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Report

PHASE II SITE INVESTIGATION
TONAWANDA COKE SITE

Tonawanda Coke Corporation

Town of Tonawanda, New York

December 1986

Project: 1022-01-1

MALCOLM PIRNIE
ENVIRONMENTAL ENGINEERS, SCIENTISTS & PLANNERS

Under Subcontract To:
Calocerinos & Spina
CONSULTING ENGINEERS
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TONAWANDA COKE CORPORATION
TOWN OF TONAWANDA
ERIE COUNTY, NEW YORK

PHASE II SITE INVESTIGATION
TONAWANDA COKE SITE
NYSDEC SITE NOS. 915055-a, 915055-b, 915055-c

DECEMBER 1986

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TABLE OF CONTENTS

LIST OF TABLES

TABLE OF CONTENTS
(Continued)

SECTION 1
EXECUTIVE SUMMARY

TEXT

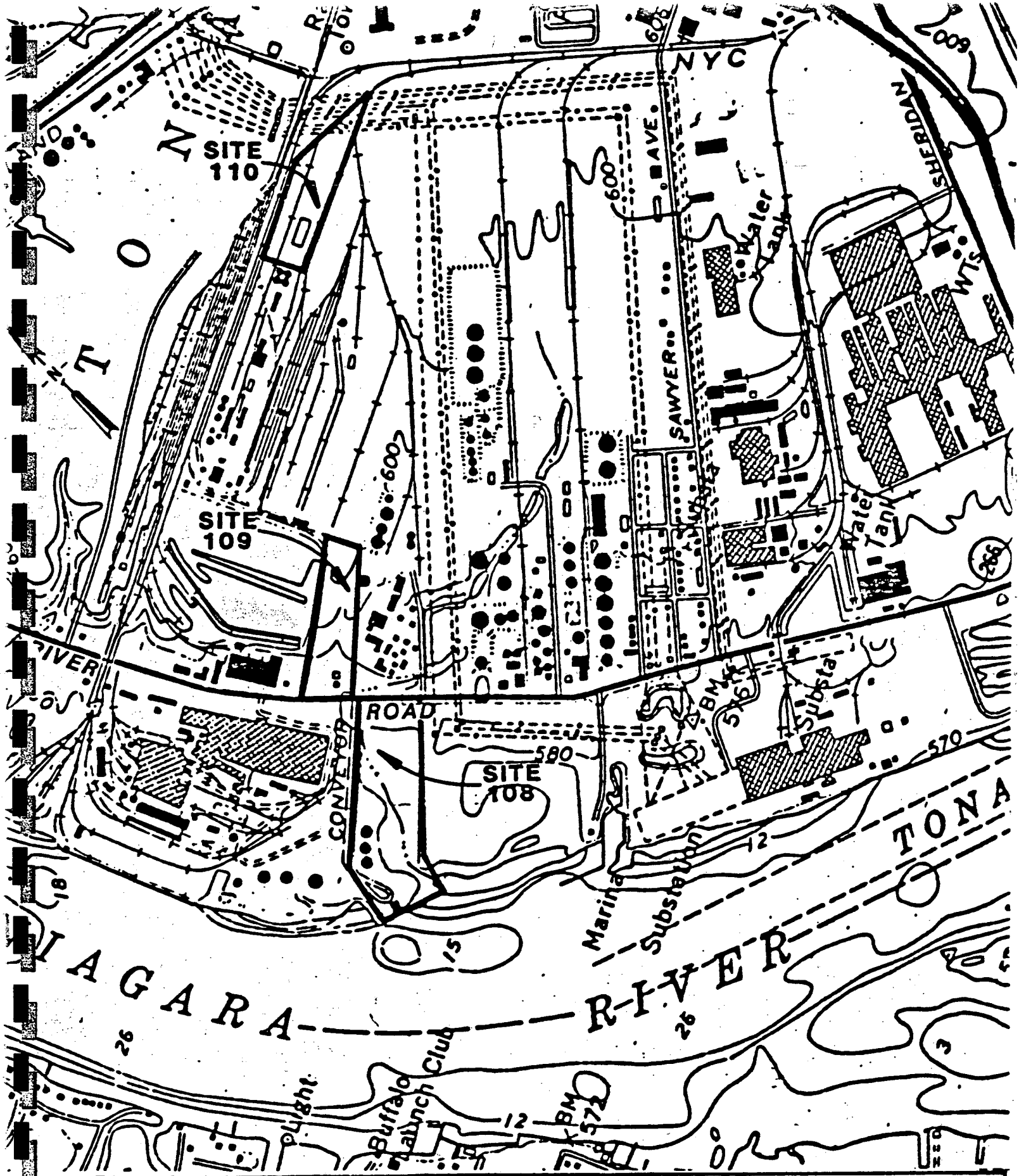
The Tonawanda Coke site consists of three inactive landfills (Sites 108, 109 and 110) located on River Road in the Town of Tonawanda, Erie County, New York (Figure 1). The site is listed on the New York State Department of Environmental Conservation registry as Sites 915055-a, -b, and -c.

Waste disposal at the three landfills occurred during the period from 1930 through 1978, when the plant was owned by Allied Chemical Corporation. Wastes reported to have been disposed of at Site 108 include ash, cinders and coal tar. Site 109 received non-hazardous wastes including bricks, rubble and demolition debris. At Site 110, spent iron oxide and wood shavings were disposed of.

A Phase II study was conducted on-site during 1985 and 1986. The study included geophysical testing, test pit excavation, monitoring well installation and sampling, surface water sampling, and calculation of a Hazard Ranking System (HRS) score.

The site assessment and HRS scores developed for the site indicated that the surface water migration route was the contaminant route of most concern for all three landfills. Contaminants found in the surface water included cyanide, aromatic hydrocarbons and polynuclear aromatic hydrocarbons (PAH's). Contaminants found in the groundwater included cyanide and TOX at all three landfills and chrysene in the upgradient well at Site 109. The HRS scores for the sites were 9.81, 4.18 and 10.77 for Sites 108, 109 and 110, respectively.

Although relatively low levels of contamination were found at the three landfills, an additional monitoring well located off-site revealed fairly high levels of contamination. This well was located in an area upgradient of the three sites. Contaminants detected there included cyanide, aromatic hydrocarbons and PAH's. In many cases, the concentrations of the organic compounds were well above Class GA standards or guidance values.



TONAWANDA COKE SITE MAP

USGS Buffalo NW Quadrant

1 INCH=1000 FEET

FIGURE No. 1

MALCOLM PIRNIE

SECTION 2
PURPOSE OF INVESTIGATION

SITE LOCATION AND HISTORY

The project site consists of three separate inactive landfills located on River Road in the Town of Tonawanda, Erie County, New York (Figure 1). The three sites are identified as Site 108, 109 and 110, which correspond to the New York State Department of Environmental Conservation (NYSDEC) site registry numbers 915055-a, 915055-b and 915055-c. (Note that Site 108 is also apparently listed as NYSDEC Site No. 915003-a.) Currently the site is owned and operated by the Tonawanda Coke Corporation. However, most of the disposal activities occurred between 1930 and 1978, when the plant was owned by Allied Chemical Corporation.

The United States Geological Survey (USGS) collected soil, surface water and groundwater samples at various on-site locations during the Summer of 1982 and Spring of 1983. The results of the analyses indicated site contamination by cyanide, organic compounds and heavy metals. Those results were provided to Tonawanda Coke by letter from Region 9 of the NYSDEC on September 24, 1984 (Appendix A).

PURPOSE OF SITE INVESTIGATION

A Phase I investigation of the site was conducted by Recra Research during 1984. The Phase I Report concluded that there were several data inadequacies which precluded the determination of an accurate Hazard Ranking System (HRS) score. It was recommended that a Phase II Investigation be initiated. The purpose of this study was to develop the additional information necessary to characterize the nature and extent of contamination at the site, and calculate a final HRS score.

SECTION 3
SCOPE OF WORK

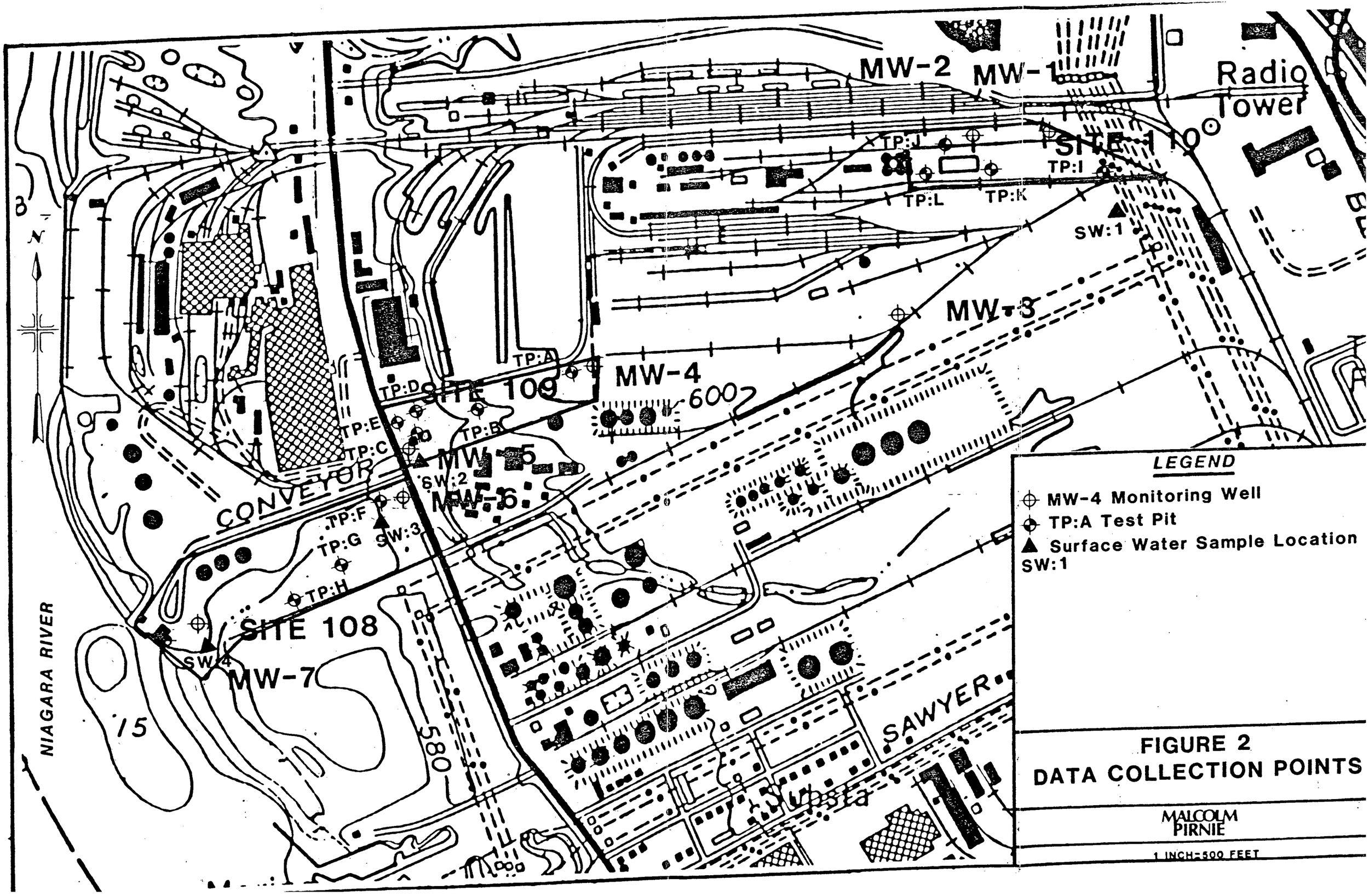
GEOPHYSICAL TESTING

Geophysical testing was conducted at the Tonawanda Coke site to characterize subsurface conditions, determine the areal extent of waste materials, and identify potential contaminant plumes. The electromagnetic survey was conducted with a Geonics EM 34-3 terrain conductivity meter. The conductivity profiling was performed using 10-meter grid spacing. Surveys were completed on sites 108 and 109. Unreliable readings, resulting primarily from man-made interferences, precluded completion of the survey on Site 110.

TEST PIT EXCAVATION AND SAMPLING

Twelve test pits were excavated at the Tonawanda Coke site. A backhoe and operator were subcontracted through Buffalo Drilling Company to perform the excavations. Three test pits were excavated in landfill 108; five test pits were excavated in the landfill 109 area, and four test pits were completed within landfill 110. The locations of the test pits and corresponding identification numbers are shown on Figure 2.

The purpose of the test pits was to characterize the type and extent of wastes buried on-site. Special attention was devoted to the landfill 110 area due to the lack of information gained in that area during the geophysical surveys. Each test pit was logged and representative samples were retained. A geologist supervised the excavation of the test pits. During the excavations, samples were collected from visually different waste types occurring in the test pits at landfill 110. These were composited into a single sample which was submitted for chemical analysis for the following parameters (utilizing the referenced United States Environmental Protection Agency [USEPA] test methods):


MW-2
MW-1
Radio Tower
TP:J
TP:I
TP:L
TP:K
SW:1
MW-3
TP:A
MW-4
TP:D
SITE 109
600
TP:E
TP:B
TP:C
MW-5
SW:2
MW-6
CONVEYOR
TP:F
TP:G
SW:3
TP:H
SITE 108
SW:4
MW-7
NIAGARA RIVER
15
580
SAWYER
Sunsta
LEGEND
MW-4 Monitoring Well
TP:A Test Pit
Surface Water Sample Location
SW:1
FIGURE 2
DATA COLLECTION POINTS
MALCOLM PIRNIE
1 INCH=500 FEET

Polynuclear Aromatic Hydrocarbons (PAH's)	USEPA Method 610
Purgeable Aromatic Hydrocarbons (BTX)	USEPA Method 8020
Phenols (4-AAP)	USEPA Method 420.2
Cyanides (total and free)	USEPA Method 335.1, 335.2
Total Organic Halogens (TOX)	N/A

Small (0.75 inch) diameter schedule 40 PVC slotted pipe was installed in ten of the test pits to allow for periodical monitoring of water levels, conductivity, and pH values. All test pits were backfilled after examination and well installation.

An HNU organic vapor detector was utilized for vapor detection during test pit excavation. The backhoe was steam cleaned for decontamination upon entering the Tonawanda Coke facility, and after each test pit, to prevent any possible cross-contamination.

MONITORING WELL INSTALLATION

Eight test borings were drilled at the Tonawanda Coke facility during the period November 14-20, 1985. Seven of the borings were subsequently converted into groundwater monitoring wells (Figure 2). One test boring location was abandoned when the boring penetrated what appeared to be Niagara River water. The location of the abandoned test boring is shown on Figure 2. The final location for installation of the monitoring wells was dependent on the results of the geophysical surveys, the test pit excavations, and the test borings.

Buffalo Drilling Company was contracted to perform the drilling and monitoring well installation services. The drilling operation consisted of the collection of continuous soil samples by means of a split-spoon sampling device and the drilling of the boreholes utilizing hollow-stem augers. Sediment samples were collected and described by a geologist. Standard grain size and color charts were utilized. An HNU meter reading was taken from each split-spoon sample in an attempt to isolate and quantify any

organic vapor concentrations. Split-spoon samplers were decontaminated between uses. The drilling rig and accessories were steam cleaned upon entrance onto the Tonawanda Coke property, between boreholes, and prior to leaving the property.

The groundwater monitoring wells were constructed of threaded joint 2-inch diameter schedule 40 PVC screens (0.020 inch slots) and threaded joint 2-inch diameter schedule 40 PVC riser pipes. All of the wells were screened in the overburden aquifer. All well construction materials were steam cleaned before insertion into their respective boreholes.

Monitoring well development consisted of suction pumping and/or bailing of at least ten casing volumes of groundwater from each well. In-situ permeability tests were performed at six of the seven wells. Damage to the seventh well prevented testing at the site.

Measuring point elevations and land surface elevations were determined based on surveyed top of casing elevations. The surveying was performed by Tonawanda Coke Corporation personnel.

The Phase II subsurface investigations were concluded by the collection of representative groundwater samples from each monitoring well for chemical analyses on two separate occasions, once during a wet weather period and once during a dry weather period. On both occasions, each well was monitored as follows:

1. The water level in the well was measured and recorded.
2. Three well casing volumes of groundwater were removed from the well using a dedicated PVC bailer.
3. A groundwater sample was collected, using the bailer, and preserved for analysis.
4. A well probe was inserted into the well to measure the groundwater pH and specific conductance.

Dry weather and wet weather samples collected from monitoring well MW-1 through MW-5 (Figure 2) were analyzed for the same parameters as listed for the composite test pit sample collected from the landfill 110 area. Wet weather groundwater samples collected from monitoring wells MW-6 and MW-7 were

submitted to CompuChem Laboratories in Research Triangle, North Carolina, for analysis for the 111 organic priority pollutants. Portions of these same samples were analyzed in the C&S Environmental Laboratory (Syracuse, New York) for 14 inorganic priority pollutants. A completed chain-of-custody document was provided for each sample and all QA/QC protocols were maintained.

SURFACE WATER INVESTIGATIONS

Concurrent with the collection of groundwater samples from the monitoring wells, surface water samples were collected for chemical analyses. Surface water samples were collected at four locations at the plant (Figure 2). The locations were chosen to evaluate the extent of contamination contributed by various regions of the plant site as well as off-site areas. The surface water samples were analyzed at the C&S Laboratory for the same parameters as the seven monitoring wells during dry weather conditions. The analytical results were combined with estimated surface flow rates to calculate mass loadings of the various contaminants to the Niagara River.

CALCULATION OF FINAL HRS SCORE

In accordance with the NYSDEC Generic Work Plan, a final HRS score was prepared, complete with documentation on standard NYSDEC/USEPA forms. A narrative summary was developed in the required format.

SECTION 4
SITE ASSESSMENT

SITE TOPOGRAPHY AND DRAINAGE

The Tonawanda Coke Corporation site is located along and to the east of the eastern bank of the Niagara River in the Town of Tonawanda, Erie County, New York. In general, the site slopes gently to the west toward the Niagara River. The site is comprised of two areas which are separated by River Road (Figure 2). The larger of the two areas exists in the upslope area to the east of River Road and encompasses the main manufacturing facility. This area is relatively flat on its eastern side and is bordered to the east by a wetlands area. The western portion of this upslope area, near River Road, has a steeper slope. An intermittent stream crosses the lower part of the western portion of the upslope area.

River Road runs along the eastern boundary of the downslope area owned by Tonawanda Coke Corporation. This portion of the site extends from River Road to the eastern bank of the Niagara River. Encompassed within this area are relatively flat marshy areas and areas which were landfilled. The intermittent stream that crosses the western portion of the upslope area meanders through this downslope area and eventually empties into the Niagara River.

Surface drainage on the entire site is promoted by drainage ditches, some of which enter the intermittent stream on its path to the river. Surface discharge from the marshy area east of the upslope portion of the site is apparently intermittent.

RESULTS OF GEOPHYSICAL TESTING

Terrain conductivity surveys were initiated September 12, 1985, on landfill sites 108 and 109. Site 110 was also inspected but cultural interferences, primarily from overhead high tension wires and railroad tracks, resulted in unreliable readings. The surveys were conducted to determine the extent of the landfilled materials and potential leachate plumes emanating from the

landfill sites. Conductivity readings are shown on Figure 3.

Site 110

This site could not be surveyed due to the very high electrical interferences from overhead high tension lines traversing the site.

Site 109

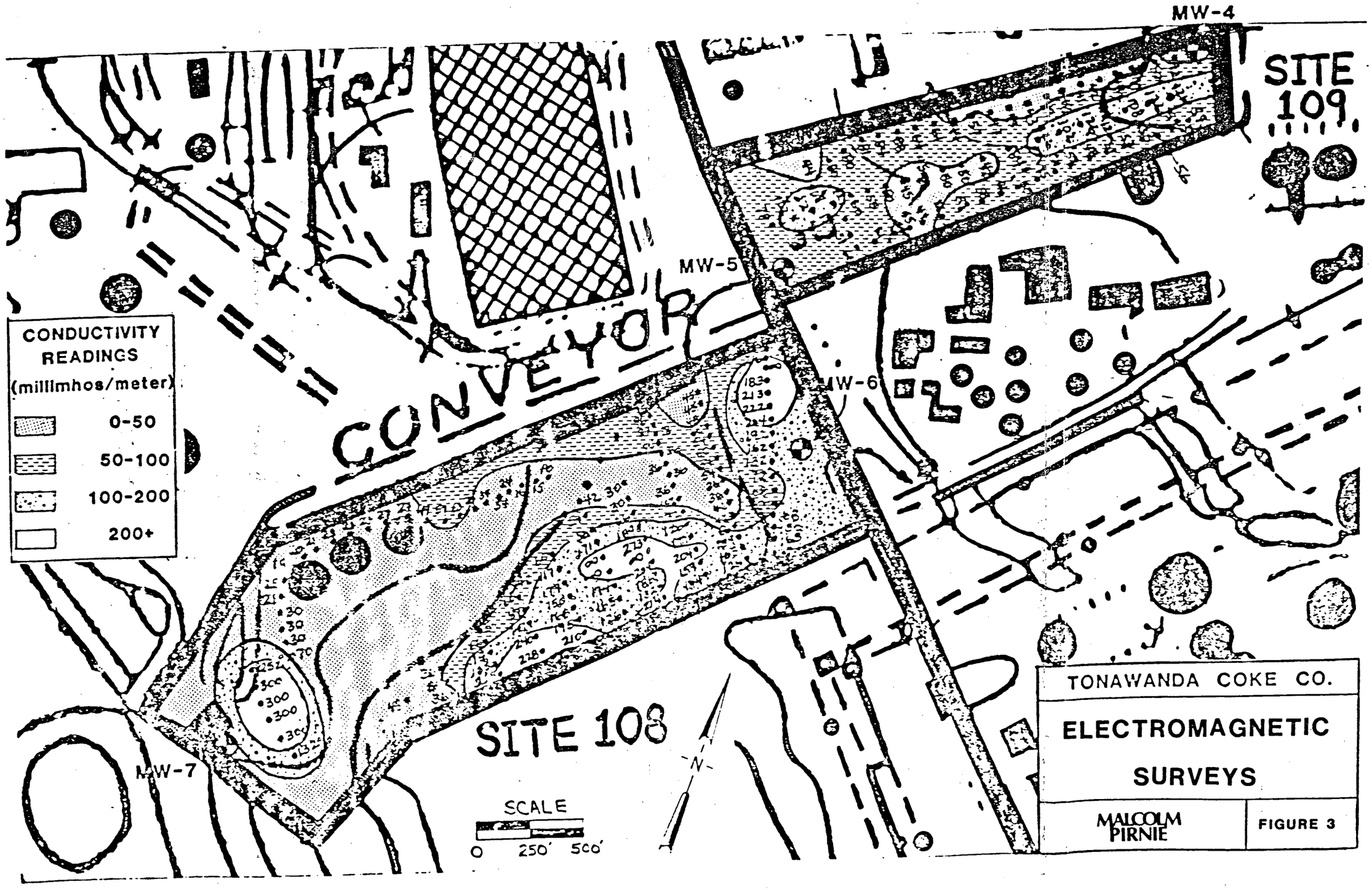
This site extends from the parking lot outward along Conveyor Road and ends at River Road. Conductivities ranged from 41 millimhos/meter to 221 millimhos/meter. In general, the terrain conductivities were low. The high values above 100 millimhos/meter appear to result from traversed building debris rather than contaminated groundwater (Figure 3).

Site 108

This site extends from River Road to the Niagara River. Conductivity values measured along the site access road remained relatively low (less than 100 millimhos/meter) in contrast to adjacent areas of known dumping, where conductivity values exceeded 300 millimhos/meter in some localized areas. The extremely high values appear to be related to disposed building debris. The large bullseye-shaped anomaly next to the river seems to result from debris used to fill in the river bank to extend the landfill area. This area is also a coal storage area where conductive leachate may be emanating to the river (Figure 3).

TEST PIT LITHOLOGY

Twelve test pits were excavated to depths ranging from approximately 5 to 8 feet below land surface. Locations are shown on Figure 2 and descriptions of test pit lithologies are included in Appendix B. Bricks, cinders, coal and ash were encountered in almost all the pits. Test pits at landfill 108 also revealed metal filing, strapping, wire, concrete with rebar, pipes, foundry sand and blasting dust. Black organic streaks were encountered in pits I, J and K at landfill 110 and pit D at



TONAWANDA COKE CO.

ELECTROMAGNETIC SURVEYS

MALCOLM PIRNIE | FIGURE 3

landfill 109. Water occurred at a depth of one to three feet below land surface in pits A, E, F, H, I, K and L. In pit B, water occurred at 6 feet below land surface. Water was not encountered in the other pits.

SITE GEOLOGY

Seven boreholes which were drilled at the site during the period of November 14-20, 1985 were subsequently converted to groundwater monitoring wells. Boring logs and monitoring well construction details are presented in Appendix C. All borings were relatively shallow. The total depth of each boring ranged from 10 to 14 feet below land surface. The borings in the vicinity of Landfills 109 and 110 penetrated an average of 4 feet of fill material from land surface. The fill material was generally comprised of the same types of materials that occurred in the test pit excavations (as described in the previous subsection). Special note should be made of the tar-like material which occurred from 4.5 to 6 feet below land surface in the boring for monitoring well MW-3. This well is not located in any of the landfills under investigation. Underlying the fill material, stiff, glaciolacustrine clay occurred. The borings in the Landfill 108 area penetrated an average of three feet of fill material. Underlying the fill material, there occurred, in descending order: 1) a sandy clay layer which contained varying amounts of organic material, and 2) a clayey silt and sand layer. The presence of the organic material indicates that this deposit was once exposed at land surface.

The locations and depths of the monitoring wells installed in the boreholes were intended to permit monitoring of groundwater occurring in positions upgradient and downgradient of each of the three landfills on the site. Three monitoring wells were installed in the vicinity of Landfill 110 to permit determination of groundwater flow directions in that area. All monitoring well locations and final depths were approved by the NYSDEC.

SITE HYDROGEOLOGY

Groundwater elevations were measured at each well location on several occasions. These elevations are included in Table 1. Groundwater elevations could not be obtained during February and March 1986 at monitoring wells MW-1 and MW-2 because of the location of the water table in the frozen soil area below land surface. Consequently the water surface was frozen in the well. Also, a water level was not obtained at monitoring well MW-1 on August 6, 1986 due to the destruction of the well.

Water levels have been plotted on Figures 4 and 5 for periods representing relatively dry conditions (07/09/86) and relatively wet weather conditions (04/17/86). Although the water levels are slightly higher during the wet weather conditions, contouring of the groundwater levels indicates that the configuration of the water table remains fairly constant year-round. The predominant groundwater flow direction is to the northwest and west. This direction seems likely given the location and direction of flow of the Niagara River. However, groundwater flow in the easternmost area of Site 110 is to the southeast and south toward the marshy area bordering this upslope area.

The water levels also indicate that the water table occurs predominantly in the fill material overlying glaciolacustrine clay in the vicinity of Landfills 109 and 110. Groundwater flow directions are basically a function of topography in these areas, flowing subparallel to topography along the top of the relatively less permeable glaciolacustrine clay.

In-situ permeability tests (slug tests) were performed on the subsurface materials in the vicinity of all monitoring wells except MW-1. Damage to MW-1 precluded slug testing. Horizontal hydraulic conductivities have been calculated for the fill material and underlying deposits and are listed in Table 2. The horizontal hydraulic conductivity calculations are shown in Appendix D. The average horizontal hydraulic conductivity is

TABLE 1

SURVEYED ELEVATIONS* AND WATER LEVEL MEASUREMENTS

TONAWANDA COKE CORPORATION

	TOP OF CASING ELEVATION	MEASURING POINT ELEVATION	LAND SURFACE ELEVATION	WATER LEVEL 11/25-26/85	WATER LEVEL 1/31/86	WATER LEVEL 2/27/86	WATER LEVEL 3/6/86	WATER LEVEL 3/18/86	WATER LEVEL 4/2/86
MW-1	40.1	40.0	38.9	38.1	37.9	-**	-**	-**	37.7
MW-2	43.0	42.9	40.9	40.6	40.0	-**	-**	40.4	39.9
MW-3	44.1	44.0	42.0	40.3	40.1	40.3	40.1	40.8	39.9
MW-4	36.6	36.5	34.0	33.0	32.9	33.3	33.6	33.5	32.8
MW-5	14.2	14.2	12.4	7.6	8.6	8.8	8.5	8.9	8.6
MW-6	13.4	13.3	10.6	6.8	6.8	7.3	7.1	7.5	7.0
MW-7	8.7	8.6	6.1	0.7	1.2	1.2	0.7	1.2	0.9

* Elevations are relative to feet above Niagara River elevation on the date of the survey
** Data not available - water frozen in well
*** Data not available - well destroyed

TABLE 1

SURVEYED ELEVATIONS* AND WATER LEVEL MEASUREMENTS

TONAWANDA COKE CORPORATION

	WATER LEVEL 4/17/86	WATER LEVEL 4/28/86	WATER LEVEL 5/12/86	WATER LEVEL 5/26/86	WATER LEVEL 6/9/86	WATER LEVEL 6/30/86	WATER LEVEL 7/9/86	WATER LEVEL 8/6/86
MW-1	38.4	37.9	37.8	37.9	38.0	37.2	36.9	N.A.***
MW-2	40.5	40.1	39.0	40.1	40.1	39.3	39.0	40.0
MW-3	40.8	40.1	39.5	40.3	40.2	39.7	39.0	39.4
MW-4	33.6	32.9	32.1	33.0	33.0	32.6	32.2	33.0
MW-5	9.1	8.8	8.5	8.8	8.7	8.1	7.6	7.9
MW-6	7.3	7.3	6.6	6.9	6.7	5.8	5.7	6.1
MW-7	1.3	1.1	0.8	1.2	2.3	1.1	0.8	0.7

*** Data not available - well destroyed

TABLE 2

HORIZONTAL HYDRAULIC CONDUCTIVITIES
TONAWANDA COKE CORPORATION

MONITORING WELL	HORIZONTAL HYDRAULIC CONDUCTIVITY (cm/sec)
MW-1	*
MW-2	3×10^{-4}
MW-3	2×10^{-4}
MW-4	6×10^{-6}
MW-5	2×10^{-5}
MW-6	3×10^{-5}
MW-7	3×10^{-5}

X Total = 1×10^{-4} cm/sec

* Damage to well precluded slug testing

MW-2

MW-1

Radio Tower

39.0

36.9

SHIE-110

N

15 20 25 30

32.2

MW-4

600

MW-3

39.0

10

5

7.6

MW-5

CONVEYOR

5.7

MW-6

0.8

SHIE 108

MW-7

NIAGARA RIVER

15

580

SAWYER

Sunset

LEGEND

Monitoring Well Location

36.9 Water Level Elevation #

35 Water Level Contour

Dashed Where Inferred

Groundwater Flow Direction Arrc

Inactive Hazardous Waste Landfill Area and Designation

Relative to Feet Above Niagara Rive Elevation on the Date of the Survey

FIGURE 4

WATER TABLE MAP

07/09/86

MALCOLM PIRNIE

1 INCH=500 FEET

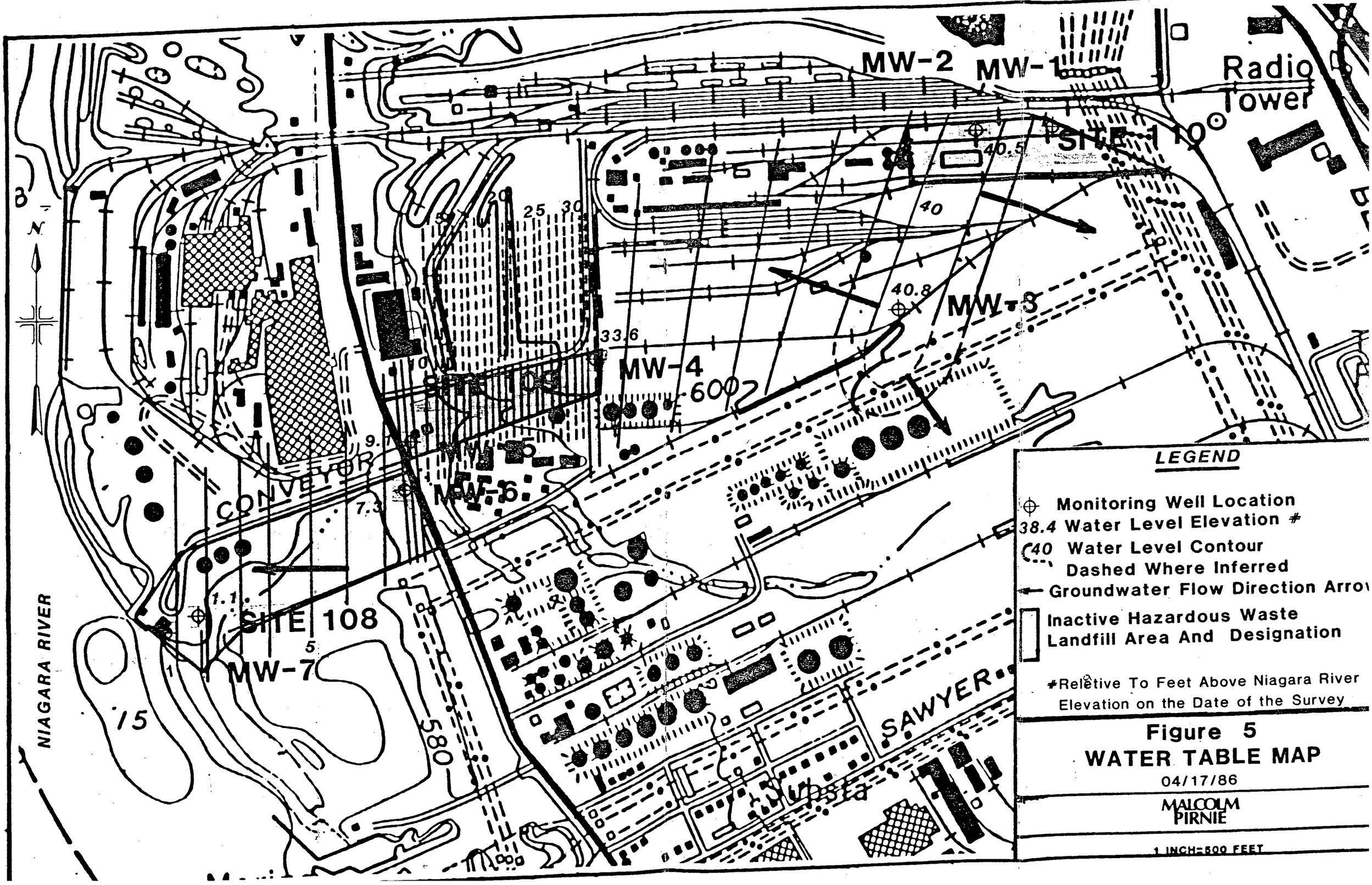


Figure 5
WATER TABLE MAP

04/17/86

MALCOLM PIRNIE

1 INCH=500 FEET

approximately 1 x 10^{-4} cm/sec. The horizontal hydraulic conductivities calculated at MW-2 and MW-3 are approximately an order of magnitude higher than the average horizontal hydraulic conductivity calculated for the deposits in the vicinity of MW-4, MW-5, MW-6, and MW-7. The location of the water table and the thickness of the fill material in the vicinity of MW-2 and MW-3 probably account for this variation. It is assumed, based on the subsurface characteristics, that the horizontal hydraulic conductivity near MW-1 would more closely resemble the calculated value for MW-2 and MW-3, rather than MW-4, MW-5, MW-6 or MW-7.

RESULTS OF TEST PIT SAMPLING

Results of the analysis of the composite sample collected from test pits at landfill 110 are summarized in Table 3. Complete analytical reports are provided in Appendix E. Some polynuclear aromatic hydrocarbons (PAH's) were found in the range of 1 to 7 mg/kg (wet weight). TOX was measured at 0.6 mg/kg. Phenols (0.30 mg/kg) and cyanide (4.96 mg/kg total) were also found at the site. All other parameters were recorded as less than the analytical detection limit.

RESULTS OF GROUNDWATER MONITORING

Complete analytical reports for the groundwater monitoring program are provided in Appendix F. A summary of the compounds detected during each sampling event is given in Tables 4 and 5. Results of the Library Search analysis are provided in Table 6.

During both the wet and dry sampling events, most of the contaminants were found at monitoring well location MW-3. Well MW-3 is not located on any of the landfill sites but is roughly upgradient of sites 109 and 110 (see Figures 2, 4 & 5). The compounds measured at MW-3 included cyanide, single ring aromatic hydrocarbons and PAH's. Concentrations of the PAH's ranged from 9 ug/l (chrysene) to 4,540 ug/l (naphthalene). In November 1985, Class GA standards and guidance values were exceeded at MW-3 for all detected compounds for which standards and guidance values exist. In August 1986, the chlorobenzene and fluorene guidance

TABLE 3

ANALYTICAL RESULTS OF COMPOSITE SOIL SAMPLE FROM TEST PITS AT LANDFILL 110

PARAMETER	RESULT (MG/KG WET WEIGHT)
Free Cyanide	0.76
Total Cyanide	4.96
Phenols	0.30
Benzene	LT 0.33
Toluene	LT 0.33
Ethylbenzene	LT 0.33
Para-Xylene	LT 0.33
Meta-Xylene/Chlorobenzene*	LT 0.33
Ortho-Xylene	LT 0.33
Para-dichlorobenzene	LT 0.33
Meta-dichlorobenzene	LT 0.33
Ortho-dichlorobenzene	LT 0.33
Acenaphthene	LT 0.50
Acenaphthylene	LT 0.63
Anthracene	LT 3.3
Benzo(a)Anthracene	LT 4.0
Benzo(a)Pyrene	LT 6.3
Benzo(b)Fluoranthene	LT 6.0
Benzo(ghi)Perylene	LT 3.2
Benzo(k)Fluoranthene	LT 23
Chrysene	LT 2.5
Dibenzo(a,h)Anthracene	LT 1.9
Fluoranthene	2.0
Fluorene	1.2
Indeno(1,2,3-c,d)Pyrene	LT 12
Naphthalene	1.4
Phenanthrene	6.7
Pyrene	3.6
TOX	0.6

* Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram.

