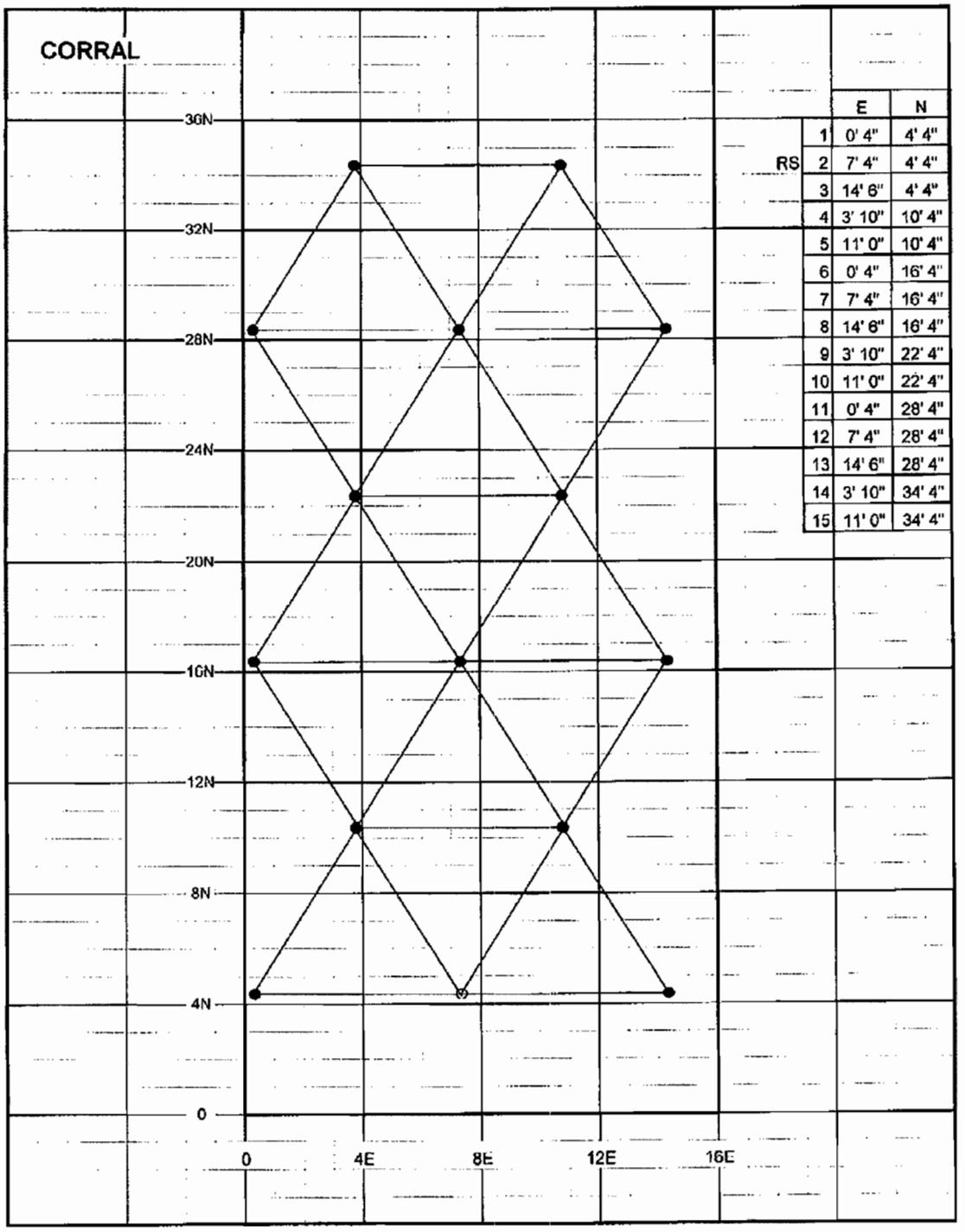
Figure 17. Post-remediation soil sample locations in the Existing Corral.

Location	Results (pCi/g)
15	7.07
16	2.74
17	4.88
18	2.77
19	1.44
20	3.54
21	0.71
22	2.09
23	2.73
24	7.05
25	3.39
26	0.66
27	0.00
28	2.75

Table 9. Post-remediation soil sample results in the Existing Corral.

Proposed Sampling Plan

Based on the chemical sampling results and on the results of the post-remediation soil scoping samples, wipe samples and bulk samples, the Existing Corral area is now ready to have a MARSSIM-compliant sampling plan applied to determine whether or not the release criteria can be met. That sampling plan consists of 15 sample points, randomly selected based on MARSSIM guidelines. Proposed sample locations are shown in Figure 18 below. Two samples will be obtained at each point: one at 0" to 6" and the second from 6" to 12" below the current grade level. A total of 30 soil samples will be collected from this location.



		E	N
RS	1	0' 4"	4' 4"
	2	7' 4"	4' 4"
	3	14' 6"	4' 4"
	4	3' 10"	10' 4"
	5	11' 0"	10' 4"
	6	0' 4"	16' 4"
	7	7' 4"	16' 4"
	8	14' 6"	16' 4"
	9	3' 10"	22' 4"
	10	11' 0"	22' 4"
	11	0' 4"	28' 4"
	12	7' 4"	28' 4"
	13	14' 6"	28' 4"
	14	3' 10"	34' 4"
	15	11' 0"	34' 4"

Figure 18. Random sample grid indicating the sample points for the Corral area using the MARSSIM method. This area is 16 feet wide by 40 feet long (640 ft^2). Chemtura proposes to take samples at 0" to 6" and from 6" to 12" below the current grade level from the 15 indicated sample points.

E. PEACH TREE AREA

In September 1999, two applications of a ^{14}C-labeled compound were sprayed onto the leaves of a peach tree that was located in the orchard. Prior to application, a plastic tent was constructed around the tree to avoid unnecessary contamination of surrounding soil and trees, and a wood and chicken wire security enclosure (12 ft^3) was constructed around the tent. This is shown in Figure 19. The tree was cut down after the study and disposed as radioactive waste, as was the root ball and a significant amount of soil. Soil sampling was performed during initial tree removal and soil excavation, but records of the final round of samples, taken after the final soil removal, cannot be located. In 2003, records show that 4 tons of soil and about 700 pounds of contaminated wood and trash were disposed as radioactive waste. See Attachment C.

Figure 19. Partially constructed double containment around the peach tree.

At the time that this current decommissioning process began, the peach tree had been removed along with the root ball and soil out to the drip line. The depth of the former root ball hole was approximately 18" below grade. The rest of the excavation tapered from a depth of approximately 15 inches near the root ball to approximately 9 inches below grade at the outer edge of the drip line excavation. Two initial samples taken for this project are labeled 9"-15" since they were taken at the outer edge of the drip line excavation where the soil was 9 inches below the surrounding grade.

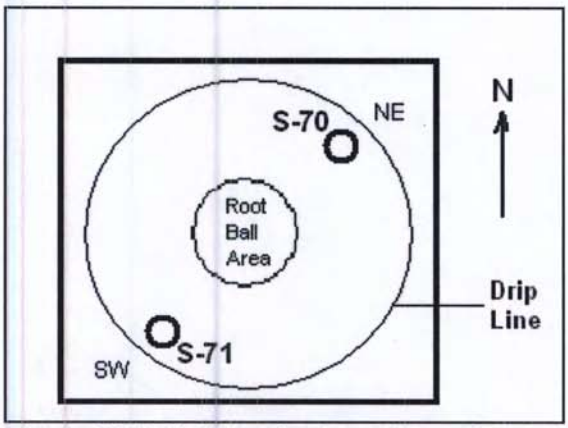


Figure 20. Initial samples from the peach tree site. Area outlined is approximately 12 feet square.

Location	ID#	Result (pCi/g)
Peach NE 9"-15"	S70	108
Peach SW 9"-15"	S71	26.4

Table 10. Initial sample results from the peach tree site.

Since both of the soil samples from the peach tree area exceeded the established limits (Table 19), a second and more extensive round of sampling was done. The locations and results of these samples are shown below (Figure 21 and Table 11).

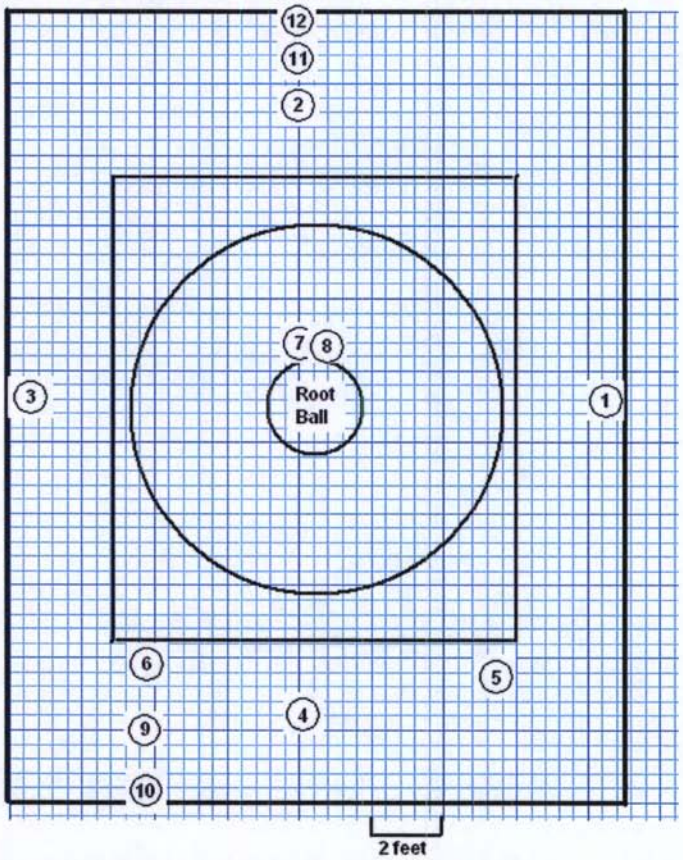


Figure 21. Second set of soil samples around the Peach Tree.

Loc. #	ID	Sample Description	Results (pCi/g)
1	S103	Peach mid E 3 ft out 0-6 in	11.0
2	S104	Peach mid N 3 ft out 0-6 in	21.8
3	S105	Peach mid W 3 ft out 0-6 in	7.58
4	S106	Peach mid S 3 ft out 0-6 in	4.93
5	S107	Peach SE 1 ft out 0-6 in	6.73
6	S108	Peach SW 1 ft out 0-6 in	64.4
7	S109	Peach Center 0-6 in (soil and clay)	41.4
8	S110	Peach Center 6-12 in (clay)	5.36
9	S117	Peach SW 3 ft out 0-6 in.	8.88
10	S118	Peach SW 5 ft out 0-6 in.	6.5
11	S119	Peach N 4 ft out 0-6 in	21.5
12	S120	Peach N 5 ft out 0-6 in	11.9

Table 11. Results of second set of soil samples around the Peach Tree.

Based on this information, an area 19 feet wide by 25 feet long around the Peach Tree was excavated to a depth of 18 inches. Photographs of the excavation are included below.

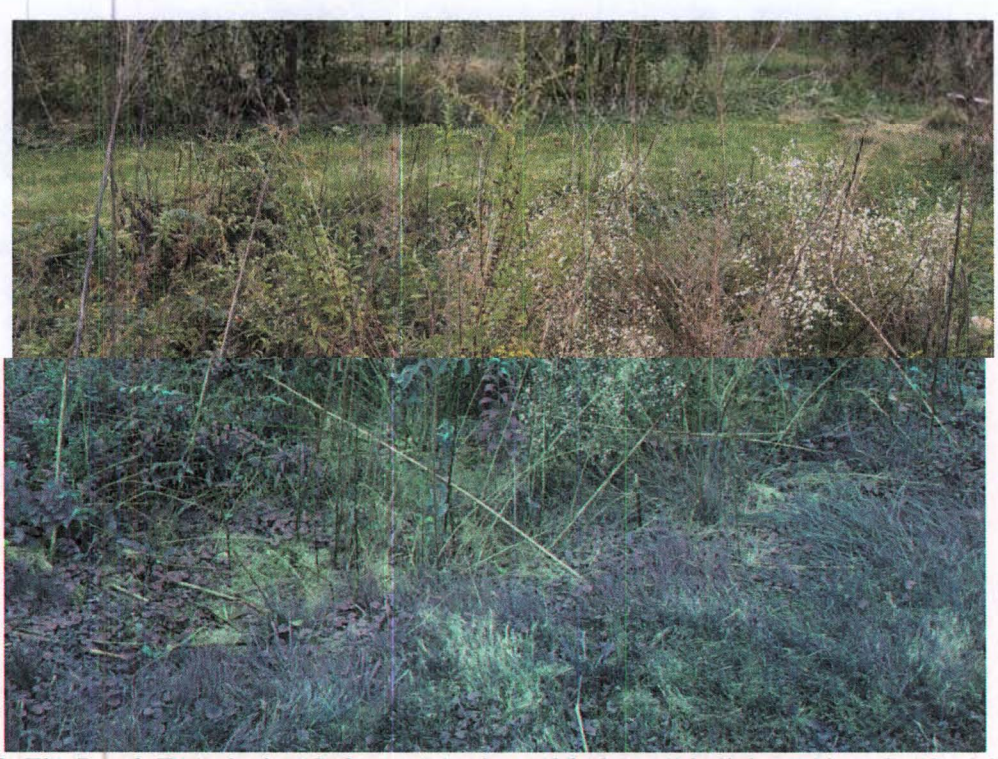


Figure 22. The Peach Tree site just before excavation, with the root ball depression clearly visible.

Figure 23. The beginning of the Peach Tree area excavation.

Figure 24. Soil being placed into a Super Sack at the Peach Tree site.

Figure 25. Securing and moving one of the Super Sacks full of soil near the Peach Tree.

Figure 26. Ensuring that the Peach Tree area excavation has reached the proper depth (18 inches).

Figure 27. The Peach Tree site after excavation but before sampling.

Figure 28. Sampling the Peach Tree area after excavation.

Post-Excavation Sampling

After the excavation, 14 soil samples were obtained and analyzed. The locations and results of these samples are shown below in Figure 29 and Table 12.

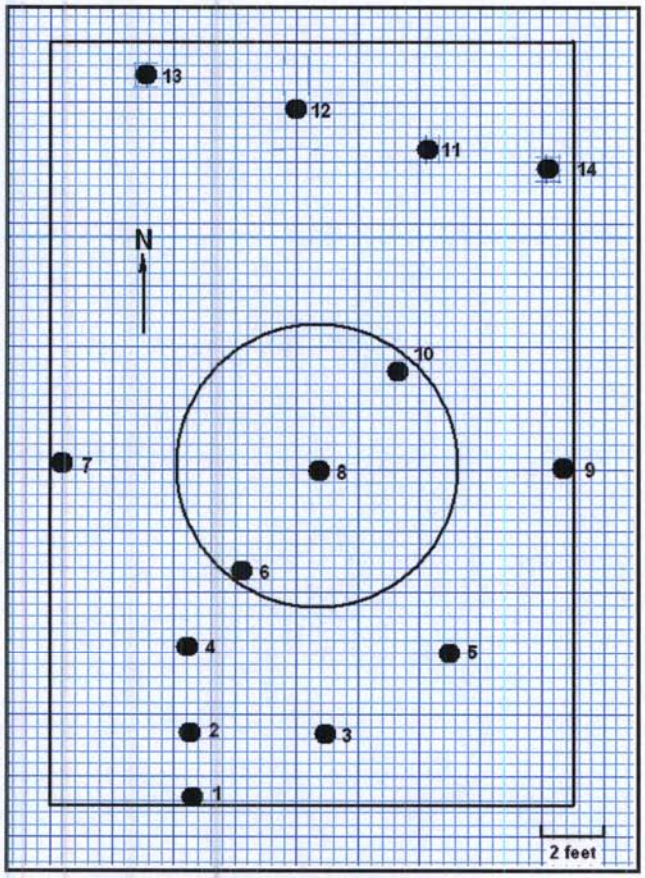


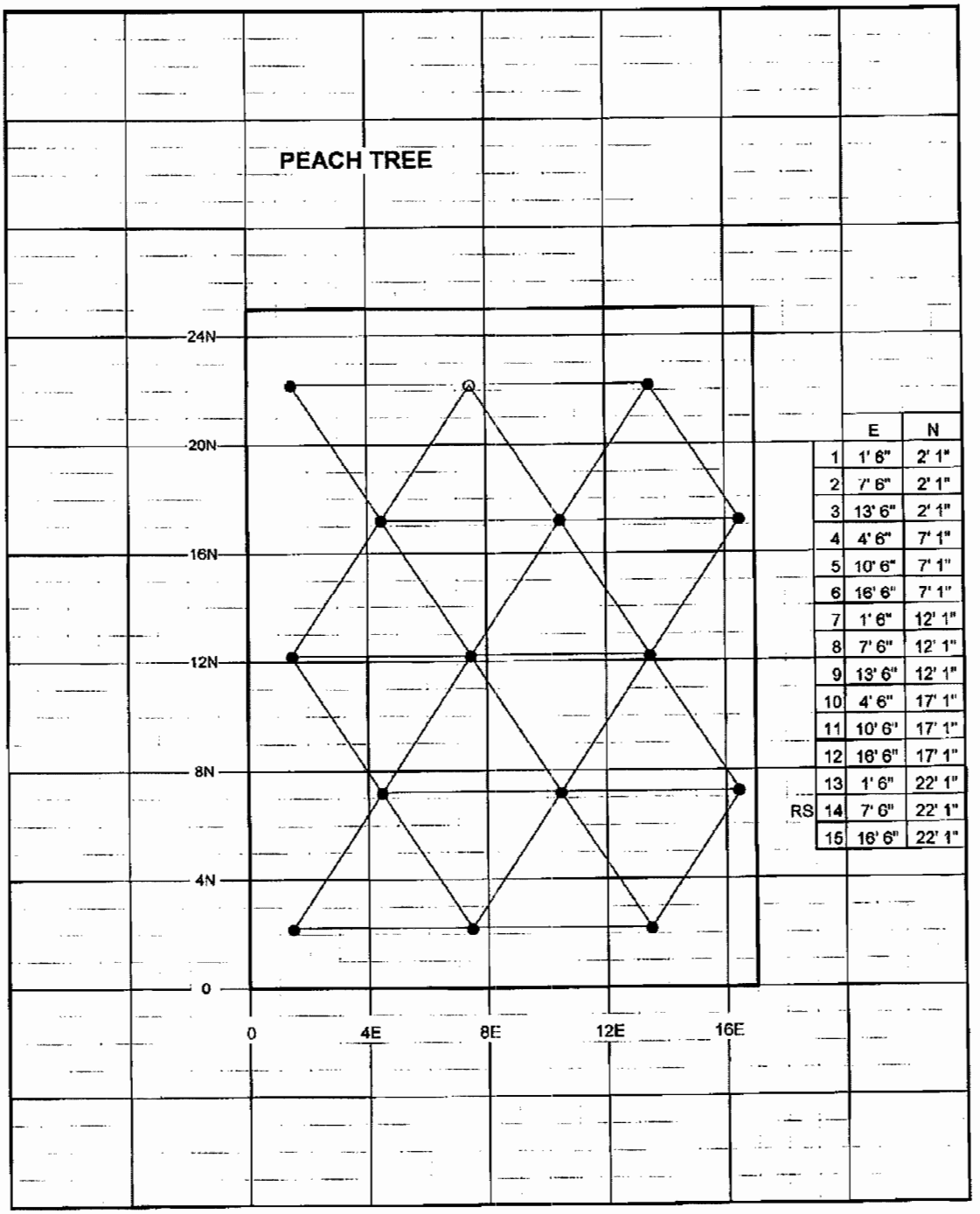
Figure 29. Final soil sample locations for the Peach Tree area.

ID	Results (pCi/g)
PES 1	1.83
PES 2	3.0
PES 3	1.13
PES 4	3.84
PES 5	2.3
PES 6	4.88
PES 7	0.659
PES 8	3.94
PES 9	1.42
PES 10	3.23
PES 11	1.21
PES 12	1.27
PES 13	0.00
PES 14	3.95

Table 12. Final soil sample results for the Peach Tree area.

Proposed Sampling Plan

Based on the results of the post-remediation soil scoping samples, the existing Corral area is now ready to have a MARSSIM-compliant sampling plan applied to determine whether or not the release criteria can be met. That sampling plan consists of 15 sample points, randomly selected based on MARSSIM guidelines. Proposed sample locations are shown in Figure 30 below. Two samples will be obtained at each point: one at 0" to 6" and the second from 6" to 12" below the current grade level. A total of 30 soil samples will be collected from this location.



		E	N
	1	1' 6"	2' 1"
	2	7' 6"	2' 1"
	3	13' 6"	2' 1"
	4	4' 6"	7' 1"
	5	10' 6"	7' 1"
	6	16' 6"	7' 1"
	7	1' 6"	12' 1"
	8	7' 6"	12' 1"
	9	13' 6"	12' 1"
	10	4' 6"	17' 1"
	11	10' 6"	17' 1"
	12	16' 6"	17' 1"
	13	1' 6"	22' 1"
RS	14	7' 6"	22' 1"
	15	16' 6"	22' 1"

Figure 30. Random sample grid indicating the sample points for the Peach Tree area using the MARSSIM method. This area is 17 feet wide by 25 feet long (425 ft^2). Chemtura proposes to take samples at 0" to 6" and from 6" to 12" below the current grade level from the 15 indicated sample points.

F. APPLE TREE AREA

In June of 1983, two apple trees were used in a study where a C-14-labeled material was painted (not sprayed) onto the leaves and fruit of the trees. The trees were planted on the grassy strip of ground between the chain link fence next to Amity Road and the current orchard (see Figure 1). While the trees have long since been removed and disposed as radioactive waste, two iron posts that supported these two experimental apple trees, each containing a few turns of yellow tape, were located. While no words remain visible on the tape, it is the same width as radioactive material warning tape that has been used for many years. When compared to a photograph taken at the time of the experiment (Figure 31), large trees and features of a building in the background confirm the location of the apple tree experiment. One of the researchers pictured in Figure 31 who participated in the June 1983 experiment was also present to help locate the test area. The scoping samples were taken in the location as indicated in Figure 33 below.

Figure 31. Location of the apple trees used in the ^{14}C study, looking southwest. The buildings past the chain link fence, on the other side of Amity Road, were used to locate the position of these trees.

Figure 32. Location of the apple trees used in the ^{14}C study, looking southwest.

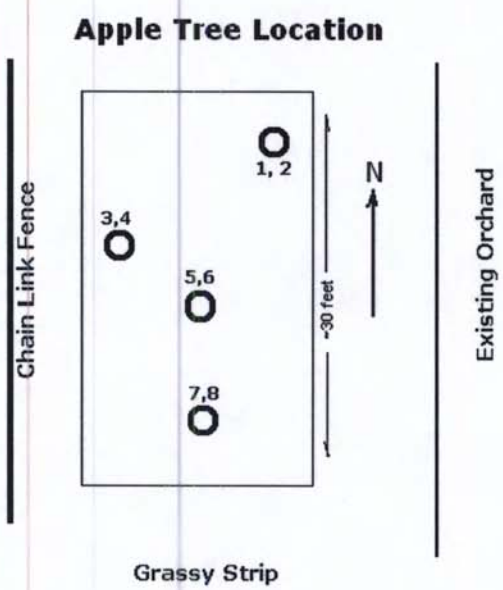


Figure 33. Apple tree location based on photo in Figs. 31 and 32, showing sample points.

Drawing Sample Location	Sample Description	ID#**	Result (pCi/g)
1	Upper apple NE 0"-6"	S62	1.95
2	Upper apple NE 6"-12"	S63	0.25
3	Upper apple SW 0"-6"	S64	-0.245
4	Upper apple SW 6"-12"	S65	3.03
5	Lower apple Ctr 0"-6"	S66	0.00
6	Lower apple Ctr 6"-12"	S67	-0.252
7	Lowest apple Ctr 0"-6"	S68	0.335
8	Lowest apple Ctr 6"-12"	S69	0.643

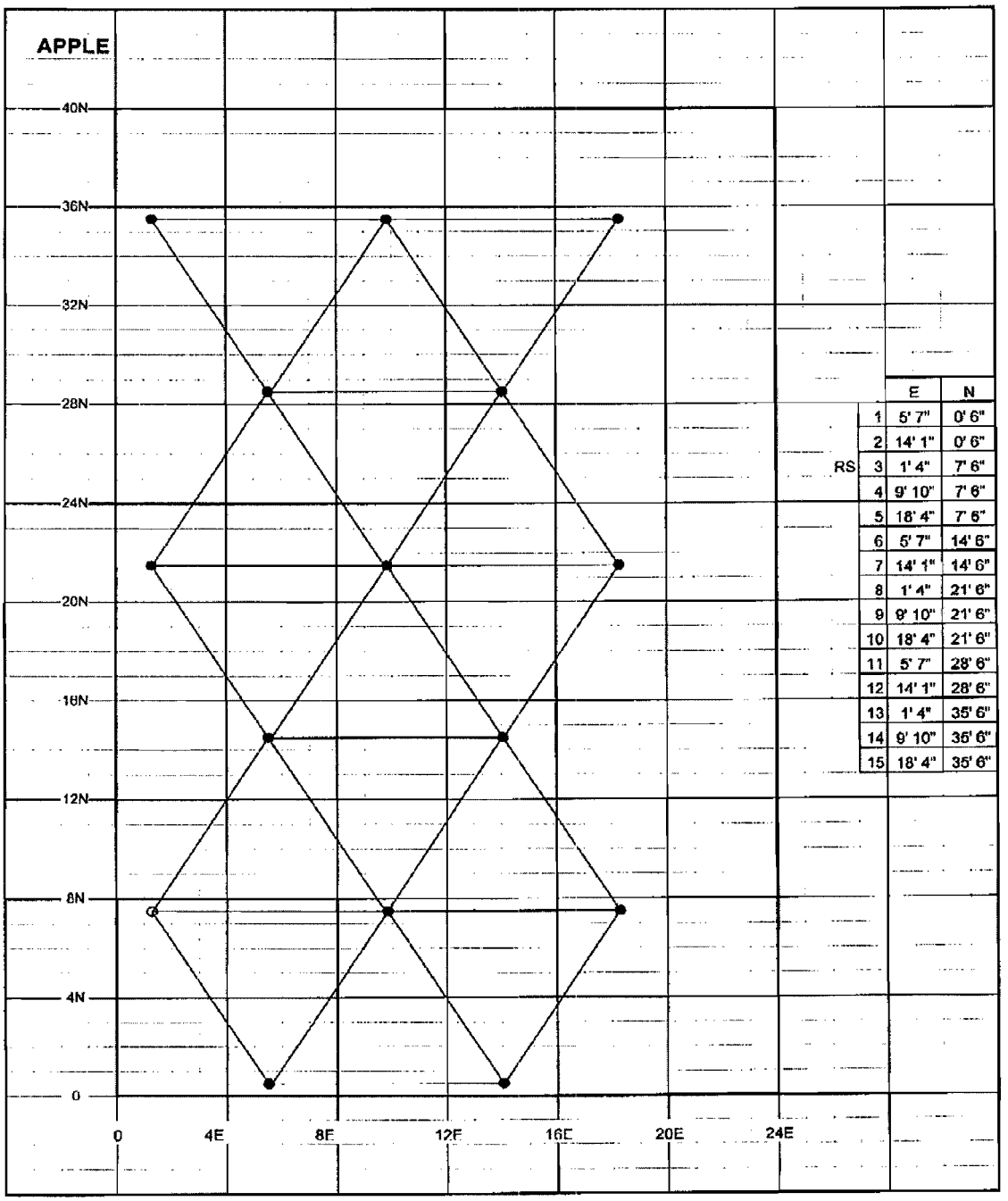
** Sample ID numbers from Eberline reports 07-11020 and 07-11021.

Table 13. Soil sample results from the area of the apple tree.

Proposed Sampling Plan

Based on the results of the soil scoping samples, the Apple Tree area is now ready to have a MARSSIM-compliant sampling plan applied to determine whether or not the release criteria can be met. That sampling plan consists of 15 sample points, randomly selected based on MARSSIM

guidelines. Proposed sample locations are shown in Figure 34 below. Two samples will be obtained at each point: one at 0" to 6" and the second from 6" to 12" below the current grade level. A total of 30 soil samples will be collected from this location.



		E	N
	1	5' 7"	0' 6"
	2	14' 1"	0' 6"
RS	3	1' 4"	7' 6"
	4	9' 10"	7' 6"
	5	18' 4"	7' 6"
	6	5' 7"	14' 6"
	7	14' 1"	14' 6"
	8	1' 4"	21' 6"
	9	9' 10"	21' 6"
	10	18' 4"	21' 6"
	11	5' 7"	28' 6"
	12	14' 1"	28' 6"
	13	1' 4"	35' 6"
	14	9' 10"	35' 6"
	15	18' 4"	35' 6"

Figure 34. Random sample grid indicating the sample points for the Apple Tree area using the MARSSIM method. This area is 24 feet wide by 40 feet long (960 ft^2). Chemtura proposes to take samples at 0" to 6" and from 6" to 12" below the current grade level from the 15 indicated sample points.

G. Grape Area

In September 1979, a grape vine was treated with a C-14-labeled compound as part of an agrochemical research study. The ground was covered with plastic before spraying the plants. During the experiment, only four rows of grape arbors were in place. In October 2007 during the initial phase of this decommissioning process four scoping samples were taken from two rows in the area. These sample results were less than the applicable limits for C-14 in soil. The locations and results of these soil analyses are shown in Figure 35 and Table 14 below.

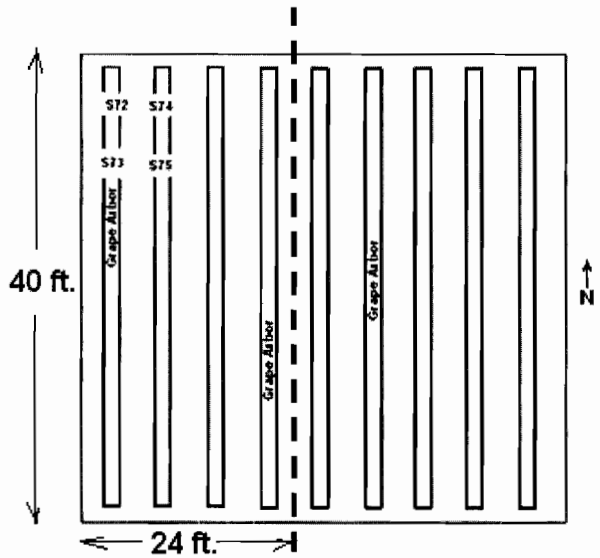


Figure 35. The grape area.

