

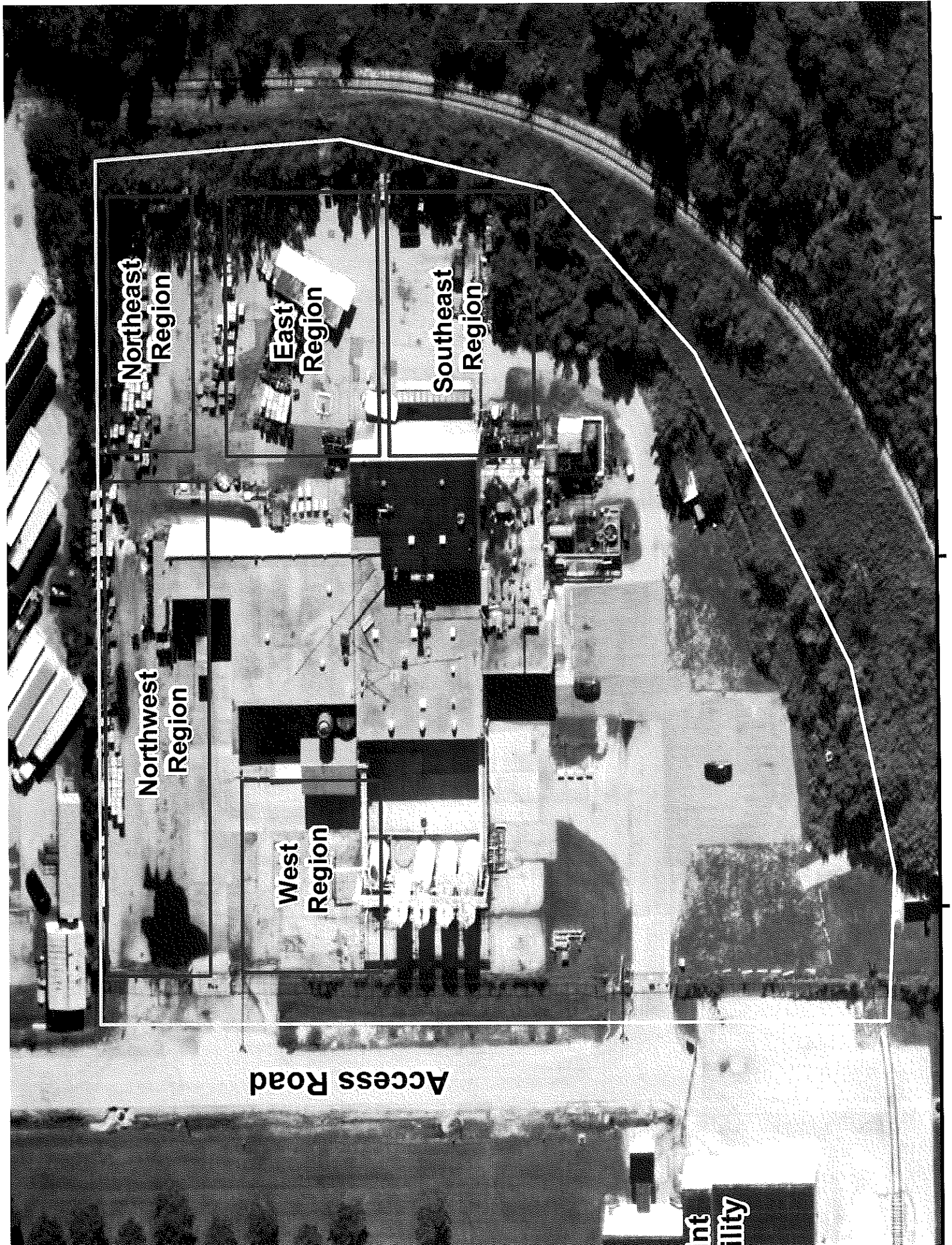


Esmark Steel Group  
Manufacturing Facility

Access Road

Ace Hardware  
Paint Manufacturing  
Facility

Thorn Creek Basin  
Sanitary District



Northwest  
Region

West  
Region

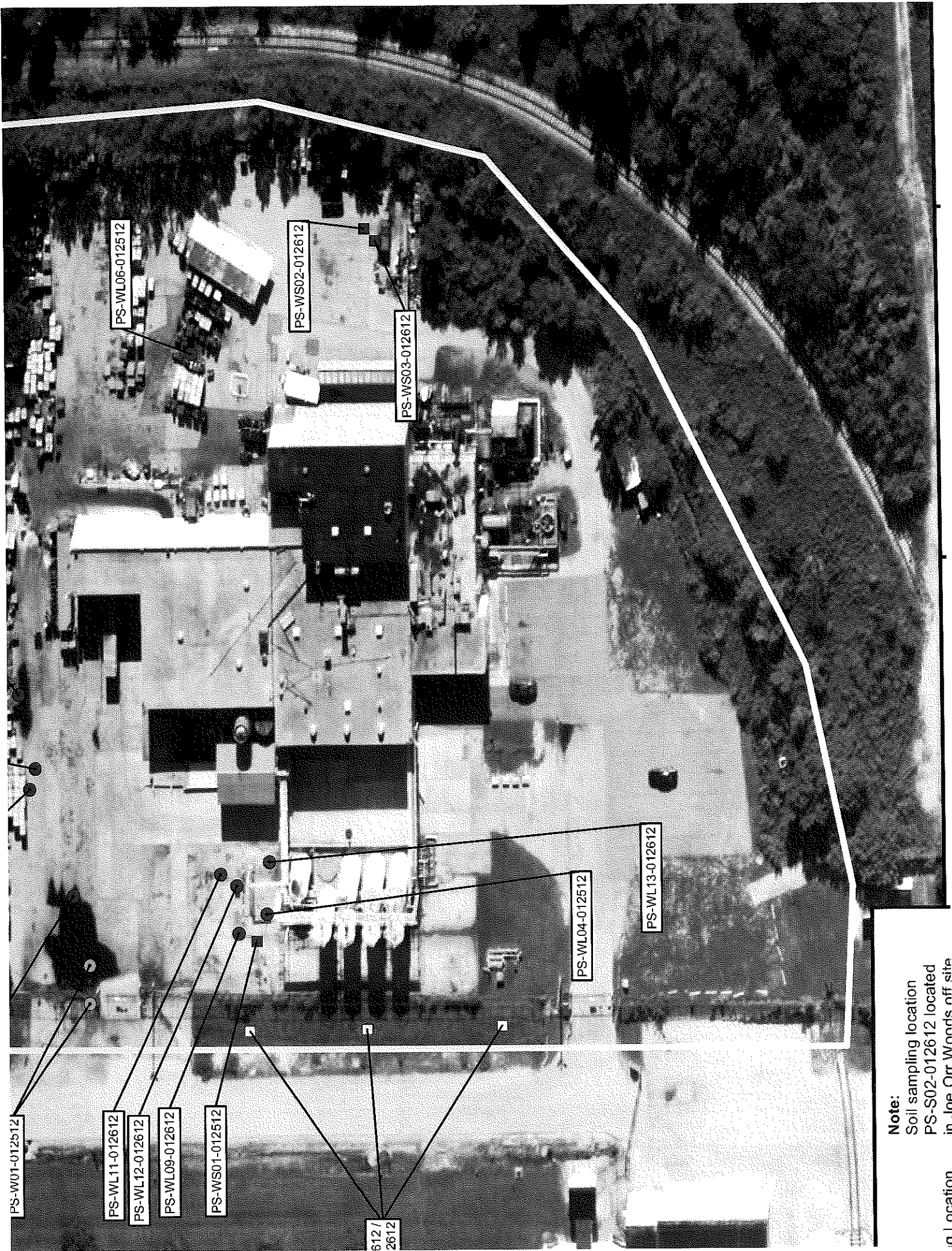
East  
Region

Northeast  
Region

Southeast  
Region

Access Road

int  
ility



**Note:**  
Soil sampling location  
PS-S02-012612 located  
in Ina Orr Woods off site

Location

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## TABLES

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**Table 3-1**  
**West and Northwest Region Container Label Summary Table**  
**Polychem Services Site**  
**Chicago Heights, Cook County, Illinois**

|                  | Labeled<br>"Hazardous" | Labeled<br>"Flammable" | Labeled<br>"Flammable"<br>and<br>"Hazardous" | Labeled<br>"Corrosive" | Labeled<br>"Non-Hazardous" | Labeled<br>"Non-Regulated<br>Waste" | Labeled<br>"Non-<br>Hazardous<br>Epoxy Resin" | Other     | Unlabeled /<br>Unknown |
|------------------|------------------------|------------------------|----------------------------------------------|------------------------|----------------------------|-------------------------------------|-----------------------------------------------|-----------|------------------------|
| West Region      | 8                      | 38                     | 76                                           | 3                      | 4                          | 0                                   | 3                                             | 13        | 39                     |
| Northwest Region | 30                     | 25                     | 2                                            | 25                     | 9                          | 6                                   | 89                                            | 27        | 274                    |
| <b>Total</b>     | <b>38</b>              | <b>63</b>              | <b>78</b>                                    | <b>28</b>              | <b>13</b>                  | <b>6</b>                            | <b>92</b>                                     | <b>40</b> | <b>313</b>             |

**Table 3-2**  
**Waste Sampling Summary Table**  
**Polychem Services Site**  
**Chicago Heights, Cook County, Illinois**

| Field Sample ID No. | Sampling Date | Sample Matrix | Sample Type | Container Type        | Container Condition               | Container Labeling                        | Container Region Location | U.S. EPA CID Drum ID | Heartland Polymer Drum ID | Analytical Parameter(s)                                                      |
|---------------------|---------------|---------------|-------------|-----------------------|-----------------------------------|-------------------------------------------|---------------------------|----------------------|---------------------------|------------------------------------------------------------------------------|
| PS-WL03-012512      | 1/25/12       | Waste Liquid  | Grab        | 55-gallon steel drum  | Fair                              | "Flammable," "MEK," and "Methanol"        | Northwest                 | A480                 | None                      | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WL03D-012512     | 1/25/12       | Waste Liquid  | Grab        | 55-gallon steel drum  | Fair                              | "Flammable," "MEK," and "Methanol"        | Northwest                 | A480                 | None                      | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WL04-012512      | 1/25/12       | Waste Liquid  | Grab        | 55-gallon steel drum  | Fair                              | "Hazardous Waste" and "Flammable"         | West                      | C014                 | 737                       | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WL05-012512      | 1/25/12       | Waste Liquid  | Grab        | 270-gallon tote       | Fair                              | "Spent Scrubber Solution" and "Corrosive" | Northwest                 | AT23                 | None                      | pH                                                                           |
| PS-WL06-012512      | 1/25/12       | Waste Liquid  | Grab        | 55-gallon steel drum  | Fair                              | "Toluene" and "Flammable"                 | East                      | B091                 | None                      | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WL07-012612      | 1/26/12       | Waste Liquid  | Grab        | 270-gallon tote       | Fair                              | "DMEA Sulfate Solution" and "Corrosive"   | Northwest                 | AT10                 | None                      | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WL08-012612      | 1/26/12       | Waste Liquid  | Grab        | 55-gallon steel drum  | Poor - leaking                    | None                                      | Northwest                 | None                 | None                      | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs, TAL Metals, PCBs |
| PS-WL09-012612      | 1/26/12       | Waste Liquid  | Grab        | 270-gallon tote       | Poor - cracks along edges and top | "DMEA Sulfate Solution" and "Corrosive"   | West                      | AT97                 | None                      | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WL11-012612      | 1/26/12       | Waste Liquid  | Grab        | 55-gallon steel drum  | Poor - Leaking                    | "Hazardous Waste" and "Flammable"         | West                      | C007                 | 751                       | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WL12-012612      | 1/26/12       | Waste Liquid  | Grab        | 55-gallon steel drum  | Poor - Leaking                    | "Flammable"                               | West                      | A040                 | 677                       | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WL13-012612      | 1/26/12       | Waste Liquid  | Grab        | 55-gallon steel drum  | Poor - Leaking                    | "Hazardous Waste" and "Flammable"         | West                      | A086                 | 164                       | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WS01-012512      | 1/25/12       | Waste Solid   | Grab        | Cubic-yard fiber tote | Poor - open and leaking           | None                                      | West                      | None                 | None                      | pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs, TAL Metals                   |
| PS-WS02-012612      | 1/26/12       | Waste Solid   | Grab        | 55-gallon steel drum  | Poor - open                       | None                                      | Southeast                 | None                 | None                      | Flashpoint, pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                   |
| PS-WS03-012612      | 1/26/12       | Waste Solid   | Grab        | 330-gallon tote       | Poor - open and leaking           | None                                      | Southeast                 | None                 | None                      | pH, TCLP VOCs, TCLP SVOCs, TCL VOCs, TCL SVOCs                               |

**Notes:**

CID = Criminal Investigation Division  
DMEA = Dimethyl ethyl amine  
Heartland Polymer = Heartland Polymer, Inc.  
ID = Identification  
MEK = Methyl ethyl ketone  
No. = Number  
PCB = Polychlorinated

SVOC = Semivolatile organic compound  
TAL = Target Analyte List  
TCL = Target Compound List  
TCLP = Toxicity Characteristic Leaching Procedure  
U.S. EPA = United States Environmental Protection Agency  
VOC = Volatile organic compound

**Table 3-3**  
**Surface Water and Soil Sampling Summary Table**  
**Polychem Services Site**  
**Chicago Heights, Cook County, Illinois**

| Field Sample ID No. | Date    | Sample Matrix | Sample Type | Sampling Location                                                             | Analyses                                  |
|---------------------|---------|---------------|-------------|-------------------------------------------------------------------------------|-------------------------------------------|
| PS-W01-012512       | 1/25/12 | Surface water | Composite   | Pooled water emanating from drums in northwest region to off-site storm sewer | pH, TCL VOCs, TCL SVOCs, PAHs, TAL Metals |
| PS-S01-012612       | 1/26/12 | Soil          | Composite   | Drainage ditch bordering Site to the west                                     | TCL VOCs, TCL SVOCs, TAL Metals           |
| PS-S01D-012612      | 1/26/12 | Soil          | Composite   | Drainage ditch bordering Site to the west                                     | TCL VOCs, TCL SVOCs, TAL Metals           |
| PS-S02-012612       | 1/26/12 | Soil          | Grab        | Joe Orr Woods, a Cook County Forest Preserve                                  | TCL VOCs, TCL SVOCs, TAL Metals           |

Notes:

ID = Identification

PAH = Polycyclic aromatic hydrocarbon

SVOC = Semivolatile organic compound

TAL = Target Analyte List

TCL = Target Compound List

VOC = Volatile organic compound

**Table 4-1**  
**Waste Liquid and Waste Solid Analytical Results Summary Table**  
**Polychem Services Site**  
**Chicago Heights, Cook County, Illinois**

| Parameter <sup>1</sup>     | Laboratory Sample ID |                | 1201631-02      | 1201631-04     | 1201631-06     | 1201631-01     | 1201631-10     | 1201631-17   |
|----------------------------|----------------------|----------------|-----------------|----------------|----------------|----------------|----------------|--------------|
|                            | Matrix               | Waste Liquid   | Waste Liquid    | Waste Liquid   | Waste Liquid   | Waste Liquid   | Waste Liquid   | Waste Liquid |
|                            | Location ID          | WL-03          | WL-03           | WL-03          | WL-04          | WL-05          | WL-06          | WL-07        |
|                            | Sampling Date        | 1/25/2012      | 1/25/2012       | 1/25/2012      | 1/25/2012      | 1/25/2012      | 1/25/2012      | 1/26/2012    |
|                            | Field Sample ID      | PS-WL03-012512 | PS-WL03D-012512 | PS-WL04-012512 | PS-WL05-012512 | PS-WL06-012512 | PS-WL07-012612 |              |
|                            | Regulatory Limit     | Result         |                 |                |                |                |                |              |
| Flashpoint (°F)            | < 140                | > 140          | > 140           | > 140          | > 140          | NA             | 65             | > 140        |
| pH (SU)                    | ≤ 2 or ≥ 12.5        | 7              | 5.37            | 7              | 7              | 5              | 7              | 13.1         |
| TCLP VOCs (mg/L)           |                      |                |                 |                |                |                |                |              |
| 2-Butanone                 | 200                  | 19             | 19              | 5 U            | 10,000 U       | NA             | 1,000 U        | 0.2 U        |
| Benzene                    | 0.5                  | 1 U            | 0.05 U          | 0.5 U          | 1,000 U        | NA             | 1,000 U        | 0.02 U       |
| TCL VOCs (mg/L or mg/kg)   |                      |                |                 |                |                |                |                |              |
| 2-Butanone                 | NA                   | 340            | 350             | 2,500 U        | 5,000 U        | NA             | 5,000 U        | 2.5 U        |
| 4-Methyl-2-pentanone       | NA                   | 10 U           | 10 U            | 2,500 U        | 5,000 U        | NA             | 5,000 U        | 2.5 U        |
| Benzene                    | NA                   | 10 U           | 10 U            | 500 U          | 1,000 U        | NA             | 1,000 U        | 0.5 U        |
| Ethylbenzene               | NA                   | 2,600          | 1,200           | 32,000         | 400 U          | NA             | 400 U          | 8.2          |
| Isopropylbenzene           | NA                   | 48             | 52              | 1,200          | 1,000 U        | NA             | 1,000 U        | 0.86         |
| Methyl acetate             | NA                   | 50 U           | 50 U            | 2,500 U        | 5,000 U        | NA             | 5,000 U        | 4.3          |
| Styrene                    | NA                   | 10 U           | 10 U            | 500 U          | 1,000 U        | NA             | 1,000 U        | 0.5 U        |
| Toluene                    | NA                   | 110            | 120             | 3,600          | 810,000        | NA             | 810,000        | 3.3          |
| Xylenes, total             | NA                   | 11,000         | 5,100           | 200,000        | 1,200 U        | NA             | 1,200 U        | 55           |
| TCL SVOCs (mg/L or mg/kg)  |                      |                |                 |                |                |                |                |              |
| 1,1-Biphenyl               | NA                   | 0.5 U          | 0.49 U          | 0.44 U         | 0.041 U        | NA             | 0.041 U        | 0.046 U      |
| Acetophenone               | NA                   | 0.1 U          | 0.099 U         | 0.088 U        | 0.0082 U       | NA             | 0.0082 U       | 0.0092 U     |
| Anthracene                 | NA                   | 0.5 U          | 0.49 U          | 0.44 U         | 0.041 U        | NA             | 0.041 U        | 0.046 U      |
| Phenanthrene               | NA                   | 0.5 U          | 0.49 U          | 0.44 U         | 0.041 U        | NA             | 0.041 U        | 93           |
| Phenol                     | NA                   | 0.5 U          | 0.49 U          | 0.44 U         | 0.041 U        | NA             | 0.041 U        | 0.046 U      |
| Pyrene                     | NA                   | 0.5 U          | 0.49 U          | 0.44 U         | 0.041 U        | NA             | 0.041 U        |              |
| TAL Metals (mg/L or mg/kg) |                      |                |                 |                |                |                |                |              |
| Aluminum                   | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Barium                     | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Calcium                    | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Chromium                   | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Copper                     | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Iron                       | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Lead                       | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Magnesium                  | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Manganese                  | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Nickel                     | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Sodium                     | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |
| Zinc                       | NA                   | NA             | NA              | NA             | NA             | NA             | NA             | NA           |

**Table 4-1**  
**Waste Liquid and Waste Solid Analytical Results Summary Table**  
**Polychem Services Site**  
**Chicago Heights, Cook County, Illinois**

| Parameter <sup>1</sup>     | Laboratory Sample ID |                | 1201631-20     | 1201628-08     | 1201628-06     | 1201628-10     | 1201631-08     |
|----------------------------|----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
|                            | Matrix               | Waste Liquid   | Waste Liquid   | Waste Liquid   | Waste Liquid   | Waste Liquid   | Waste Solid    |
|                            | Location ID          | WL-08          | WL-09          | WL-11          | WL-12          | WL-13          | WS-01          |
|                            | Sampling Date        | 1/26/2012      | 1/26/2012      | 1/26/2012      | 1/26/2012      | 1/26/2012      | 1/25/2012      |
| Regulatory Limit           | Field Sample ID      | PS-WL08-012612 | PS-WL09-012612 | PS-WL11-012612 | PS-WL12-012612 | PS-WL13-012612 | PS-WS01-012512 |
|                            | Result               |                |                |                |                |                |                |
| Flashpoint (°F)            | < 140                | > 140          | > 140          | 84             | 108            | 120            | NA             |
| pH (SU)                    | ≤ 2 or ≥ 12.5        | 6.45           | 9.5            | 7              | 6.4            | 6              | 7.5            |
| TCLP VOCs (mg/L)           |                      |                |                |                |                |                |                |
| 2-Butanone                 | 200                  | 1,000 U        | 0.2 U          | 800            | 5,000 U        | 5,000 U        | 0.2 U          |
| Benzene                    | 0.5                  | 100 U          | 0.02 U         | 700            | 500 U          | 500 U          | 0.02 U         |
| TCL VOCs (mg/L or mg/kg)   |                      |                |                |                |                |                |                |
| 2-Butanone                 | NA                   | 25 U           | 25 U           | 500 U          | 250 U          | 10,000 U       | 5.1 U          |
| 4-Methyl-2-pentanone       | NA                   | 25 U           | 25 U           | 1,400          | 250 U          | 10,000 U       | 5.1 U          |
| Benzene                    | NA                   | 5 U            | 5 U            | 300            | 50 U           | 2,000 U        | 0.51           |
| Ethylbenzene               | NA                   | 94             | 5 U            | 36,000         | 12,000         | 3,500          | 100            |
| Isopropylbenzene           | NA                   | 7.3            | 5 U            | 3,000          | 780            | 3,000          | 7.3            |
| Methyl acetate             | NA                   | 25 U           | 25 U           | 500 U          | 250 U          | 10,000 U       | 5.1 U          |
| Styrene                    | NA                   | 13             | 5 U            | 100 U          | 50 U           | 2,000 U        | 41             |
| Toluene                    | NA                   | 62             | 5 U            | 4,100          | 960            | 2,000 U        | 2.1            |
| Xylenes, total             | NA                   | 330            | 15 U           | 160,000        | 54,000         | 14,000         | 420            |
| ICL SVOCs (mg/L or mg/kg)  |                      |                |                |                |                |                |                |
| 1,1-Biphenyl               | NA                   | 310            | 0.043 U        | 0.043 U        | 0.5 U          | 0.49 U         | 34 U           |
| Acetophenone               | NA                   | 96             | 0.0086 U       | 0.0086 U       | 670            | 2,200          | 860            |
| Anthracene                 | NA                   | 700            | 0.043 U        | 0.043 U        | 0.5 U          | 0.49 U         | 3.1 U          |
| Phenanthrene               | NA                   | 590            | 0.043 U        | 0.043 U        | 0.5 U          | 0.49 U         | 3.1 U          |
| Phenol                     | NA                   | 160            | 0.043 U        | 1,000          | 0.5 U          | 0.49 U         | 16 U           |
| Pyrene                     | NA                   | 230            | 0.043 U        | 0.043 U        | 0.5 U          | 0.49 U         | 3.1 U          |
| TAL Metals (mg/L or mg/kg) |                      |                |                |                |                |                |                |
| Aluminum                   | NA                   | 0.5 U          | NA             | NA             | NA             | NA             | 43             |
| Barium                     | NA                   | 0.25 U         | NA             | NA             | NA             | NA             | 1.8            |
| Calcium                    | NA                   | 69             | NA             | NA             | NA             | NA             | 280            |
| Chromium                   | NA                   | 0.25 U         | NA             | NA             | NA             | NA             | 0.92           |
| Copper                     | NA                   | 0.25 U         | NA             | NA             | NA             | NA             | 2.5            |
| Iron                       | NA                   | 4 U            | NA             | NA             | NA             | NA             | 320            |
| Lead                       | NA                   | 0.25 U         | NA             | NA             | NA             | NA             | 0.82           |
| Magnesium                  | NA                   | 10 U           | NA             | NA             | NA             | NA             | 81             |
| Manganese                  | NA                   | 0.25 U         | NA             | NA             | NA             | NA             | 3.6            |
| Nickel                     | NA                   | 0.25 U         | NA             | NA             | NA             | NA             | 0.51           |
| Sodium                     | NA                   | 24             | NA             | NA             | NA             | NA             | 49             |
| Zinc                       | NA                   | 0.5 U          | NA             | NA             | NA             | NA             | 9              |

**Table 4-1**  
**Waste Liquid and Waste Solid Analytical Results Summary Table**  
**Polychem Services Site**  
**Chicago Heights, Cook County, Illinois**

| Parameter <sup>1</sup>     | Laboratory Sample ID |                | 1201628-01     |  |
|----------------------------|----------------------|----------------|----------------|--|
|                            | Matrix               | Waste Solid    | Waste Solid    |  |
|                            | Location ID          | WS-02          | WS-03          |  |
|                            | Sampling Date        | 1/26/2012      | 1/26/2012      |  |
|                            | Field Sample ID      | PS-WS02-012612 | PS-WS03-012612 |  |
| Regulatory Limit           | Result               |                |                |  |
|                            |                      |                |                |  |
| Flashpoint (°F)            | < 140                | > 140          | NA             |  |
| pH (SU)                    | ≤ 2 or ≥ 12.5        | 13.6           | 6              |  |
| TCLP VOCs (mg/L)           |                      |                |                |  |
| 2-Butanone                 | 200                  | 0.2 U          | 0.2 U          |  |
| Benzene                    | 0.5                  | 0.02 U         | 0.02 U         |  |
| TCL VOCs (mg/L or mg/kg)   |                      |                |                |  |
| 2-Butanone                 | NA                   | 0.25 U         | 25 U           |  |
| 4-Methyl-2-pentanone       | NA                   | 0.25 U         | 25 U           |  |
| Benzene                    | NA                   | 0.05 U         | 5 U            |  |
| Ethylbenzene               | NA                   | 0.41           | 450            |  |
| Isopropylbenzene           | NA                   | 0.05 U         | 28             |  |
| Methyl acetate             | NA                   | 0.29           | 25 U           |  |
| Styrene                    | NA                   | 0.05 U         | 5 U            |  |
| Toluene                    | NA                   | 0.05 U         | 13             |  |
| Xylenes, total             | NA                   | 1.9            | 1,100          |  |
| TCL SVOCs (mg/L or mg/kg)  |                      |                |                |  |
| 1,1-Biphenyl               | NA                   | 3.1 U          | 0.44 U         |  |
| Acetophenone               | NA                   | 3.1 U          | 0.089 U        |  |
| Anthracene                 | NA                   | 0.28 U         | 0.44 U         |  |
| Phenanthrene               | NA                   | 0.28 U         | 0.44 U         |  |
| Phenol                     | NA                   | 1.5 U          | 0.44 U         |  |
| Pyrene                     | NA                   | 0.28 U         | 0.44 U         |  |
| TAL Metals (mg/L or mg/kg) |                      |                |                |  |
| Aluminum                   | NA                   | NA             | NA             |  |
| Barium                     | NA                   | NA             | NA             |  |
| Calcium                    | NA                   | NA             | NA             |  |
| Chromium                   | NA                   | NA             | NA             |  |
| Copper                     | NA                   | NA             | NA             |  |
| Iron                       | NA                   | NA             | NA             |  |
| Lead                       | NA                   | NA             | NA             |  |
| Magnesium                  | NA                   | NA             | NA             |  |
| Manganese                  | NA                   | NA             | NA             |  |
| Nickel                     | NA                   | NA             | NA             |  |
| Sodium                     | NA                   | NA             | NA             |  |
| Zinc                       | NA                   | NA             | NA             |  |

Notes:

Shaded and bolded results exceed the hazardous waste regulatory limits in Title 40 of the Code of Federal Regulations, Part 261, Subpart C.