TABLE 4

SUMMARY OF COMPOUNDS DETECTED IN GROUNDWATER SAMPLES* COLLECTED
NOVEMBER 1985 AND THEIR RELATIONSHIP TO ESTABLISHED STANDARDS OR GUIDANCES

TONAWANDA COKE CORPORATION

	CLASS GA STANDARD	GUIDANCES	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
Cyanide-Free			0.038	0.042	0.018	0.011	0.013	***	***
Cyanide-Total	.200		0.730	0.740	0.196	0.021	0.030	0.189	0.089
Phenols	.001		LT 0.010	0.060	0.520	LT 0.010	LT 0.010	LT 0.025	LT 0.025
Benzene	ND		LT 5.0	LT 5.0	84.0	LT 5.0	LT 5.0	LT 10	LT 10
Toluene		50	LT 5.0	LT 5.0	59.0	LT 5.0	LT 5.0	LT 10	LT 10
p-Xylene			LT 5.0	LT 5.0	19.0	LT 5.0	LT 5.0	***	***
m-Xylene/Chlorobenzene	ND	50**/20	LT 5.0	LT 5.0	62.0	LT 5.0	LT 5.0	LT 10	LT 10
O-Xylene			LT 5.0	LT 5.0	36.0	LT 5.0	LT 5.0	***	***
Acenaphthene		20	LT 7.0	LT 6.2	59.0	LT 6.0	LT 3.0	LT 10	LT 10
Acenaphthylene	NA	NA	LT 12.0	LT 11.0	450.0	LT 11.0	LT 5.0	LT 10	LT 10
Anthracene		50	LT 14.0	LT 15.0	173.0	LT 27.0	LT 12.0	LT 10	LT 10
Benzo(a)pyrene	ND		LT 26.0	LT 24.0	95.0	LT 58.0	LT 24.0	LT 10	LT 10
Benzo(ghi)perylene	NA	NA	LT 65.0	LT 59.0	78.0	LT 59.0	LT 24.0	LT 25	LT 25
Chrysene		0.002	LT 21.0	LT 19.0	9.0	88.0	LT 19.0	LT 10	LT 10
Fluoranthene		50	LT 14.0	LT 12.0	400.0	LT 16.0	LT 12.0	LT 10	LT 10
Fluorene		50	LT 14.0	LT 12.0	99.0	LT 26.0	LT 12.0	LT 10	LT 10
Indeno(1,2,3-c,d)pyrene		0.002	LT 250.0	LT 229.0	95.0	LT 229.0	LT 229.0	LT 25	LT 25
Naphthalene		10	LT 13.0	LT 10.0	4,540.0	LT 36.0	LT 6.0	LT 10	LT 10
Phenanthrene		50	LT 12.0	LT 15.0	1,100.0	LT 11.0	LT 11.0	LT 10	LT 10
Pyrene		50	LT 24.0	LT 22.0	302.0	LT 22.0	LT 22.0	LT 10	LT 10
TOX	NA	NA	0.62	10.0	61.0	1.90	0.19	***	***
Arsenic								0.013	0.022
Copper								0.02	LT 0.01
Nickel								LT 0.01	0.05
Zinc								0.18	0.14

* All results in ug/l, except Cyanides, Phenols and metals (mg/l)
** Applies to sum of isomers
*** Parameter not analyzed

TABLE 5

SUMMARY OF COMPOUNDS DETECTED IN GROUNDWATER SAMPLES* COLLECTED
AUGUST 1986 AND THEIR RELATIONSHIP TO ESTABLISHED STANDARDS OR GUIDANCES

TONAWANDA COKE CORPORATION

	CLASS GA STANDARD	GUIDANCES	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
Cyanide-T	.200		NA**	0.500	0.120	0.030	0.043	0.198	0.064
Phenols	.001		NA	LT 0.010	0.050	LT 0.010	LT 0.010	LT 0.010	LT 0.010
Benzene	ND		NA	LT 5.0	6.7	LT 5.0	LT 5.0	LT 5.0	LT 5.0
Toluene		50	NA	LT 5.0	11.0	LT 5.0	LT 5.0	LT 5.0	LT 5.0
Chlorobenzene		20	NA	LT 5.0	22.0	LT 5.0	LT 5.0	LT 5.0	LT 5.0
1,4-Dichlorobenzene	4.7***		NA	LT 5.0	29.0	LT 5.0	LT 5.0	LT 5.0	LT 5.0
Total Xylenes		50	NA	LT 15.0	45.0	LT 15.0	LT 15.0	LT 15.0	LT 15.0
Acenaphthylene	NA	NA	NA	LT 44.0	146.0	LT 41.0	LT 45.0	LT 42.0	LT 43.0
Fluroranthene		50	NA	LT 27.0	37.0	LT 24.0	LT 27.0	LT 25.0	LT 26.0
Fluorene		50	NA	LT 50.0	110.0	LT 46.0	LT 51.0	LT 48.0	LT 49.0
TOX	NA	NA	NA	2.73	11.3	6.01	2.07	0.59	0.93

* All results in ug/l, except Cyanide-T and Phenols (mg/l)
** Well damaged, no sample
*** Applies to sum of para (1,4-) and ortho (1,2-) isomers

TABLE 6

RESULTS OF LIBRARY SEARCH ANALYSIS ON TWO WELLS
(UG/L)

	MW-6	MW-7
Volatiles	None Detected	None Detected
Acid Extractables		None Detected
Tetradecanoic Acid	30	
Pentadecanoic Acid	14	
Hexadecanoic Acid	90	
Unknown	32	
Base/Neutral Extractables	None Detected	
Unknown		16
Unknown		22
Unknown		17
Pesticides/PCB's	None Detected	None Detected

values and the benzene and 1.4-dichlorobenzene standards were exceeded. The Class GA standard for phenols was exceeded on both sampling dates. The cyanide level at MW-3 (196 ug/l) was just below the standard (200 ug/l) in November 1985, but was lower (120 ug/l) in August 1986.

Monitoring wells MW-1 and MW-2 are located on Site 110 (Figure 2). Well MW-1 is slightly downgradient of MW-2 (Figures 4 & 5). High levels of cyanide (730-740 ug/l) were found in both wells in November 1985, and in MW-2 (500 ug/l) in August 1986 (MW-1 was not sampled in August 1986). The Class GA standard for cyanide (200 ug/l) was exceeded in each case. The Class GA standard for phenols (1 ug/l) was exceeded at MW-2 in November 1985 (60 ug/l) but phenols were not detected in August 1986. The only other parameter detected at Site 110 was TOX, and the levels were low.

Monitoring wells MW-4 and MW-5 are located upgradient and downgradient, respectively on Site 109. On both sampling dates, moderate levels of cyanide (21-43 ug/l), and low levels of TOX (0.2-6 ug/l) were found in both wells. Additionally, chrysene was measured at 88 ug/l at MW-4 in November 1985. The Class GA guidance value for chrysene is 0.002 ug/l. No other parameters were detected at this site.

Monitoring wells MW-6 and MW-7 are located on Site 108, with MW-7 being roughly downgradient of MW-6. On both sampling dates, moderate levels of cyanide were found at MW-7 (64-89 ug/l) and high levels were found at MW-6 (189-198 ug/l). The Class GA standard for cyanide (200 ug/l) was not exceeded. Low levels of TOX (0.59-0.93 ug/l) were measured at the site in August 1986. TOX was not analyzed in November 1985 at this site; however, some additional analyses were included. These were a Library Search for the organic scans, and metals analyses. The Library Search did not reveal any new contaminants of significance (Table 6). Results of the metals analyses showed low levels of arsenic, copper, nickel and zinc at the site.

RESULTS OF SURFACE WATER ANALYSIS

Surface water samples were taken from an on-site stream at location SW-2 on Site 109 (upstream), and locations SW-3 and SW-4

on Site 108 (downstream). The stream flows into the Niagara River just below SW-4. Location SW-1 represents ponded water from the marshy area above Site 110. During wet seasons, it is likely that water from SW-1 may flow east and then south to the aforementioned stream.

Complete analytical reports for the surface water samples are provided in Appendix G. A summary of the compounds detected during each sampling event is given in Tables 7 and 8. Cyanide and some single ring aromatic hydrocarbons were found at all the sampling locations. Additionally, some PAH's were found at location SW-1. During the August 1986 sampling, there was a general trend of concentrations increasing from upstream to downstream locations; however, this was not true during the November 1985 sampling. Data from that sampling event shows concentrations both increasing and decreasing. A flow value of approximately 150 gallons per minute was measured during the November 1985 sampling. Contaminant loadings to the Niagara River based on this flow are given on Table 9.

SITE ASSESSMENT - SITE 108

Site 108 was used for the disposal of coal tar, ash and cinders for 50 years. Coal tar was the waste of main concern due to the hazardous nature of its constituents (aromatic hydrocarbons and PAH's). Although up to 500 tons of coal tar are reported to have been buried on-site, none was encountered during the excavation of several test pits and monitoring well boreholes. Furthermore, no aromatic hydrocarbons or PAH's were detected in groundwater samples collected on-site during either the Phase II Investigation, or the previous USGS investigation.

TABLE 7

SUMMARY OF COMPOUNDS DETECTED* IN SURFACE
WATER SAMPLES COLLECTED
NOVEMBER 1985

TONAWANDA COKE CORPORATION

	SW-1	SW-2	SW-3	SW-4
Cyanide-Free	0.053	0.006	0.014	0.013
Cyanide-Total	0.057	0.060	0.049	0.033
Phenols	0.039	LT 0.010	0.065	0.104
Benzene	48.0	LT 5.0	7.7	7.0
Toluene	24.0	LT 5.0	20.0	14.0
m-Xylene/Chlorobenzene	9.0	LT 5.0	10.0	6.0
O-Xylene	7.0	LT 5.0	12.0	7.0
Acenophthene	11.0	LT 7.0	LT 16.0	LT 15.0
Acenophthylene	50.0	LT 12.0	LT 26.0	LT 26.0
Benzo(a)pyrene	6.0	LT 26.0	LT 118.0	LT 116.0
Naphthalene	210.0	LT 11.0	LT 10.0	LT 10.0
TOX	24.0	0.02	0.45	1.7

* All results in ug/l, except Cyanides and Phenol (mg/l)
** Applies to sum of isomers

TABLE 8

SUMMARY OF COMPOUNDS DETECTED* IN SURFACE WATER SAMPLES COLLECTED AUGUST 1986

TONAWANDA COKE CORPORATION

	SW-1	SW-2	SW-3	SW-4
Cyanide-T	0.013	0.010	LT 0.004	0.008
Phenols	0.610	LT 0.010	0.046	0.059
Benzene	33.0	LT 5.0	7.8	34.0
Toluene	12.0	LT 5.0	17.0	87.0
Ethylbenzene	LT 5.0	LT 5.0	LT 5.0	9.3
Chlorobenzene	LT 5.0	LT 5.0	14.0	30.0
1,4-Dichlorobenzene	LT 5.0	LT 5.0	9.5	22.0
Anthracene	208.0**	LT 48.0	LT 48.0	LT 44.0
Napthalene	1050.0	LT 82.0	LT 82.0	LT 76.0
TOX	38.7	1.89	3.07	3.56

* All results in ug/l, except Cyanide-T and Phenol (mg/l)

** Anthracene and Phenanthrene coelute as one peak on the gas chromatogram. The reported value could be a reflection of the concentration of one or both compounds.

TABLE 9

MASS LOADINGS OF CONTAMINANTS TO THE NIAGARA RIVER

PARAMETER	LBS/DAY
Cyanide-Free	0.023
Cyanide-Total	0.038
Phenols	0.148
Benzene	0.037
Toluene	0.091
m-Xylene/Chlorobenzene	0.032
o-Xylene	0.013
Ethylbenzene	0.013
1,4-Dichlorobenzene	0.024
TOX	0.005

Previous data collected by the USGS did, however show benzene and toluene in soil samples. Surface water collected during the Phase II study showed benzene, toluene, ethylbenzene, xylenes, chlorobenzene and 1,4-dichlorobenzene. Both groundwater and surface water samples showed high concentrations of cyanide on-site. Based on this data, cyanide is probably the contaminant of main concern, and surface water, the migration route of concern.

SITE ASSESSMENT - SITE 109

Site 109 was used for the disposal of non-hazardous wastes such as bricks and rubble. As would be expected, few contaminants were detected during either the current study or the previous USGS investigation. During the Phase II Investigation, cyanide was detected at moderate levels in the groundwater and surface water samples. Additionally, a high concentration of chrysene was measured at the upgradient well location.

SITE ASSESSMENT - SITE 110

Site 110 was used for the disposal of spent iron oxide and wood shavings. As with Sites 108 and 109, cyanide seems to be the contaminant of main concern. Cyanide levels at this site were particularly high; groundwater concentrations were 500-740 ug/l. The Class GA standard for cyanide in groundwater is 200 ug/l. No other parameters of concern were detected in the groundwater.

There was no surface water sample location on Site 110; however, location SW-1 was a ponded area slightly downslope of the site. Several contaminants were measured in the sample collected there including cyanide, aromatic hydrocarbons and PAH's.

SITE ASSESSMENT - ADDITIONAL DISCUSSION

As mentioned previously in this report, the majority of contamination was found at monitoring well MW-3. This well is not located on any of the sites and is upgradient of all of them. The contaminants found there include cyanide, aromatic hydrocarbons, and a fairly large number of PAH's.

SECTION 5

FINAL APPLICATION OF THE HAZARD RANKING SYSTEM

NARRATIVE SUMMARY

The Tonawanda Coke site consists of three inactive landfills located on River Road in the Town of Tonawanda, Erie County, New York. A USGS quadrangle portion with the site located on it is provided in Figure 1. One of the landfills (Site 108) covers approximately 20 acres; the other two landfills (Sites 109 and 110) cover approximately 10 acres each. The site is currently owned by Tonawanda Coke Corporation. However, most of the disposal activities occurred between 1930 and 1978, when the plant was owned by Allied Chemical Corporation.

It is reported that Allied Chemical Corporation disposed of fly ash, cinders and coal tar at Site 108. Site 109 received non-hazardous wastes including bricks, rubble and demolition debris. Spent iron oxide and wood shavings were landfilled at Site 110.

Investigations conducted at the site revealed cyanide contamination of the surface water and groundwater at all three landfills. The only other groundwater contaminants were low levels of TOX at all three sites and chrysene at an upgradient well on Site 109. Additional surface water contaminants detected included aromatic hydrocarbons at Sites 108 and 110, PAH's slightly downslope of Site 110, and TOX at all three sites.

Although site surface water discharges to the nearby Niagara River, there are no drinking water intakes within three miles downstream; thus there is zero population at risk.

The aquifer of concern consists of a permeable layer of fill located over a shallow (4-8 feet deep) layer of clay. The only wells in the area draw water for industrial uses (i.e., cooling water and truck washing). Undoubtedly, these wells draw from a much deeper aquifer; thus, the targets for the groundwater contamination migration route are zero.

HRS SCORE

An HRS score of 9.81 was calculated for Site 108. The component scores were 5.42 for the groundwater route, 16.08 for the surface water route, and zero for the air route. The HRS score for Site 109 was 4.18. The component scores were 4.24 for the groundwater route, 5.87 for the surface water route, and zero for the air route. For Site 110, an HRS score of 10.77 was calculated. The component scores were 4.08, 18.18 and zero for the groundwater, surface water and air routes, respectively. HRS worksheets and documentation records are included in Appendix H.

Appendices

APPENDIX A

USGS LETTER AND DATA OF 9/24/84

New York State Department of Environmental Conservation
600 Delaware Avenue, Buffalo, New York 14202-1073

Henry G. Williams
Commissioner

September 24, 1984

RECEIVED
SEP 26 1984
TONAWANDA COKE CORP.

Mr. J. D. Crane, President
Tonawanda Coke Corporation
Box A-500
Tonawanda, New York 14150

Dear Mr. Crane:

Re: Tonawanda Coke
Site Nos. 915055-a, 915055-b, and 915055-c

During the Summer of 1982 and the Spring of 1983, the United States Geological Survey (USGS) undertook the sampling of a number of inactive hazardous waste disposal sites within roughly a three mile wide band along the Niagara River as part of an overall investigation of toxic contaminant entry to the Niagara River. Your site was one of those sampled by the USGS as part of this program.

For your information, find enclosed a copy of a site map delineating the USGS sampling locations, and a copy of the analytical results from the sampling program.

Questions concerning the enclosed material can be directed to this office at 716/847-4590.

Yours truly,

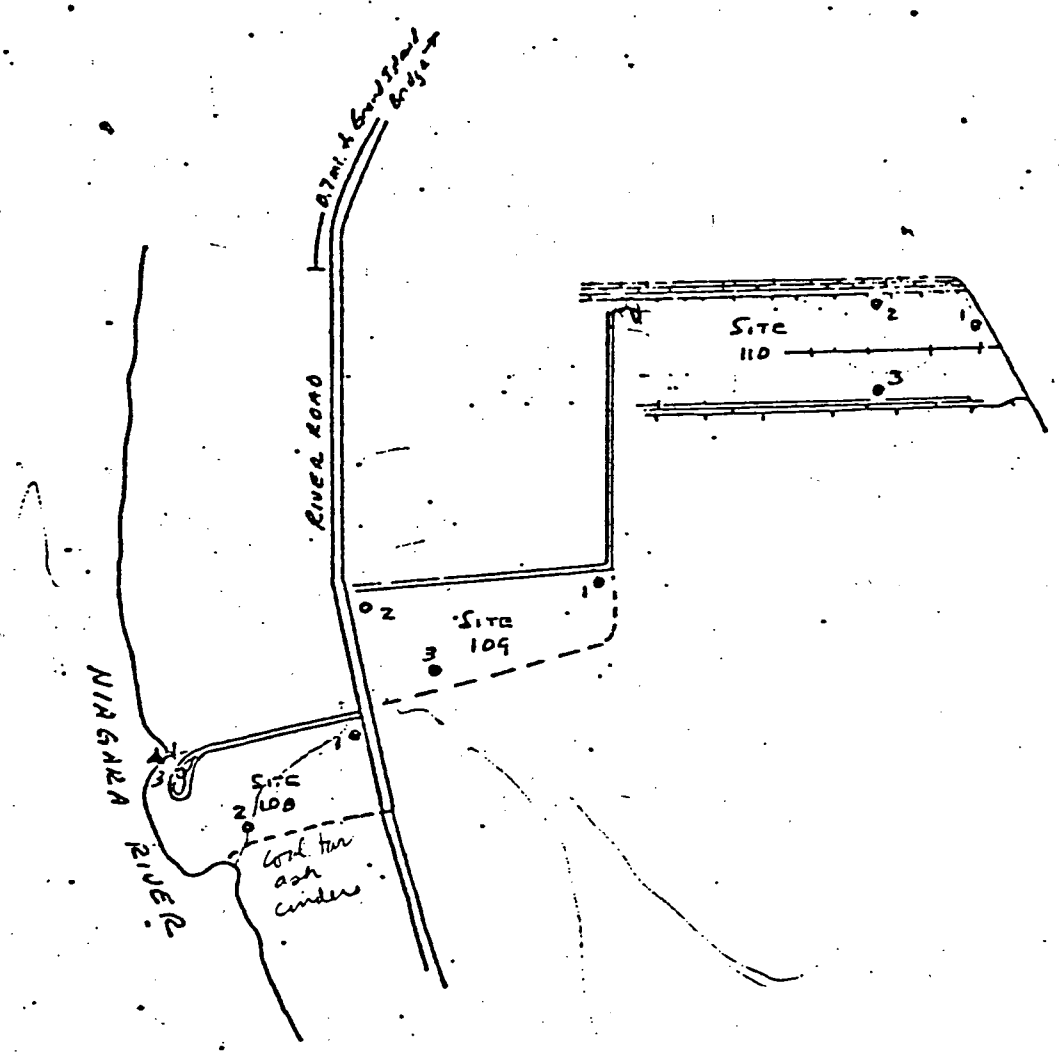
Peter J. Buechi, P.E.
Associate Sanitary Engineer

PJB:cag

Enclosure

78°56'10"

SW
SE

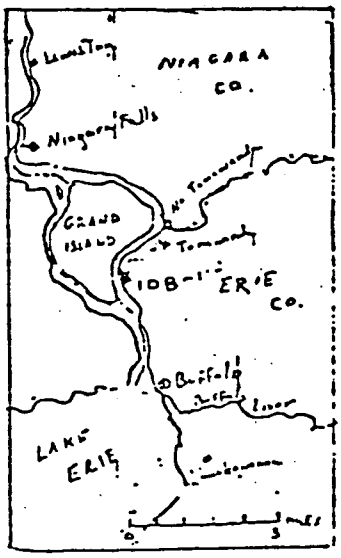


EXPLANATION

● 2 TEST BORING AND SUBSTRATE SAMPLE

▲ 4 SURFACE WATER SAMPLE

MAP NOT TO SCALE



Base from field sketch

Table 57.--Analyses of ground-water, surface-water, and substrate samples from Tonawanda Coke, site 108, Tonawanda, N.Y. (Locations shown in fig. 43.) Concentrations are in µg/L and µg/Kg; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.)

	Sample number and depth below land surface (ft)			
	Ground water	Substrates		Surface water
	1	2	3	4
First sampling (7-13-82)	16.5	6.0	8.0	
pH	6.8			7.2
Specific conductance (µ mho/cm)	1,480			1,020
Temperature (°C)	12.0			26.2
Inorganic constituents				
Cyanide	280†	—	—	30
Iron	170,000†	9,500,000	5,900,000	2,400†
Organic compounds				
Priority pollutant				
Diethylphthalate	LT	--	--	--
~~Naturally occurring compound~~ Compound potentially of natural origin				
Benzoic acid	LT	--	--	--

	Sample number	
	Substrates	
Second sampling (5-24-83)	2A	3A
Inorganic constituents		
Molecular sulfur[1]	11,000	--

[1] Tentative identification based on comparison with the National Bureau of Standards (NBS) library. No external standard was available. Concentration reported is semiquantitative and is based only on an internal standard. GC/MS spectra were examined and interpreted by GC/MS analysts.

† Exceeds USEPA criterion for maximum permissible concentration in drinking water.

* Compounds detected but not quantified--Holding time exceeded before GC/MS acid- and base-neutral extractable compounds were extracted.

** Surrogate recoveries were above or below the acceptance limits.

DRAFT

Tonawanda Coke, Site 106, Tonawanda, [illegible] trations are in µg/L and µg/Kg; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.)--continued

	Sample Number	
Second sampling (5-24-83)	2A	3A
Organic Compounds		
Priority pollutants		
Benzene	32.2**	134**
1,2-Trans-dichloroethene	—	468**
Ethylbenzene	28.5**	150**
Methylene chloride	45.0**	—
Tetrachloroethene	—	33.0**
Toluene	16.1**	363**
Vinylchloride	--	2,180**
Acenaphthene	*	—
Fluoranthene	*	—
Naphthalene	*	*
Bis(2-ethylhexl)phthalate	*	—
Benzo(a)anthracene	*	--
Benzo(b)fluoranthene and benzo(k)fluoranthene	*	--
Acenaphthylene	*	—
Benzo(ghi)perylene	*	—
Fluorene	*	—
Indeno(1,2,3-cd)pyrene	*	—
Pyrene	*	—
Nonpriority pollutants		
Acetone	—	352**
Carbondisulfide	44.2**	247**
O-xylene	126**	530**
Dibenzofuran	*	--
2-Methylnaphthalene	*	—
2,3-Dihydro-1H-indene[1]	*	—
1H-Indene[1]	*	—
Cyclohexane[1]	—	*
Methylcyclopentane[1]	—	*
1,1,3-Trimethyl-cyclohexane[1]	—	*
2,2,3,4-Tetramethylpentane[1]	—	*
1-Ethyl-3-methyl-trans-cyclopentane[1]	--	*
2,6,6-Trimethyl-bicyclo-(3.1.1)hepten-2-ene[1]	—	*
Unknown hydrocarbons[1]	--	*

DRAFT

~~Allied Chemical~~ Tonawanda Coke, Inc., Tonawanda, N.Y. (Locations shown in Fig. 2.) Concentrations are in µg/L; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.)

	Sample number and depth below land surface (ft)	
	Surface water	Ground water
	1	2
First sampling (7-14-82)	0.2	11.0
pH	3.2	6.8
Specific conductance (umho/cm)	3,000	1,600
Temperature (°C)	21.0	13.0
Inorganic constituents		
Aluminum	1,300	
Antimony	--	
Arsenic	—	
Barium	284	
Beryllium	--	
Cadmium	3	
Chromium	1,100†	
Cobalt	65	
Copper	724	
Iron	280,000†	
Lead	120†	
Manganese	5,040	
Mercury	0.3	
Nickel	244	
Selenium	—	
Silver	—	
Tullerium	—	
Vanadium	—	
Zinc	192	
Organic compounds		
Priority pollutant		
Di-n-butylphthalate	LT	—
Nonpriority pollutant		
1,2-dimethylbenzene[1]	26	—
~~Possibly naturally occurring compound~~ Compound potentially of natural origin		
Undecane[1]	—	5.0

[1] Tentative identification based on comparison with the National Bureau of Standards (NBS) library. No external standard was available. Concentration reported is semiquantitative and is based only on an internal standard. GC/MS spectra were examined and interpreted by GC/MS analysts.

† Exceeds USEPA criterion for maximum permissible concentration in drinking water.

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Table 58.--Analyses of surface-water, ground-water and substrate samples from Tonawanda Coke, site 109, Tonawanda, N.Y. (Locations shown in fig. 48.) Concentrations are in µg/L; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.) --continued

	Sample number and depth below land surface (ft)		
	Substrates		
	1A	2A	3A
Second sampling (5-24-83)	2.0	4.0	3.0
Inorganic constituent			
Molecular sulfur[1]	--	1,900	—
Organic compounds			
Priority pollutants			
Benzene	5.7**	8.3	—
1,1,1-Trichloroethane	—	--	LT
Toluene	3.9**	LT	8.2**
BMC-alpha	—	LT	LT
Acenaphthene	*	*	—
Fluoranthene	*	*	*
Naphthalene	*	*	*
Bis(2-ethylhexl)phthalate	*	*	*
Butylbenzlphthalate	—	*	—
Di-n-butylphthalate	—	*	—
Diethylphthalate	—	*	—
Benzo(a)anthracene	—	*	*
Benzo(a)pyrene	*	*	*
Benzo(b)fluoranthene and benzo(k)fluoranthene	*	*	*
Chrysene	*	--	—
Acenaphthylene	*	*	*
Benzo(ghi)perylene	*	*	*
Fluorene	*	*	*
Dibenzo(a,h)anthracene	*	*	*
Indeno(1,2,3-cd)pyrene	--	*	*
Pyrene	*	*	*

[1] Tentative identification based on comparison with the National Bureau of Standards (NBS) library. No external standard was available. Concentration reported is semiquantitative and is based only on an internal standard. GC/MS spectra were examined and interpreted by GC/MS analysts.

* Compounds detected but not quantified--Holding time exceeded before GC/MS acid- and base-neutral extractable compounds were extracted.

** Surrogate recoveries were above or below the acceptance limits.

trations are in µg/L; dashes indicate that concentr...
found, LT indicates it was found but below the quantifiable detection limit.)--continued

	Sample number and depth below land surface (ft)		
	Substrates		
	1A	2A	3A
Second sampling (5-24-83)	2.0	4.0	3.0
Organic compounds (continued)			
Nonpriority pollutants			
Carbondisulfide	2.9**	33.4	37.9**
O-xylene	--	--	5.3**
Benzoic acid	*	—	—
2-Methylphenol	—	LT	—
Dibenzofuran	*	*	*
2-Methylnaphthalene	*	*	*
1,3-Dimethylbenzene[1]	—	--	*
1,4-Dimethylbenzene[1]	—	--	*
1,Methylnaphthalene[1]	—	--	*
1,8-Dimethylnaphthalene[1]	—	—	*
1,6,7-Trimethylnaphthalene[1]	—	—	*
7-Octadecanol[1]	—	*	—
Hexadecanol[1]	--	*	—
Hexadecanoic acid[1]	*	—	—
2-Octadecanol[1]	*	—	—
Perylene[1]	*	—	—
9-Methylphenanthrene	—	--	*
Unknown hydrocarbons[1]	*	—	*
Unknown PAH[1]			*
~~Possibly naturally occurring compound~~ Compound potentially of natural origin			
2,6-Dimethylundecane[1]	—	—	*

[1] Tentative identification based on comparison with the National Bureau of Standards (NBS) library. No external standard was available. Concentration reported is semiquantitative and is based only on an internal standard. GC/MS spectra were examined and interpreted by GC/MS analysts.

* Compounds detected but not quantified--Holding time exceeded before GC/MS acid- and base-neutral extractable compounds were extracted.

** Surrogate recoveries were above or below the acceptance limits.

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Table 59.--Analyses of substrate samples from Tonawanda Coke Site No., Tonawanda, N.Y., May 24, 1983. (Locations shown in fig. 44 & 45. Concentrations are in µg/Kg; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.)

	Sample number and depth below land surface (ft)			
	1	(split)	2	3
	4.0		4.0	4.0
Organic compounds				
Priority pollutants				
Acrolein	LT	(--)	--	—
Benzene	64.0**	(--)	3,560**	77.1**
1,1,1-Trichloroethane	LT	(10.8**)	—	3.0**
Cis,1,3-Dichloropropene	—		—	5.9**
Ethylbenzene	LT		737**	—
Methylene chloride	81.4**	(83.9**)	314**	160**
Toluene	5.97**	(21.0**)	1,420**	16.8**
Dieldrin	—	(31)	—	—
Heptachlor epoxide	22**	(--)	—	—
Acenaphthene	—	(*)	—	—
3,4-Dinitrotoluene	—	(*)	—	—
Fluoranthene	*	(*)	--	*
Naphthalene	*	(*)	—	*
N-nitrosodidiphenylamine	—	(*)	—	—
Bis(2-ethylhexl)phthalate	*	(*)	--	—
Di-n-butylphthalate	—	(*)	—	—
Di-n-octylphthalate	*	(--)	--	—
Diethylphthalate	—	(*)	—	—
Benzo(a)pyrene	*	(*)	--	*
Benzo(b)fluoranthene and benzo(k)fluoranthene	*	(*)	--	*
Chrysene	*	(--)	—	*
Acenaphthylene	—	(*)	—	*
Benzo(ghi)perylene	*	(*)	—	*
Fluorene	*	(*)	—	*
Phenanthrene	*	(*)	—	*
Dibenzo(a,h)anthracene	*	(*)	--	*
Indeno(1,2,3-cd)pyrene	*	(--)	--	*
Pyrene	*	(*)	—	*

[1] Tentative identification based on comparison with the National Bureau of Standards (NBS) library. No external standard was available. Concentration reported is semiquantitative and is based only on an internal standard. GC/MS spectra were examined and interpreted by GC/MS analysts.

* Compounds detected but not quantified--Holding time exceeded before GC/MS acid- and base-neutral extractable compounds were extracted.

** Surrogate recoveries were above or below the acceptance limits.

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Table 59.--Analyses of substrate samples from Tonawanda Coke, Site 110, Tonawanda, N.Y., May 24, 1983. (Locations shown in fig. 49.45) Concentrations are in µg/Kg; dashes indicate that constituent or compound was not found, LT indicates it was found but below the quantifiable detection limit.)--continued

	Sample number and depth below land surface (ft)			
	1	(split)	2	3
	4.0		4.0	4.0
Organic compounds (continued)				
Nonpriority pollutants				
Acetone	—	(164**)	379**	—
Carbondisulfide	180**	(614**)	620**	161**
2-Hexanone	—	(--)	--	17.1**
4-Methyl-2-pentanone	—	(--)	—	6.3**
Styrene	--	(--)	86.1**	--
O-xylene	4.7**	(25.5**)	238**	17.1**
4-Chloroaniline	*	(--)	—	—
Dibenzofuran	--	(*)	—	*
2-Methylnaphthalene	*	(*)	--	*
4-Methylphenanthrene[1]	—	(*)	--	—
Tetrahydrofuran[1]	—	(--)	--	*
Perylene	--	(*)	--	—
1-Methylnaphthalene[1]	*	(--)	—	—
1,8-Dimethylnaphthalene[1]	*	(--)	--	—
Thiophene[1]	--	(--)	*	--
2-Methylbutane[1]	—	(--)	--	*
Cyclohexane[1]	—	(--)	--	*
Unknown hydrocarbons[1]	*	(*)	--	—

DRAFT

APPENDIX B

DESCRIPTION OF TEST PIT LITHOLOGIES

LANDFILL 109

Interval (Feet Below Land Surface)	Description
	Test Pit A*
0-3	Fill, Black and Dark Gray, Bricks, Coal Fragments, Dark Gray Silty Clay, Water occurs at 3'
3-5	Clay, Reddish-Brown, Silty, Block Texture
	Test Pit B*
0-6	Fill, Dark Gray and Black, Silty Clay and Coal, Bricks, Cinders, Water occurs at 6'
6-8	Clay, Reddish-Brown, Silty, Block Texture
	Test Pit C
0-1.5	Clay, Dark Gray, Silty, High Organic Content
1.5-2	Clay, Reddish-Brown, Silty, Block Texture
	Test Pit D
0-1	Fill, Reddish-Brown, Cinders, Ash, Coal, Silty Clay
1-2	Fill, Black, Coal, Ash, Cinders
2-3	Clay, Gray, VF Sandy, Silty, Streaks of Black Organics
3-4	Clay, Gray, Mottled, Iron-stained
4-5	Clay, Reddish-Brown, Silty
	Test Pit E*
0-1	Fill, Coal, Ash, Cinders, Water occurs at 1'
1-5	Fill, Cinders, Bricks, and Silty Clay
5-6	Clay, Gray

* Piezometer ~~Monitoring Well~~ Installed

LANDFILL 108

Interval (Feet Below Land Surface)	Description
	Test Pit F*
0-2	Fill, Brown, Bricks, Cinders, Ash
2-3	Fill, Black, Coal, Cinders, Ash, Water Occurs at 2'
3-5	Clay, Gray, Silty, VF Sandy, Iron-Stained, Mottled
5-6	Clay, Gray, Silty, Saturated, Plastic
	Test Pit G*
0-5	Fill, Black, Metal Filings, Metal Strapping, Wire
5-6	Clay, Gray, VF Sandy, Silty, Iron-Stained, Mottled
	Test Pit H*
0-1	Clay, Dark Gray, Silty (Topsoil)
1-2.5	Fill, Concrete Slabs With Rebar, Pipes, Bricks, Water occurs at 1'
2.5-6	Fill, Black, Foundry Sand, Blasting Dust
6-7	Clay, Brown, Silty With Blocky Texture

* Piezometer ~~Monitoring Well~~ Installed

LANDFILL 110

Interval (Feet Below Land Surface)	Description
	Test Pit I*
0-3	Fill, Black, Coal, Ash, Cinders, Water Just Below Surface
3-5	Clay, Gray-Brown, Very Stiff, Iron-Stained, Mottled, Black Organic Streaks
	Test Pit J*
0-4	Fill, Black, Coke, Cinders, Odoriferous (Sulfur), Water at Surface
4-5	Fill, Reddish-Brown, Cinders, Coke, Saturated
5-6	Clay, Gray, Iron-Stained, Mottled, Black Organic Streaks
	Test Pit K*
0-1.5	Fill, Black, Cinders, Coke, Bricks, Silty Clay, Water occurs at 1.5'
1.5-4	Clay, Gray-Brown, Very Stiff, Mottled
	Test Pit L*
0-5	Fill, Black, Cinders, Coke, Water occurs at 2'
5-6	Clay, Gray, Stiff, Black Organic Streaks

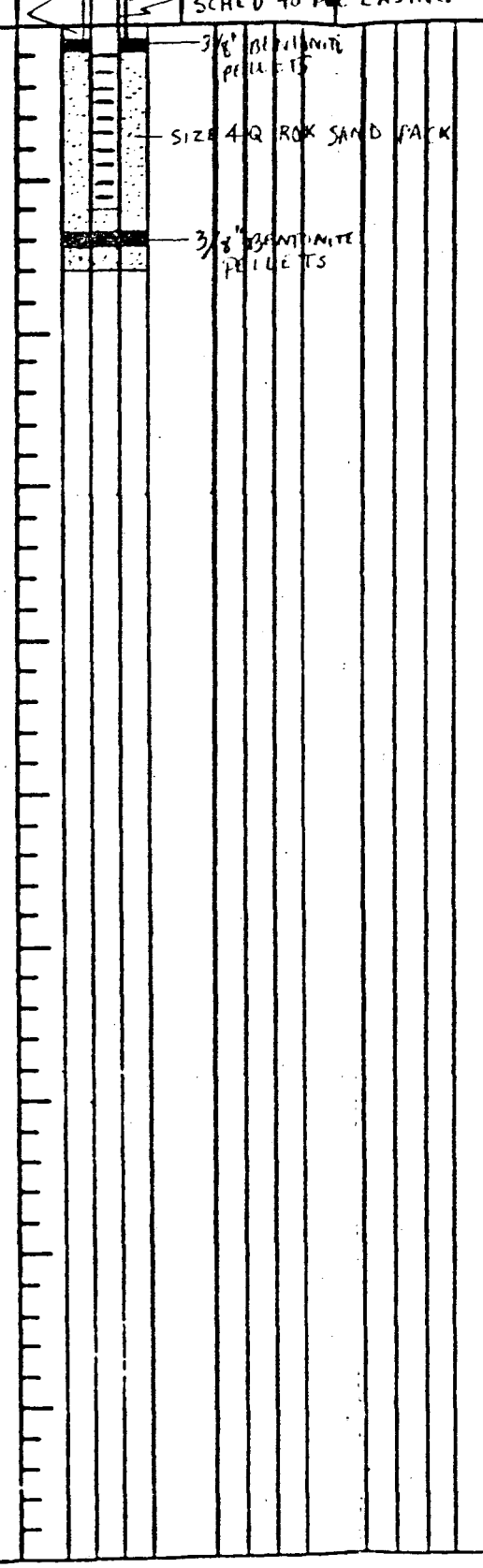
* Monitoring Well Installed

APPENDIX C

BORING LOGS

DEPTH (FEET)	ELEVATION (MSL)	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT.	SOIL or ROCK DESCRIPTION	UNIFIED SOIL CLASS
		X	B-5	5-6	FILL, NO-NI COKE, SOOT, AND SANDY FILL	
		X	S-1	5-6	N8 to 5Y 8/1, WET 0.5-2.0' BLS	
2		X	B-5	4-4	FILL, WET, CLAYEY 5Y 3/2 to 5Y5/6, CRSE	
		X	S-2	2-2	SAND, GRAVEL, BRICKS	
4		X	B-5	2-4	CLAY AND CRSE GRAVEL FILL AS ABOVE WET	
		X	S-3	7-13	CLAY, 10R 4/6 to 10R 3/4, DESICCATION	
6		X	B-5	6-7	CRACKS FILLED W/N7 to N8 CLAY, MINOR GRAVEL	
		X	S-4	21-28	CLAY, AS ABOVE, VERY STIFF	
8		X	B-5	13-23	CLAY, AS ABOVE, DESICCATION CRACKS	
		X	S-5	30-40	ABSENT 9-10' BLS, MINOR CRSE SAND	
10						

MONITOR CONSTRUCTION DETAILS



PERMEABILITY (cm/sec)	DOWN HOLE PROBE ANALYSES: Temp. (°C)	Conductance (umho/cm)	pH (S.U.)	NOTES: Hnu Readings
				0.4 ppm
				0.6 ppm
				0.6 ppm
				0.8 - 1 ppm
				0.4 ppm

Surface Elevation _____ Classified By Mark D. Wilder

Date Installed 11-19-85 C&S Inspector Mark D. Wilder

Driller Buffalo Drilling Co.