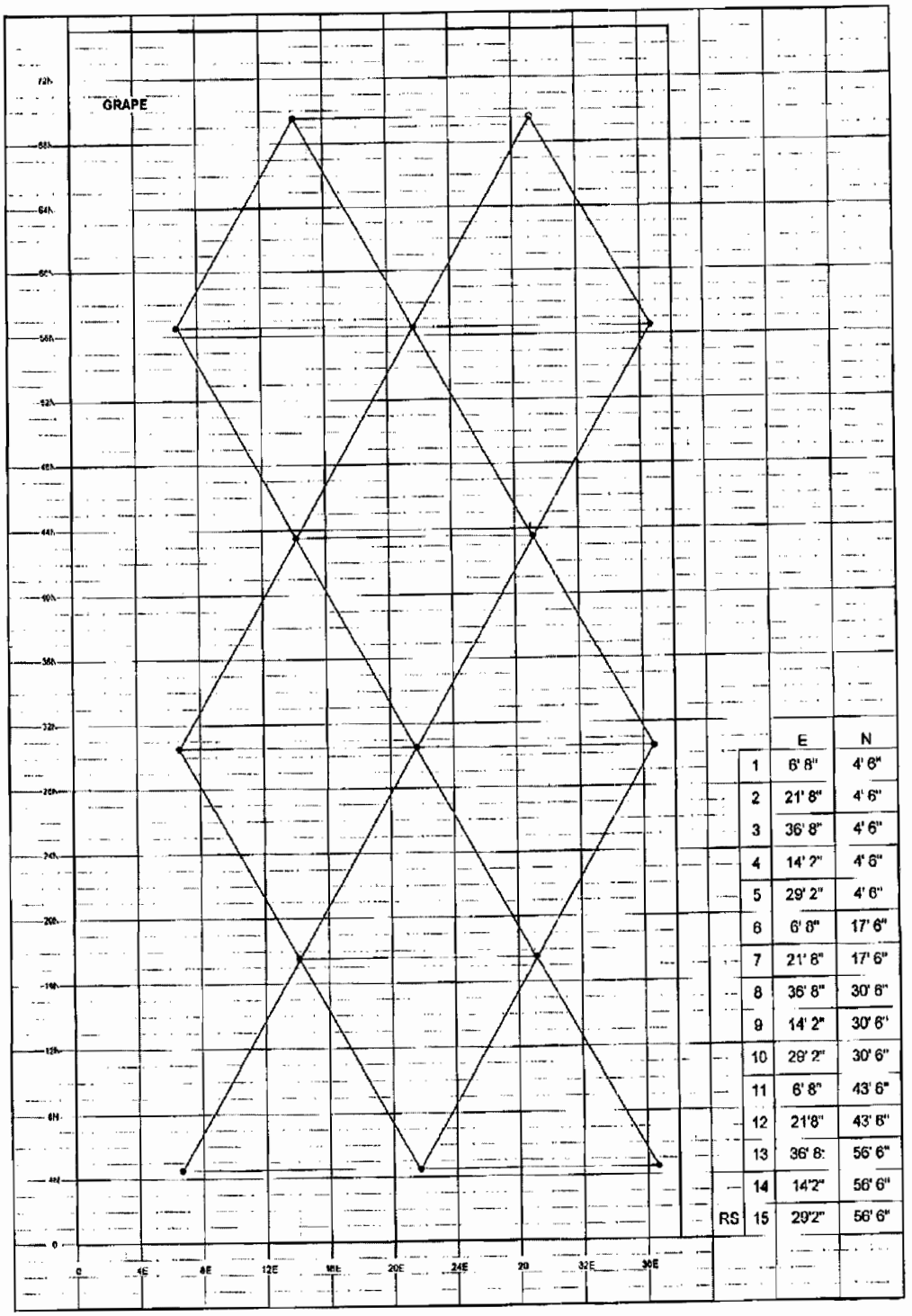
Sample #	Location	Results (pCi/g)
S72	Grape 0-6"	1.31
S73	Grape 0-6"	0.648
S74	Grape 0-6"	0.647
S75	Grape 0-6"	0.331

Table 14. Results of soil scoping samples from the grape area.

Proposed Sampling Plan

Based on the results of the soil scoping samples, the Grape Area is now ready to have a MARSSIM-compliant sampling plan applied to determine whether or not the release criteria can be met. The area to be included in the sampling plan will be expanded to include the full length of the first four (western-most) rows of grapes. Additional rows of grape vines were subsequently planted to the east of the original four rows, but this took place after the study in question. The additional rows that now exist were not part of the study.

That sampling plan consists of 15 sample points, randomly selected based on MARSSIM guidelines. Proposed sample locations are shown in Figure 36 below. Two samples will be obtained at each point: one at 0" to 6" and the second from 6" to 12" below the current grade level. A total of 30 soil samples will be collected from this location.



		E	N
	1	6' 8"	4' 6"
	2	21' 8"	4' 6"
	3	36' 8"	4' 6"
	4	14' 2"	4' 6"
	5	29' 2"	4' 6"
	6	6' 8"	17' 6"
	7	21' 8"	17' 6"
	8	36' 8"	30' 6"
	9	14' 2"	30' 6"
	10	29' 2"	30' 6"
	11	6' 8"	43' 6"
	12	21'8"	43' 6"
	13	36' 8:	56' 6"
	14	14'2"	56' 6"
RS	15	29'2"	56' 6"

Figure 36. Random sample grid indicating the sample points for the Grape area using the MARSSIM method. This area is 38 feet wide by 75 feet long (2,850 ft^2).Chemtura proposes to take samples at 0" to 6" and from 6" to 12" below the current grade level from the 15 indicated sample points.

5. Waste Disposal

As described earlier (Sections D and E of this report) soil was excavated from the Corral and Peach Tree areas. All contaminated soil waste was placed in DOT-approved "Super Sacks" for transportation to the radioactive waste disposal facility in Clive, Utah. Manifests for the waste shipment are contained in Attachment D. A total of 2295 cubic feet of soil (50.67 tons) were removed from the Corral and Peach Tree areas of this site. Several photographs of the waste loading operations are included below.

Figure 37. Super Sack staging area in the parking lot.

Figure 38. Loading a Super Sack onto a transport vehicle.

Figure 39. A full truck ready for departure.

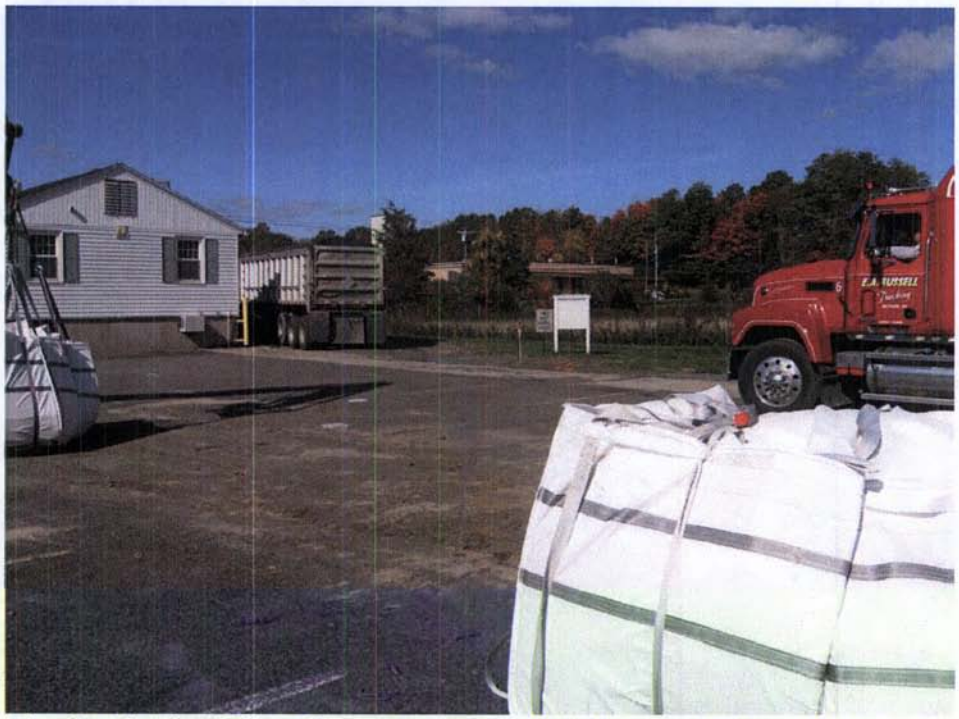


Figure 40. A full truck leaving the site (left) and an empty truck (red cab) moving into position for loading.

6. Conclusion

With the results of the soil scoping samples and subsequent removal and disposal of all the contaminated soil described in this report and proposed sampling plan, Chemtura's viewpoint is that the affected areas of the site are now ready to have a MARSSIM-compliant sampling plan applied to determine whether or not the release criteria can be met. Details of this sampling plan have been provided previously in this document.

K. Paul Steinmeyer, RRPT
Senior Health Physicist

6/11/10
Date

Attachment A

Chemical Analysis of Waste Soil And CIH Review of Data

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 220-5740-1

SDG Number: 220-5740

Job Description: 14C soils - Full TCLP

For:
Chemtura Corporation
199 Benson Road
Middlebury, CT 06749

Attention: Mr. Jay Nag

Joan Widomski

Designee for
Erin A Gaus
Project Manager I
erin.gaus@testamericainc.com
07/29/2008

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Connecticut Certifications and Approvals: CTDOH PH-047, MADEP CT023, RIDOH A43, NYDOH 10602, NY NELAP 10602, NHDES 2528, NJDEP CT410, ME DOH CT023, UT DOH 2032614458

TestAmerica Laboratories, Inc.
TestAmerica Connecticut 128 Long Hill Cross Road, Shelton, CT 06484
Tel (203) 929-8140 Fax (203) 929-8142 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Job Narrative
220-J5740-1

Comments
As per the State of Connecticut Reasonable Confidence Protocol (CTRCP), a Laboratory Analysis QA/QC Certification Form has been provided with this report.

The following case narrative contains information detailing the QA/QC performance criteria outliers and other documentation as specified in the Connecticut Department of Environmental Protection CTRCP documents. Also described are any issues or limits that are outside of method or client specific acceptance criteria.

The laboratory data qualifiers contained within the report are method specific. The CTRCP QA/QC outliers are described solely in the case narrative.

In order for the laboratory to achieve the required Connecticut Remediation Standard Criteria (CTRSR) for these samples, the analytical results were evaluated to the Method Detection Limit (MDL).

No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
Method(s) 8260B: The laboratory control standard (LCS) for batch 18024 was outside CTRCP control limits for the following analytes: methyl ethyl ketone.

Method(s) 8260B: The initial calibration curve analyzed on instrument MSV on 7/2/08 was outside CTRCP acceptance criteria for 2-butanone and 1,2-dichloroethane-d4.

No other analytical or quality issues were noted.

GC/MS Semi VOA
No analytical or quality issues were noted.

GC Semi VOA
Method(s) 8081A: The continuing calibration verification (CCV) analyzed on 7/12/08 recovered above the CTRCP upper control limit for endrin.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
SDG: 220-5740

Laboratory Chronicle

Lab ID: 220-5740-1 **Client ID: CORRAL AREA**

Sample Date/Time: 07/02/2008 10:25 Received Date/Time: 07/03/2008 09:38

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-5740-B-1-E		220-18024		07/15/2008 14:33	1	TAL CT	DH
A:8260B	220-5740-B-1-E		220-18024		07/15/2008 14:33	1	TAL CT	DH
P:3510C	220-5740-B-1-B		220-17933	220-17905	07/11/2008 12:52	1	TAL CT	PHG
A:8270C	220-5740-B-1-B		220-17933	220-17905	07/12/2008 16:08	1	TAL CT	DP
P:3510C	220-5740-B-1-C		220-17825	220-17909	07/11/2008 14:25	1	TAL CT	PHG
A:8081A	220-5740-B-1-C		220-17825	220-17909	07/12/2008 15:48	1	TAL CT	DP
P:3010A	220-5740-B-1-D		220-18032	220-17952	07/14/2008 10:48	1	TAL CT	MEC
A:6010B	220-5740-B-1-D		220-18032	220-17952	07/15/2008 13:49	1	TAL CT	NP
P:7470A	220-5740-B-1-F		220-18013	220-17967	07/14/2008 14:08	1	TAL CT	MEC
A:7470A	220-5740-B-1-F		220-18013	220-17967	07/15/2008 14:09	1	TAL CT	JFV

Lab ID: 220-5740-2 **Client ID: PEACH TREE AREA**

Sample Date/Time: 07/02/2008 10:40 Received Date/Time: 07/03/2008 09:38

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-5740-B-2-E		220-18024		07/15/2008 14:06	1	TAL CT	DH
A:8260B	220-5740-B-2-E		220-18024		07/15/2008 14:06	1	TAL CT	DH
P:3510C	220-5740-B-2-B		220-17933	220-17905	07/11/2008 12:52	1	TAL CT	PHG
A:8270C	220-5740-B-2-B		220-17933	220-17905	07/12/2008 16:32	1	TAL CT	DP
P:3510C	220-5740-B-2-C		220-17825	220-17909	07/11/2008 14:25	1	TAL CT	PHG
A:8081A	220-5740-B-2-C		220-17825	220-17909	07/12/2008 16:09	1	TAL CT	DP
P:3010A	220-5740-B-2-D		220-18032	220-17952	07/14/2008 10:48	1	TAL CT	MEC
A:6010B	220-5740-B-2-D		220-18032	220-17952	07/15/2008 14:06	1	TAL CT	NP
P:7470A	220-5740-B-2-F		220-18013	220-17967	07/14/2008 14:08	1	TAL CT	MEC
A:7470A	220-5740-B-2-F		220-18013	220-17967	07/15/2008 14:10	1	TAL CT	JFV

Lab ID: MB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 220-18024/3		220-18024		07/15/2008 11:36	1	TAL CT	DH
A:8260B	MB 220-18024/3		220-18024		07/15/2008 11:36	1	TAL CT	DH
P:3510C	MB 220-17905/1-A		220-17933	220-17905	07/11/2008 12:52	1	TAL CT	PHG
A:8270C	MB 220-17905/1-A		220-17933	220-17905	07/12/2008 13:41	1	TAL CT	DP
P:3510C	MB 220-17909/1-A		220-17825	220-17909	07/11/2008 14:25	1	TAL CT	PHG
A:8081A	MB 220-17909/1-A		220-17825	220-17909	07/12/2008 13:40	1	TAL CT	DP
P:3010A	MB 220-17952/1-A		220-18032	220-17952	07/14/2008 10:48	1	TAL CT	MEC
A:6010B	MB 220-17952/1-A		220-18032	220-17952	07/15/2008 13:32	1	TAL CT	NP
P:7470A	MB 220-17967/1-A		220-18013	220-17967	07/14/2008 14:08	1	TAL CT	MEC
A:7470A	MB 220-17967/1-A		220-18013	220-17967	07/15/2008 14:05	1	TAL CT	JFV

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
SDG: 220-5740

Laboratory Chronicle

Lab ID: LB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LB 220-17786/8-A		220-18024		07/15/2008 12:20	1	TAL CT	DH
A:8260B	LB 220-17786/8-A		220-18024		07/15/2008 12:20	1	TAL CT	DH
P:3510C	LB 220-17890/1-B		220-17933	220-17905	07/11/2008 12:52	1	TAL CT	PHG
A:8270C	LB 220-17890/1-B		220-17933	220-17905	07/12/2008 14:29	1	TAL CT	DP
P:3510C	LB 220-17890/1-D		220-17825	220-17909	07/11/2008 14:25	1	TAL CT	PHG
A:8081A	LB 220-17890/1-D		220-17825	220-17909	07/12/2008 14:23	1	TAL CT	DP
P:3010A	LB 220-17890/1-E		220-18032	220-17952	07/14/2008 10:48	1	TAL CT	MEC
A:6010B	LB 220-17890/1-E		220-18032	220-17952	07/15/2008 13:43	1	TAL CT	NP
P:7470A	LB 220-17890/1-G		220-18013	220-17967	07/14/2008 14:08	1	TAL CT	MEC
A:7470A	LB 220-17890/1-G		220-18013	220-17967	07/15/2008 14:07	1	TAL CT	JFV

Lab ID: LCS **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 220-18024/2		220-18024		07/15/2008 09:45	1	TAL CT	DH
A:8260B	LCS 220-18024/2		220-18024		07/15/2008 09:45	1	TAL CT	DH
P:3510C	LCS 220-17905/4-A		220-17933	220-17905	07/11/2008 12:52	1	TAL CT	PHG
A:8270C	LCS 220-17905/4-A		220-17933	220-17905	07/12/2008 14:54	1	TAL CT	DP
P:3510C	LCS 220-17909/4-A		220-17825	220-17909	07/11/2008 14:25	1	TAL CT	PHG
A:8081A	LCS 220-17909/4-A		220-17825	220-17909	07/12/2008 14:44	1	TAL CT	DP
P:3010A	LCS 220-17952/2-A		220-18032	220-17952	07/14/2008 10:48	1	TAL CT	MEC
A:6010B	LCS 220-17952/2-A		220-18032	220-17952	07/15/2008 13:38	1	TAL CT	NP
P:7470A	LCS 220-17967/2-A		220-18013	220-17967	07/14/2008 14:08	1	TAL CT	MEC
A:7470A	LCS 220-17967/2-A		220-18013	220-17967	07/15/2008 14:06	1	TAL CT	JFV

Lab References:
TAL CT = TestAmerica Connecticut

METHOD SUMMARY

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	TAL CT	SW846 8260B	
Toxicity Characteristic Leaching Procedure (ZHE)	TAL CT		SW846 1311
Purge and Trap on Leachates	TAL CT		SW846 5030B
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	TAL CT	SW846 8270C	
Toxicity Characteristic Leaching Procedure	TAL CT		SW846 1311
Separatory Funnel Liquid-Liquid Extraction	TAL CT		SW846 3510C
Organochlorine Pesticides by Gas Chromatography	TAL CT	SW846 8081A	
Toxicity Characteristic Leaching Procedure	TAL CT		SW846 1311
Separatory Funnel Liquid-Liquid Extraction	TAL CT		SW846 3510C
Inductively Coupled Plasma - Atomic Emission Spectrometry	TAL CT	SW846 6010B	
Toxicity Characteristic Leaching Procedure	TAL CT		SW846 1311
Acid Digestion of Aqueous Samples and Extracts for	TAL CT		SW846 3010A
Mercury in Liquid Waste (Manual Cold Vapor Technique)	TAL CT	SW846 7470A	
Toxicity Characteristic Leaching Procedure (Hg Only)	TAL CT		SW846 1311
Mercury in Liquid Waste (Manual Cold Vapor	TAL CT		SW846 7470A
TCLP SW846 8151 Herbicides	TAL SL	SW846 8151	

Lab References:

TAL CT = TestAmerica Connecticut

TAL SL = TestAmerica St. Louis

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Method	Analyst	Analyst ID
SW846 8260B	Humbert, Dave	DH
SW846 8270C	Passarella, Danielle	DP
SW846 8081A	Passarella, Danielle	DP
SW846 6010B	Petronchak, Nestor	NP
SW846 7470A	Voytek, Joseph F	JFV

SAMPLE SUMMARY

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
220-5740-1	CORRAL AREA	Solid	07/02/2008 1025	07/03/2008 0938
220-5740-2	PEACH TREE AREA	Solid	07/02/2008 1040	07/03/2008 0938

SAMPLE RESULTS

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **CORRAL AREA**

Lab Sample ID: 220-5740-1
Client Matrix: Solid

Date Sampled: 07/02/2008 1025
Date Received: 07/03/2008 0938

8260B Volatile Organic Compounds by GC/MS-TCLP

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 07/15/2008 1433
Date Prepared: 07/15/2008 1433
Date Leached: 07/14/2008 1314

Analysis Batch: 220-18024
Leachate Batch: 220-17963

Instrument ID: HP 6890/5973 GC/MS
Lab File ID: V6743.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Vinyl chloride		0.0050	U	0.00098	0.0050
1,1-Dichloroethene		0.0050	U	0.00083	0.0050
Methyl Ethyl Ketone		0.010	U	0.0011	0.010
Chloroform		0.0050	U	0.00067	0.0050
Carbon tetrachloride		0.0050	U	0.0011	0.0050
Benzene		0.0050	U	0.00074	0.0050
1,2-Dichloroethane		0.0050	U *	0.00072	0.0050
Trichloroethene		0.0050	U	0.00062	0.0050
Tetrachloroethene		0.0050	U	0.00081	0.0050
Chlorobenzene		0.0050	U	0.00072	0.0050

Surrogate	%Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116	53 - 125
4-Bromofluorobenzene	82	73 - 127
Dibromofluoromethane	115	54 - 137
Toluene-d8 (Surr)	80	63 - 121

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID: 220-5740-2
Client Matrix: Solid

Date Sampled: 07/02/2008 1040
Date Received: 07/03/2008 0938

8260B Volatile Organic Compounds by GC/MS-TCLP

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 07/15/2008 1406
Date Prepared: 07/15/2008 1406
Date Leached: 07/14/2008 1323

Analysis Batch: 220-18024
Leachate Batch: 220-17963

Instrument ID: HP 6890/5973 GC/MS
Lab File ID: V6742.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Vinyl chloride		0.0050	U	0.00098	0.0050
1,1-Dichloroethene		0.0050	U	0.00083	0.0050
Methyl Ethyl Ketone		0.010	U	0.0011	0.010
Chloroform		0.0050	U	0.00067	0.0050
Carbon tetrachloride		0.0050	U	0.0011	0.0050
Benzene		0.0050	U	0.00074	0.0050
1,2-Dichloroethane		0.0050	U *	0.00072	0.0050
Trichloroethene		0.0021	J B	0.00062	0.0050
Tetrachloroethene		0.0050	U	0.00081	0.0050
Chlorobenzene		0.0050	U	0.00072	0.0050

Surrogate	%Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113	53 - 125
4-Bromofluorobenzene	79	73 - 127
Dibromofluoromethane	114	54 - 137
Toluene-d8 (Surr)	78	63 - 121

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **CORRAL AREA**

Lab Sample ID: 220-5740-1
Client Matrix: Solid

Date Sampled: 07/02/2008 1025
Date Received: 07/03/2008 0938

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)-TCLP

Method:	8270C	Analysis Batch: 220-17933		Instrument ID:	HP 6890/5975
Preparation:	3510C	Prep Batch: 220-17905		Lab File ID:	C6675.D
Dilution:	1.0	Leachate Batch: 220-17890		Initial Weight/Volume:	500 mL
Date Analyzed:	07/12/2008 1608			Final Weight/Volume:	1 mL
Date Prepared:	07/11/2008 1252			Injection Volume:	1.0 uL
Date Leached:	07/10/2008 1715				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
1,4-Dichlorobenzene		0.020	U	0.0010	0.020
2,4-Dinitrotoluene		0.020	U	0.00084	0.020
2,4,5-Trichlorophenol		0.10	U	0.0011	0.10
2,4,6-Trichlorophenol		0.020	U	0.00099	0.020
2-Methylphenol		0.020	U	0.0012	0.020
Hexachlorobenzene		0.020	U	0.00095	0.020
Hexachlorobutadiene		0.020	U	0.0017	0.020
Hexachloroethane		0.020	U	0.0010	0.020
Nitrobenzene		0.020	U	0.0015	0.020
Pentachlorophenol		0.10	U	0.0024	0.10
Pyridine		0.040	U	0.0077	0.040
4-Methylphenol		0.020	U	0.00078	0.020

Surrogate	%Rec	Acceptance Limits
2,4,6-Tribromophenol	77	29 - 126
2-Fluorobiphenyl	65	43 - 116
2-Fluorophenol	52	21 - 97
Nitrobenzene-d5	67	38 - 113
Terphenyl-d14	75	10 - 119
Phenol-d5	42	18 - 97

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID: 220-5740-2
Client Matrix: Solid

Date Sampled: 07/02/2008 1040
Date Received: 07/03/2008 0938

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)-TCLP

Method:	8270C	Analysis Batch: 220-17933		Instrument ID:	HP 6890/5975
Preparation:	3510C	Prep Batch: 220-17905		Lab File ID:	C6676.D
Dilution:	1.0	Leachate Batch: 220-17890		Initial Weight/Volume:	500 mL
Date Analyzed:	07/12/2008 1632			Final Weight/Volume:	1 mL
Date Prepared:	07/11/2008 1252			Injection Volume:	1.0 uL
Date Leached:	07/10/2008 1715				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
1,4-Dichlorobenzene		0.020	U	0.0010	0.020
2,4-Dinitrotoluene		0.020	U	0.00084	0.020
2,4,5-Trichlorophenol		0.10	U	0.0011	0.10
2,4,6-Trichlorophenol		0.020	U	0.00099	0.020
2-Methylphenol		0.020	U	0.0012	0.020
Hexachlorobenzene		0.020	U	0.00095	0.020
Hexachlorobutadiene		0.020	U	0.0017	0.020
Hexachloroethane		0.020	U	0.0010	0.020
Nitrobenzene		0.020	U	0.0015	0.020
Pentachlorophenol		0.10	U	0.0024	0.10
Pyridine		0.040	U	0.0077	0.040
4-Methylphenol		0.020	U	0.00078	0.020

Surrogate	%Rec	Acceptance Limits
2,4,6-Tribromophenol	73	29 - 126
2-Fluorobiphenyl	61	43 - 116
2-Fluorophenol	50	21 - 97
Nitrobenzene-d5	63	38 - 113
Terphenyl-d14	75	10 - 119
Phenol-d5	40	18 - 97

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **CORRAL AREA**

Lab Sample ID: 220-5740-1
Client Matrix: Solid

Date Sampled: 07/02/2008 1025
Date Received: 07/03/2008 0938

8081A Organochlorine Pesticides by Gas Chromatography-TCLP

Method:	8081A	Analysis Batch: 220-17825	Instrument ID:	HP 5890 with dual ECD	
Preparation:	3510C	Prep Batch: 220-17909	Lab File ID:	C7611086.D	
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	200 mL	
Date Analyzed:	07/12/2008 1548		Final Weight/Volume:	10 mL	
Date Prepared:	07/11/2008 1425		Injection Volume:	1.0 uL	
Date Leached:	07/10/2008 1715		Column ID:	PRIMARY	

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Chlordane (technical)		0.0025	U	0.00071	0.0025
Endrin		0.00050	U	0.000070	0.00050
Heptachlor		0.00025	U	0.000038	0.00025
Heptachlor epoxide		0.00025	U	0.000029	0.00025
gamma-BHC (Lindane)		0.00025	U	0.000026	0.00025
Methoxychlor		0.0025	U	0.00045	0.0025
Toxaphene		0.012	U	0.0011	0.012

Surrogate	%Rec	Acceptance Limits
DCB Decachlorobiphenyl	83	29 - 156
Tetrachloro-m-xylene	125	53 - 144

Method:	8081A	Analysis Batch: 220-17825	Instrument ID:	HP 5890 with dual ECD
Preparation:	3510C	Prep Batch: 220-17909	Lab File ID:	D7611086.D
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	200 mL
Date Analyzed:	07/12/2008 1548		Final Weight/Volume:	10 mL
Date Prepared:	07/11/2008 1425		Injection Volume:	1.0 uL
Date Leached:	07/10/2008 1715		Column ID:	SECONDARY

Surrogate	%Rec	Acceptance Limits
DCB Decachlorobiphenyl	83	29 - 156
Tetrachloro-m-xylene	122	53 - 144

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID: 220-5740-2
Client Matrix: Solid

Date Sampled: 07/02/2008 1040
Date Received: 07/03/2008 0938

8081A Organochlorine Pesticides by Gas Chromatography-TCLP

Method:	8081A	Analysis Batch: 220-17825	Instrument ID:	HP 5890 with dual ECD	
Preparation:	3510C	Prep Batch: 220-17909	Lab File ID:	C7611087.D	
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	200 mL	
Date Analyzed:	07/12/2008 1609		Final Weight/Volume:	10 mL	
Date Prepared:	07/11/2008 1425		Injection Volume:	1.0 uL	
Date Leached:	07/10/2008 1715		Column ID:	PRIMARY	

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Chlordane (technical)		0.0025	U	0.00071	0.0025
Endrin		0.00050	U	0.000070	0.00050
Heptachlor		0.00025	U	0.000038	0.00025
Heptachlor epoxide		0.00025	U	0.000029	0.00025
gamma-BHC (Lindane)		0.00025	U	0.000026	0.00025
Methoxychlor		0.0025	U	0.00045	0.0025
Toxaphene		0.012	U	0.0011	0.012

Surrogate	%Rec	Acceptance Limits
DCB Decachlorobiphenyl	82	29 - 156
Tetrachloro-m-xylene	117	53 - 144

Method:	8081A	Analysis Batch: 220-17825	Instrument ID:	HP 5890 with dual ECD
Preparation:	3510C	Prep Batch: 220-17909	Lab File ID:	C7611087.D
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	200 mL
Date Analyzed:	07/12/2008 1609		Final Weight/Volume:	10 mL
Date Prepared:	07/11/2008 1425		Injection Volume:	1.0 uL
Date Leached:	07/10/2008 1715		Column ID:	SECONDARY

Surrogate	%Rec	Acceptance Limits
DCB Decachlorobiphenyl	80	29 - 156
Tetrachloro-m-xylene	120	53 - 144

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **CORRAL AREA**

Lab Sample ID:	220-5740-1	Date Sampled:	07/02/2008 1025
Client Matrix:	Solid	Date Received:	07/03/2008 0938

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-TCLP

Method:	6010B	Analysis Batch: 220-18032	Instrument ID:	TJA Trace ICAP
Preparation:	3010A	Prep Batch: 220-17952	Lab File ID:	W071508
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	10 mL
Date Analyzed:	07/15/2008 1349		Final Weight/Volume:	50 mL
Date Prepared:	07/14/2008 1048			
Date Leached:	07/10/2008 1715			

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Arsenic		0.20	U	0.022	0.20
Barium		0.35		0.0060	0.025
Cadmium		0.050	U	0.014	0.050
Chromium		0.050	U	0.0050	0.050
Lead		0.050	U	0.015	0.050
Selenium		0.15	U	0.016	0.15
Silver		0.030	U	0.0065	0.030

7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)-TCLP

Method:	7470A	Analysis Batch: 220-18013	Instrument ID:	Perkin Elmer FIMS
Preparation:	7470A	Prep Batch: 220-17967	Lab File ID:	N/A
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	5 mL
Date Analyzed:	07/15/2008 1409		Final Weight/Volume:	50 mL
Date Prepared:	07/14/2008 1408			
Date Leached:	07/10/2008 1715			

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Mercury		0.0020	U	0.0010	0.0020

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID:	220-5740-2	Date Sampled:	07/02/2008 1040
Client Matrix:	Solid	Date Received:	07/03/2008 0938

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-TCLP

Method:	6010B	Analysis Batch: 220-18032		Instrument ID:	TJA Trace ICAP
Preparation:	3010A	Prep Batch: 220-17952		Lab File ID:	W071508
Dilution:	1.0	Leachate Batch: 220-17890		Initial Weight/Volume:	10 mL
Date Analyzed:	07/15/2008 1406			Final Weight/Volume:	50 mL
Date Prepared:	07/14/2008 1048				
Date Leached:	07/10/2008 1715				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Arsenic		0.026	J	0.022	0.20
Barium		0.33		0.0060	0.025
Cadmium		0.050	U	0.014	0.050
Chromium		0.050	U	0.0050	0.050
Lead		0.015	J	0.015	0.050
Selenium		0.030	J	0.016	0.15
Silver		0.030	U	0.0065	0.030

7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)-TCLP

Method:	7470A	Analysis Batch: 220-18013		Instrument ID:	Perkin Elmer FIMS
Preparation:	7470A	Prep Batch: 220-17967		Lab File ID:	N/A
Dilution:	1.0	Leachate Batch: 220-17890		Initial Weight/Volume:	5 mL
Date Analyzed:	07/15/2008 1410			Final Weight/Volume:	50 mL
Date Prepared:	07/14/2008 1408				
Date Leached:	07/10/2008 1715				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Mercury		0.0020	U	0.0010	0.0020

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

General Chemistry

Client Sample ID: **CORRAL AREA**

Lab Sample ID: 220-5740-1
Client Matrix: Solid

Date Sampled: 07/02/2008 1025
Date Received: 07/03/2008 0938

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	23.6		%	0.100	0.100	1.0	PercentMoisture
	Anly Batch: 220-18331		Date Analyzed	07/24/2008 1500			
Percent Solids	76.4		%	0.100	0.100	1.0	PercentMoisture
	Anly Batch: 220-18331		Date Analyzed	07/24/2008 1500			

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID: 220-5740-2
Client Matrix: Solid

Date Sampled: 07/02/2008 1040
Date Received: 07/03/2008 0938

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	20.8		%	0.100	0.100	1.0	PercentMoisture
	Anly Batch: 220-18331		Date Analyzed	07/24/2008 1500			
Percent Solids	79.2		%	0.100	0.100	1.0	PercentMoisture
	Anly Batch: 220-18331		Date Analyzed	07/24/2008 1500			