> = Greater than

≤ = Less than or equal to

≥ = Greater than or equal to

°F = Degree Fahrenheit

ID = Identification

mg/L = Milligram per liter

mg/kg = Milligram per kilogram

NA = Not analyzed or not applicable

mg/kg = milligrams per kilo; U = Non-detect

SVOC = Semi-volatile organic compound

TCL = Target Compound List

TCLP = Toxicity Characteristic Leaching Procedure

U = Not detected at listed reporting limit

VOC = Volatile organic compound

1 Only detected parameters listed

**Table 4-2**  
**Surface Water Analytical Results Summary Table**  
**Polychem Services Site**  
**Chicago Heights, Cook County, Illinois**

| Parameter <sup>1</sup> | Laboratory Sample ID | 1201628-03    |
|------------------------|----------------------|---------------|
|                        | Matrix               | Surface Water |
|                        | Location ID          | W-01          |
|                        | Sampling Date        | 1/25/2012     |
|                        | Field Sample ID      | PS-W01-012512 |
|                        | Unit                 | Result        |
| <b>pH</b>              | SU                   | 7.32          |
| <b>TCL VOCs</b>        |                      |               |
| Ethylbenzene           | mg/L                 | 0.013         |
| Isopropylbenzene       | mg/L                 | 0.0015        |
| Toluene                | mg/L                 | 0.0012        |
| Xylenes, total         | mg/L                 | 0.07          |
| <b>TCL SVOCs</b>       |                      |               |
| Acetophenone           | mg/L                 | 0.0062        |
| Anthracene             | mg/L                 | 0.0068        |
| Phenanthrene           | mg/L                 | 0.0096        |
| Phenol                 | mg/L                 | 0.036         |
| <b>PAHs</b>            |                      |               |
| 2-Methylnaphthalene    | mg/L                 | 0.0006        |
| Anthracene             | mg/L                 | 0.008         |
| Naphthalene            | mg/L                 | 0.00034       |
| Phenanthrene           | mg/L                 | 0.0078        |
| <b>TAL Metals</b>      |                      |               |
| Aluminum               | mg/L                 | 18            |
| Antimony               | mg/L                 | 0.0064        |
| Arsenic                | mg/L                 | 0.013         |
| Barium                 | mg/L                 | 0.35          |
| Cadmium                | mg/L                 | 0.0037        |
| Calcium                | mg/L                 | 140           |
| Chromium               | mg/L                 | 0.19          |
| Cobalt                 | mg/L                 | 0.0095        |
| Copper                 | mg/L                 | 0.14          |
| Iron                   | mg/L                 | 38            |
| Lead                   | mg/L                 | 0.17          |
| Magnesium              | mg/L                 | 57            |
| Manganese              | mg/L                 | 0.5           |
| Nickel                 | mg/L                 | 0.041         |
| Potassium              | mg/L                 | 16            |
| Sodium                 | mg/L                 | 1,800         |
| Vanadium               | mg/L                 | 0.053         |
| Zinc                   | mg/L                 | 2.5           |
| Mercury                | mg/L                 | 0.00024       |

**Notes:**

ID = Identification

mg/L = Milligram per liter

PAH = Polycyclic aromatic hydrocarbon

SVOC = Semivolatile organic compound

<sup>1</sup> Only detected parameters listed

SU = Standard unit

TAL = Target Analyte List

TCL = Target Compound List

VOC = Volatile organic compound

**Table 4-3**  
**Soil Analytical Results Summary Table**  
**Polychem Services Site**  
**Chicago Heights, Cook County, Illinois**

| Parameter <sup>1</sup> | Laboratory Sample ID |              |              |         | 1201631-14    | 1201631-15     | 1201631-16    |
|------------------------|----------------------|--------------|--------------|---------|---------------|----------------|---------------|
|                        | Matrix               |              |              |         | Soil          | Soil           | Soil          |
|                        | Location ID          |              |              |         | S-01          | S-01           | S-02          |
|                        | Sampling Date        |              |              |         | 1/26/2012     | 1/26/2012      | 1/26/2012     |
|                        | Field Sample ID      |              |              |         | PS-S01-012612 | PS-S01D-012612 | PS-S02-012612 |
|                        | Regulatory Limit     | TACO I/C-Ing | TACO I/C-Inh | Unit    | Result        |                |               |
| TCL VOCs               |                      |              |              |         |               |                |               |
| 2-Butanone             | NA                   | NA           | mg/kg        | 0.02 J  | 0.016 U       | 0.017 U        |               |
| Acetone                | NA                   | 100,000      | mg/kg        | 0.068 J | 0.047         | 0.13           |               |
| TCL SVOCs              |                      |              |              |         |               |                |               |
| Benzo(a)anthracene     | 8                    | NA           | mg/kg        | 0.74    | 0.62          | 0.052 U        |               |
| Benzo(a)pyrene         | 0.8                  | NA           | mg/kg        | 0.95    | 0.76          | 0.052 U        |               |
| Benzo(b)fluoranthene   | 8                    | NA           | mg/kg        | 1.9     | 1.6           | 0.053          |               |
| Benzo(k)fluoranthene   | 78                   | NA           | mg/kg        | 0.6     | 0.5           | 0.052 U        |               |
| Chrysene               | 780                  | NA           | mg/kg        | 1.1     | 0.99          | 0.052 U        |               |
| Fluoranthene           | 82,000               | NA           | mg/kg        | 1.8     | 1.8           | 0.052 U        |               |
| Phenanthrene           | NA                   | NA           | mg/kg        | 0.66    | 0.7           | 0.052 U        |               |
| Pyrene                 | 61,000               | NA           | mg/kg        | 1.3     | 1.3           | 0.058          |               |
| TAL Metals             |                      |              |              |         |               |                |               |
| Aluminum               | NA                   | NA           | mg/kg        | 9,100   | 8,000         | 9,500          |               |
| Antimony               | 820                  | NA           | mg/kg        | 2.3     | 1.3           | 0.68 U         |               |
| Arsenic                | NA                   | 1,200        | mg/kg        | 7.2     | 9             | 7.6            |               |
| Barium                 | 140,000              | 910,000      | mg/kg        | 110     | 85            | 86             |               |
| Beryllium              | 4,100                | 2,100        | mg/kg        | 0.57 U  | 0.43 U        | 0.61           |               |
| Cadmium                | 2,000                | 2,800        | mg/kg        | 2.3     | 1.1           | 0.41           |               |
| Calcium                | NA                   | NA           | mg/kg        | 69,000  | 53,000        | 6,800          |               |
| Chromium               | 6,100                | 420          | mg/kg        | 28      | 21            | 15             |               |
| Cobalt                 | 120,000              | NA           | mg/kg        | 12      | 10            | 4.8            |               |
| Copper                 | 82,000               | NA           | mg/kg        | 210     | 68            | 19             |               |
| Iron                   | NA                   | NA           | mg/kg        | 24,000  | 23,000        | 21,000         |               |
| Lead                   | 800                  | NA           | mg/kg        | 150     | 70            | 36             |               |
| Magnesium              | NA                   | NA           | mg/kg        | 32,000  | 32,000        | 2,700          |               |
| Manganese              | 41,000               | 91,000       | mg/kg        | 380     | 400           | 160            |               |

**Table 4-3**  
**Soil Analytical Results Summary Table**  
**Polychem Services Site**  
**Chicago Heights, Cook County, Illinois**

| Parameter <sup>1</sup> | Laboratory Sample ID |              | 1201631-14    | 1201631-15     | 1201631-16    |
|------------------------|----------------------|--------------|---------------|----------------|---------------|
|                        | Matrix               |              | Soil          | Soil           | Soil          |
|                        | Location ID          |              | S-01          | S-01           | S-02          |
|                        | Sampling Date        |              | 1/26/2012     | 1/26/2012      | 1/26/2012     |
| Regulatory Limit       | Field Sample ID      |              | PS-S01-012612 | PS-S01D-012612 | PS-S02-012612 |
|                        | TACO I/C-Ing         | TACO I/C-Inh | Result        |                |               |
| Nickel                 | 41,000               | 21,000       | mg/kg         | 30             | 24            |
| Potassium              | NA                   | NA           | mg/kg         | 1,400          | 1,200         |
| Selenium               | 10,000               | NA           | mg/kg         | 1.5            | 1.4           |
| Silver                 | 10,000               | NA           | mg/kg         | 1.6            | 0.54 U        |
| Sodium                 | NA                   | NA           | mg/kg         | 2,200          | 1,300         |
| Vanadium               | 14,000               | NA           | mg/kg         | 24             | 20            |
| Zinc                   | 610,000              | NA           | mg/kg         | 1,200          | 480           |
| Mercury                | 610                  | 16           | mg/kg         | 0.18           | 0.33          |
|                        |                      |              |               |                | 0.062         |

Notes:

**Shaded and bolded results exceed the IEPA TACO I/C-Ing or TACO I/C-Inh regulatory limits.**

ID = Identification

IEPA = Illinois Environmental Protection Agency

I/C-Ing = Industrial/Commercial Ingestion

I/C-Inh = Industrial/Commercial Inhalation

J = Estimated result

mg/kg = Milligram per kilogram

NA = Not applicable

SVOC = Semivolatile organic compound

TACO = Tiered Approach to Corrective Action

TAL = Target Analyte List

TCL = Target Compound List

U = Not detected at listed reporting limit

VOC = Volatile organic compound

1 Only detected parameters listed

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**APPENDIX A**  
**PHOTOGRAPHIC DOCUMENTATION**

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**Site:** Polychem Services Site

**Photograph No.:** 1

**Direction:** Southeast

**Subject:** Polychem Services chemical conversion facility and staged drums in northwest region of the Site

**Date:** 2/1/12

**Photographer:** David Sena



**Site:** Polychem Services Site

**Photograph No.:** 2

**Direction:** South

**Subject:** Drums staged in west region of the Site

**Date:** 1/25/12

**Photographer:** Jeff Bryniarski



**Site:** Polychem Services Site

**Photograph No.:** 3

**Direction:** Northwest

**Subject:** Drums staged in northwest region of the Site

**Date:** 1/25/12

**Photographer:** Jeff Bryniarski



**Site:** Polychem Services Site

**Photograph No.:** 4

**Direction:** North

**Subject:** Drums and totes staged in northeast region of the Site

**Date:** 1/25/12

**Photographer:** Jeff Bryniarski



**Site:** Polychem Services Site

**Photograph No.:** 5

**Direction:** Northeast

**Subject:** WESTON START conducting air monitoring in northeast region of the Site next to drums

**Date:** 1/25/12

**Photographer:** Jeff Bryniarski



**Site:** Polychem Services Site

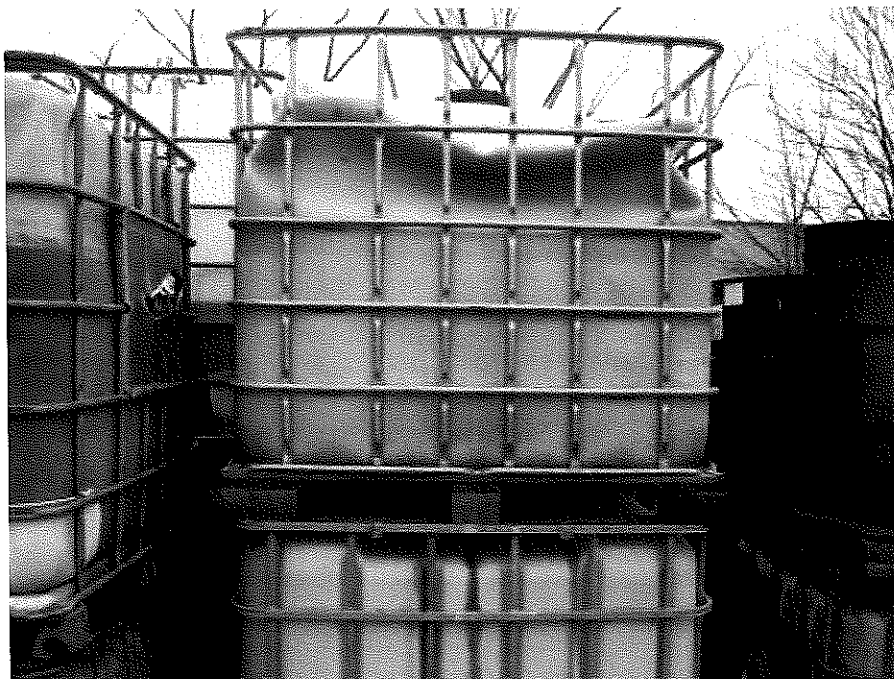
**Photograph No.:** 6

**Direction:** East

**Subject:** Containers staged in east region of the Site

**Date:** 1/25/12

**Photographer:** Jeff Bryniarski



**Site:** Polychem Services Site

**Photograph No.:** 7

**Direction:** North

**Subject:** Damaged and cracked 270-gallon totes in northeast region of the Site

**Date:** 1/26/12

**Photographer:** David Sena



**Site:** Polychem Services Site

**Photograph No.:** 8

**Direction:** East

**Subject:** Black resin spilled onto ground from open tote in southeast region of the Site

**Date:** 1/25/12

**Photographer:** Jeff Bryniarski



**Site:** Polychem Services Site

**Photograph No.:** 9

**Direction:** Southwest

**Subject:** WESTON START collecting liquid waste sample PS-WL12-012612 from a drum in the west region of the Site

**Date:** 1/26/12

**Photographer:** Jon Colomb



**Site:** Polychem Services Site

**Photograph No.:** 10

**Direction:** Southwest

**Subject:** WESTON START collecting liquid waste sample PS-WL08-012612 from a drum in the northwest region of the Site

**Date:** 1/26/12

**Photographer:** Jon Colomb

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**APPENDIX B**  
**LABORATORY ANALYTICAL AND DATA VALIDATION REPORTS**

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**POLYCHEM SERVICES, INC.  
CHICAGO HEIGHTS, ILLINOIS  
DATA VALIDATION REPORT**

**Date:** February 8, 2012

**Laboratory:** ALS Environmental (ALS), Holland, Michigan

**Laboratory Project #:** 1201628

**Data Validation Performed By:** Lisa Graczyk, Weston Solutions, Inc. (WESTON) Superfund Technical Assessment and Response Team (START)

**Weston Analytical Work Order #/TDD #:** 20405.016.001.1723.00/S05-0001-1201-012

This data validation report has been prepared by WESTON START under the START III Region V contract. This report documents the data validation for 4 waste liquid, 1 waste solid, 1 water, and trip blank samples collected for the Polychem Services, Inc. Site Assessment that were analyzed for the following parameters and U.S. Environmental Protection Agency (U.S. EPA) methods:

- Volatile Organic Compounds (VOC) by SW-846 Method 8260B
- Toxicity Characteristic Leaching Procedure (TCLP) VOCs by SW-846 Methods 1311 and 8260B
- Semivolatile Organic Carbons (SVOC) by SW-846 Method 8270C
- TCLP SVOCs by SW-846 Methods 1311 and 8270C
- Metals by SW-846 Methods 6020A, 7471A, and 7470A
- Ignitability by ASTM D93
- Corrosivity by SW-846 Methods 9040 and 9045

A level II data package was requested from ALS. The data validation was conducted in general accordance with the U.S. EPA "Contract Laboratory Program National Functional Guidance for Superfund Organic Methods Data Review" dated June 2008 and "Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review" dated January 2010. The Attachment contains the results summary sheets with the hand-written qualifiers applied during data validation.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 W. JACKSON BOULEVARD  
CHICAGO, IL 60604

FOCUSED SITE ASSESSMENT INSPECTION REPORT

MEMORANDUM TO FILE

INSTALLATION NAME: Polychem Services, Inc., LLC  
U.S. EPA ID No.: ILD 980 578 876  
LOCATION ADDRESS: 374 E. Joe Orr Road  
Chicago Heights, IL 60411  
NAICS CODES: 325211 (Plastics, Material and Resin  
Manufacturing); 424690 (Other Chemical  
and Allied Products Merchant Wholesalers)  
DATE OF INSPECTION: December 26, 2012  
EPA INSPECTOR: Michael Valentino

PREPARED BY:

Michael Valentino

Michael Valentino,  
Environmental Engineer

1-15-13

Date

REVIEWED BY:

Lorna M. Jereza

Lorna M. Jereza, Chief  
Compliance Section 1  
RCRA Branch

1/15/13

Date

### **Purpose of Inspection:**

The purpose of the inspection was to observe site conditions and evaluate whether conditions have worsened since February 2012, when EPA Office of Superfund and its contractor, WESTON, Inc. provided oversight to an emergency removal action (ER) conducted by Polychem Services, Inc. ("Polychem") and its contractors. The February 2012 ER included over-packing 60 leaking and/or damaged drums and placing a berm (fabric absorbent socks) along the northwestern corner of the site.

### **Site History:**

|                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>July 2007</i>     | Illinois Environmental Protection Agency (IEPA) first inspects Facility (then Heartland Polymers, Inc.).                                                                                                                                                                                                                                                                                                                                           |
| <i>August 2007</i>   | IEPA addresses violations of RCRA in Violation Notice Letter to Heartland Polymers, Inc.                                                                                                                                                                                                                                                                                                                                                           |
| <i>December 2007</i> | IEPA rejects Heartland Polymer, Inc.'s Compliance Commitment Agreement.                                                                                                                                                                                                                                                                                                                                                                            |
| <i>May 2008</i>      | IEPA inspects the facility, now operated by Polychem Services, Inc. IEPA finds more than 500 drums and totes outside at the Facility and approximately 500 drums of usable solvent inside the Facility.                                                                                                                                                                                                                                            |
| <i>December 2008</i> | IEPA refers the case to EPA Region 5 for enforcement.                                                                                                                                                                                                                                                                                                                                                                                              |
| <i>November 2009</i> | EPA first inspects the Facility. Situated along the western, northern and eastern sides of the Site were nearly 500 containers consisting of 55-gallon steel drums, totes and poly bags. Aisle space in many locations was not sufficient to allow for ease of human movement or for emergency equipment to be easily moved in and out, such as over-pack drums. At the time of the inspection, the drums had been on-site for more than 180 days. |
| <i>July 2010</i>     | IEPA inspects the Facility, and observes liquids running off-site to a manhole in the street, leaking poly bags, open containers and evidence of historical spillage onto the Facility's blacktop.                                                                                                                                                                                                                                                 |
| <i>August 2010</i>   | EPA inspects the Facility, and observes approximately 550 to 600 55-gallon steel drums staged on the blacktop throughout the facility, many of which were unlabeled, found to have illegible labels or were inaccessible or non-discernable. At least 110 drums had hazardous waste labels that were either dated May 12, 2009, or left undated. There were also more than 200 totes on site on the                                                |

day of the inspection, the vast majority of which were believed to contain spent scrubber solution.

- October 2010* EPA issues a Request for Information under RCRA Section 3007 to Polychem Services, Inc. and Heartland Polymers, Inc.
- March 2011* EPA National Enforcement Investigations Center investigates the Facility and conducts sampling of containers.
- December 2011* Land and Chemicals Division (LCD) referred the Site to the Superfund Division (SFD) for investigation and potential removal action.
- January 2012* EPA (SFD and LCD) inspect the Facility, and observed at least 130 drums of hazardous waste on the west side of the Site. EPA observed frozen liquids on the ground near these drums.
- January 2012* EPA SFD conducted a Site Assessment under the Comprehensive Environmental Response, Compensation and Liability Act. The Site Assessment discovered 671 containers on-site, of which 59 were leaking and 46 were open.
- February 2012* Polychem contractors performed an emergency response under EPA supervision, and over-packed 60 leaking drums and containers, secured lids on 17 other drums, secured eight open totes and stopped offsite releases of hazardous substances or pollutants in the northwest region of the Site by placing absorbent booms along the western fence line and near the area where drums were observed to be leaking in the northwest region of the Site.
- March 2012* EPA issues a Request for Information under RCRA Section 3007 to Polychem Services, Inc., Heartland Polymers, Inc., and JAS Environmental, Inc.
- September 2012* EPA issues a RCRA 7003 Unilateral Administrative Order to Polychem Services, Inc., Polychem Holdings, Inc., Heartland Polymers, Inc., and Heartland Polymers Realty, Inc.

**Participants:**

Tom Wiggins, Business Manager, Chemtech Services, Inc. (ph: 630-429-3640; email: [twiggins@chemtechservicesinc.com](mailto:twiggins@chemtechservicesinc.com)) and Mark Knight, Principal, Arrow Consulting Group, LLC (ph: 219-808-8686; email: [mjknight@arrow-cg.com](mailto:mjknight@arrow-cg.com)) represented Polychem. Michael Valentino, RCRA Inspector, Land and Chemicals Division, and Ramon Mendoza, On-Scene Coordinator, Superfund Division, represented EPA Region 5. The

Chicago Heights Fire Department (CHFD) was represented by Fire Chief James Angell and Assistant Fire Chief Steve Kozlowski.