Method Hollow Stem Auger / Split Spoon Sample Collection

NOTE: DATA ON THIS SUMMARY SHEET COMPOSITED FROM DRILLER'S LOGS & C&S COLLECTED DATA & FIELD OBSERVATIONS

PROJECT: Tonawanda Coke Corporation
Phase II 405-231-001-191

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088

GROUNDWATER MONITOR SUMMARY SHEET

LOCATION NO. MW-1

SHEET 1 OF 7

DEPTH (FEET)	ELEVATION (MSL)	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT.	SOIL or ROCK DESCRIPTION	UNIFIED SOIL CLASS
			B-6	3-5	FILL, NO, COKE, SOOT, ASH, GRANULAR AND COARSE	
2			S-1	5-7		
			B-6	10-13	FILL, AS ABOVE, WET, COARSER AND LESS COKE WITH DEPTH, BRICK, GRAVEL <.5" DIAM.	
4			S-2	10-5		
			B-6	1-2	CLAY, 10YR 5/4 to 10YR 4/2 AND MINOR 10YR 6/6, MINOR FILL	
			S-3	3-4		
6			B-6	5-12	CLAY, 10R 4/6 TO 10R 3/4, GRAVEL, <1" DIAM., DESICCATION CRACKS ABUNDANT, FILLED W/N7 TO N8 CLAY	
			S-4	24-24		
8			B-6	13-18	CLAY, AS ABOVE, W/ CRSE SAND (VY MING) DESICCATION CRACKS ABSENT	
			S-5	28-36		
10						

MONITOR CONSTRUCTION DETAILS

PERMEABILITY (cm/sec)	DOWN HOLE PROBE ANALYSES			NOTES
	Temp. (°C)	Conductance (umho/cm)	pH (S.U.)	Hnu Readings
				0.5 ppm
				0.7 ppm
				0.8 ppm
				1.0 to 1.2 ppm
				1.0 ppm

Surface Elevation _____ Classified By Mark D. Wilder

Date Installed 11-19-85 C&S Inspector Mark D. Wilder

Driller Buffalo Drilling Co.

Hollow Stem Auger / Split Spoon Sample Collection

NOTE: DATA ON THIS SUMMARY SHEET COMPOSITED FROM DRILLER'S LOGS & C&S COLLECTED DATA & FIELD OBSERVATIONS

PROJECT: Tonawanda Coke Corporation
Phase II 405-231-001-191

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088

GROUNDWATER MONITOR SUMMARY SHEET

LOCATION NO. MW-2

SHEET _____ OF _____

DEPTH (FEET)	ELEVATION (MSL)	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT.	SOIL or ROCK DESCRIPTION	UNIFIED SOIL CLASS
		X	B-7	3-4	FILL, NO, COAL CHUNKS, COKE (GRANULAR), SOOT, SLAG	
2		X	S-1	6-6		
		X	B-7	4-5	FILL, NO, COKE (GRANULAR), IRON OXIDE STAINED SLAG, CINDERS, ASH, WET	
4		X	S-2	6-13		
		X	B-7	10-6	FILL AND TAR (VY VISCOUS), FILL AS ABOVE	
6		X	S-3	6-4		
		X	B-7	4-11	CLAY, 5Y 3/2 to 5Y 5/2, GRAVEL	
8		X	S-4	20-14	CLAY, 10R 4/6 to 10R 3/4, GRAVEL <0.5", CRSE SAND	
		X	B-7	7-16	CLAY, AS ABOVE, VY STIFF, MINOR DESICCATION CRACKS (FILLED W/ NT TO NS (CLAY), MINOR GRAVEL	
10		X	S-5	23-39		

MONITOR CONSTRUCTION DETAILS

PERMEABILITY (cm/sec)	DOWN HOLE PROBE ANALYSES			NOTES
	Temp. (°C)	Conductance (umho/cm)	pH (S.U.)	Hnu Readings
				1.0 - 2.5 ppm
				0.5 ppm
				10.0 - 13.5 ppm
				1.8 ppm
				3.8

Surface Elevation _____ Classified By Mark D. Wilder

Date Installed 11-20-85 C&S Inspector Mark D. Wilder

Driller Buffalo Drilling Co.

Hollow Stem Auger / Split Spoon Sample Collection

NOTE: DATA ON THIS SUMMARY SHEET COMPOSITED FROM DRILLER'S LOGS & C&S COLLECTED DATA & FIELD OBSERVATIONS

PROJECT: Tonawanda Coke Corporation
Phase II 405-231-001-191

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088

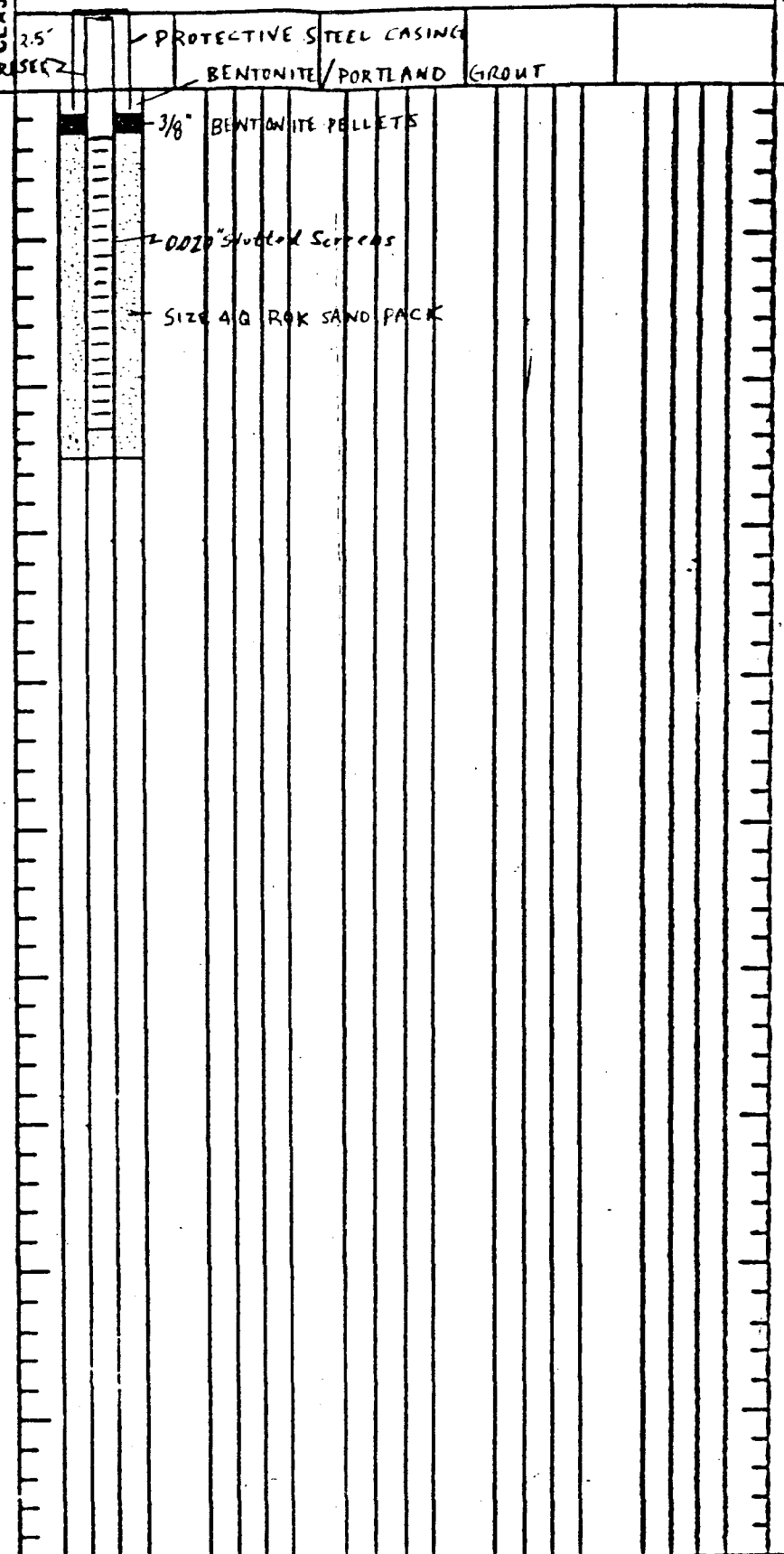
GROUNDWATER MONITOR SUMMARY SHEET

LOCATION NO. MW-3

SHEET _____ OF _____

DEPTH (FEET)	ELEVATION (MSL)	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT.	SOIL or ROCK DESCRIPTION	UNIFIED SOIL CLASS
		X	B-1	2-3	FILL, WET, 5YR 2/1 TO N2, SOOT, CINDERS,	
		X	S-1	2-8	COKE, GRAVEL AND SAND SIZE PARTICLES	
2		X	B-1	6-10	CLAY, 10R 4/6 TO 10R 3/4, STIFF,	
		X	S-2	14-27	DESICCATION CRACKS FILLED WITH N7 TO N8 CLAY	
4		X	B-1	15-24	CLAY, AS ABOVE, MINOR <0.5 inch diam.	
		X	S-3	38-45	GRAVEL	
6		X	B-1	17-27	CLAY, AS ABOVE, TRACE GRAVEL SIZE	
		X	S-4	40-55	DECREASING, MINOR 5YR3/4 CLAY	
8		X	B-1	14-24	CLAY, 5YR 3/4, VERY STIFF, MINOR	
		X	S-5	37-47	GRAVEL	
10		X	B-1	14-22	CLAY, AS ABOVE	
		X	S-6	42-44		
12						

MONITOR CONSTRUCTION DETAILS



PERMEABILITY (cm/sec)	DOWN HOLE PROBE ANALYSES: Temp. (°C)	Conductance (umho/cm)	pH (S.U.)	NOTES: Hnu Readings
				0.2 - .4 ppm
				0.2 - .4 ppm
				0.2 - .4 ppm
				0.2 - .4 ppm
				0.2 - .4 ppm
				0.2 - .4ppm

Surface Elevation _____ Classified By Mark D. Wilder

Date Installed 11-15-85 C&S Inspector Mark D. Wilder

Driller Buffalo Drilling Co.

Method Hollow Stem Auger / Split Spoon Sample Collection

NOTE: DATA ON THIS SUMMARY SHEET COMPOSITED FROM DRILLER'S LOGS & C&S COLLECTED DATA & FIELD OBSERVATIONS

PROJECT: Tonawanda Coke Corporation
Phase II 405-231-001-191

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088

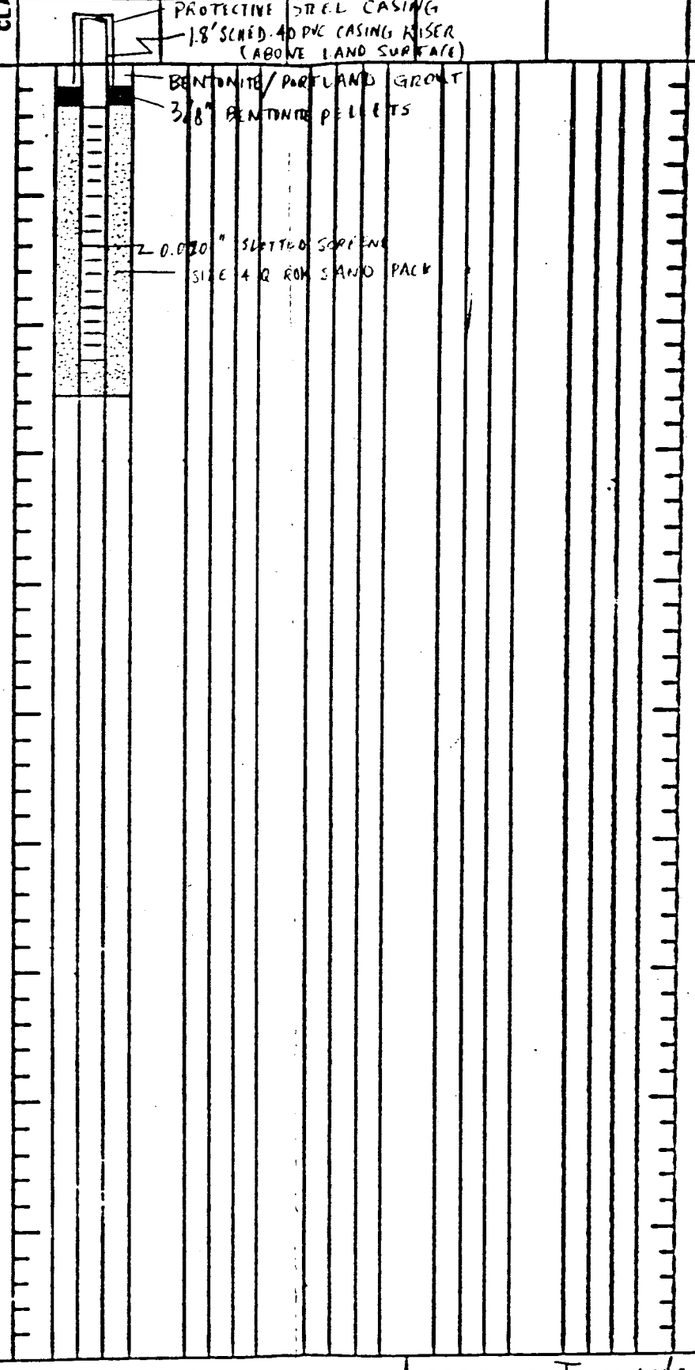
GROUNDWATER MONITOR SUMMARY SHEET

LOCATION NO. MW-4

SHEET _____ OF _____

DEPTH (FEET)	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT.	SOIL or ROCK DESCRIPTION	UNIFIED SOIL CLASS
		B-2	8-24	TOP SOIL; CLAY, 10YR 2/2 TO 5YR 3/4, SILT, GRAVEL, GRASS, ROOT	
		S-1	22-17	FILL, MOIST, CLAY AS ABOVE, BRICK, COAL ASH, SLAG, GRAVEL AND SAND SIZE PARTICLES	
2		B-2	100-	FILL, BRICK, CONCRETE (SLAB)	
		S-2		CLAY, 10YR 2/2 TO 5YR 3/4, MINOR GRAVEL <0.5" DIAM.	
4		B-2	3-4	CLAY, 10R 3/4 TO 10R 4/6 AND MINOR 10YR 2/2,	
		S-3	9-14	MINOR CRSE SAND AND GRAVEL, SA TO SR	
6		B-2	14-16	CLAY, AS ABOVE, MINOR GRAVEL < 1.0" DIAM.	
		S-4	18-25	DESICCATION CRACKS FILLED WITH NONTONT CLAY	
8		B-2	13-18	CLAY, AS ABOVE, VERY STIFF, GRAVEL	
		S-5	25-35	TRACE, MINOR 5YR 3/4 to 10YR 4/2 - 2/2	
10		B-2	13-14	CLAY, 10YR 4/2 TO 10YR 2/2 AND 5YR 3/4	
		S-6	20-25	TRACE GRAVEL, MINOR 10R 3/4 to 10R 4/6	
12					

MONITOR CONSTRUCTION DETAILS



PERMEABILITY (cm/sec)	DOWN HOLE PROBE ANALYSES: Temp. (°C)	Conductance (umho/cm)	pH (S.U.)

NOTES

Hnu Readings

0.2 to 0.4 ppm
0.2 to 0.4 ppm
3.0 to 4.0 ppm
4.0 to 60 ppm
5.0 to 100 ppm
1.2 to 1.4 ppm

Surface Elevation _____ Classified By Mark D. Wilder

Date Installed 11-15-85 C&S Inspector Mark D. Wilder

Driller Buffalo Drilling Co.

Method Hollow Stem Auger / Split Spoon Sample Collection

NOTE: DATA ON THIS SUMMARY SHEET COMPOSITED FROM DRILLER'S LOGS & C&S COLLECTED DATA & FIELD OBSERVATIONS

PROJECT: Tonawanda Coke Corporation
Phase II 405-231-001-191

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088

GROUNDWATER MONITOR SUMMARY SHEET

LOCATION NO. MW-5

SHEET _____ OF _____

DEPTH (FEET)	ELEVATION (MSL)	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT.	SOIL or ROCK DESCRIPTION	UNIFIED SOIL CLASS
			10BU	9-12	FILL, ASH, SLAG, CLAY 10YR 4/2 TO 10YR 2/2,	
			S-1	50/1"	SAND AND GRAVEL SIZE PARTICLES	
2			10BU	Auger	FILL, AS ABOVE	
			S-2	Spoils		
4			10BU	4-5	CLAY, 5Y 5/2 TO 5Y 3/2, SANDY, SILTY,	
			S-3	5-6	MINOR 5YR 5/6, ORGANIC VEGETATION	
6			10BU	3-4	CLAY, AS ABOVE	
			S-4	5-5	CLAY, 10R 4/6 AND MINOR 5Y 5/2-3/2, SILTY, FINE SANDY, MINOR GRAVEL, MOIST	
8			10BU	2-[illegible]	CLAY, N3 TO N5 AND 5Y 2/2, ORGANICS ABUNDANT BOG	
			S-5	3-5	CLAY, 5Y 3/2, SAND, FINE GRAINED AND SILT	
10			10BU	1-3	SAND, WET, VY CLAYEY, 5G 2/1 TO 5GY2/1,	
			S-6	3-4	SILTY.	
12			10BU	2-4	SAND, WET, VY CLAYEY, 5Y 4/1, FINE	
14			S-7	5-5	GRAINED	

MONITOR CONSTRUCTION DETAILS

PERMEABILITY (cm/sec)	DOWN HOLE PROBE ANALYSES Temp. (°C)	Conductance (umho/cm)	pH (S.U.)

NOTES

Hnu Readings

- 5 - 12 ppm
- .8 - 1 ppm
- 5 - 7 ppm
- 2.5 - 3 ppm
- 15 - 18.5 ppm
- 3.4 ppm
- 1.0 ppm

Surface Elevation _____ Classified By Mark D. Wilder

Date Installed 11-18-85 C&S Inspector Mark D. Wilder

Driller Buffalo Drilling Co.

Method Hollow Stem Auger / Split Spoon Sample Collection

NOTE: DATA ON THIS SUMMARY SHEET COMPOSITED FROM DRILLER'S LOGS & C&S COLLECTED DATA & FIELD OBSERVATIONS

PROJECT: Tonawanda Coke Corporation
Phase II 405-231-001-191

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088

GROUNDWATER MONITOR SUMMARY SHEET

LOCATION NO. MW-6

SHEET _____ OF _____

DEPTH (FEET)	ELEVATION (MSL)	SAMPLES	SAMPLE NO.	SAMPLER BLOWS/FT.	SOIL or ROCK DESCRIPTION	UNIFIED SOIL CLASS
			B-8	4-4	FILL, NO, AND TOP SOIL. GRASS, ROOTS, SLAG	
2			S-1	3-8	CLAY, 10R 4/6 TO 10R 3/4, MINOR < FSL SAND.	
			B-8	3-9	FILL AND CLAY, AS ABOVE, ASH, COKE, SLAG, WET	
4			S-2	11-8	3.5 TO 4.0 FEET BLS	
			B-8	5-6	CLAY, 10R 4/6 TO 10R 3/4, AND GRAVEL	
6			S-3	3-3	< .25" DIAM.	
			B-8	2-2	SAND, CLAYEY, 5Y 3/2, TRACE ORGANIC	
8			S-4	3-4	VEGETATION, FINE TO MED GRAINED, ROUNDED TO SR	
			B-8	1-2	SAND, AS ABOVE, CLAY CONTENT AND	
10			S-5	3-2	ORGANIC VEG. CONTENT INCREASING	
			B-8	1-2	SAND, AS ABOVE, ORGANIC CONTENT INC.	
12			S-6	1-2		

MONITOR CONSTRUCTION DETAILS

PERMEABILITY (cm/sec)	DOWN HOLE PROBE ANALYSES			NOTES
	Temp. (°C)	Conductance (umho/cm)	pH (S.U.)	Hnu Readings
				0.8 ppm
				3.2 ppm
				4.6 ppm
				4.2 ppm
				1.8 ppm
				15 ppm

Surface Elevation _____ Classified By Mark D. Wilder

Date Installed 11-20-85 C&S Inspector Mark D. Wilder

Driller Buffalo Drilling Co.

Hollow Stem Auger / Split Spoon Sample Collection

NOTE: DATA ON THIS SUMMARY SHEET COMPOSITED FROM DRILLER'S LOGS & C&S COLLECTED DATA & FIELD OBSERVATIONS

PROJECT: Tonawanda Coke Corporation
Phase II 405-231-001-191

Calocerinos & Spina
CONSULTING ENGINEERS
Liverpool, New York 13088

GROUNDWATER MONITOR SUMMARY SHEET

LOCATION NO. MW-7

SHEET _____ OF _____

APPENDIX D

HORIZONTAL HYDRAULIC CONDUCTIVITY CALCULATIONS

TONAWANDA COKE CORPORATION

MW-2

$$K = \frac{r_c^2 \ln (R_e/r_w)}{2 L_e} \frac{1}{t} \ln \frac{y_o}{y_t}$$

$$= \frac{(0.083)^2 (0.77)}{10} \frac{1}{60} \ln \frac{.285}{.11}$$

$$= (5.3 \times 10^{-4})(.02)(.95)$$

$$= 1 \times 10^{-5} \text{ ft/sec}$$

$$= 3 \times 10^{-4} \text{ cm/sec}$$

r_c = 0.083 ft
r_w = 0.29 ft
L_e = 5 ft
y_o = .285
y_t = .11
t = 60 sec
H = 5.61 ft
L_w = 5.61 ft
$\frac{L_e}{r_w}$ = 17.24
$\ln \frac{L_w}{r_w}$ = 2.96
C = 16
$\ln \frac{R_e}{r_w}$ = .77

Δ Water Level (Feet)

10 9 8 7 6 5 4 3 2 1 .9 .8 .7 .6 .5 .4 .3 .2 .1 .09 .08 .07 .06 .05 .04 .03 .02 .01

50 100 150 200 250 300

46 5490

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JONAWANDA COKE CORPORATION

MW-3

$$K = \frac{r_c^2 \ln (Re/r_w)}{2 L_e} \frac{1}{t} \ln \frac{y_0}{y_t}$$

$$= \frac{(.083)^2 \ln (Re/r_w)}{10} \frac{1}{50} \ln \frac{.28}{.18}$$

$$= \frac{(6.889 \times 10^{-3})(.74)}{10} (0.02)(.44)$$

$$= (5.1 \times 10^{-4})(0.02)(.44)$$

$$= 5 \times 10^{-6} \text{ ft/sec}$$

$$= 2 \times 10^{-4} \text{ cm/sec}$$

Δ Water Level (feet)

$r_c = 0.083$ ft
$r_w = 0.29$ ft
$L_e = 5$ ft
$y_0 = .28$
$y_t = .18$
$t = 50$ sec
$H = 4.11$
$L_w = 4.11$
$\ln \frac{L_w}{r_w} = 2.65$
$L_e/r_w = 17.24$
$\ln Re/r_w = .74$
$C = 16$

10 20 30 40 50 60 70 80 90 100

10 9 8 7 6 5 4 3 2 1 .9 .8 .7 .6 .5 .4 .3 .2 .1

46 5490

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TONAWANDA COKE CORPORATION

MW-4

$$K = \frac{r_c^2 \ln(R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{y_o}{y_t}$$

$$K = \frac{(0.083)^2 (0.40)}{2(10)} \frac{1}{60} \ln \frac{0.89}{0.84}$$

$$K = (1.38 \times 10^{-4})(0.02)(0.06)$$

$$K = 2 \times 10^{-9} \text{ ft/sec}$$

$$K = 6 \times 10^{-6} \text{ cm/sec}$$

$r_c = 0.083$ ft. $\quad \ln \frac{R_e}{r_w} = 0.40$

$r_w = 0.38$ ft.

$L_e = 10.0 \quad \ln \frac{L_w}{r_w} = 3.3$

$y_o = 0.89$

$y_t = 0.84 \quad \frac{L_e}{r_w} = 26.3$

$t = 60$ sec. $\quad C = 1.8$

$H = 10.5$

$L_w = 10.5$

Δ Water Level (feet)

10 9 8 7 6 5 4 3 2 1 .9 .8 .7 .6 .5 .4 .3 .2 .1

10 20 30 40 50 60 70 80 90 100 110 120

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TONAWANDA COKE CORPORATION

MW-5

$$K = \frac{r_c^2 \ln (R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{y_0}{y_t}$$

$$K = \frac{(.083)^2 (.97)}{20} \frac{1}{70} \ln \frac{.65}{.55}$$

$$K = (3.34 \times 10^{-4})(.01)(.17)$$

$$K = 6 \times 10^{-7} \text{ ft/sec}$$

$$K = 2 \times 10^{-5} \text{ cm/sec}$$

$r_c = 0.083$ ft
$r_w = 0.38$ ft
$L_e = 10$ ft
$y_0 = .65$
$y_t = .55$
$t = 70$ sec
$H = 8.22$
$L_w = 8.22$

$\ln \frac{R_e}{r_w} = .97$
$\ln \frac{L_w}{r_w} = 3.07$
$\frac{L_e}{r_w} = 26.32$
$C = 17.5$

Δ Water Level (feet)

10 9 8 7 6 5 4 3 2 1 .9 .8 .7 .6 .5 .4 .3 .2 .1

10 20 30 40 50 60 70 80 90 100 110 120

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TONAWANDA COKE CORPORATION

MW-6

$$K = \frac{r_c^2 \ln (Re/r_w)}{2 Le} \frac{1}{t} \ln \frac{y_o}{y_t}$$

$$= \frac{(.083)^2 (0.37)}{20} \frac{1}{40} \ln \frac{.93}{.60}$$

$$= (1.28 \times 10^{-4})(.025)(.44)$$

$$= 1 \times 10^{-6} \text{ ft/sec}$$

$$= 3 \times 10^{-5} \text{ cm/sec}$$

r_c = 0.083 ft
r_w = 0.29 ft
L_e = 10 ft
L_w = 9.19 ft
H = 16.19 ft
$\ln \frac{R_e}{r_w}$ = 0.37
A = 25
B = 100
y_o = .93
y_t = .6
t = 40 sec

Δ WATER LEVEL (FEET)

10 9 8 7 6 5 4 3 2 1 .9 .8 .7 .6 .5 .4 .3 .2 .1

10 20 30 40 50 60 70 80 90 100 110 120

46 5490

KEUFFEL & ESSER CO. MADE IN U.S.A.

TONAWANDA COKE CORPORATION

MW-7

$$K = \frac{r_c^2 \ln(R_e/r_w)}{2L_e} \frac{1}{t} \ln \frac{Y_o}{Y_t}$$

$$K = \frac{(0.083)^2 (0.29)}{20} \frac{1}{50} \ln \frac{1.55}{.89}$$

$$K = (9.99 \times 10^{-5})(.02)(.56)$$

$$K = 1 \times 10^{-6} \text{ ft/sec}$$

$$K = 3 \times 10^{-5} \text{ cm/sec}$$

$r_c = 0.083$ ft
$r_w = 0.29$ ft
$L_e = 10$ ft
$L_w = 7.09$
$H = 25.09$
$Y_o = 1.55$
$Y_t = .89$
$t = 50$ sec

$\ln \frac{R_e}{r_w} = 0.29$
$\ln \frac{L_w}{r_w} = 3.2$
$\ln[(H-L_w)/r_w] = 4.13$
$L_e/r_w = 34.48$
$A = 25$
$B = .5$

Δ Water Level (Feet)

10 9 8 7 6 5 4 3 2 1 .9 .8 .7 .6 .5 .4 .3 .2 .1

10 20 30 40 50 60 70 80 90 100 110 120

46 5490

KEUFFEL & ESSER CO. MADE IN U.S.A.

APPENDIX E

ANALYTICAL REPORTS FOR COMPOSITE TEST PIT SAMPLE

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Feb 04 1986

Attention: MARK KOMHOLZ

****

SAMPLE #8170

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 12/03/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/15/85
LOCATION	: SITE 110 TEST PIT SOIL (I,J,L)	TIME COLLECTED	: NA
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS	DUPLICATE
FREE CYANIDE	0.76	mg/kg	
CYANIDE-T	4.96	mg/kg	
PHENOL	0.30	mg/kg	
BENZENE	<0.33	mg/kg	LT 0.38
TOLUENE	<0.33	mg/kg	LT 0.38
ETHYLBENZENE	<0.33	mg/kg	LT 0.38
PARA-XYLENE	<0.33	mg/kg	LT 0.38
META-XYLENE /CHLOROBENZENE	<0.33	mg/kg	LT 0.38
ORTHO-XYLENE	<0.33	mg/kg	LT 0.38
PARADICHLOROBENZENE	<0.33	mg/kg	LT 0.38
METADICHLOROBENZENE	<0.33	mg/kg	LT 0.38
ORTHODICHLOROBENZENE	<0.33	mg/kg	LT 0.38
ACENAPHTHENE	<0.50	mg/kg	LT 0.50
ACENAPHTHYLENE	<0.63	mg/kg	LT 0.63
ANTHRACENE	<3.3	mg/kg	LT 3.3

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #8170

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS	Duplicate
BENZO(a)ANTHRACENE	<4.0	mg/kg	LT 4.0
BENZO(a)PYRENE	<6.3	mg/kg	LT 6.3
BENZO(b)FLUORANTHENE	<6.0	mg/kg	LT 6.0
BENZO(ghi)PERYLENE	<3.2	mg/kg	LT 3.2
BENZO(k)FLUORANTHENE	<23.	mg/kg	LT23.
CHRYSENE	<2.5	mg/kg	LT 2.5
DIBENZO(a,h)ANTHRACENE	<1.9	mg/kg	LT 1.9
FLUORANTHENE	2.0	mg/kg	3.2
FLUORENE	1.2	mg/kg	1.9
INDENO(1,2,3-c,d)PYRENE	<12.	mg/kg	LT12.
NAPHTHALENE	1.4	mg/kg	2.8
PHENANTHRENE	6.7	mg/kg	4.3
PYRENE	3.6	mg/kg	5.7
TOX	0.6	mg/kg	

NOTE: ALL ANALYSES PERFORMED AND REPORTED ON A mg/kg WET WEIGHT BASIS.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Edward Fenlon Jr DATE: FEB 04 1986

APPENDIX F

ANALYTICAL REPORTS FOR GROUNDWATER SAMPLES

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Jan 13 1986

Attention: MARK KOMHOLZ

****

SAMPLE #8068

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/26/85
LOCATION	: MW1	TIME COLLECTED	: 0900
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
FREE CYANIDE	0.038	mg/l
CYANIDE-T	0.73	mg/l
PHENOL	<0.010	mg/l
BENZENE	<5.	ug/l
TOLUENE	<5.	ug/l
ETHYLBENZENE	<5.	ug/l
PARA-XYLENE	<5.	ug/l
META-XYLENE /Chlorobenzene*	<5.	ug/l
ORTHO-XYLENE	<5.	ug/l
PARADICHLOROBENZENE	<5.	ug/l
METADICHLOROBENZENE	<5.	ug/l
ORTHODICHLOROBENZENE	<5.	ug/l
ACENAPHTHENE	<7.	ug/l
ACENAPHTHYLENE	<12.	ug/l
ANTHRACENE	<14.	ug/l

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #8068

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)ANTHRACENE	<33.	ug/l
BENZO(a)PYRENE	<26.	ug/l
BENZO(b)FLUORANTHENE	<32.	ug/l
BENZO(ghi)PERYLENE	<65.	ug/l
BENZO(k)FLUORANTHENE	<65.	ug/l
CHRYSENE	<21.	ug/l
DIBENZO(a,h)ANTHRACENE	<39.	ug/l
FLUORANTHENE	<14.	ug/l
FLUORENE	<14.	ug/l
INDENO(1,2,3-c,d)PYRENE	<250.	ug/l
NAPHTHALENE	<13.	ug/l
PHENANTHRENE	<12.	ug/l
PYRENE	<24.	ug/l
TOX	0.62 **	ug/l

*Note - Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram. The reported value could be a reflection of the concentration of chlorobenzene, Metaxylene, or a combination of both. (N.Y.S.D.O.H. procedure 310-19)

NOTE:

**TOX Scan - The results of this scan are not designed for qualification or quantification of any specific organic compound. The results are calculated based upon the chlorine content and response factor of lindane (α-BHC). This does not imply either the presence or absence of lindane itself.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Teufel DATE: JAN 13 1986

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Jan 13 1986

Attention: MARK KOMHOLZ

SAMPLE #8069

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/26/85
LOCATION	: MW2	TIME COLLECTED	: 1030
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS	SPIKE % RECOVERY
FREE CYANIDE	0.042	mg/l	
CYANIDE-T	0.74	mg/l	
PHENOL	0.060	mg/l	
BENZENE	<5.	ug/l	90%
TOLUENE	<5.	ug/l	92%
ETHYLBENZENE	<5.	ug/l	90%
PARA-XYLENE	<5.	ug/l	94%
META-XYLENE/Chlorobenzene*	<5.	ug/l	91%
ORTHO-XYLENE	<5.	ug/l	96%
PARADICHLOROBENZENE	<5.	ug/l	92%
METADICHLOROBENZENE	<5.	ug/l	95%
ORTHODICHLOROBENZENE	<5.	ug/l	94%
ACENAPHTHENE	<6.2	ug/l	
ACENAPHTHYLENE	<11.	ug/l	
ANTHRACENE	<15.	ug/l	

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #8069

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)ANTHRACENE	<30.	ug/l
BENZO(a)PYRENE	<24.	ug/l
BENZO(b)FLUORANTHENE	<29.	ug/l
BENZO(ghi)PERYLENE	<59.	ug/l
BENZO(k)FLUORANTHENE	<120.	ug/l
CHRYSENE	<19.	ug/l
DIBENZO(a,h)ANTHRACENE	<36.	ug/l
FLUORANTHENE	<12.	ug/l
FLUORENE	<12.	ug/l
INDENO(1,2,3-c,d)PYRENE	<229.	ug/l
NAPHTHALENE	<10.	ug/l
PHENANTHRENE	<15.	ug/l
PYRENE	<22.	ug/l
TOX	10. **	ug/l

* Note - Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram. The reported value could be a reflection of the concentration of Chlorobenzene, Meta-Xylene, or a combination of both. (N.Y.S.D.O.H. procedure 310-19)

NOTE:

**TOX Scan - The results of this scan are not designed for qualification or quantification of any specific organic compound. The results are calculated based upon the chlorine content and response factor of lindane (α-BHC). This does not imply either the presence or absence of lindane itself.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Teufel DATE: JAN 13 1986

Environmental
CS LABORATORY
Division of Caloccrinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Jan 13 1986

Attention: MARK KOMHOLZ

SAMPLE #8070

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/25/85
LOCATION	: MW3	TIME COLLECTED	: 1115
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
FREE CYANIDE	0.018	mg/l
CYANIDE-T	0.196	mg/l
PHENOL	0.52	mg/l
BENZENE	84.	ug/l
TOLUENE	59.	ug/l
ETHYLBENZENE	<5.	ug/l
PARA-XYLENE	19.	ug/l
META-XYLENE/Chlorobenzene*	62.	ug/l
ORTHO-XYLENE	36.	ug/l
PARADICHLOROBENZENE	<50.	ug/l
METADICHLOROBENZENE	<50.	ug/l
ORTHODICHLOROBENZENE	<50.	ug/l
ACENAPHTHENE	59.	ug/l
ACENAPHTHYLENE	450.	ug/l
ANTHRACENE	173.	ug/l

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #8070

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)ANTHRACENE	115.	ug/l
BENZO(a)PYRENE	95.	ug/l
BENZO(b)FLUORANTHENE	(660.	ug/l
BENZO(ghi)PERYLENE	78.	ug/l
BENZO(k)FLUORANTHENE	(990.	ug/l
CHRYSENE	9.	ug/l
DIBENZO(a,h)ANTHRACENE	(35.	ug/l
FLUORANTHENE	400.	ug/l
FLUORENE	99.	ug/l
INDENO(1,2,3-c,d)PYRENE	95.	ug/l
NAPHTHALENE	4540.	ug/l
PHENANTHRENE	1100.	ug/l
PYRENE	302.	ug/l
TOX	61. **	ug/l

* Note - Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram. The reported value could be a refection of the concentration of Chlorobenzene, Meta-Xylene, or a combination of both. (N.Y.S.D.O.H. procedure 310-19)

NOTE:

**TOX Scan - The results of this scan are not designed for qualification or quantification of any specific organic compound. The results are calculated based upon the chlorine content and response factor of lindane (α-BHC). This does not imply either the presence or absence of lindane itself.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Teufel DATE: JAN 13 1986

Environmental
CS LABORATORY
Division of Caloceninos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Jan 13 1986

Attention: MARK KOMHOLZ

****

SAMPLE #8071

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/25/85
LOCATION	: MW4	TIME COLLECTED	: 1310
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS	DUPLICATION
FREE CYANIDE	0.011	mg/l	
CYANIDE-T	0.021	mg/l	
PHENOL	<0.010	mg/l	
BENZENE	<5.	ug/l	LT. 5.
TOLUENE	<5.	ug/l	LT. 5.
ETHYLBENZENE	<5.	ug/l	LT. 5.
PARA-XYLENE	<5.	ug/l	LT. 5.
META-XYLENE/Chlorobenzene*	<5.	ug/l	LT. 5.
ORTHO-XYLENE	<5.	ug/l	LT. 5.
PARADICHLOROBENZENE	<5.	ug/l	LT. 5.
METADICHLOROBENZENE	<5.	ug/l	LT. 5.
ORTHODICHLOROBENZENE	<5.	ug/l	LT. 5.
ACENAPHTHENE	<6.	ug/l	
ACENAPHTHYLENE	<11.	ug/l	
ANTHRACENE	<27.	ug/l	

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #8071

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)ANTHRACENE	<44.	ug/l
BENZO(a)PYRENE	<58.	ug/l
BENZO(b)FLUORANTHENE	<29.	ug/l
BENZO(ghi)PERYLENE	<59.	ug/l
BENZO(k)FLUORANTHENE	<59.	ug/l
CHRYSENE	88.	ug/l
DIBENZO(a,h)ANTHRACENE	<36.	ug/l
FLUORANTHENE	<16.	ug/l
FLUORENE	<26.	ug/l
INDENO(1,2,3-c,d)PYRENE	<229.	ug/l
NAPHTHALENE	<36.	ug/l
PHENANTHRENE	<11.	ug/l
PYRENE	<22.	ug/l
TOX	1.9 **	ug/l

*NOTE-Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram. The reported value could be a reflection of the concentration of Chlorobenzene, Meta-Xylene, or a combination of both. (N.Y.S.D.O.H. procedure 310-19)

NOTE:

**TOX Scan - The results of this scan are not designed for qualification or quantification of any specific organic compound. The results are calculated based upon the chlorine content and response factor of lindane (α-BHC). This does not imply either the presence or absence of lindane itself.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Teufel DATE: JAN 13 1986

Environmental
CS LABORATORY
Division of Caloceninos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Jan 13 1986

Attention: MARK KOMHOLZ

SAMPLE #8072

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/25/85
LOCATION	: MW5	TIME COLLECTED	: 1330
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
FREE CYANIDE	0.013	mg/l
CYANIDE-T	0.030	mg/l
PHENOL	<0.010	mg/l
BENZENE	<5.	ug/l
TOLUENE	<5.	ug/l
ETHYLBENZENE	<5.	ug/l
PARA-XYLENE	<5.	ug/l
META-XYLENE/Chlorobenzene*	<5.	ug/l
ORTHO-XYLENE	<5.	ug/l
PARADICHLOROBENZENE	<5.	ug/l
METADICHLOROBENZENE	<5.	ug/l
ORTHODICHLOROBENZENE	<5.	ug/l
ACENAPHTHENE	<3.	ug/l
ACENAPHTHYLENE	<5.	ug/l
ANTHRACENE	<12.	ug/l

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #8072

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)ANTHRACENE	<30.	ug/l
BENZO(a)PYRENE	<24.	ug/l
BENZO(b)FLUORANTHENE	<29.	ug/l
BENZO(ghi)PERYLENE	<24.	ug/l
BENZO(k)FLUORANTHENE	<59.	ug/l
CHRYSENE	<19.	ug/l
DIBENZO(a,h)ANTHRACENE	<36.	ug/l
FLUORANTHENE	<12.	ug/l
FLUORENE	<12.	ug/l
INDENO(1,2,3-c,d)PYRENE	<229.	ug/l
NAPHTHALENE	<6.	ug/l
PHENANTHRENE	<11.	ug/l
PYRENE	<22.	ug/l
TOX	0.19 **	ug/l

* Note-Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram. The reported value could be a reflection of the concentration of Chlorobenzene, Meta-Xylene, or a combination of both. (N.Y.S.D.O.H. procedure 310-19)

NOTE:

** TOX Scan - The results of this scan are not designed for qualification or quantification of any specific organic compound. The results are calculated based upon the chlorine content and response factor of lindane (α-BHC). This does not imply either the presence or absence of lindane itself.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Teufel DATE: JAN 13 1986

Environmental
CS LABORATORY
Division of Caloceriños & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Feb 05 1986

Attention: MARK KOMHOLZ

****

SAMPLE #8078

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/25/85
LOCATION	: MW6	TIME COLLECTED	: 1430
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T	0.189	mg/l
ANTIMONY	<0.3	mg/l
ARSENIC	0.013	mg/l
BERYLLIUM	<0.02	mg/l
CADMIUM	<0.01	mg/l
CHROMIUM-T	<0.01	mg/l
COPPER	0.02	mg/l
LEAD	<0.05	mg/l
MERCURY	<0.002	mg/l
NICKEL	<0.01	mg/l
SELENIUM	<0.002	mg/l
SILVER	<0.03	mg/l
THALLIUM	<0.2	mg/l
ZINC	0.18	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

COMPUCHEM LABORATORIES

December 13, 1985

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

Dear Mr. Leone:

We at CompuChem® are pleased to provide our report for the analysis you requested. Enclosed is data for the following sample:

YOUR ID NO.	C/C NO.	ANALYSIS CODE	ORDER NO.	DESCRIPTION OF WORK PERFORMED	REPORT FORMAT
8078-MW-6	69452	100	8119	Volatiles + Library Search	Gold

For your information and convenience, we have included in this report the analytical results, method reference and quality control summary. When anomalies are encountered in an analysis, they are referenced in the quality assurance notice(s). Additionally, instrumental documentation is provided with reports purchased in our GOLD REPORT FORMAT.