DATA REPORTING QUALIFIERS

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	LCS or LCSD exceeds the control limits
	B	The analyte was found in an associated blank, as well as in the sample.
GC/MS Semi VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
GC Semi VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
Metals		
	U	Indicates analyzed for but not detected.
	J	Sample result is greater than the MDL but below the CRDL

QUALITY CONTROL RESULTS

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Prep Batch: 220-17786					
LB 220-17786/8-A	TCLP SPLPE Leachate Blank	P	Solid	1311	
Prep Batch: 220-17963					
220-5740-1	CORRAL AREA	P	Solid	1311	
220-5740-2	PEACH TREE AREA	P	Solid	1311	
Analysis Batch:220-18024					
LB 220-17786/8-A	TCLP SPLPE Leachate Blank	P	Solid	8260B	
LCS 220-18024/2	Lab Control Spike	T	Water	8260B	
MB 220-18024/3	Method Blank	T	Water	8260B	
220-5740-1	CORRAL AREA	P	Solid	8260B	
220-5740-2	PEACH TREE AREA	P	Solid	8260B	

Report Basis
P = TCLP
T = Total

GC/MS Semi VOA					
Prep Batch: 220-17890					
LB 220-17890/1-B	TCLP SPLPE Leachate Blank	P	Solid	1311	
220-5740-1	CORRAL AREA	P	Solid	1311	
220-5740-2	PEACH TREE AREA	P	Solid	1311	
Prep Batch: 220-17905					
LCS 220-17905/4-A	Lab Control Spike	T	Water	3510C	
MB 220-17905/1-A	Method Blank	T	Water	3510C	
LB 220-17890/1-B	TCLP SPLPE Leachate Blank	P	Solid	3510C	220-17890
220-5740-1	CORRAL AREA	P	Solid	3510C	220-17890
220-5740-2	PEACH TREE AREA	P	Solid	3510C	220-17890
Analysis Batch:220-17933					
LB 220-17890/1-B	TCLP SPLPE Leachate Blank	P	Solid	8270C	220-17905
LCS 220-17905/4-A	Lab Control Spike	T	Water	8270C	220-17905
MB 220-17905/1-A	Method Blank	T	Water	8270C	220-17905
220-5740-1	CORRAL AREA	P	Solid	8270C	220-17905
220-5740-2	PEACH TREE AREA	P	Solid	8270C	220-17905

Report Basis
P = TCLP
T = Total

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC Semi VOA					
Analysis Batch:220-17825					
LB 220-17890/1-D	TCLP SPLPE Leachate Blank	P	Solid	8081A	220-17909
LCS 220-17909/4-A	Lab Control Spike	T	Water	8081A	220-17909
MB 220-17909/1-A	Method Blank	T	Water	8081A	220-17909
220-5740-1	CORRAL AREA	P	Solid	8081A	220-17909
220-5740-2	PEACH TREE AREA	P	Solid	8081A	220-17909
Prep Batch: 220-17890					
LB 220-17890/1-D	TCLP SPLPE Leachate Blank	P	Solid	1311	
220-5740-1	CORRAL AREA	P	Solid	1311	
220-5740-2	PEACH TREE AREA	P	Solid	1311	
Prep Batch: 220-17909					
LCS 220-17909/4-A	Lab Control Spike	T	Water	3510C	
MB 220-17909/1-A	Method Blank	T	Water	3510C	
LB 220-17890/1-D	TCLP SPLPE Leachate Blank	P	Solid	3510C	220-17890
220-5740-1	CORRAL AREA	P	Solid	3510C	220-17890
220-5740-2	PEACH TREE AREA	P	Solid	3510C	220-17890

Report Basis
P = TCLP
T = Total

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Metals					
Prep Batch: 220-17890					
LB 220-17890/1-E	TCLP SPLPE Leachate Blank	P	Solid	1311	
LB 220-17890/1-G	TCLP SPLPE Leachate Blank	P	Solid	1311	
220-5740-1	CORRAL AREA	P	Solid	1311	
220-5740-2	PEACH TREE AREA	P	Solid	1311	
Prep Batch: 220-17952					
LCS 220-17952/2-A	Lab Control Spike	T	Water	3010A	
MB 220-17952/1-A	Method Blank	T	Water	3010A	
LB 220-17890/1-E	TCLP SPLPE Leachate Blank	P	Solid	3010A	220-17890
220-5740-1	CORRAL AREA	P	Solid	3010A	220-17890
220-5740-2	PEACH TREE AREA	P	Solid	3010A	220-17890
Prep Batch: 220-17967					
LCS 220-17967/2-A	Lab Control Spike	T	Water	7470A	
MB 220-17967/1-A	Method Blank	T	Water	7470A	
LB 220-17890/1-G	TCLP SPLPE Leachate Blank	P	Solid	7470A	220-17890
220-5740-1	CORRAL AREA	P	Solid	7470A	220-17890
220-5740-2	PEACH TREE AREA	P	Solid	7470A	220-17890
Analysis Batch:220-18013					
LB 220-17890/1-G	TCLP SPLPE Leachate Blank	P	Solid	7470A	220-17967
LCS 220-17967/2-A	Lab Control Spike	T	Water	7470A	220-17967
MB 220-17967/1-A	Method Blank	T	Water	7470A	220-17967
220-5740-1	CORRAL AREA	P	Solid	7470A	220-17967
220-5740-2	PEACH TREE AREA	P	Solid	7470A	220-17967
Analysis Batch:220-18032					
LB 220-17890/1-E	TCLP SPLPE Leachate Blank	P	Solid	6010B	220-17952
LCS 220-17952/2-A	Lab Control Spike	T	Water	6010B	220-17952
MB 220-17952/1-A	Method Blank	T	Water	6010B	220-17952
220-5740-1	CORRAL AREA	P	Solid	6010B	220-17952
220-5740-2	PEACH TREE AREA	P	Solid	6010B	220-17952

Report Basis
P = TCLP
T = Total

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Surrogate Recovery Report

8260B Volatile Organic Compounds by GC/MS

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	12DCE %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
220-5740-1	CORRAL AREA	116	82	115	80
220-5740-2	PEACH TREE AREA	113	79	114	78
MB 220-18024/3		106	84	109	77
LB 220-17786/8-A		113	89	117	80
LCS 220-18024/2		104	86	109	79

Surrogate	Acceptance Limits
12DCE = 1,2-Dichloroethane-d4 (Surr)	53-125
BFB = 4-Bromofluorobenzene	73-127
DBFM = Dibromofluoromethane	54-137
TOL = Toluene-d8 (Surr)	63-121

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Surrogate Recovery Report

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	TBP %Rec	FBP %Rec	2FP %Rec	NBZ %Rec	TPH %Rec	PHL %Rec
220-5740-1	CORRAL AREA	77	65	52	67	75	42
220-5740-2	PEACH TREE AREA	73	61	50	63	75	40
MB 220-17905/1-A		63	52	32	51	65	22
LB 220-17890/1-B		79	66	53	68	78	44
LCS 220-17905/4-A		79	72	55	71	75	44

Surrogate	Acceptance Limits
TBP = 2,4,6-Tribromophenol	29-126
FBP = 2-Fluorobiphenyl	43-116
2FP = 2-Fluorophenol	21-97
NBZ = Nitrobenzene-d5	38-113
TPH = Terphenyl-d14	10-119
PHL = Phenol-d5	18-97

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Surrogate Recovery Report

8081A Organochlorine Pesticides by Gas Chromatography

Client Matrix: Solid TCLP

Lab Sample ID	Client Sample ID	DCB1 %Rec	DCB2 %Rec	TCX1 %Rec	TCX2 %Rec
220-5740-1	CORRAL AREA	83	83	122	125
220-5740-2	PEACH TREE AREA	80	82	117	120
MB 220-17909/1-A		80	79	112	118
LB 220-17890/1-D		89	91	115	118
LCS 220-17909/4-A		78	78	106	109

Surrogate	Acceptance Limits
DCB = DCB Decachlorobiphenyl	29-156
TCX = Tetrachloro-m-xylene	53-144

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Method Blank - Batch: 220-18024

Method: 8260B
Preparation: 5030B

Lab Sample ID: MB 220-18024/3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2008 1136
Date Prepared: 07/15/2008 1136

Analysis Batch: 220-18024
Prep Batch: N/A
Units: mg/L

Instrument ID: HP 6890/5973 GC/MS
Lab File ID: V6737.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Vinyl chloride	0.0050	U	0.00098	0.0050
1,1-Dichloroethene	0.0050	U	0.00083	0.0050
Methyl Ethyl Ketone	0.010	U	0.0011	0.010
Chloroform	0.0050	U	0.00067	0.0050
Carbon tetrachloride	0.0050	U	0.0011	0.0050
Benzene	0.0050	U	0.00074	0.0050
1,2-Dichloroethane	0.0050	U	0.00072	0.0050
Trichloroethene	0.0050	U	0.00062	0.0050
Tetrachloroethene	0.0050	U	0.00081	0.0050
Chlorobenzene	0.0050	U	0.00072	0.0050

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106	53 - 125
4-Bromofluorobenzene	84	73 - 127
Dibromofluoromethane	109	54 - 137
Toluene-d8 (Surr)	77	63 - 121

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

TCLP SPLPE Leachate Blank - Batch: 220-18024

Method: 8260B
Preparation: 5030B
TCLP

Lab Sample ID: LB 220-17786/8-A
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/15/2008 1220
Date Prepared: 07/15/2008 1220
Date Leached: 07/08/2008 2049

Analysis Batch: 220-18024
Prep Batch: N/A
Units: mg/L

Leachate Batch: 220-17786

Instrument ID: HP 6890/5973 GC/MS
Lab File ID: V6738.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Result	Qual	MDL	RL
Vinyl chloride	0.0050	U	0.00098	0.0050
1,1-Dichloroethene	0.0050	U	0.00083	0.0050
Methyl Ethyl Ketone	0.0030	J	0.0011	0.010
Chloroform	0.0050	U	0.00067	0.0050
Carbon tetrachloride	0.0050	U	0.0011	0.0050
Benzene	0.0050	U	0.00074	0.0050
1,2-Dichloroethane	0.0050	U	0.00072	0.0050
Trichloroethene	0.0013	J	0.00062	0.0050
Tetrachloroethene	0.0050	U	0.00081	0.0050
Chlorobenzene	0.0050	U	0.00072	0.0050

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113	53 - 125
4-Bromofluorobenzene	89	73 - 127
Dibromofluoromethane	117	54 - 137
Toluene-d8 (Surr)	80	63 - 121

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Lab Control Spike - Batch: 220-18024

Method: 8260B
Preparation: 5030B

Lab Sample ID: LCS 220-18024/2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2008 0945
Date Prepared: 07/15/2008 0945

Analysis Batch: 220-18024
Prep Batch: N/A
Units: mg/L

Instrument ID: HP 6890/5973 GC/MS
Lab File ID: V6735.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Vinyl chloride	0.0100	0.00882	88	51 - 139	
1,1-Dichloroethene	0.0100	0.0115	115	57 - 137	
Methyl Ethyl Ketone	0.0100	0.0132	132	30 - 222	
Chloroform	0.0100	0.0122	122	70 - 124	
Carbon tetrachloride	0.0100	0.0121	121	56 - 131	
Benzene	0.0100	0.0116	116	68 - 126	
1,2-Dichloroethane	0.0100	0.0128	128	68 - 124	*
Trichloroethene	0.0100	0.0108	108	58 - 125	
Tetrachloroethene	0.0100	0.00773	77	62 - 118	
Chlorobenzene	0.0100	0.00850	85	71 - 114	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	104	53 - 125
4-Bromofluorobenzene	86	73 - 127
Dibromofluoromethane	109	54 - 137
Toluene-d8 (Surr)	79	63 - 121

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Method Blank - Batch: 220-17905

Method: 8270C
Preparation: 3510C

Lab Sample ID: MB 220-17905/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/12/2008 1341
Date Prepared: 07/11/2008 1252

Analysis Batch: 220-17933
Prep Batch: 220-17905
Units: mg/L

Instrument ID: HP 6890/5975
Lab File ID: C6669.D
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result	Qual	MDL	RL
1,4-Dichlorobenzene	0.010	U	0.00051	0.010
2,4-Dinitrotoluene	0.010	U	0.00042	0.010
2,4,5-Trichlorophenol	0.050	U	0.00054	0.050
2,4,6-Trichlorophenol	0.010	U	0.00049	0.010
2-Methylphenol	0.010	U	0.00060	0.010
Hexachlorobenzene	0.010	U	0.00048	0.010
Hexachlorobutadiene	0.010	U	0.00086	0.010
Hexachloroethane	0.010	U	0.00052	0.010
Nitrobenzene	0.010	U	0.00073	0.010
Pentachlorophenol	0.050	U	0.0012	0.050
Pyridine	0.020	U	0.0039	0.020
4-Methylphenol	0.010	U	0.00039	0.010

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol	63	29 - 126
2-Fluorobiphenyl	52	43 - 116
2-Fluorophenol	32	21 - 97
Nitrobenzene-d5	51	38 - 113
Terphenyl-d14	65	10 - 119
Phenol-d5	22	18 - 97

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

TCLP SPLPE Leachate Blank - Batch: 220-17905

Method: 8270C
Preparation: 3510C
TCLP

Lab Sample ID: LB 220-17890/1-B
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/12/2008 1429
Date Prepared: 07/11/2008 1252
Date Leached: 07/10/2008 1715

Analysis Batch: 220-17933
Prep Batch: 220-17905
Units: mg/L
Leachate Batch: 220-17890

Instrument ID: HP 6890/5975
Lab File ID: C6671.D
Initial Weight/Volume: 500 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result	Qual	MDL	RL
1,4-Dichlorobenzene	0.020	U	0.0010	0.020
2,4-Dinitrotoluene	0.020	U	0.00084	0.020
2,4,5-Trichlorophenol	0.10	U	0.0011	0.10
2,4,6-Trichlorophenol	0.020	U	0.00099	0.020
2-Methylphenol	0.020	U	0.0012	0.020
Hexachlorobenzene	0.020	U	0.00095	0.020
Hexachlorobutadiene	0.020	U	0.0017	0.020
Hexachloroethane	0.020	U	0.0010	0.020
Nitrobenzene	0.020	U	0.0015	0.020
Pentachlorophenol	0.10	U	0.0024	0.10
Pyridine	0.040	U	0.0077	0.040
4-Methylphenol	0.020	U	0.00078	0.020

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol	79	29 - 126
2-Fluorobiphenyl	66	43 - 116
2-Fluorophenol	53	21 - 97
Nitrobenzene-d5	68	38 - 113
Terphenyl-d14	78	10 - 119
Phenol-d5	44	18 - 97

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Lab Control Spike - Batch: 220-17905

Method: 8270C
Preparation: 3510C

Lab Sample ID: LCS 220-17905/4-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/12/2008 1454
Date Prepared: 07/11/2008 1252

Analysis Batch: 220-17933
Prep Batch: 220-17905
Units: mg/L

Instrument ID: HP 6890/5975
Lab File ID: C6672.D
Initial Weight/Volume: 500 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,4-Dichlorobenzene	0.0800	0.0486	61	32 - 104	
2,4-Dinitrotoluene	0.0800	0.0463	58	55 - 130	
2,4,5-Trichlorophenol	0.0800	0.0625	78	50 - 126	J
2,4,6-Trichlorophenol	0.0800	0.0606	76	50 - 121	
2-Methylphenol	0.0800	0.0542	68	42 - 117	
Hexachlorobenzene	0.0800	0.0630	79	54 - 129	
Hexachlorobutadiene	0.0800	0.0518	65	28 - 110	
Hexachloroethane	0.0800	0.0478	60	28 - 105	
Nitrobenzene	0.0800	0.0583	73	44 - 120	
Pentachlorophenol	0.0800	0.0693	87	35 - 154	J
Pyridine	0.0800	0.0538	67	10 - 107	
4-Methylphenol	0.160	0.106	66	37 - 117	

Surrogate	% Rec	Acceptance Limits
2,4,6-Tribromophenol	79	29 - 126
2-Fluorobiphenyl	72	43 - 116
2-Fluorophenol	55	21 - 97
Nitrobenzene-d5	71	38 - 113
Terphenyl-d14	75	10 - 119
Phenol-d5	44	18 - 97

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Method Blank - Batch: 220-17909

Method: 8081A
Preparation: 3510C

Lab Sample ID: MB 220-17909/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/12/2008 1340
Date Prepared: 07/11/2008 1425

Analysis Batch: 220-17825
Prep Batch: 220-17909
Units: mg/L

Instrument ID: HP 5890 with dual ECD
Lab File ID: C7611080.D
Initial Weight/Volume: 1000 mL
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
Chlordane (technical)	0.00050	U	0.00014	0.00050
Endrin	0.00010	U	0.000014	0.00010
Heptachlor	0.000050	U	0.0000075	0.000050
Heptachlor epoxide	0.000050	U	0.0000058	0.000050
gamma-BHC (Lindane)	0.000050	U	0.0000053	0.000050
Methoxychlor	0.00050	U	0.000091	0.00050
Toxaphene	0.0025	U	0.00021	0.0025

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	80	29 - 156
Tetrachloro-m-xylene	118	53 - 144

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	79	29 - 156
Tetrachloro-m-xylene	112	53 - 144

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

TCLP SPLPE Leachate Blank - Batch: 220-17909

Method: 8081A
Preparation: 3510C
TCLP

Lab Sample ID: LB 220-17890/1-D
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/12/2008 1423
Date Prepared: 07/11/2008 1425
Date Leached: 07/10/2008 1715

Analysis Batch: 220-17825
Prep Batch: 220-17909
Units: mg/L

Leachate Batch: 220-17890

Instrument ID: HP 5890 with dual ECD
Lab File ID: C7611082.D
Initial Weight/Volume: 200 mL
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

Analyte	Result	Qual	MDL	RL
Chlordane (technical)	0.0025	U	0.00071	0.0025
Endrin	0.00050	U	0.000070	0.00050
Heptachlor	0.00025	U	0.000038	0.00025
Heptachlor epoxide	0.00025	U	0.000029	0.00025
gamma-BHC (Lindane)	0.00025	U	0.000026	0.00025
Methoxychlor	0.0025	U	0.00045	0.0025
Toxaphene	0.012	U	0.0011	0.012

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	91	29 - 156
Tetrachloro-m-xylene	118	53 - 144

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	89	29 - 156
Tetrachloro-m-xylene	115	53 - 144

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Lab Control Spike - Batch: 220-17909

Method: 8081A
Preparation: 3510C

Lab Sample ID: LCS 220-17909/4-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/12/2008 1444
Date Prepared: 07/11/2008 1425

Analysis Batch: 220-17825
Prep Batch: 220-17909
Units: mg/L

Instrument ID: HP 5890 with dual ECD
Lab File ID: D7611083.D
Initial Weight/Volume: 200 mL
Final Weight/Volume: 10 mL
Injection Volume: 1.0 uL
Column ID: PRIMARY

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Endrin	0.00100	0.000953	95	42 - 175	
Heptachlor	0.00100	0.000925	92	35 - 163	
Heptachlor epoxide	0.00100	0.000850	85	54 - 143	
gamma-BHC (Lindane)	0.00100	0.000863	86	43 - 118	
Methoxychlor	0.00100	0.00113	113	86 - 196	J

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	78	29 - 156
Tetrachloro-m-xylene	109	53 - 144

Surrogate	% Rec	Acceptance Limits
DCB Decachlorobiphenyl	78	29 - 156
Tetrachloro-m-xylene	106	53 - 144

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Method Blank - Batch: 220-17952

Method: 6010B
Preparation: 3010A

Lab Sample ID: MB 220-17952/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2008 1332
Date Prepared: 07/14/2008 1048

Analysis Batch: 220-18032
Prep Batch: 220-17952
Units: mg/L

Instrument ID: TJA Trace ICAP 61E2
Lab File ID: W071508
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Arsenic	0.040	U	0.0044	0.040
Barium	0.0050	U	0.0012	0.0050
Cadmium	0.010	U	0.0028	0.010
Chromium	0.010	U	0.0010	0.010
Lead	0.010	U	0.0030	0.010
Selenium	0.0040	J	0.0032	0.030
Silver	0.0060	U	0.0013	0.0060

TCLP SPLPE Leachate Blank - Batch: 220-17952

Method: 6010B
Preparation: 3010A
TCLP

Lab Sample ID: LB 220-17890/1-E
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/15/2008 1343
Date Prepared: 07/14/2008 1048
Date Leached: 07/10/2008 1715

Analysis Batch: 220-18032
Prep Batch: 220-17952
Units: mg/L

Leachate Batch: 220-17890

Instrument ID: TJA Trace ICAP 61E2
Lab File ID: W071508
Initial Weight/Volume: 10 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Arsenic	0.20	U	0.022	0.20
Barium	0.025	U	0.0060	0.025
Cadmium	0.050	U	0.014	0.050
Chromium	0.050	U	0.0050	0.050
Lead	0.050	U	0.015	0.050
Selenium	0.022	J	0.016	0.15
Silver	0.030	U	0.0065	0.030

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Lab Control Spike - Batch: 220-17952

Method: 6010B
Preparation: 3010A

Lab Sample ID: LCS 220-17952/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2008 1338
Date Prepared: 07/14/2008 1048

Analysis Batch: 220-18032
Prep Batch: 220-17952
Units: mg/L

Instrument ID: TJA Trace ICAP 61E2
Lab File ID: W071508
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Arsenic	1.00	0.997	100	80 - 120	
Barium	0.300	0.307	102	80 - 120	
Cadmium	0.300	0.305	102	80 - 120	
Chromium	0.300	0.314	105	80 - 120	
Lead	1.00	1.00	100	80 - 120	
Selenium	0.500	0.504	101	80 - 120	
Silver	0.300	0.299	100	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quality Control Results

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Method Blank - Batch: 220-17967

Method: 7470A
Preparation: 7470A

Lab Sample ID: MB 220-17967/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2008 1405
Date Prepared: 07/14/2008 1408

Analysis Batch: 220-18013
Prep Batch: 220-17967
Units: mg/L

Instrument ID: Perkin Elmer FIMS 100
Lab File ID: N/A
Initial Weight/Volume: 25 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Mercury	0.00040	U	0.00020	0.00040

TCLP SPLPE Leachate Blank - Batch: 220-17967

Method: 7470A
Preparation: 7470A
TCLP

Lab Sample ID: LB 220-17890/1-G
Client Matrix: Solid
Dilution: 1.0
Date Analyzed: 07/15/2008 1407
Date Prepared: 07/14/2008 1408
Date Leached: 07/10/2008 1715

Analysis Batch: 220-18013
Prep Batch: 220-17967
Units: mg/L

Leachate Batch: 220-17890

Instrument ID: Perkin Elmer FIMS 100
Lab File ID: N/A
Initial Weight/Volume: 5 mL
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Mercury	0.0020	U	0.0010	0.0020

Lab Control Spike - Batch: 220-17967

Method: 7470A
Preparation: 7470A

Lab Sample ID: LCS 220-17967/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 07/15/2008 1406
Date Prepared: 07/14/2008 1408

Analysis Batch: 220-18013
Prep Batch: 220-17967
Units: mg/L

Instrument ID: Perkin Elmer FIMS 100
Lab File ID: N/A
Initial Weight/Volume: 50 mL
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Mercury	0.00500	0.00512	102	80 - 120	

Calculations are performed before rounding to avoid round-off errors in calculated results.

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Chain of Custody Form

1923

•53 Southampton Road
Westfield, MA 01085
(P) 413-572-4000
(F) 413-572-3707
Westfield

•148 Rangeway Road
N. Billerica, MA 01862
(P) 978-667-1400
(F) 978-667-7871
Boston - Service Center

Client: Chemtura Corp
Address: 74 Amity Rd
Bethany Ct.
Phone: 203-508-3415 Fax:

Client Project #:
Site ID & State:
Reports Sent To: JAY NAG
Email: Jay.Nag@chemtura.com Email Rpt: ☐

Job# | Quote# | PO#

Shaded areas for office use
Invoice same as Report to? ☐
If invoice contact or address different, note in Comments

Comments (Special Instructions)

Requested Turnaround Time (PLEASE SPECIFY)
STANDARD _____ RUSH _____ (Lab Approval Required)

Regulatory Programs/Presumptive Certainty/QC Forms
MADEP MCP ☐ GW1/S1 ☐ PWS DEP Forms ☐
CTDEP RCP ☐ CT RSR ☐ EDD Required ☐
QA Rpt: No QC ☐ Std QC Rpt ☐ CLP ☐

500-series for drinking water
600-series for waste water, NPDES
6000-series for groundwater, soil, waste
8000-series for groundwater, soil, waste
Use comments section to further define.

Please print legibly. If the analytical requests are not clearly defined on the chain-of-custody, the turnaround time will begin after all questions have been satisfactorily answered.

Sample Type Codes: WW-Wastewater, DW-Drinking Water, SW-Surface Water, GW-Groundwater, LW Lab Water, A-Air, S-Solids, "Z"- Other (please specify)

	Sample I.D.	Sample Type	Sampler's Initials	Date Time Collected	Grab	Comp.	# Containers	Plastic(P) or Glass(G)	NaHSO4/MeOH	HNO3 to pH <2	H2SO4 to pH <2	HCl to pH <2	NaOH to pH >12	Na2S2O3	None / 4°C	524 / 624 / 8260	525 / 625 / 8270	PCB / Pest / Herbicide	EPH / VPH	DRO / GRO / ETPH	Metals (Please Specify)	Mercury	General Chemistry	Bacteriological	Toxicity	TCLP
01	Corral Area	SO	TDK	7-2-08 1025	X		7	P/G							X											①
02	Peach Tree Area	SO	TDK	7-2-08 1040	X		7	P/G							X											①

Comments:
① TCLP
PC 1576

Tim Knollmeyer 220-5740
7-2-08

PASSED RAD SCREEN 3.8°C

Sampled by (print): Tim Knollmeyer
Signature: Tim Knollmeyer

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Tim Knollmeyer	7-2-08	1556	[illegible]	7/2/08	1550
[illegible] (Shipped Fed Ex)	7/2/08	1600	[illegible]	7/3/08	0938

Cooler ? Y / N
MADEP Requirement Samples Iced? Y / N
Temp @ receipt: _____ °C
Preservation / pH checked? Y / N
By: _____ Date: _____

WESTFIELD

Page 1 of 1

White = Lab file Yellow = Report copy Pink = Customer copy

PASSED RAD SCREEN

WI-QA-010-REV 4A

TAL-8245-360 (0408)

ATTACHMENT A

Chemtura Bethany Site

220-5740
Chemtura / 14C Soils

TestAmerica - Connecticut
Internal Chain-of-Custody

Trip Blank: —

QC: —

FB: —

Soil: #1+2

Air: —

Water: —

Date Received: 7/3/08

Sample #s: 1+2

Locations: A1, F-1

Laboratory Sample #	Relinquished by	Accepted by	Date	Time	Reason	Relinquished by	Accepted by	Date	Time
1, 2	KB	JV	7/10	1615	TTR-TCLP	JV	KB	7/10	1622
1, 2	KB	[illegible]	7/14/08	1254	VOA	[illegible]	KB	7/14/08	1609

TestAmerica Form# SMF00508.CT

ATTACHMENT A

Chemtura
Bethany Site

Login Sample Receipt Check List

Client: TestAmerica Connecticut

Job Number: 220-5740-1
SDG Number: 220-5740

Login Number: 5740
Creator: Dini, Tracy
List Number: 1

List Source: TestAmerica Connecticut

Question	T / F/ NA	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.8C
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	

Mystic Air Quality Consultants, Inc.
1204 North Road, Groton, Connecticut 06340
www.mysticair.com *maqc2@aol.com* *800 247-7746*

August 5. 2008

K. Paul Steinmeyer
Radiation Safety Associates
19 Pendleton Drive
PO Box 107
Hebron, **CT** 06248

Re: TCLP Soil Analysis Result Review, Chemtura Corp, Peachtree area

Dear Paul,

As requested, Mystic Air Quality Consultants has reviewed the TCLP results of the soil samples from the Peachtree area (Chemtura Corp), attached in Enclosure (1). The samples were analyzed by a State of Connecticut licensed lab (TestAmerica Connecticut).