### **Site Description:**

Polychem operates a medium-sized chemical conversion facility occupying a single building housed under approximately 25,000 square feet of roof and resting on approximately four acres of property in an industrial area of Chicago Heights, Illinois. The site is located approximately one and one-half miles east of I-394 (Bishop Ford Freeway) and one mile north of Route 30 (Lincoln Highway), and is set back to the south of Joe Orr Road.

Polychem recovers dimethyl ethyl amine (DMEA), dimethyl isopropyl amine (DMIPA) and triethylamine (TEA) from spent scrubber solutions from foundries under a tolling agreement managed by Chemtech Services, Inc. DMEA, TEA and DMIPA are used in foundry operations to cure phenolic urethane cold box binders (PUCB). The amine, which accelerates curing of the sand in the cold box, is vaporized in the PUCB sand cores and subsequently captured in a scrubber which utilizes an aqueous solution of a strong acid, typically  $H_2SO_4$ .

Spent amine scrubber solution containing DMEA, TEA and DMIPA are received in 250-gallon poly totes and processed first by introducing a strong acid in a continuous stirred tank reactor (CSTR). From the CSTR the DMEA vapors are distilled and condensed and then sent to a distillate receiving tank where they are subsequently packaged into 110-gallon steel vessels (Manchester tanks) and sold to Chemtech under a Multiple Release Purchase Order on a converted per-pound basis. TEA and DMIPA are sent to a holding vessel for an additional drying step prior to being packaged and sold to Chemtech. The process generates sodium sulfate salts and wastewater, both of which are nonhazardous.

Polychem presently employs six people. Hours of operation are 6:00 am to 4:00 pm, Monday through Friday.

### **Arrival and Pre-Meeting:**

I arrived at the site at approximately 8:50 am CST on December 26, 2012. I waited in the parking lot to the south of the building as I awaited the arrival of OSC Mendoza and CHFD representatives. Fire Chief Angell and Asst. Fire Chief Kozlowski arrived within three minutes, followed shortly after by OSC Mendoza. We spoke briefly among ourselves before proceeding indoors where we were met by Messrs. Wiggins and Knight. Mr. Wiggins led us to a conference room on the 2<sup>nd</sup> floor.

We began the meeting at 9:10 am. Mr. Wiggins provided a brief overview of recent efforts to consolidate waste streams and to segregate Polychem waste inventory from Heartland Polymers, Inc. waste inventory.

Mr. Wiggins said amine recovery operations had since started again. He said that in calendar year 2012, he shipped off-site approximately 1.5 million pounds of nonhazardous wastewater. In the amine recovery process, sodium sulfate precipitates out at 87°F. The sodium sulfate consists of approximately 50% salt cake and 50% water. The water is skimmed off the top and out-hauled to Liquid Environmental Solutions.

Mr. Wiggins said that Polychem previously made solvent-based paints and that xylene was used to clean out reactors. Most of the hazardous waste streams on-site are solvents and resins with a low flash (< 140°F). Resins are off-spec materials left from prior site operations.

Materials on-site include resins (these are all legacy materials, according to Mr. Wiggins), nonhazardous materials from the recovery of amines (brine salts and wastewater) and scrubber solutions. Scrubber solutions received in totes from foundries are assigned a tracking number upon receipt for each tote. Each tote is then assigned a batch number for processing on-site. Spent sodium sulfate salt from the process (a nonhazardous by-product of the amine recovery process) is also assigned a batch number for each tote. This allows for the internal tracking of each tote and its associated time to be processed upon arrival at the site.

Mr. Wiggins, upon questioning, said that the materials presently in the stacker crane room are the responsibility of Polychem. He further stated that there are at most 40-50 drums in the stacker crane room, and he expects most will not be characterized as hazardous waste. If any of the materials in this room are deemed to be off-spec, Polychem agrees to include them in the Work Plan and to manage as hazardous waste if so characterized.

Mr. Wiggins said Polychem performed inventory of the contents of all indoor tanks. He provided an inventory, dated November 20, 2012, which included indoor tanks, outdoor tanks (tank farm along western edge of the site) and containers (totes, drums and pails) outdoors (segregated into distinct areas for Heartland materials and Polychem materials, the latter of which were moved into seven storage areas in the southeast, east, northeast and north-central portions of the site). (Attachment No. 1)

Mr. Wiggins and Mr. Knight presented a summary of four disposal options Polychem will include in the Work Plan to be submitted as required by the 7003 Unilateral Administrative Order. These options include: (i) bulk loads to a cement kiln (Essroc Italimenti in Logansport, Indiana); (ii) fuel blending and use as fuel; (iii) beneficial re-use downstream in lieu of commercial chemical product by Lonestar Truck Company to clean out tanker trucks; and (iv) beneficial re-use downstream in lieu of commercial chemical product by a paint company to clean out its reactor vessels and tanks.<sup>1</sup>

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<sup>1</sup> The beneficial re-use options must be weighed by EPA in light of the ongoing speculative accumulation and storage of hazardous waste for greater than 90 days (since at least May 12, 2009 to December 26, 2012).

Polychem proposes to blend solvents in its reactor vessel and pipe to one of five 6000 gallon tanks. It will blend in 6000-gallon increments. It expects a 10% reduction in amine production due to needing the reactor vessels, but the reactor vessels allow pressure relief venting and are the safest place to blend the solvents according to Mr. Wiggins.<sup>2</sup> Polychem anticipates needing three months to completely remove all bulked solvents.

Polychem has taken a blend from approximately 50 totes and 30-40 drums.<sup>3</sup> Polychem has done compatibility testing and run analyses for VOCs, SVOCs, total metals, flash point and pH on this composite. (Attachment No. 2) The composite consists of approximately 46% total xylene, by weight, and has a flash point of 84°F. Mr. Wiggins referred to the solvent blending/off-site disposal program as Polychem's "CT-23 Program."

Mr. Wiggins said that once approval to proceed is given, Polychem can process 30,000 gallons in three to four week cycles. Solvents would be blended using the reactor vessels under a nitrogen blanket and would be transferred to one of five 6000-gallon tanks, from which the solvents would be off-loaded to a tanker truck.

Mr. Wiggins said the one factor which could delay matters is getting the analyses completed. He expects all solvents and resins under the CT-23 Program can be removed off-site within two to three months.

Mr. Wiggins also said that cold weather is also part of the hold-up, as some materials are more viscous than others. He said the pour point of the solvent blend was -90°F.<sup>4</sup>

Chief Angell asked if there are any inherent dangers in Polychem's proposed solvent blending operations. Mr. Wiggins replied with five points: (i) none of the materials that will be included in the CT-23 Program are reactive; (ii) the blend will be a low flash<sup>5</sup> mixture because it will consist of low flash components, and therefore Polychem will maintain a nitrogen blanket on all blend tanks and reactors. Mr. Wiggins said that Polychem is considering removing its now mothballed solvent still and on its footprint erecting a nitrogen tank. All blending of solvents to occur will take place under a nitrogen blanket because of the low flash characteristic and fire potential of the solvents to be blended. If Polychem does not install the nitrogen tank it will use nitrogen canisters (at is presently employs in its amine recovery reactors to provide a nitrogen blanket in the head space of those reactors). Polychem is speaking with both U.S. Gas and Air Products along these lines; (iii) all fans are equipped to exhaust solvent vapor leaks to roof vents;

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<sup>2</sup> At the time of the site visit, Polychem was only processing in Reactors nos. 1 and 2. Reactor no. 1 is a 4800 gallon vessel which operates at 60 psi. Reactor no. 2 is an 1800 gallon vessel which also operates at 60 psi. Reactor no. 3 is a 400 gallon vessel which operates at 100 psi.

<sup>3</sup> The composite sample was taken on November 15, 2012.

<sup>4</sup> The solvent blend, as stated above, is about 46% total xylene by weight. The pour point for xylene is 0°F, which is significantly higher than that measured for the solvent blend.

<sup>5</sup> Flash point below 140°F, therefore mixture will be a characteristic hazardous waste (D001).

(iv) all tanks and reactors will be grounded to reduce possibility of sparking; and (v) chemical fire extinguishers are placed throughout the plant.<sup>6</sup>

At this point that Chief Angell said that the fire department would use foam to fight a fire at the site, and that CHFD does have foam.

Mr. Wiggins said that one safety concern of Polychem was to move flammables closer to the center of the facility and further from the property line. On the east end of the site, Polychem has placed totes containing sodium sulfate salts and moved its solvent drums west of the salt totes. However, the Heartland materials, much of which consists of spent flammable solvents, remains within 50 feet of the west fence line, just north of the raw material outdoor tank farm.

Mr. Wiggins said that Polychem recovers about 200,000 pounds of amines annually, and is looking to increase production to 250,000-350,000 pounds per year.

#### **Site Walk-Through and Observations:**

We began the facility walk-through at approximately 10:15 am CST. Each of the participants identified above took part in the site walk-through.

During the course of the walk-through, I took thirty-seven (37) photographs on a Nikon Coolpix P4 digital camera, with 8.1 megapixel resolution.<sup>7</sup> These photographs are contained in the attached photo log. They are true and representative of the conditions I observed at the installation on the date of the CEI. All photographs were taken between 10:27 am and 11:04 am CST. Descriptions of the photographs are provided directly below each in the attached Photo Log. (Attachment No. 3)

The site walk-through consisted of walking the perimeter of the site, beginning in the southeast corner and working counter clockwise around the site outdoors. We also went inside the production and processing building to tour the reactor vessels and the control room serving these, as well as the first floor where processed amines are metered through pumps into totes and canisters.

The attached photo log describes visual observations during the walk-through and the author refers the reader to this and the site summary findings below.

At the completion of the site walk-through we returned to the conference room at 11:10 am. The summary of findings incorporates key points raised during the close-out meeting.

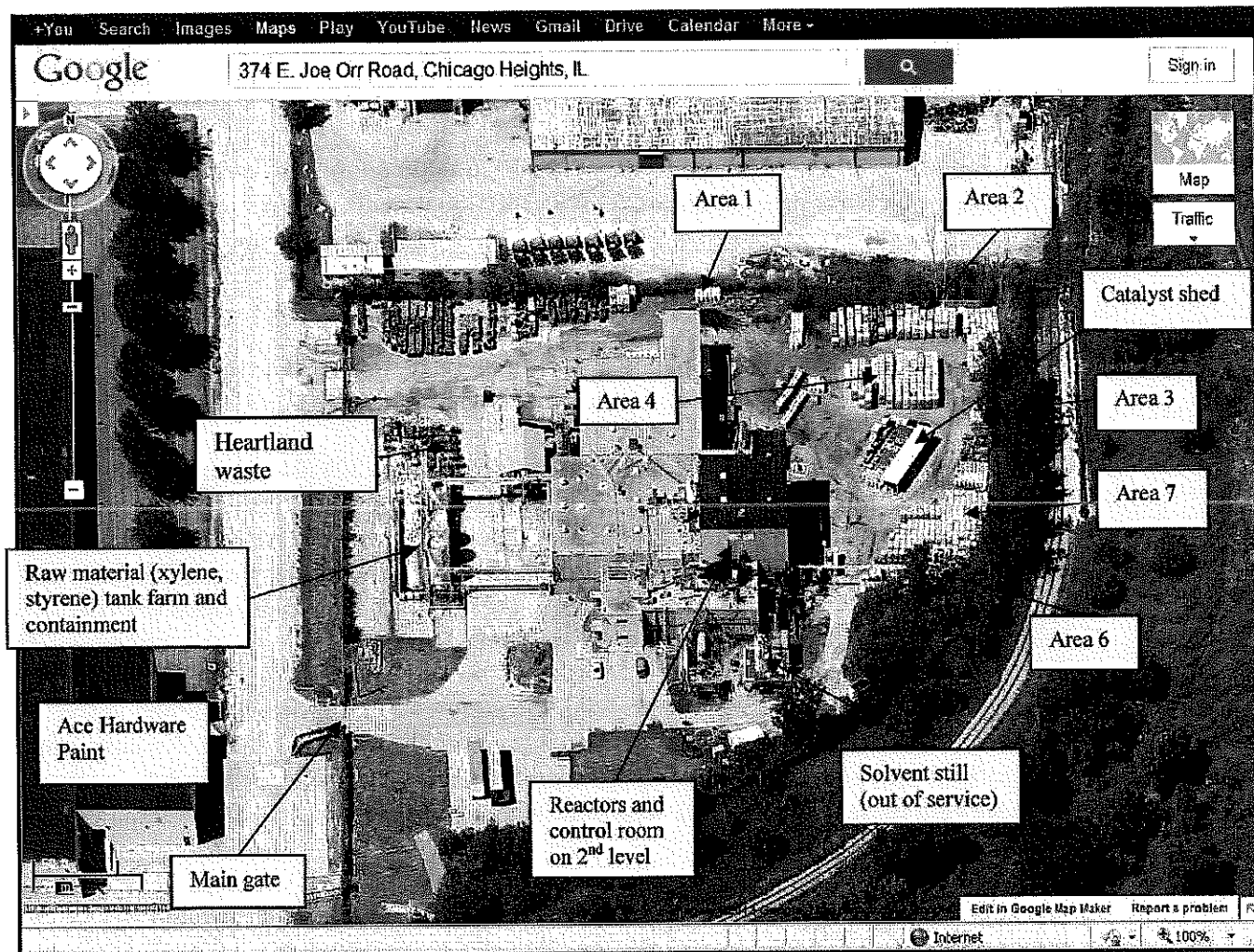
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<sup>6</sup> During the site walk-through, CHFD confirmed that the type ABC fire extinguishers placed within the plant were compatible with the chemicals stored at the site.

<sup>7</sup> OSC Mendoza also took photographs during the walk-through. After reviewing the attached photo log, Mr. Mendoza acknowledged that his photos and those of this report's author were similar enough in content to only attach one photo log to this site summary report.

### Site Aerial Photo:

The following aerial photo does not reflect site conditions at the time of the December 26, 2012 site visit, but rather it is included here to provide reference points for the attached photographs and photo summary table.



### Summary of Findings:

- Heartland waste and Polychem waste have been segregated. Heartland wastes are on the west side of the site, north of the raw material tank farm, and apart from Polychem waste and amine scrubber solutions.
- Drums formerly in the northwest corner of the site have been moved to either the east side (Polychem ownership) or joined with drums on the west side (Heartland ownership, according to Polychem).

- Amine sulfate salts (process residues from amine recovery) are lined up along the eastern fence line, serving as a buffer to Polychem's flammable drums which are now more centrally located on the east side of the site.
- Polychem has an internal tracking system that identifies each incoming tote of spent amine scrubber solution, and each tote is assigned a batch number (processed in one of two active reactors). By-products of water and sodium sulfate (salt) are separated: water is sent offsite as nonhazardous (about 1.5 million pounds in 2012), and sodium sulfate totes are tracked according to their incoming batch number.
- Amine recovery process is up and running. This is most evident by the reduced number of totes containing spent amine solutions in the north, northeast and east areas of the site.
- Current waste inventory includes outdoor and indoor tank volumes/contents. These materials, according to Mr. Wiggins, are the responsibility of Polychem.
- The stacker crane room contains almost exclusively product materials, and only about 40-50 drums in all. According to Mr. Wiggins, these belong to Polychem. In the event some of these drums turn out to be off-spec materials requiring disposal, Polychem will include them in the hazardous waste inventory to be managed as hazardous waste.
- Polychem will do in-field bucket tests (for compatibility) for all solvent blends.
- All tanks and reactors involved in solvent blending will be grounded and will take place under a nitrogen blanket to eliminate fire risk.
- The amine reactor vessels, where solvent blending will occur, are located on the 2<sup>nd</sup> floor of the process building, and the room is equipped with blow out walls to reduce the amount of damage in the event of an explosion.
- Polychem will propose four disposal options in the Work Plan. These include off-site disposal as hazardous waste as well as beneficial re-use in lieu of commercial chemical product.
- OSC Mendoza will draft an off-site contingency/response plan. He will send this to Craig Melodia (EPA ORC) who would then forward it to Polychem and Heartland through their attorneys. OSC Mendoza will share this with the CHFD to ensure proper response for the community.
- Polychem has submitted its EPCRA Tier II form to CHFD, and agreed to send a copy to OSC Mendoza.
- We did not observe any leaking or damaged containers and totes during the site walk-through.
- CHFD gave recommendations to Mr. Wiggins regarding the number, type, location and accessibility of fire extinguishers. Type ABC would be appropriate for fighting chemical fires at Polychem. In some locations, current fire extinguishers need to be made more visible and/or elevated. CHFD said that more fire extinguishers are needed and must be placed within 50 feet of one another.
- No hazardous waste releases were observed off-site (beyond the fence line) during the course of the inspection.
- CHFD and Polychem confirmed that foam should be used by the Fire Department if they respond to a fire at the facility.

- Drums over-packed from the February 2012 CERCLA emergency response were still on-site and had not been shipped off-site for disposal.

Following our meeting with Messrs. Wiggins and Knight, I met briefly outside with Chief Angell, Asst. Chief Kozlowski and OSC Mendoza. We discussed the improvements made by Polychem since EPA's last site visit (February 2012) and recognized the ongoing fire threats posed by the facility.

We concurred that additional time should be given to Polychem to submit the Work Plan and accompanying documents required by the 7003 Unilateral Administrative Order, which were past due at the time of the December 26, 2012 site visit.

I left the site at approximately 11:35 am.

**Attachments:**

1. Inventory Areas (11/20/12)
2. Composite Solvent Blend Analysis (ALS Group USA, reported 12/3/12)
3. Photo Log – December 26, 2012