Should you require additional TECHNICAL EXPLANATION of this report, please do not hesitate to contact me at 1-919-549-8263. To place a NEW ORDER, request additional SAMPLESAVERS®, inquire about SAMPLE STATUS or if you need help with SAMPLE LOGISTICS your Customer Service Representative can be of assistance. Of course, your Sales Representative is always available to provide a complete overview of our LINE OF SERVICES and assist you in identifying those services which will support your monitoring program as well as provide you with a QUOTATION.

Thank you for this order. We at CompuChem® look forward to providing you with continued analytical support. We appreciate your comments regarding the level of service you feel you have received and look forward to receiving your written comments when possible. Comments should be directed to Mr. Kevin McConnaghy, Director of Marketing, at the address given below.

Sincerely,

Diana A. Scammell

Diana A. Scammell
Manager, Technical Review

cc: Cover letter only
Accounting

COMPUCHEM LABORATORIES

ANALYTICAL REPORT OF DATA
SUBMITTED TO:

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

CHRONICLE

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM® NUMBER	DATE SAMPLE RECEIVED	DATE VOLATILE FRACTION ANALYZED
1.	8078-MW-6	69452	11/29/85	12/06/85

COMPUCHEM
LABORATORIES

- TABLE OF CONTENTS -

*These notices are included where appropriate for data qualification.

**When the original chain of custody is submitted with the sample(s), a copy of it is included with the report.

METHOD REFERENCE

CompuChem® employs Method 624 for the GC/MS analysis of volatile priority pollutant organics in liquid matrices. This method is published in Volume 49, October 26, 1984 Federal Register.

Method Summary

As stated in the October 1984 reference, "An inert gas is bubbled through a 5 ml sample contained in a specially designed purging chamber at ambient temperature. The purgeables are efficiently transferred from the aqueous phase to the vapor phase. The vapor is swept through a sorbent column where the purgeables are trapped. After purging is completed, the sorbent column is heated and backflushed with the inert gas to desorb the purgeables onto a gas chromatographic column." ".... which are then detected with a mass spectrometer." Unknown compounds are tentatively identified by comparison to the National Bureau of Standards (NBS) mass spectral library.

The referenced methods are no longer appropriate for several of the original priority pollutant compounds. This is due to either the deletion from the toxic pollutant list (40 CFR Part 401) by EPA or the determination by EPA that the referenced methods may not be optimized for certain compounds (EPA-600/4-82-057) originally incorporated by the methods.

CompuChem® presents these compounds in its sample data report for completeness as many of the government compound list forms continue to display the affected compounds. For consistency, these compounds are reported as "BDL" or "Below Detection Limits" as they are either not likely to exist in the sample or are not likely to be detected by the method. Those compounds which have actually been deleted are listed below with the Federal Register deletion reference.

Compound Name	GC/MS Fraction	Federal Register	Date
Dichlorodifluoromethane	Volatile	46FR2264	1/8/81
*Trichlorofluoromethane	Volatile	46FR2264	1/8/81
Bis(Chloromethyl)Ether	Volatile	46FR10723	2/4/81

*While this compound has been deleted, CompuChem® continues to identify and quantitate for it.

COMPOUND LIST - VOLATILE ORGANICS

SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69452

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1V.	CHLOROMETHANE	BDL	10	
2V.	VINYL CHLORIDE	BDL	10	
3V.	CHLOROETHANE	BDL	10	
4V.	BROMOMETHANE	BDL	10	
5V.	ACROLEIN	BDL	100	
6V.	ACRYLONITRILE	BDL	100	
7V.	METHYLENE CHLORIDE	BDL	10	
8V.	TRICHLOROFLUOROMETHANE	BDL	10	
9V.	1,1-DICHLOROETHYLENE	BDL	10	
10V.	1,1-DICHLOROETHANE	BDL	10	
11V.	TRANS-1,2-DICHLOROETHYLENE	BDL	10	
12V.	CHLOROFORM	BDL	10	
13V.	1,2-DICHLOROETHANE	BDL	10	
14V.	1,1,1-TRICHLOROETHANE	BDL	10	
15V.	CARBON TETRACHLORIDE	BDL	10	
16V.	BROMODICHLOROMETHANE	BDL	10	
17V.	1,2-DICHLOROPROPANE	BDL	10	
18V.	TRANS-1,3-DICHLOROPROPENE	BDL	10	
19V.	TRICHLOROETHYLENE	BDL	10	
20V.	BENZENE	BDL	10	
21V.	CIS-1,3-DICHLOROPROPENE	BDL	10	
22V.	1,1,2-TRICHLOROETHANE	BDL	10	
23V.	DIBROMOCHLOROMETHANE	BDL	10	
24V.	BROMOFORM	BDL	10	
25V.	1,1,2,2-TETRACHLOROETHYLENE	BDL	10	
26V.	1,1,2,2-TETRACHLOROETHANE	BDL	10	
27V.	TOLUENE	BDL	10	
28V.	CHLOROBENZENE	BDL	10	
29V.	ETHYLBENZENE	BDL	10	
30V.	2-CHLOROETHYL VINYL ETHER	BDL	10	
31V.	DICHLORODIFLUOROMETHANE†	BDL		
32V.	BIS(CHLOROMETHYL)ETHER†	BDL		

Surrogate Recoveries - Introduced at the instrument, volatile surrogate standards are deuterated and/or select compounds that analytically mimic the response of certain analytes. Known concentrations of these surrogates are added to the sample and a percent recovery is calculated. This recovery acts as a barometer of method efficiency for the individual sample.

	% Recovery	Control Range%
D_4-1,2-Dichloroethane	90	(77-120)
4-Bromofluorobenzene	103	(85-121)
D_8-Toluene	98	(86-119)

BDL= BELOW DETECTION LIMIT
†See Method Reference

SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69452

15 PEAK IDENTIFICATION - Volatile

Exclusive of any priority pollutants (specific to this analysis), surrogate standard, and internal standard peaks, no compounds greater than 25% of the closest internal standard were tentatively identified by mass spectral library search.

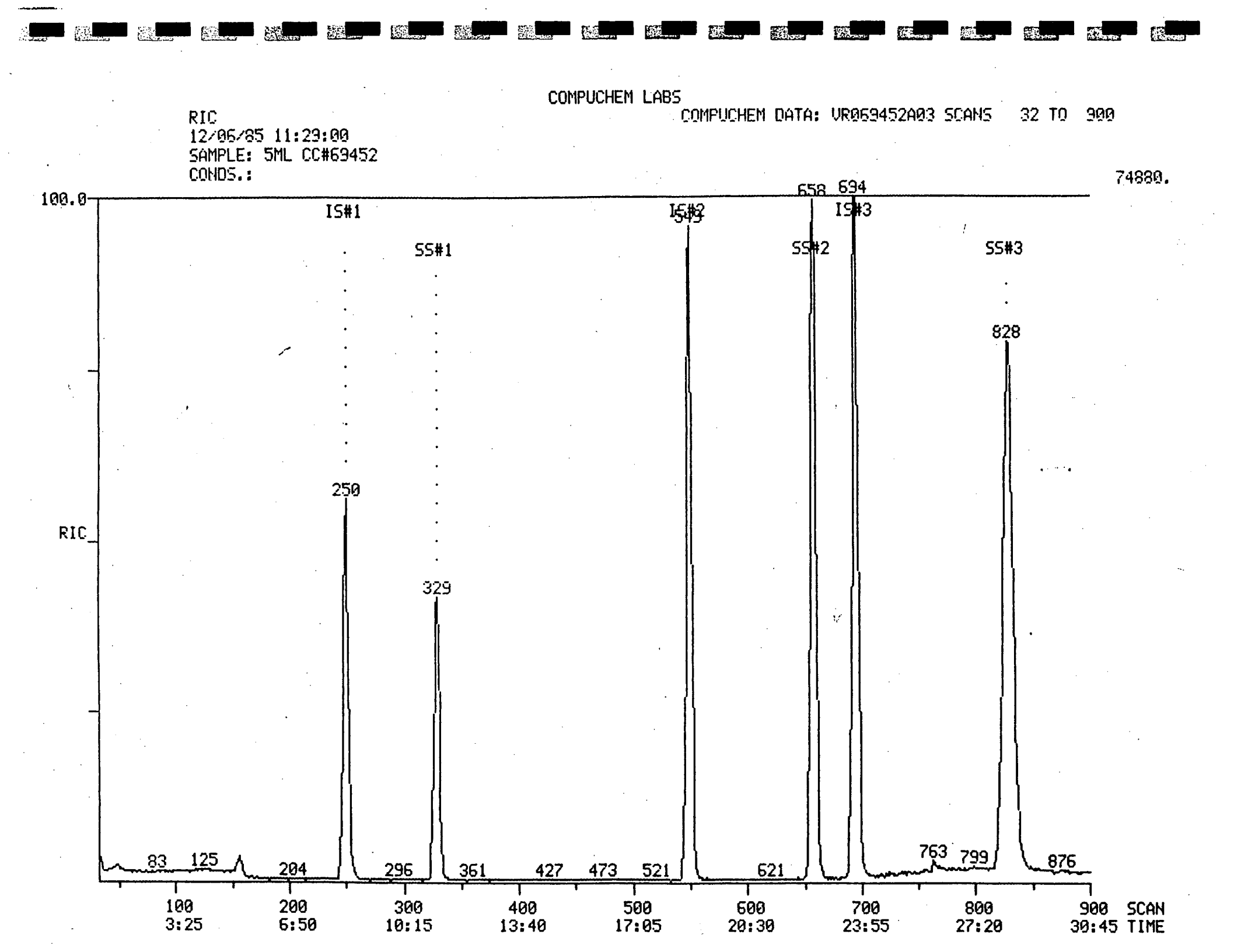
QUALITY CONTROL SUMMARY

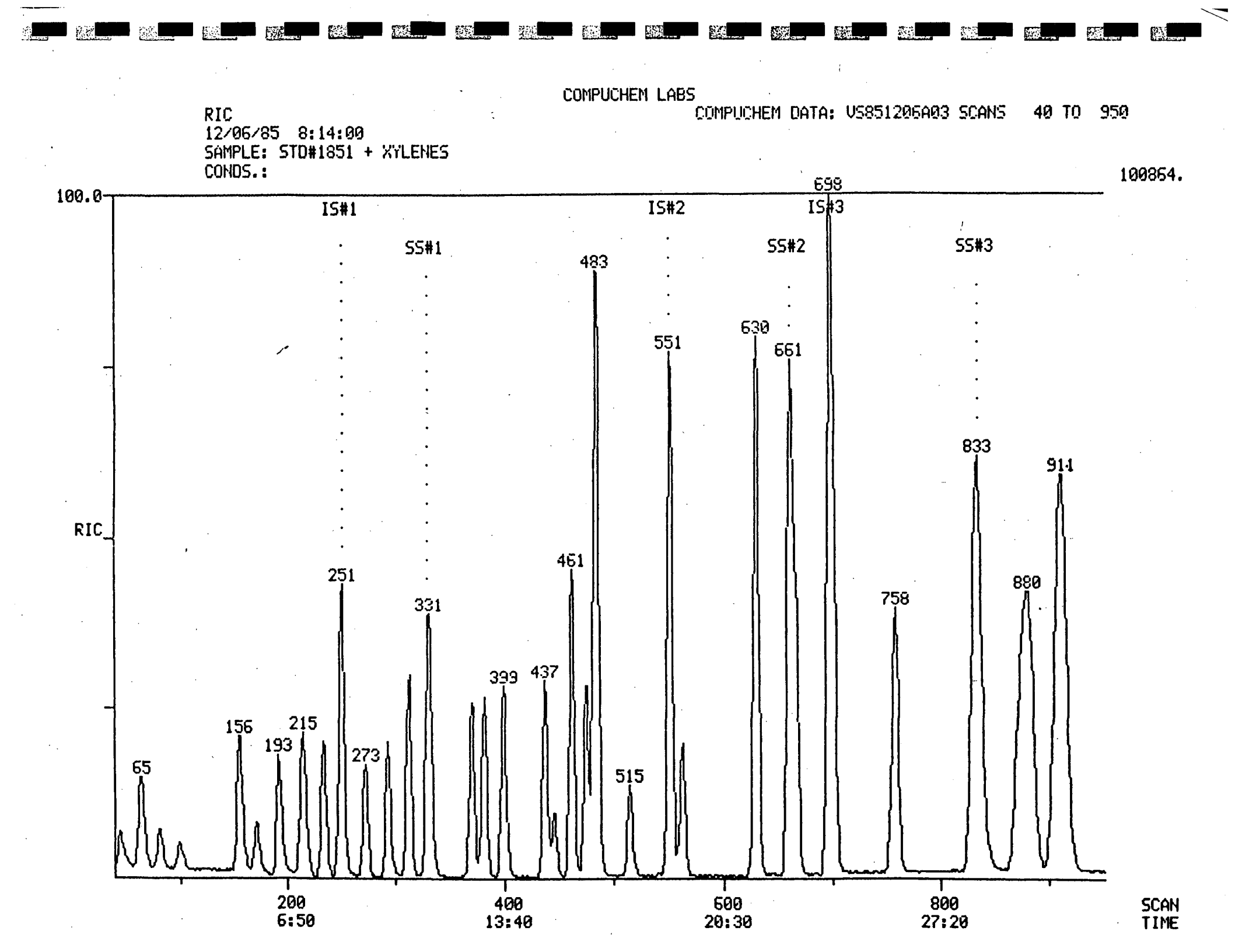
SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69452

VOLATILE

	NUMBER	ACCEPTANCE CRITERIA
Blank	69543	OK
Blank Spike	68933	OK
Sample Spike	68932	OK
BFB*	BF851206A03	OK
Shift Standard	VS851206A03	OK

*The tuning calibration compound, Bromofluorobenzene, is used for the volatile instruments.


COMPUCHEM LABS
RIC
12/06/85 11:23:00
SAMPLE: 5ML CC#69452
CONDS.:
COMPUCHEM DATA: VR069452A03 SCANS 32 TO 900
74880.
100.0
RIC
IS#1
SS#1
IS#2
SS#2
IS#3
SS#3
250
329
658
694
828
83
125
204
296
361
427
473
521
621
763
799
876
100
3:25
200
6:50
300
10:15
400
13:40
500
17:05
600
20:30
700
23:55
800
27:20
900
30:45
SCAN
TIME


COMPUCHEM LABS
RIC
12/06/85 8:14:00
SAMPLE: STD#1851 + XYLENES
CONDS.:
COMPUCHEM DATA: VS851206A03 SCANS 40 TO 950
100864.
100.0
RIC
IS#1
SS#1
IS#2
SS#2
IS#3
SS#3
65
156
193
215
251
273
331
399
437
461
483
515
551
630
661
698
758
833
880
911
200
6:50
400
13:40
600
20:30
800
27:20
SCAN
TIME

COMPUCHEM LABORATORIES

December 18, 1985

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

Dear Mr. Leone:

We at CompuChem® are pleased to provide our report for the analysis you requested. Enclosed is data for the following sample:

YOUR ID NO.	C/C NO.	ANALYSIS CODE	ORDER NO.	DESCRIPTION OF WORK PERFORMED	REPORT FORMAT
8078-MW-6	69453	502	8119	ACID & BASE/NEUTRAL + LIBRARY SEARCH	GOLD

For your information and convenience, we have included in this report the analytical results, method reference and quality control summary. When anomalies are encountered in an analysis, they are referenced in the quality assurance notice(s). Additionally, instrumental documentation is provided with reports purchased in our GOLD REPORT FORMAT.

Should you require additional TECHNICAL EXPLANATION of this report, please do not hesitate to contact me at 1-919-549-8263. To place a NEW ORDER, request additional SAMPLESAVERS®, inquire about SAMPLE STATUS or if you need help with SAMPLE LOGISTICS your Customer Service Representative can be of assistance. Of course, your Sales Representative is always available to provide a complete overview of our LINE OF SERVICES and assist you in identifying those services which will support your monitoring program as well as provide you with a QUOTATION.

Thank you for this order. We at CompuChem® look forward to providing you with continued analytical support. We appreciate your comments regarding the level of service you feel you have received and look forward to receiving your written comments when possible. Comments should be directed to Mr. Kevin McConnaghy, Director of Marketing, at the address given below.

Sincerely,

Diana A. Scammell
Manager, Technical Review

cc: Cover letter only
Accounting

RECEIVED
DEC 23 1985
CALCERINOS & SPINA
ENGINEERS

COMPUCHEM LABORATORIES

ANALYTICAL REPORT OF DATA
SUBMITTED TO:

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

CHRONICLE

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM® NUMBER	DATE SAMPLE RECEIVED	DATE SAMPLE EXTRACTED	DATE ACID FRACTION ANALYZED	DATE BASE/NEUTRAL FRACTION ANALYZED
1.	8078-MW-6	69453	11/29/85	12/03/85	12/12/85	12/11/85
				ACID 12/11/85*	12/16/85*	12/14/85**
				B/N 12/11/85**		

*See Quality Assurance Notice
**Base/Neutral fraction re-extracted and re-analyzed because initial endeavors did not meet quality control acceptance criteria.

COMPUCHEM LABORATORIES

- TABLE OF CONTENTS -

*These notices are included where appropriate for data qualification.

**When the original chain of custody is submitted with the sample(s), a copy of it is included with the report.

METHOD REFERENCE

CompuChem® employs Method 625 for GC/MS analysis of acid and base/neutral organics in liquid matrices. This method is published in Volume 49, October 26, 1984 Federal Register.

METHOD SUMMARY

As stated in the October 1984 reference, "A measured volume of sample, approximately one liter, is serially extracted with methylene chloride at a pH greater than 11 and again at pH less than 2 using a separatory funnel or a continuous extractor. The methylene chloride extract is dried and concentrated to a volume of 1 ml."

"Qualitative identification is performed using the retention time and the relative abundance of three characteristic ions. Quantitative analysis is performed using either external or internal standard techniques."

Semi-quantitative analysis (library search) is performed by automatic comparison of the unknown peak spectrum to the National Bureau of Standards (NBS) mass spectral library. Estimated concentration is calculated using the known concentration and peak area of the closest internal standard while assuming a response factor of one for the unknown compound.

COMPOUND LIST -- ACID EXTRACTABLES

SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69453

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1A.	PHENOL	BDL	25	
2A.	2-CHLOROPHENOL	BDL	25	
3A.	2-NITROPHENOL	BDL	25	
4A.	2,4-DIMETHYLPHENOL	BDL	25	
5A.	2,4-DICHLOROPHENOL	BDL	25	
6A.	P-CHLORO-M-CRESOL	BDL	25	
7A.	2,4,6-TRICHLOROPHENOL	BDL	25	
8A.	2,4-DINITROPHENOL	BDL	250	
9A.	4-NITROPHENOL	BDL	25	
10A.	4,6-DINITRO-O-CRESOL	BDL	250	
11A.	PENTACHLOROPHENOL	BDL	25	

Surrogate Recoveries - Introduced at the beginning of the extraction, surrogate standards are deuterated and/or select compounds that analytically mimic the response of certain analytes. Known concentrations of these surrogates are added to the sample and a percent recovery is calculated. This recovery acts as a barometer of extraction efficiency and analytical response for the individual sample.

	%Recovery	Control Range%
2-Fluorophenol	BDL*	(23-121)
d_5-Phenol	BDL*	(15-103)
2,4,6-Tribromophenol	23	(10-130)

BDL= BELOW DETECTION LIMIT
*See Quality Assurance Notice #1

QUALITY ASSURANCE NOTICE #1
Sample#69453

Surrogate recoveries for the ACID fraction of this sample fell outside quality control limits in both the original and repeated extractions. These recoveries could not be attributed to errors in calculations, instrument performance, surrogate or internal standard solutions, or sample preparation. As a result, we have attributed these surrogate recoveries to the particular sample matrix rather than laboratory error.

Reviewer's Initials ESB

Date 12/17/85

QAN3S

SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69453

15 PEAK IDENTIFICATION - ACID

Exclusive of any priority pollutants (specific to this analysis), surrogate standard, and internal standard peaks, four (4) compounds greater than 25% of the closest internal standard were tentatively identified by mass spectral library search and estimated concentrations were computed.

COMPUCHEM ORGANICS ANALYSIS DATA SHEET

DATA FILENAME: CR069453A14

LIBRARY SEARCH RESULTS OF EXTRANEOUS PEAKS &
ESTIMATED CONCENTRATION OF TENTATIVELY IDENTIFIED COMPOUNDS
ANALYTICAL FRACTION: ACID1

SAMPLE # _____

ITEM	SCAN NUMBER	CAS #	COMPOUND NAME	% PURITY	ASSESSMENT* RS	OI	UK	ESTIMATED CONC. IN UG PER L	KG	ML	G
1	781	544-63-8	TETRADECANOICACID	71.4	☐	☑	☐		30.		
2	819	1002-84-2	PENTADECANOICACID	68.4	☐	☑	☐		14.		
3	850	2091-29-4	9-HEXADECENOICACID	60.9	☐	☐	☑		32.		
4	857	57-10-3	HEXADECANOICACID	72.5	☐	☑	☐		90.		
	1.000	40.00									

SPECTROSCOPIST ___KMJ___

DATE ___12/17/15___

(*) RS - REASONABLE IDENTIFICATION, RETENTION TIME COMPATIBILITY
OI - ISOMER OR SIMILAR COMPOUND
UK - UNKNOWN, NOT IN NBS LIBRARY

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLES

SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69453

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1B.	N-NITROSODIMETHYLAMINE	BDL	10	
2B.	BIS (2-CHLOROETHYL) ETHER	BDL	10	
3B.	1,3-DICHLOROBENZENE	BDL	10	
4B.	1,4-DICHLOROBENZENE	BDL	10	
5B.	1,2-DICHLOROBENZENE	BDL	10	
6B.	BIS (2-CHLOROISOPROPYL) ETHER	BDL	10	
7B.	HEXACHLOROETHANE	BDL	10	
8B.	N-NITROSODI-N-PROPYLAMINE	BDL	10	
9B.	NITROBENZENE	BDL	10	
10B.	ISOPHORONE	BDL	10	
11B.	BIS(2-CHLOROETHOXY) METHANE	BDL	10	
12B.	1,2,4-TRICHLOROBENZENE	BDL	10	
13B.	NAPHTHALENE	BDL	10	
14B.	HEXACHLOROBUTADIENE	BDL	10	
15B.	HEXACHLOROCYCLOPENTADIENE	BDL	10	
16B.	2-CHLORONAPHTHALENE	BDL	10	
17B.	DIMETHYLPHTHALATE	BDL	10	
18B.	ACENAPHTHYLENE	BDL	10	
19B.	2,6-DINITROTOLUENE	BDL	10	
20B.	ACENAPHTHENE	BDL	10	
21B.	2,4-DINITROTOLUENE	BDL	10	
22B.	DIETHYLPHTHALATE	BDL	10	
23B.	FLUORENE	BDL	10	
24B.	4-CHLOROPHENYL PHENYL ETHER	BDL	10	
25B.	DIPHENYLAMINE (N-NITROSO)	BDL	10	
26B.	1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	BDL	10	
27B.	4-BROMOPHENYL PHENYL ETHER	BDL	10	
28B.	HEXACHLOROBENZENE	BDL	10	

(Continued)

BDL=BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69453

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
29B.	PHENANTHRENE	BDL	10	
30B.	ANTHRACENE	BDL	10	
31B.	DI-N-BUTYLPHTHALATE	BDL	10	
32B.	FLUORANTHENE	BDL	10	
33B.	BENZIDINE	BDL	10	
34B.	PYRENE	BDL	10	
35B.	BUTYLBENZYLPHTHALATE	BDL	10	
36B.	BENZO(A)ANTHRACENE	BDL	10	
37B.	3,3'-DICHLOROBENZIDINE	BDL	10	
38B.	CHRYSENE	BDL	10	
39B.	BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	
40B.	DI-N-OCTYLPHTHALATE	BDL	10	
41B.	BENZO(B)FLUORANTHENE	BDL	10	
42B.	BENZO(K)FLUORANTHENE	BDL	10	
43B.	BENZO(A)PYRENE	BDL	10	
44B.	INDENO(1,2,3-C,D)PYRENE	BDL	25	
45B.	DIBENZO(A,H)ANTHRACENE	BDL	25	
46B.	BENZO(G,H,I)PERYLENE	BDL	25	

Surrogates Recoveries - Introduced at the beginning of the extraction, surrogate standards are deuterated and/or select compounds that analytically mimic the response of certain analytes. Known concentrations of these surrogates are added to the sample and a percent recovery is calculated. This recovery acts as a barometer of extraction efficiency and analytical response for the individual sample.

	%Recovery	Control Range%
d_5-Nitrobenzene	92	(41-120)
2-Fluorobiphenyl	77	(44-119)
d_{14}-Terphenyl	117	(33-128)
d_{10}-Pyrene*	118	*

BDL=BELOW DETECTION LIMIT
*Advisory Surrogate; therefore no control range

SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69453

15 PEAK IDENTIFICATION - BASE/NEUTRAL

Exclusive of any priority pollutants (specific to this analysis), surrogate standard, and internal standard peaks, no compounds greater than 25% of the closest internal standard were tentatively identified by mass spectral library search.

QUALITY CONTROL SUMMARY

SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69453

ACID

	NUMBER	ACCEPTANCE CRITERIA
Blank	70358	OK
Blank Spike	68738	OK
Sample Spike	68737	**
DFTPP*	DH851216C14	OK
Shift Standard	AS851216C14	OK

BASE/NEUTRAL

Blank	70359	OK
Blank Spike	68738	OK
Sample Spike	68737	**
DFTPP*	DH851214A21	OK
Shift Standard	BT851214A21	OK

*The tuning calibration compound, Decafluorotriphenylphosphine, is used for the acid and base/neutral instruments.
**See Quality Assurance Notice #2

QUALITY ASSURANCE NOTICE #2
sample spike #68737 original # 68736
blank spike #68738 fraction Acid & Base/Neutral

Recoveries for the surrogate and/or spike compounds were outside acceptance criteria in the sample spike associated with this sample. A Quality Control blank spike was prepared and analyzed with this batch of samples, and all spike and surrogate recovery criteria were met. In addition, surrogate recoveries in the original sample (used to prepare the sample spike) were comparable to those in the spike.

We have attributed the unacceptable recoveries to the matrix of the original sample, since recoveries in the blank and blank spike prepared with these samples were acceptable. These data are being reported with reference to this qualifier.

data reviewer WJB

date 12/09/85

QAN18S

COMPUCHEM LABS

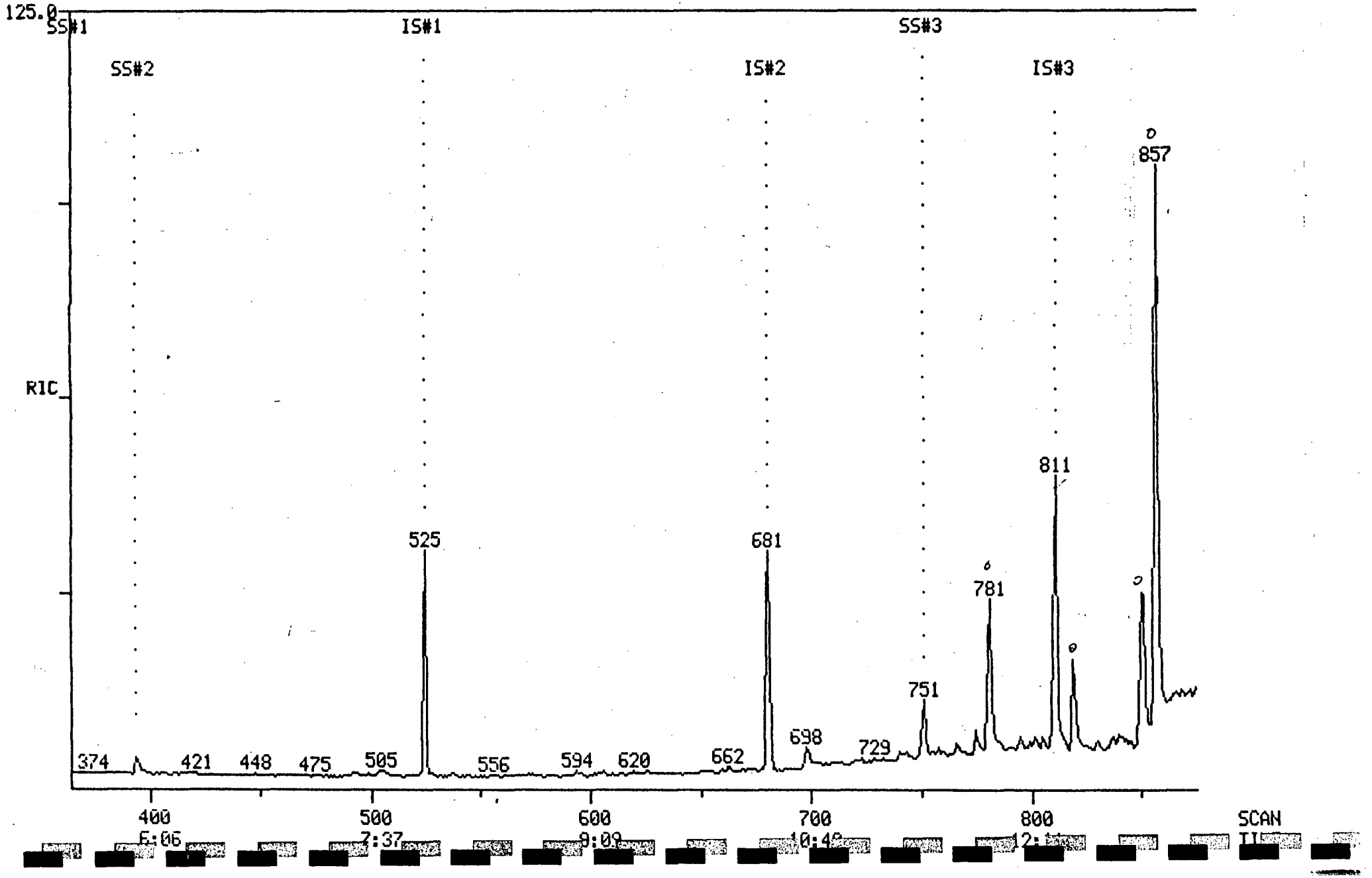
RIC

COMPUCHEM DATA: CR069453A14 SCANS 364 TO 875

12/16/85 12:50:00

SAMPLE: 1UL CC#69453R (12-11-85) OWA#14

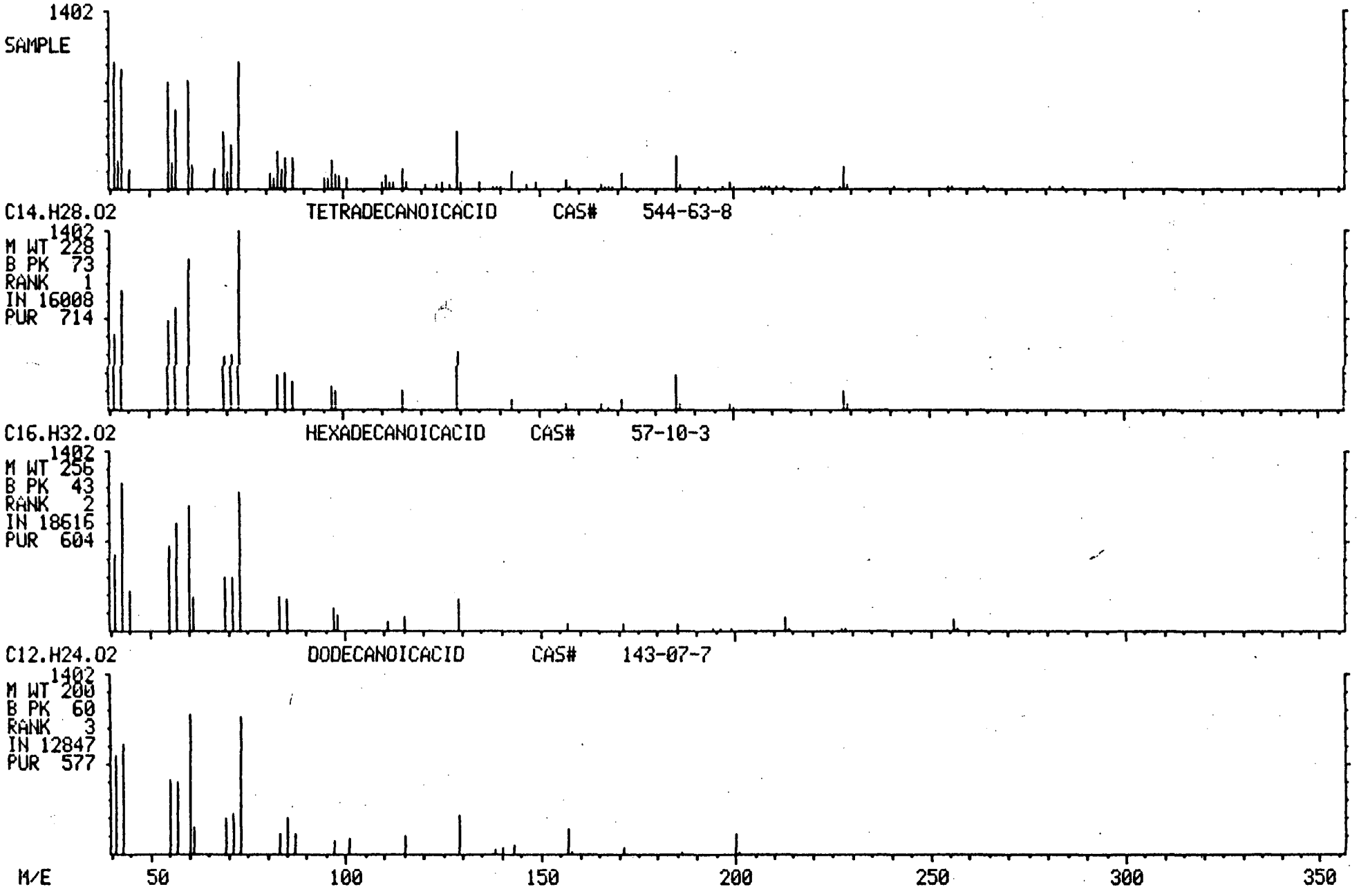
CONDS.:



COMPUCHEM LABS

LIBRARY SEARCH
12/16/85 12:50:00 + 11:54
SAMPLE: 1UL CC#69453R (12-11-85) OWA#14

DATA: CR069453A14 # 781
BASE M/E: 73
RIC: 269823.