The levels are all below the EPA RCRA standards (Hazardous Waste Identification 40 CFR Parts 261, Enclosure (2)) **for hazardous waste. The soil would be considered non-hazardous in regards to waste disposal.**

Sincerely,

Christopher J. Eident, CIH, CSP, RS CEO

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

General Chemistry

Client Sample ID: **CORRAL AREA**

Lab Sample ID: 220-5740-1
Client Matrix: Solid

Date Sampled: 07/02/2008 1025
Date Received: 07/03/2008 0938

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	23.6		%	0.100	0.100	1.0	PercentMoisture
	Anly Batch: 220-18331		Date Analyzed	07/24/2008 1500			
Percent Solids	76.4		%	0.100	0.100	1.0	PercentMoisture
	Anly Batch: 220-18331		Date Analyzed	07/24/2008 1500			

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID: 220-5740-2
Client Matrix: Solid

Date Sampled: 07/02/2008 1040
Date Received: 07/03/2008 0938

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Percent Moisture	20.8		%	0.100	0.100	1.0	PercentMoisture
	Anly Batch: 220-18331		Date Analyzed	07/24/2008 1500			
Percent Solids	79.2		%	0.100	0.100	1.0	PercentMoisture
	Anly Batch: 220-18331		Date Analyzed	07/24/2008 1500			

TestAmerica Connecticut

Client Sample ID: CORRAL AREA (220-5740-1)

TCLP GC Semivolatiles

Lot-Sample #...: F8G100226-001 **Work Order #...:** KRA211AA **Matrix.....:** SOLID
Date Sampled...: 07/02/08 10:25 **Date Received..:** 07/08/08
Leach Date.....: 07/11/08 **Prep Date.....:** 07/14/08 **Analysis Date..:** 07/15/08
Leach Batch #..: P819307 **Prep Batch #...:** 8197046 **Analysis Time..:** 18:17
Dilution Factor: 1
% Moisture.....: **Method.....:** SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	8.0	ug/L
2,4,5-TP (Silvex)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4-Dichlorophenylacetic acid	98	(71 - 124)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

TestAmerica Connecticut

Client Sample ID: PEACH TREE AREA (220-5740-2)

TCLP GC Semivolatiles

Lot-Sample #...: F8G100226-002 **Work Order #...:** KRA251AA **Matrix.....:** SOLID
Date Sampled...: 07/02/08 10:40 **Date Received..:** 07/08/08
Leach Date.....: 07/11/08 **Prep Date.....:** 07/14/08 **Analysis Date..:** 07/15/08
Leach Batch #..: P819307 **Prep Batch #...:** 8197046 **Analysis Time..:** 19:54
Dilution Factor: 1
% Moisture.....: **Method.....:** SW846 8151A

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-D	ND	8.0	ug/L
2,4,5-TP (Silvex)	ND	2.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2,4-Dichlorophenylacetic acid	90	(71 - 124)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **CORRAL AREA**

Lab Sample ID: 220-5740-1
Client Matrix: Solid

Date Sampled: 07/02/2008 1025
Date Received: 07/03/2008 0938

8260B Volatile Organic Compounds by GC/MS-TCLP

Method: 8260B
Preparation: 5030B
Dilution: 1.0
Date Analyzed: 07/15/2008 1433
Date Prepared: 07/15/2008 1433
Date Leached: 07/14/2008 1314

Analysis Batch: 220-18024
Leachate Batch: 220-17963

Instrument ID: HP 6890/5973 GC/MS
Lab File ID: V6743.D
Initial Weight/Volume: 5 mL
Final Weight/Volume: 5 mL

Analyte	DryWt Corrected: N Result (mg/L)	Qualifier	MDL	RL
Vinyl chloride	0.0050	U	0.00098	0.0050
1,1-Dichloroethene	0.0050	U	0.00083	0.0050
Methyl Ethyl Ketone	0.010	U	0.0011	0.010
Chloroform	0.0050	U	0.00067	0.0050
Carbon tetrachloride	0.0050	U	0.0011	0.0050
Benzene	0.0050	U	0.00074	0.0050
1,2-Dichloroethane	0.0050	U *	0.00072	0.0050
Trichloroethene	0.0050	U	0.00062	0.0050
Tetrachloroethene	0.0050	U	0.00081	0.0050
Chlorobenzene	0.0050	U	0.00072	0.0050

Surrogate	%Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	116	53 - 125
4-Bromofluorobenzene	82	73 - 127
Dibromofluoromethane	115	54 - 137
Toluene-d8 (Surr)	80	63 - 121

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID:	220-5740-2	Date Sampled:	07/02/2008 1040
Client Matrix:	Solid	Date Received:	07/03/2008 0938

8260B Volatile Organic Compounds by GC/MS-TCLP

Method:	8260B	Analysis Batch: 220-18024	Instrument ID:	HP 6890/5973 GC/MS	
Preparation:	5030B		Lab File ID:	V6742.D	
Dilution:	1.0	Leachate Batch: 220-17963	Initial Weight/Volume:	5 mL	
Date Analyzed:	07/15/2008 1406		Final Weight/Volume:	5 mL	
Date Prepared:	07/15/2008 1406				
Date Leached:	07/14/2008 1323				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Vinyl chloride		0.0050	U	0.00098	0.0050
1,1-Dichloroethene		0.0050	U	0.00083	0.0050
Methyl Ethyl Ketone		0.010	U	0.0011	0.010
Chloroform		0.0050	U	0.00067	0.0050
Carbon tetrachloride		0.0050	U	0.0011	0.0050
Benzene		0.0050	U	0.00074	0.0050
1,2-Dichloroethane		0.0050	U *	0.00072	0.0050
Trichloroethene		0.0021	J B	0.00062	0.0050
Tetrachloroethene		0.0050	U	0.00081	0.0050
Chlorobenzene		0.0050	U	0.00072	0.0050

Surrogate	%Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113	53 - 125
4-Bromofluorobenzene	79	73 - 127
Dibromofluoromethane	114	54 - 137
Toluene-d8 (Surr)	78	63 - 121

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **CORRAL AREA**

Lab Sample ID: 220-5740-1
Client Matrix: Solid

Date Sampled: 07/02/2008 1025
Date Received: 07/03/2008 0938

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)-TCLP

Method:	8270C	Analysis Batch: 220-17933	Instrument ID:	HP 6890/5975	
Preparation:	3510C	Prep Batch: 220-17905	Lab File ID:	C6675.D	
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	500 mL	
Date Analyzed:	07/12/2008 1608		Final Weight/Volume:	1 mL	
Date Prepared:	07/11/2008 1252		Injection Volume:	1.0 uL	
Date Leached:	07/10/2008 1715				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
1,4-Dichlorobenzene		0.020	U	0.0010	0.020
2,4-Dinitrotoluene		0.020	U	0.00084	0.020
2,4,5-Trichlorophenol		0.10	U	0.0011	0.10
2,4,6-Trichlorophenol		0.020	U	0.00099	0.020
2-Methylphenol		0.020	U	0.0012	0.020
Hexachlorobenzene		0.020	U	0.00095	0.020
Hexachlorobutadiene		0.020	U	0.0017	0.020
Hexachloroethane		0.020	U	0.0010	0.020
Nitrobenzene		0.020	U	0.0015	0.020
Pentachlorophenol		0.10	U	0.0024	0.10
Pyridine		0.040	U	0.0077	0.040
4-Methylphenol		0.020	U	0.00078	0.020

Surrogate	%Rec	Acceptance Limits
2,4,6-Tribromophenol	77	29 - 126
2-Fluorobiphenyl	65	43 - 116
2-Fluorophenol	52	21 - 97
Nitrobenzene-d5	67	38 - 113
Terphenyl-d14	75	10 - 119
Phenol-d5	42	18 - 97

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID: 220-5740-2
Client Matrix: Solid

Date Sampled: 07/02/2008 1040
Date Received: 07/03/2008 0938

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)-TCLP

Method: 8270C
Preparation: 3510C
Dilution: 1.0
Date Analyzed: 07/12/2008 1632
Date Prepared: 07/11/2008 1252
Date Leached: 07/10/2008 1715

Analysis Batch: 220-17933
Prep Batch: 220-17905
Leachate Batch: 220-17890

Instrument ID: HP 6890/5975
Lab File ID: C6676.D
Initial Weight/Volume: 500 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	DryWt Corrected: N Result (mg/L)	Qualifier	MDL	RL
1,4-Dichlorobenzene	0.020	U	0.0010	0.020
2,4-Dinitrotoluene	0.020	U	0.00084	0.020
2,4,5-Trichlorophenol	0.10	U	0.0011	0.10
2,4,6-Trichlorophenol	0.020	U	0.00099	0.020
2-Methylphenol	0.020	U	0.0012	0.020
Hexachlorobenzene	0.020	U	0.00095	0.020
Hexachlorobutadiene	0.020	U	0.0017	0.020
Hexachloroethane	0.020	U	0.0010	0.020
Nitrobenzene	0.020	U	0.0015	0.020
Pentachlorophenol	0.10	U	0.0024	0.10
Pyridine	0.040	U	0.0077	0.040
4-Methylphenol	0.020	U	0.00078	0.020

Surrogate	%Rec	Acceptance Limits
2,4,6-Tribromophenol	73	29 - 126
2-Fluorobiphenyl	61	43 - 116
2-Fluorophenol	50	21 - 97
Nitrobenzene-d5	63	38 - 113
Terphenyl-d14	75	10 - 119
Phenol-d5	40	18 - 97

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **CORRAL AREA**

Lab Sample ID: 220-5740-1
Client Matrix: Solid

Date Sampled: 07/02/2008 1025
Date Received: 07/03/2008 0938

8081A Organochlorine Pesticides by Gas Chromatography-TCLP

Method:	8081A	Analysis Batch: 220-17825	Instrument ID:	HP 5890 with dual ECD	
Preparation:	3510C	Prep Batch: 220-17909	Lab File ID:	C7611086.D	
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	200 mL	
Date Analyzed:	07/12/2008 1548		Final Weight/Volume:	10 mL	
Date Prepared:	07/11/2008 1425		Injection Volume:	1.0 uL	
Date Leached:	07/10/2008 1715		Column ID:	PRIMARY	

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Chlordane (technical)		0.0025	U	0.00071	0.0025
Endrin		0.00050	U	0.000070	0.00050
Heptachlor		0.00025	U	0.000038	0.00025
Heptachlor epoxide		0.00025	U	0.000029	0.00025
gamma-BHC (Lindane)		0.00025	U	0.000026	0.00025
Methoxychlor		0.0025	U	0.00045	0.0025
Toxaphene		0.012	U	0.0011	0.012

Surrogate	%Rec	Acceptance Limits
DCB Decachlorobiphenyl	83	29 - 156
Tetrachloro-m-xylene	125	53 - 144

Method:	8081A	Analysis Batch: 220-17825	Instrument ID:	HP 5890 with dual ECD
Preparation:	3510C	Prep Batch: 220-17909	Lab File ID:	D7611086.D
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	200 mL
Date Analyzed:	07/12/2008 1548		Final Weight/Volume:	10 mL
Date Prepared:	07/11/2008 1425		Injection Volume:	1.0 uL
Date Leached:	07/10/2008 1715		Column ID:	SECONDARY

Surrogate	%Rec	Acceptance Limits
DCB Decachlorobiphenyl	83	29 - 156
Tetrachloro-m-xylene	122	53 - 144

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID: 220-5740-2
Client Matrix: Solid

Date Sampled: 07/02/2008 1040
Date Received: 07/03/2008 0938

8081A Organochlorine Pesticides by Gas Chromatography-TCLP

Method:	8081A	Analysis Batch: 220-17825	Instrument ID:	HP 5890 with dual ECD	
Preparation:	3510C	Prep Batch: 220-17909	Lab File ID:	C7611087.D	
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	200 mL	
Date Analyzed:	07/12/2008 1609		Final Weight/Volume:	10 mL	
Date Prepared:	07/11/2008 1425		Injection Volume:	1.0 uL	
Date Leached:	07/10/2008 1715		Column ID:	PRIMARY	

Analyte	DryWt Corrected: N Result (mg/L)	Qualifier	MDL	RL
Chlordane (technical)	0.0025	U	0.00071	0.0025
Endrin	0.00050	U	0.000070	0.00050
Heptachlor	0.00025	U	0.000038	0.00025
Heptachlor epoxide	0.00025	U	0.000029	0.00025
gamma-BHC (Lindane)	0.00025	U	0.000026	0.00025
Methoxychlor	0.0025	U	0.00045	0.0025
Toxaphene	0.012	U	0.0011	0.012

Surrogate	%Rec	Acceptance Limits
DCB Decachlorobiphenyl	82	29 - 156
Tetrachloro-m-xylene	117	53 - 144

Method:	8081A	Analysis Batch: 220-17825	Instrument ID:	HP 5890 with dual ECD
Preparation:	3510C	Prep Batch: 220-17909	Lab File ID:	C7611087.D
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	200 mL
Date Analyzed:	07/12/2008 1609		Final Weight/Volume:	10 mL
Date Prepared:	07/11/2008 1425		Injection Volume:	1.0 uL
Date Leached:	07/10/2008 1715		Column ID:	SECONDARY

Surrogate	%Rec	Acceptance Limits
DCB Decachlorobiphenyl	80	29 - 156
Tetrachloro-m-xylene	120	53 - 144

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **CORRAL AREA**

Lab Sample ID: 220-5740-1
Client Matrix: Solid

Date Sampled: 07/02/2008 1025
Date Received: 07/03/2008 0938

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-TCLP

Method:	6010B	Analysis Batch: 220-18032	Instrument ID:	TJA Trace ICAP
Preparation:	3010A	Prep Batch: 220-17952	Lab File ID:	W071508
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	10 mL
Date Analyzed:	07/15/2008 1349		Final Weight/Volume:	50 mL
Date Prepared:	07/14/2008 1048			
Date Leached:	07/10/2008 1715			

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Arsenic		0.20	U	0.022	0.20
Barium		0.35		0.0060	0.025
Cadmium		0.050	U	0.014	0.050
Chromium		0.050	U	0.0050	0.050
Lead		0.050	U	0.015	0.050
Selenium		0.15	U	0.016	0.15
Silver		0.030	U	0.0065	0.030

7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)-TCLP

Method:	7470A	Analysis Batch: 220-18013	Instrument ID:	Perkin Elmer FIMS
Preparation:	7470A	Prep Batch: 220-17967	Lab File ID:	N/A
Dilution:	1.0	Leachate Batch: 220-17890	Initial Weight/Volume:	5 mL
Date Analyzed:	07/15/2008 1409		Final Weight/Volume:	50 mL
Date Prepared:	07/14/2008 1408			
Date Leached:	07/10/2008 1715			

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Mercury		0.0020	U	0.0010	0.0020

Analytical Data

Client: Chemtura Corporation

Job Number: 220-5740-1
Sdg Number: 220-5740

Client Sample ID: **PEACH TREE AREA**

Lab Sample ID:	220-5740-2	Date Sampled:	07/02/2008 1040
Client Matrix:	Solid	Date Received:	07/03/2008 0938

6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-TCLP

Method:	6010B	Analysis Batch: 220-18032		Instrument ID:	TJA Trace ICAP
Preparation:	3010A	Prep Batch: 220-17952		Lab File ID:	W071508
Dilution:	1.0	Leachate Batch: 220-17890		Initial Weight/Volume:	10 mL
Date Analyzed:	07/15/2008 1406			Final Weight/Volume:	50 mL
Date Prepared:	07/14/2008 1048				
Date Leached:	07/10/2008 1715				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Arsenic		0.026	J	0.022	0.20
Barium		0.33		0.0060	0.025
Cadmium		0.050	U	0.014	0.050
Chromium		0.050	U	0.0050	0.050
Lead		0.015	J	0.015	0.050
Selenium		0.030	J	0.016	0.15
Silver		0.030	U	0.0065	0.030

7470A Mercury in Liquid Waste (Manual Cold Vapor Technique)-TCLP

Method:	7470A	Analysis Batch: 220-18013		Instrument ID:	Perkin Elmer FIMS
Preparation:	7470A	Prep Batch: 220-17967		Lab File ID:	N/A
Dilution:	1.0	Leachate Batch: 220-17890		Initial Weight/Volume:	5 mL
Date Analyzed:	07/15/2008 1410			Final Weight/Volume:	50 mL
Date Prepared:	07/14/2008 1408				
Date Leached:	07/10/2008 1715				

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	MDL	RL
Mercury		0.0020	U	0.0010	0.0020

RCRA

codified at §261.24.

Table 1

TOXICITY CHARACTERISTIC CONSTITUENTS AND REGULATORY LEVELS

Waste Code	Contaminants	Concentration
D004	Arsenic	5.0
D005	Barium	100.0
D018	Benzene	0.5
D006	Cadmium	1.0
D019	Carbon tetrachloride	0.5
D020	Chlordane	0.03
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D007	Chromium	5.0
D023	o-Cresol*	200.0
D024	m-Cresol*	200.0
D025	p-Cresol*	200.0
D026	Total Cresols*	200.0
D016	2,4-D	10.0
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D012	Endrin	0.02
D031	Heptachlor (and its epoxide)	0.008
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D008	Lead	5.0
D013	Lindane	0.4
D009	Mercury	0.2
D014	Methoxychlor	10.0
D035	Methyl ethyl ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D010	Selenium	1.0
D011	Silver	5.0
D039	Tetrachloroethylene	0.7
D015	Toxaphene	0.5
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D017	2,4,5-TP (Silvex)	1.0
D043	Vinyl chloride	0.2

*If o-, m-, and p-cresols cannot be individually measured, the regulatory level for total cresols is used.

The information in this document is not by any means a complete representation of EPA's regulations or policies,
But is an introduction to the topic used for training purposes.

Attachment B

Energy Solutions Work Plan
Chemtura Bethany Site Remediation

Radiation Safety Associates, Inc.

ENERGYSOLUTIONS

CS-OP-PN-026

Work Plan
for Chemtura Site Remediation Project

Project No. 137083 **Revision 0**

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[X] New Plan
[ ] Title Change
[ ] Plan Revision
[ ] Plan Rewrite

Effective Date 10/13/08

Electronic documents, once printed, are uncontrolled and may become outdated
Refer to the intraweb or the Document Control authority for the correct revision.

Table of Contents

Section **Page**

1.0 PROJECT DESCRIPTION....4
- 1.1 Introduction....4
- 1.2 Background....4
- 1.3 Purpose....4
- 1.4 Description....4
- 1.5 Scope....4
- 1.6 Schedule....5

2.0 COMMITMENTS....5
- 2.1 Health and Safety....5
- 2.2 Radiation Protection....6
- 2.3 Quality Assurance & Quality Control....6

3.0 REFERENCES....7

4.0 GENERAL....7
- 4.1 Authorities and Responsibilities....8
- 4.2 Responsibilities of On-Site Personnel....8
- 4.3 Precautions and Limitations....9
- 4.4 Records....9

5.0 REQUIREMENTS....9
- 5.1 Site Requirements and Equipment....9
- 5.2 Project Regulatory Permits and Requirements....10
- 5.3 Transportation Requirements....10
- 5.4 Safety Training....11
- 5.5 Procedures....11
- 5.6 Personnel Protective Equipment (PPE)....11
- 5.7 Site Security and Access....11
- 5.8 Instrumentation....12
- 5.9 Personnel Monitoring....12
- 5.10 Equipment Surveys....13
- 5.11 Air Sampling....13

6.0 OPERATIONAL REQUIREMENTS....13
- 6.1 Pre-operational Walk-down....13
- 6.2 Operational Requirements....13
- 6.3 Initial Radiological Controls....13
- 6.4 Operational Radiological Controls....14
- 6.5 Safety Controls....14

7.0 WASTE MANAGEMENT 14
7.1 Waste Characterization 14
7.2 Characterization Data 15
7.3 Waste Package Controls 15
7.4 Waste Handling 15
7.5 Waste Container Documentation 16
7.6 Class A Waste – Clive Bulk Waste Facility Disposal 17

8.0 ATTACHMENTS 18
8.1 Figures 18
8.2 Work Site Safety Checklist 18
8.3 Instrument List 18
8.4 Project RWP 18
8.5 Waste Profile & Supporting Data 18

1.0 PROJECT DESCRIPTION

1.1 Introduction

This project is concerned with the packaging, transportation and disposal of low level radioactive waste (LLRW) from the Chemtura Corporation facility located in Bethany, Connecticut on Amity Road.

1.2 Background

Chemtura is a manufacturer of specialty chemicals previously operating under the Crompton Corporation until 2005. The facility at 74 Amity Road, Bethany, Connecticut was an agricultural research facility.

1.3 Purpose

The purpose of this project is to excavate radiological contaminated targeted soil areas at the Bethany facility, package these soils, and transport the soil as LLRW from Bethany, Connecticut to the Energy*Solutions* waste disposal facility in Clive, Utah.

1.4 Description

Energy*Solutions* will provide radiological safety support during the course of the excavation, packaging, loading, transportation, and demobilization of the LLRW activities on site.

Energy*Solutions* will also excavate, load, package, and have the LLRW soils transloaded to a rail facility for transportation to the Clive, Utah disposal facility. Energy*Solutions* will coordinate its activities with the Chemtura Radiation Safety Officer (RSO) and the RSO's representatives.

Energy*Solutions* will coordinate this project with the local authorities and emergency services prior to starting project activities at the Bethany site.

1.5 Scope

The scope of this project is to provide services, packaging, transportation, and disposal of the following:

1.5.1 Approximately fourteen and one half (14½) cubic yards (yd^3) of soil located in the "Peach Tree" area will be excavated for disposal. The activity concentrations of Carbon-14 (C-14) identified in the area ranged from 5 to 108 pCi/g. Soil excavations from this area are expected to be at a maximum depth of 12 to 18 inches. The contaminated soil will be packaged into 5 yd^3 USDOT Industrial Packaging Type One (IP-1) soft-sided containers. The containers will be moved to a staging area near the edge of the asphalt parking area for weighing and loading onto flatbed tractor trailers. The excavation activities will be conducted under weather

conditions that would minimize the moisture content of the contaminated soil matrix.

1.5.2 Approximately thirty nine (39) yd^3 of soil located within the "Fenced Area" will also be excavated. The activity concentrations of C-14 identified in the area ranged from 0.5 to 43 pCi/g. Soil excavations from this area are expected to be at a maximum depth of 18 inches. The contaminated soil will be packaged into 5 yd^3 IP-1 soft-sided containers. The containers will be moved to a staging area near the edge of the asphalt parking area for weighing and loading onto flatbed tractor trailers. The excavation activities will also be conducted under weather conditions that would minimize the moisture content of the contaminated soil matrix.

The chain link fence, the intertwined Wisteria plants, and the concrete fence post bases have been previously surveyed for radiological contaminates and the samples analyzed. The fence, posts, Wisteria, and concrete bases results indicated residual surface activity concentrations that were less than 38 dpm/100 cm^2. During excavation activities the chain link fence and posts in the Corral area will be randomly surveyed with net surface activity concentrations not to exceed 200 dpm/100 cm^2. These surveys will be conducted using hand held survey meters prior to disposal as non-radioactive waste.

1.6 Schedule

The on-site duration of the project is approximately five (5) days, tentatively scheduled to begin on October 13, 2008 with a completion date of October 17, 2008.

2.0 COMMITMENTS

2.1 Health and Safety

All project work shall be performed under the Energy*Solutions Corporate Safety and Health Program* (Ref. No. 3.1) and the Energy*Solutions Commercial Services Division Health and Safety Plan* (Ref. No. 3.2). Work activities may include hazards such as heavy object lifting, noise, dust, electrical, and other physical hazards (sharp edges, working at elevation, etc.). Energy*Solutions* is responsible for assuring safety for the following:

2.1.1 Operation of heavy equipment by Energy*Solutions* personnel or subcontractors,
2.1.2 Lifting, rigging, and movement of high center-of-gravity materials,
2.1.3 Use of power tools,
2.1.4 Any other potential safety hazards identified for the Chemtura - Bethany site,
2.1.5 Following the administrative and engineering controls described in this work plan,

2.1.6 Assuring that non-radiological hazardous materials are stored in a safe manner, and

2.1.7 Notifying the Project Manager of any unanticipated hazardous materials or conditions that may be encountered during the work.

2.2 Radiation Protection

The Commercial Services *Radiation Protection Program (RPP) for Commercial Services Projects* (Ref. No. 3.3) will be implemented during this project to ensure that potential radiation exposures to site workers and members of the public, as well as potential airborne releases to the environment are maintained as low as reasonable achievable (ALARA). Site workers are responsible for maintaining their radiation exposure ALARA and notifying supervision of potential radiological hazards, improper practices, or issues of non compliance. Every site worker is encouraged to identify potential changes to current procedures or practices, especially those that may reduce radiation exposures or improve worker safety.

2.2.1 Energy*Solutions* shall be responsible for monitoring entry to and exit from radiological controlled areas (RCA), while conducting activities on-site. The radiation protection supervisor (RPS) shall be responsible for items released for unrestricted use from any RCA in accordance with written procedures. No items will be removed from the RCA without approval of the RPS or Energy*Solutions* Commercial Services (CS) RSO.

2.2.2 Personal protective equipment (PPE) requirements shall be determined in accordance with the Energy*Solutions Selection and Use of Radiological Protective Clothing* procedure (Ref. No. 3.4) at the start of work activities and as specified in this Work Plan. In accordance with this procedure[1] and the anticipated C-14 contamination in soils (less than 180 dpm/100 cm^2), there is no site-specific requirement for radiological PPE. However, PPE, as discussed in Section 5.6 of this plan, will be worn to maintain potential personal contamination events ALARA.

2.2.3 The Commercial Services RPP establishes administrative control levels for individual whole body radiation dose. No site worker will be allowed to exceed this dose limit without the prior approval of the Commercial Decommissioning Services President. The CS RSO shall approve all exposures greater than 75% of any administrative limit.

2.3 Quality Assurance & Quality Control

All work will be performed in a quality manner and under the auspices of the Energy*Solutions Quality Assurance Program* (Ref. No. 3.5).

[1] CS-RS-PR-001, "Selection and Use of Radiological Protective Clothing"; Attachment 5.1 – "Guide for the Selection of Radiological Protective Clothing"; β^-/γ – emitters < 1,000 dpm/100 cm^2.

3.0 REFERENCES

The following documents and specifications are included in the work scope by reference:

3.1 ES-SH-PG-100, *Safety and Health Program*
3.2 CS-SH-PN-004, *Commercial Services Division Health and Safety Plan*
3.3 CS-RS-PG-001, *Radiation Protection Program for Commercial Services Projects*
3.4 CS-RS-PR-001, *Selection and Use of Radiological Protective Clothing*
3.5 ES-QA-PG-001, *Quality Assurance Program*
3.6 ES-AD-PR-005, *First Notifications*
3.7 CS-AD-PR-002, *Commercial Services Project Records Procedure*
3.8 CS-FO-PR-002, *Calibration and Maintenance of Radiological Survey and Sampling Equipment*
3.9 CS-RS-PR-009, *Radioactive Source Inventory, Leak Testing, and Control at Field Projects*
3.10 CS-RS-PR-002, *Personnel Survey and Decontamination Procedure*
3.11 CS-RS-PR-003, *Commercial Services Radiation Worker and Authorized User Training Procedure*
3.12 CS-WM-PG-001, *Radioactive Materials Management Program for Commercial Services Projects*
3.13 CS-WM-PR-002, *Transportation of Radioactive Materials and LLRW from Project Sites*
3.14 CS-RS-PN-004, *Commercial Services Transportation Emergency Response Plan*

4.0 GENERAL

Radioactive contamination associated with the scope of work defined above will be screened using portable beta radiation detectors coupled to rate meters capable of detecting C-14. Other radiological equipment may be used, as necessary, to assure regulatory compliance and company requirements.

As sufficient samples of the radioactive material have already been analyzed for environmental contaminants[2], there will be no additional environmental sampling, unless requested by the Chemtura RSO.

The Radioactive Waste Profile (Form EC-0230, Rev. 6) will be used to document the characteristics of the LLRW soil for the Clive, Utah disposal facility. The waste profile will be reviewed by an Energy*Solutions* Certified Broker to assure suitability for disposal at the Clive, Utah Bulk Waste Facility, in accordance with the Waste Acceptance Criteria (WAC). Any discrepancies will be resolved by revision to the waste profiles and/or establishing new waste profiles and waste streams as required by the WAC.

[2] TestAmerica Job Number 220-5740-1; Energy*Solutions* Technical Review – 08/01/2008

4.1 Authorities and Responsibilities

ALL project personnel (Energy*Solutions* and/or subcontractors) have the authority to stop work when health, safety, or environmental concerns potential exist or occur. The affected work activity shall be placed in a safe condition and immediately ceased until the Project Manager/On-site Supervisor has investigated the concern, identified causal factors, developed and implemented corrective actions, and provided additional training as necessary. Normally, a stop work action will result in a First Notification Report in accordance with, Energy*Solutions First Notifications* procedure (Ref. No. 3.6).

4.2 Responsibilities of On-site Personnel

4.2.1 Project Manager/On-site Supervisor

The Project Manager/On-site Supervisor will be the main site point of contact. The Project Manager/On-site Supervisor has overall responsibility for the day to day management of the characterization activities and ensuring that all Energy*Solutions* employees and subcontractors have the proper training and experience to perform their assigned duties.

4.2.2 Site Safety Officer (SSO)

The SSO is responsible for implementation of the Energy*Solutions Safety and Health Program* (Ref. No. 3.1) and the *Commercial Services Division Health and Safety Plan* (CS HASP) (Ref. No. 3.2). The Project Manager/On-site Supervisor may serve in this role in addition to his/her other duties.

4.2.3 The Project Manager/On-site Supervisor is responsible for implementation of the *Radiation Protection Program for Commercial Services Projects* (Ref. No. 3.3) and other applicable Commercial Services procedures.

4.2.4 Project Employee(s)

Each individual project employee is responsible for complying with the requirements of this Project Work Plan, the CS HASP (Ref. No. 3.2), RWP's, and the specific requirements of applicable implementing procedures.

4.2.5 Subcontractors

Subcontractors supporting this project shall be subject to the applicable portions of the safety, quality, operational and regulatory requirements of this project.

4.3 Precautions and Limitations

4.3.1 Work shall not commence until authorization is provided by the Project Manager/On-site Supervisor to ensure the proper training and project setup is complete.

4.3.2 Safety meetings for all project personnel shall be conducted on a daily basis prior to beginning work activities to address the work to be performed and any applicable safety hazards.

4.3.3 All project personnel are responsible for project safety and have both the right and the responsibility to call for a STOP WORK if there are unsafe working conditions or behaviors that are either observed or anticipated. All site personnel are required to immediately report any unsafe conditions (observed or anticipated) upon recognition of the condition.

4.3.4 Subcontractors will be trained to safety standards for the equipment that they operate. Subcontractors will provide insurance/bonding for the scope of their work. Copies of operator training must be provided to the SSO.

4.4 Records

Records generated during the project shall be neat, legible, and prepared using ink and in accordance with the *Commercial Services Project Records Procedure* (Ref. No. 3.7). Each record will be dated and signed by the individual preparing and/or reviewing the record. Changes to completed records shall be performed using a single line out which is to be initialed and dated. Examples of records generated during the implementation of the Project Work Plan will include:

- A copy of this Project Work Plan
- Training records
- Project logs and safety briefings
- Job Hazard Analyses
- Survey results and logs
- Instrument calibration records and source certificates
- Instrument source and response tests

5.0 REQUIREMENTS

Prior to the beginning of waste shipments, the following pre-requisites must be completed:

5.1 Site Requirements and Equipment

5.1.1 Utilities for the surveillance, transfer, packaging, waste loading, and transportation-related activities are available.

5.1.2 A pre-mobilization walk-down has been conducted to identify conditions adverse to safety, radiation safety practices that are ALARA[3], equipment status and inventory, and operational sequences.

5.1.3 Site safety concerns have been addressed and incorporated into this Work Plan.

5.1.4 Sufficient stand-alone packages have been ordered for the Clive Type A shipments.

5.1.5 Lifting and material moving equipment sufficient to lift/move materials and/or components in a safe manner [weight capacity ≥ 20,000 lbs.] has been selected and ordered.

5.1.6 Calibrated radiological instruments are available for surveillance, sampling, and compliance-related activities.

5.1.7 The Chemtura RSO may be on site for activities involving radiological materials.

5.1.8 Bethany first responders have been briefed about the project and have participated in a meeting where their concerns have been discussed and resolved.

5.2 Project Regulatory Permits and Requirements

5.2.1 Site personnel have been briefed on project security requirements in 49CFR§172.800. The security requirements will be outlined in this work plan.

5.2.2 Site personnel have been briefed about emergencies and emergency first-responders. The Emergency Response Information required by 49CFR§172.600 are made available on site and on shipping documents.

5.2.3 A State of Utah Generator Site Access Permit (GSAP) has been obtained for the disposal of LLRW in the State of Utah.

5.2.4 Other elements of 49CFR§§172 & 173 have been followed for the shipment of the LLRW to Clive, Utah

5.3 Transportation Requirements

5.3.1 A Five-day Advance Notification Form has been sent to the scheduling department at scheduling@energy*Solutions*.com or FAXED to Attn. Scheduling Dept., 435.884.3549, the Clive Disposal Facility at least five working days prior to the date of anticipated arrival of the first shipment.

5.3.2 An approved Notice To Transport has been issued and received by the site staff prior to the first shipment of LLRW.

5.3.3 Each package has been inspected to meet the requirements of 49CFR§§173.24, 410.

5.3.4 Radioactive Material Shipment Exclusive Use Instructions (Form CP-SR-PR-204-F8) has been prepared for the driver(s).

5.3.5 USNRC Uniform Low Level Radioactive Waste Manifests (Forms 540, 541, and 542) have been prepared and submitted, as required.

[3] ALARA – As Low As Reasonably Achievable. 10CFR§20.1001

5.4 Safety Training

On the first day of work the Project Manager/On-site Supervisor, or designee(s) will provide site-specific training to all workers involved in the preparation, packaging, and shipping of LLRW. Site personnel will have site specific radiation worker training prior to initiating work on site. Site-specific training will include a pre-job briefing, information on the radioactive contaminates for this project, radioactive waste handling training, and dissemination of the any safety equipment required for the safe completion of assigned tasks.

Site personnel will be familiar with the requirements of:

1. This Project Work Plan,
2. *Commercial Services Division Health and Safety Plan* (Ref. No. 3.2)
3. Applicable operating procedures
4. Locations of:
   - Saint Mary's Hospital – 56 Franklin St. Waterbury, CT (203.709.7055)
   - Yale-New Haven Hospital – 20 York St. New Haven, CT (203.688.4242)
   - Waterbury Hospital – 64 Robbins St. Waterbury, CT (203.573.6000)

5.5 Procedures

Copies of references in Section 3.0 shall be located at the job site, as necessary.

5.6 Personnel Protective Equipment (PPE)

PPE is for worker safety and protection against non-radiological hazards as specified in the CS HASP. These minimal requirements are: hard hat, safety shoes, safety glasses, and visible vest (when excavation and/or lifting and moving of the waste packages are taking place).

For outdoors radiological tasks, including waste handling, PPE is required for radiological protection. PPE requirements include Tyvek®-like coveralls, booties or rubber shoe covers, and gloves. For indoors radiological tasks, gloves and eye protection (for protection from beta (β^-) particles) is required.

5.7 Site Security and Access

The Chemtura – Bethany site is a controlled facility and access to work areas associated with the disposal operations will be controlled by Energy*Solutions*. Additional controls will be implemented during the project activities. All personnel shall be aware of site security and be responsible to control access to the site. Parking will be limited to area(s) determined by the Project Supervisor.

5.8 Instrumentation

Survey instrumentation will be selected to ensure that alpha, beta, and gamma contamination can be identified at levels above background in or on shipping containers at DOT regulatory levels, e.g., 49CFR§173.441 and §173.443.