**ATTACHMENT NO. 1**



212 roses  
CF-23

16 Jotras FP-140

for drums  
ET-22

123 xoxox sulfata DMBA  
DMBA  
TBA

42. 40% Na<sub>2</sub>SO<sub>4</sub> brine cake  
200 drums 61-23

Mg soap  
since water  
39 takes

Area 5  
3,4



12 supers - marked  
110 gal. handcatch tanks

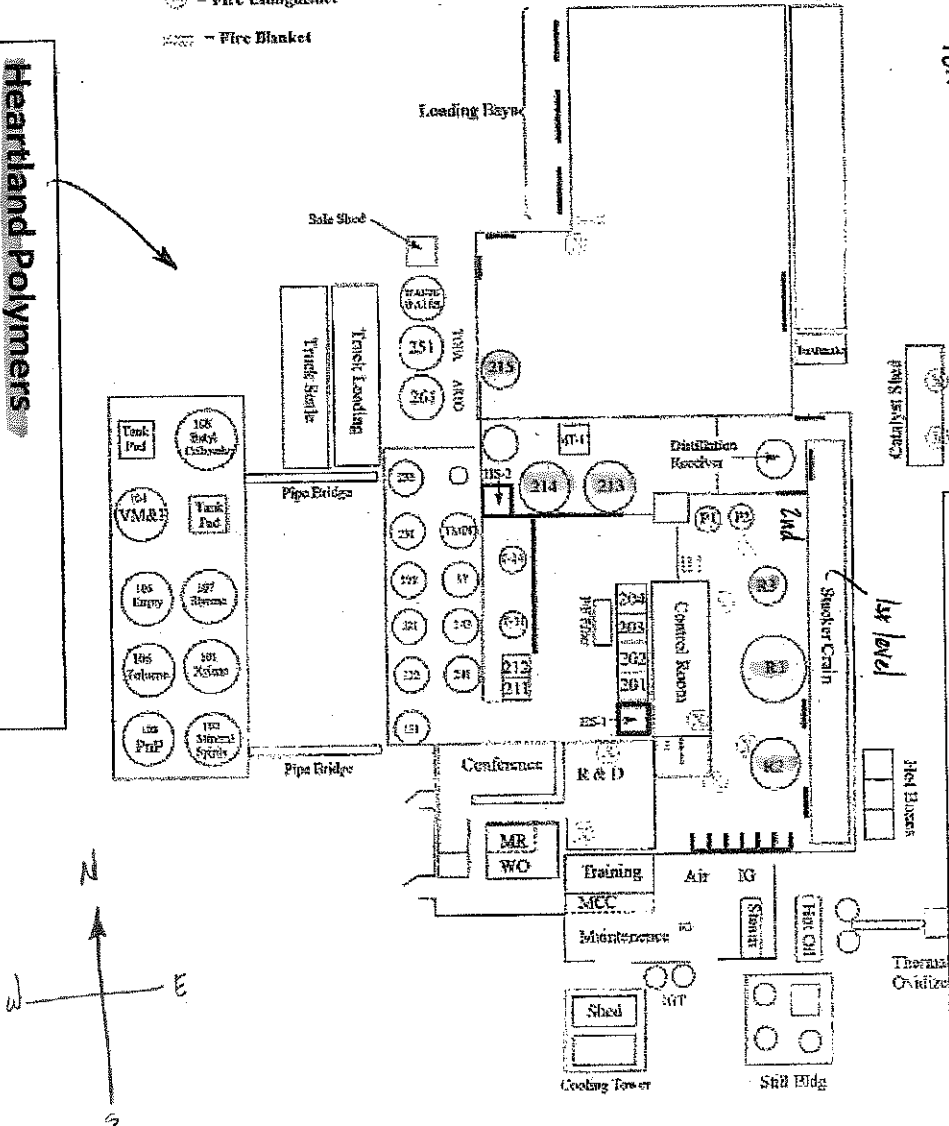
**Birm**

## Inventory Areas:

# Polychern Site

11/20/2012

 = Fire Extinguisher  
 = Fire Blanket



## POLYCHEM INVENTORY

| CONTAINER      | Volume/<br># Totes | MOC | CONTAINER<br>VOLUME (GAL) | CONTAINER<br>LOCATION | PRODUCT DESCRIPTION          | APPROXIMATE QUANTITY |                  |                     |  | Flash Point | Toxicity | pH | Notes |
|----------------|--------------------|-----|---------------------------|-----------------------|------------------------------|----------------------|------------------|---------------------|--|-------------|----------|----|-------|
|                |                    |     |                           |                       |                              | No. of Containers    | Volume (Gallons) | Weight (lbs)        |  |             |          |    |       |
| TANK 101       |                    |     | 25,000                    | Outdoor Tank Farm     | Xylene                       |                      | 20,040           | 156,312             |  | 87          |          |    |       |
| TANK 102       |                    |     | 25,000                    | Outdoor Tank Farm     | Sodium Sulfate               |                      |                  | 1,000 - heal        |  |             |          |    |       |
| TANK 103       |                    |     | 25,000                    | Outdoor Tank Farm     | Sodium Sulfate               |                      |                  | 1,000 - heal        |  |             |          |    |       |
| TANK 104       |                    |     | 21,000                    | Outdoor Tank Farm     | M/T                          |                      |                  | 1,000 - heal        |  |             |          |    |       |
| TANK 105       |                    |     | 21,000                    | Outdoor Tank Farm     | M/T                          |                      |                  |                     |  |             |          |    |       |
| TANK 106       |                    |     | 25,000                    | Outdoor Tank Farm     | AMS                          |                      |                  |                     |  |             |          |    |       |
| TANK 107       |                    | SS  | 20,000                    | Outdoor Tank Farm     | styrene                      |                      |                  |                     |  |             |          |    |       |
| TANK 108       |                    |     | 13,150                    | Outdoor Tank Farm     | M/T                          |                      |                  | 32,600              |  |             |          |    |       |
| TANK 121-A     |                    |     | 9,000                     | Indoor-South West     | 50% Caustic Soda             |                      |                  | heal                |  |             |          |    |       |
| TANK 121-B     |                    |     | 9,000                     | Indoor-South West     | dirty caustic                |                      |                  | 2,000 (est)         |  |             |          |    |       |
| TANK 121-A     |                    |     | 6,000                     | Indoor-South West     | Trench Water                 |                      |                  | 3,000 (est)         |  |             |          |    |       |
| TANK 122-B     |                    |     | 5,000                     | Indoor-South West     |                              |                      |                  | M/T                 |  |             |          |    |       |
| TANK 122-C     |                    |     | 5,000                     | Indoor-South West     | Rinse Solvent                |                      |                  | 3,000 (est)         |  |             |          |    |       |
| TANK 122-A     |                    |     | 12,000                    | Indoor-South West     |                              |                      |                  | M/T                 |  |             |          |    |       |
| TANK 222-B     |                    |     | 9,000                     | Indoor-South West     | Trench Water                 |                      |                  | 7,000 est           |  |             |          |    |       |
| TANK 231-A     |                    |     | 6,000                     | Indoor-South West     |                              |                      |                  | M/T                 |  |             |          |    |       |
| TANK 231-B     |                    |     | 6,000                     | Indoor-South West     |                              |                      |                  | M/T                 |  |             |          |    |       |
| TANK 231-C     |                    |     | 6,000                     | Indoor-South West     |                              |                      |                  | M/T                 |  |             |          |    |       |
| TANK 232-A     |                    |     | 6,000                     | Indoor-North West     | Trench Water                 |                      |                  | 10,000 est          |  |             |          |    |       |
| TANK 232-B     |                    |     | 6,000                     | Indoor-North West     |                              |                      |                  |                     |  |             |          |    |       |
| TANK 232-C     |                    |     | 6,000                     | Indoor-North West     |                              |                      |                  |                     |  |             |          |    |       |
| TANK 141       |                    | SS  | 10,000                    | Indoor-South East     | Phenol heal                  |                      |                  | 500                 |  |             |          |    |       |
| TANK 142       |                    | SS  | 10,000                    | Indoor-South East     | DMEA Sulfate                 |                      |                  | 4,000 est           |  |             |          |    |       |
| TANK 143       |                    | SS  | 10,000                    | Indoor-South East     | Caustic Soda                 |                      |                  | 10,000 est          |  |             |          |    |       |
| TANK 241-A     |                    |     | 6,000                     | Indoor-South East     | Trench Water                 |                      |                  | M/T                 |  |             |          |    |       |
| TANK 241-B     |                    |     | 6,000                     | Indoor-South East     |                              |                      |                  | M/T                 |  |             |          |    |       |
| TANK 241-C     |                    |     | 6,000                     | Indoor-South East     |                              |                      |                  | M/T                 |  |             |          |    |       |
| Scribbler Tank |                    |     |                           | Indoor North East     |                              |                      |                  | M/T                 |  |             |          |    |       |
| TANK 201       |                    |     | 6,000                     | Indoor-Mid Section    | Dirty Rinse Solvent          |                      |                  | 2,000 est           |  |             |          |    |       |
| TANK 202       |                    |     | 6,000                     | Indoor-Mid Section    | Clean Up Water - Some VOM    |                      |                  | 48,000 being tested |  |             |          |    |       |
| TANK 203       |                    |     | 6,000                     | Indoor-Mid Section    | Clay-Lime Neville settling   |                      |                  | 1,000 est           |  |             |          |    |       |
| TANK 204       |                    |     | 6,000                     | Indoor-Mid Section    | Clay-Lime Neville settling   |                      |                  | 1,000 est           |  |             |          |    |       |
| TANK 213 (MIX) |                    |     | 6,000                     | Indoor-Mid Section    | Solvent Rinse                |                      |                  | 3,000               |  |             |          |    |       |
| TANK 214 (MIX) |                    |     | 6,500                     | Indoor-Mid Section    | Neville LH Resin             |                      |                  | M/T                 |  |             |          |    |       |
| TANK 215 (MIX) |                    | SS  | 6,000                     | Indoor-Mid Section    | Sodium Sulfate               |                      |                  | 1,500               |  |             |          |    |       |
| TANK 211       |                    |     | 6,000                     | Indoor-Mid Section    | Trench & Dirty Rinse Solvent |                      |                  | 1,500               |  |             |          |    |       |
| TANK 212       |                    |     | 4,000                     | Indoor-Mid Section    | Sodium Sulfate               |                      |                  | heal                |  |             |          |    |       |
| TANK 311       |                    | SS  | 10,000                    | Outdoor Tank Farm     | Sodium Sulfate               |                      |                  | 6,000               |  |             |          |    |       |
| TANK 411       |                    |     | 2,800                     | Indoor                |                              |                      |                  | M/T                 |  |             |          |    |       |
| M/T-11         |                    | SS  | 2,800                     | Outdoor Tank Farm     | M/T                          |                      |                  | M/T                 |  |             |          |    |       |
| M/T-14         |                    | SS  | 16,500                    | Outdoor Tank Farm     | TEA Sulfate                  |                      |                  | 1,000               |  |             |          |    |       |
| TANK 251       |                    | SS  | 15,000                    | Outdoor Tank Farm     | M/T                          |                      |                  |                     |  |             |          |    |       |
| TANK 261       |                    | SS  | 15,000                    | Outdoor Tank Farm     |                              |                      |                  |                     |  |             |          |    |       |

## Exterior Lots

## Heartland Polymer

Drums 55 gallon Heartland Area Resin and Solvent Mixtures  
Drums 56 gallon Heartland Area Resin and Solvent Mixtures

Area 1

less than 140 F  
greater than 140 FHaz Mat  
Non Haz Matwill need accurate drum count  
in the WP13  
100% if shipped  
off-site13  
characteristic corrosivity 100%  
if these are manipulated & shipped  
off-site

## CONCLUSIONS

7 Non Haz resin

24,000

|         |                  |
|---------|------------------|
| 83,250  | less than 14 May |
| 393,750 | less than 14 May |

Heals

|             | Non Haz   | Haz | Heals                                              |
|-------------|-----------|-----|----------------------------------------------------|
| 1,675       | Non Haz   |     | 7                                                  |
| 3,300       | Non Haz   |     |                                                    |
| <b>Pool</b> |           |     |                                                    |
| 9,000       | Below 140 | Haz | 4 strip DINEA first                                |
| 27,000      | Below 140 | Haz | 4 strip DINEA first                                |
| 27,000      |           |     | 12. Neutralize first<br>Pallets for Drum shipments |

CT-23 Program

| Solvent/Resin mixtures | 1,313 | 1,330  | CT-23 Program |
|------------------------|-------|--------|---------------|
| DMAc Sulfate           | 38    | 22,000 | Non Haz       |
| TEA Sulfate            | 20    | 5,000  | Non Haz       |
| DMAc Sulfate           | 5     | 1,250  | Non Haz       |
| Resin                  | 10    | 2,500  | 19,500        |

CATHLETIC SIDE

|                                |    |     |       |
|--------------------------------|----|-----|-------|
| Organic Peroxide - Luperox     | 19 | 55  | 760   |
| Organic Peroxide - Tifinox     | 10 | 50  | 400   |
| Boron Fluoride Ether Catalyst  | 3  | 70  | 700   |
| Organic Peroxide - Luperox 26  | 1  | 1   | 8     |
| Silane                         | 1  | 1   | 10    |
| Luperox A98                    | 32 |     | 32    |
| Hydrogen Peroxide (35%)        | 1  | 55  | 440   |
| Styrene                        | 1  | 55  | 440   |
| Luperox D1                     | 1  | 55  | 440   |
| Styrene/Xylene Monomer Mix     | 1  | 55  | 440   |
| Unseeded Fatty Acid (whitford) | 4  | 220 | 1,700 |
| RDd Unseeded Oil               | 1  | 55  | 400   |
| Unseeded Oil - Cargill         | 1  | 55  | 400   |
| Phosphoric Acid (85%)          | 4  | 200 | 2,000 |
| Hydrochloric Acid (20%)        | 2  | 110 | 1,100 |
| Bisomer HEMA Std               | 1  | 55  | 450   |
| Diacetone Alcohol              | 1  | 55  | 400   |
| Glycol Ether PVP               | 5  | 275 | 2,150 |
| Methyl Isobutyl Ketone         | 4  | 220 | 1,650 |
| Glycerine                      | 2  | 110 | 800   |
| Diethylene Glycol              | 5  | 275 | 2,000 |
| Buryl Acrylate                 | 8  | 440 | 3,500 |
| Methyl Methacrylate            | 1  | 55  | 410   |
| Diethanol                      | 1  | 55  | 400   |
| IBMA                           | 1  | 55  | 410   |
| Ethanolamine                   | 1  | 55  | 420   |



**ATTACHMENT NO. 2**



# ALS Group USA, Corp

Date: 03-Dec-12

Client: Arrow Consulting Group, LLC

Project: Polychem Services, Inc.

Sample ID: Compositd Solvent

Collection Date: 11/15/12

Work Order: 1211537

Lab ID: 1211537-01

Matrix: SOLVENT

| Analyses                               | Result | Qual | Report Limit    | Units | Dilution Factor | Date Analyzed                                            |
|----------------------------------------|--------|------|-----------------|-------|-----------------|----------------------------------------------------------|
| <b>MERCURY BY CVAA</b>                 |        |      |                 |       |                 |                                                          |
| Mercury                                | ND     |      | SW7471<br>0.040 | mg/Kg | 1               | Prep Date: 11/20/12<br>Analyst: LR<br>11/21/12 01:43 PM  |
| <b>METALS BY ICP-MS</b>                |        |      |                 |       |                 |                                                          |
| Arsenic                                | ND     |      | SW6020A<br>0.28 | mg/Kg | 1               | Prep Date: 11/26/12<br>Analyst: CES<br>11/27/12 08:01 PM |
| Barium                                 | ND     |      | 0.28            | mg/Kg | 1               | 11/27/12 08:01 PM                                        |
| Cadmium                                | ND     |      | 0.11            | mg/Kg | 1               | 11/27/12 08:01 PM                                        |
| Chromium                               | 3.1    |      | 0.28            | mg/Kg | 1               | 11/27/12 08:01 PM                                        |
| Lead                                   | ND     |      | 0.28            | mg/Kg | 1               | 11/27/12 08:01 PM                                        |
| Selenium                               | ND     |      | 0.28            | mg/Kg | 1               | 11/27/12 08:01 PM                                        |
| Silver                                 | ND     |      | 0.28            | mg/Kg | 1               | 11/27/12 08:01 PM                                        |
| <b>SEMI-VOLATILE ORGANIC COMPOUNDS</b> |        |      |                 |       |                 |                                                          |
| 1,1'-Biphenyl                          | ND     |      | SW8270<br>4,600 | mg/Kg | 100             | Prep Date: 11/27/12<br>Analyst: HL<br>11/27/12 01:23 PM  |
| 2,4,5-Trichlorophenol                  | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2,4,6-Trichlorophenol                  | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2,4-Dichlorophenol                     | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2,4-Dimethylphenol                     | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2,4-Dinitrophenol                      | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2,4-Dinitrotoluene                     | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2,6-Dinitrotoluene                     | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2-Chloronaphthalene                    | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2-Chlorophenol                         | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2-Methylnaphthalene                    | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2-Methylphenol                         | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2-Nitroaniline                         | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 2-Nitrophenol                          | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 3,3'-Dichlorobenzidine                 | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 3-Nitroaniline                         | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 4,6-Dinitro-2-methylphenol             | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 4-Bromophenyl phenyl ether             | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 4-Chloro-3-methylphenol                | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 4-Chloroaniline                        | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 4-Chlorophenyl phenyl ether            | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 4-Methylphenol                         | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 4-Nitroaniline                         | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| 4-Nitrophenol                          | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| Acenaphthene                           | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| Acenaphthylene                         | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| Acetophenone                           | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |
| Anthracene                             | ND     |      | 4,600           | mg/Kg | 100             | 11/27/12 01:23 PM                                        |

Note: See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 03-Dec-12

Client: Arrow Consulting Group, LLC

Project: Polychem Services, Inc.

Sample ID: Compositied Solvent

Collection Date: 11/15/12

Work Order: 1211537

Lab ID: 1211537-01

Matrix: SOLVENT

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| Atrazine                    | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Benzaldehyde                | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Benzo(a)anthracene          | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Benzo(a)pyrene              | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Benzo(b)fluoranthene        | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Benzo(g,h,i)perylene        | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Benzo(k)fluoranthene        | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Butyl benzyl phthalate      | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Caprolactam                 | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Carbazole                   | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Chrysene                    | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Dibenzo(a,h)anthracene      | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Dibenzofuran                | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Diethyl phthalate           | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Dimethyl phthalate          | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Di-n-butyl phthalate        | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Di-n-octyl phthalate        | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Fluoranthene                | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Fluorene                    | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Hexachlorobenzene           | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Hexachlorobutadiene         | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Hexachlorocyclopentadiene   | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Hexachloroethane            | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Indeno(1,2,3-cd)pyrene      | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Isophorone                  | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Naphthalene                 | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Nitrobenzene                | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| N-Nitrosodi-n-propylamine   | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| N-Nitrosodiphenylamine      | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Pentachlorophenol           | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Phenanthrene                | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Phenol                      | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Pyrene                      | ND     |      | 4,600        | mg/Kg | 100             | 11/27/12 01:23 PM |
| Surr: 2,4,6-Tribromophenol  | 0      |      | 35-125       | %REC  | 100             | 11/27/12 01:23 PM |
| Surr: 2-Fluorobiphenyl      | 0      |      | 45-105       | %REC  | 100             | 11/27/12 01:23 PM |
| Surr: 2-Fluorophenol        | 0      |      | 35-105       | %REC  | 100             | 11/27/12 01:23 PM |

Note: See Qualifiers page for a list of qualifiers and their definitions.

# ALS Group USA, Corp

Date: 03-Dec-12

Client: Arrow Consulting Group, LLC

Project: Polychem Services, Inc.

Sample ID: Compositd Solvent

Collection Date: 11/15/12

Work Order: 1211537

Lab ID: 1211537-01

Matrix: SOLVENT

| Analyses                          | Result | Qual | Report Limit  | Units | Dilution Factor | Date Analyzed     |
|-----------------------------------|--------|------|---------------|-------|-----------------|-------------------|
| Surr: 4-Terphenyl-d14             | 0      |      | 30-125        | %REC  | 100             | 11/27/12 01:23 PM |
| Surr: Nitrobenzene-d5             | 0      |      | 35-100        | %REC  | 100             | 11/27/12 01:23 PM |
| Surr: Phenol-d6                   | 0      |      | 40-100        | %REC  | 100             | 11/27/12 01:23 PM |
| <b>VOLATILE ORGANIC COMPOUNDS</b> |        |      | <b>SW8260</b> |       |                 | Analyst: BG       |
| 1,1,1-Trichloroethane             | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,1,2,2-Tetrachloroethane         | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,1,2-Trichloroethane             | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,1,2-Trichlorotrifluoroethane    | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,1-Dichloroethane                | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,1-Dichloroethene                | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,2,4-Trichlorobenzene            | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,2-Dibromo-3-chloropropane       | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,2-Dibromoethane                 | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,2-Dichlorobenzene               | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,2-Dichloroethane                | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,2-Dichloropropane               | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,3-Dichlorobenzene               | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 1,4-Dichlorobenzene               | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 2-Butanone                        | ND     |      | 5,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 2-Hexanone                        | ND     |      | 5,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| 4-Methyl-2-pentanone              | ND     |      | 5,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Acetone                           | ND     |      | 25,000        | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Benzene                           | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Bromodichloromethane              | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Bromoform                         | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Bromomethane                      | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Carbon disulfide                  | ND     |      | 5,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Carbon tetrachloride              | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Chlorobenzene                     | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Chloroethane                      | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Chloroform                        | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Chloromethane                     | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| cis-1,2-Dichloroethene            | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| cis-1,3-Dichloropropene           | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Cyclohexane                       | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Dibromochloromethane              | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Dichlorodifluoromethane           | ND     |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Ethylbenzene                      | 99,000 |      | 5,000         | mg/Kg | 5E+06           | 11/21/12 09:42 PM |
| Isopropylbenzene                  | 6,100  |      | 1,000         | mg/Kg | 1E+06           | 11/20/12 10:41 PM |
| Methyl acetate                    | ND     |      | 10,000        | mg/Kg | 1E+06           | 11/20/12 10:41 PM |

Note: See Qualifiers page for a list of qualifiers and their definitions.

**ALS Group USA, Corp**

Date: 03-Dec-12

**Client:** Arrow Consulting Group, LLC  
**Project:** Polychem Services, Inc.  
**Sample ID:** Composited Solvent  
**Collection Date:** 11/15/12

**Work Order:** 1211537  
**Lab ID:** 1211537-01  
**Matrix:** SOLVENT

| Analyses                          | Result         | Qual | Report Limit   | Units        | Dilution Factor | Date Analyzed            |
|-----------------------------------|----------------|------|----------------|--------------|-----------------|--------------------------|
| Methyl tert-butyl ether           | ND             |      | 5,000          | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| Methylcyclohexane                 | ND             |      | 10,000         | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| Methylene chloride                | ND             |      | 5,000          | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| Styrene                           | ND             |      | 1,000          | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| Tetrachloroethene                 | ND             |      | 1,000          | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| <b>Toluene</b>                    | <b>59,000</b>  |      | <b>1,000</b>   | <b>mg/Kg</b> | <b>1E+06</b>    | <b>11/20/12 10:41 PM</b> |
| trans-1,2-Dichloroethene          | ND             |      | 1,000          | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| trans-1,3-Dichloropropene         | ND             |      | 1,000          | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| Trichloroethene                   | ND             |      | 1,000          | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| Trichlorofluoromethane            | ND             |      | 1,000          | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| Vinyl chloride                    | ND             |      | 1,000          | mg/Kg        | 1E+06           | 11/20/12 10:41 PM        |
| <b>Xylenes, Total</b>             | <b>460,000</b> |      | <b>15,000</b>  | <b>mg/Kg</b> | <b>5E+06</b>    | <b>11/21/12 09:42 PM</b> |
| Surr: 1,2-Dichloroethane-d4       | 103            |      | 70-130         | %REC         | 1E+06           | 11/20/12 10:41 PM        |
| Surr: 1,2-Dichloroethane-d4       | 103            |      | 70-130         | %REC         | 5E+06           | 11/21/12 09:42 PM        |
| Surr: 4-Bromofluorobenzene        | 97.2           |      | 70-130         | %REC         | 5E+06           | 11/21/12 09:42 PM        |
| Surr: 4-Bromofluorobenzene        | 104            |      | 70-130         | %REC         | 1E+06           | 11/20/12 10:41 PM        |
| Surr: Dibromofluoromethane        | 96.2           |      | 70-130         | %REC         | 5E+06           | 11/21/12 09:42 PM        |
| Surr: Dibromofluoromethane        | 98.6           |      | 70-130         | %REC         | 1E+06           | 11/20/12 10:41 PM        |
| Surr: Toluene-d8                  | 106            |      | 70-130         | %REC         | 1E+06           | 11/20/12 10:41 PM        |
| Surr: Toluene-d8                  | 98.3           |      | 70-130         | %REC         | 5E+06           | 11/21/12 09:42 PM        |
| <b>FLASHPOINT, P-M CLOSED-CUP</b> |                |      | <b>D93</b>     |              |                 | <b>Analyst: MB</b>       |
| Flashpoint, P-M Closed-cup        | <b>84.0</b>    |      |                | <b>°F</b>    | <b>1</b>        | <b>11/26/12 10:30 AM</b> |
| <b>PH</b>                         |                |      | <b>SW9045D</b> |              |                 | <b>Analyst: JB</b>       |
| pH                                | <b>5.25</b>    |      |                | <b>S.U.</b>  | <b>1</b>        | <b>11/16/12 08:50 AM</b> |

**Note:** See Qualifiers page for a list of qualifiers and their definitions.

**ATTACHMENT NO. 3**



**PHOTO LOG – DECEMBER 26, 2012 EPA AND CHFD SITE VISIT**  
**POLYCHEM SERVICES, INC. – CHICAGO HEIGHTS, IL**

| PHOTO No. | DATE     | TIME     | PHOTOGRAPHER | ORIENTATION | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------|----------|----------|--------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1         | 12/26/12 | 10:27 am | M. Valentino | NE          | Outside southeast corner of production building. Solvent still and its secondary containment system. Still is no longer in use. Polychem is considering removing these structures and erecting a nitrogen tank on this footprint.                                                                                                                                                             |
| 2         | 12/26/12 | 10:28 am | M. Valentino | N           | Outside southeast corner of production building. Hot oil boiler.                                                                                                                                                                                                                                                                                                                              |
| 3         | 12/26/12 | 10:28 am | M. Valentino | NW          | Area 5. Outside production building's southeast side. Red drums contain heat transfer oil. These drums will be recycled and returned to vendor. Totes in background contain sodium sulfate (salt) cake. This salt cake is nonhazardous and will be disposed of at a solid waste landfill.                                                                                                     |
| 4         | 12/26/12 | 10:29 am | M. Valentino | E           | Areas 5 and 7. Totes in foreground and background contain nonhazardous sodium sulfate salt cake. Red-topped drums in center of photo are over-pack drums containing spent flammable materials. All of the drums in the photo belong to Polychem. These are segregated from Heartland's waste (drums shown in Photos 27-28). 200 drums located in Area 7 are part of Polychem's CT-23 Program. |
| 5         | 12/26/12 | 10:29 am | M. Valentino | SE          | Area 7 solvent drums (CT-23 Program) and totes containing sodium sulfate brine cake or sodium sulfate water (nonhazardous). This location includes 78 over-pack drums (60 from February 2012; 18 from December 2012).                                                                                                                                                                         |
| 6         | 12/26/12 | 10:30 am | M. Valentino | E           | Area 7. Sodium sulfate brine cake totes.                                                                                                                                                                                                                                                                                                                                                      |
| 7         | 12/26/12 | 10:32 am | M. Valentino | NW          | Area 4. Catalyst shed. Containers varying from one-gallon jugs and pails to 55-gallon drums. Three compartments, A, B and C store organic peroxide, hydrogen peroxide, linseed oil, phosphoric acid, hydrochloric acid and mixed solvents.                                                                                                                                                    |
| 8         | 12/26/12 | 10:33 am | M. Valentino | E           | Area 3. Totes containing sodium sulfate waters with flash point < 140°F; awaiting analysis for amine levels. These totes should have hazardous waste labels because of the low flash contents.                                                                                                                                                                                                |
| 9         | 12/26/12 | 10:34 am | M. Valentino | E           | Area 3. Totes of sodium sulfate water with high pH. DOT placard UN2796 is Hazard Class 8 corrosive material.                                                                                                                                                                                                                                                                                  |
| 10        | 12/26/12 | 10:34 am | M. Valentino | NW          | Area 4 drums (L. of photo) for CT-23 Program; Area 2 totes (R. of photo) for CT-23 Program.                                                                                                                                                                                                                                                                                                   |
| 11        | 12/26/12 | 10:34 am | M. Valentino | W           | Area 4 solvent drums (CT-23 Program). Amine product (DMEA, DMIPA, TEA) tankers in rear of photo.                                                                                                                                                                                                                                                                                              |
| 12        | 12/26/12 | 10:35 am | M. Valentino | NW          | Area 2 totes (resin and solvent mixtures) for CT-23 Program.                                                                                                                                                                                                                                                                                                                                  |
| 13        | 12/26/12 | 10:35 am | M. Valentino | N           | Area 2 totes (resin and solvent mixtures) for CT-23 Program.                                                                                                                                                                                                                                                                                                                                  |

|    |          |          |              |     |                                                                                                                                                                                                                                                                                                       |
|----|----------|----------|--------------|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 14 | 12/26/12 | 10:35 am | M. Valentino | NNW | Area 2 totes (resin and solvent mixtures) for CT-23 Program.                                                                                                                                                                                                                                          |
| 15 | 12/26/12 | 10:35 am | M. Valentino | NNW | Area 2 totes (resin and solvent mixtures) for CT-23 Program.                                                                                                                                                                                                                                          |
| 16 | 12/26/12 | 10:36 am | M. Valentino | NW  | Area 2 totes (resin and solvent mixtures) for CT-23 Program.                                                                                                                                                                                                                                          |
| 17 | 12/26/12 | 10:39 am | M. Valentino | SSW | Area 4. Blue drums in foreground contain sodium sulfate salts from tank clean-out. Totes behind drums contain DMEA, DMIPA and TEA sulfates.                                                                                                                                                           |
| 18 | 12/26/12 | 10:41 am | M. Valentino | N   | Area 1. Empty 110-gallon Manchester tanks. These will be filled with recovered TEA from the amine recovery process.                                                                                                                                                                                   |
| 19 | 12/26/12 | 10:41 am | M. Valentino | NW  | Area 1. Wooden totes to far L. of photo contain gelled ink resin (nonhazardous); totes in center of photo contain scrubber solution (incoming) from customers; 110-gallon Manchester tanks to center-right of photo are empty and will be filled with recovered DMEA from the amine recovery process. |
| 20 | 12/26/12 | 10:41 am | M. Valentino | SE  | Area 4 DMEA, DMIPA and TEA sulfate totes, L. of photo; Area 6 magnesium sulfate clean-up rinse water totes, center-background of photo; amine product tankers to R. of photo.                                                                                                                         |
| 21 | 12/26/12 | 10:42 am | M. Valentino | S   | Tankers of amine (DMEA, DMIPA, TEA) product from amine recovery process.                                                                                                                                                                                                                              |
| 22 | 12/26/12 | 10:44 am | M. Valentino | SW  | East dock. Empty 250-gallon poly totes.                                                                                                                                                                                                                                                               |
| 23 | 12/26/12 | 10:44 am | M. Valentino | S   | North end of building. Dock #3. Totes marked with red and blue dots contain water pumped from product tank secondary containment area (nonhazardous). Circular 250-gallon totes in background are empty.                                                                                              |
| 24 | 12/26/12 | 10:44 am | M. Valentino | SW  | North end of building. Dock #3. Totes marked with red and blue dots, and center totes at ground level without red and blue dots, contain water pumped from raw material tank farm secondary containment area (nonhazardous). Circular 250-gallon and 330-gallon totes in background are empty.        |
| 25 | 12/26/12 | 10:44 am | M. Valentino | NNW | Area 1. Fabric super sacks in wooden frames contain gelled ink resin (nonhazardous).                                                                                                                                                                                                                  |
| 26 | 12/26/12 | 10:45 am | M. Valentino | NW  | Far northwestern corner of facility. Drums stored here previously have been relocated on-site (to Areas 4 and 7 or to the west-central part of the facility where Heartland drums are stored).                                                                                                        |
| 27 | 12/26/12 | 10:45 am | M. Valentino | SW  | West-central area, north of raw material tank farm. Heartland drums.                                                                                                                                                                                                                                  |
| 28 | 12/26/12 | 10:45 am | M. Valentino | SW  | West-central area, north of raw material tank farm. Heartland drums. Close-up of Photo 27.                                                                                                                                                                                                            |
| 29 | 12/26/12 | 10:46 am | M. Valentino | SSW | Raw material tanks on west end of facility. Secondary containment had a small amount of standing liquid on the day of the December 26, 2012 inspection.                                                                                                                                               |
| 30 | 12/26/12 | 10:47 am | M. Valentino | SW  | Raw material tanks on west end of facility. Tank 107 (styrene).                                                                                                                                                                                                                                       |
| 31 | 12/26/12 | 10:47 am | M. Valentino | SW  | Raw material tanks on west end of facility. Tank 101 (xylene).                                                                                                                                                                                                                                        |

|    |          |          |              |    |                                                                                                                                                                                                                            |
|----|----------|----------|--------------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 32 | 12/26/12 | 10:50 am | M. Valentino | E  | 1 <sup>st</sup> level, east end of building. Amine packaging area. 110-gallon Manchester tank at fill station where recovered amines are metered into tanks atop load cells. This tank is being filled with recovered TEA. |
| 33 | 12/26/12 | 10:52 am | M. Valentino | S  | SE corner of building, 1 <sup>st</sup> level. Tote containing spent scrubber solution, to be pumped up to reactor room on 2 <sup>nd</sup> level.                                                                           |
| 34 | 12/26/12 | 10:52 am | M. Valentino | E  | 1 <sup>st</sup> level, south-central warehouse area. Bottom of tank no. T-213, a mix tank with a capacity of 6000 gallons.                                                                                                 |
| 35 | 12/26/12 | 10:53 am | M. Valentino | NE | 1 <sup>st</sup> level, south-central warehouse area. To the north of Photo 35. Tank no. T-215, a mix tank with a capacity of 6000 gallons.                                                                                 |
| 36 | 12/26/12 | 11:04 am | M. Valentino | E  | Reactor room, SE corner of process building, 2 <sup>nd</sup> level. Top of Reactor No. 1.                                                                                                                                  |
| 37 | 12/26/12 | 11:04 am | M. Valentino | NE | Reactor room, SE corner of process building, 2 <sup>nd</sup> level. Top of Reactor No. 3.                                                                                                                                  |