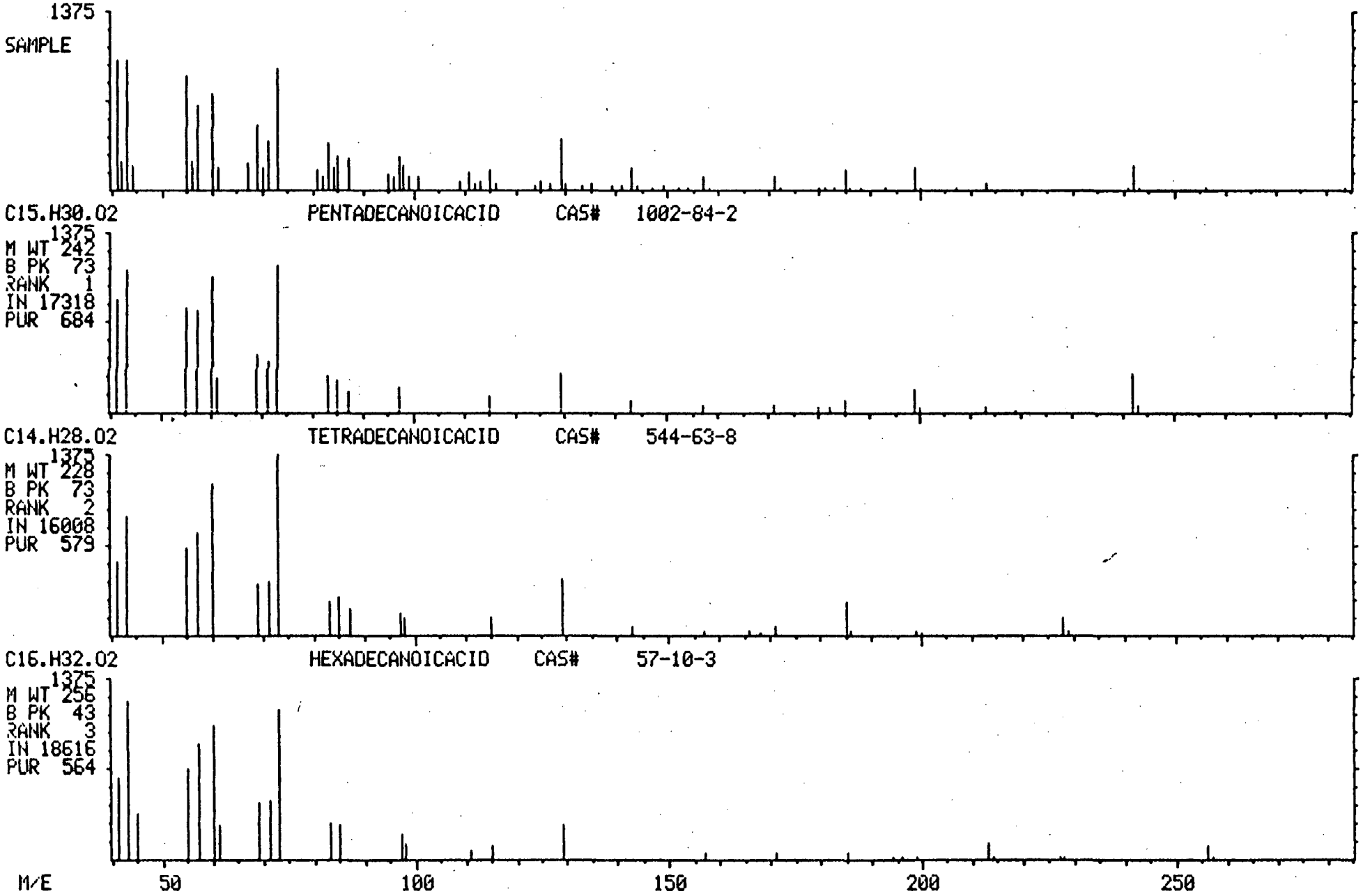


COMPUCHEM LABS

LIBRARY SEARCH
12/16/85 12:50:00 + 12:29
SAMPLE: 1UL CC#69453R (12-11-85) OWA#14

DATA: CR069453A14 # 819

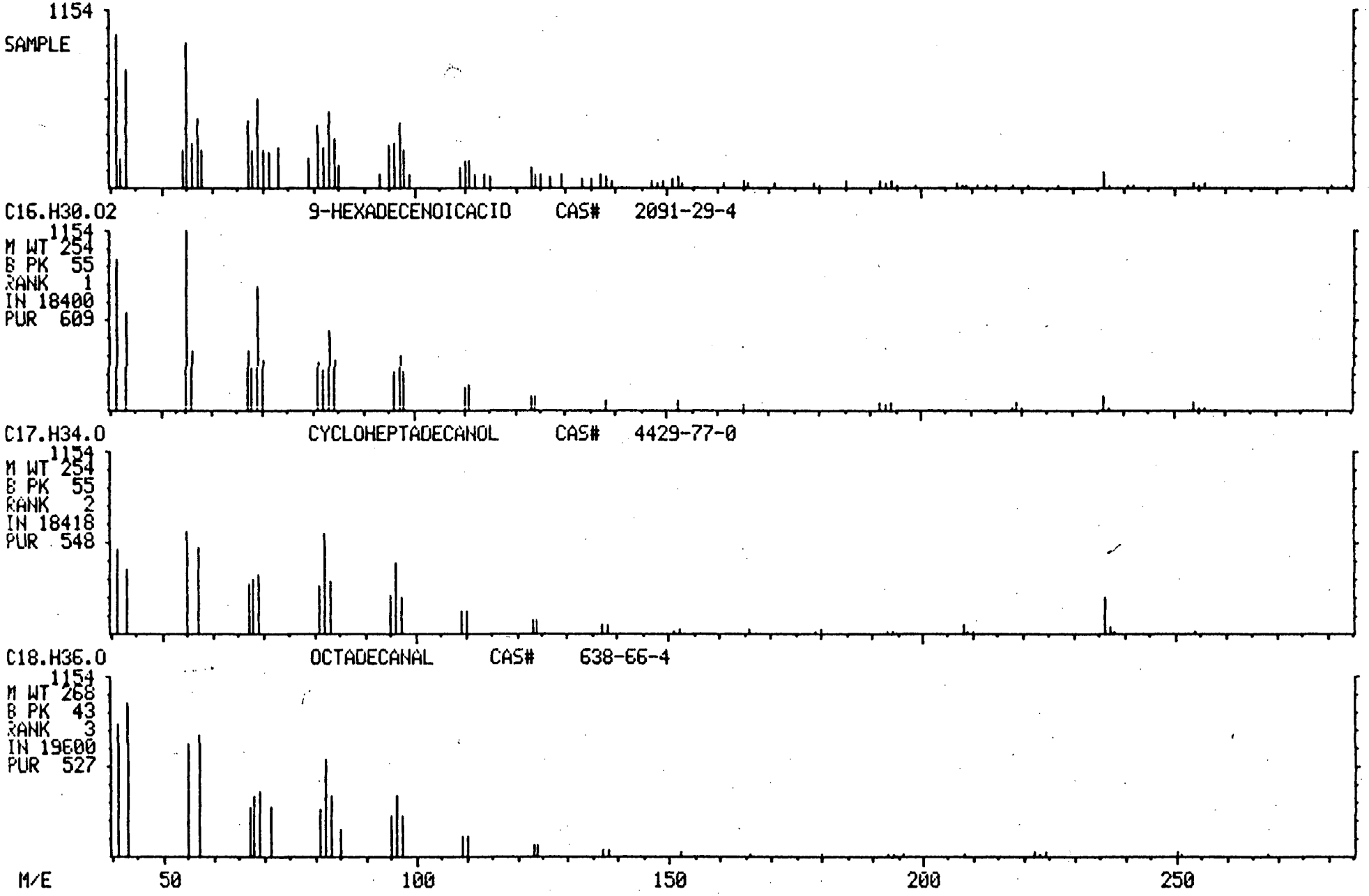
BASE M/E: 41
RIC: 186111.



COMPUCHEM LABS

LIBRARY SEARCH
12/16/85 12:50:00 + 12:57
SAMPLE: 1UL CC#69453R (12-11-85) OWA#14

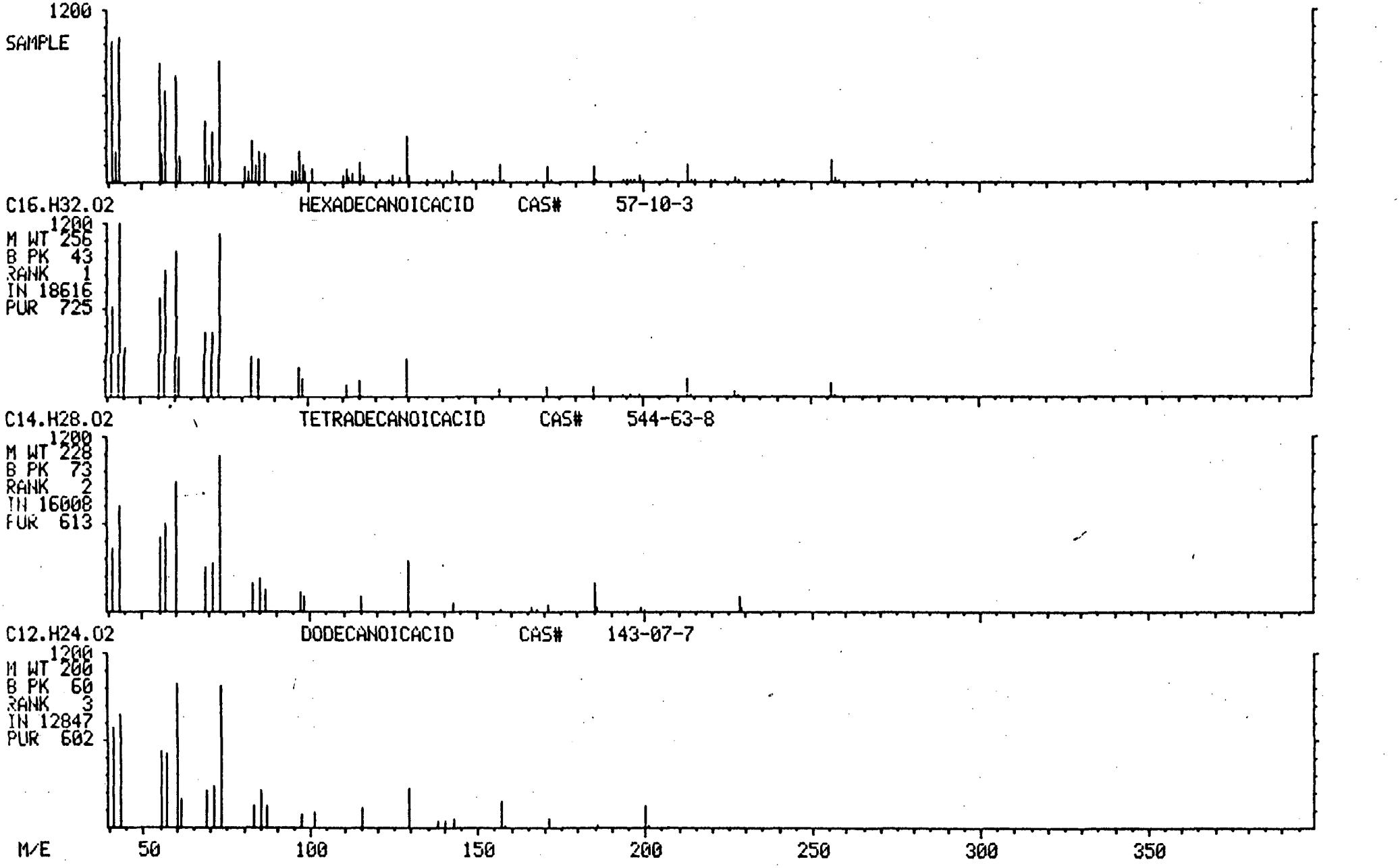
DATA: CR069453A14 # 850
BASE M/E: 41
RIC: 266751.



COMPUCHEM LABS

LIBRARY SEARCH
12/16/85 12:50:00 + 13:04
SAMPLE: 1UL CC#69453R (12-11-85) OWA#14

DATA: CR069453A14 # 857
BASE M/E: 43
RIC: 903167.



COMPUCHEM LABS

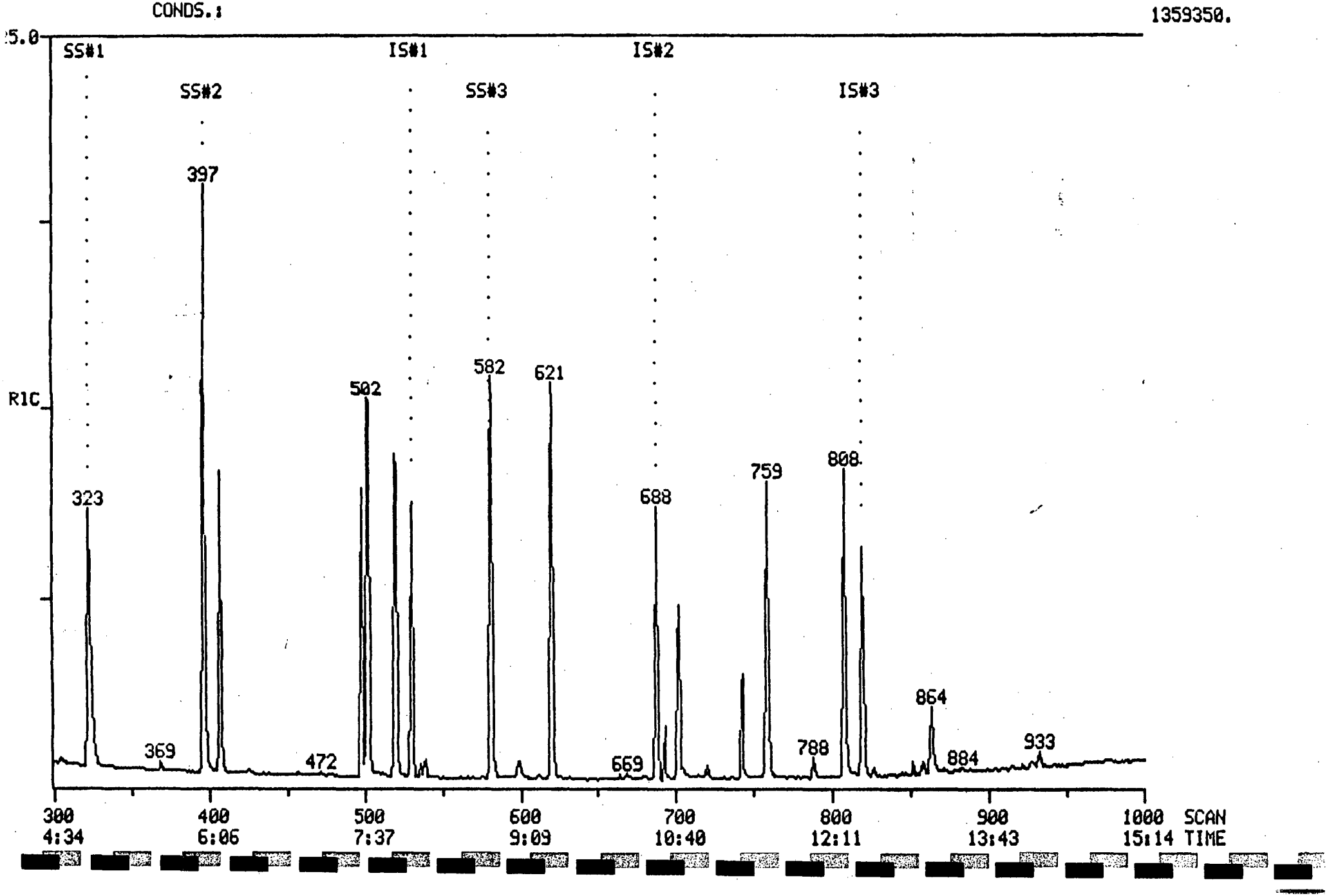
RIC

COMPUCHEM DATA: AS851216C14 SCANS 299 TO 1000

12/16/85 3:50:00

SAMPLE: 1UL 100NG STD ACID1 16264-3316 ON 14

CONDS.:



COMPUCHEM LABS

RIC

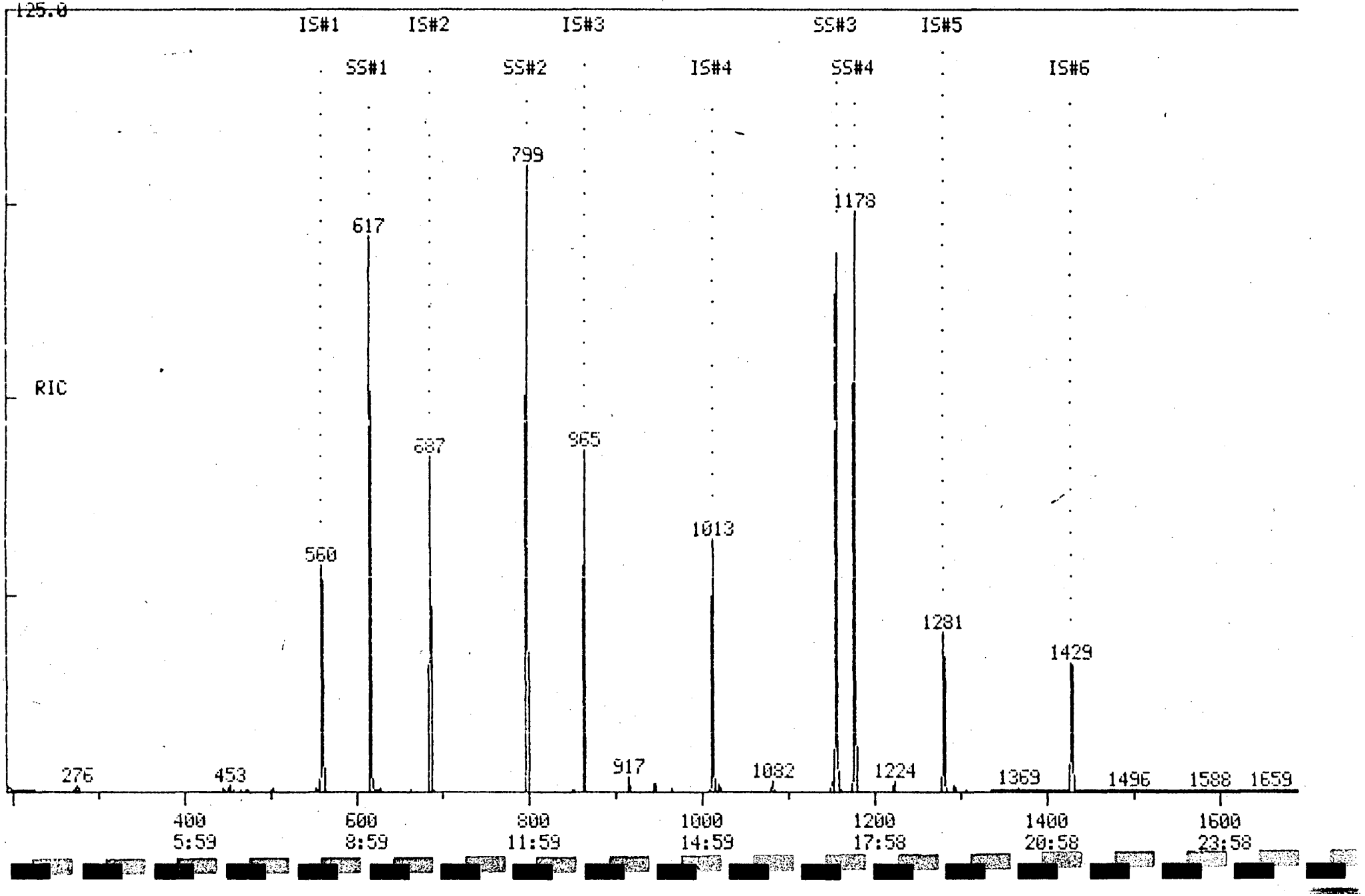
COMPUCHEM DATA: BR069453A21 SCANS 192 TO 1692

12/14/85 10:27:00

OUT OF 192 TO 1725

SAMPLE: 1UL CC#69453R (12-11-85) OWA#21

CONDS.:



COMPUCHEM LABS

RIC

COMPUCHEM DATA: BR069453A21 SCANS 1692 TO 1725
OUT OF 192 TO 1725

12/14/85 10:27:00

SAMPLE: 1UL CC#69453R (12-11-85) DWA#21

CONDS.:

519040.

SCAN TIME

COMPUCHEM LABS

RIC

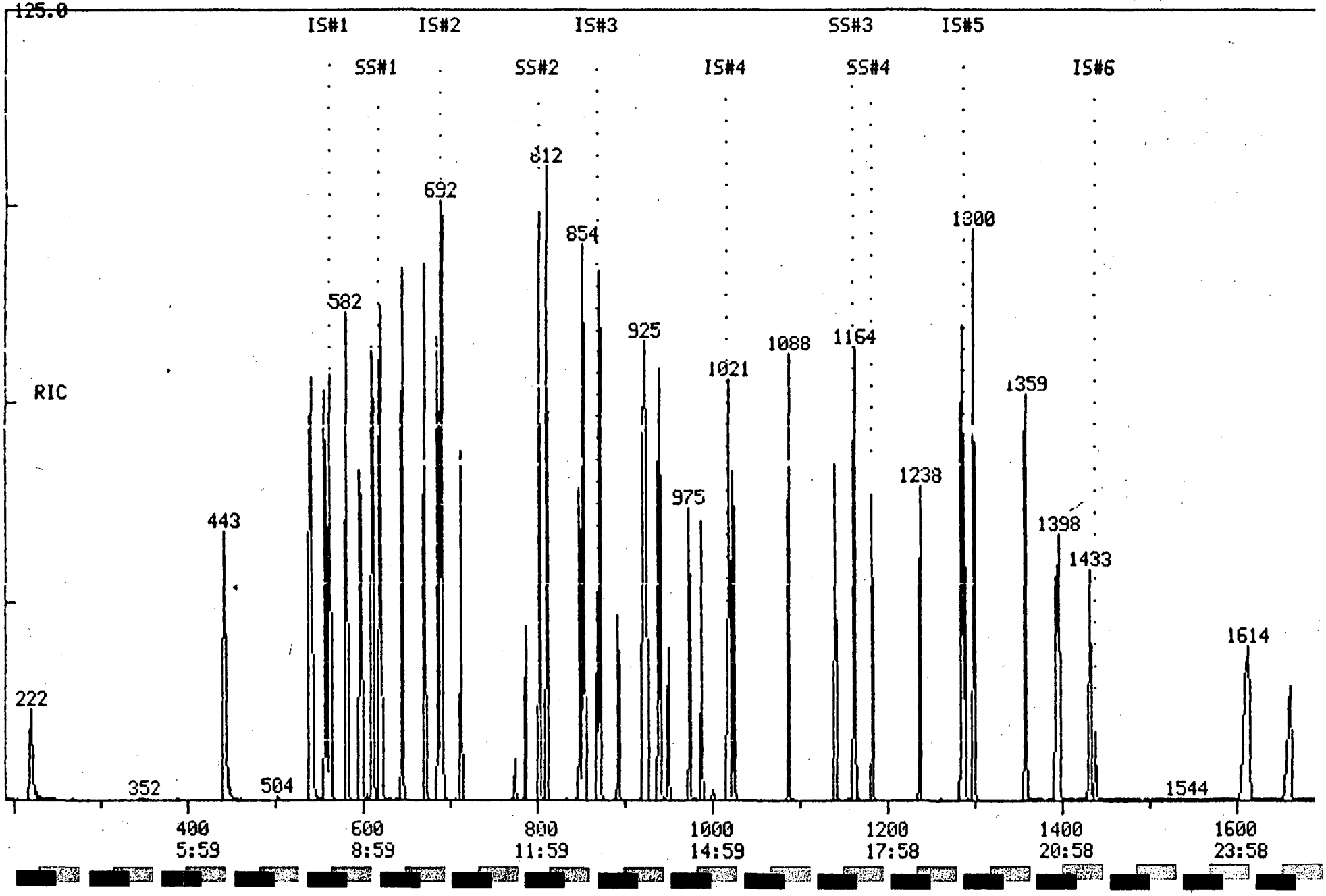
COMPUCHEM DATA: BT851214A21 SCANS 190 TO 1630

12/14/85 8:56:00

OUT OF 190 TO 1750

SAMPLE: 1UL 100NG/UL BASE1 STANDARD 16269#2363 OWA#21

CONDS.:



RECEIVED
DEC 23 1985
CALCERINOS & SPINA
ENGINEERS

COMPUCHEM LABORATORIES

December 11, 1985

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

Dear Mr. Leone:

We at CompuChem® are pleased to provide our report for the analysis you requested. Enclosed is data for the following sample:

YOUR ID NO.	C/C NO.	ANALYSIS CODE	ORDER NO.	DESCRIPTION OF WORK PERFORMED	REPORT FORMAT
8078-MW-6	69454	008	8119	Pesticides/PCBs	Gold

For your information and convenience, we have included in this report the analytical results, method reference and quality control summary. When anomalies are encountered in an analysis, they are referenced in the quality assurance notice(s). Additionally, instrumental documentation is provided with reports purchased in our GOLD REPORT FORMAT.

Should you require additional TECHNICAL EXPLANATION of this report, please do not hesitate to contact me at 1-919-549-8263. To place a NEW ORDER, request additional SAMPLESAVERS®, inquire about SAMPLE STATUS or if you need help with SAMPLE LOGISTICS your Customer Service Representative can be of assistance. Of course, your Sales Representative is always available to provide a complete overview of our LINE OF SERVICES and assist you in identifying those services which will support your monitoring program as well as provide you with a QUOTATION.

Thank you for this order. We at CompuChem® look forward to providing you with continued analytical support. We appreciate your comments regarding the level of service you feel you have received and look forward to receiving your written comments when possible. Comments should be directed to Mr. Kevin McConnaghy, Director of Marketing, at the address given below.

Sincerely,

Diana A. Scammell
Manager, Technical Review

cc: Cover letter only
Accounting

COMPUCHEM LABORATORIES

ANALYTICAL REPORT OF DATA
SUBMITTED TO:

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

CHRONICLE

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM® NUMBER	DATE SAMPLE RECEIVED	DATE SAMPLE EXTRACTED	DATE PESTICIDES/PCBs FRACTION ANALYZED
1.	8078-MW-6	69454	11/29/85	12/03/85	12/04/85

COMPUCHEM
LABORATORIES

- TABLE OF CONTENTS -

*These notices are included where appropriate for data qualification.

**When the original chain of custody is submitted with the sample(s), a copy of it is included with the report.

***Pesticides/PCBs chromatograms are present for specific compounds when second column analysis is employed.

METHOD REFERENCE

CompuChem® employs Method 608 for the GC analysis of pesticides and PCBs in aqueous matrices. This method is published in Volume 49, October 26, 1984 Federal Register.

Method Summary

As stated in the October 1984 reference, "A measured volume of sample, approximately one liter, is solvent extracted with methylene chloride using a separatory funnel or continuous extractor. The methylene chloride extract is dried and exchanged to hexane during concentration to a final volume of 10 ml or less. Gas chromatographic conditions... permit the separation and measurement of the parameters in the extract by electron capture GC".

COMPOUND LIST -- PESTICIDES/PCBs

SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69454

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
1P.	ALDRIN	BDL	0.10
2P.	ALPHA-BHC	BDL	0.10
3P.	BETA-BHC	BDL	0.10
4P.	GAMMA-BHC	BDL	0.10
5P.	DELTA-BHC	BDL	0.10
6P.	CHLORDANE (TECHNICAL)	BDL	0.50
7P.	4,4'-DDT	BDL	0.10
8P.	4,4'-DDE	BDL	0.10
9P.	4,4'-DDD	BDL	0.10
10P.	DIELDRIN	BDL	0.10
11P.	ALPHA-ENDOSULFAN	BDL	0.10
12P.	BETA-ENDOSULFAN	BDL	0.10
13P.	ENDOSULFAN SULFATE	BDL	0.10
14P.	ENDRIN	BDL	0.10
15P.	ENDRIN ALDEHYDE	BDL	0.10
16P.	HEPTACHLOR	BDL	0.10
17P.	HEPTACHLOR EPOXIDE	BDL	0.10
18P.	PCB-1242	BDL	1.0
19P.	PCB-1254	BDL	1.0
20P.	PCB-1221	BDL	1.0
21P.	PCB-1232	BDL	1.0
22P.	PCB-1248	BDL	1.0
23P.	PCB-1260	BDL	1.0
24P.	PCB-1016	BDL	1.0
25P.	TOXAPHENE	BDL	1.0

Surrogate Recovery - Introduced at the beginning of the extraction, the surrogate standard is a select compound that analytically mimics the response of certain analytes. A known concentration of this surrogate is added to the sample and a percent recovery is calculated. This recovery acts as a barometer of extraction efficiency and analytical response for the individual sample.

	% Recovery	Control Range %
Dibutylchlorendate	100	(48-136)*

*Advisory surrogate; recovery below 10% requires action step (re-extraction and re-analysis).

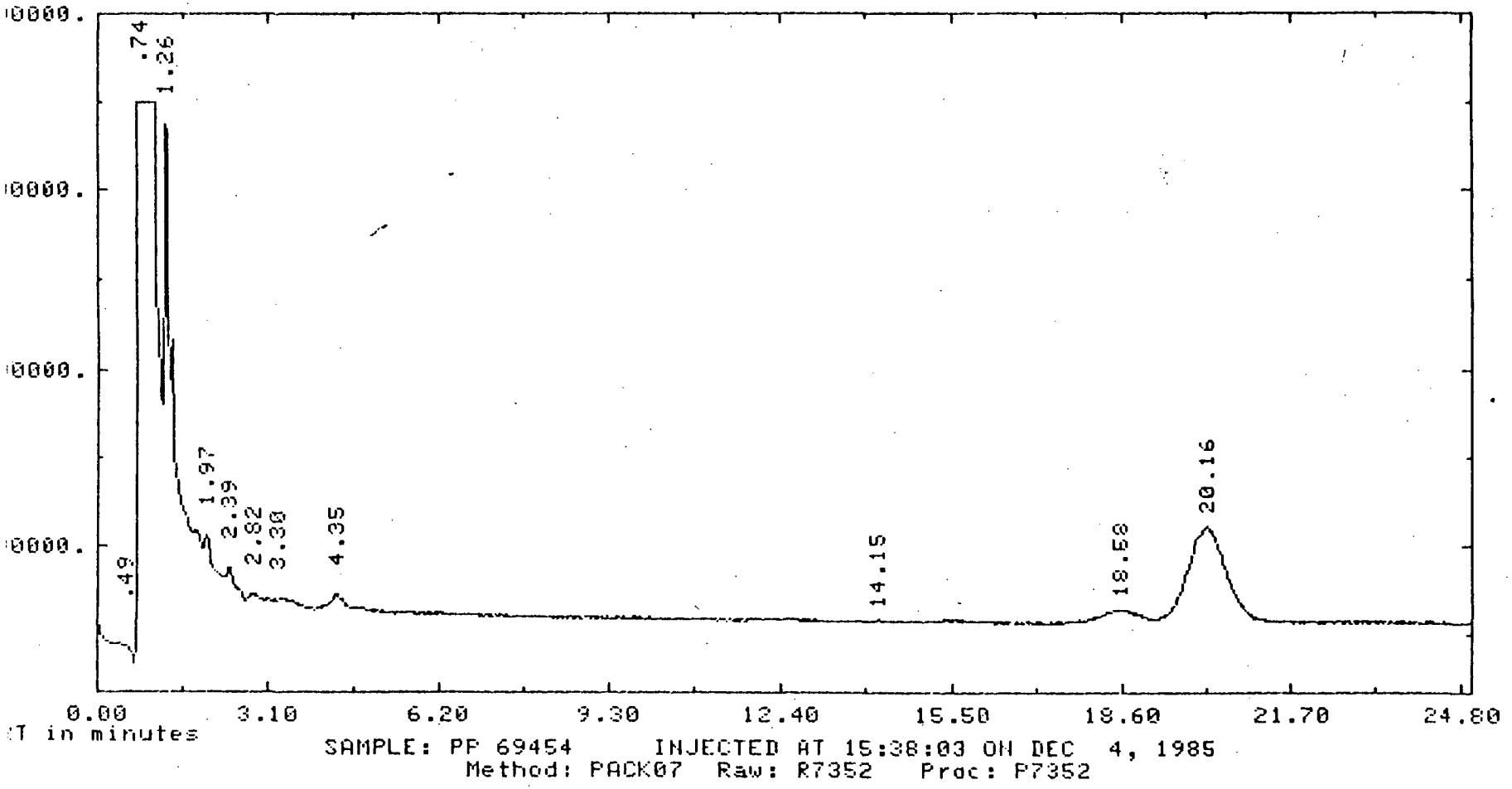
BDL=BELOW DETECTION LIMIT

QUALITY CONTROL SUMMARY

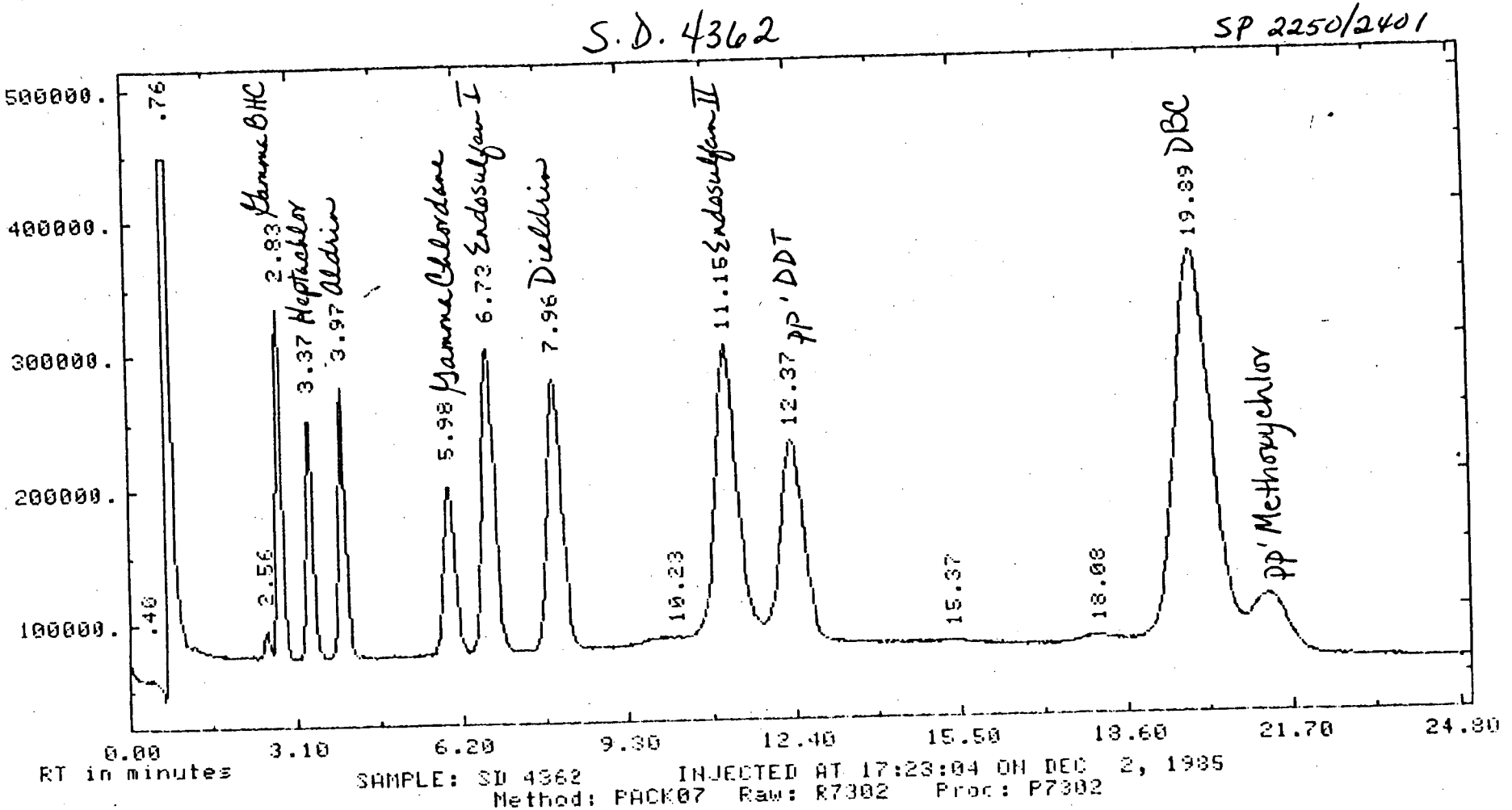
SAMPLE IDENTIFIER: 8078-MW-6
COMPUCHEM® SAMPLE NUMBER: 69454

PESTICIDES

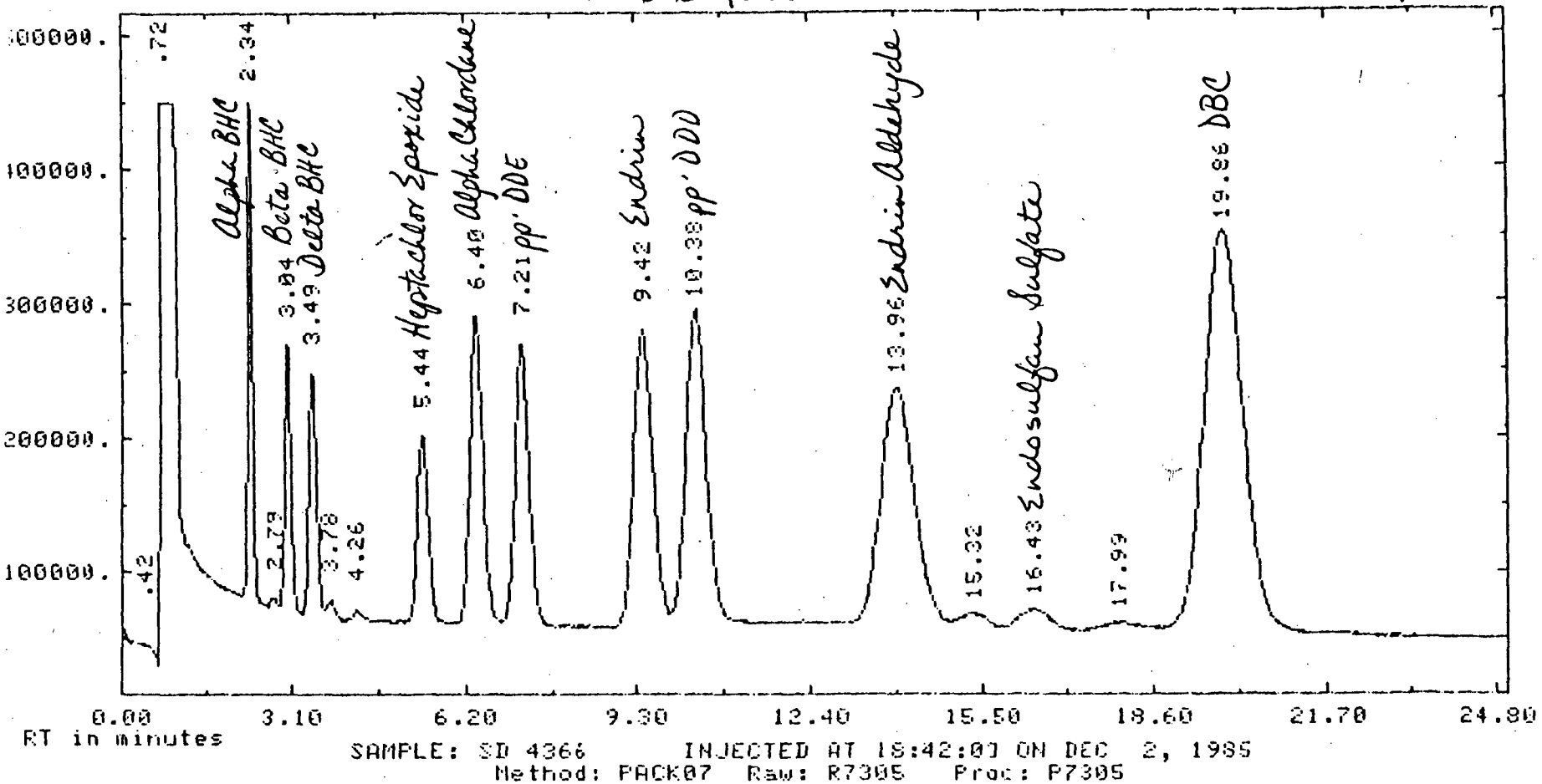
	NUMBER	ACCEPTANCE CRITERIA
Blank	69587	OK
Blank Spike	69108	OK
Sample Spike	69107	OK
Shift Standards		
Pesticide/PCBs Standard		OK



SAMPLE: PP 69454 INJECTED AT 15:38:03 ON DEC 4, 1985
Method: PACK07 Raw: R7352 Proc: P7352


S.D. 4362
SP 2250/2401
500000.
400000.
300000.
200000.
100000.
.76
.40
2.56
2.83 Gamma BHC
3.37 Heptachlor
3.97 Aldrin
5.98 Gamma Chlordane
6.73 Endosulfan I
7.96 Dieldrin
10.23
11.15 Endosulfan II
12.37 pp' DDT
15.37
18.08
19.89 DBC
pp' Methoxychlor
0.00
3.10
6.20
9.30
12.40
15.50
18.60
21.70
24.80
RT in minutes
SAMPLE: SD 4362 INJECTED AT 17:23:04 ON DEC 2, 1985
Method: PACK07 Raw: R7302 Proc: P7302