5.8.1 Calibration

Energy*Solutions* maintains instrumentation in accordance with Energy*Solutions Calibration and Maintenance of Radiological Survey and Sampling Equipment* procedure (Ref. No. 3.8). The calibration, maintenance, control, and operation of Energy*Solutions* radiation detection instruments meet the criteria provided by ANSI Standards N323-1978 and N42.17A-1989. All field survey instrumentation is calibrated on an annual basis, at a minimum, and following any maintenance that could affect the instrument's calibration. Attachment 8.5 provides a list of detection levels that should be used as guidance for determining the suitability of any instrument. The instrumentation used for radiological surveys and personal frisking may be calibrated to Co-60, Sr/Y-90, Tc-99, Cs-137 and/or Th-230.

5.8.2 Response Testing

All radiological instrumentation will be response tested and documented daily when in use in accordance with Energy*Solutions Calibration and Maintenance of Radiological Survey and Sampling Equipment* (Ref. No. 3.8).

5.8.3 Source Control

All sources used for instrument response tests will be secured when not in active possession by qualified personnel in accordance with Energy*Solutions Radioactive Source Inventory, Leak Testing, and Control at Field Projects* (Ref. No. 3.9).

5.9 Personnel Monitoring

All personnel exiting the work area will be required to perform at a minimum a frisk for both beta/gamma and alpha on hands and footwear. This will be performed by the use of hand held instruments. All personnel will use proper frisking techniques in accordance with Energy*Solutions Commercial Services Personnel Survey and Decontamination Procedure* (Ref. No. 3.10). If frisking identifies any contamination above background levels, the on-site supervisor shall be notified immediately. If routine monitoring indicates that workers may have been potential exposed to internal exposure, bioassay methods will be considered for estimating the dose. The need for an emergency bioassay will be determined by the CS RSO in accordance with Energy*Solutions Radiation Protection Program for Commercial Services Projects (*Ref. No. 3.3).

5.10 Equipment Surveys

At a minimum, fixed and removable surface contamination surveys will be conducted before any equipment enters or leaves a radiological area. The Chemtura administrative criterion for unrestricted release of equipment is 200 dpm/100 cm^2 above background. The contamination surveys will demonstrate that equipment entering and leaving the radiological area are free from contamination. If contamination is identified greater than 200 dpm/100 cm^2 above background, the on-site supervisor will be notified immediately.

5.11 Air Sampling

Air sampling is not required for this project. Dose modeling[4] of a release/failure of a five (5) yd^3 package indicates that the dose within 50 feet would be less than 0.02 microrem (μrem).

6.0 OPERATIONAL REQUIREMENTS

6.1 Pre-operational Walk-down

Project workers will conduct a safety walk-down of the site prior to initiating the activities of this plan. An inspection report shall document any conditions of concern noted during the walk-down on a Work Site Safety Checklist (Form 1), which will address:

6.1.1 Determine remedial actions for safety concerns and document actions, and
6.1.2 Obtain any necessary additional equipment, if appropriate, prior to starting any task that has a documented safety concern.

6.2 Operational Requirements

6.2.1 Assure that site personnel are familiarized with safety-related issues and equipment prior to starting operational tasks.
6.2.2 Set up a counting and instrument area based upon ambient radiological conditions.
6.2.3 Separate and/or rope off area to be used for the instrument area.
6.2.4 Preoperational surveys should be conducted to determine the best location for staging of waste containers to be filled or packaged or for transportation. The Project Manager/On-site Supervisor shall approve all changes in area designations.

6.3 Initial Radiological Controls

6.3.1 Establish control points at entrance/exit points.
6.3.2 Post entrances according to radiological conditions.
6.3.3 Set up PPE doffing station.

[4] Hotspot, version 2.06 – General Plume

6.3.4 Set up a LLRW container staging area in the controlled area.

6.4 Operational Radiological Controls

6.4.1 Inventory and store equipment used during operations in areas to avoid cross-contamination.
6.4.2 Maintain a clean area to be used for staging empty containers.
6.4.3 Transfer empty LLRW containers to work area only when necessary to maintain good radiological housekeeping practices.
6.4.4 Assure that RCA postings and boundaries are inspected and maintained on a regular basis.
6.4.5 Rope off area to be used for staging of containers:

- When appropriate, post area as a RCA.
- Stage waste container.
- Assure that the container is in a secure area prior to the end of the day.

6.4.6 Perform surveys on filled packages to identify any change in dose/contamination status.
6.4.7 Perform surveys on any unfilled LLRW package, new rental equipment, and waste transport vehicle prior to its use to establish its baseline radiological data.
6.4.8 Document any changes and have the data available for the morning safety orientation.

6.5 Safety Controls

6.5.1 Identify any materials requiring a Material Safety Data Sheet (MSDS). Obtain the MSDS's and place them in a notebook that is easily accessible to site workers.
6.5.2 Identify any requirements for safe storage of hazardous materials. Provide labels for identifying these materials, as necessary.
6.5.3 Prior to the start of work each day, inspect for the condition of safety supplies and potential hazards
6.5.4 Conduct morning safety meeting.
6.5.5 Stage radiological equipment.
6.5.6 Bring tools, expendables, and instruments into work area.
6.5.7 Conduct a daily safety walk-down of the active areas on site. An inspection report shall document any conditions of concern on a Work Site Safety Checklist (Form 1).

7.0 WASTE MANAGEMENT

7.1 Waste Characterization

The radioactive material on the Chemtura site has been identified as C-14. Characterization of the waste will consist of estimating total C-14 activity (in

curies or millicuries) of each waste container for the purposes of complying with the WAC for the Clive, Utah disposal site.

The WAC for the Clive facility is contained in the Bulk Waste Disposal and Treatment Facilities Waste Acceptance Criteria, Revision 6.

7.2 Characterization Data

Activities in the various packages were estimated by converting survey data from the two areas into pCi/g, based upon their latest survey data. A variance of 2σ was added to the highest observed activity concentration of 108 pCi/g to yield 180 pCi/g. This specific activity will be used as the shipping and disposal C-14 specific activity.

Analytical results from TestAmerica indicated that Chemtura materials were below limit concentrations in 40 CFR §261.

7.3 Waste Package Controls

7.3.1 No additional waste shall be added to containers that have been filled and sealed. Waste generated during the course of waste disposal tasks may be placed in appropriate partially filled containers.

7.3.2 Activities assigned to the various waste containers will be determined by the Energy*Solutions* Certified Broker and/or the On-site Supervisor.

7.3.3 Surveys will be conducted and documented on any container that has added waste to determine its waste type and class in accordance with applicable regulatory and the WAC.

7.3.4 Documentation of activities assigned for each container will be available for review by the Energy*Solutions* Certified Broker.

7.4 Waste Handling

7.4.1 Container Loading and Inspection

1. Visually inspect the container to ensure there are no tears, or unraveled seams.
2. Visually assure to ensure there are no sharp materials in the container prior to loading.
3. For new containers and casks, assure that there is no significant removable contamination, above background, or dose rate associated with the container prior to loading.
4. The following are not allowed in any container without specific written permission of the Energy*Solutions* Certified Broker and On-site Supervisor:

   - *Hazardous Waste* - There shall not be any LLRW that is potential RCRA hazardous waste loaded into any waste container. Personnel loading waste check with the On-site

Supervisor, if there is any question about constituents of any waste. Waste destined for the Clive site must meet the approved waste profiles.

- *Free-standing or bulk liquid waste* - There shall be no free-standing or bulk liquids loaded into any waste container destined for disposal. Small amounts of incidental liquid may be absorbed so that no more than 1% exists by volume, or 0.5% if processed to a solidified form. Provisions for additional absorbent should be made in each container due to the affects of differing temperatures and pressures along the transportation routes and at the Clive disposal site.
- *Chelating agents* – No more than 1% of the waste, by weight, may be chelating or complexing agents. In order to assure compliance, the inventory of chelating agents will be less than 150 net pounds. Common types of chelates found at sites are citric acid based cleaners, Radiac Wash, RadAway, and EDTA.

7.4.2 Waste Container Inventory

A waste container inventory will be kept for waste containers that are filled during this project. An item entry must include a description of the waste item (e.g. paper, soil, wood, plastic, rubber, air pump, electrical wiring, misc. metal parts, etc.), the isotope(s) and activity(s), weight, estimated volume, date of entry, and the person making the entry. After each container is filled, the inventory shall be used to determine the total activity for the container. The information from each container shall be provided to the On-site Supervisor and the Energy*Solutions* Certified Broker after each container is full.

7.5 Waste Container Documentation

Each waste container should have the following data associated with a unique identification number:

1. Physical description of the contents,
2. Physical form, e.g., solid, liquid, gaseous,
3. Principal chemical constituent(s),
4. Volume of the waste,
5. Burial volume of the container,
6. Net weight of the waste,
7. Gross weight of the container,
8. Any over packs,
9. Combustible, Non-combustible
10. Percentage of chelates by weight, if any,
11. Sorption media, if any,
12. Solidification media, if any
13. Isotope(s) and associated activities,
14. Isotope concentrations – pCi/g
15. Highest and average surface dose rates,
16. Removable contamination (α, β^-, γ) dpm/100 cm^2,

17. Waste class, e.g., AU (A – Unstable); BU (B – Unstable); etc.

7.6 Class A Waste - Clive Bulk Waste Facility Disposal

7.6.1 Anticipated Exposure Levels

There will be approximately twelve (12) soft-sided 5 yd^3 packages. No elevated exposure levels above background are anticipated for any of these packages.

7.6.2 Other Potential Hazards

As these packages weigh between 9,000 and 11,000 lbs., there are risks associated with crushing and other physical injuries associated with movement of this scale of weight. These packages should be moved with forklifts, and/or cranes (with appropriate load capacities). Associated with the use of motorized equipment, a potential hazard of overhead interferences exists. Care should be taken during rigging of these boxes during transfer to the flat bed trailer.

7.6.3 Truck and Flatbed Trailer Inspection and Readiness

1. An incoming roadworthiness inspection shall be completed on the truck, and trailer using the Energy*Solutions* Certified Broker inspection checklist.
2. An incoming radiological survey shall be completed on the truck, trailer, and cask using a survey inspection document.
3. An incoming inspection of the operator's ID, license and other documents shall be conducted. At a minimum, the CDL endorsement, Hazmat endorsement, and current medical certificate shall be verified.
4. Driver and crane operator site-specific training shall be completed.
5. An area should be set aside for staging the truck and trailer that takes into consideration all of the following:
   - Overhead obstructions for the cask, forklift, or crane,
   - Surface conditions, level, potholes, seams, etc.,
   - Space needed for both the forklift and crane to transfer boxes without resetting the crane's position.
8. The packages will be inspected for proper labels and markings. Any missing labels/markings should be placed on the boxes prior loading.
9. Each waste package should have the Section 7.5 "Waste Package Documentation" data associated with a unique identification number.
10. Placement of the packages on the trailer shall be reviewed and approved by the Energy*Solutions* Certified Broker and the truck operator.
11. The transportation exclusive use, radiation protection, and security documents shall be given to the operator for review and signature.
12. Roadworthiness inspections, radiological surveys, Energy*Solutions* Certified Broker documentation, disposal site documents, and manifests shall be completed.

13. Photographs documenting the condition of the truck and loaded trainer should be taken prior to leaving the site.
14. For any shipping papers required by governmental agencies, two copies shall be generated and each signed by the responsible personnel, e.g., two manifests will be generated. Each manifest will have original signatures.
15. Notifications shall be completed prior to the truck and cask leaving the site, e.g., emergency response, disposal site, and broker supervisor.

8.0 ATTACHMENTS

8.1 Figures

8.2 Work Site Safety Checklist

8.3 Instrument List

8.4 Project RWP

8.5 Waste Profile & Supporting Data

Attachment 8.1

Figures

Figure 1
Insert from Site Plan

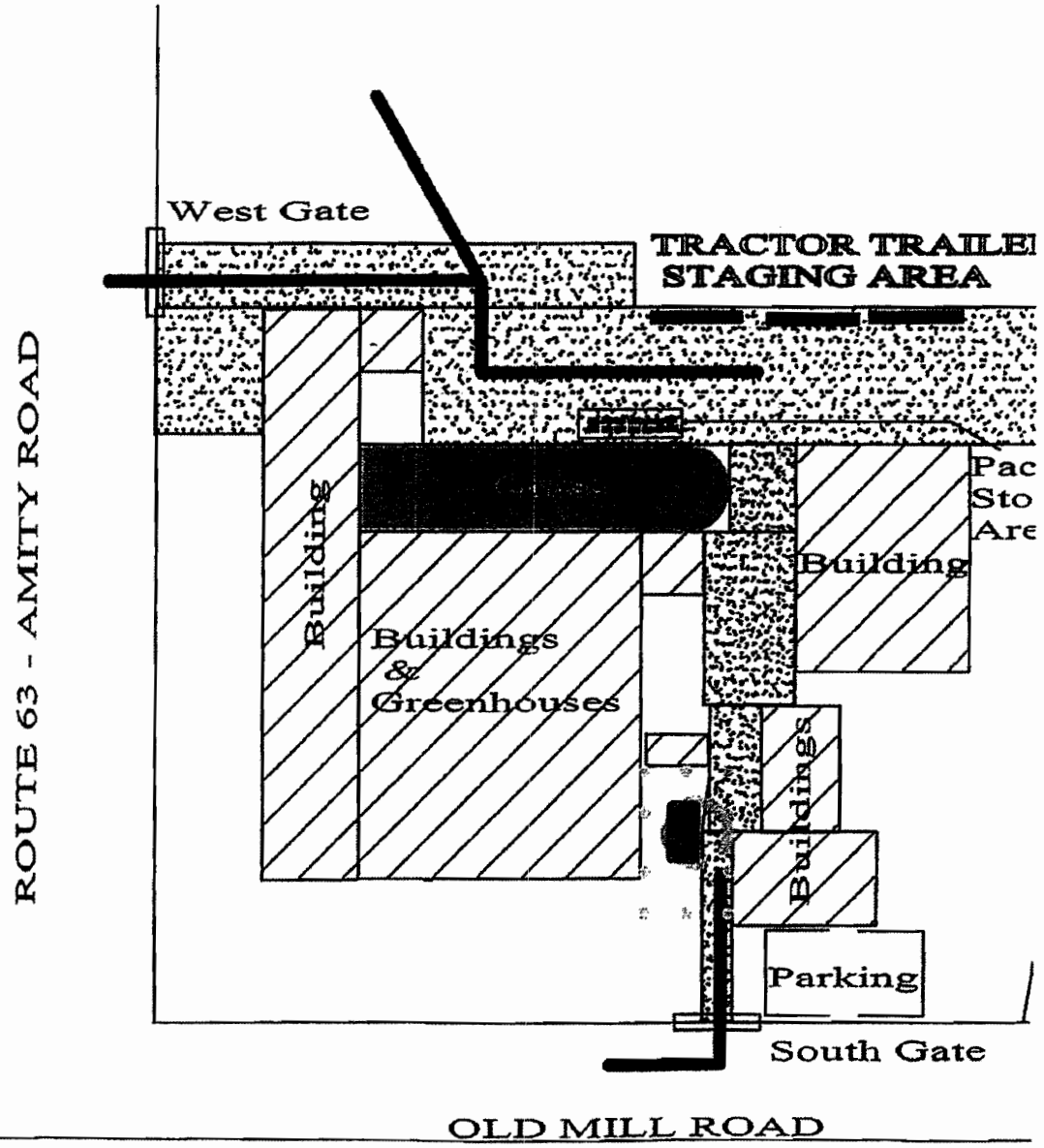


Figure 2
Site Plan

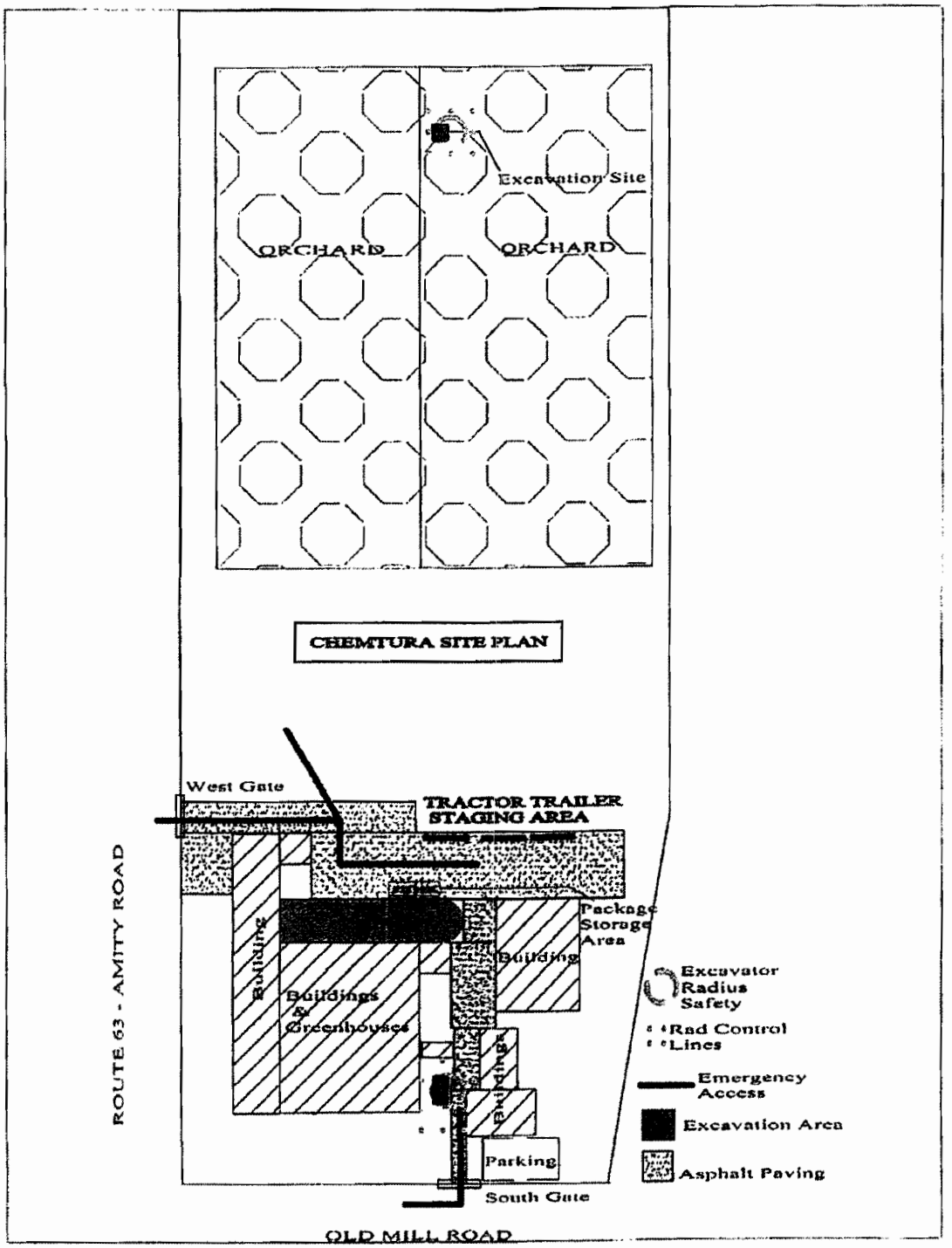


Figure 3
74 Amity Road, Bethany, CT

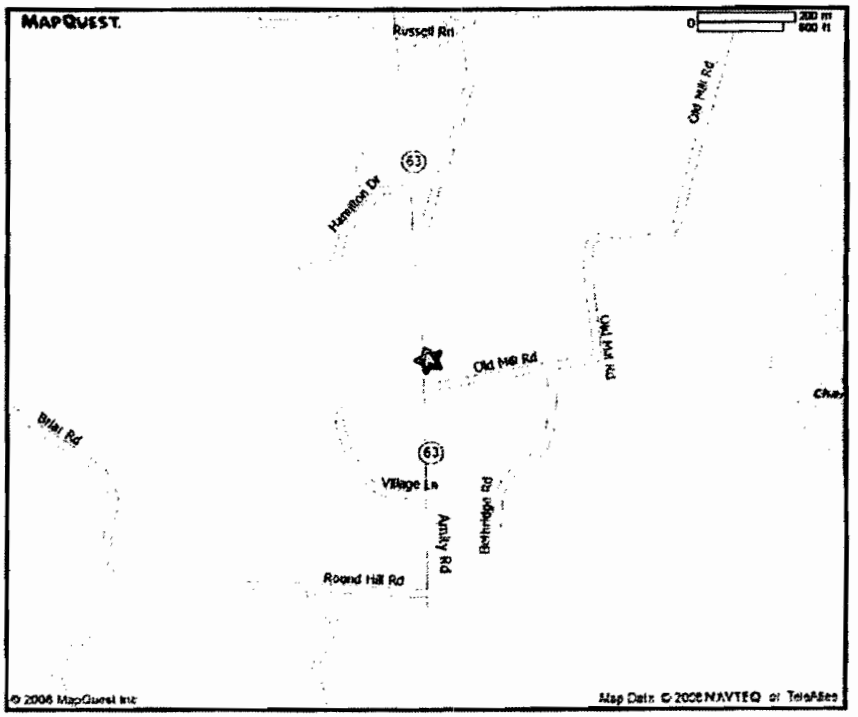
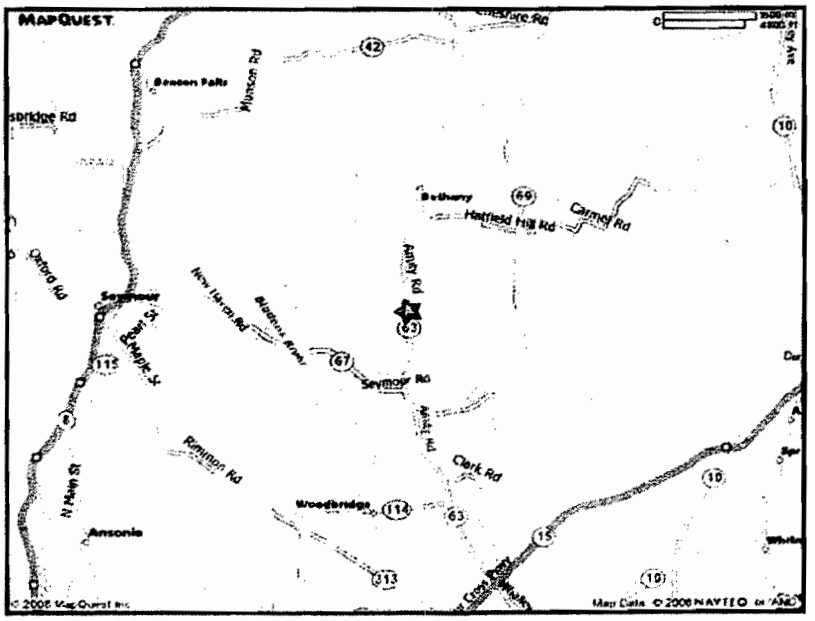


Figure 4
Bethany Area



Attachment 8.2

Work Site Safety Checklist

WORK SITE SAFETY CHECKLIST

Project: Chemtura – Bethany, CT

Location:	**Date & Time:**

1	Lockout / Tagout Equipment	☐ Intact	☐ Damaged	☐ Missing	☐N/A
2	Entrance Warning Placarding	☐ Intact	☐ Damaged	☐ Missing	☐N/A
3	Entry Secure	☐ Yes	☐ No	☐ Corrected	☐N/A
4	Trip / Fall Hazards	☐ Yes	☐ No	☐ Corrected	☐N/A
5	Heavy Equipment Secured / Chocked	☐ Yes	☐ No	☐ Corrected	☐N/A
6	Fire Extinguishers	☐ Intact	☐ Damaged	☐ Missing	☐N/A
7	Portable Fuel Containers NFPA 30	☐ Yes	☐ No	☐ Corrected	☐N/A
8	Portable Fuel Containers Stored	☐ Yes	☐ No	☐ Corrected	☐N/A
9	Spill Response Material Kit	☐ Intact	☐ Damaged	☐ Missing	☐N/A
10	First Aid Kit / BBP Kit / CPR Supplies	☐ Intact	☐ Damaged	☐ Missing	☐N/A
11	Eyewash Station	☐ Intact	☐ Damaged	☐ Missing	☐N/A
12	Drench Shower	☐ Intact	☐ Damaged	☐ Missing	☐N/A
13	Sanitation Facilities	☐ Intact	☐ Damaged	☐ Missing	☐N/A
14	Electrical Cords Secure / Protected	☐ Yes	☐ No	☐ Corrected	☐N/A
15	Trash Containers Closed / Disposal	☐ Yes	☐ No	☐ Corrected	☐N/A
16	Lighting Equipment	☐ Intact	☐ Damaged	☐ Missing	☐N/A
17	Utility Markings / Flags / Postings	☐ Intact	☐ Damaged	☐ Missing	☐N/A
18	Negative Pressure Enclosure Secure	☐ Yes	☐ No	☐ Corrected	☐N/A
19	Temporary Stairways (In Work Areas)	☐ Intact	☐ Damaged	☐ Missing	☐N/A
20	Ladders	☐ Intact	☐ Damaged	☐ Missing	☐N/A
21	Hazardous Waste Containers	☐ Intact	☐ Damaged	☐ Missing	☐N/A
22	Hazardous Waste Labeling / Posting	☐ Intact	☐ Damaged	☐ Missing	☐N/A
23	Active Work Permit Postings	☐ Intact	☐ Damaged	☐ Missing	☐N/A

Note:

Completed By:

Attachment 8.3

Instrument List

1. Radiological Instruments

   The following is a list of radiological instruments that may be used for this project. It does not preclude using other instruments, as necessary:

   - Ludlum Model 12 Count Rate Meter – G-M detector
   - Ludlum Model 2221 Scaler – 44-110 Alpha-Beta GPC detector
   - Ludlum Model 2929 Scaler – Alpha-Beta swipe counter
   - Ludlum Model 3030 Scaler – Alpha-Beta swipe counter
   - Bicron microrem dose-rate meter
   - Thermo-Eberline E-600 – multiple detectors – dose-rate & count rate meter

2. Calibrated Tools

   None for this project.

Attachment 8.4

Project RWP

Work Plan
for Chemtura Site Remediation Project

CS-OP-PN-026
Revision 0

RADIATION WORK PERMIT

☐ **Job Specific** ☑ **Standing/General**

Job Location: Chemtura – 74 Amity Road Bethany, CT			**RWP No. :** 001
Task Name/Number	**Initiated By**	**Estimated Person Hours**	**Start Date**
Excavation & Loading	S. R. Smith	120	10/13/2008
Job Description (Be Specific) Excavate approximately 55 cubic yards of soil			**End Date:** 10/17/2008
Contaminated with < 180 pCi gram^{-1} from two locations, place the soil in 5 cubic yard Lift-liners			Est Person-Rem: 0
prepare packages and ship off-site for transfer to Clive, UT			Total Exposure-Rem:: 0

INITIAL RADIOLOGICAL CONDITIONS (attach survey if applicable)

Radiation	Contamination	Air Sampling	Other
General Area Dose (units)	**General Loose (dpm/100cm^2)**	**% of DAC/Isotope**	
< 40 µR hr^{-1}	< 160 dpm/100 cm^2	N/A	
Hot Spot Dose (units)	**General Fixed (dpm/100cm^2)**	**% of DAC/Isotope**	
< 40 µR hr^{-1}	< 160 dpm/100 cm^2	N/A	
Surveyed By:	**Date:**		

RCT SUPPORT

☐ **None**	☐ **Initial**	☑ **Intermittent**	☐ **Continuous**

PROTECTIVE CLOTHING AND EQUIPMENT REQUIREMENTS (Check all that apply)

Body		Respiratory Protection*		Dosimetry	
Lab Coat		**Dust mask (not for rad work)**		**Film Badge**	
Coveralls ☐ **1 pr** ☐ **2pr**		**Half Face**		**TLD/OSL Badge**	
Disp. Coveralls ☑ **1 pr** ☐ **2pr**	X	**Full Face**		**Low Range Dosimeter**	
Plastic Suit ☐ **1 pr** ☐ **2pr**		**Supplied Air Respirator**		**High Range Dosimeter**	
Fire Retardant Coveralls		**Supplied Air Hood**		**Integrating Dose Rate Meter**	
Head		SCBA		**Integrating Neutron Meter**	
Skull Cap		**Particulate (HEPA) Cartridge**		**Neutron Badge**	
Hood ☐ **Disposable** ☐ **Cloth**		**Vapor Cartridge**		**Multi Badge**	
Face Shield		**Other**		**Finger Ring**	
Goggles		Feet		**Ankle Badge**	
Hands		**Plastic Booties** ☐ **1 pr** ☐ **2pr**		**Pocket Dosimeter**	
Rubber Gloves ☑ **1 pr** ☐ **2pr**	X	**Rubber Booties** ☑ **1 pr** ☐ **2pr**	X	**Alarming Electronic Dosimeter**	
Surgeons Gloves ☐ **1 pr** ☐ **2pr**		**Cloth Booties** ☐ **1 pr** ☐ **2pr**			
Cotton Liners		**Rubber Boots**		**Bioassay***	
Leather Work Gloves		**Covers** ☐ **Disposable** ☐ **Cloth**			

Taped Cuffs					
		*If required by the Radiological Respiratory Protection Program, an ALARA evaluation must be documented prior to use.		* The use of bioassay must be pre-approved by a Certified Health Physicist	

SPECIAL INSTRUCTIONS (Check all that apply)

☐ **Tape Gloves and Footwear to Coveralls**	☐ **Temporary Ventilation Unit Required**
☐ **Wear Dosimeter on Inner Coveralls**	☑ **Pre-Job Planning Meeting Required**
☑ **Set Up Local Control Zone (Radiation or Contamination)**	☐ **Contamination Control Envelope Required**
☐ **Wear Dosimetry on Head**	☐ **Outer Personnel Clothing Not to be Worn**
☐ **Airborne Sample to be Taken as Specified Below**	☐ **Notify HP/RCT Prior to Start of Work**
☐ **Fire Watch Required**	☐ **Re-Evaluate Radiological Conditions Every**
☐ **Confined Space Entry Controls Required**	☐ **Re-Evaluate Hazardous Conditions Every**
☑ **Hard Hats Required**	☐ **Chemical Hazards Present (provide Hazard Analysis)**
☑ **Eye Protection Required**	☐ **Use of Scaffolding Required**
☐ **Hearing Protection Required**	

MONITORING REQUIREMENTS (Check all that apply)

Radiation		Contamination		Air Sampling			Other
Once per shift	X	**Once per shift**	X		**WA**	**BZ**	
Daily		**Daily**		**Once per shift**			
Weekly		**Weekly**		**Daily**			
Prior to work start		**Prior to work start**		**When in work area**			
Every _____ hours		**Every _____ hours**		**Every _____ hours**			
At completion of job	X	**At completion of job**		**Lapel**			
Gamma		**Beta/Gamma**	X	**O2**			
Alpha		**Alpha**		**VOCs**			
Beta	X						
Neutron				**WA – Work Area**			
				BZ – Breathing Zone			

INSTRUCTIONS TO WORKERS

- **Read the RWP carefully. By signing the RWP briefing/acknowledgment sheet and signing in on the RWP sign-in sheet you acknowledge that you have read and understand to RWP requirements.**
- **Read and familiarize yourself with any attachments including JHAs, surveys and other job related instructions as you are responsible for your own exposure as well as the safety and well being of yourself and others.**
- **You must follow the RWP instructions including the wearing the appropriate PPE and monitoring equipment. Only the RPS or Site Safety Officer may down grade any PPE and monitoring requirements.**

Work Plan
for Chemtura Site Remediation Project

CS-OP-PN-026
Revision 0

APPROVALS (see table below for required approval)

	Printed Name	Signature	Date
Prepared By:	Stewart R Smith		
Commercial Services RSO:			
Radiation Safety Committee:			
Termination:			

Radiation Safety Committee approval required for these conditions:	**Individual approaching any Administrative Limit (Reference 2.2)**
	Task ≥ 2 person-rem TEDE
	Dose to the public > 10 mrem (excluding transportation)

Attachments: NONE

Attachment 8.5

Waste Profile
&
Supporting Data

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EC-0230
Revision 7

RADIOACTIVE WASTE PROFILE RECORD

A. GENERATOR AND WASTE STREAM INFORMATION

GENERAL: Complete this form for one waste stream. Contact EnergySolutions at (801) 532-1330 if you have any questions while completing this form. Please indicate "N/A" if a category does not apply.