PHOTO 1



PHOTO 2



PHOTO 3

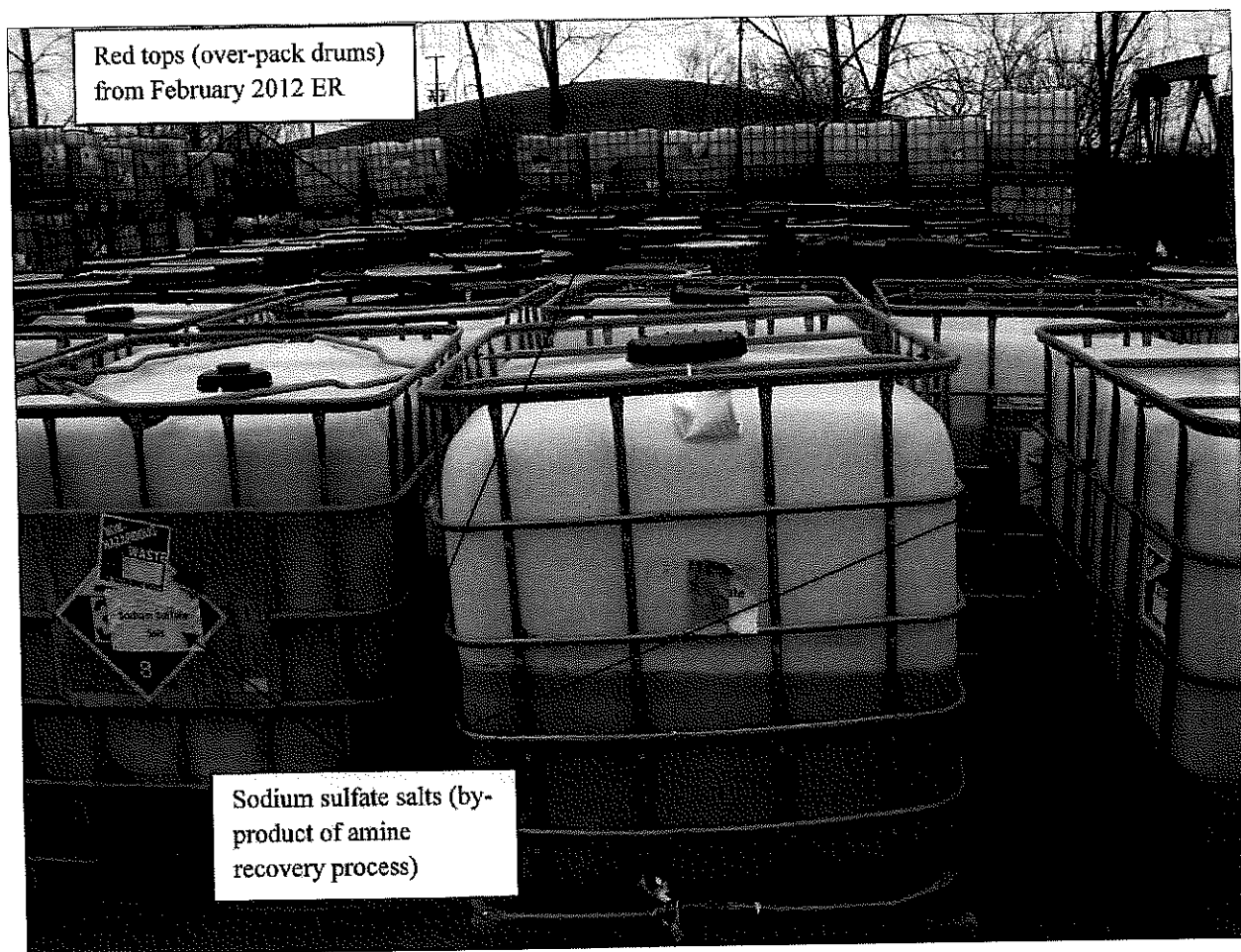


PHOTO 4

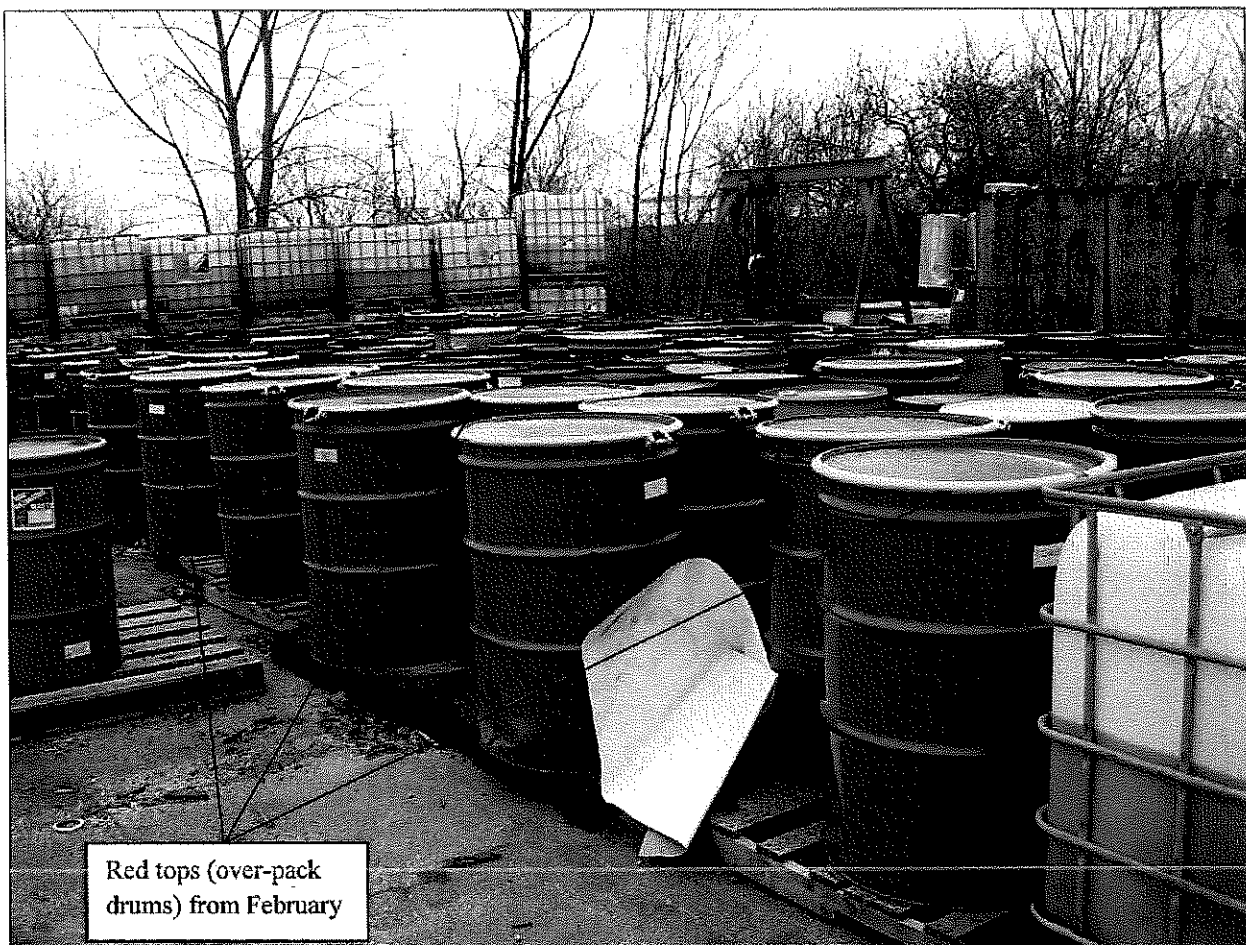
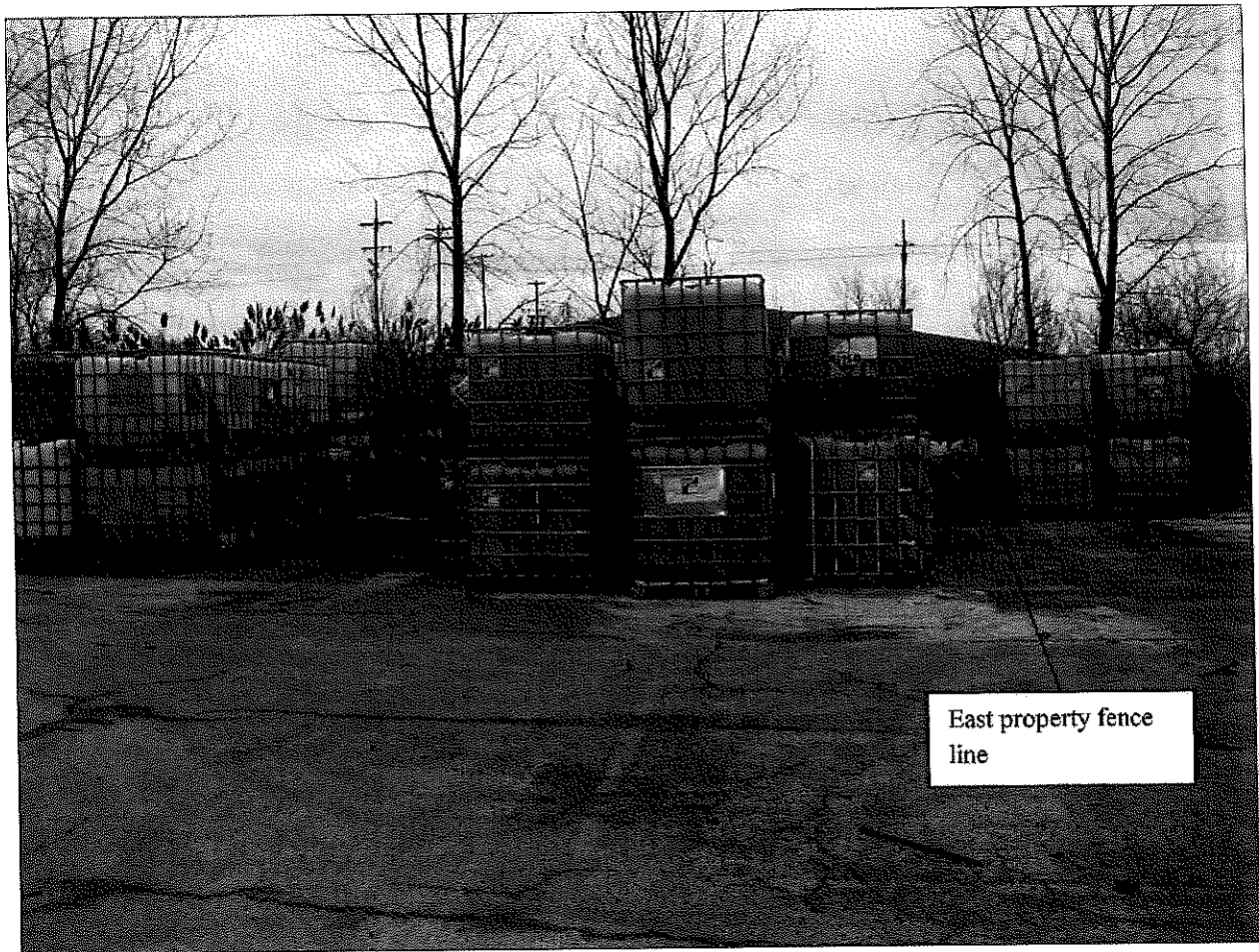


PHOTO 5



East property fence  
line

PHOTO 6



PHOTO 7

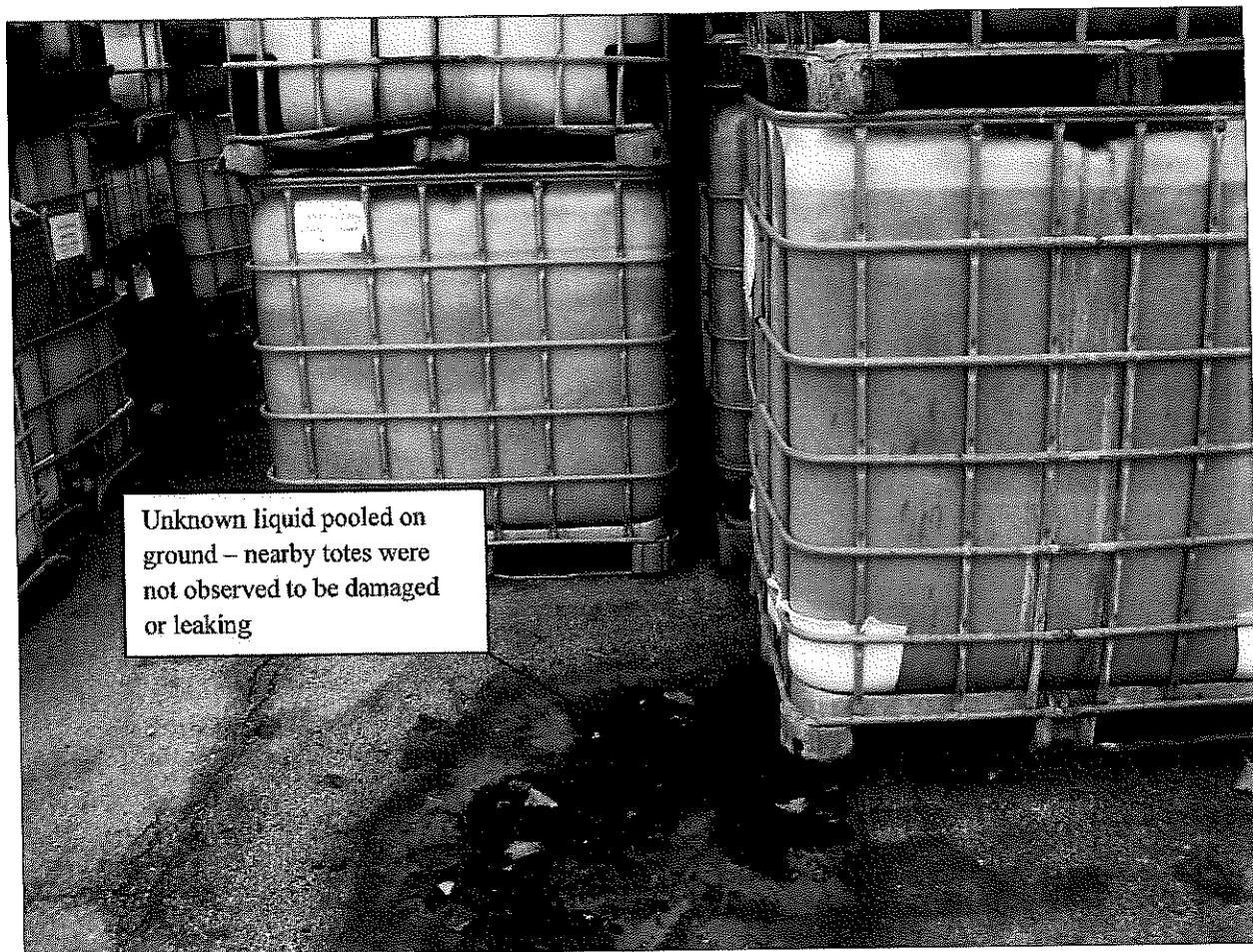


PHOTO 8

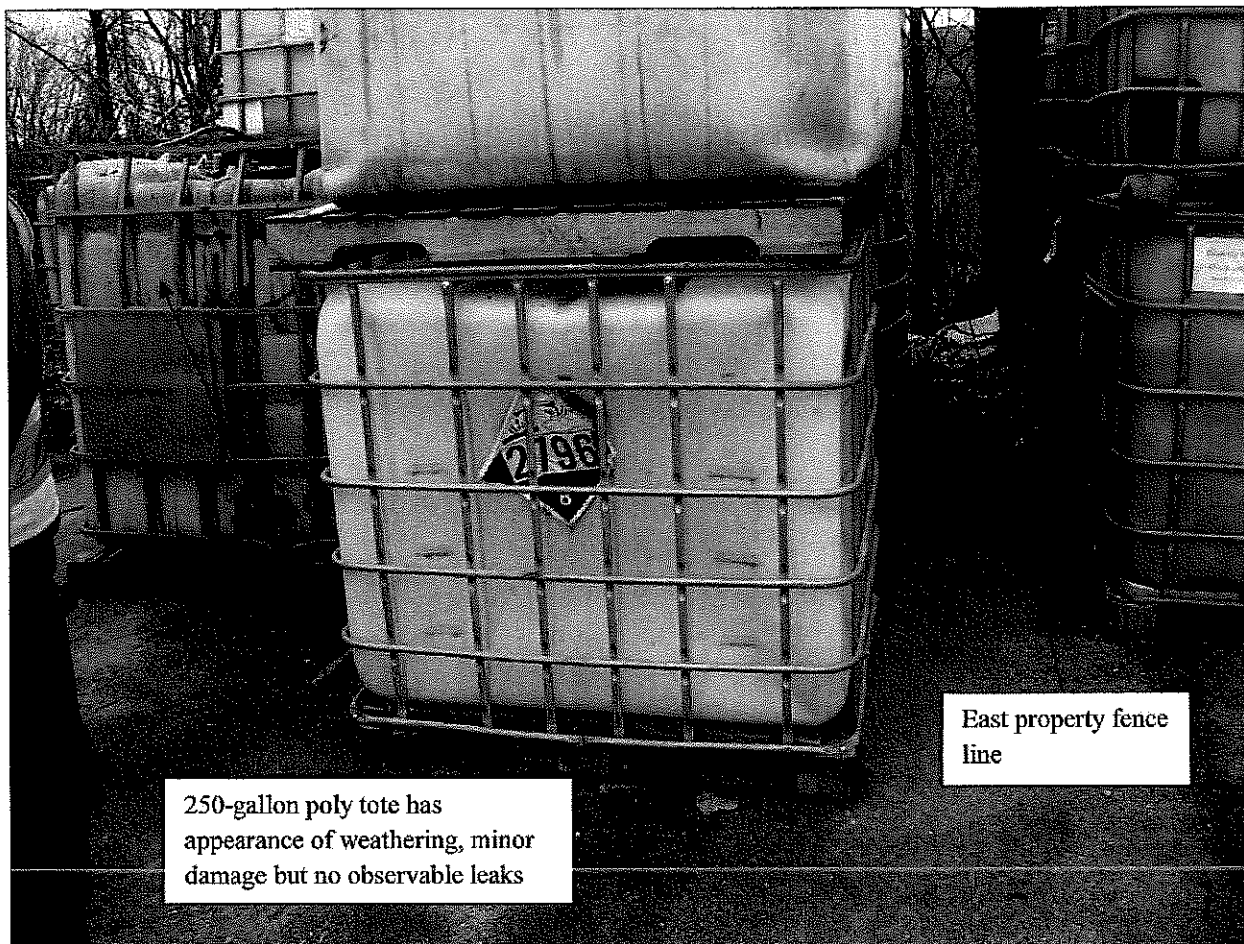
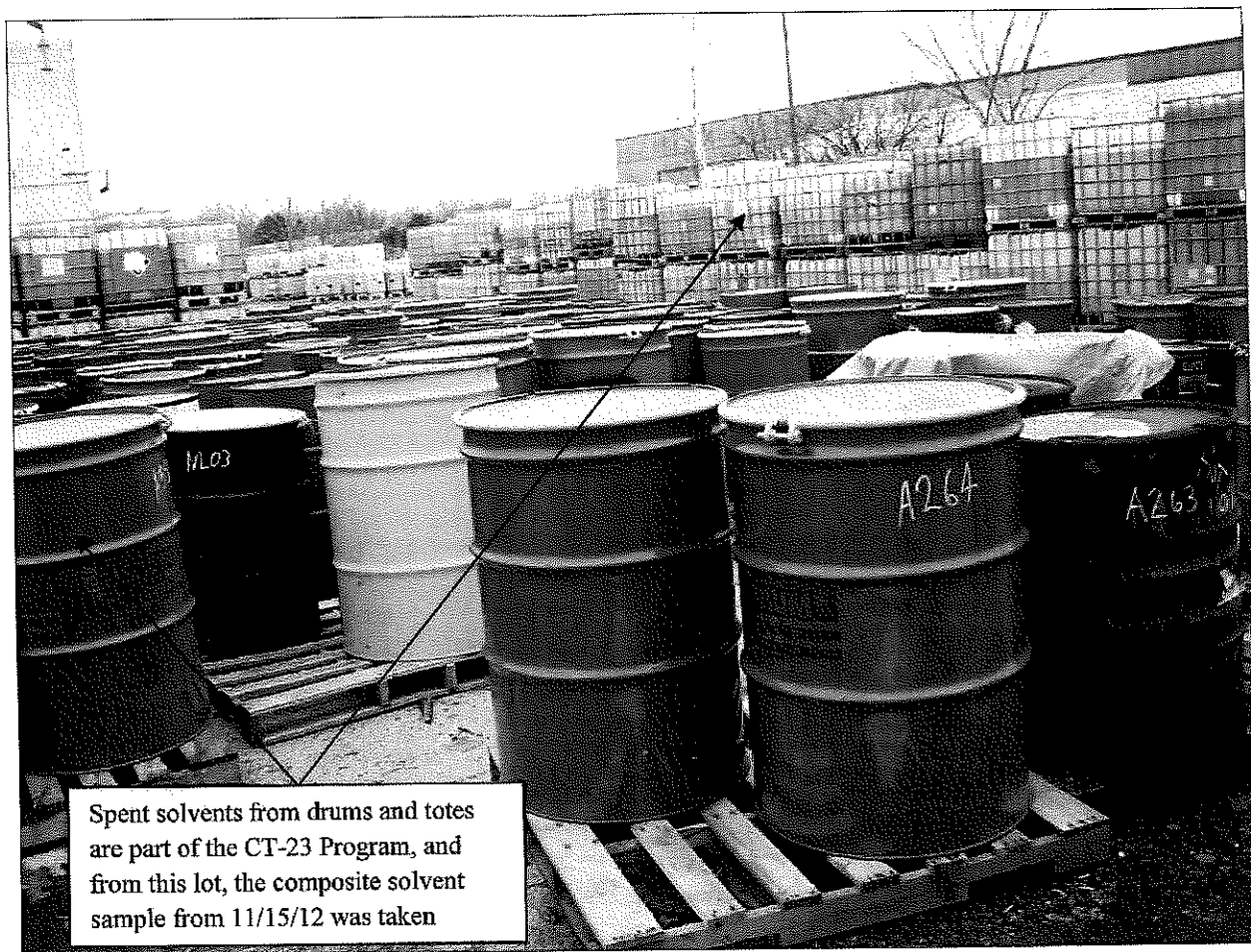