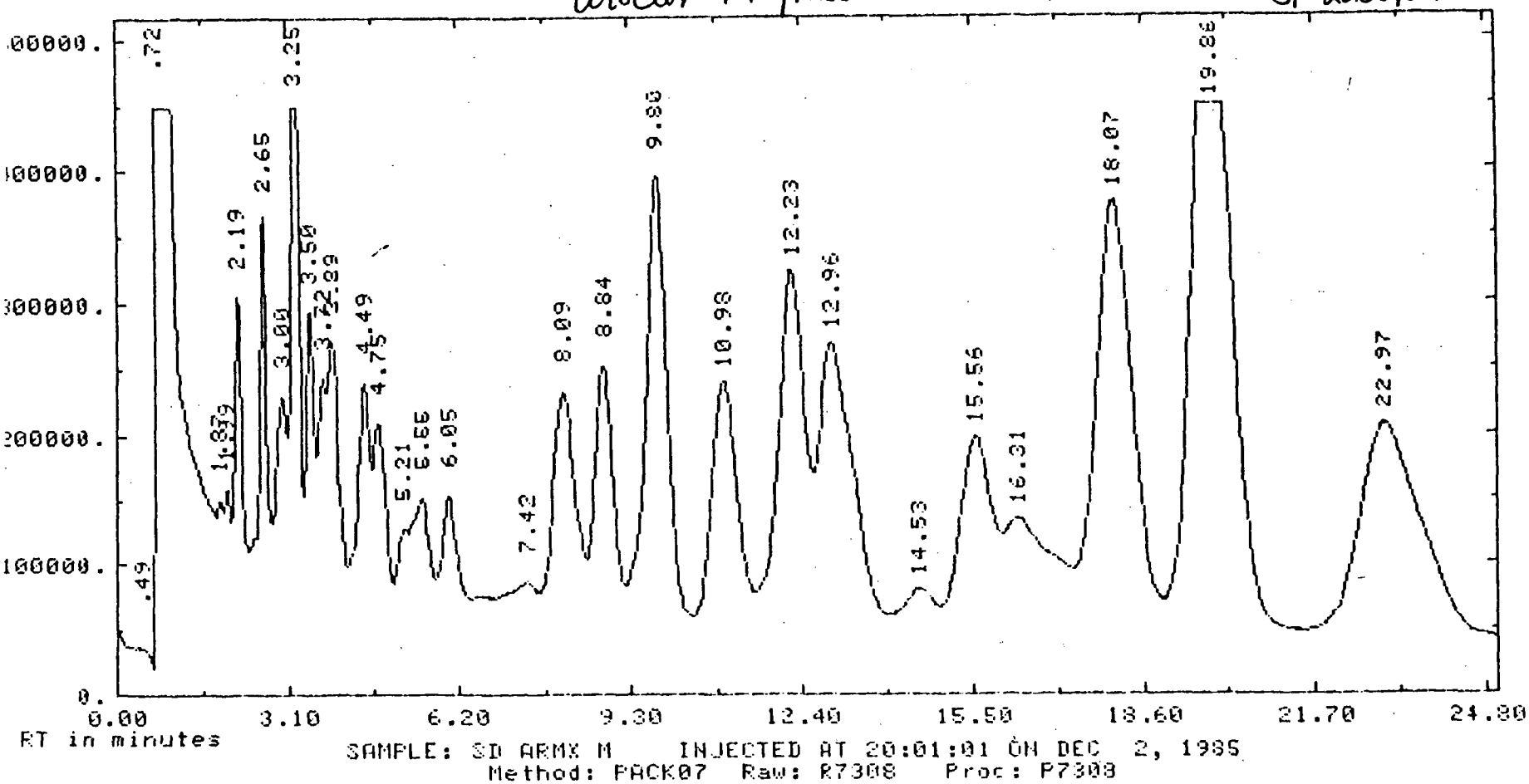
S.D. 4366 SP2250/2401



SAMPLE: SD 4366 INJECTED AT 18:42:00 ON DEC 2, 1985
Method: PACK07 Raw: R7305 Proc: P7305

Aroclor 1016/1260

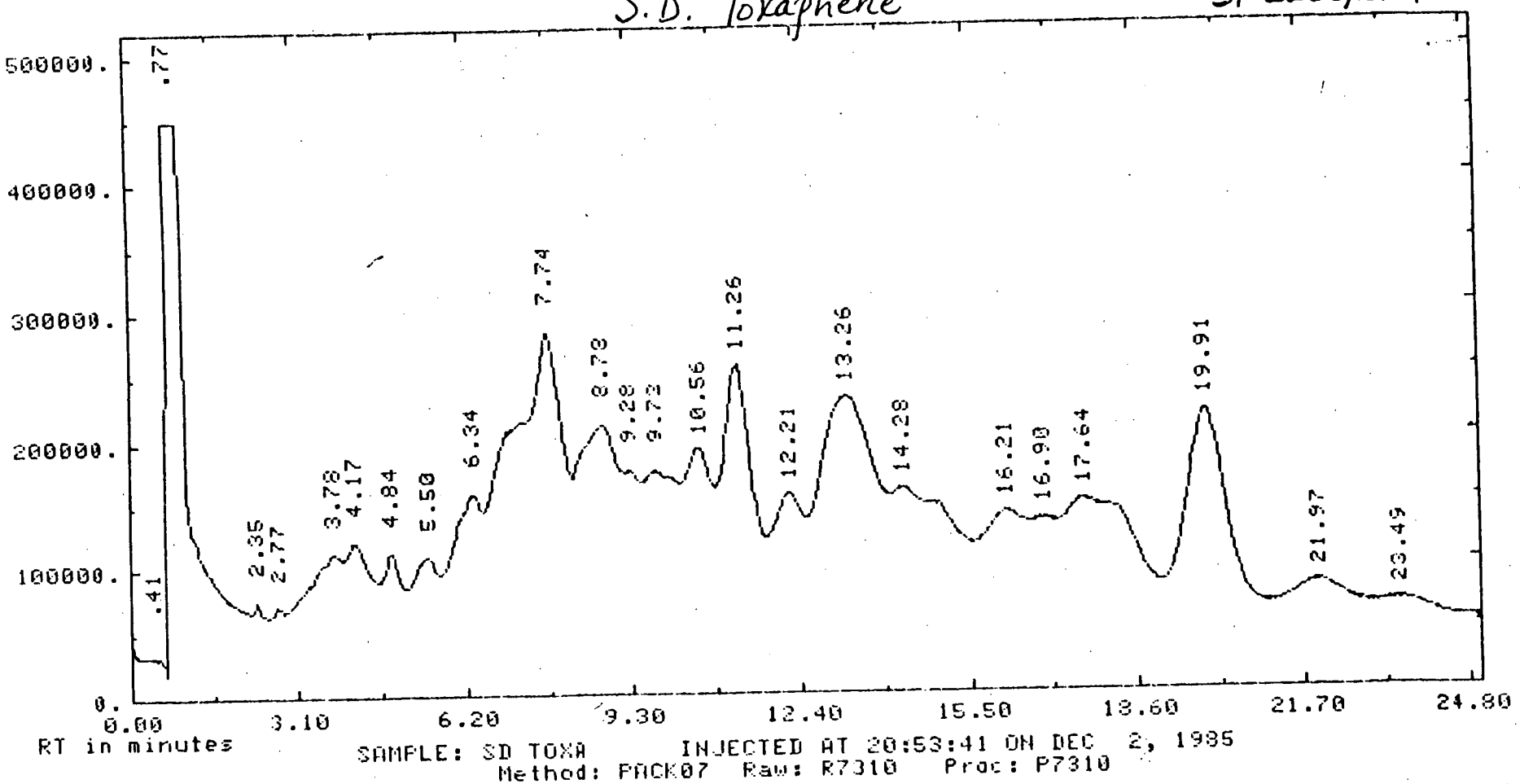
SP 2250/2401



SAMPLE: SD ARMX M INJECTED AT 20:01:01 ON DEC 2, 1985

Method: PACK07 Raw: R7308 Proc: P7308

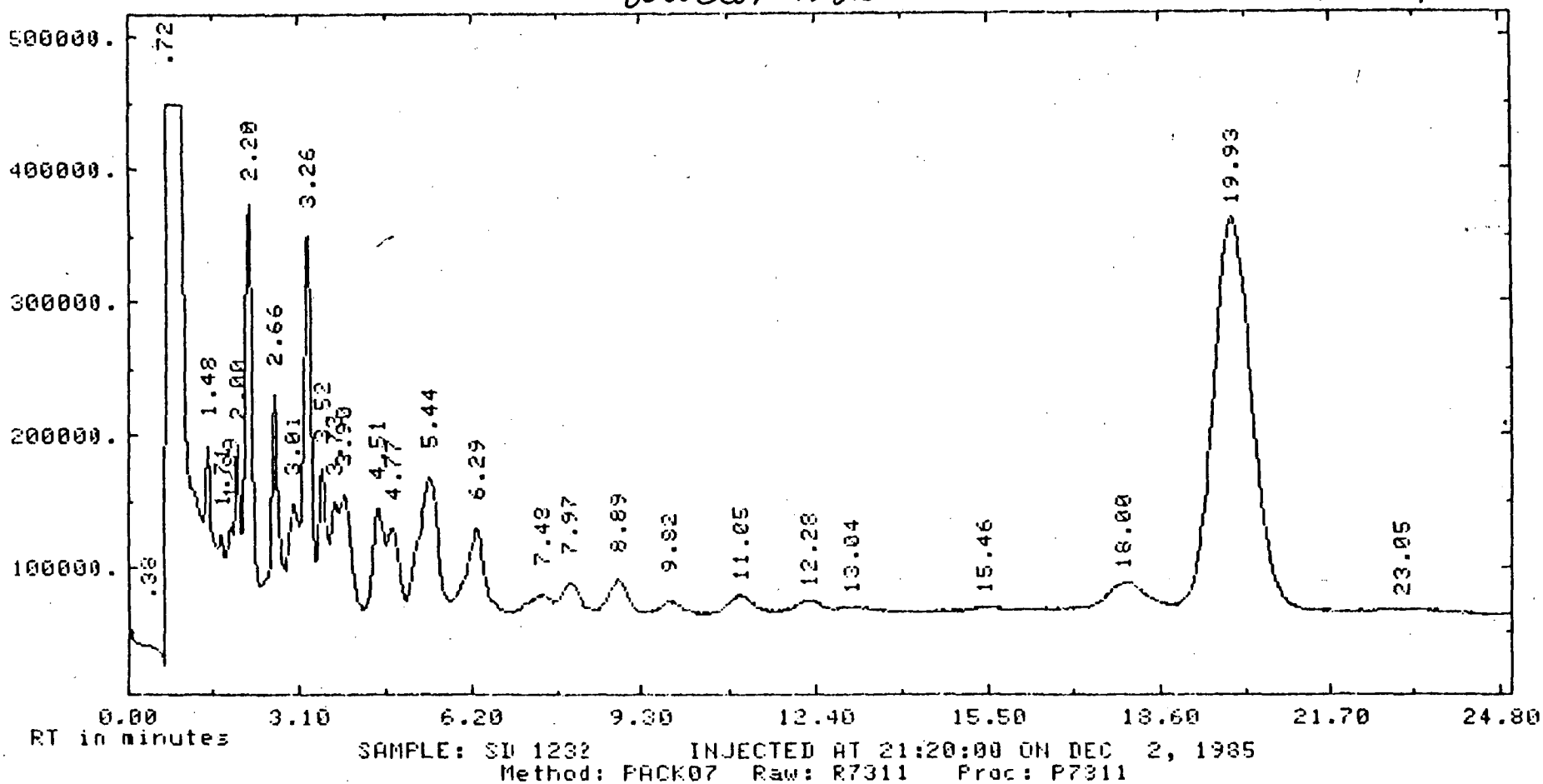
S.D. Toxaphene SP 2250/2401



SAMPLE: SD TOXA INJECTED AT 20:53:41 ON DEC 2, 1985
Method: PACK07 Raw: R7310 Proc: P7310

Aroclor 1232

SP 2250/2401

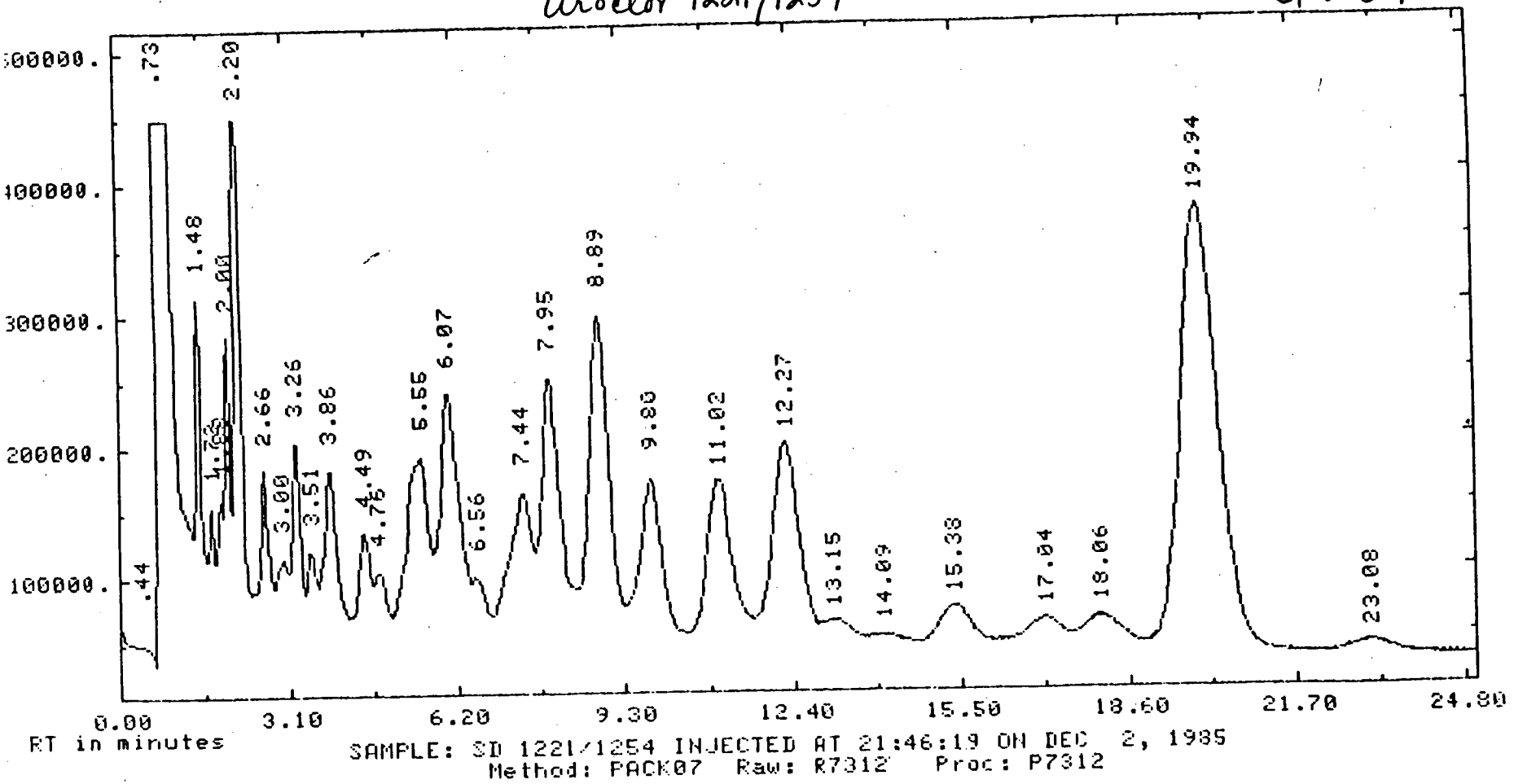


SAMPLE: SD 1232 INJECTED AT 21:20:00 ON DEC 2, 1985

Method: PACK07 Raw: R7311 Proc: P7311

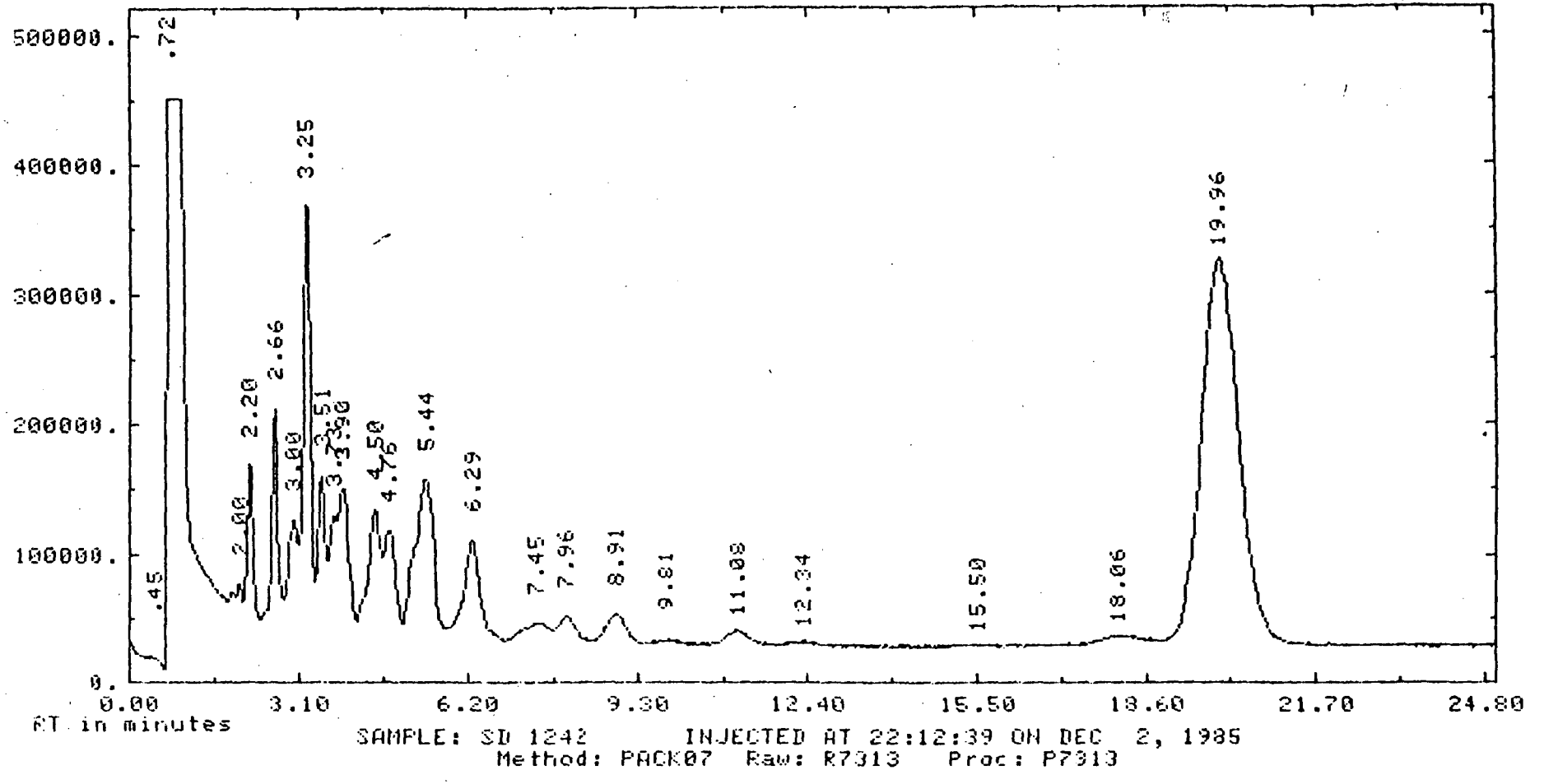
Aroclor 1221/1254

SP 2250/2401



SAMPLE: SD 1221/1254 INJECTED AT 21:46:19 ON DEC 2, 1985
Method: PACK07 Raw: R7312 Proc: P7312

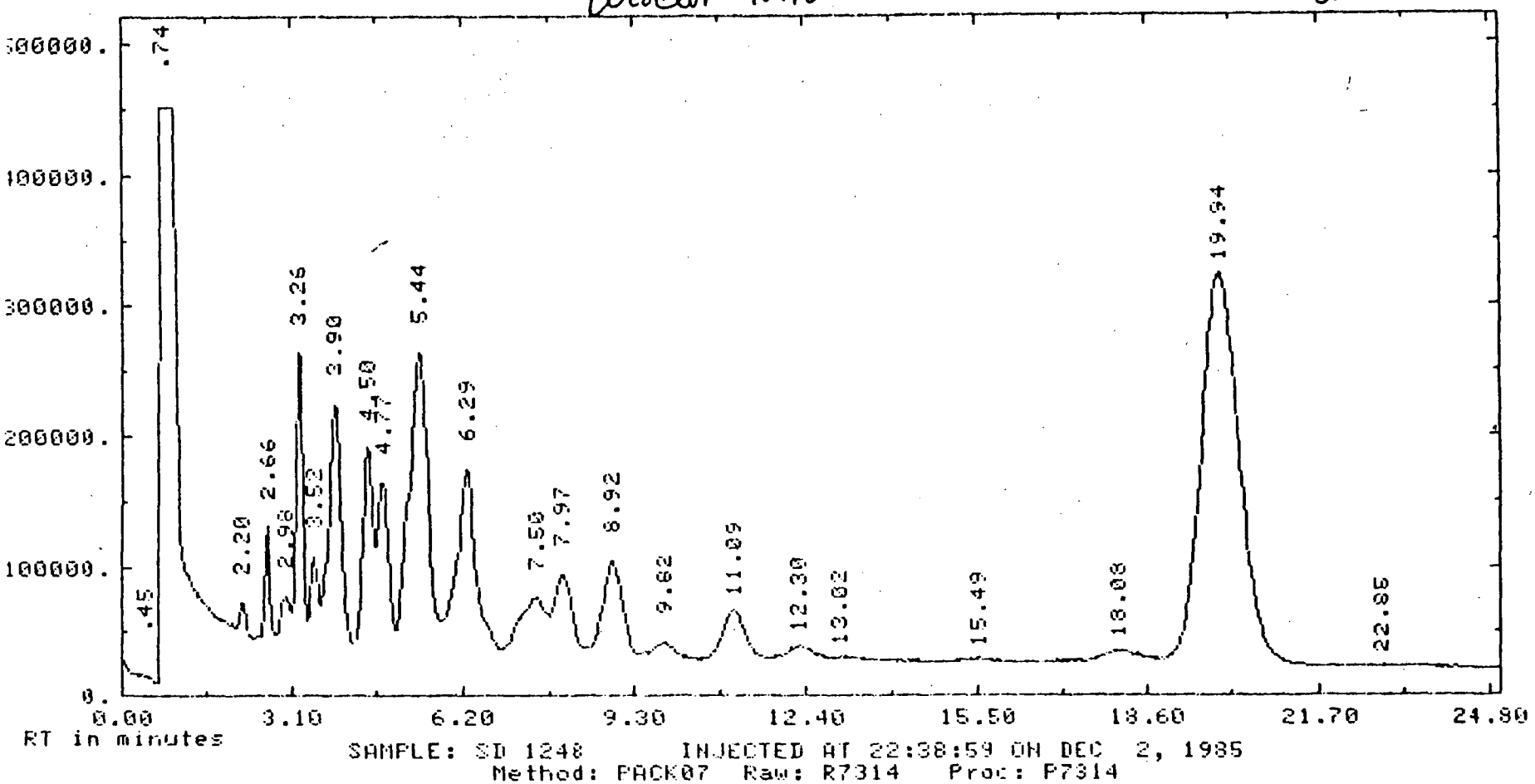
Aroclor 1242 SP2250/2401



SAMPLE: SD 1242 INJECTED AT 22:12:39 ON DEC 2, 1985
Method: PACK07 Raw: R7313 Proc: P7313

Aroclor 1248

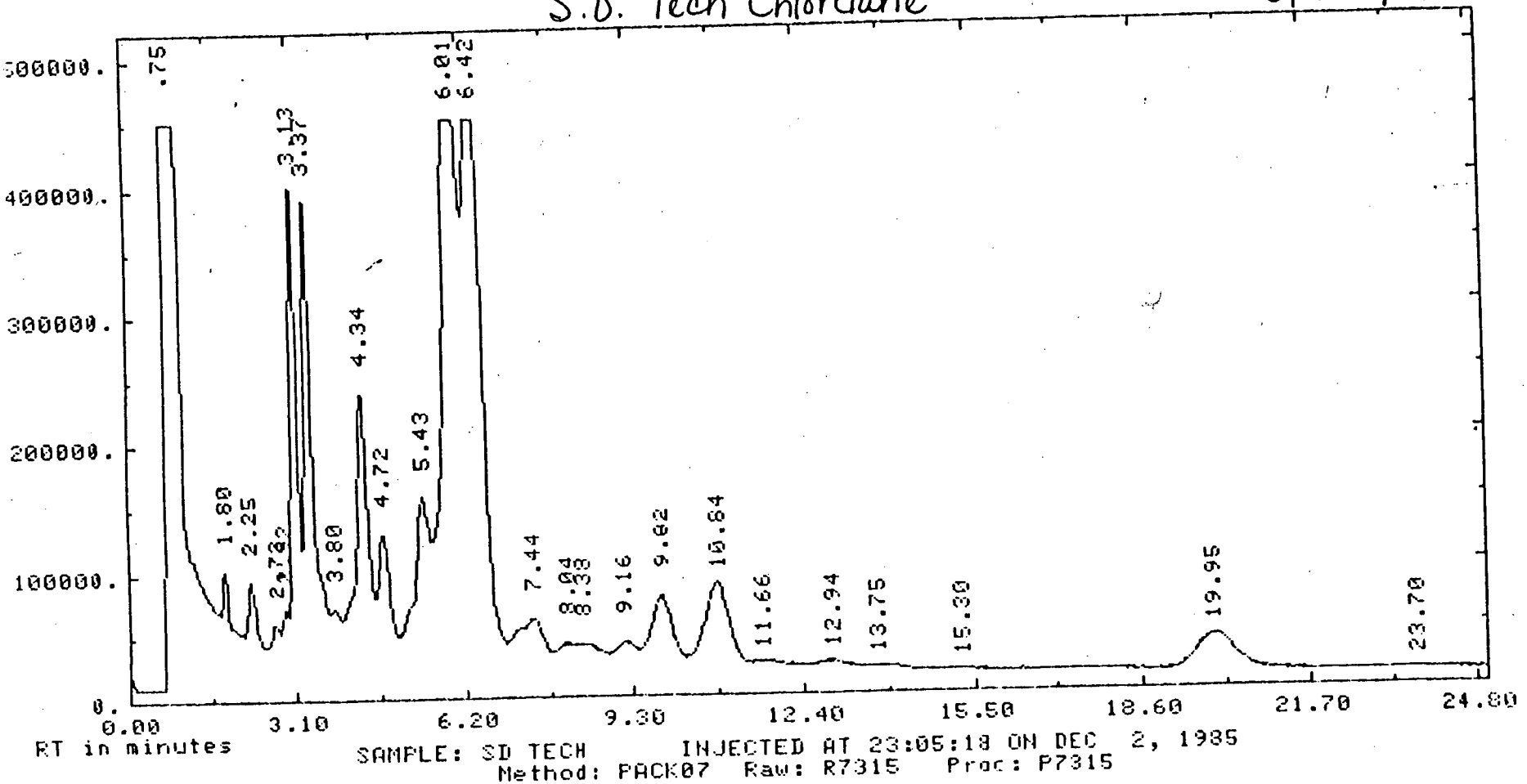
SP 2250/2401



SAMPLE: SD 1248 INJECTED AT 22:38:59 ON DEC 2, 1985

Method: PACK07 Raw: R7314 Proc: P7314

S.D. Tech Chlordane SP 2250/2401



SAMPLE: SD TECH INJECTED AT 23:05:18 ON DEC 2, 1985
Method: PACK07 Raw: R7315 Proc: P7315

Environmental
CS LABORATORY
(315) 457-6711
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Feb 05 1986

Attention: MARK KOMHOLZ

****

SAMPLE #8079

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/25/85
LOCATION	: MW7	TIME COLLECTED	: 1515
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
CYANIDE-T	0.089	mg/l
ANTIMONY	<0.3	mg/l
ARSENIC	0.022	mg/l
BERYLLIUM	<0.02	mg/l
CADMIUM	<0.01	mg/l
CHROMIUM-T	<0.01	mg/l
COPPER	<0.01	mg/l
LEAD	<0.05	mg/l
MERCURY	<0.002	mg/l
NICKEL	0.05	mg/l
SELENIUM	<0.002	mg/l
SILVER	<0.03	mg/l
THALLIUM	<0.2	mg/l
ZINC	0.14	mg/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

R. J. Gallo FEB 05 1986

Environmental
CS LABORATORY
Division of Caloceriños & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O.BOX A-500
TONAWANDA, NY 14150

Date: Feb 05 1986

Attention: MARK KOMHOLZ

SAMPLE #8080

LABORATORY ANALYSIS REPORT

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.050.00	DATE COLLECTED	: NA
LOCATION	: FIELD BLANK	TIME COLLECTED	: NA
PRICE CODE	: STANDARD	METHOD	: NA

PARAMETER	RESULTS	UNITS
CYANIDE-T	<0.004	mg/l
PHENOL	<0.010	mg/l
ANTIMONY	<0.3	mg/l
ARSENIC	<0.002	mg/l
BERYLLIUM	<0.02	mg/l
CADMIUM	<0.01	mg/l
CHROMIUM-T	<0.01	mg/l
COPPER	<0.01	mg/l
LEAD	<0.05	mg/l
MERCURY	<0.002	mg/l
NICKEL	<0.01	mg/l
SELENIUM	<0.002	mg/l
SILVER	<0.03	mg/l
THALLIUM	<0.02	mg/l
ZINC	<0.01	mg/l

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

SAMPLE #8080

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZENE	<5.	ug/l
1,2 DICHLOROBENZENE	<5.	ug/l
1,3 DICHLOROBENZENE	<5.	ug/l
1,4 DICHLOROBENZENE	<5.	ug/l
ETHYLBENZENE	<5.	ug/l
TOLUENE	<5.	ug/l
ortho-XYLENE	<5.	ug/l
para-XYLENE	<5.	ug/l
meta-XYLENE/CHLOROBENZENE	<5.	ug/l

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Teufel Jr. DATE: FEB 05 1986

COMPUCHEM LABORATORIES

December 13, 1985

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

Dear Mr. Leone:

We at CompuChem® are pleased to provide our report for the analysis you requested. Enclosed is data for the following sample:

YOUR ID NO.	C/C NO.	ANALYSIS CODE	ORDER NO.	DESCRIPTION OF WORK PERFORMED	REPORT FORMAT
8079-MW-7	69455	100	8119	Volatiles + Library Search	Gold

For your information and convenience, we have included in this report the analytical results, method reference and quality control summary. When anomalies are encountered in an analysis, they are referenced in the quality assurance notice(s). Additionally, instrumental documentation is provided with reports purchased in our GOLD REPORT FORMAT.

Should you require additional TECHNICAL EXPLANATION of this report, please do not hesitate to contact me at 1-919-549-8263. To place a NEW ORDER, request additional SAMPLESAVERS®, inquire about SAMPLE STATUS or if you need help with SAMPLE LOGISTICS your Customer Service Representative can be of assistance. Of course, your Sales Representative is always available to provide a complete overview of our LINE OF SERVICES and assist you in identifying those services which will support your monitoring program as well as provide you with a QUOTATION.

Thank you for this order. We at CompuChem® look forward to providing you with continued analytical support. We appreciate your comments regarding the level of service you feel you have received and look forward to receiving your written comments when possible. Comments should be directed to Mr. Kevin McConnaghy, Director of Marketing, at the address given below.

Sincerely,

Diana A. Scammell

Diana A. Scammell
Manager, Technical Review

cc: Cover letter only
Accounting

COMPUCHEM LABORATORIES

ANALYTICAL REPORT OF DATA
SUBMITTED TO:

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

CHRONICLE

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM® NUMBER	DATE SAMPLE RECEIVED	DATE VOLATILE FRACTION ANALYZED
1.	8079-MW-7	69455	11/29/85	12/06/85

COMPUCHEM
LABORATORIES

- TABLE OF CONTENTS -

*These notices are included where appropriate for data qualification.

**When the original chain of custody is submitted with the sample(s), a copy of it is included with the report.

METHOD REFERENCE

CompuChem® employs Method 624 for the GC/MS analysis of volatile priority pollutant organics in liquid matrices. This method is published in Volume 49, October 26, 1984 Federal Register.

Method Summary

As stated in the October 1984 reference, "An inert gas is bubbled through a 5 ml sample contained in a specially designed purging chamber at ambient temperature. The purgeables are efficiently transferred from the aqueous phase to the vapor phase. The vapor is swept through a sorbent column where the purgeables are trapped. After purging is completed, the sorbent column is heated and backflushed with the inert gas to desorb the purgeables onto a gas chromatographic column." ".... which are then detected with a mass spectrometer." Unknown compounds are tentatively identified by comparison to the National Bureau of Standards (NBS) mass spectral library.

The referenced methods are no longer appropriate for several of the original priority pollutant compounds. This is due to either the deletion from the toxic pollutant list (40 CFR Part 401) by EPA or the determination by EPA that the referenced methods may not be optimized for certain compounds (EPA-600/4-82-057) originally incorporated by the methods.

CompuChem® presents these compounds in its sample data report for completeness as many of the government compound list forms continue to display the affected compounds. For consistency, these compounds are reported as "BDL" or "Below Detection Limits" as they are either not likely to exist in the sample or are not likely to be detected by the method. Those compounds which have actually been deleted are listed below with the Federal Register deletion reference.

Compound Name	GC/MS Fraction	Federal Register	Date
Dichlorodifluoromethane	Volatile	46FR2264	1/8/81
*Trichlorofluoromethane	Volatile	46FR2264	1/8/81
Bis(Chloromethyl)Ether	Volatile	46FR10723	2/4/81

*While this compound has been deleted, CompuChem® continues to identify and quantitate for it.

COMPOUND LIST - VOLATILE ORGANICS

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69455

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1V.	CHLOROMETHANE	BDL	10	
2V.	VINYL CHLORIDE	BDL	10	
3V.	CHLOROETHANE	BDL	10	
4V.	BROMOMETHANE	BDL	10	
5V.	ACROLEIN	BDL	100	
6V.	ACRYLONITRILE	BDL	100	
7V.	METHYLENE CHLORIDE	BDL	10	
8V.	TRICHLOROFLUOROMETHANE	BDL	10	
9V.	1,1-DICHLOROETHYLENE	BDL	10	
10V.	1,1-DICHLOROETHANE	BDL	10	
11V.	TRANS-1,2-DICHLOROETHYLENE	BDL	10	
12V.	CHLOROFORM	BDL	10	
13V.	1,2-DICHLOROETHANE	BDL	10	
14V.	1,1,1-TRICHLOROETHANE	BDL	10	
15V.	CARBON TETRACHLORIDE	BDL	10	
16V.	BROMODICHLOROMETHANE	BDL	10	
17V.	1,2-DICHLOROPROPANE	BDL	10	
18V.	TRANS-1,3-DICHLOROPROPENE	BDL	10	
19V.	TRICHLOROETHYLENE	BDL	10	
20V.	BENZENE	BDL	10	
21V.	CIS-1,3-DICHLOROPROPENE	BDL	10	
22V.	1,1,2-TRICHLOROETHANE	BDL	10	
23V.	DIBROMOCHLOROMETHANE	BDL	10	
24V.	BROMOFORM	BDL	10	
25V.	1,1,2,2-TETRACHLOROETHYLENE	BDL	10	
26V.	1,1,2,2-TETRACHLOROETHANE	BDL	10	
27V.	TOLUENE	BDL	10	
28V.	CHLOROBENZENE	BDL	10	
29V.	ETHYLBENZENE	BDL	10	
30V.	2-CHLOROETHYL VINYL ETHER	BDL	10	
31V.	DICHLORODIFLUOROMETHANE†	BDL		
32V.	BIS(CHLOROMETHYL)ETHER†	BDL		

Surrogate Recoveries - Introduced at the instrument, volatile surrogate standards are deuterated and/or select compounds that analytically mimic the response of certain analytes. Known concentrations of these surrogates are added to the sample and a percent recovery is calculated. This recovery acts as a barometer of method efficiency for the individual sample.

	% Recovery	Control Range%
D_4-1,2-Dichloroethane	85	(77-120)
4-Bromofluorobenzene	97	(85-121)
D_8-Toluene	94	(86-119)

BDL= BELOW DETECTION LIMIT
†See Method Reference

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69455

15 PEAK IDENTIFICATION - Volatile

Exclusive of any priority pollutants (specific to this analysis), surrogate standard, and internal standard peaks, no compounds greater than 25% of the closest internal standard were tentatively identified by mass spectral library search.