1. GENERATOR INFORMATION

Generator Name: Chemtura Corporation - Bethany Site EPA ID #: CTD000841312

Generator Contact: Jay Nag Title: E-fate scientitst & RSO

Mailing Address: 199 Benson Road

Middlebury, CT 06749 Utah Site Access Permit #: 0211 001 864.

Phone: (203) 573-3698 Fax: (203) 573-3660 Email: Jay.Nag@chemtura.com

Contractor Name: N/A Location of Waste (City, State): Bethany, CT

Name & Title of Person Completing Form: Stewart R Smith Phone: (801) 303-1603 Email: ssmith@energysolutions.com

2. WASTE STREAM INFORMATION

Waste Stream ID: 0942-01 Waste Stream Name: Chemtura - Bethany Agricultural Station State of Origin: CT

Revision: 0 Date: 10/10/2008 Volume (ft^3): ~1,500 Delivery Date: 10/27/2008

CHECK APPROPRIATE BOXES BELOW. Please verify the required forms requested below are completed and submitted with the Radioactive Waste Profile Record.

HAZARDOUS WASTE: Is the waste classified as hazardous waste as defined by 40 CFR 261?

N ☒ If NO, complete and attach the "**Low-Level Radioactive Waste Certification Attachment**".
Y ☐ If YES, complete and attach the "**Hazardous Waste Certification Attachment**" and check applicable box below.
Has the waste been treated to meet applicable treatment standards per 40 CFR 268? Y ☐ N ☐
Is the waste to be treated by EnergySolutions? Y ☐ N ☐

LOW-LEVEL RADIOACTIVE WASTE: Is the radioactive waste defined as Low-Level Radioactive Waste in accordance with the Low-Level Radioactive Waste Policy Amendments Act of 1985 or in DOE Order 435.1?

Y ☒ If YES, a current copy of a LLRW Compact Export letter authorizing export must be submitted if applicable. This authorization is applicable for non-DOE LLRW (i.e., Mixed Waste, NORM/NARM, 11e.(2) material, and waste from DOE do not require a Compact Export Letter).
N ☐ If NO, check appropriate box: NORM/NARM ☐ 11e.(2) Byproduct Material ☐ Other: _____

SPECIAL NUCLEAR MATERIAL: Does the waste stream contain material with uranium enriched in U-235 or any of the following radionuclides: U-233, Pu-236, Pu-238, Pu-239, Pu-240, Pu-241, Pu-242, Pu-243, or Pu-244?

Y ☐ N ☒ If Yes, complete and attach the "SNM Exemption Certification" form (EC-0230-SNM). Supporting statements, analytical results, and documentation must be included with the submittal.

PCB WASTE: Does the waste contain Polychlorinated Biphenyls (PCB) that are regulated for disposal per 40 CFR 761?

Y ☐ N ☒ If Yes, complete and attach the "PCB Waste Certification" form (EC-98279).

ASBESTOS: Does the waste contain Asbestos Containing Material?

Y ☐ N ☒ If Yes, Asbestos Containing Material must be managed in accordance with applicable federal regulations. Provide a detailed description of the waste containing asbestos in Section B.5 of the waste profile.

ENERGYSOLUTIONS

EC-0230
Revision 7

RADIOACTIVE WASTE PROFILE RECORD

B. WASTE PHYSICAL PROPERTIES & PACKAGE INFORMATION

1. GENERAL CHARACTERISTICS

Does the waste contain free liquids? Y ☐ N ☒ If Yes, what is the percent of free liquid by waste volume? _____ %

If Yes, is the liquid aqueous (water-based)? Y ☐ N ☐

Does the waste contain absorbent? Y ☒ N ☐ Density range of the waste: 1.5 – 1.9 g/cc ☒ lb/ft³ ☐

List percentage of waste type by volume: Soil 98% Concrete & Metal 1% DAW 1% Resins _____% Sludge _____%

Other constituents and percentage by volume? _____

2. MATERIAL SIZE

Gradation of Material: Indicate the percentage of waste material that would pass through the following grid sizes. For example, 95% of the material would pass through a 12" square, 90% passes through a 4" square, 80% passes through a 1" square, etc.

12" 99 % 4" 99 % 1" 75 % 1/4" 50 % 1/40" 10 % 1/200" 1 %

Does the waste stream contain oversize debris (i.e., no dimension < 10 inches and any dimension > 12 feet)? Y ☐ N ☒
If Yes, include a detailed description (i.e., weight, size, drawings, etc.) of the oversize debris in the narrative of Section B.5.

3. MOISTURE CONTENT

For soil or soil-like materials, please use **Std. Proctor Method ASTM D-698** to determine the optimum moisture content. The waste material must not exceed 3 percentage points above optimum moisture upon arrival at EnergySolutions' disposal facility unless approved by EnergySolutions.

Optimum Moisture Content: 23.3 % at Maximum Dry Density (lb/ft³): 99.7

Average Moisture Content: 21.7 % Moisture Content Range: 20.8% - 23.3%

4. WASTE SHIPPING & PACKAGING

Transportation Mode: ☐ Highway ☒ Rail

Shipping & Container Packages: (Check all that apply) ☐ Drums* (≤ 85 gallons) ☐ Boxes (≤ 100 ft³) ☒ Soft-Sided Bags (≤ 10 yd³)

☐ Intermodal ☐ Sealand ☐ Gondola** ☐ Box Car

Other:

*Palletized drums are preferred by the disposal site. Please specify in the "Other" field if drums will not be palletized.
**Dimensions of gondola railcars must be between 48 to 65 feet in length and 8.5 to 12.5 feet in height as measured from the top of the rail to the top of the railcar unless approved by EnergySolutions.

5. NARRATIVE DESCRIPTION AND HISTORY OF WASTE

Please submit a narrative description and history of the waste as an attachment to the Radioactive Waste Profile Record. This attachment should include the following:

- Process that generated the waste
- Waste material physical composition and characteristics
- Radiological and chemical characterization method
- Basis for determining manifested radionuclide concentrations
- Description and amounts of absorbents, if applicable
- Basis of non-hazardous or hazardous waste determinations
- Treatment processes, if applicable
- Product information or Material Safety Data Sheets associated with the waste as applicable
- Information requested in other sections of this form

ENERGYSOLUTIONS

EC-0230
Revision 7

RADIOACTIVE WASTE PROFILE RECORD

Waste Stream ID: 0942-01 Revision: 0 Date of Revision: *10/10/2008*

C. RADIOLOGICAL INFORMATION

Obtain sufficient samples to adequately determine a range and weighted average of activity in the waste. Attach the gamma spectroscopy or radiochemistry data supporting the radionuclide information listed below.

1. Does the waste material contain accessible surfaces with contact dose rates greater than 500 mR/hr? Y ☐ N ☒

2. Does the waste material contain any of the following isotopes: Aluminum-26, Berkelium-247, Calcium-41, Californium-250, Chlorine-36, Rhenium-187, Terbium-157, or Terbium-158? Y ☐ N ☒

3. Please list the following information for each isotope associated with the waste. Provide an explanation in the narrative description of Section B.5 if the waste contains localized "hot spots" or elevated concentrations that significantly exceed the upper concentration range. If additional space is needed, provide an Attachment C.3 to this profile record formatted as below.

Isotope	Manifested Upper Concentration (pCi/g)	Weighted Avg. per Container (pCi/g)	Isotope	Manifested Upper Concentration (pCi/g)	Weighted Avg. per Container (pCi/g)
C-14	180	12.43			

ENERGYSOLUTIONS

EC-0230
Revision 7

RADIOACTIVE WASTE PROFILE RECORD

LOW-LEVEL RADIOACTIVE WASTE CERTIFICATION ATTACHMENT

This form is required only if the checkbox for Hazardous Waste on page one has been checked No. Otherwise, complete the Hazardous Waste Certification Attachment instead of this attachment. EnergySolutions may waive the chemical laboratory analyses if the material is not amenable to chemical sampling and analysis (e.g., debris items including metal pieces, concrete, plastic, etc.). Justification for waiving the chemical analyses must be provided in Section B.5.

D. MINIMUM REQUIRED CHEMICAL ANALYSIS

The following parameters must be analyzed by a Utah or NELAC certified laboratory. Typical SW-846 analytical methods have been listed. Other approved methods are acceptable. Attach the most recent or applicable chemical analytical results representing the waste.

1. GENERAL CHEMICAL PARAMETERS

SW-846 Analytical Methods

PFLT:_____ **Pass / Fail** **Method 9095** Not applicable for liquid radioactive waste streams.

2. 40 CFR 261.24 Table 1 – Contaminants of Toxicity Characteristic

Metals: Methods 6010 & *7470 ☒ TCLP (mg/L) or ☐ Total (mg/kg)

Arsenic	2.0E-01	Chromium	5.0E-02	Selenium	1.5E-01
Barium	3.5E-01	Lead	5.0E-02	Silver	3.0E-02
Cadmium	5.0E-02	*Mercury	2.0E-03		

Organics, Pesticides/Herbicides: Methods 8081/*8151 ☒ TCLP (mg/L) or ☐ Total (mg/kg)

Endrin	5.0E-03	Toxaphene	1.2E-02	Chlordane	2.5E-04
Lindane	2.5E-03	*2,4-D	0.0E-00	Heptachlor	2.5E-05
Methoxychlor	2.5E-04	*2,4,5-TP Silvex	0.0E-00		

Organics, Semi-Volatile: Method 8270 ☒ TCLP (mg/L) or ☐ Total (mg/kg)

o-Cresol	2.0E-02	Hexachlorobenzene	2.0E-02	Pentrachlorophenol	1.0E-01
m-Cresol	---	Hexachlorobutadiene	2.0E-02	Pyridine	4.0E-02
p-Cresol	2.0E-02	Hexachloroethane	2.0E-02	2,4,5-Trichlorophenol	1.0E-01
Total Cresol	4.0E-02	Nitrobenzene	2.0E-02	2,4,6-Trichlorophenol	2.0E-02
2,4-Dinitrotoluene	2.0E-02				

Organics, Volatile: Method 8260 ☒ TCLP (mg/L) or ☐ Total (mg/kg)

Benzene	5.0E-03	1,4-Dichlorobenzene	2.0E-02	Methyl ethyl keytone	1.0E-02
Carbon Tetrachloride	5.0E-03	1,2-Dichloroethane	5.0E-03	Tetrachloroethylene	5.0E-03
Chlorobenzene	5.0E-03	1,1-Dichloroethylene	5.0E-03	Trichloroethylene	5.0E-03
Chloroform	5.0E-03	Vinyl Chloride	5.0E-03		

3. Was the waste at the point of generation a RCRA hazardous waste per 40 CFR 261? Y ☐ N ☒

If Yes, list former hazardous waste codes and former underlying hazardous constituents. List worst-case concentrations for each hazardous constituent. If additional space is needed, provide an Attachment D.3 to this profile record formatted as below. Attach the most recent chemical analytical results demonstrating compliance with applicable treatment standards.

If No, indicate "N/A" in Section D.3 below.

ENERGYSOLUTIONS

EC-0230
Revision 7

RADIOACTIVE WASTE PROFILE RECORD

D. 3.

Former EPA HW Codes or Underlying Hazardous Constituents	Treatment Standard (mg/kg unless noted as mg/L TCLP or Technology Code)	Worst Case Concentration (mg/kg unless noted as mg/L TCLP)
N/A		
N/A		
N/A		
N/A		
N/A		
N/A		

4. **OTHER CHEMICAL CONSTITUENTS**

List any other chemical constituents of concern (e.g., PCBs, chelating agents, etc.) and worst-case concentrations. If additional space is needed, provide an Attachment D.4 to this profile record formatted as below.

Other Chemical Constituents	Worst-Case Concentration (mg/kg unless noted as mg/L TCLP)	Other Hazardous Constituents	Worst-Case Concentration (mg/kg unless noted as mg/L TCLP)
N/A			
N/A			
N/A			
N/A			
N/A			
N/A			

5. **LABORATORY CERTIFICATION**

☒ **UTAH or NELAC CERTIFIED**
The Utah or NELAC certified laboratory holds a current certification for the applicable chemical test methods insofar as such official certifications are given. Please provide a copy of the laboratory's current certification letter for each parameter analyzed and each method used for chemical analyses required by this form.

☐ **OTHER LABORATORY CERTIFICATION** (Describe below)

6. **CERTIFICATION**

I certify that sample results representative of the waste described in this profile were or shall be obtained using state- and EPA-approved analytical methods. I also certify that where necessary representative samples were or shall be provided to EnergySolutions and to qualified laboratories for the analytical results reported herein. I further certify that the waste described in this record is not prohibited from land disposal in 40 CFR 268 (unless prior arrangements are made for treatment at EnergySolutions) and that all applicable treatment standards are clearly indicated on this form. I also certify that the information provided on this form is complete, true, and correct and is accurately supported and documented by any laboratory testing as required by EnergySolutions. I certify that the results of any said testing have been submitted to EnergySolutions. I certify that the waste does not contain any prohibited items listed in EnergySolutions' Radioactive Material License.

Generator's Signature: [signature] Title: RSO - Chemtura Date: 10/10/2008

Stewart R Smith ES - PROJECT MANAGER 10/10/2008

ATTACHMENT B.5
PHYSICAL PROPERTIES

Generator Name: Chemtura Corporation Waste Stream ID: 0942-01
Revision #: 0 Revision Date: 10/10/2008

OVERWRITE THIS SECTION TO COMPLETE YOUR NARRATIVE
Items to include in this attachment as applicable:

- Process that generated the waste – ***Small amounts of C-14 labeled organic compounds were sprayed upon plants as part of experiments involving agricultural chemical products.***
- Waste material physical composition and characteristics – ***Soils were contaminated as part of these experiments.***
- Radiological and chemical characterization method – ***Samples from the soil, leaf and root systems were taken and analyzed by combustion and liquid scintillation counter by Eberline of Oak Ridge, TN.***
- Basis for determining manifested radionuclide concentrations – ***The range of the LSC results was evaluated. The manifested concentration in pCi gm^{-1} was determined by adding 2σ to the highest observed concentration.***
- Description and amounts of absorbents, if applicable – ***Sufficient clay absorbent (<1% by weight) was added to the packages to absorb moisture that might separate due to vibrations generated by transportation.***
- Basis of non-hazardous or hazardous waste determinations – ***Analysis was conducted on samples provided to TestAmerica for TCLP from Chemtura Corporation. EnergySolutions, Inc. environmental and radiological staff evaluated the results.***
- Treatment processes, if applicable – ***Not Applicable***
- Product information or Material Safety Data Sheets associated with the waste as applicable – ***Not Applicable***
- Information requested in other sections of this form

For waste streams with SNM, please include the information requested in items 3a through 3d of the SNM Exemption Certification (form EC-0230-SNM) including: - ***Not Applicable***

- How the waste was generated
- Physical forms in the waste
- Uranium chemical composition (if applicable)
- How the waste was characterized
- The range of SNM concentrations
- Analytical results with error values
- Spatial distribution uniformity of SNM
- Determination of manifested concentrations

For waste streams containing PCBs regulated for disposal, please provide a description of the PCB waste categories listed on the PCB Waste Certification form (EC-98279) – ***Not Applicable***

For profiles containing large components (e.g., single items > 20,000 lbs), please provide the following information: - ***Not Applicable***

- Drawings illustrating dimension, weight, access ports to void spaces and lifting points
- Photographs of the object
- Radiological characterization and surveys including dose rates and surface contamination levels
- Packaging, rigging, loading and transportation plans

07..11018

Sand & Soil Sample Chain of Custody Document

Shipped From: Robin Charlton
Chemtura Corporation
199 Benson Rd
Middlebury, CT 06749
Phone 203-573-3692
Fax 203-573-3660
robin.charlton@chemtura.com

To: Michael McDougall
Eberline Services
601 Scarboro Rd
Oak Ridge, TN 37830
Phone 865-481-0683

Shipping Conditions: ambient temperature
Shipping Carrier: FedEx

Shipper Signature: Fed Ex Date: 11/5/07

	Sample No.	Description	Sampling Date	Box No.	Shipped	Received
	S1	G1-I-5 (Greenhouse #-Section #-Table #)	10/29/07	1	X	
	S2	G1-I-6	10/29/07	1	X	
	S3	G1-I-7	10/29/07	1	X	
	S4	G1-I-8	10/29/07	1	X	
	S5	G1-I-11	10/29/07	1	X	
	S6	G1-I-12	10/29/07	1	X	
	S7	G1-II-1	10/29/07	1	X	
	S8	G1-II-2	10/29/07	1	X	
	S9	G1-II-5	10/29/07	1	X	
	S10	G1-II-6	10/29/07	1	X	
	S11	G1-II-7	10/29/07	1	X	
	S12	G1-III-1	10/29/07	1	X	
	S13	G1-III-2	10/29/07	1	X	
	S14	G1-III-6	10/29/07	1	X	
	S15	G2-I-1	10/29/07	1	X	
	S16	G2-I-2	10/29/07	1	X	
	S17	G2-I-3	10/29/07	1	X	
4	S18	G2-I-4	10/29/07	1	X	
5	S19	G2-I-6	10/29/07	1	X	
6	S20	G2-I-7	10/29/07	1	X	
7	S21	G2-I-8	10/29/07	1	X	
8	S22	G2-II-1	10/29/07	1	X	
9	S23	G2-II-2	10/29/07	1	X	
10	S24	G2-II-3	10/29/07	1	X	
11	S25	G2-II-4	10/29/07	1	X	
12	S26	G2-II-7	10/29/07	1	X	
13	S27	G2-II-8	10/29/07	1	X	
14	S28	G2-II-9	10/29/07	1	X	

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	Sample No.	Description	Sampling Date	Box No.	Shipped	Received
15	S29	G2-II-10	10/29/07	1	X	
16	S30	G2-III-1	10/29/07	1	X	
17	S31	G2-III-2	10/29/07	1	X	
18	S32	G2-III-3	10/29/07	1	X	
19	S33	G2-III-4	10/29/07	1	X	
20	S34	G2-III-7	10/29/07	1	X	
	S35	G2-III-8	10/29/07	1	X	
	S36	G3-I-2	10/29/07	1	X	
	S37	G3-I-3	10/29/07	1	X	
	S38	G3-I-4	10/29/07	1	X	
	S39	G3-I-5	10/29/07	1	X	
	S40	G3-I-6	10/29/07	1	X	
	S41	G3-I-7	10/29/07	1	X	
	S42	G3-I-8	10/29/07	1	X	
	S43	G3-I-9	10/29/07	1	X	
	S44A	G3-I-10	10/29/07	1	X	
	S44B	G3-II-1	10/29/07	1	X	
	S45	G3-II-2	10/29/07	1	X	
	S46	G3-II-3	10/29/07	1	X	
	S47	G3-II-4	10/29/07	1	X	
	S48	G3-II-5	10/29/07	1	X	
	S49	G3-II-6	10/29/07	1	X	
	S50	G3-II-7	10/29/07	1	X	
	S51	G3-II-8	10/29/07	1	X	
	S52	G3-II-9	10/29/07	1	X	
	S53	G3-II-10	10/29/07	1	X	
	S54	G3-III-1	10/29/07	1	X	
	S55	G3-III-2	10/29/07	1	X	
	S56	G3-III-3	10/29/07	1	X	
	S57	G3-III-4	10/29/07	1	X	
	S58	G3-III-5	10/29/07	1	X	
	S59	G3-III-6	10/29/07	1	X	
	S60	G3-III-7	10/29/07	1	X	
	S61	G3-III-8	10/29/07	1	X	
	S62	Upper Apple NE 0-6 in	10/30/07	1	X	
	S63	Upper Apple NE 6-12 in	10/30/07	1	X	
	S64	Upper Apple SW 0-6 in	10/30/07	1	X	
	S65	Upper Apple SW 6-12 in	10/30/07	1	X	
	S66	Lower Apple Center 0-6 in	10/30/07	1	X	
	S67	Lower Apple Center 6-12 in	10/30/07	1	X	
	S68	Lowest Apple Center 0-6 in	10/30/07	1	X	
	S69	Lowest Apple Center 6-12 in	10/30/07	1	X	
	S70	Peach NE 9-15 in	10/30/07	2	X	

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Sample No.	Description	Sampling Date	Box No.	Shipped	Received
S71	Peach SW 9-15 in	10/30/07	2	X	
S72	Grape E 0-6 in	10/30/07	2	X	
S73	Grape E 6-12 in	10/30/07	2	X	
S74	Grape W 0-6 in	10/30/07	2	X	
S75	Grape W 6-12 in	10/30/07	2	X	
S76	Old Corral E 0-6 in	10/31/07	2	X	
S77	Old Corral E 6-12 in	10/31/07	2	X	
S78	Old Corral W 0-6 in	10/31/07	2	X	
S79	Old Corral W 6-12 in	10/31/07	2	X	
S80	Corral SW 0-6 in	10/31/07	2	X	
S81	Corral SW 6-12 in	10/31/07	2	X	
S82	Corral mid W 0-6 in	10/31/07	2	X	
S83	Corral mid W 6-12 in	10/31/07	2	X	
S84	Corral NW 0-6 in	10/31/07	2	X	
S85	Corral NW 6-12 in	10/31/07	2	X	
S86	Corral SE 0-6 in	10/31/07	2	X	
S87	Corral SE 6-12 in	10/31/07	2	X	
S88	Corral mid E 0-6 in	10/31/07	2	X	
S89	Corral mid E 6-12 in	10/31/07	2	X	
S90	Corral NE 0-6 in	10/31/07	2	X	
S91	Corral NE 6-12 in	10/31/07	2	X	

Acknowlegement of Receipt:

Received in good condition. If other than good condition, please explain.

Signature: [illegible] Date: [illegible]

Printed Name: D. Webb

Please send a signed copy of this document to the Shipper at the address above.

The samples above are submitted for the analysis of ^{14}C content with standard 21-day turn-around time and Level IV Analytical Data Package with Standard EDD at an MDA of < 5 pCi/g. The NRC specification for decommissioning is 12 pCi/g.

NOV 05 2007
BRP

KF
12/3/07 ~~07.11135~~

07.12002

Sand & Soil Sample Chain of Custody Document

Shipped From: Robin Charlton
Chemtura Corporation
199 Benson Rd
Middlebury, CT 06749
Phone 203-573-3692
Fax 203-573-3660
robin.charlton@chemtura.com

To: Michael McDougall
Eberline Services
601 Scarboro Rd
Oak Ridge, TN 37830
Phone 865-481-0683

Shipping Conditions: ambient temperature
Shipping Carrier: FedEx

Shipper Signature: Robin Charlton Date: 11/30/07

	Sample No.	Description	Sampling Date	Box No.	Shipped	Received
4	S96	Corral NE hole 12-15 in	11/30/07	1	X	
5	S97	Corral NW hole 12-15 in	11/30/07	1	X	
6	S98	Corral mid E out 0-6 in	11/30/07	1	X	
7	S99	Corral mid E out6-12 in	11/30/07	1	X	
8	S100	Corral mid N out 8-14 in	11/30/07	1	X	
9	S101	Corral mid W out 0-6 in	11/30/07	1	X	
10	S102	Corral mid W out 6-12 in	11/30/07	1	X	
11	S103	Peach mid E 3 ft out 0-6 in	11/30/07	1	X	
12	S104	Peach mid N 3 ft out 0-6 in	11/30/07	1	X	
13	S105	Peach mid W 3 ft out 0-6 in	11/30/07	1	X	
14	S106	Peach mid S 3 ft out 0-6 in	11/30/07	1	X	
15	S107	Peach SE 1 ft out 0-6 in	11/30/07	1	X	
16	S108	Peach SW 1 ft out 0-6 in	11/30/07	1	X	
17	S109	Peach Center 0-6 in (soil and clay)	11/30/07	1	X	
18	S110	Peach Center 6-12 in (clay)	11/30/07	1	X	

Acknowlegement of Receipt:

Received in good condition. If other than good condition, please explain.

Signature: Kevin Fox Date: 12/3/07

Printed Name: Kevin Fox

Please send a signed copy of this document to the Shipper at the address above.

RECEIVED
DEC 03 2007
BY KF

Soil Chain of Custody 113007.doc

06.0104U

Sand & Soil Sample Chain of Custody Document

Shipped From: Robin Charlton
Chemtura Corporation
199 Benson Rd
Middlebury, CT 06749
Phone 203-573-3692
Fax 203-573-3660
robin.charlton@chemtura.com

To: Michael McDougall
Eberline Services
601 Scarboro Rd
Oak Ridge, TN 37830
Phone 865-481-0683

Shipping Conditions: ambient temperature
Shipping Carrier: FedEx

Shipper Signature: Robin Charlton Date: 1/10/08

	Sample No.	Description	Sampling Date	Box No.	Shipped	Received
4	S111	Corral NE fence 0-6 in	1/10/08	1	X	
5	S112	Corral NW fence 0-6 in	1/10/08	1	X	
6	S113	Corral WN fence 0-6 in	1/10/08	1	X	
7	S114	Corral W fence 0-6 in	1/10/08	1	X	
8	S115	Corral E fence 0-6 in	1/10/08	1	X	
9	S116	Corral EN fence 0-6 in	1/10/08	1	X	
10	S117	Peach SW 3 ft out 0-6 in	1/10/08	1	X	
11	S118	Peach SW 5 ft out 0-6 in	1/10/08	1	X	
12	S119	Peach N 4 ft out 0-6 in	1/10/08	1	X	
13	S120	Peach N 5 ft out 0-6 in	1/10/08	1	X	

Acknowlegement of Receipt:

Received in good condition. If other than good condition, please explain.

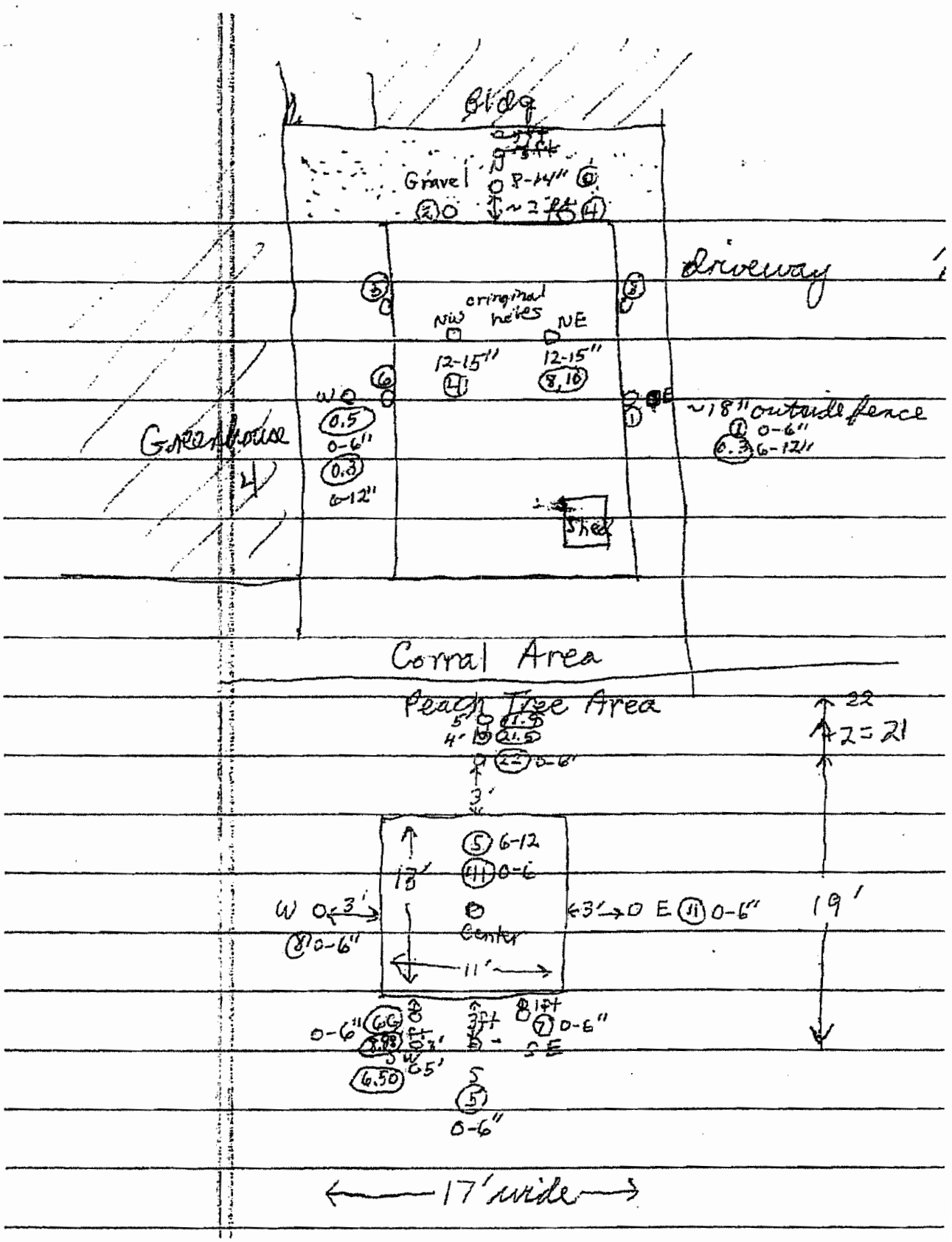
Signature: [signature] Date: 1/14/08 0800

Printed Name: Kevin Fox

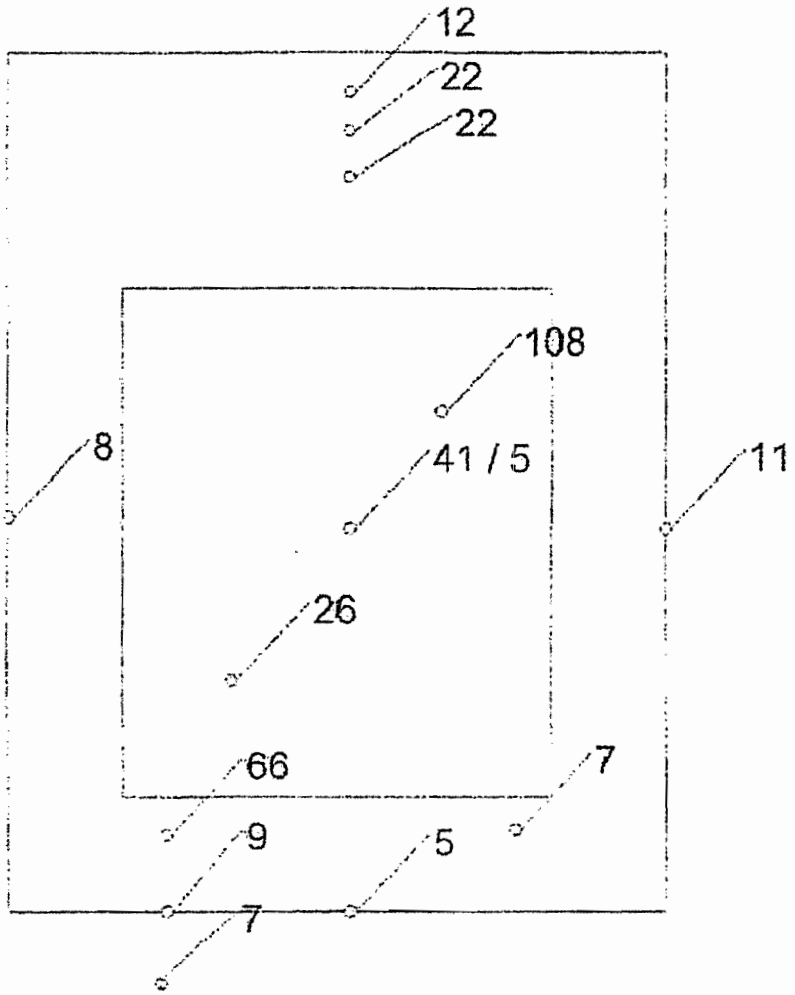
Please send a signed copy of this document to the Shipper at the address above.