PHOTO 9



Spent solvents from drums and totes are part of the CT-23 Program, and from this lot, the composite solvent sample from 11/15/12 was taken

PHOTO 10

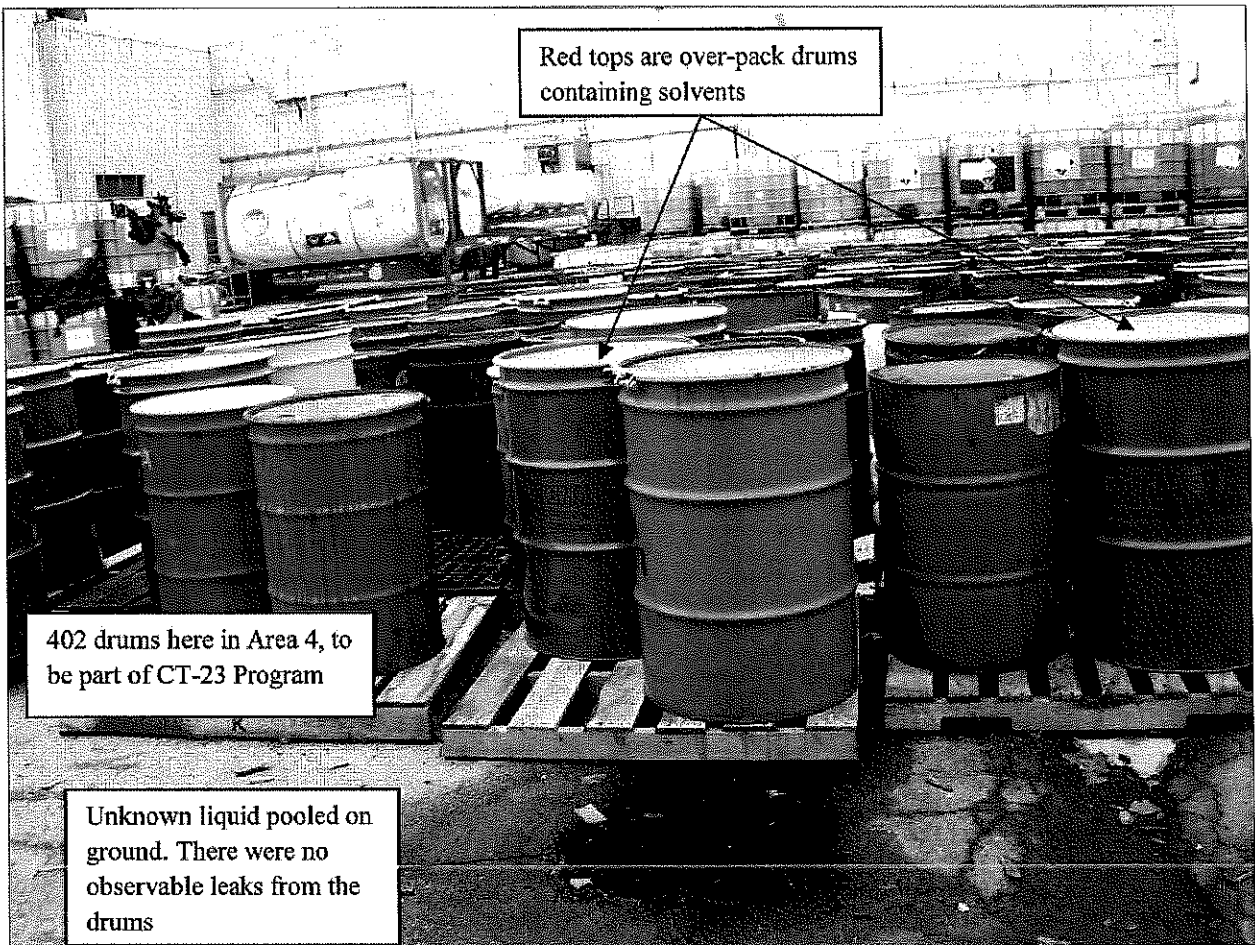


PHOTO 11

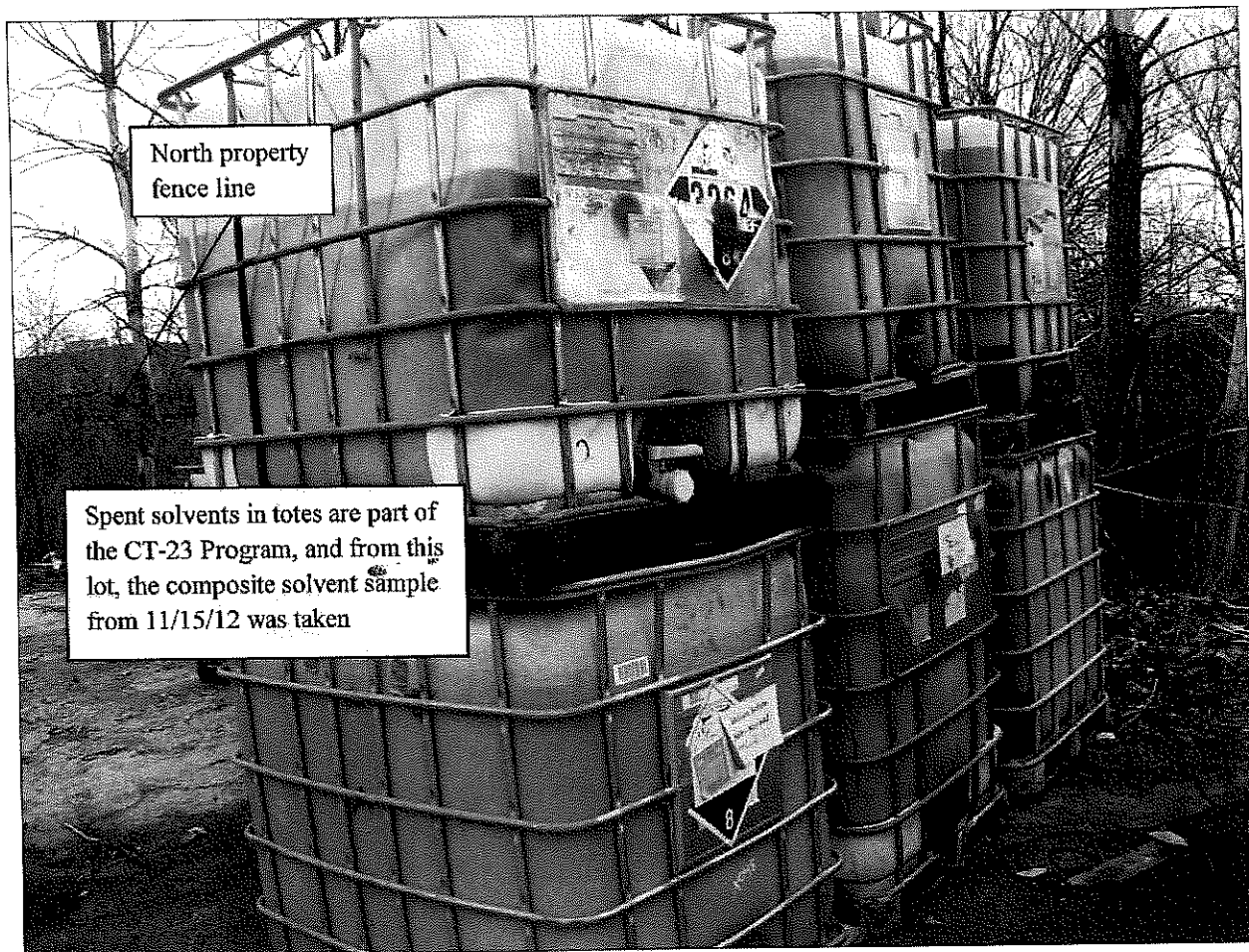


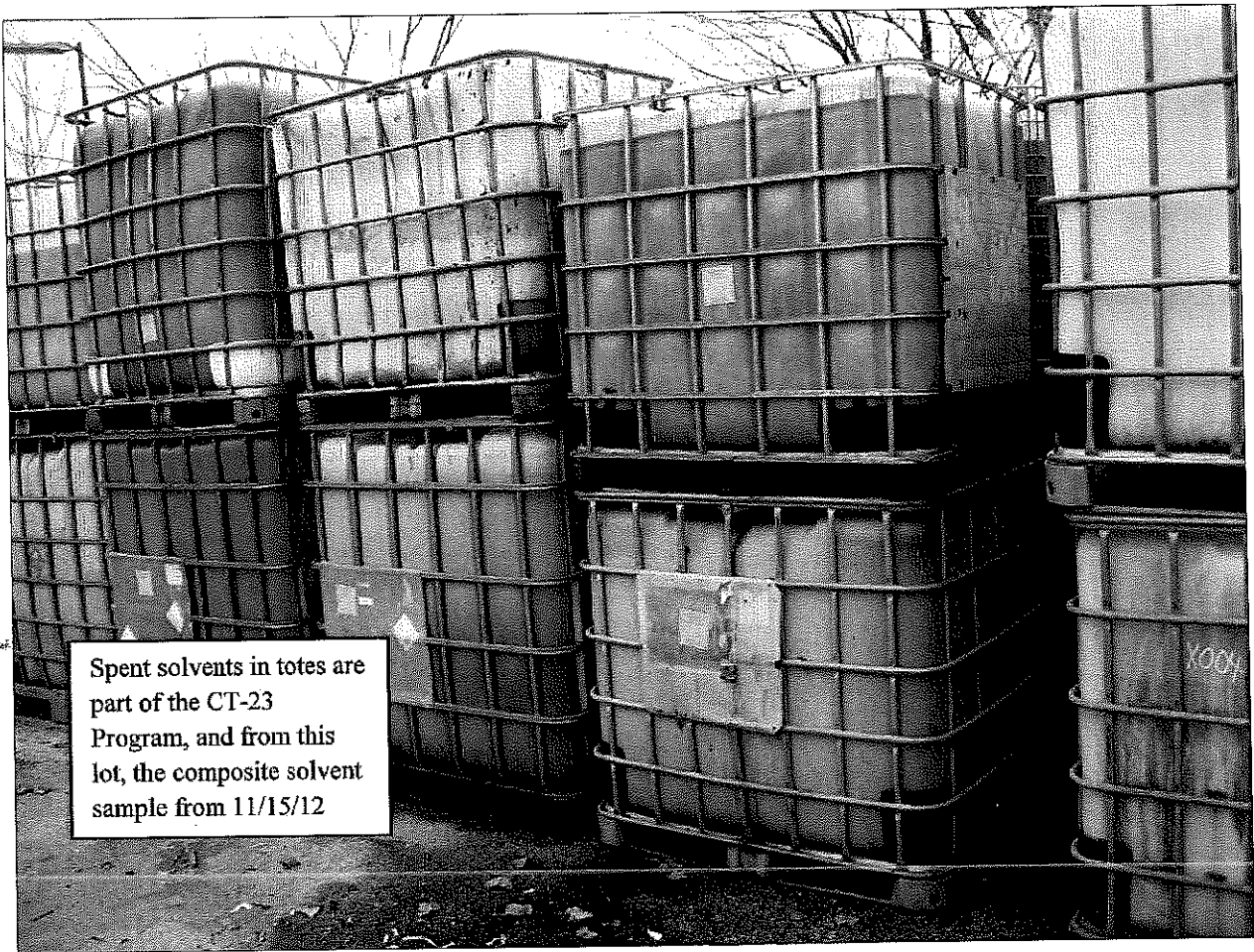
PHOTO 12



PHOTO 13



PHOTO 14



Spent solvents in totes are  
part of the CT-23  
Program, and from this  
lot, the composite solvent  
sample from 11/15/12