QUALITY CONTROL SUMMARY

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69455

VOLATILE

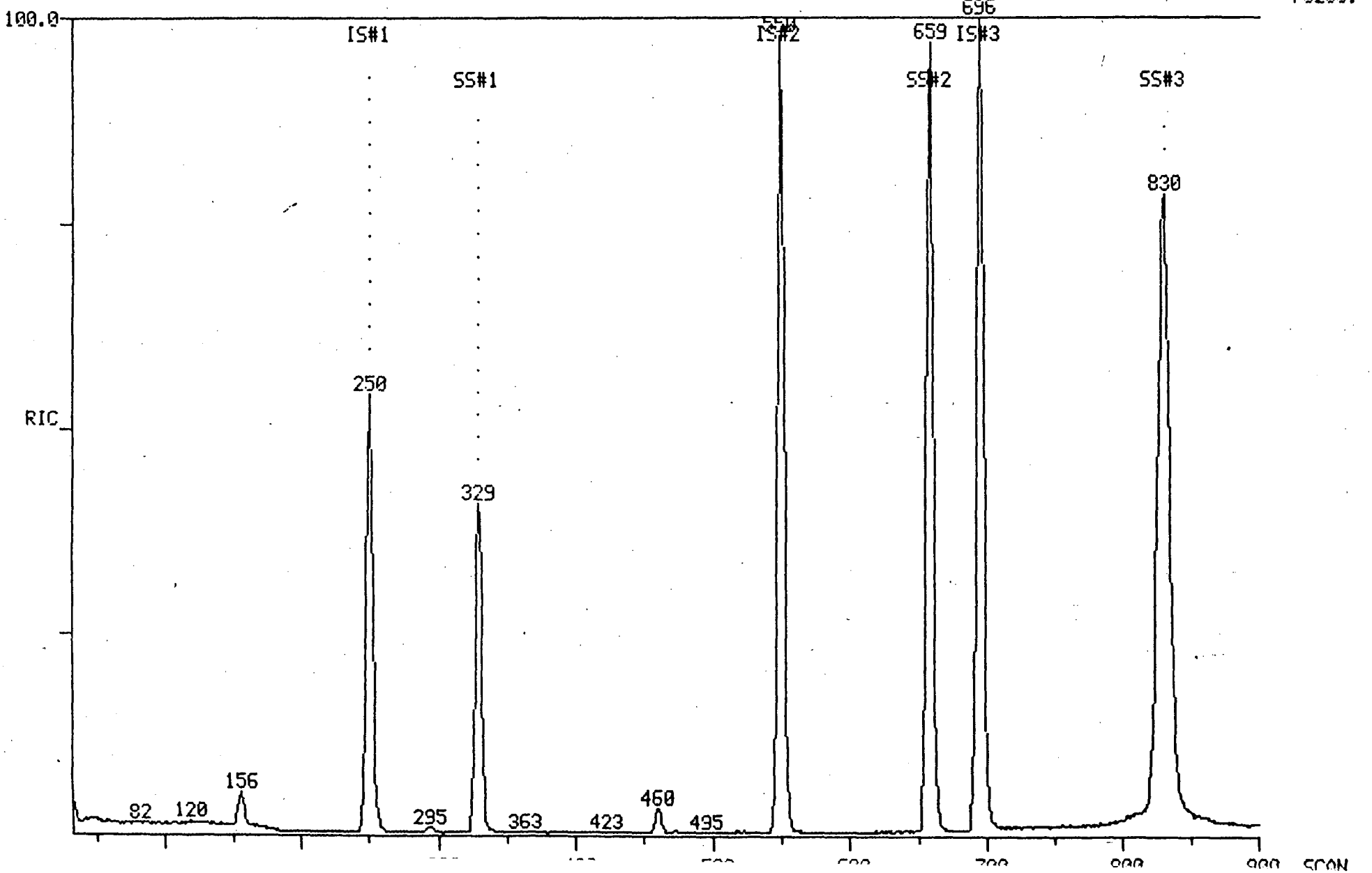
	NUMBER	ACCEPTANCE CRITERIA
Blank	69543	OK
Blank Spike	68933	OK
Sample Spike	68932	OK
BFB*	BF851206A03	OK
Shift Standard	VS851206A03	OK

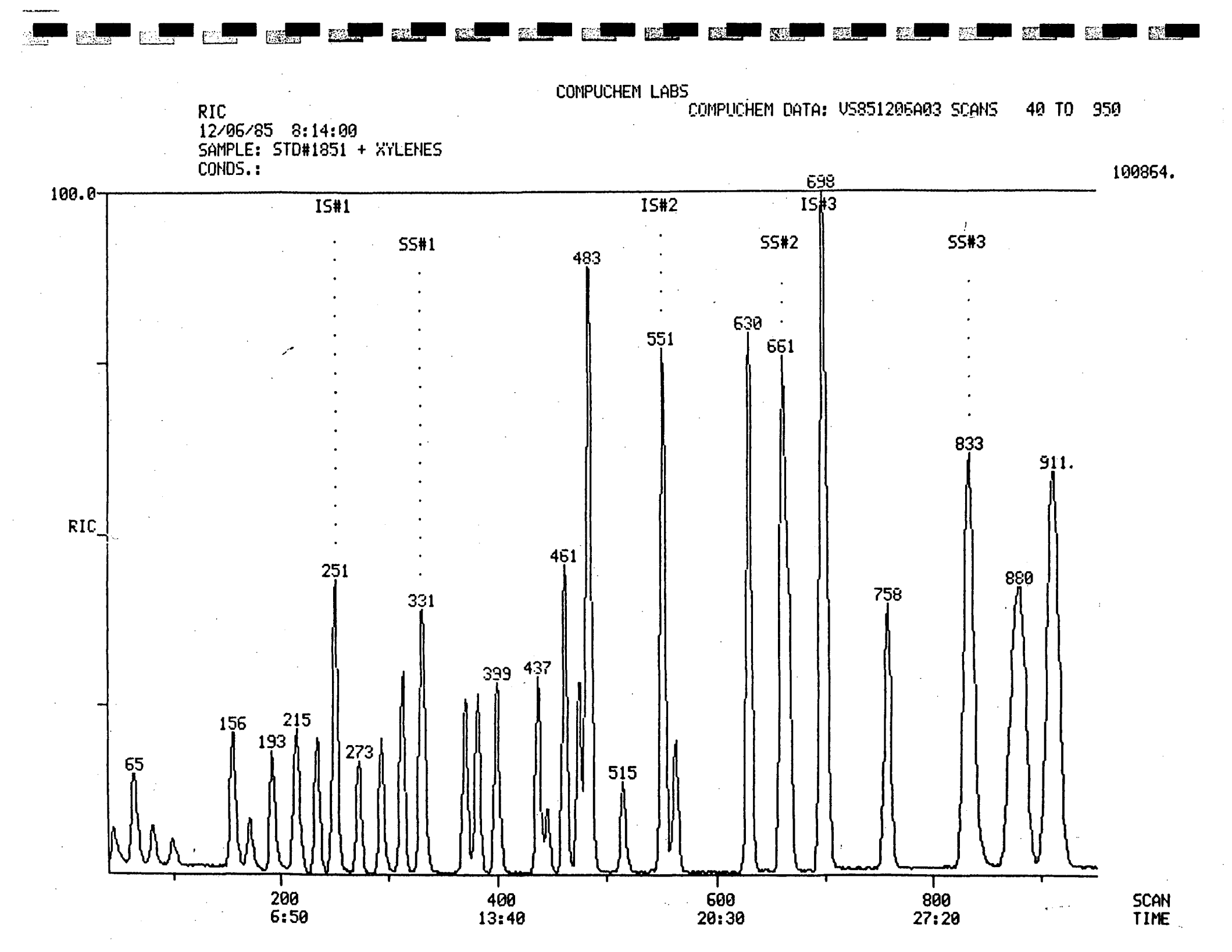
*The tuning calibration compound, Bromofluorobenzene, is used for the volatile instruments.

COMPUCHEM LABS

RIC
12/06/85 12:10:00
SAMPLE: 5ML CC#69455
CONDS.:

COMPUCHEM DATA: VR069455A03 SCANS 32 TO 900




COMPUCHEM LABS
RIC
12/06/85 8:14:00
SAMPLE: STD#1851 + XYLENES
CONDS.:
COMPUCHEM DATA: VS85120GA03 SCANS 40 TO 950
100864.
100.0
RIC
IS#1
SS#1
IS#2
SS#2
IS#3
SS#3
65
156
193
215
251
273
331
399
437
461
483
515
551
630
661
698
758
833
880
911.
200
6:50
400
13:40
600
20:30
800
27:20
SCAN
TIME

COMPUCHEM LABORATORIES

December 17, 1985

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

Dear Mr. Leone:

We at CompuChem® are pleased to provide our report for the analysis you requested. Enclosed is data for the following sample:

YOUR ID NO.	C/C NO.	ANALYSIS CODE	ORDER NO.	DESCRIPTION OF WORK PERFORMED	REPORT FORMAT
8079-MW-7	69456	502	8119	ACID & BASE/NEUTRAL + LIBRARY SEARCH	GOLD

For your information and convenience, we have included in this report the analytical results, method reference and quality control summary. When anomalies are encountered in an analysis, they are referenced in the quality assurance notice(s). Additionally, instrumental documentation is provided with reports purchased in our GOLD REPORT FORMAT.

Should you require additional TECHNICAL EXPLANATION of this report, please do not hesitate to contact me at 1-919-549-8263. To place a NEW ORDER, request additional SAMPLESAVERS®, inquire about SAMPLE STATUS or if you need help with SAMPLE LOGISTICS your Customer Service Representative can be of assistance. Of course, your Sales Representative is always available to provide a complete overview of our LINE OF SERVICES and assist you in identifying those services which will support your monitoring program as well as provide you with a QUOTATION.

Thank you for this order. We at CompuChem® look forward to providing you with continued analytical support. We appreciate your comments regarding the level of service you feel you have received and look forward to receiving your written comments when possible. Comments should be directed to Mr. Kevin McConnaghy, Director of Marketing, at the address given below.

Sincerely,

Diana A. Scammell
Manager, Technical Review

cc: Cover letter only
Accounting

RECEIVED
DEC 23 1985
& SPINA
ENGINEERS

COMPUCHEM LABORATORIES

ANALYTICAL REPORT OF DATA
SUBMITTED TO:

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

CHRONICLE

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM® NUMBER	DATE SAMPLE RECEIVED	DATE SAMPLE EXTRACTED	DATE ACID FRACTION ANALYZED	DATE BASE/NEUTRAL FRACTION ANALYZED
1.	8079-MW-7	69456	11/29/85	12/03/85 12/12/85*	12/12/85	* 12/14/85*

*Base/Neutral fraction re-extracted and re-analyzed because associated quality control samples did not meet acceptance criteria.

COMPUCHEM
LABORATORIES

- TABLE OF CONTENTS -

*These notices are included where appropriate for data qualification.

**When the original chain of custody is submitted with the sample(s), a copy of it is included with the report.

METHOD REFERENCE

CompuChem® employs Method 625 for GC/MS analysis of acid and base/neutral organics in liquid matrices. This method is published in Volume 49, October 26, 1984 Federal Register.

METHOD SUMMARY

As stated in the October 1984 reference, "A measured volume of sample, approximately one liter, is serially extracted with methylene chloride at a pH greater than 11 and again at pH less than 2 using a separatory funnel or a continuous extractor. The methylene chloride extract is dried and concentrated to a volume of 1 ml."

"Qualitative identification is performed using the retention time and the relative abundance of three characteristic ions. Quantitative analysis is performed using either external or internal standard techniques."

Semi-quantitative analysis (library search) is performed by automatic comparison of the unknown peak spectrum to the National Bureau of Standards (NBS) mass spectral library. Estimated concentration is calculated using the known concentration and peak area of the closest internal standard while assuming a response factor of one for the unknown compound.

COMPOUND LIST -- ACID EXTRACTABLES

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69456

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1A.	PHENOL	BDL	25	
2A.	2-CHLOROPHENOL	BDL	25	
3A.	2-NITROPHENOL	BDL	25	
4A.	2,4-DIMETHYLPHENOL	BDL	25	
5A.	2,4-DICHLOROPHENOL	BDL	25	
6A.	P-CHLORO-M-CRESOL	BDL	25	
7A.	2,4,6-TRICHLOROPHENOL	BDL	25	
8A.	2,4-DINITROPHENOL	BDL	250	
9A.	4-NITROPHENOL	BDL	25	
10A.	4,6-DINITRO-O-CRESOL	BDL	250	
11A.	PENTACHLOROPHENOL	BDL	25	

Surrogate Recoveries - Introduced at the beginning of the extraction, surrogate standards are deuterated and/or select compounds that analytically mimic the response of certain analytes. Known concentrations of these surrogates are added to the sample and a percent recovery is calculated. This recovery acts as a barometer of extraction efficiency and analytical response for the individual sample.

	%Recovery	Control Range%
2-Fluorophenol	47	(23-121)
d_5-Phenol	34	(15-103)
2,4,6-Tribromophenol	77	(10-130)

BDL= BELOW DETECTION LIMIT

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69456

15 PEAK IDENTIFICATION - ACID

Exclusive of any priority pollutants (specific to this analysis), surrogate standard, and internal standard peaks, no compounds greater than 25% of the closest internal standard were tentatively identified by mass spectral library search.

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLES

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69456

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
1B.	N-NITROSODIMETHYLAMINE	BDL	10	
2B.	BIS (2-CHLOROETHYL) ETHER	BDL	10	
3B.	1,3-DICHLOROBENZENE	BDL	10	
4B.	1,4-DICHLOROBENZENE	BDL	10	
5B.	1,2-DICHLOROBENZENE	BDL	10	
6B.	BIS (2-CHLOROISOPROPYL) ETHER	BDL	10	
7B.	HEXACHLOROETHANE	BDL	10	
8B.	N-NITROSODI-N-PROPYLAMINE	BDL	10	
9B.	NITROBENZENE	BDL	10	
10B.	ISOPHORONE	BDL	10	
11B.	BIS(2-CHLOROETHOXY) METHANE	BDL	10	
12B.	1,2,4-TRICHLOROBENZENE	BDL	10	
13B.	NAPHTHALENE	BDL	10	
14B.	HEXACHLOROBUTADIENE	BDL	10	
15B.	HEXACHLOROCYCLOPENTADIENE	BDL	10	
16B.	2-CHLORONAPHTHALENE	BDL	10	
17B.	DIMETHYLPHTHALATE	BDL	10	
18B.	ACENAPHTHYLENE	BDL	10	
19B.	2,6-DINITROTOLUENE	BDL	10	
20B.	ACENAPHTHENE	BDL	10	
21B.	2,4-DINITROTOLUENE	BDL	10	
22B.	DIETHYLPHTHALATE	BDL	10	
23B.	FLUORENE	BDL	10	
24B.	4-CHLOROPHENYL PHENYL ETHER	BDL	10	
25B.	DIPHENYLAMINE (N-NITROSO)	BDL	10	
26B.	1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	BDL	10	
27B.	4-BROMOPHENYL PHENYL ETHER	BDL	10	
28B.	HEXACHLOROBENZENE	BDL	10	

(Continued)

BDL=BELOW DETECTION LIMIT

COMPOUND LIST -- BASE-NEUTRAL EXTRACTABLES (Page Two)

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69456

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)	SCAN NUMBER
29B.	PHENANTHRENE	BDL	10	
30B.	ANTHRACENE	BDL	10	
31B.	DI-N-BUTYLPHTHALATE	BDL	10	
32B.	FLUORANTHENE	BDL	10	
33B.	BENZIDINE	BDL	10	
34B.	PYRENE	BDL	10	
35B.	BUTYLBENZYLPHTHALATE	BDL	10	
36B.	BENZO(A)ANTHRACENE	BDL	10	
37B.	3,3'-DICHLOROBENZIDINE	BDL	10	
38B.	CHRYSENE	BDL	10	
39B.	BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	
40B.	DI-N-OCTYLPHTHALATE	BDL	10	
41B.	BENZO(B)FLUORANTHENE	BDL	10	
42B.	BENZO(K)FLUORANTHENE	BDL	10	
43B.	BENZO(A)PYRENE	BDL	10	
44B.	INDENO(1,2,3-C,D)PYRENE	BDL	25	
45B.	DIBENZO(A,H)ANTHRACENE	BDL	25	
46B.	BENZO(G,H,I)PERYLENE	BDL	25	

Surrogates Recoveries - Introduced at the beginning of the extraction, surrogate standards are deuterated and/or select compounds that analytically mimic the response of certain analytes. Known concentrations of these surrogates are added to the sample and a percent recovery is calculated. This recovery acts as a barometer of extraction efficiency and analytical response for the individual sample.

	%Recovery	Control Range%
d_5-Nitrobenzene	72	(41-120)
2-Fluorobiphenyl	57	(44-119)
d_{14}-Terphenyl	94	(33-128)
d_{10}-Pyrene*	100	*

BDL=BELOW DETECTION LIMIT
*Advisory Surrogate; therefore no control range

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69456

15 PEAK IDENTIFICATION - BASE/NEUTRAL

Exclusive of any priority pollutants (specific to this analysis), surrogate standard, and internal standard peaks, three (3) compounds greater than 25% of the closest internal standard were tentatively identified by mass spectral library search and estimated concentrations were computed.

COMBUCHEM ORGANICS ANALYSIS DATA SHEET
LIBRARY SEARCH RESULTS OF EXTRANEOUS PEAKS &
ESTIMATED CONCENTRATION OF TENTATIVELY IDENTIFIED COMPOUNDS
ANALYTICAL FRACTION: BASE1

DATA FILENAME: BR060456A21 SAMPLE # _____

ITEM	SCAN NUMBER	CAS #	COMPOUND NAME	% PURITY	ASSESSMENT* RS	OI	UK	ESTIMATED CONC. IN UG PER L	KG	ML	G
1	945	103-44-6	HEPTANE,3-[(ETHENYLOXY)METHYL]-	73.0	☐	☐	☑		16.		
2	1150	62338-09-4	DECANE,2,2,3-TRIMETHYL-	58.5	☐	☐	☑		22.		
3	1222	57-11-4	OCTADECANOICACID	61.6	☐	☐	☑		17.		
	1.000	40.00									

SPECTROSCOPIST _____

DATE 12/16/85

(*) RS - REASONABLE IDENTIFICATION, RETENTION TIME COMPATIBILITY
OI - ISOMER OR SIMILAR COMPOUND
UK - UNKNOWN, NOT IN NBS LIBRARY

QUALITY CONTROL SUMMARY

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69456

ACID

	NUMBER	ACCEPTANCE CRITERIA
Blank	69599	OK
Blank Spike	68738	OK
Sample Spike	68737	**
DFTPP*	DF851212C14	OK
Shift Standard	AS851212C14	OK

BASE/NEUTRAL

Blank	70576	OK
Blank Spike	68738	OK
Sample Spike	68737	**
DFTPP*	DH851214A21	OK
Shift Standard	BT851214A21	OK

*The tuning calibration compound, Decafluorotriphenylphosphine, is used for the acid and base/neutral instruments.
**See Quality Assurance Notice

QUALITY ASSURANCE NOTICE
sample spike #68737 original #68736
blank spike #68738 fraction ACID & BASE/NEUTRAL

Recoveries for the surrogate and/or spike compounds were outside acceptance criteria in the sample spike associated with this sample. A Quality Control blank spike was prepared and analyzed with this batch of samples, and all spike and surrogate recovery criteria were met. In addition, surrogate recoveries in the original sample (used to prepare the sample spike) were comparable to those in the spike.

We have attributed the unacceptable recoveries to the matrix of the original sample, since recoveries in the blank and blank spike prepared with these samples were acceptable. These data are being reported with reference to this qualifier.

data reviewer ESB

date 12/02/85

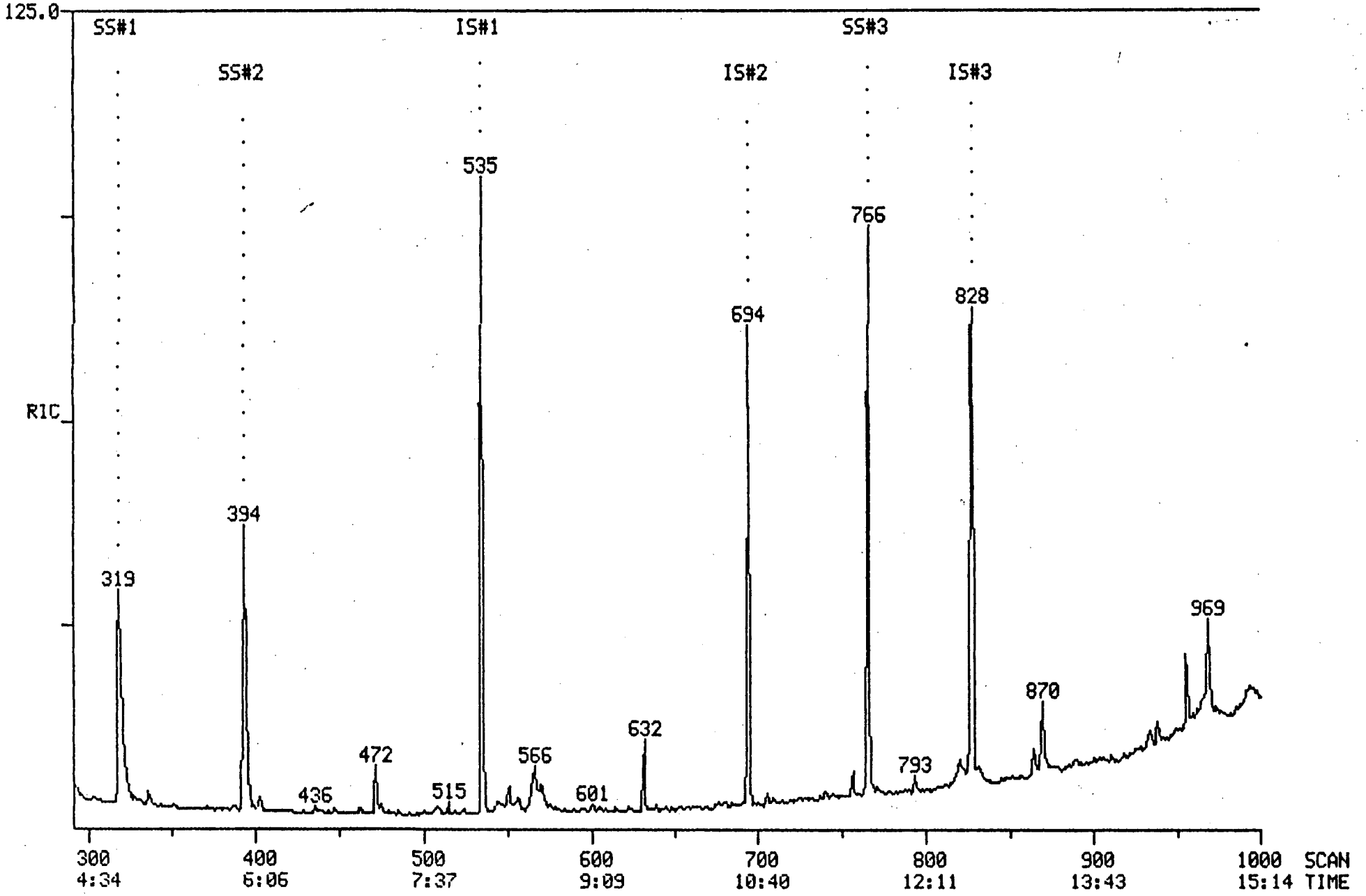
QAN18S

COMPUCHEM LABS

RIC
12/12/85 8:09:00
SAMPLE: 1 UL 69456
CONDS.:

COMPUCHEM DATA: AC069456C14 SCANS 291 TO 1000

1125110.



COMPUCHEM LABS

RIC

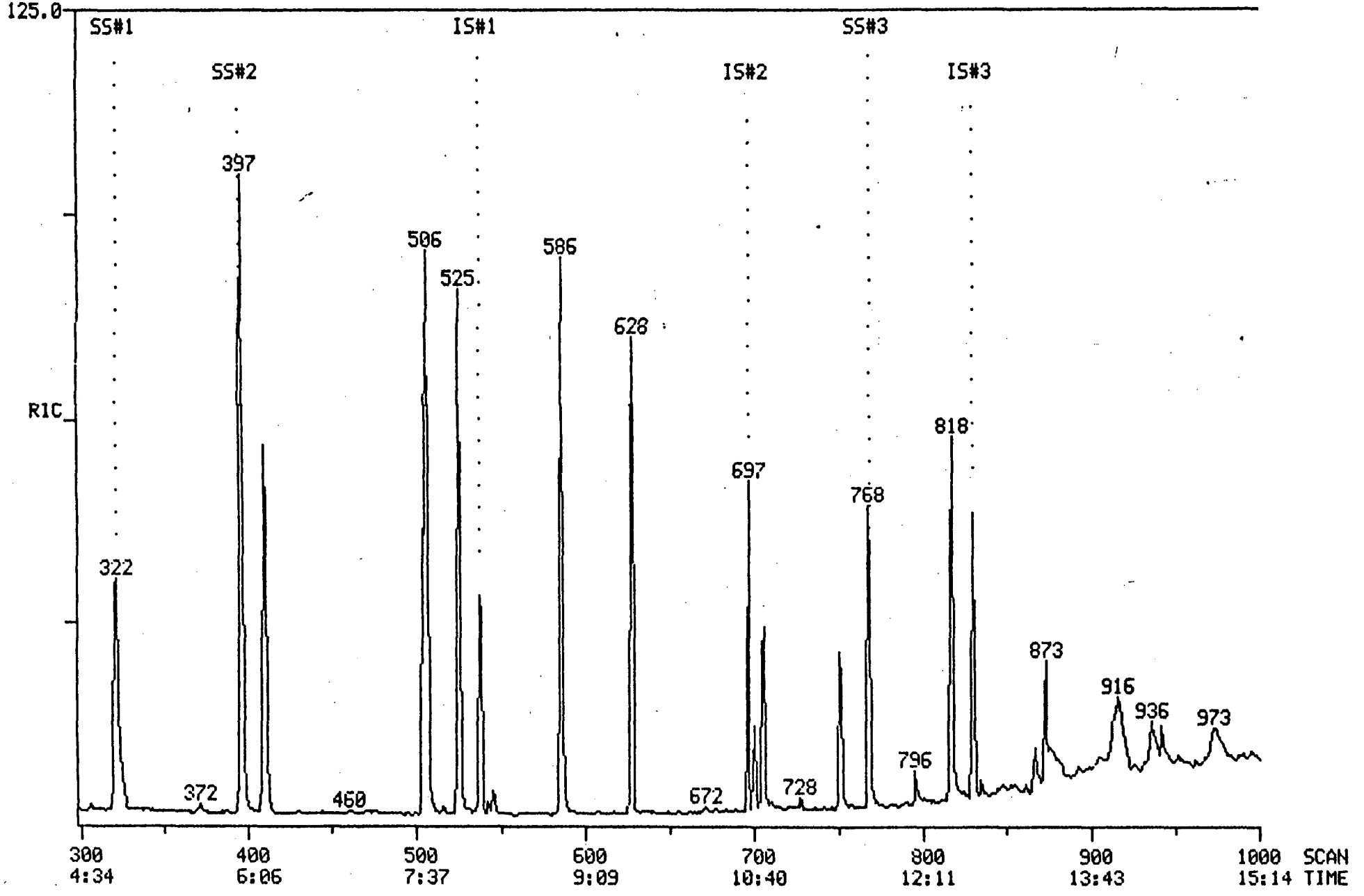
COMPUCHEM DATA: AS851212C14 SCANS 298 TO 1000

12/12/85 3:18:00

SAMPLE: 1 UL 3316 #16264 100NG

CONDS.:

1702390.



COMPUCHEM LABS

RIC

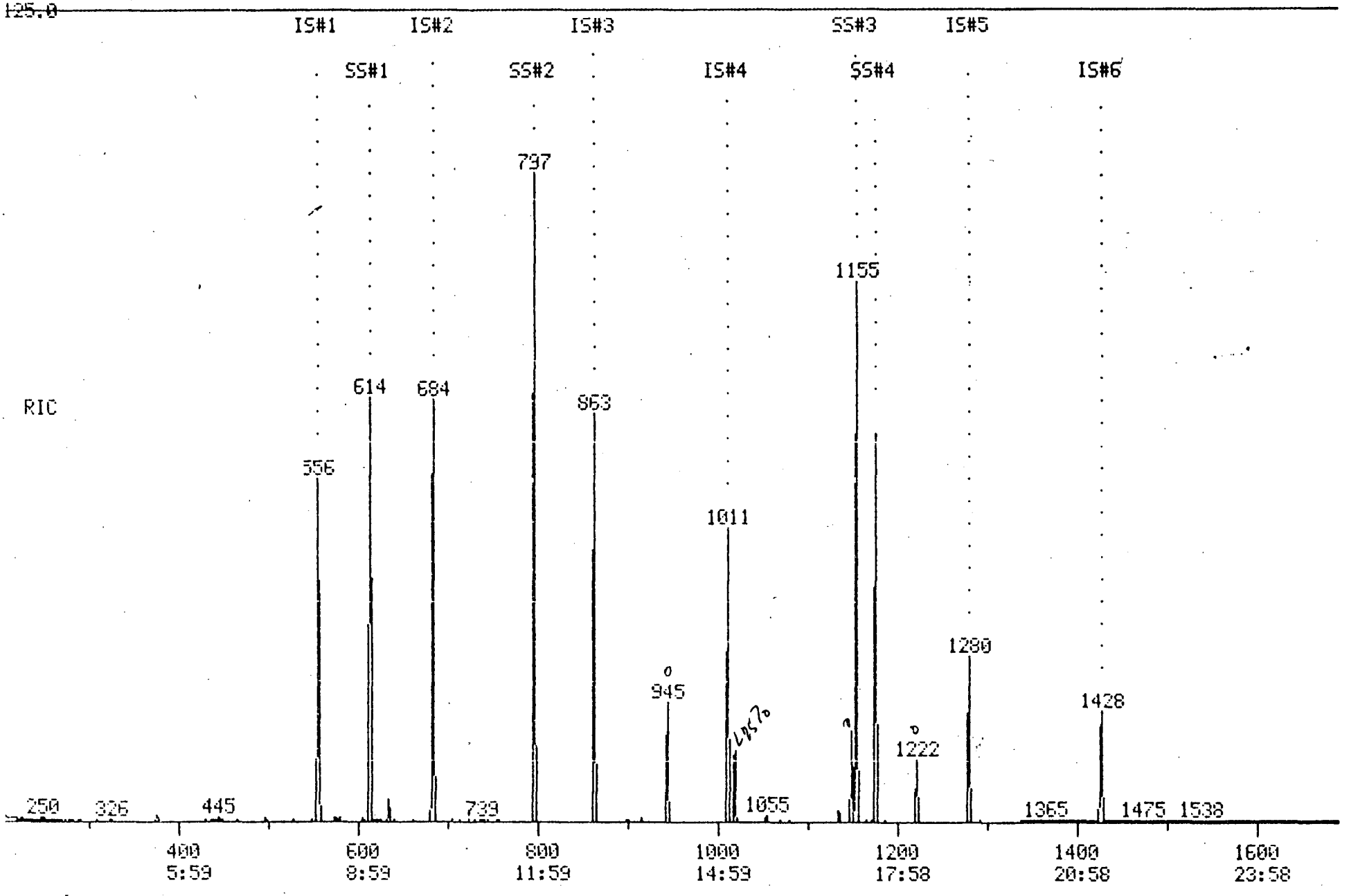
COMPUCHEM DATA: BR069456A21 SCANS 192 TO 1692

12/14/85 12:58:00

OUT OF 192 TO 1725

SAMPLE: 1UL CC#69456R (12-12-85) DWA#21

CONDS.:



COMPUCHEM LABS

RIC
12/14/85 12:58:00
SAMPLE: 1UL CC#69456R (12-12-85) OWA#21
CONDS.:

COMPUCHEM DATA: BR069456A21 SCANS 1692 TO 1725
OUT OF 192 TO 1725

435200.

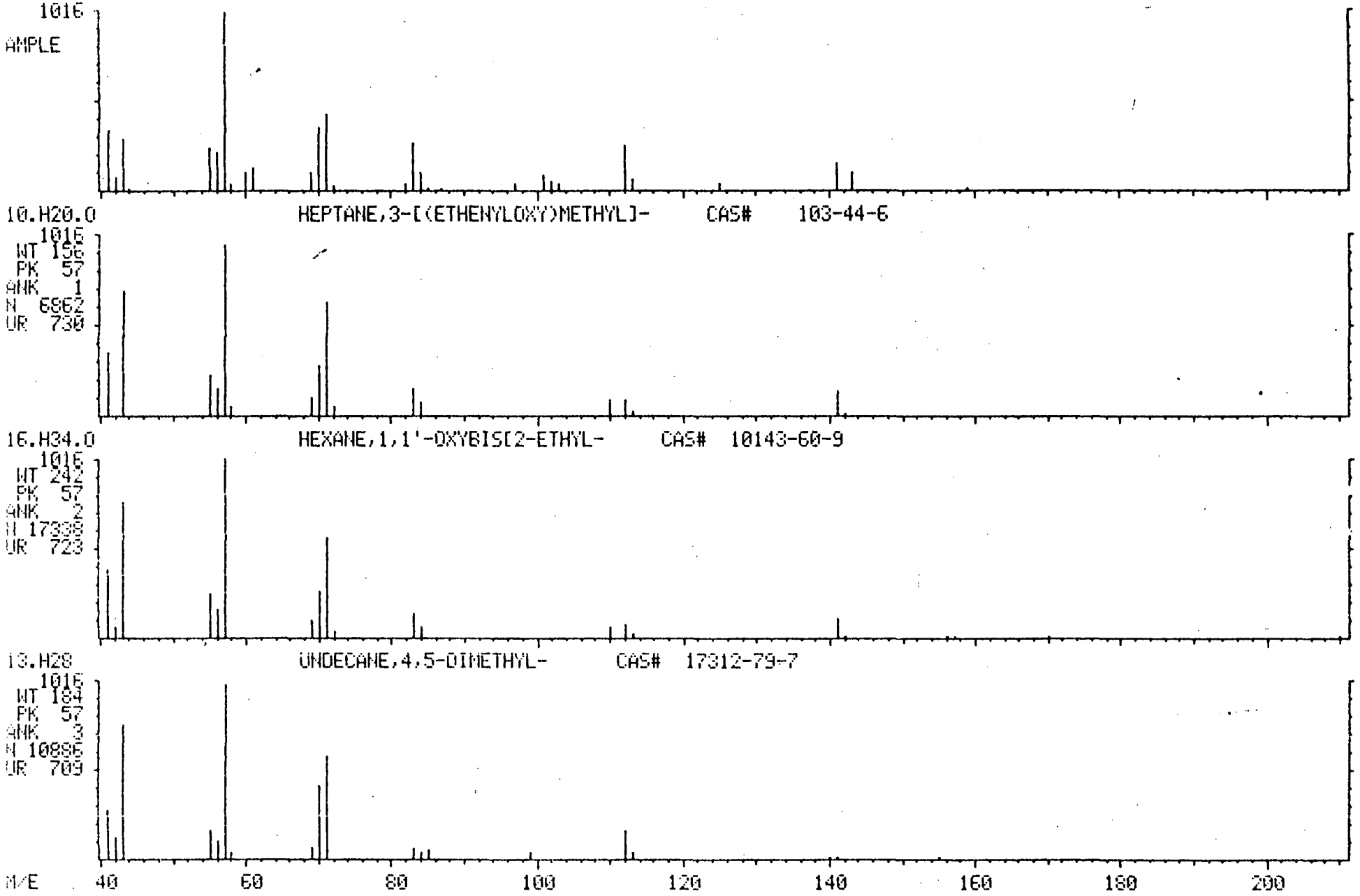
SCAN
TIME

[redacted]

COMPUCHEM LABS

LIBRARY SEARCH
12/14/85 12:58:00 + 14:09
SAMPLE: 1UL CC#69456R (12-12-85) DWA#21

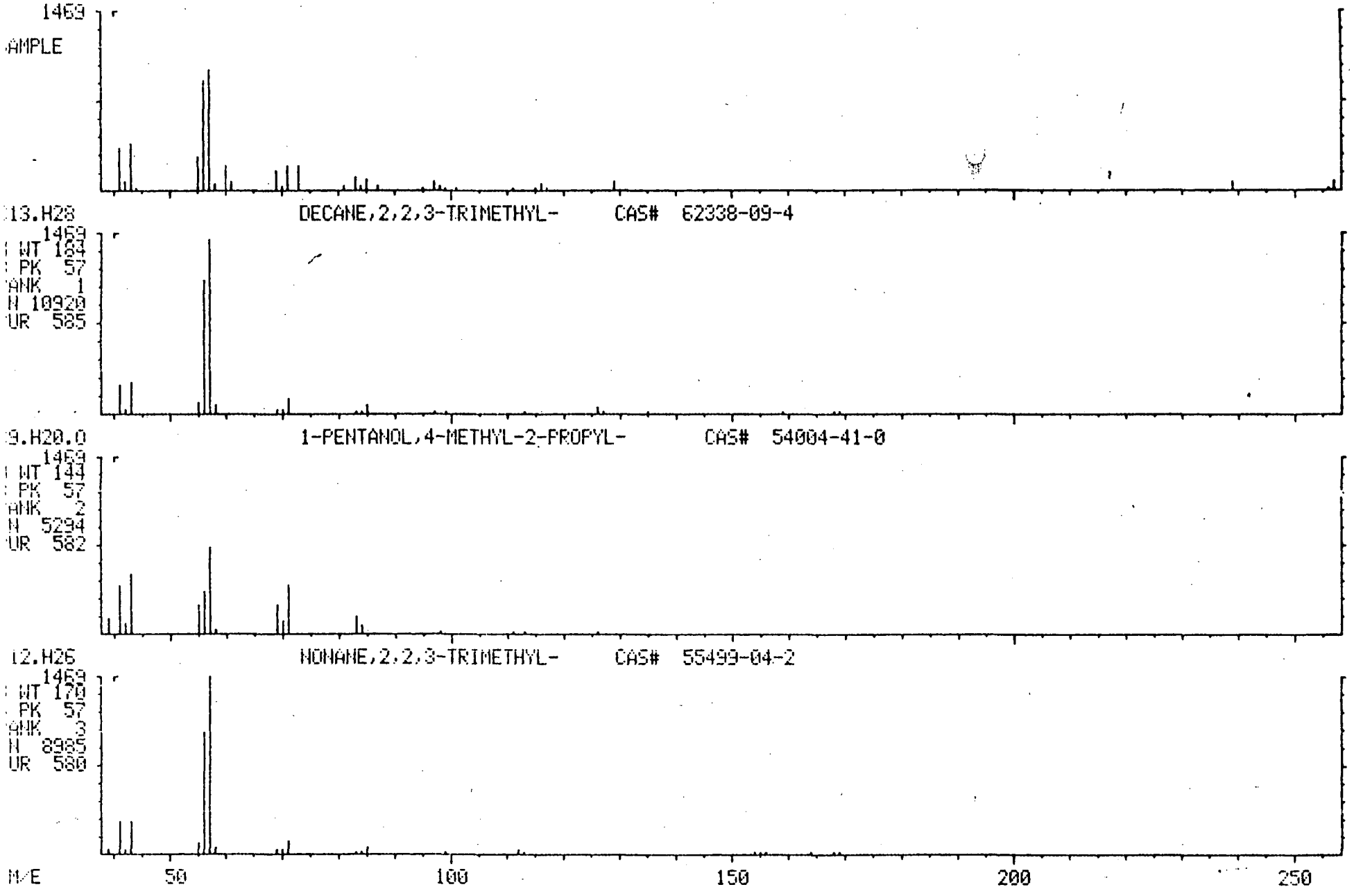
DATA: BR069456A21 # 945
BASE M/E: 57
RIC: 63999.



COMPUCHEM LABS

LIBRARY SEARCH
12/14/85 12:58:00 + 17:14
SAMPLE: 1UL CC#69456R (12-12-85) OWA#21

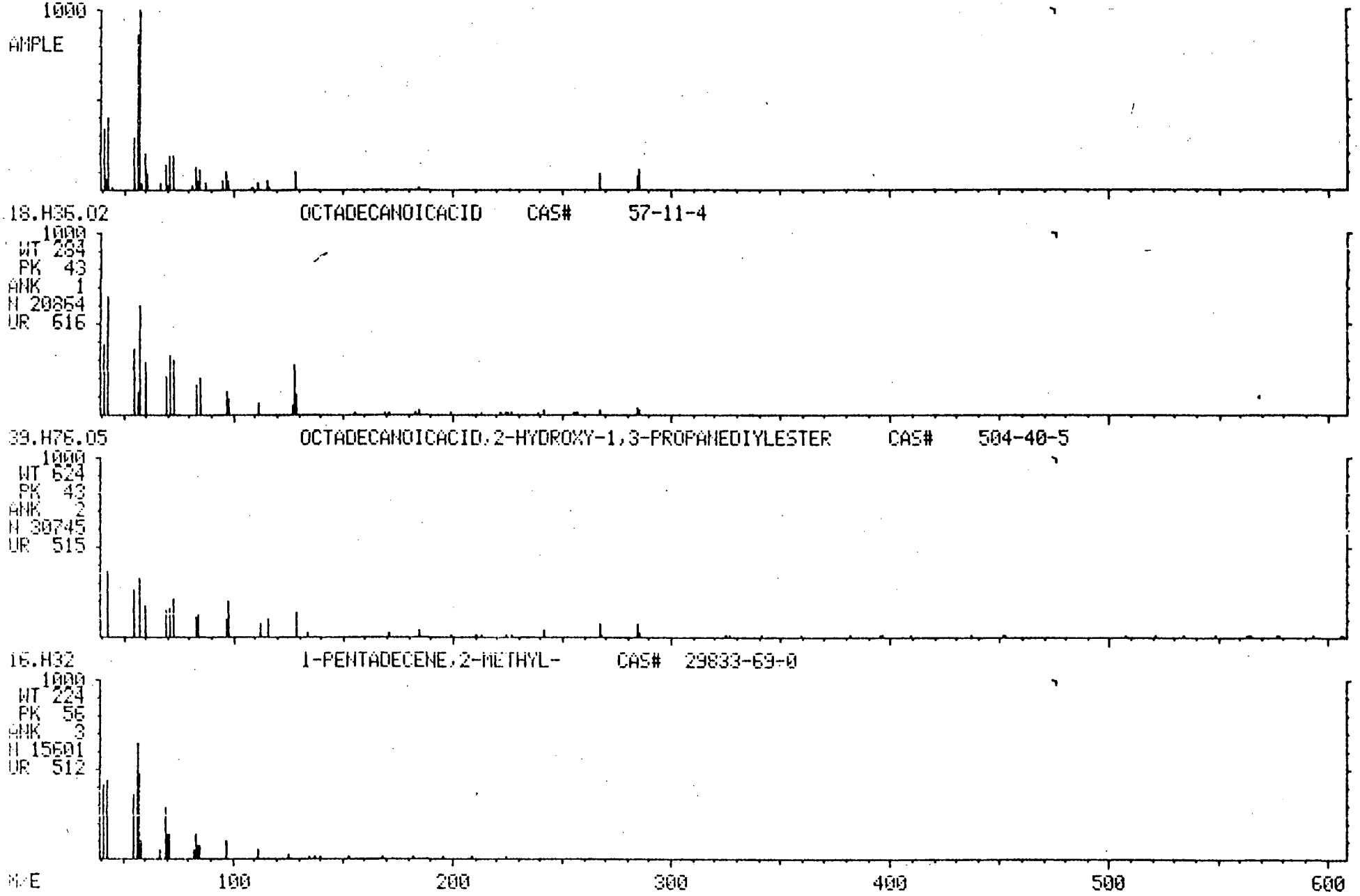
DATA: BR069456A21 #1150
BASE M/E: 57
RIC: 48319.