The samples above are submitted for the analysis of ^{14}C content with standard 21-day turn-around time and Level IV Analytical Data Package with Standard EDD at an MDA of < 5 pCi/g. The NRC specification for decommissioning is 12 pCi/g.

JAN 14 2008
KF

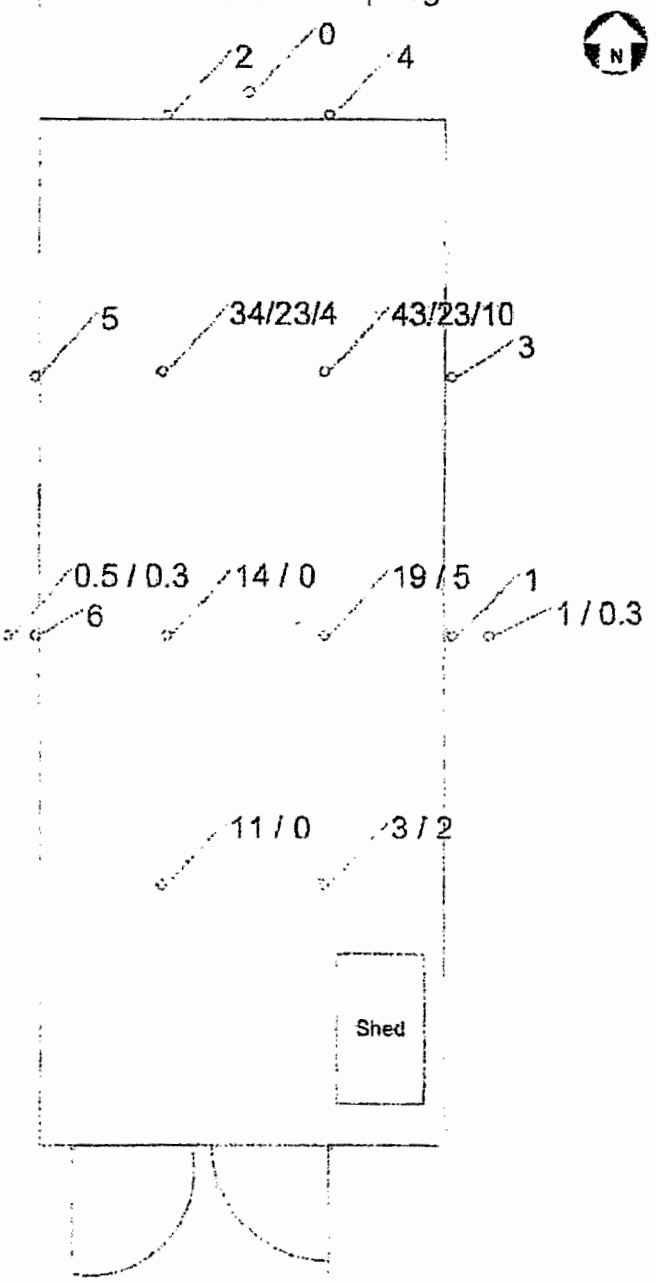

Bldg
Gravel
8-14"
~2 ft
driveway
original holes
NW
NE
12-15"
12-15"
8,10
W
0.5
0-6"
0.3
6-12"
Greenhouse
~18" outside fence
0-6"
0.3 6-12"
Shed
Corral Area
Peach Tree Area
5'
4'
21.5
21.5
22 0-6"
3'
22
2 = 21
5 6-12
11 0-6
13'
W 3'
8 0-6"
Center
3' E 11 0-6"
19'
11'
0-6"
6.6
8.98
6.50
3ft
1ft
7 0-6"
SE
5
0-6"
17' wide

Peach Tree Area 17X22 ft
Soil Samples
0-6 in/6-12 in pCi/g



Inner rectangle is 11X13 ft
area previously excavated to
an average of at least 6 in.

Outdoor Corral 16X40 ft
Soil Samples
0-6 in/6-12 in/12-15 in pCi/g



Chemtura Bethany Site

Eberline Services
Final Report of Analysis

Report To:	
Robin Charlton	
Chemtura Corporation	
199 Benson Road	
Middlebury, CT 06749	

Work Order Details:	
SDG:	07-11021
Purchase Order:	4603003657
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
07-11021-01	LCS	KNOWN	11/05/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	3.66E+02	1.02E+01			pCi/g
07-11021-01	LCS	SPIKE	11/05/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	3.14E+02	3.85E+00	2.03E+00	1.82E+00	pCi/g
07-11021-02	MBL	BLANK	11/05/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	-3.34E-01	5.14E-01	2.62E-01	8.91E-01	pCi/g
07-11021-03	DUP	S68	10/30/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	9.93E-01	5.36E-01	2.74E-01	8.82E-01	pCi/g
07-11021-04	DO	S68	10/30/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	3.35E-01	5.29E-01	2.70E-01	8.93E-01	pCi/g
07-11021-05	TRG	S69	10/30/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	6.43E-01	5.15E-01	2.63E-01	8.58E-01	pCi/g
07-11021-06	TRG	S70	10/30/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	1.08E+02	1.62E+00	8.42E-01	9.02E-01	pCi/g
07-11021-07	TRG	S71	10/30/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	2.64E+01	8.92E-01	4.57E-01	8.58E-01	pCi/g
07-11021-08	TRG	S72	10/30/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	1.31E+00	5.38E-01	2.75E-01	8.75E-01	pCi/g
07-11021-09	TRG	S73	10/30/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	6.48E-01	5.19E-01	2.65E-01	8.65E-01	pCi/g
07-11021-10	TRG	S74	10/30/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	6.47E-01	5.18E-01	2.64E-01	8.62E-01	pCi/g
07-11021-11	TRG	S75	10/30/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	3.31E-01	5.23E-01	2.67E-01	8.83E-01	pCi/g
07-11021-12	TRG	S76	10/31/07 00:00	11/5/2007	11/15/2007	07-11021	Carbon-14	EPA 520.0 Modified	0.00E+00	5.17E-01	2.64E-01	8.83E-01	pCi/g
07-11021-13	TRG	S77	10/31/07 00:00	11/5/2007	11/16/2007	07-11021	Carbon-14	EPA 520.0 Modified	3.34E-01	5.27E-01	2.69E-01	8.89E-01	pCi/g

Attachment B

47

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Chemtura Bethany Site

Eberline Services
Final Report of Analysis

Report To:	
Robin Charlton	
Chemtura Corporation	
199 Benson Road	
Middlebury, CT 06749	

Work Order Details:	
SDG:	07-11022
Purchase Order:	4603003657
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
07-11022-01	LCS	KNOWN	11/05/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	3.77E+02	1.06E+01			pCi/g
07-11022-01	LCS	SPIKE	11/05/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	3.01E+02	3.36E+00	1.78E+00	1.50E+00	pCi/g
07-11022-02	MBL	BLANK	11/05/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	-2.73E-01	4.32E-01	2.20E-01	7.47E-01	pCi/g
07-11022-03	DUP	S78	10/31/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	-2.56E-01	4.05E-01	2.07E-01	7.01E-01	pCi/g
07-11022-04	DO	S78	10/31/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	5.32E-01	4.36E-01	2.22E-01	7.27E-01	pCi/g
07-11022-05	TRG	S79	10/31/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	2.60E-01	4.22E-01	2.15E-01	7.12E-01	pCi/g
07-11022-06	TRG	S80	10/31/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	-4.07E+01	6.06E-01	3.10E-01	7.33E-01	pCi/g
07-11022-07	TRG	S81	10/31/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	0.00E+00	4.40E-01	2.24E-01	7.51E-01	pCi/g
07-11022-08	TRG	S82	10/31/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	1.40E+01	6.34E-01	3.24E-01	7.07E-01	pCi/g
07-11022-09	TRG	S83	10/31/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	0.00E+00	4.12E-01	2.10E-01	7.03E-01	pCi/g
07-11022-10	TRG	S84	10/31/07 00:00	11/5/2007	11/16/2007	07-11022	Carbon-14	EPA 520.0 Modified	3.43E+01	8.48E-01	4.36E-01	6.90E-01	pCi/g
07-11022-11	TRG	S85	10/31/07 00:00	11/5/2007	11/17/2007	07-11022	Carbon-14	EPA 520.0 Modified	2.26E+01	7.36E-01	3.77E-01	7.03E-01	pCi/g
07-11022-12	TRG	S86	10/31/07 00:00	11/5/2007	11/17/2007	07-11022	Carbon-14	EPA 520.0 Modified	2.88E+00	4.73E-01	2.41E-01	7.16E-01	pCi/g
07-11022-13	TRG	S87	10/31/07 00:00	11/5/2007	11/17/2007	07-11022	Carbon-14	EPA 520.0 Modified	2.07E+00	4.53E-01	2.31E-01	7.06E-01	pCi/g
07-11022-14	TRG	S88	10/31/07 00:00	11/5/2007	11/17/2007	07-11022	Carbon-14	EPA 520.0 Modified	1.89E+01	7.10E-01	3.64E-01	7.29E-01	pCi/g
07-11022-15	TRG	S89	10/31/07 00:00	11/5/2007	11/17/2007	07-11022	Carbon-14	EPA 520.0 Modified	5.00E+00	5.11E-01	2.61E-01	7.20E-01	pCi/g
07-11022-16	TRG	S90	10/31/07 00:00	11/5/2007	11/17/2007	07-11022	Carbon-14	EPA 520.0 Modified	4.31E+01	9.43E-01	4.86E-01	7.10E-01	pCi/g
07-11022-17	TRG	S91	10/31/07 00:00	11/5/2007	11/17/2007	07-11022	Carbon-14	EPA 520.0 Modified	2.34E+01	7.60E-01	3.90E-01	7.26E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (1-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Attachment B

48

Chemtura
Bethany Site

Eberline Services
Final Report of Analysis

Report To:	
Robin Charlton	
Chemtura Corporation	
199 Benson Road	
Middlebury, CT 06749	

Work Order Details:	
SDG:	07-12002
Purchase Order:	4603003657
Analysis Category:	ENVIRONMENTAL
Sample Matrix:	SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
07-12002-01	LCS	KNOWN	12/03/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	3.67E+02	1.03E+01			pCi/g
07-12002-01	LCS	SPIKE	12/03/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	2.95E+02	3.40E+00	3.43E+00	1.55E+00	pCi/g
07-12002-02	MBL	BLANK	12/03/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	2.85E-01	4.61E-01	4.61E-01	7.78E-01	pCi/g
07-12002-03	DUP	S96	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	7.79E+00	5.50E-01	5.50E-01	7.10E-01	pCi/g
07-12002-04	DO	S96	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	9.85E+00	6.17E-01	6.17E-01	7.70E-01	pCi/g
07-12002-05	TRG	S97	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	3.97E+00	4.97E-01	4.97E-01	7.24E-01	pCi/g
07-12002-06	TRG	S98	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	1.06E+00	4.44E-01	4.44E-01	7.23E-01	pCi/g
07-12002-07	TRG	S99	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	2.65E-01	4.30E-01	4.30E-01	7.25E-01	pCi/g
07-12002-08	TRG	S100	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	0.00E+00	4.27E-01	4.27E-01	7.29E-01	pCi/g
07-12002-09	TRG	S101	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	5.22E-01	4.28E-01	4.28E-01	7.14E-01	pCi/g
07-12002-10	TRG	S102	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	2.68E-01	4.35E-01	4.35E-01	7.34E-01	pCi/g
07-12002-11	TRG	S103	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	1.10E+01	5.89E-01	5.89E-01	6.98E-01	pCi/g
07-12002-12	TRG	S104	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	2.18E+01	7.44E-01	7.45E-01	7.28E-01	pCi/g
07-12002-13	TRG	S105	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	7.58E+00	5.50E-01	5.50E-01	7.15E-01	pCi/g
07-12002-14	TRG	S106	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	4.93E+00	5.04E-01	5.04E-01	7.10E-01	pCi/g
07-12002-15	TRG	S107	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	6.73E+00	5.32E-01	5.33E-01	7.08E-01	pCi/g
07-12002-16	TRG	S108	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	6.64E+01	1.14E+00	1.15E+00	7.26E-01	pCi/g
07-12002-17	TRG	S109	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	4.14E+01	9.63E-01	9.65E-01	7.55E-01	pCi/g
07-12002-18	TRG	S110	11/30/07 00:00	12/3/2007	12/7/2007	07-12002	Carbon-14	EPA 520.0 Modified	5.36E+00	5.48E-01	5.49E-01	7.72E-01	pCi/g

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

Chemtura
Bethany Site

Eberline Services
Final Report of Analysis

Report To:

Robin Charlton
Chemtura Corporation
199 Benson Road
Middlebury, CT 06749

Work Order Details:

SDG: **08-01040**
Purchase Order: 4603003657
Analysis Category: ENVIRONMENTAL
Sample Matrix: SO

Lab ID	Sample Type	Client ID	Sample Date	Receipt Date	Analysis Date	Batch ID	Analyte	Method	Result	CU	CSU	MDA	Report Units
08-01040-01	LCS	KNOWN	01/14/08 00:00	1/14/2008	1/21/2008	08-01040	Carbon-14	EPA 520.0 Modified	3.62E+02	1.01E+01			pCi/g
08-01040-01	LCS	SPIKE	01/14/08 00:00	1/14/2008	1/21/2008	08-01040	Carbon-14	EPA 520.0 Modified	2.99E+02	3.38E+00	3.41E+00	1.49E+00	pCi/g
08-01040-02	MBL	BLANK	01/14/08 00:00	1/14/2008	1/21/2008	08-01040	Carbon-14	EPA 520.0 Modified	-5.50E-01	8.47E-01	8.47E-01	1.47E+00	pCi/g
08-01040-03	DUP	S111	01/10/08 00:00	1/14/2008	1/21/2008	08-01040	Carbon-14	EPA 520.0 Modified	4.06E+00	8.70E-01	8.70E-01	1.35E+00	pCi/g
08-01040-04	DO	S111	01/10/08 00:00	1/14/2008	1/21/2008	08-01040	Carbon-14	EPA 520.0 Modified	3.53E+00	8.56E-01	8.56E-01	1.34E+00	pCi/g
08-01040-05	TRG	S112	01/10/08 00:00	1/14/2008	1/21/2008	08-01040	Carbon-14	EPA 520.0 Modified	2.18E+00	8.93E-01	8.93E-01	1.45E+00	pCi/g
08-01040-06	TRG	S113	01/10/08 00:00	1/14/2008	1/22/2008	08-01040	Carbon-14	EPA 520.0 Modified	4.73E+00	9.11E-01	9.11E-01	1.40E+00	pCi/g
08-01040-07	TRG	S114	01/10/08 00:00	1/14/2008	1/22/2008	08-01040	Carbon-14	EPA 520.0 Modified	6.21E+00	9.26E-01	9.26E-01	1.38E+00	pCi/g
08-01040-08	TRG	S115	01/10/08 00:00	1/14/2008	1/22/2008	08-01040	Carbon-14	EPA 520.0 Modified	1.06E+00	8.45E-01	8.45E-01	1.41E+00	pCi/g
08-01040-09	TRG	S116	01/10/08 00:00	1/14/2008	1/22/2008	08-01040	Carbon-14	EPA 520.0 Modified	2.74E+00	9.08E-01	9.08E-01	1.46E+00	pCi/g
08-01040-10	TRG	S117	01/10/08 00:00	1/14/2008	1/22/2008	08-01040	Carbon-14	EPA 520.0 Modified	8.88E+00	9.80E-01	9.81E-01	1.39E+00	pCi/g
08-01040-11	TRG	S118	01/10/08 00:00	1/14/2008	1/22/2008	08-01040	Carbon-14	EPA 520.0 Modified	6.50E+00	9.69E-01	9.69E-01	1.44E+00	pCi/g
08-01040-12	TRG	S119	01/10/08 00:00	1/14/2008	1/22/2008	08-01040	Carbon-14	EPA 520.0 Modified	2.15E+01	1.18E+00	1.18E+00	1.40E+00	pCi/g
08-01040-13	TRG	S120	01/10/08 00:00	1/14/2008	1/22/2008	08-01040	Carbon-14	EPA 520.0 Modified	1.19E+01	1.06E+00	1.06E+00	1.44E+00	pCi/g

Attachment B

CU=Counting Uncertainty;CSU=Combined Standard Uncertainty (2-sigma);MDA=Minimal Detected Activity;LCS=Laboratory Control Sample; MBL=Blank; DUP=Duplicate; TRG=Normal Sample; DO=Duplicate Original

EBERLINE SERVICES

Oak Ridge Laboratory
601 Scarboro Road, Oak Ridge, TN 37830 865/481-0683 FAX 865/483-4621

40 CFR § 261.24 Table 1					Chemtura		
EPA HW No.	Contaminant	CAS No.	mg/L	Test USA Analyte	Corral Area mg/L	Peach Tree Area mg/L	Analysis MDL mg/L
D004	Arsenic	7440-38-2	5.0	*Arsenic*	0.2	0.026	0.022
D005	Barium	7440-39-3	100.0	*Barium*	0.35	0.33	0.006
D018	Benzene	71-43-2	0.5	*Benzene*	0.005	0.005	0.00074
D006	Cadmium	7440-43-9	1.0	*Cadmium*	0.05	0.05	0.014
D019	Carbon tetrachloride	56-23-5	0.5	*Carbon tetrachloride*	0.005	0.005	0.0011
D020	Chlordane	57-74-9	0.03	*Chlordane*	0.0025	0.0025	0.00071
D021	Chlorobenzene	108-90-7	100.0	*Chlorobenzene*	0.005	0.005	0.00072
D022	Chloroform	67-66-3	6.0	*Chloroform*	0.005	0.005	0.00067
D007	Chromium	7440-47-3	5.0	*Chromium*	0.05	0.05	0.005
D023	o-Cresol	95-48-7	200.0	*2-Methylphenol*	0.02	0.02	0.0012
D024	m-Cresol	108-39-4	200.0	——	——	——	——
D025	p-Cresol	106-44-5	200.0	*4-Methylphenol*	0.02	0.02	0.00078
D026	Cresol [Total][4]	1319-77-3	200.0	Methylphenols [Total]	0.04	0.04	0.0012
D016	2,4-D	94-75-7	10.0	*2,4-D*	0.000	0.000	0.008
D027	1,4-Dichlorobenzene	106-46-7	7.5	*1,4-Dichlorobenzene*	0.02	0.02	0.001
D028	1,2-Dichloroethane	107-06-2	0.5	*1,2-Dichloroethane*	0.005	0.005	0.00072
D029	1,1-Dichloroethylene	75-35-4	0.7	*1,1-Dichloroethene*	0.005	0.005	0.00083
D030	2,4-Dinitrotoluene	121-14-2	0.13	*2,4-Dinitrotoluene*	0.02	0.02	0.0084
D012	Endrin	72-20-8	0.02	*Endrin*	0.0005	0.0005	0.00007
D031	Heptachlor	76-44-8	0.008	*Heptachlor*	0.00025	0.00025	0.000038
D031	Heptachlor epoxide	76-44-8	0.008	*Heptachlor epoxide*	0.00025	0.00025	0.000029
D032	Hexachlorobenzene	118-74-1	0.13	*Hexachlorobenzene*	0.02	0.02	0.00095
D033	Hexachlorobutadiene	87-68-3	0.5	*Hexachlorobutadiene*	0.02	0.02	0.0017
D034	Hexachloroethane	67-72-1	3.0	*Hexachloroethane*	0.02	0.02	0.001
D008	Lead	7439-92-1	5.0	*Lead*	0.05	0.015	0.015
D013	Lindane	58-89-9	0.4	*γ-BHC (Lindane)*	0.00025	0.00025	0.000026
D009	Mercury	7439-97-6	0.2	*Mercury*	0.002	0.002	0.001
D014	Methoxychlor	72-43-5	10.0	*Methoxychlor*	0.0025	0.0025	0.00045
D035	Methyl ethyl ketone	78-93-3	200.0	*Methyl ethyl ketone*	0.01	0.01	0.0011
D036	Nitrobenzene	98-95-3	2.0	*Nitrobenzene*	0.02	0.02	0.0015
D037	Pentachlorophenol [sic]	87-86-6	100.0	*Pentachlorophenol*	0.1	0.1	0.0024
D038	Pyridine	110-86-1	5.0	*Pyridine*	0.04	0.04	0.0077
D010	Selenium	7782-49-2	1.0	*Selenium*	0.15	0.03	0.016
D011	Silver	7440-22-4	5.0	*Silver*	0.03	0.03	0.0065
D039	Tetrachloroethylene	127-18-4	0.7	*Tetrachloroethene*	0.005	0.005	0.00081
D015	Toxaphene	8001-35-2	0.5	*Toxaphene*	0.012	0.012	0.0011
D040	Trichloroethylene	79-01-6	0.5	*Trichloroethene*	0.005	0.0021	0.00062
D041	2,4,5-Trichlorophenol	95-95-4	400.0	*2,4,5-Trichlorophenol*	0.1	0.1	0.001
D042	2,4,6-Trichlorophenol	88-06-2	2.0	*2,4,6-Trichlorophenol*	0.02	0.02	0.00099
D017	2,4,5-TP (Silvex)	93-72-1	1.0	*2,4,5-TP (Silvex)*	0.000	0.000	0.002
D043	Vinyl chloride	75-01-4	0.2	*Vinyl chloride*	0.005	0.005	0.00098

[4] If o-, m- and p-Cresol concentration cannot be differentiated, the total Cresol (D026) is used. The regulatory level of total cresol is 200 mg/L.

Percent moisture = 23.6% 20.8%

RCRA Review by: SR Smith SR Smith Date: 8/1/2008

Checked by: DR SLYWKA DRS Date: 8/1/2008

DOT Hazardous Material Calculations Per Package

Package #: 1

Given Information			Radioactive Material Exemption (49CFR§173.403 & 173.436)								Reportable Quantity		
Step 1	Step 2		Step 4		Step 5		Step 6	Step 7		Step 8	Step 9		Step 10
Nuclide(s)	Activity		Activity Concentration Step 2 Step 3		Concentration Limit 49CFR§173.436		Concentration Fraction	Activity Limit 49CFR§173.436		Activity Fraction	RQ Limit 49CFR§172.101 App. A, Table 2		Hazardous Substance?
(1)	US Units =27.03 * TBq	SI Units =0.037 * Ci					Step 4 ÷ Step 5			Step 2 ÷ Step 7			Step 2 ÷ Step 9
	Ci	TBq	Ci**	Bq**	Ci**	Bq**		Ci	Bq		Ci	TBq	
C-14	1.188E-03	4.321E-05	1.6408E-10	6.2180E+00	2.70E-04	9.99E+06	6.2253E-07	2.70E-04	9.99E+06	4.3250E+00	10	3.70E-01	1.1677E-04
Total Activity:	1.1677E-03	4.3206E-05				SI =	6.2253E-07	(2)	SI =	4.3250E+00	(2) SI =		1.1677E-04 (3)

Step A	Step B		Step C		Step D
	Activity		49CFR§173.435 Specific Activity		Step B
Fissile Nuclides	Ci	TBq	Ci**	TBq**	Step C
Pu-239			6.20E-02	2.30E-03	0
Pu-241			1.00E+02	3.8	0
U-233			9.70E-03	3.60E-04	0
U-235			2.20E-08	8.00E-08	0
				Total fissile grams:	NP

Step 3	Pounds	Grams
Material Weight: 1 lb. = 453.5924 grams	15,318	6,947,429

Notes: (1) If U-233, U-235, Pu-239, or Pu-241 are present, calculate for fissile or fissile excepted per 49CFR§173.453.
(2) If both >1, then it is Radioactive Material (49CFR§173.403) and subject to the HAZMAT Regulations (HMR).
(3) If <1, then it is not a hazardous substance (RQ). If = 1, the it is a hazardous substance (RQ) and subject to the HMR.

YELLOW AREAS MAY NOT BE EDITED

- 1. Identify radionuclides and activities
  - Normal vs. special form
  - Fissile nuclides
  - Fissile or excepted
- 2. Determine if the material is a hazardous material
  - Radioactive material
  - Hazardous substance
- 3. Determine Hazard Class(es)
- 4. Determine DOT shipping quantity
  - Excepted
  - Type A
  - Type B
  - Highway RouteControlled Quantity
  - LSA/SCO
- 5. Select proper shipping name
- 6. Select packaging
- 7. Consider radiation and contamination levels
- 8. Use specification communications from Part 172
- 9. Identify required communications form Parts 173 and 178
- 10. Complete the paperwork.
- 11. Inspect the shipment and carrier

YELLOW AREAS MAY NOT BE EDITED

Fissile-excepted Worksheet (49CFR§173.453)

> 2 grams Fissile material — (a) Does the package contain less than 2 grams of fissile material?

#VALUE! — (b) Does the individual or bulk package containing less than 1.5 grams [0.9 * 15 grams] of fissile material have at least 200 grams of solid non-fissile material for every one gram of fissile material. Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package, but must not be included in determining the required mass for solid non-fissile material.

Minimum mass required (lbs.): #VALUE!

Rs. = 68.00 — * Enter "Step 3" solid non-fissile mass (that does not include lead, beryllium, graphite, and hydrogenous material enriched in deuterium)

#VALUE! — (c) Does the waste contain low concentrations of solid fissile material commingled with solid non-fissile material:
(1) Where there is at least 2200 grams [2000 * 0.9] of non-fissile material for every gram of fissile material. -AND-
(2) There is no more than 162 grams [180 grams * 0.9] of fissile material distributed within 360 kg of contiguous non-fissile material. Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package but must not be included in determining the required mass for solid non-fissile material.

Minimum mass required (lbs.): #VALUE!

Maximum fissile material (grams) per lb. = 0.204

(d) Does the waste contain Uranium enriched in U-235 = 1% by weight, and with total plutonium and U-233 content less than 1% of the mass of U-235? The mass of any beryllium, graphite, and hydrogenous material enriched in deuterium must be less than 5% of the uranium mass

DOT Hazardous Material Calculations Per Package

Package #: 1

Given Information			Excepted Package					Type A or B?	Highway Route Controlled Quantity		Low Specific Activity		
Step 1	Step 2		Step 11		Step 12		Step 13	Step 14	Step 15	Step 16	Step 17		
Nuclide(s)	Activity		A_1 or A_2 (1) Activity 49CFR§173.435		LQ or IAA each Limit 49CFR§173.425 Table 4		Fraction	Fraction	HRCQ Limit 3000 × (Step 11) or 1,000 TBq (27,000 Ci) *(whichever is least)*	Step 2 ÷ Step 15	LSA 49CFR§173.403 & 173.427		
(1)	US Units	SI Units			(A_1 or A_2) ×	1.00E-03	Step 2 ÷ Step 12	Step 2 ÷ Step 11					
	Ci	TBq	Ci	Bq	Ci	Bq							
C-14	1.168E-03	4.321E-05	8.100E+01	2.997E+12	8.10E-02	3.00E+09	1.44E-02	1.441E-05	27,000	4.32496E-08	For LSA-I: (2) $\frac{Step\ 6 \sum f}{30} \le 1$		LSA-I $f = (2.075E-08)$
								0.000E+00	0	N/A			
								0.000E+00	0	N/A			
								0.000E+00	0	N/A	For LSA-II & III: (2) $A_2/gram = \frac{Step\ 14 \sum f}{Step\ 3}$		2.075E-12
								0.000E+00	0	N/A			
								0.000E+00	0	N/A			
								0.000E+00	0	N/A	LSA-II (3) [solids & gases]	$\frac{A_2/gram}{1E-04} \le 1$	LSA-I $f = (1.868E-08)$
								0.000E+00	0	N/A			
								0.000E+00	0	N/A			
								0.000E+00	0	N/A			
								0.000E+00	0	N/A	LSA-II (3) [liquids]	$\frac{A_2/gram}{1E-05} \le 1$	LSA-I
								0.000E+00	0	N/A			
								0.000E+00	0	N/A			
								0.000E+00	0	N/A	LSA-III (3)	$\frac{A_2/gram}{2E-03} \le 1$	LSA-I
								0.000E+00	0	N/A			
								0.000E+00	0	N/A			
								0.000E+00	0	N/A			
								0.000E+00	0	N/A			
Total Activity:	1.1677E-03	4.3286E-05				Σf =	1.4417E-02 (2)	1.4417E-05 (3)	Σf =	4.32496E-08 (4)	Liquid (Y/N):	N	

Notes: (1) If special form use the A_1 value, or if normal form use the A_2 value
(2) If ≤ 1, then ship per 49CFR§173.421 or §173.424 (as appropriate); if >1, then continue calculations
(3) If ≤ 1, then Type A Quantity, if > 1, then Type B Quantity and continue calculations for HRCQ.
For 95% rule: multiply 0.95 × (Step 14 Σf) = 95% of the total relative radiotoxicity per 49CFR§173.433(g)
(4) If ≤ 1, then Type B Quantity, if > 1, then Type B Quantity-HRCQ
(5) Ensure < 1 Rem/hr at 3 meters from unshielded material and meets the definition per 49CFR§173.403, §173.427 and NUREG 1608

Step 3	Pounds	Grams
Material Weight 1 lb. = 453.59237 grams	15316.5	6,947,428.9

YELLOW AREAS MAY NOT BE EDITED

WASTE CLASSIFICATION

Package #: 1

Step A	Step B		Step C	Step D
Table I Radionuclides	Activity Ci	Activity TBq	Activity pCi	Step C / Step E: nCi / cc
C-14	3.1900E-03	3.1560E-02	8.5312E+04	3.1907E-01
C-14 (act. met.)			0.0000E+00	0.0000E+00
Ni-59 (act. met.)			0.0000E+00	0.0000E+00
Nb-94 (act. met.)			0.0000E+00	0.0000E+00
Tc-99			0.0000E+00	0.0000E+00
I-129			0.0000E+00	0.0000E+00
	Activity Ci	Activity TBq	Activity nCi	Step C / Step E: nCi / gram
Total alpha TRU ½t > 5 years	3.0000E-09	1.110E-10	3.000E+00	1.110E-06
Ra-226			0.0000E+00	0.0000E+00
Pu-241			0.0000E+00	0.0000E+00
Cm-242			0.0000E+00	0.0000E+00

Table II Radionuclides	Activity Ci	Activity TBq	Activity pCi	Step C / Step E: nCi / cc
Total all with ½t < 5 years	0	0.000E+00	0.0000E+00	0.0000E+00
H-3			0.0000E+00	0.0000E+00
Co-60			0.0000E+00	0.0000E+00
Ni-63			0.0000E+00	0.0000E+00
Ni-63 (act. met.)			0.0000E+00	0.0000E+00
Sr-90			0.0000E+00	0.0000E+00
Cs-137			0.0000E+00	0.0000E+00

YELLOW AREAS MAY NOT BE EDITED

Waste Volume:	Step H: ft³	yd³	m³	gallon	liter	Step F: cc
		5.0				2.7189E+06
cc =	0	3818455.778	0	0	0	

Waste Mass:	Step P: pounds	tons	kilogram	Step G: grams
	5.80E+03			2.6319E+06
grams =	2630035.92	0	0	

Total alpha TRU ½t > 5 years	Nuclides	Activity Ci	Activity TBq
(Atomic Number >92)		3.000E-09	1.110E-10
Examples: Am-241, Am-243, Cm-243, Cm-244, Pu-238, Pu-239			
	Total Activity =	3.0000E-09	1.110E-10