PHOTO 15

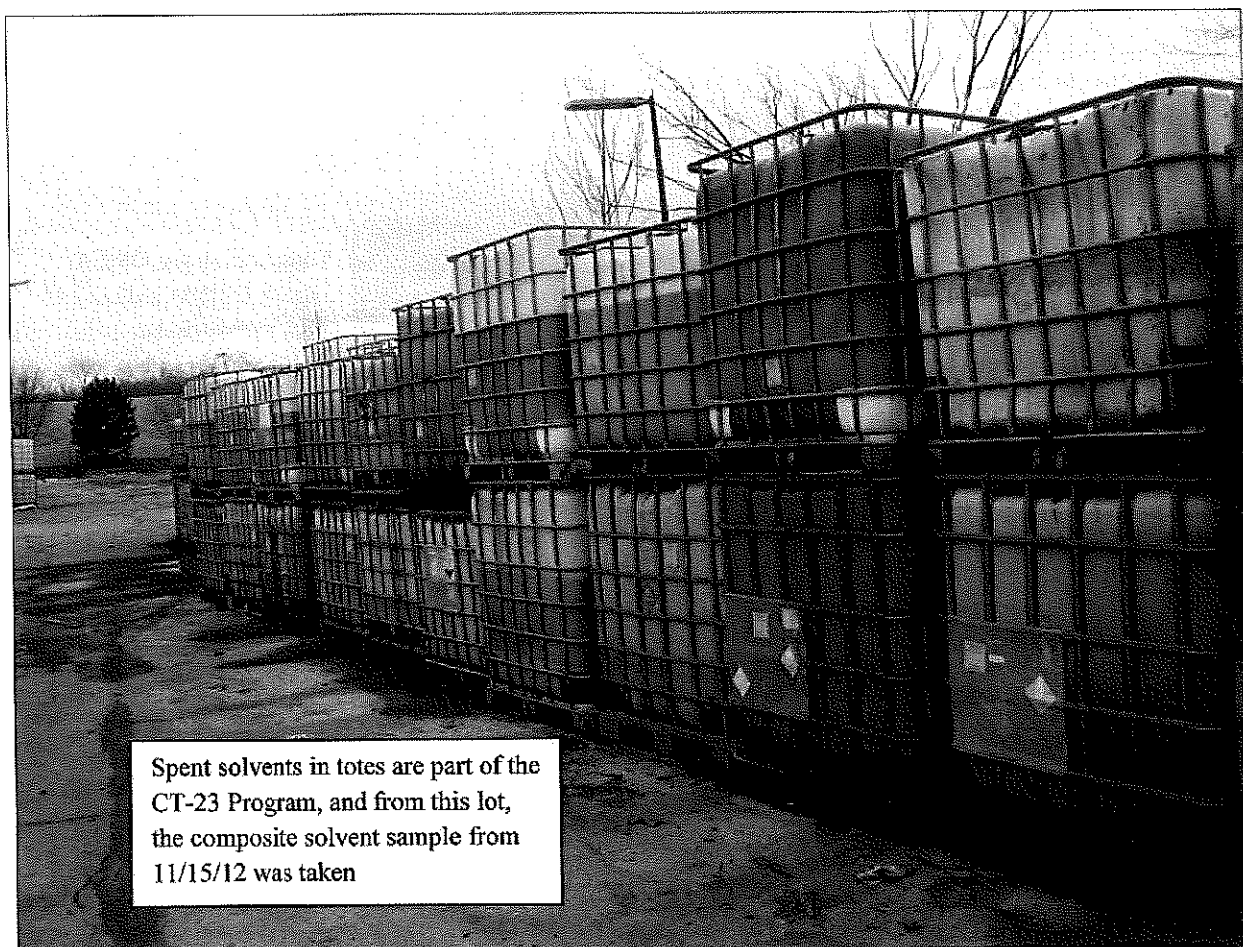


PHOTO 16

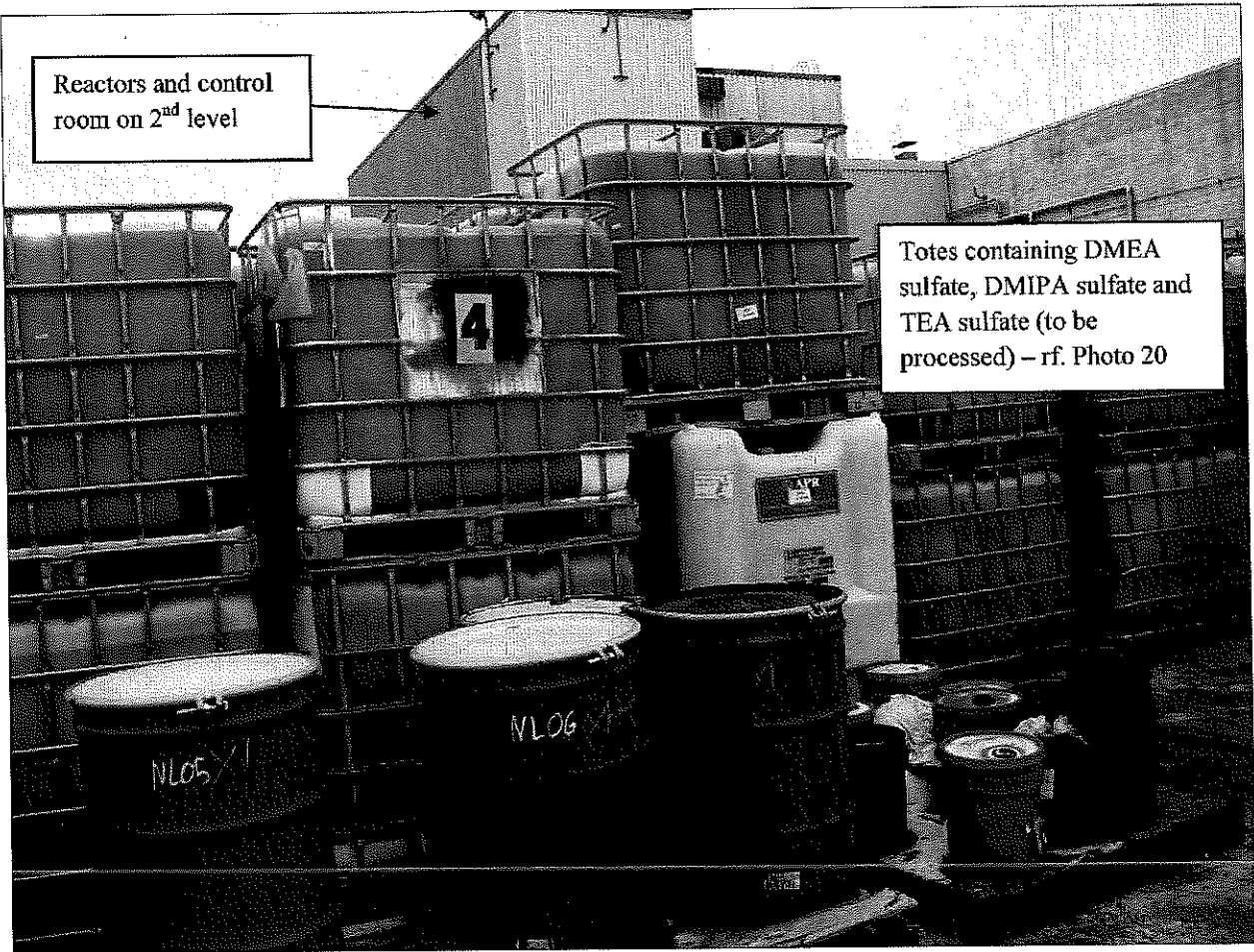


PHOTO 17

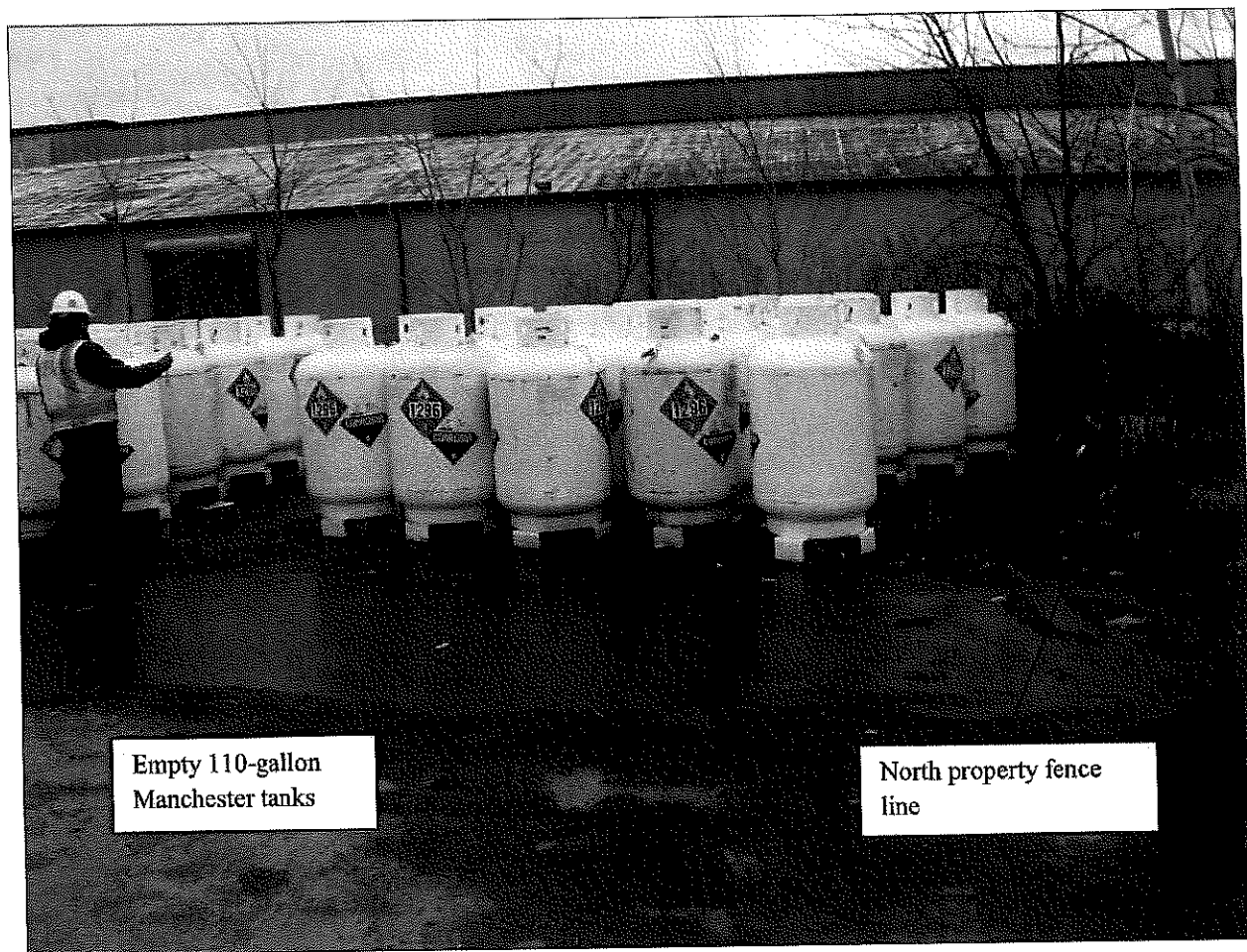


PHOTO 18

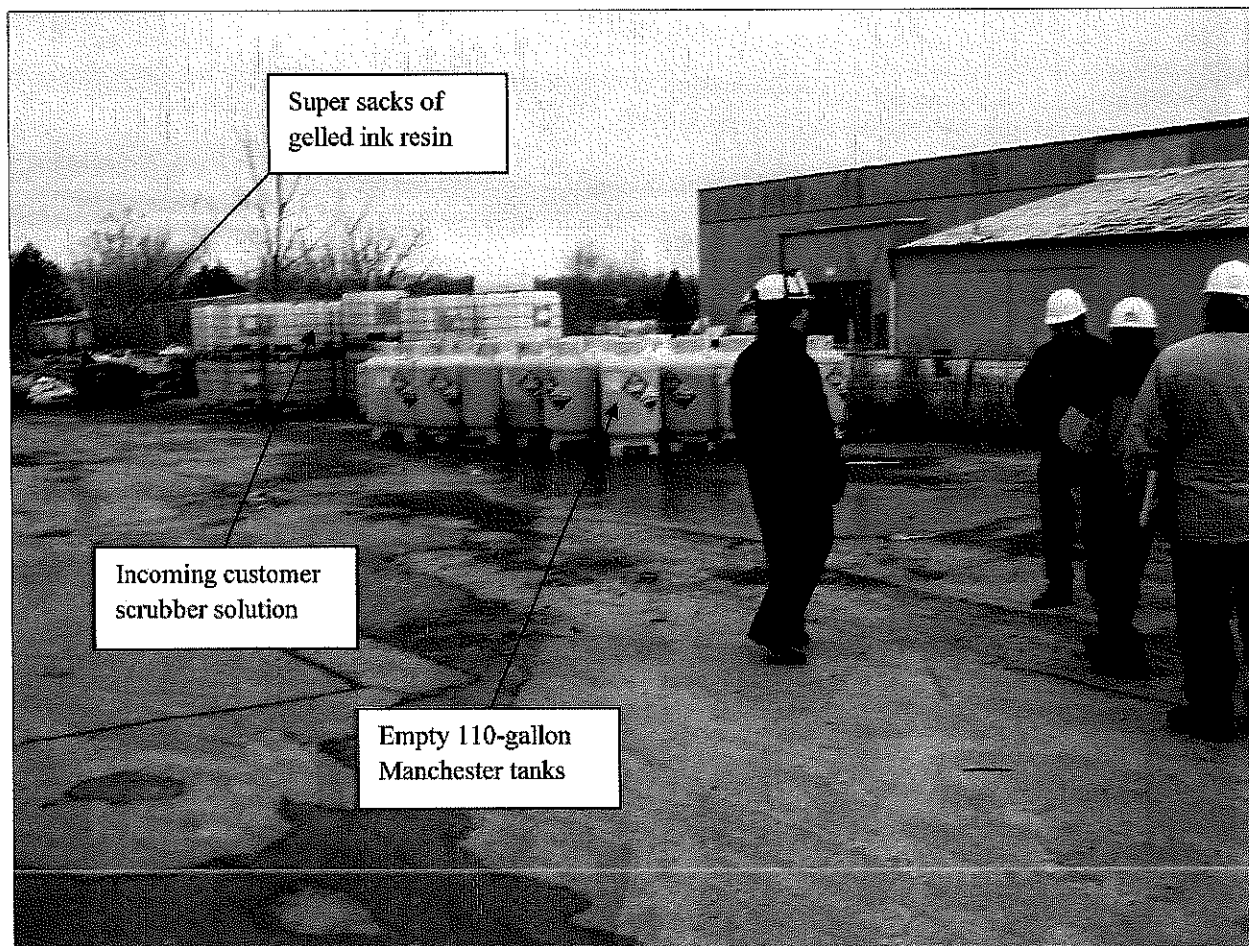


PHOTO 19

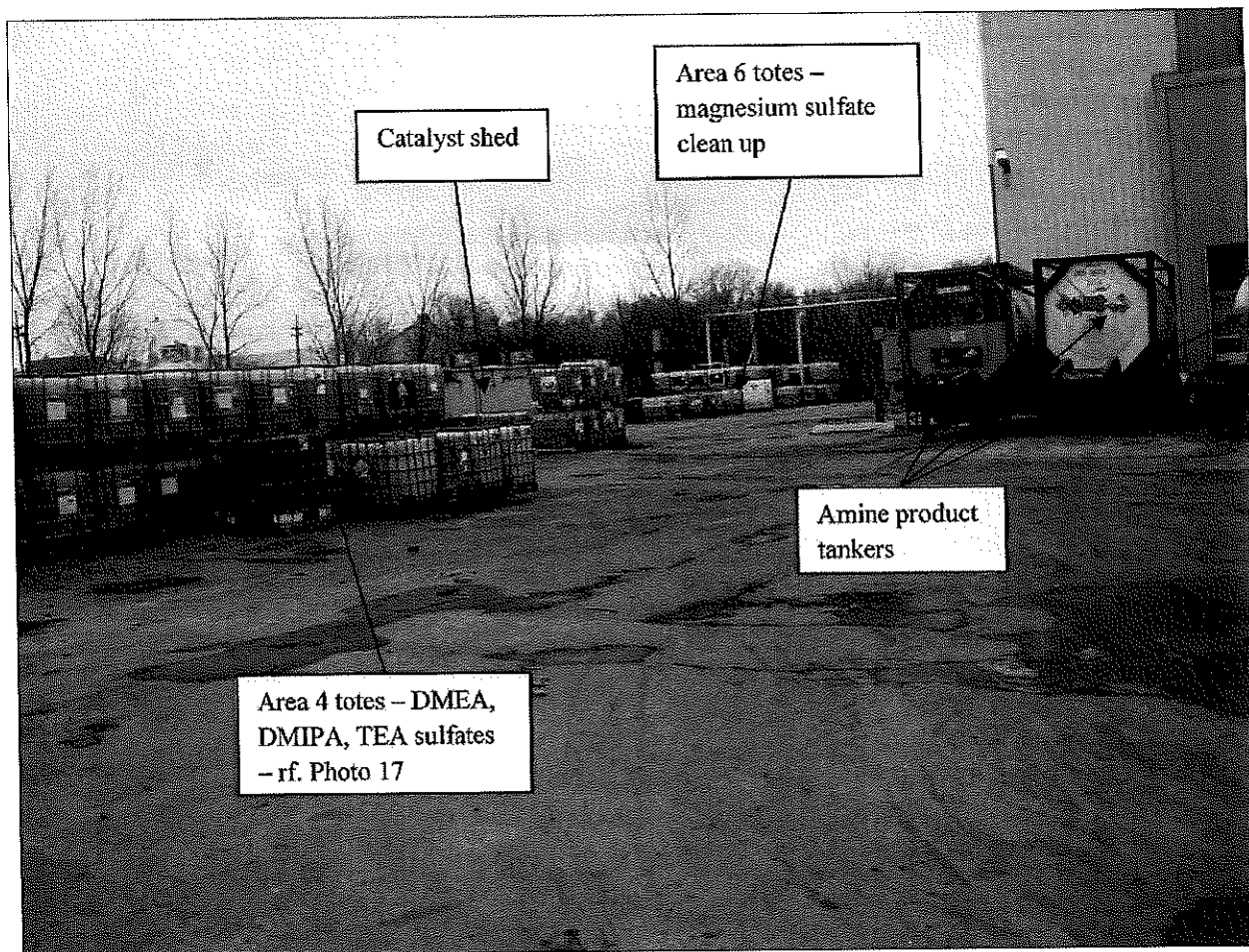


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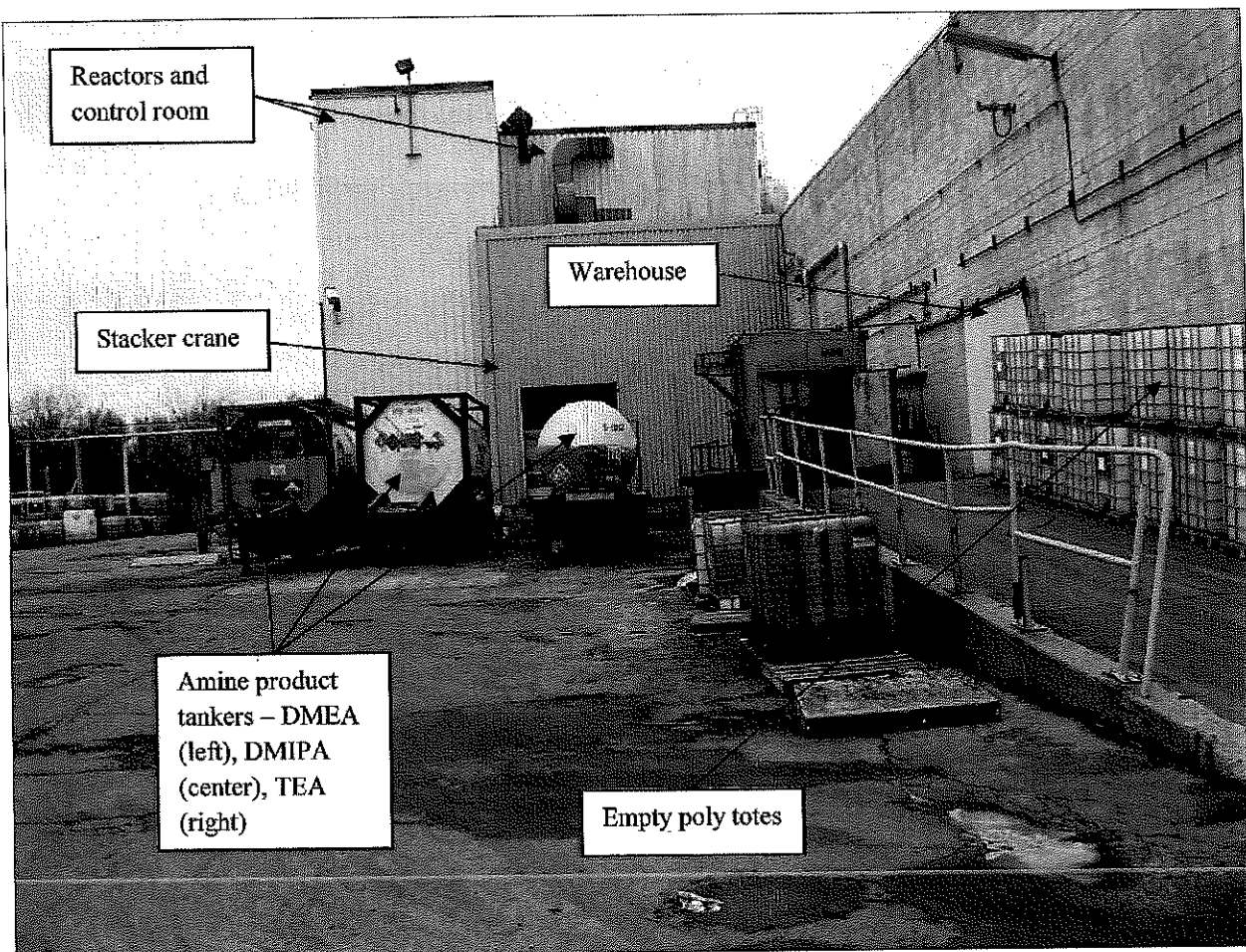


PHOTO 21



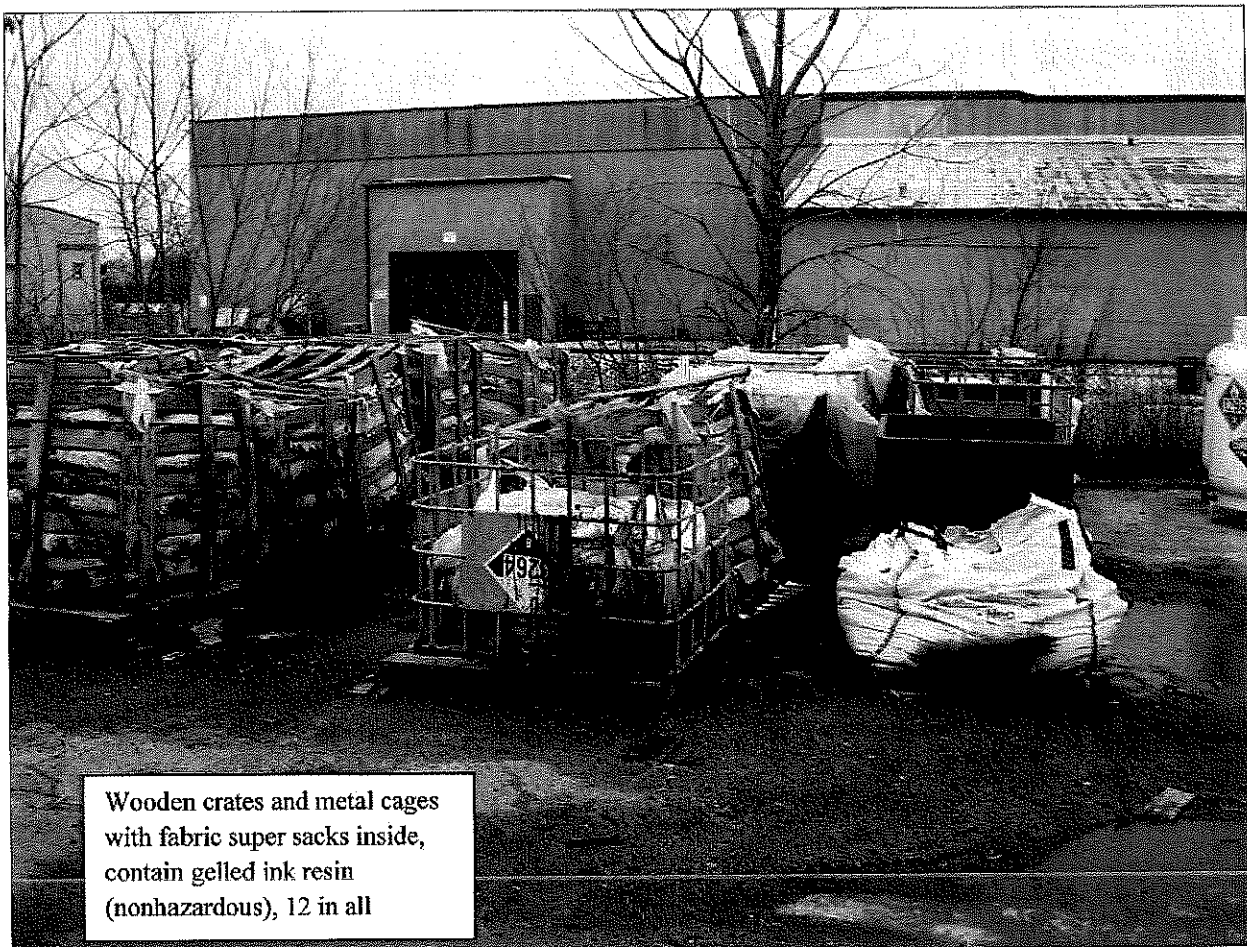
PHOTO 22



PHOTO 23



PHOTO 24



Wooden crates and metal cages  
with fabric super sacks inside,  
contain gelled ink resin  
(nonhazardous), 12 in all