Ci = TBq * 37.03
mCi = GBq * 37.03
µCi = MBq * 37.03
nCi = Bq * 0.03703
pCi = Bq * 37.03
TBq = 0.027 * Ci
GBq = 0.027 * mCi
MBq = 0.027 * µCi
Bq = 37 * nCi
Bq = 0.037 * pCi

Total all with ½t < 5 years	Nuclides	Activity Ci	Activity TBq
Examples: Co-60, Cs-134, Fe-55, Fe-59, Mn-54, Mn-56, Nb-95, Zn-65			
	Total Activity =	0	0

TABLE I Long-lived Radionuclides	Step 1: Concentration pCi/cc	Step 2: Class A Limit pCi/cc	Step 3: Step 1/Step 2	Step 4	Step 5	Step 6: Class C Limit pCi/cc	Step 7: Step 3/Step 6
C-14	3.1907E-01	0.72	4.3599E-01	No Class B Limit		7.2	4.3599E-02
C-14 (act. met.)	0.0000E+00	7.2	0.0000E+00			72	0.0000E+00
Ni-59 (act. met.)	0.0000E+00	19.8	0.0000E+00			198	0.0000E+00
Nb-94 (act. met.)	0.0000E+00	0.018	0.0000E+00			0.18	0.0000E+00
Tc-99	0.0000E+00	0.27	0.0000E+00			2.7	0.0000E+00
I-129	0.0000E+00	0.0072	0.0000E+00			0.072	0.0000E+00
	Concentration nCi/gram	Class A Limit nCi/gram				Class C Limit nCi/gram	
Total alpha TRU ½t > 5 years	1.1100E-06	9	1.2679E-07			90	1.2679E-08
Ra-226	0.0000E+00	9	0.0000E+00			90	0.0000E+00
Pu-241	0.0000E+00	315	0.0000E+00			3150	0.0000E+00
Cm-242	0.0000E+00	1800	0.0000E+00			18000	0.0000E+00
		S_T =	4.3599E-01			S_T =	0.0000E+00

TABLE II Short-lived Radionuclides	Step 1: Concentration pCi/cc	Step 2: Class A Limit pCi/cc	Step 3: Step 1/Step 2	Step 4: Class B Limit pCi/cc	Step 5: Step 1/Step 4	Step 6: Class C Limit pCi/cc	Step 7: Step 1/Step 6
Total all with ½t < 5 years	0.0000E+00	630	0.0000E+00	Class A Waste		Class A Waste	
H-3	0.0000E+00	36	0.0000E+00	Class A Waste		Class A Waste	
Co-60	0.0000E+00	630	0.0000E+00	Class A Waste		Class A Waste	
Ni-63	0.0000E+00	3.15	0.0000E+00	63	0.0000E+00	630	0.0000E+00
Ni-63 (act. met.)	0.0000E+00	31.5	0.0000E+00	630	0.0000E+00	6300	0.0000E+00
Sr-90	0.0000E+00	0.036	0.0000E+00	135	0.0000E+00	6300	0.0000E+00
Cs-137	0.0000E+00	0.9	0.0000E+00	39.6	0.0000E+00	4140	0.0000E+00
		S_T =	0.0000E+00		S_T = 0.0000E+00		S_T = 0.0000E+00

CLASS A WASTE

YELLOW AREAS MAY NOT BE EDITED

FORM 540 — GTS DURATEK

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): 865-220-1566

ORGANIZATION: Duratek Attn: Emergency Duty Officer

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? [ ] YES [X] NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST: 27

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? [ ] YES [X] NO — If "Yes," provide Manifest Number: NA

5. SHIPPER – NAME AND FACILITY
Crompton Corp./Uniroyal Chemical(Bethany)C/O: Duratek
74 Amity Road
Bethany, CT 06524

NA — SHIPMENT NUMBER T032381

CONTACT: Bill Harned

6. CARRIER – Name and Address
Duratek operated by: Hittman
828 Gallahner Rd
Kingston, TN 37763-0966
Truck #: 5437
Trailer #: 730830

CONTACT: Karen Kirby

SIGNATURE – Authorized carrier acknowledging waste receipt: Chris Dailey

SHIPMENT I.D. NUMBER: T032381
[ ] COLLECTOR
[ ] PROCESSOR
[X] GENERATOR TYPE (Specify): O

TELEPHONE NUMBER (Include Area Code): 203-673-3882

EPA I.D. NUMBER: TND007783066

SHIPPING DATE: 6/3/03

TELEPHONE NUMBER (Include Area Code): 865-481-0222

DATE: 6-3-03

7. FORM 540 AND 540A — PAGE 1 OF 3 PAGE(S)
FORM 541 AND 541A — 4 PAGE(S)
FORM 542 AND 542A — None PAGE(S)
ADDITIONAL INFORMATION — 5 PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): T032381-Crompton

9. CONSIGNEE - Name and Facility Address
Duratek
1560 Bear Creek Rd
Oak Ridge, TN 37831-2530

CONTACT: Tim Stout

TELEPHONE NUMBER (Include Area Code): 865-481-0222

SIGNATURE - Authorized consignee acknowledging waste receipt

DATE

10. CERTIFICATION

This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE: [signature] — TITLE: Broker / Driver — DATE: 6-3-03

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B004
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B005
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B006
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B007
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B008
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B009

Attachment C

FOR CONSIGNEE USE ONLY

TENNESSEE "LICENSE FOR DELIVERY" NO _____

SOUTH CAROLINA TRANSPORT PERMIT NO _____

US ECOLOGY GENERATOR NO _____

US ECOLOGY PERMIT NO _____

20. GENERATOR CERTIFICATION STATEMENT

A) Radioactive Materials. Certification is hereby made to GTS Duratek, Inc. that this shipment of low-level radioactive material/waste has been prepared in accordance with radioactive waste management program which has been approved by the Nuclear Regulatory Commission or an Agreement State regulatory agency and with the current revision of the GTS Duratek Material Acceptance Criteria.

B) Hazardous Materials. Generator hereby certifies that this material does not contain a hazardous waste as defined in 40 CFR 261.

C) Data. Generator hereby represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and GTS Duratek State of Tennessee Radioactive Material Licenses.

WILLIAM H. HARNED (Print Name) — [signature] (Signature) — Jun 3, 2003 (Date)

FORM 540 (10-96)

Chemtura Bethany Site

FORM 540A

GTS DURATEK

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) T032381-Crompton

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (including proper shipping name, hazard class, UN ID number, and any additional information	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES		16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B010
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B011
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B012
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B013
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B014
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B015
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B016
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B017
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		3.7000E+00	1.0000E-01	NA	600. LBS; 7.35 FT3	B018
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B019
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B020
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B021
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B022

FORM 540A (10-96)

Attachment C

Chemtura
Bethany Site

FORM 540A

GTS DURATEK

8. MANIFEST NUMBER (Use this number on all continuation pages) T032381-Crompton

PAGE 3 OF 3 PAGES

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST SHIPPING PAPER (CONTINUATION)

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDE		16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B023
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B024
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B025
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B026
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B027
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B028
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	50. LBS; 5. FT3	B029
Radioactive material, excepted package-limited quantity of material, 7, UN2910	NA	NA	Solid OXIDE	C-14		1.8500E+00	5.0000E-02	NA	LBS; 5. FT3	B030

FORM 540A (10-96)

Attachment C

Chemtura
Bethany Site

FORM 541 GTS DURATEK

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT
27	m3 4.6877 / ft3 165.5500	kg 3855.5346 / lb 8500.0000

SPECIAL NUCLEAR MATERIAL (grams)

U-233	U-235	Pu	TOTAL
NP	NP	NP	NP

ACTIVITY

	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	7.4000E+01	NP	7.4000E+01	NP	NP	(kgs)	NA
mCi	2.0000E+00	NP	2.0000E+00	NP	NP	(lbs)	NA

2. MANIFEST NUMBER T032381-Crompton

3. PAGE 1 OF 4 PAGE(S)

4. SHIPPER NAME Crompton Corp./Uniroyal Chemi

SHIPMENT ID NUMBER T032381

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION
5. CONTAINER IDENTIFICATION NUMBER / GENERATOR ID NUMBER	6. CONTAINER DESCRIPTION (See Note 1) PROCESS REQUESTED (See Note 1A) BURIAL/DISPOSITION (See Note 2A)	7. VOLUME (m3) / (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) / (lb)	9. SURFACE RADIATION LEVEL mSv/hr / mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm2 / dpm/100 cm2 ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) / (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF>0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY AND CONTAINER TOTAL; OR TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	MBq	mCi	AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
B004/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-06	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B005/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-06	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B006/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B007/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B008/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B009/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	

NOTE 1: Container Description Codes. For containers/ waste requiring disposal in approved structural over-packs the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethlene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in Item 6, or additional page.

Note 1A: Process Requested

- C. Compaction
- SR. Steam Reforming
- DI. Direct Incineration
- SI. Sort & Incinerate
- D. Decon
- G. Green is Clean
- M. Metal Melt
- T. Trans-Ship
- LI. Liquid for Incineration
- OI. Oil for Incineration
- O. Other (describe)

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in Item 11, or additional page

Note 2A: Burial/Disposition Site

- B Barnwell Waste Management Facility
- E Envirocare
- R Richland, WA
- PR Process and Return
- O Other

Note 3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume. For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S" and the media vendor and brand name must also be identified in Item 13. Code 100=NONE REQUIRED.

Solidification

90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in Item 13, or additional page
100. None Required.

FORM 541 (10-96)

Attachment C

Chemfura Bethany Site

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

GTS DURATEK

2. MANIFEST NUMBER T032381-Crompton

3. PAGE 2 OF 4 PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16.WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER / GENERATOR ID NUMBER	6. CONTAINER DESCRIPTION (See Note 1) PROCESS REQUESTED (See Note 1A) BURIAL/DISPOSITION (See Note 2A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (LB)	9. SURFACE RADIATION LEVEL mSv/hr mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm2 dpm/100 cm2 ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF>0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY AND CONTAINER TOTAL; OR TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	MBq	mCi	
B010/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B011/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B012/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B013/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B014/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B015/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B016/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B017/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	
B018/3203	4	0.2081	272.1554	<5.0000E-03	<1.6700E-06	<1.6700E-06	22	0.2081	NA	OXIDE/NP	NP	C-14	3.7000E+00	1.0000E-01	AU
												Subtotal	3.7000E+00	1.0000E-01	
		7.3500	600.0000	<5.000E-01	<1.000E+02	<1.000E+03		7.3500				Total	3.7000E+00	1.0000E-01	

FORM 541A (10-96)

Attachment C

Chemtura Bethany Site

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

GTS DURATEK

2. MANIFEST NUMBER T032381-Crompton

3. PAGE 3 OF 4 PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER / GENERATOR ID NUMBER	6. CONTAINER DESCRIPTION (See Note 1) PROCESS REQUESTED (See Note 1A) BURIAL/DISPOSITION (See Note 2A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (LB)	9. SURFACE RADIATION LEVEL mSv/hr mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm2 dpm/100 cm2 ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF>0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY AND CONTAINER TOTAL; OR TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	MBq	mCi	
B019/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-05	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B020/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-05	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B021/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-05	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B022/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-05	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B023/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-05	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B024/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-05	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B025/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-05	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B026/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-05	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B027/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-05	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	

FORM 541A (10-96)

Attachment C

Chemtura Bethany Site

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

GTS DURATEK

2. MANIFEST NUMBER T032381-Crompton

3. PAGE 4 OF 4 PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER								
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION			16.WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER / GENERATOR ID NUMBER	6. CONTAINER DESCRIPTION (See Note 1) PROCESS REQUESTED (See Note 1A) BURIAL/DISPOSITION (See Note 2A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (LB)	9. SURFACE RADIATION LEVEL mSv/hr mrem/hr	10 SURFACE CONTAMINATION MBq/100 cm2 dpm/100 cm2 ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF>0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY AND CONTAINER TOTAL; OR TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	MBq	mCi	
B028/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-06	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B029/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-06	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
B030/3203	19 FIBER BOX / DRUM	0.1416	22.6796	<5.0000E-03	<1.6700E-06	<1.6700E-06	59-DAW	0.1416	NA	OXIDE/NP	NP	C-14	1.8500E+00	5.0000E-02	AU
												Subtotal	1.8500E+00	5.0000E-02	
		5.0000	50.0000	<5.000E-01	<1.000E+02	<1.000E+03		5.0000				Total	1.8500E+00	5.0000E-02	
Shipment Totals		4.6977	3866.6348										7.4000E+01	2.0000E+00	
		166.5600	8500.0000												

FORM 541A (10-96)

Attachment C

Chemtura Bethany Site

Attachment D

Waste Disposal Manifests
From 2008

Chemtura
Bethany Site

Attachment D

2

FORM 540 — EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code): 865-220-1555

ORGANIZATION: EnergySolutions Bear Creek Security

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT? ☑ YES ☐ NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST ====> 17

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? ☐ YES ☑ NO
If "Yes," provide Manifest Number ====>

EPA MANIFEST NUMBER

5. SHIPPER - NAME AND FACILITY
Chemtura Corporation
199 Benson Road
Middlebury, CT 06749

Utah Generator Site Access Permit No: 9211 001 884

SHIPMENT NUMBER: 0942-01-0001

CONTACT: Jay Nag

6. CARRIER - Name and Address
Providence & Worcester Railroad
75 Hammond Street
Worcester, MA 01610

CONTACT: CHRIS GUZZI

SIGNATURE - Authorized carrier acknowledging waste receipt

SHIPPER I.D. NUMBER: 0942-01-0001
☐ COLLECTOR
☐ PROCESSOR
☑ GENERATOR TYPE (Specify) I

TELEPHONE NUMBER (Include Area Code): (203) 573-3693

EPA I.D. NUMBER: MAD05902834

SHIPPING DATE: 10/17/2006

TELEPHONE (Include Area Code): 508-755-4000

DATE

7. FORM 540 AND 540A — PAGE 1 OF 4 PAGE(S)
FORM 541 AND 541A — 3 PAGE(S)
FORM 542 AND 542A — 1 PAGE(S)
ADDITIONAL INFORMATION — 1 PAGE(S)

8. MANIFEST NUMBER (Use this number on all continuation pages): 0942-01-0001

9. CONSIGNEE - Name and Facility
EnergySolutions, LLC
Clive Disposal Site (Bulk Waste Facility)
Interstate 80, Exit 49
Clive, UT 84029

CONTACT: Transportation Compliance

TELEPHONE (Include Area Code): (435)884-0155

SIGNATURE - Authorized consignee acknowledging waste receipt

DATE

10. CERTIFICATION
This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE: Stewart R Smith — See continuation block for signature

TITLE: Certified Broker/Radiological Engineer — RSO, Chemtura

DATE: 10/17/2006

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.2099E+00	3.2700E-02	NA	5800 LBS; 135 FT3	0942-01-B-001_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.5895E+00	4.2960E-02	NA	7620 LBS; 135 FT3	0942-01-B-002_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.4833E+00	4.0090E-02	NA	7110 LBS; 135 FT3	0942-01-B-003_
									MHF/11-HW4 896/49CFR§171.8

FOR CONSIGNEE USE ONLY

The original signer manifest resides with:
EnergySolutions, Inc.
143 West Street
New Milford, CT 06776
860-355-4194

____ Record Waste Description Inadequate
____ Contamination or Leakage Detected
____ Unexpected Exposure Rates Detected
____ Labels, Markings, etc. Inadequate
____ Container Integrity Inadequate
____ Other
____ No Violations Detected on this Shipment

20. TERMS AND CONDITIONS

A. HAZARDOUS MATERIALS: Generator represents & warrants that Waste Material __ is (or) ✓ is not a hazardous waste as defined in 40 CFR 261. Where the material is a hazardous waste, this shipment is also accompanied by a separate and completed hazardous waste manifest, along with the appropriate land-disposal restriction notice and/or certification as required by 40 CFR 268.1.

B. TITLE: Upon acceptance at the disposal site by EnergySolutions, LLC, and all appropriate regulatory authorities, title to the Waste Material which conforms to Generator's representations herein shall thereupon transfer from Generator and be vested in EnergySolutions, LLC

C. WASTE MATERIAL: Generator represents and warrants that all data set forth in this (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST) are true and correct in all respects and in accordance with all applicable governmental laws, rules, regulations and EnergySolutions LLC's facility license.

D. INDEMNIFICATION: Generator agrees to indemnify EnergySolutions, LLC, its officers, employees and agents against all losses and liability whatsoever if such losses or liability results from the failure of the Waste Material to conform in all material respects to the data supplied on the (UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST,) or if this shipment fails to meet the standards prescribed by the Department of Transportation or any governmental agency having jurisdiction over such matters.

FORM 540 (03-06)

FORM 540A

EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) 0942-01-0001

Page 2 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.4915E+00	4.0310E-02	NA	7150 LBS; 135 FT3	0942-01-B-004_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.2310E+00	3.3270E-02	NA	5900 LBS; 135 FT3	0942-01-B-005_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.3457E+00	3.6370E-02	NA	6450 LBS; 135 FT3	0942-01-B-006_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.3997E+00	3.7830E-02	NA	6710 LBS; 135 FT3	0942-01-B-007_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.1004E+00	2.9740E-02	NA	5275 LBS; 135 FT3	0942-01-B-008_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.1141E+00	3.0110E-02	NA	5340 LBS; 135 FT3	0942-01-B-009_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.3457E+00	3.6370E-02	NA	6450 LBS; 135 FT3	0942-01-B-010_

FORM 540A (03-00)

FORM 540A

EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

8. MANIFEST NUMBER (Use this number on all continuation pages) 0942-01-0001

Page 3 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14 PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides		1.3457E+00	3.6370E-02	NA	6450 LBS; 135 FT3	0942-01-B-01 0_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	7.6775E-01	2.0750E-02	NA	3680 LBS; 135 FT3	0942-01-B-01 1_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.0057E+00	2.7180E-02	NA	4820 LBS; 135 FT3	0942-01-B-01 2_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	8.3435E-01	2.2550E-02	NA	4000 LBS; 135 FT3	0942-01-B-01 3_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.2850E+00	3.4730E-02	NA	6160 LBS; 135 FT3	0942-01-B-01 4_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	9.8346E-01	2.6580E-02	NA	4715 LBS; 135 FT3	0942-01-B-01 5_
									MHF/11-HW4 896/49CFR§171.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.6731E+00	4.5220E-02	NA	8020 LBS; 135 FT3	0942-01-B-01 6_

FORM 540A (03-06)

FORM 540A

EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER (CONTINUATION)

6. MANIFEST NUMBER (Use this number on all continuation pages) 0942-01-0001

Page 4 of 4

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLIDES	16. TOTAL PACKAGE ACTIVITY MBq	mCi	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides		1.6731E+00	4.5220E-02	NA	8020 LBS; 135 FT3	0942-01-B-01 6_
									MHF/11-HW4 896/49CFR§1 71.8
USDOT Non-regulated material; Regulated by USNRC Soil, sod, brush	NA	0	Solid Metal oxides	C-14	1.2809E+00	3.4620E-02	NA	6140 LBS; 135 FT3	0942-01-B-01 7_
									MHF/11-HW4 896/49CFR§1 71.8

FORM 540A (03-06)

FORM 541 — EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME	NET WASTE WEIGHT	SPECIAL NUCLEAR MATERIAL (grams) L-233	U-235	Pu	Total
17	m3 64.9876 / ft3 2295.0000	kg 45967.0539 / ton 50.6700	NP	NP	NP	NP

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE (kg)	
MBq	2.1141E+01	NP	2.1141E+01	NP	NP	(kg)	NA
mCi	5.7138E-01	NP	5.7138E-01	NP	NP	(tons)	NA

2. MANIFEST NUMBER 0942-01-0001

3. PAGE 1 OF 3 PAGE(S)

4. SHIPPER NAME Chemtura Corporation

SHIPMENT ID NUMBER 0942-01-0001

DISPOSAL CONTAINER DESCRIPTION / WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER

5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (ton)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	14. CHEMICAL DESCRIPTION: CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	15. RADIOLOGICAL DESCRIPTION: RADIONUCLIDES	[Ci/gm]	MBq	mCi	16. WASTE CLASSIFICATION A/S-Class A Stable A/U-Class A Unstable B-Class B C-Class C
0942-01-S-001_/0942	19-B OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	2630.8359	1.0000E-05	0.0000E+00	1.6700E-08	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.2099E+00	3.2700E-02	AU
		135.0000	2.9080	1.0000E-03	0.0000E+00	1.0000E+00		135.0000				Subtotal		1.2099E+00	3.2700E-02	
												Total		1.2099E+00	3.2700E-02	
0942-01-S-002_/0942	19-B OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	3456.3741	1.0000E-04	0.0000E+00	1.7800E-06	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.5895E+00	4.2960E-02	AU
		135.0000	3.8100	1.0000E-02	0.0000E+00	1.6700E+02		135.0000				Subtotal		1.5895E+00	4.2960E-02	
												Total		1.5895E+00	4.2960E-02	
0942-01-S-003_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	3225.9420	1.0000E-04	0.0000E-00	1.5860E-06	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.4833E+00	4.0090E-02	AU
		135.0000	3.5550	1.0000E-02	4.0000E+00	9.5000E+01		135.0000				Subtotal		1.4833E+00	4.0090E-02	
												Total		1.4833E+00	4.0090E-02	
0942-01-S-004_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	3243.1857	1.0000E-04	0.0000E-00	3.8416E-07	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.4915E+00	4.0310E-02	AU
		135.0000	3.5750	1.0000E-02	4.0000E+00	2.3000E+01		135.0000				Subtotal		1.4915E+00	4.0310E-02	
												Total		1.4915E+00	4.0310E-02	
0942-01-S-005_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	2676.1952	1.0000E-04	0.0000E-00	7.8498E-07	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.2310E+00	3.3270E-02	AU
		135.0000	2.9500	1.0000E-02	4.0000E+00	4.7000E+01		135.0000				Subtotal		1.2310E+00	3.3270E-02	
												Total		1.2310E+00	3.3270E-02	
0942-01-S-006_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	2925.6710	1.0000E-04	0.0000E-00	3.8416E-07	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.3457E+00	3.6370E-02	AU
		135.0000	3.2250	1.0000E-02	4.0000E+00	2.3000E+01		135.0000				Subtotal		1.3457E+00	3.6370E-02	
												Total		1.3457E+00	3.6370E-02	

Note 1: Container Description Codes. For containers/ waste requiring disposal in approved structural over-packs the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethlene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk, Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in item 6, or additional page

Note 1A: Bulk Packaging Description Codes. (Choose one code as may be applicable.)

A Gondola
B Intermodal
C End-Dump
D Roll-off
E Seavan

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges/ Concentrates
39. Compactible Trash
40. Noncompactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in item 11, or additional page

NOTE 2A: Specific Waste Descriptors (Choose all applicable codes.)

G Dewatered
H Solid
I Combustible
J Non-combustible
K Air Filtration Filters
L Asbestos

Note3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S." and the media vendor and brand name must also be identified

In item 13. Code 100=NONE REQUIRED.

Solidification

90. Cement
91. Concrete (encapsulation)
92. Bitumen
93. Vinyl Chloride
94. Vinyl Ester Styrene
95. Other. Describe in item 13, or additional page
100. None Required.

FORM 541 (03-06)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

EnergySolutions, LLC

2. MANIFEST NUMBER 0942-01-0001

3. PAGE 2 OF 3 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14 CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lbs)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11 WASTE DESCRIPTOR (See Note 2 & Note 2A)	12 APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL: OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	pCi/gm	MBq	mCi	
0942-01-8-007_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	3043.6050	1.0000E-04	2.0040E-07	1.6780E-06	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.3997E+00	3.7830E-02	AU
		135.0000	3.3550	1.0000E-02	1.2000E+01	1.0000E+00		136.0000				Subtotal		1.3997E+00	3.7830E-02	
												Total		1.3997E+00	3.7830E-02	
0942-01-8-008_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	2392.6089	1.0000E-04	0.0000E+00	1.6700E-06	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.1004E+00	2.9740E-02	AU
		135.0000	2.6375	1.0000E-02	0.0000E+00	1.0000E+00		135.0000				Subtotal		1.1004E+00	2.9740E-02	
												Total		1.1004E+00	2.9740E-02	
0942-01-8-009_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	2422.1834	1.0000E-04	1.3360E-07	3.8410E-07	22-HJ	3.8228	89 - OTHER. 100	Meta oxides/None	0	C-14	1.24300E+01	1.1141E+00	3.0110E-02	AU
		135.0000	2.6700	1.0000E-02	8.0000E+00	2.3000E+01		135.0000				Subtotal		1.1141E+00	3.0110E-02	
												Total		1.1141E+00	3.0110E-02	
0942-01-8-010_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	2915.6710	1.0000E-04	1.4700E-06	0.0000E+00	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.3457E+00	3.6370E-02	AU
		135.0000	3.2250	1.0000E-02	1.0000E+00	0.0000E+00		135.0000				Subtotal		1.3457E+00	3.6370E-02	
												Total		1.3457E+00	3.6370E-02	
0942-01-8-011_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	1888.2200	1.0000E-04	0.0000E+00	1.6700E-06	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	7.6775E-01	2.0750E-02	AU
		135.0000	1.8400	1.0000E-02	0.0000E+00	1.0000E+00		135.0000				Subtotal		7.6775E-01	2.0750E-02	
												Total		7.6775E-01	2.0750E-02	
0942-01-8-012_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	2186.3154	1.0000E-04	6.6000E-08	1.3001E-06	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.0057E+00	2.7180E-02	AU
		135.0000	2.4100	1.0000E-02	4.0000E+00	8.3000E+01		135.0000				Subtotal		1.0057E+00	2.7180E-02	
												Total		1.0057E+00	2.7180E-02	
0942-01-8-013_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	1814.3896	1.0000E-04	6.6000E-08	1.3001E-06	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	8.3435E-01	2.2550E-02	AU
		135.0000	2.0000	1.0000E-02	4.0000E+00	8.3000E+01		135.0000				Subtotal		8.3435E-01	2.2550E-02	
												Total		8.3435E-01	2.2550E-02	
0942-01-8-014_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	2794.1292	1.0000E-04	0.0000E+00	1.6700E-06	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	1.2850E+00	3.4730E-02	AU
		135.0000	3.0800	1.0000E-02	0.0000E+00	1.0000E+00		135.0000				Subtotal		1.2850E+00	3.4730E-02	
												Total		1.2850E+00	3.4730E-02	
0942-01-8-015_/0942	19-A OTHER. MHF/11-HW4896/49CF R§171.8 "Siltproof pac NA	3.8228	2138.6882	1.0000E-04	2.0040E-07	1.6700E-07	22-HJ	3.8228	89 - OTHER. 100	Metal oxides/None	0	C-14	1.24300E+01	9.8346E-01	2.6530E-02	AU
		135.0000	2.3575	1.0000E-02	1.2000E+01	1.1000E+01		135.0000				Subtotal		9.8346E-01	2.6530E-02	
												Total		9.8346E-01	2.6530E-02	

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

EnergySolutions, LLC

2. MANIFEST NUMBER 0942-01-0001

3. PAGE 3 OF 3 PAGE(S)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER									
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION				16. WASTE CLASSIFICATION A3-Class A Stable A1J-Class A Unstable B-Class B C-Class C
5. CONTAINER IDENTIFICATION NUMBER/ GENERATOR ID NUMBER(S)	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME m3 (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lbs)	9. SURFACE RADIATION LEVEL (mSv/hr) (mrem/hr)	10. SURFACE CONTAMINATION (MBq/100 cm2) (dpm/100cm2) ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER m3 (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF > 0.1%	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT: RADIONUCLIDES	µCi/gm	MBq	mCi	
0942-01-E-016_/0942	19-A OTHER. NNF/11-HW4896/49CF R§171.8 "Siltproof pac 8A	3.8228	3637.8110	1.0000E-04	6.6000E-00	1.3861E-06	22-HJ	3.8228	89 - OTHER, 100	Metal oxides/None	0	C-14	1.24300E+01	1.6731E+00	4.5220E-02	AU
		135.0000	4.0100	1.0000E-02	4.0000E+00	8.3000E+01		135.0000				Subtotal		1.6731E+00	4.5220E-02	
												Total		1.6731E+00	4.5220E-02	
0942-01-E-017_/0942	19-A OTHER. NNF/11-HW4896/49CF R§171.8 "Siltproof pac 8A	3.8228	2765.0573	1.0000E-04	8.0000E+00	3.8410E-07	22-HJ	3.8228	89 - OTHER, 100	Metal oxides/None	0	C-14	1.24300E+01	1.2809E+00	3.4620E-02	AU
		135.0000	3.8700	1.0000E-02	8.0000E+00	2.3000E+01		135.0000				Subtotal		1.2809E+00	3.4620E-02	
												Total		1.2809E+00	3.4620E-02	
Shipment Totals		64.9876	45867.0339											2.1141E+01	5.7138E-01	
		2295.0000	50.6700													

FORM 541A (03-06)

FORM 542 — EnergySolutions, LLC

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

MANIFEST INDEX AND REGIONAL COMPACT TABULATION

List all original "PROCESSED WASTE" generators (if any) before "COLLECTED WASTE" generators.

1. WASTE COLLECTOR/PROCESSOR

NAME: Chemtura Corporation

IDENTIFICATION NUMBER: 0942-01

SHIPPING DATE: 10/17/2006

SHIPPER USE ONLY

2. MANIFEST NUMBER: 0942-01-0001

3. PAGE 1 OF 1 PAGE(S)

4. GENERATOR IDENTIFICATION NUMBER	5. GENERATOR NAME AND TELEPHONE NUMBER	6. GENERATOR FACILITY ADDRESS	6A. WASTE DESCRIPTION (NOMENCLATURE)	7. PREPROCESSED WASTE (OR MATERIAL) VOLUME (m3)	(ft3)	8. MANIFEST NUMBER(S) UNDER WHICH WASTE (OR MATERIAL) RECEIVED AND DATE OF RECEIPT	9. WASTE CODE P = PROCESSED C = COLLECTED	10. ORIGINATING COMPACT REGION OR STATE	11. AS PROCESSED/COLLECTED TOTAL A. SOURCE MATERIAL (kg)	(lb)	B. SNM (g)	C. ACTIVITY (MBq)	(mCi)	D. VOLUME (m3)	(ft3)	E. WEIGHT (tons)	F. MAXIMUM PACKAGE RADIATION LEVEL (mrem/hr)
0942 22	Chemtura Corporation 0211 001 004 (203) 573-3094	199 Benson Road Middlebury, CT 06749	Soil, sod, brush	64.9000	2295.0000	0942-01-0001 Received: 10/17/2006	C	CT	0.0000E+00	0.0000E+00	0.0000E+00	2.1141E+01	5.7138E-01	64.9872	2295.0000	50.6700	1.0000E-02
TOTALS OF ALL PAGES (FORMS 542 AND 542A)									0.0000E+00	0.0000E+00	0.0000E+00	2.1141E+01	5.7138E-01	64.9872	2295.0000	50.6700	N/A

FORM 542 (03-06)

EnergySolutions, LLC

ADDITIONAL NOTES

Manifest Number
0942-01-0001
PAGE 1

Exempt Material per 49CFR§173.403 & 173.436

Maximum concentration = 180 pCi/gram
Exempt Quantity Limit [C-14] = 2.70 E-04 Ci/gram
= 2.70 E+08 pCi/gram

Shipment fraction = 180 ÷ 2.7E+08 = 3.891 E-07

Additional Transporters:

CSXT
Union Pacific

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST
ISOTOPES REPORT

For Manifest # 0942-01-0001
EnergySolutions, LLC

Isotope	Total Activity (MBq)	Total Activity (mCi)
C-14	2.1141E+01	5.7138E-01

This is to acknowledge the receipt of your letter/application dated

6/15/2010, and to inform you that the initial processing which includes an administrative review has been performed.

AMEND. 06-00221-08

[V] There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

[ ] Please provide to this office within 30 days of your receipt of this card

_____.

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 572999.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.

NRC FORM 532 (RI)
(6-96)

Sincerely,
Licensing Assistance Team Leader