PHOTO 25

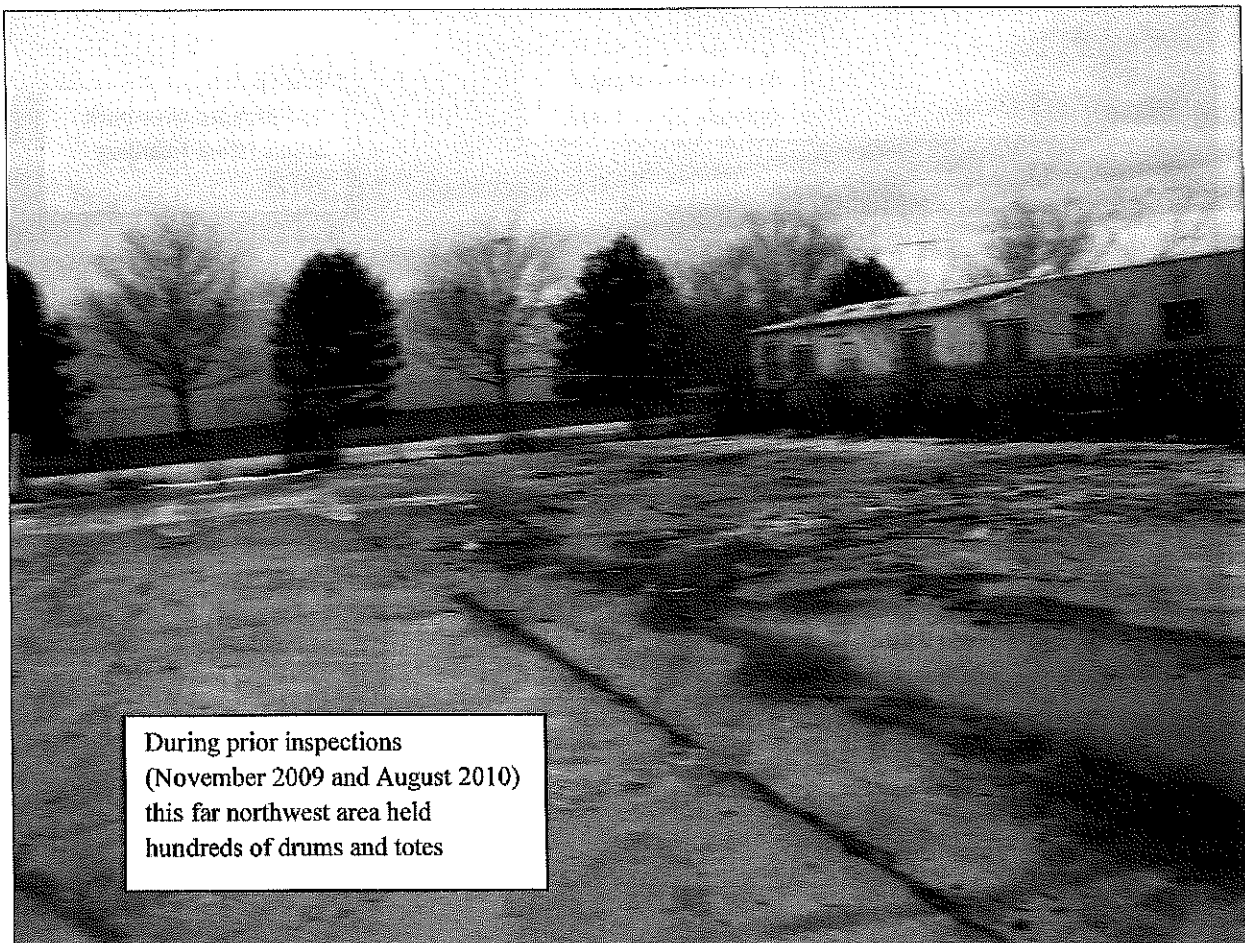


PHOTO 26

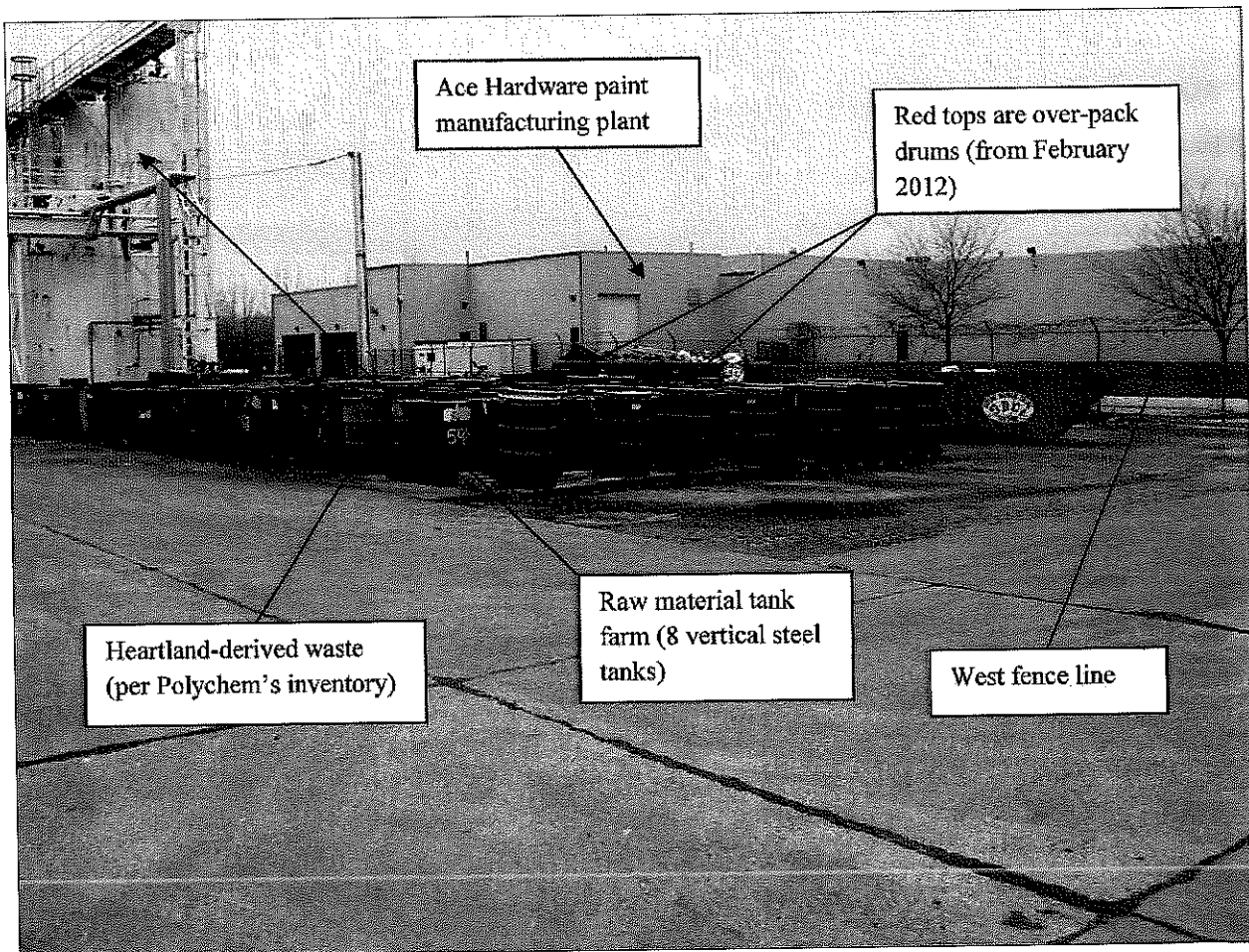


PHOTO 27



PHOTO 28

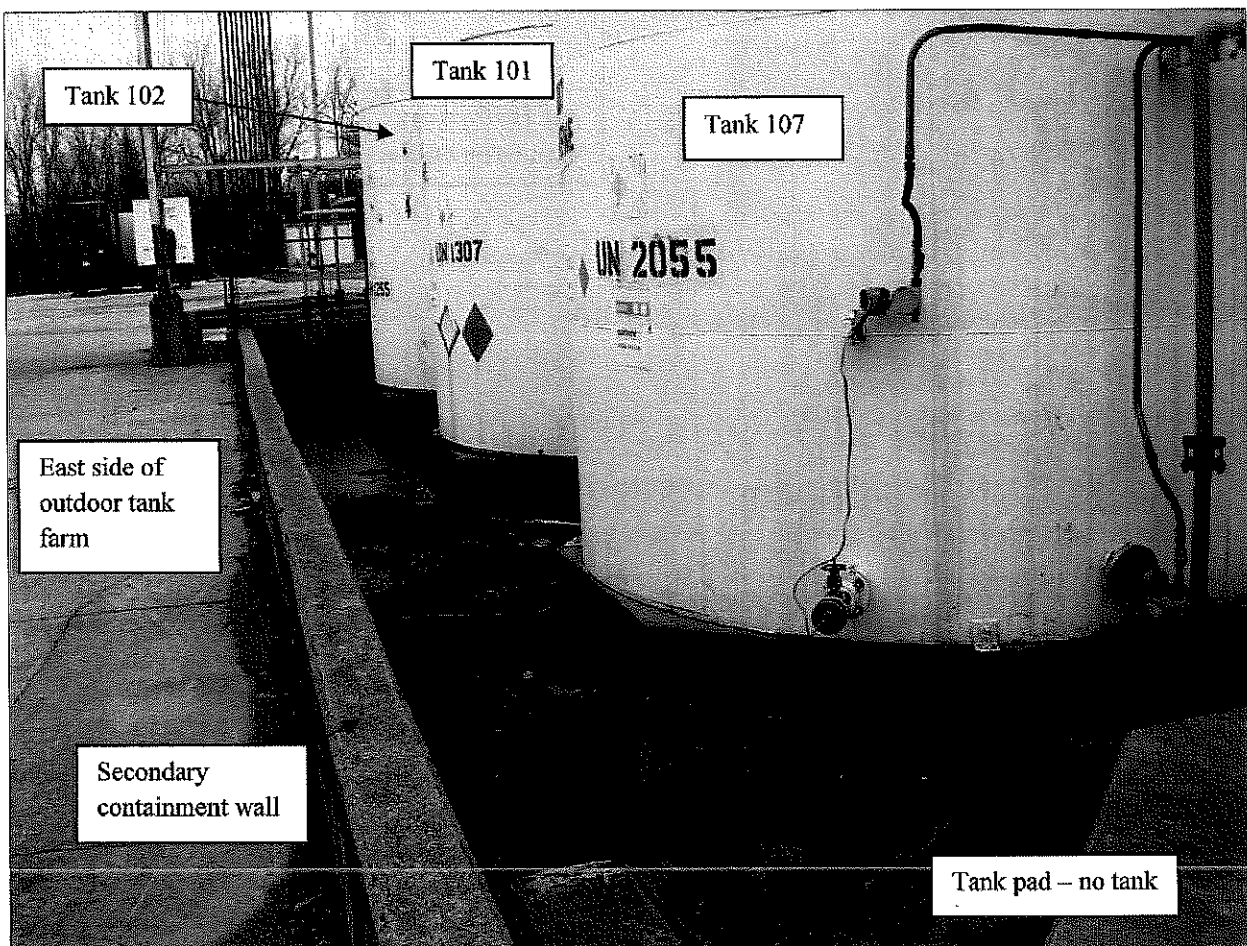


PHOTO 29



PHOTO 30

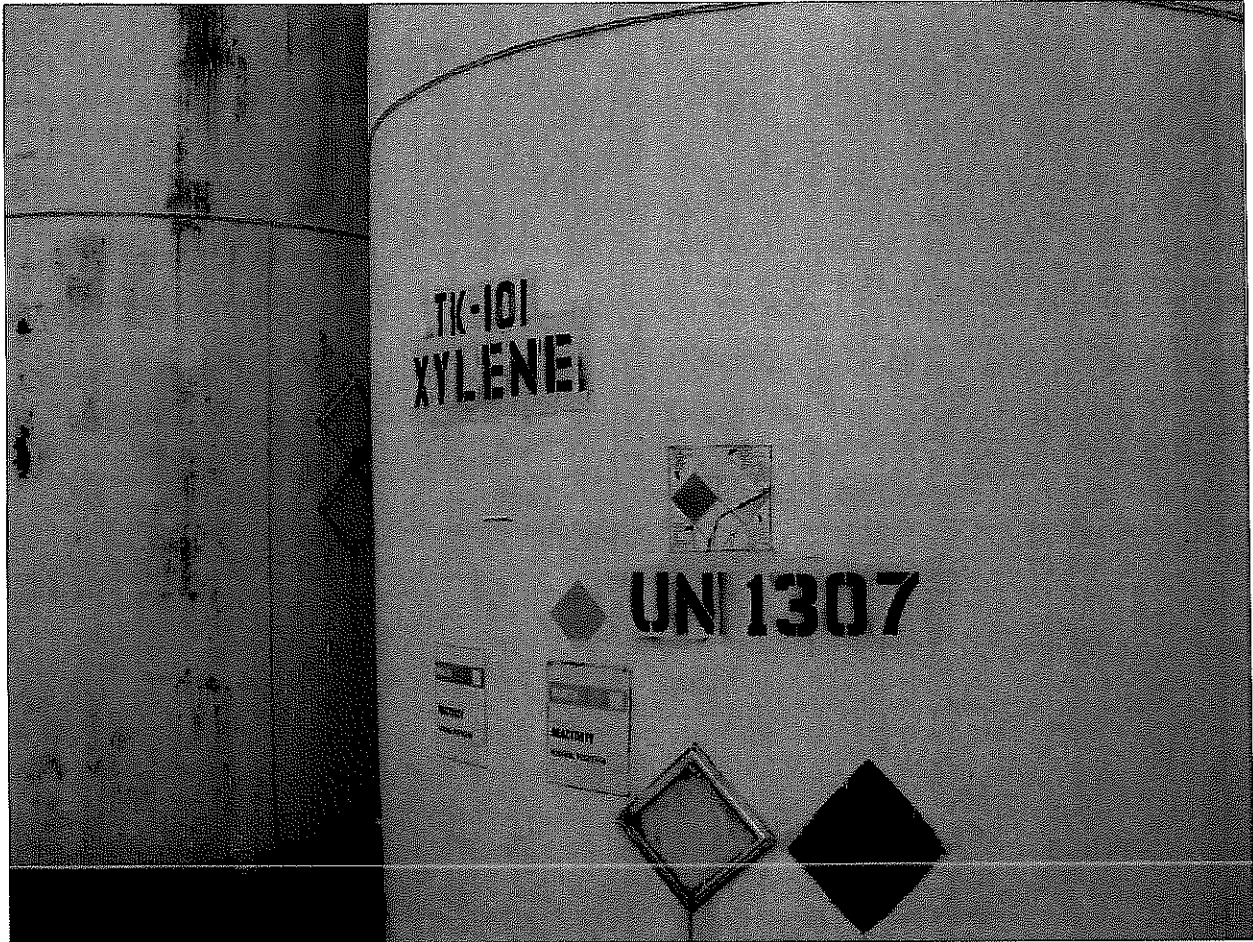


PHOTO 31

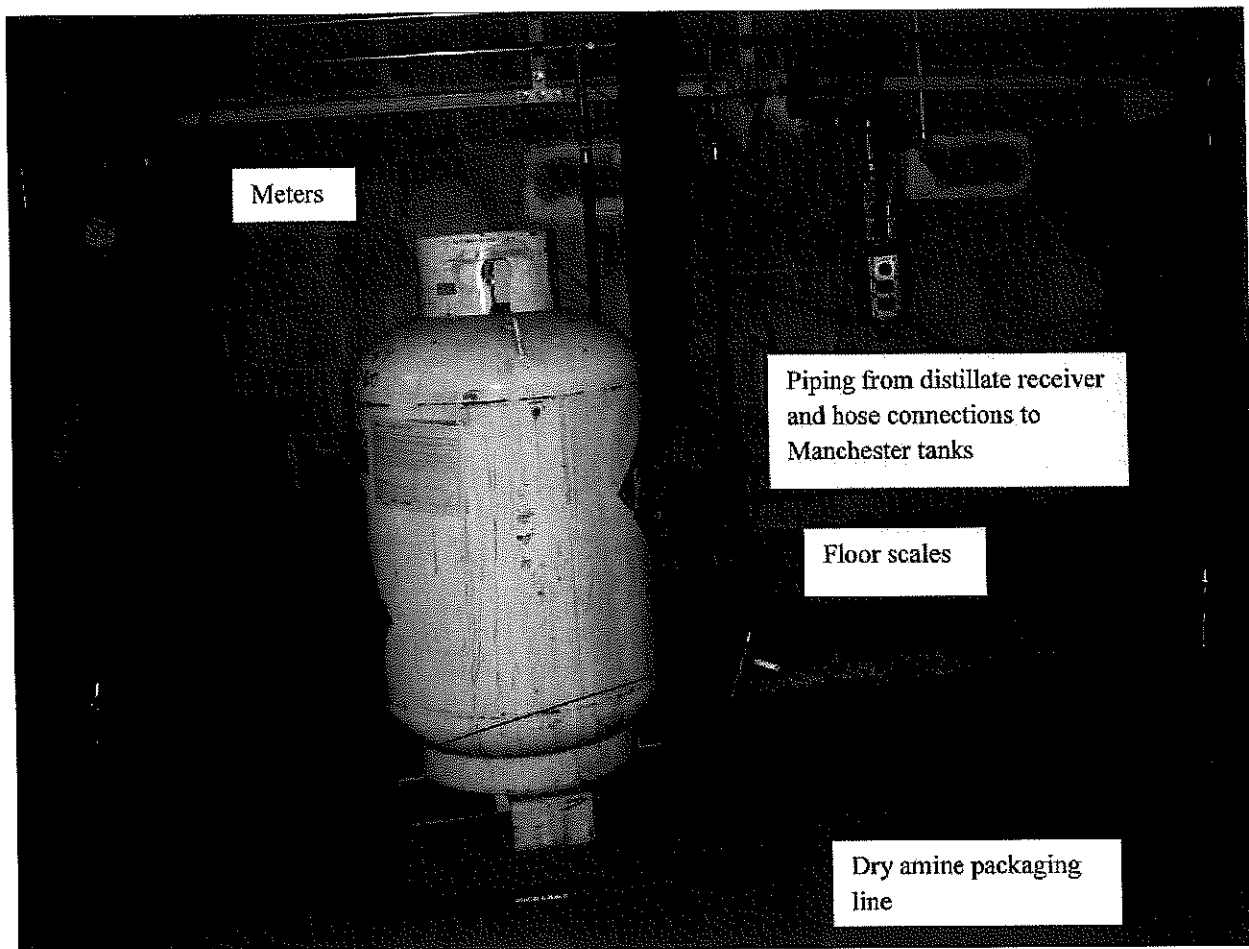


PHOTO 32

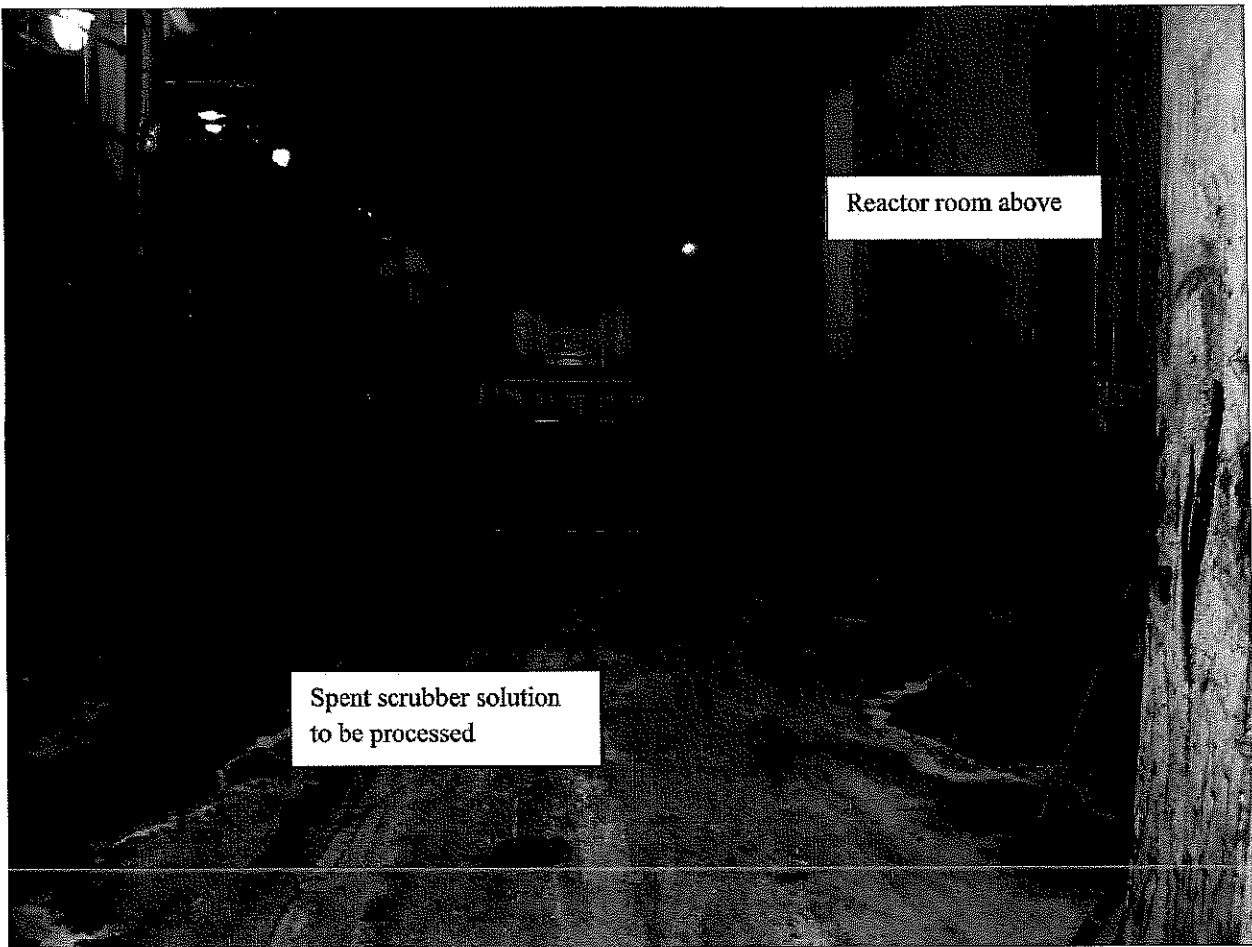


PHOTO 33

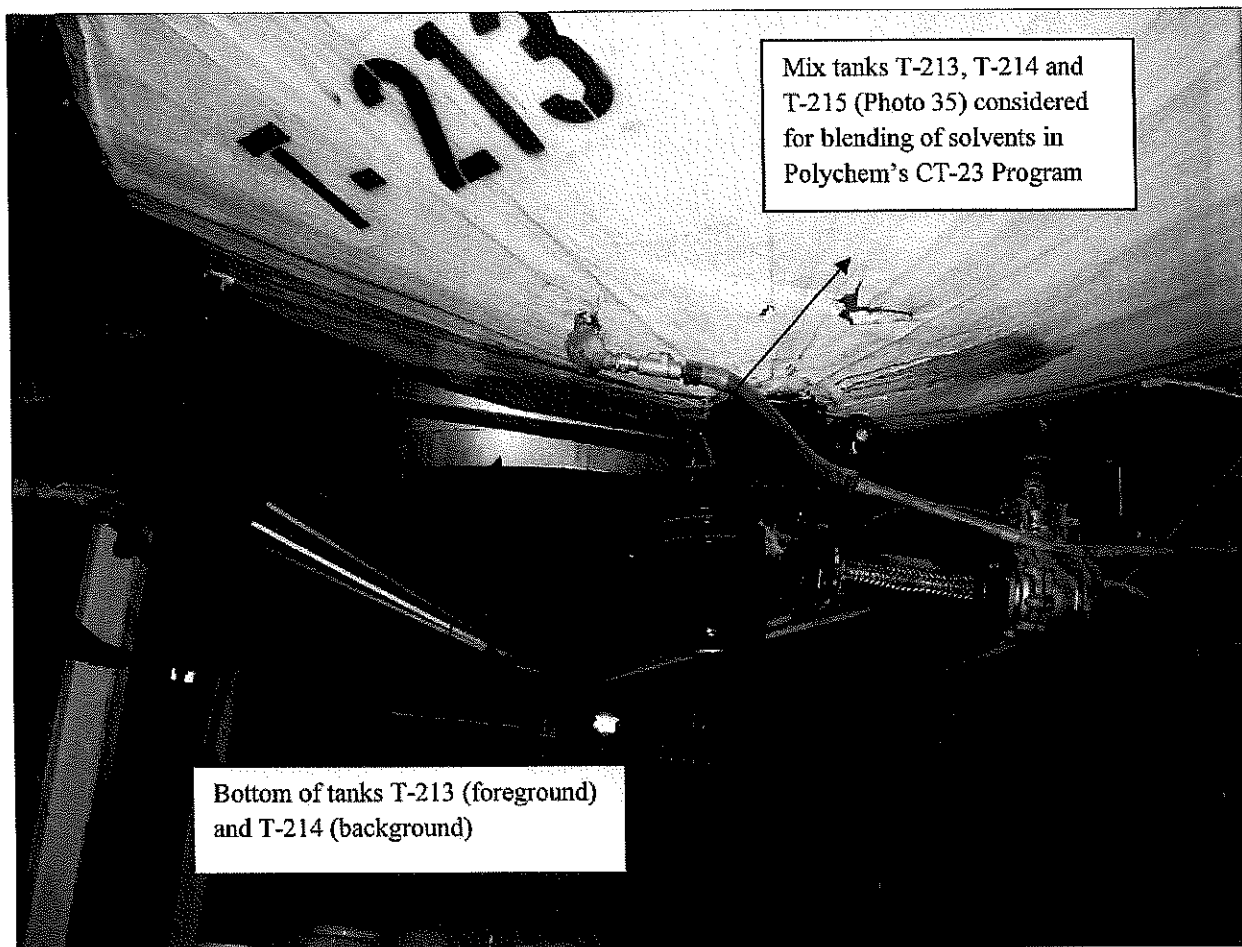


PHOTO 34

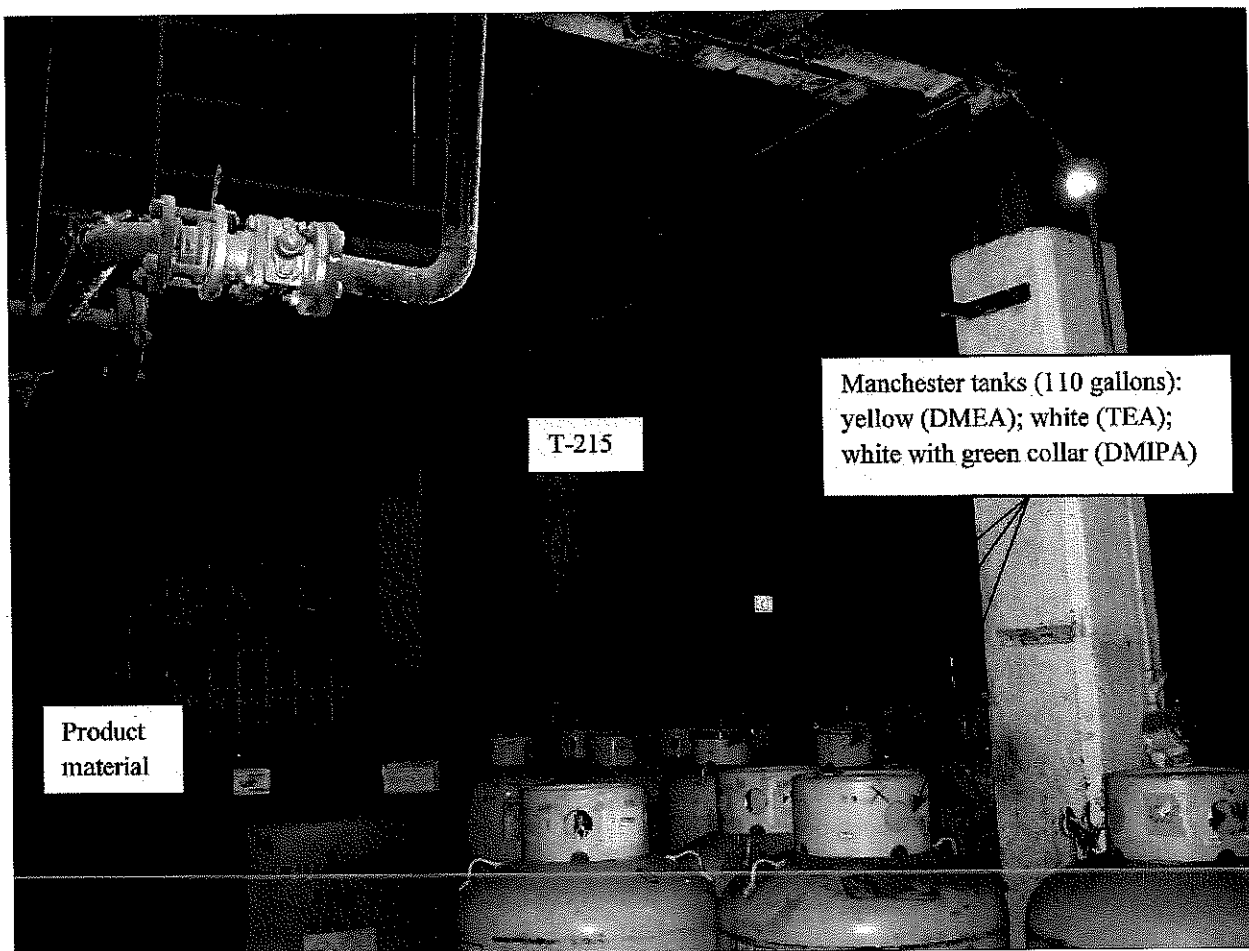


PHOTO 35



PHOTO 36

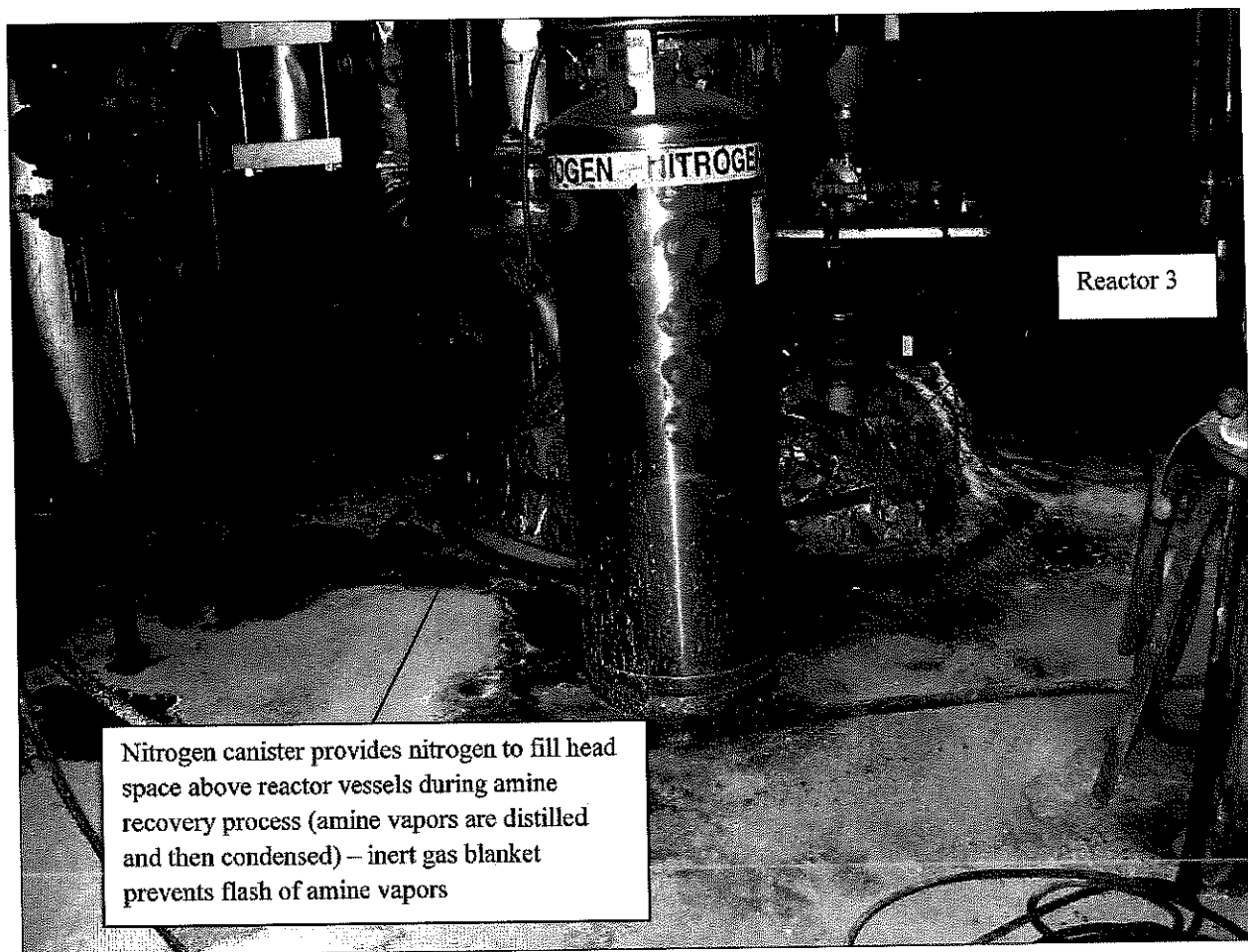


PHOTO 37