COMPUCHEM LABS

LIBRARY SEARCH
12/14/85 12:58:00 + 18:18
SAMPLE: 1UL CC#69456R (12-12-85) OWA#21

DATA: BR069456A21 #1222
BASE M/E: 57
RIC: 33471.



COMPUCHEM LABS

RIC

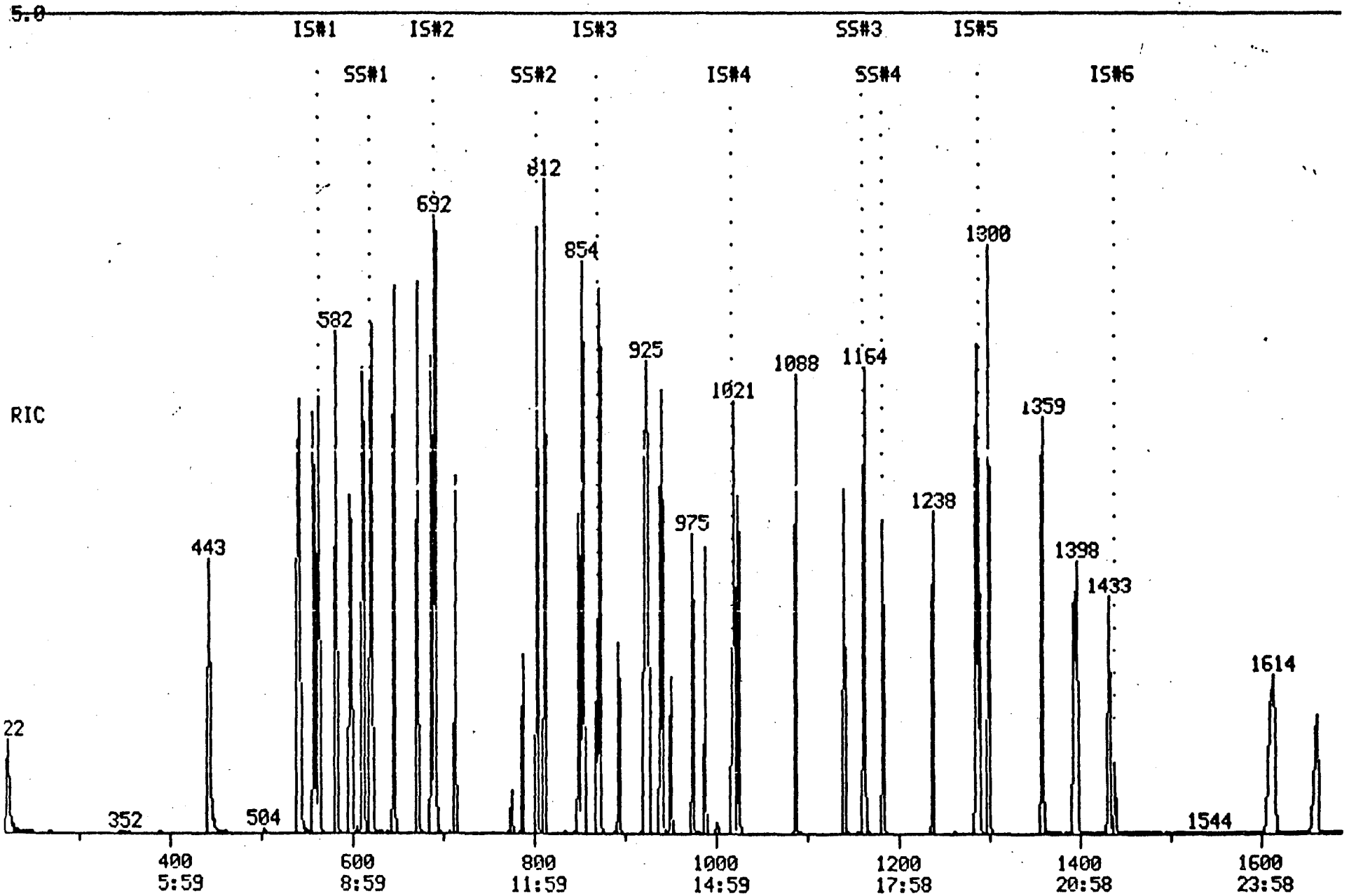
COMPUCHEM DATA: BT851214A21 SCANS 190 TO 1690

12/14/85 8:56:00

OUT OF 190 TO 1750

SAMPLE: 1UL 100NG/UL BASE1 STANDARD 16269#2363 OWA#21

CONDS.:



COMPUCHEM LABORATORIES

December 11, 1985

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

Dear Mr. Leone:

We at CompuChem® are pleased to provide our report for the analysis you requested. Enclosed is data for the following sample:

YOUR ID NO.	C/C NO.	ANALYSIS CODE	ORDER NO.	DESCRIPTION OF WORK PERFORMED	REPORT FORMAT
8079-MW-7	69457	008	8119	Pesticides/PCBs	Gold

For your information and convenience, we have included in this report the analytical results, method reference and quality control summary. When anomalies are encountered in an analysis, they are referenced in the quality assurance notice(s). Additionally, instrumental documentation is provided with reports purchased in our GOLD REPORT FORMAT.

Should you require additional TECHNICAL EXPLANATION of this report, please do not hesitate to contact me at 1-919-549-8263. To place a NEW ORDER, request additional SAMPLESAVERS®, inquire about SAMPLE STATUS or if you need help with SAMPLE LOGISTICS your Customer Service Representative can be of assistance. Of course, your Sales Representative is always available to provide a complete overview of our LINE OF SERVICES and assist you in identifying those services which will support your monitoring program as well as provide you with a QUOTATION.

Thank you for this order. We at CompuChem® look forward to providing you with continued analytical support. We appreciate your comments regarding the level of service you feel you have received and look forward to receiving your written comments when possible. Comments should be directed to Mr. Kevin McConnaghy, Director of Marketing, at the address given below.

Sincerely,

Diana A. Scammell
Manager, Technical Review

cc: Cover letter only
Accounting

RECEIVED
DEC 23 1985

COMPUCHEM LABORATORIES

ANALYTICAL REPORT OF DATA
SUBMITTED TO:

Mr. Patrick Leone
Calcerinos & Spina
1020 7th North Street
Liverpool, NY 13088

CHRONICLE

ITEM NO.	SAMPLE IDENTIFIER	COMPUCHEM® NUMBER	DATE SAMPLE RECEIVED	DATE SAMPLE EXTRACTED	DATE PESTICIDES/PCBs FRACTION ANALYZED
1.	8079-MW-7	69457	11/29/85	12/03/85	12/04/85

COMPUCHEM
LABORATORIES

- TABLE OF CONTENTS -

*These notices are included where appropriate for data qualification.

**When the original chain of custody is submitted with the sample(s), a copy of it is included with the report.

***Pesticides/PCBs chromatograms are present for specific compounds when second column analysis is employed.

METHOD REFERENCE

CompuChem® employs Method 608 for the GC analysis of pesticides and PCBs in aqueous matrices. This method is published in Volume 49, October 26, 1984 Federal Register.

Method Summary

As stated in the October 1984 reference, "A measured volume of sample, approximately one liter, is solvent extracted with methylene chloride using a separatory funnel or continuous extractor. The methylene chloride extract is dried and exchanged to hexane during concentration to a final volume of 10 ml or less. Gas chromatographic conditions... permit the separation and measurement of the parameters in the extract by electron capture GC".

COMPOUND LIST -- PESTICIDES/PCBs

SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69457

		CONCENTRATION (UG/L)	DETECTION LIMIT (UG/L)
1P.	ALDRIN	BDL	0.10
2P.	ALPHA-BHC	BDL	0.10
3P.	BETA-BHC	BDL	0.10
4P.	GAMMA-BHC	BDL	0.10
5P.	DELTA-BHC	BDL	0.10
6P.	CHLORDANE (TECHNICAL)	BDL	0.50
7P.	4,4'-DDT	BDL	0.10
8P.	4,4'-DDE	BDL	0.10
9P.	4,4'-DDD	BDL	0.10
10P.	DIELDRIN	BDL	0.10
11P.	ALPHA-ENDOSULFAN	BDL	0.10
12P.	BETA-ENDOSULFAN	BDL	0.10
13P.	ENDOSULFAN SULFATE	BDL	0.10
14P.	ENDRIN	BDL	0.10
15P.	ENDRIN ALDEHYDE	BDL	0.10
16P.	HEPTACHLOR	BDL	0.10
17P.	HEPTACHLOR EPOXIDE	BDL	0.10
18P.	PCB-1242	BDL	1.0
19P.	PCB-1254	BDL	1.0
20P.	PCB-1221	BDL	1.0
21P.	PCB-1232	BDL	1.0
22P.	PCB-1248	BDL	1.0
23P.	PCB-1260	BDL	1.0
24P.	PCB-1016	BDL	1.0
25P.	TOXAPHENE	BDL	1.0

Surrogate Recovery - Introduced at the beginning of the extraction, the surrogate standard is a select compound that analytically mimics the response of certain analytes. A known concentration of this surrogate is added to the sample and a percent recovery is calculated. This recovery acts as a barometer of extraction efficiency and analytical response for the individual sample.

	% Recovery	Control Range %
Dibutylchlorendate	90	(48-136)*

*Advisory surrogate; recovery below 10% requires action step (re-extraction and re-analysis).

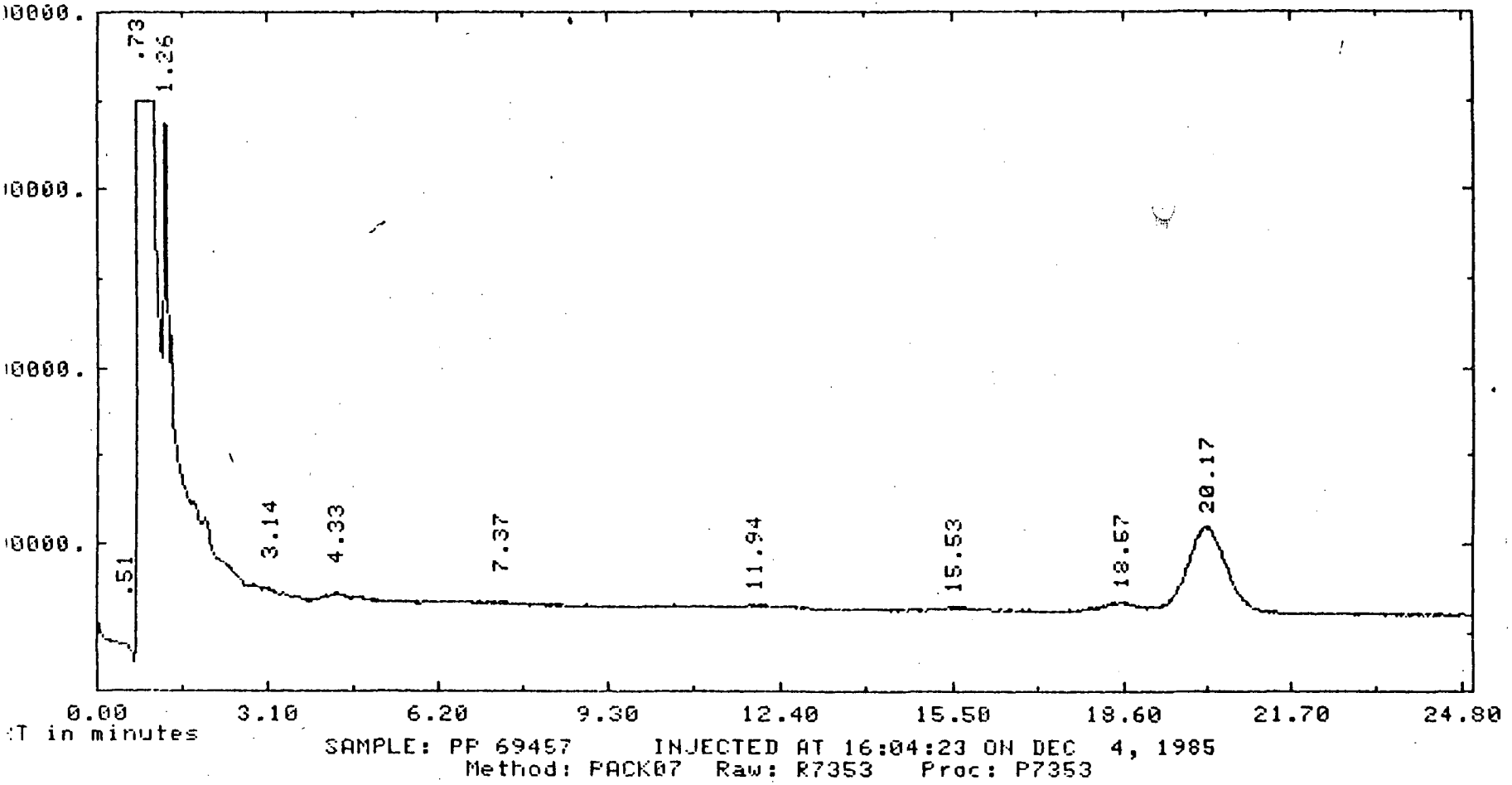
BDL=BELOW DETECTION LIMIT

QUALITY CONTROL SUMMARY

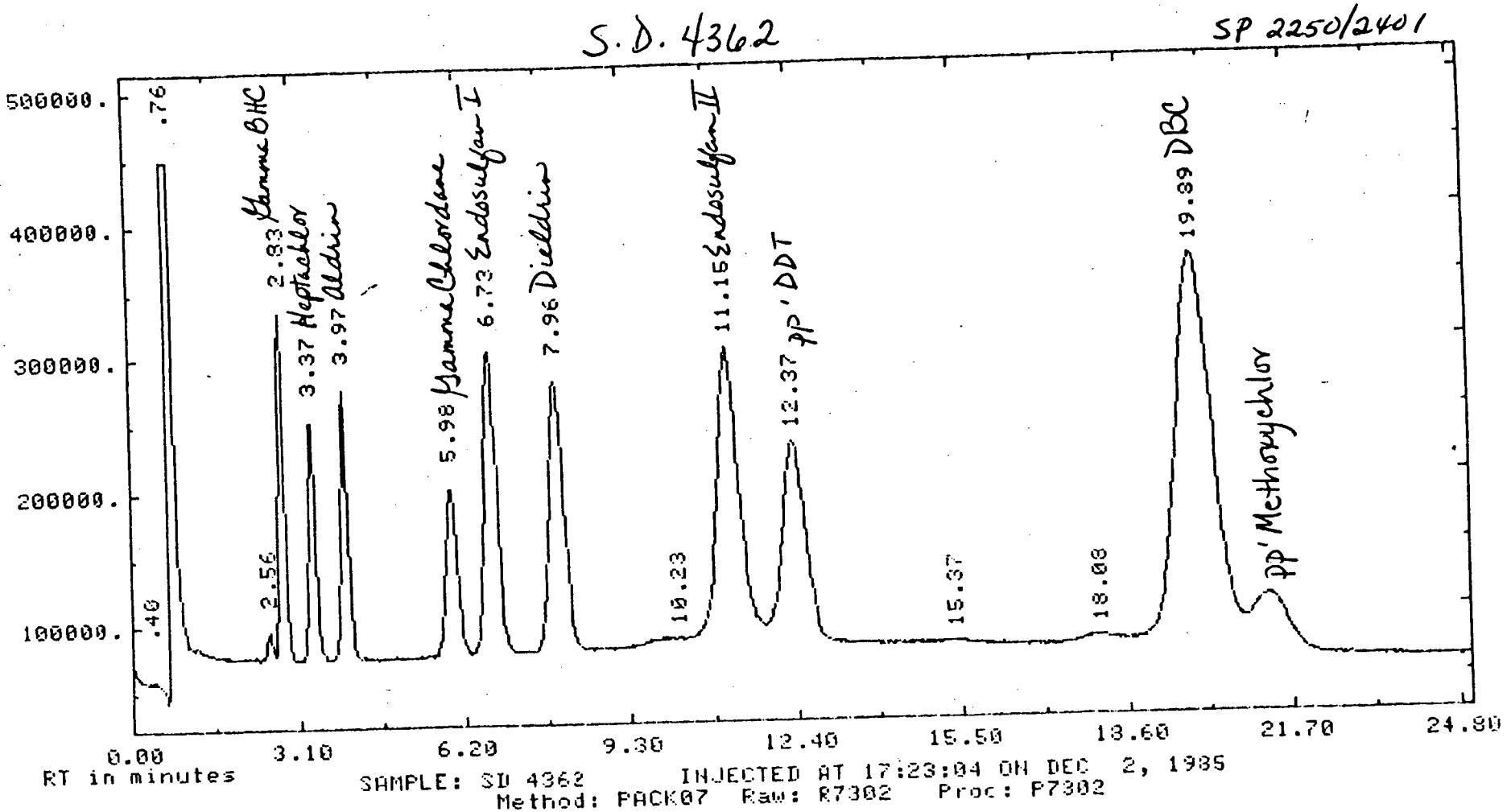
SAMPLE IDENTIFIER: 8079-MW-7
COMPUCHEM® SAMPLE NUMBER: 69457

PESTICIDES

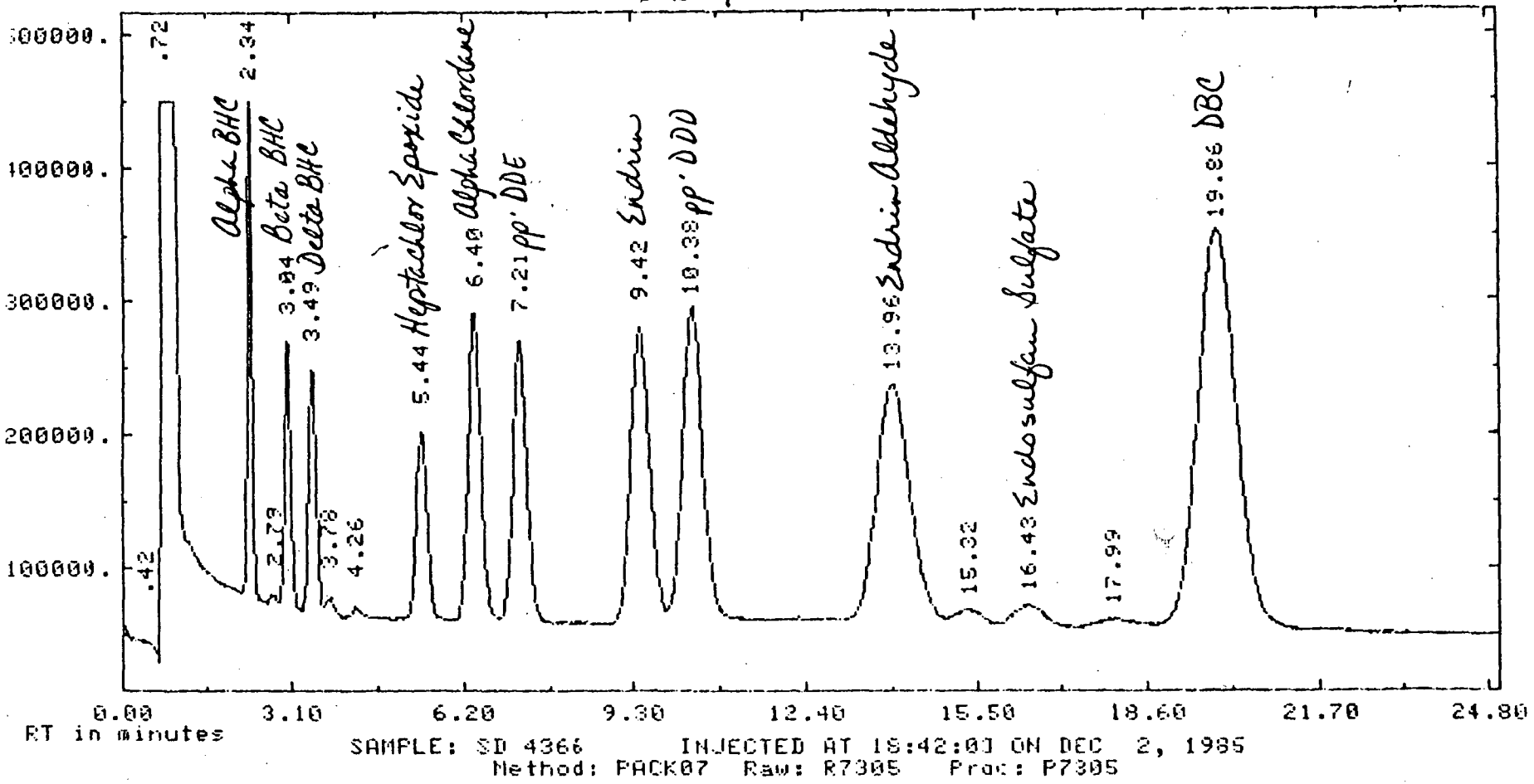
	NUMBER	ACCEPTANCE CRITERIA
Blank	69587	OK
Blank Spike	69108	OK
Sample Spike	69107	OK
Shift Standards		
Pesticide/PCBs Standard		OK



SAMPLE: PP 69457 INJECTED AT 16:04:23 ON DEC 4, 1985
Method: PACK07 Raw: R7353 Proc: P7353


S.D. 4362
SP 2250/2401
500000.
400000.
300000.
200000.
100000.
.40
.76
2.56
2.83 Gamma BHC
3.37 Heptachlor
3.97 Aldrin
5.98 Gamma Chlordane
6.73 Endosulfan I
7.96 Dieldrin
10.23
11.16 Endosulfan II
12.37 pp' DDT
15.37
18.08
19.89 DBC
pp' Methoxychlor
0.00
3.10
6.20
9.30
12.40
15.50
18.60
21.70
24.80
RT in minutes
SAMPLE: SD 4362 INJECTED AT 17:23:04 ON DEC 2, 1985
Method: PACK07 Raw: R7302 Proc: P7302

S.D. 4366 SP2250/2401

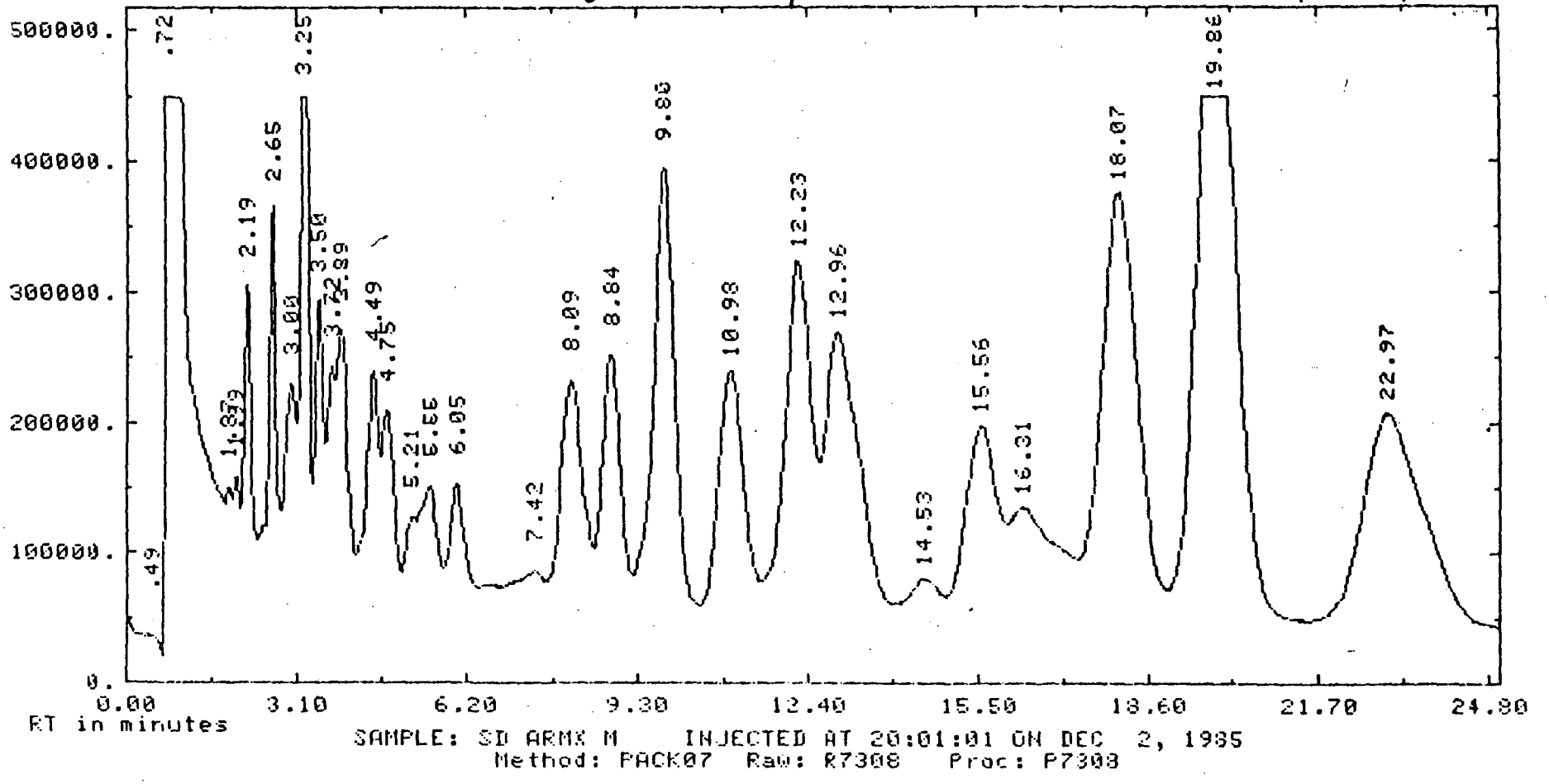


SAMPLE: SD 4366 INJECTED AT 18:42:01 ON DEC 2, 1985
Method: PACK07 Raw: R7305 Proc: P7305

[redacted]

Aroclor 1016/1260

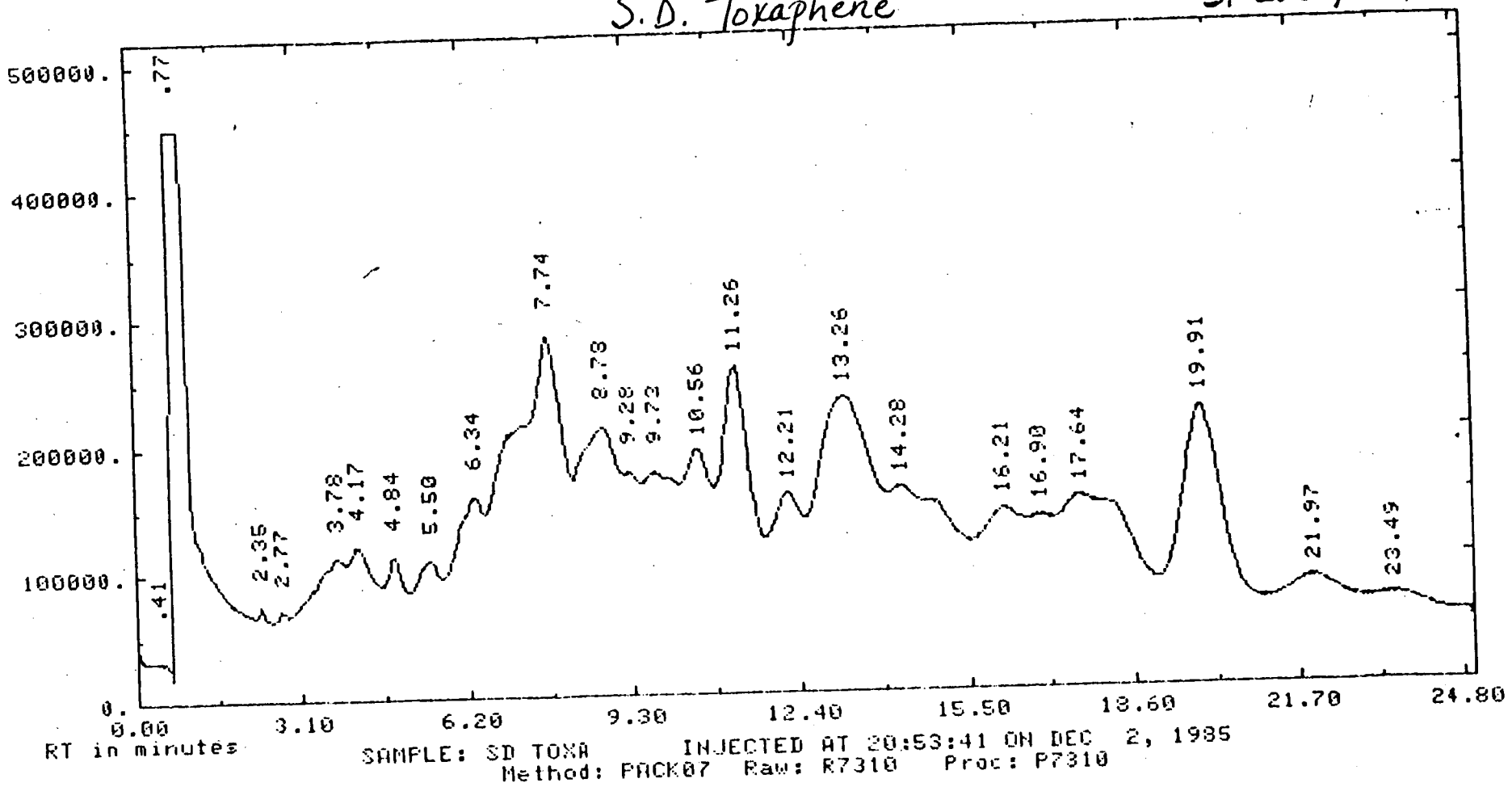
SP 2250/2401



SAMPLE: SD ARMX M INJECTED AT 20:01:01 ON DEC 2, 1985
Method: PACK07 Raw: R7308 Proc: P7308

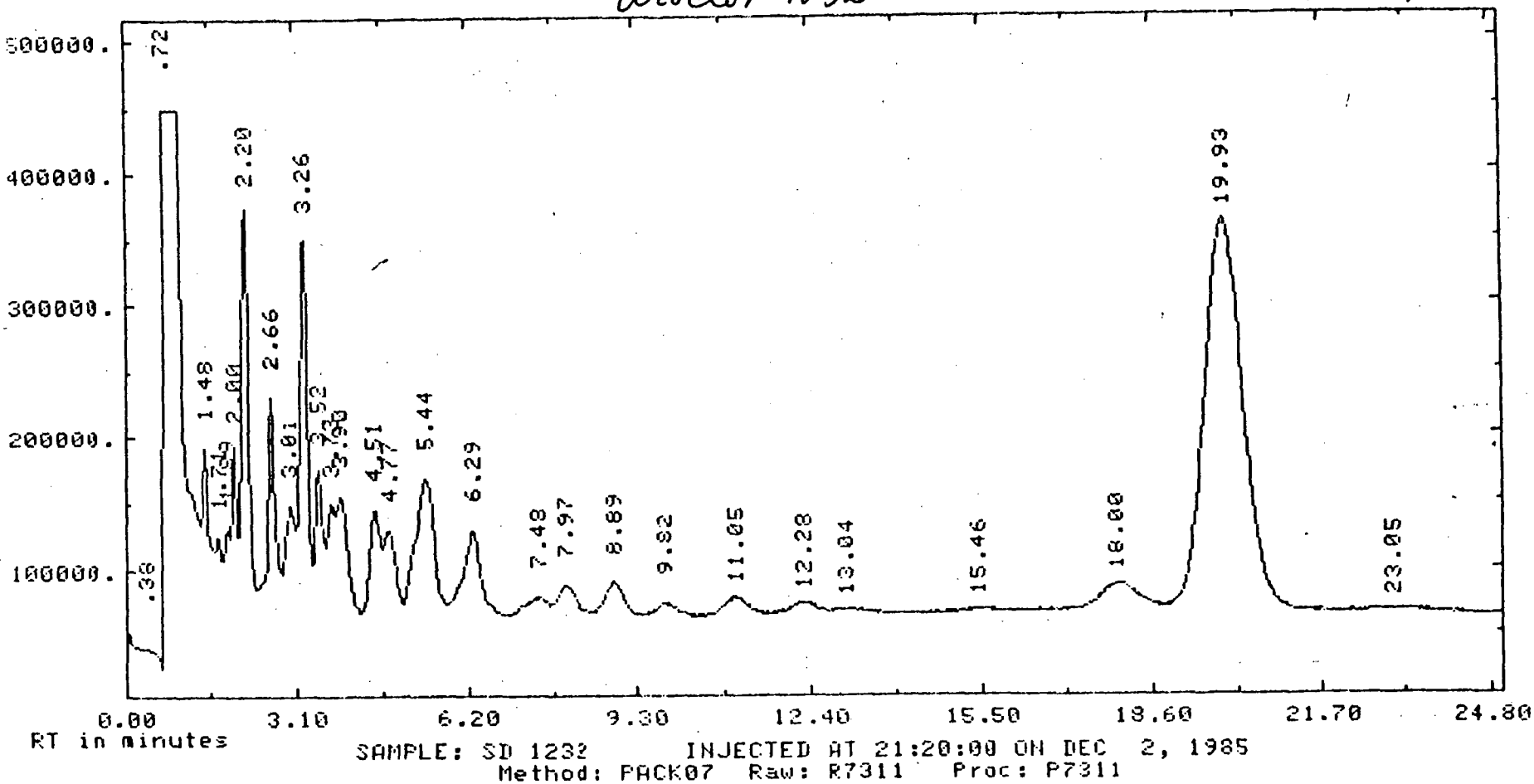
S.D. Toxaphene

SP 2250/2401



SAMPLE: SD TOXA INJECTED AT 20:53:41 ON DEC 2, 1985
Method: PACK07 Raw: R7310 Proc: P7310

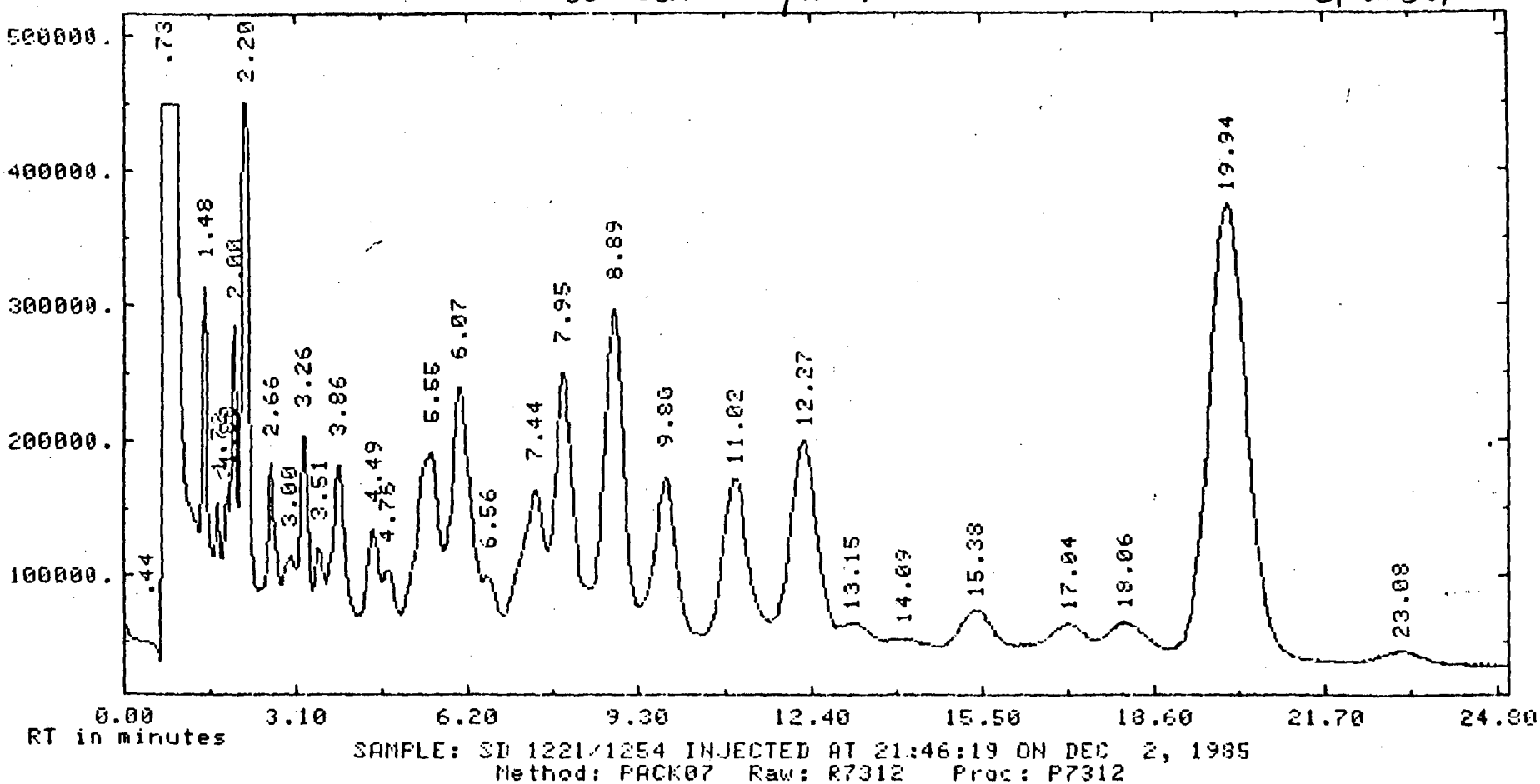
Aroclor 1232 SP 2250/2401



SAMPLE: SD 1232 INJECTED AT 21:20:00 ON DEC 2, 1985
Method: PACK07 Raw: R7311 Proc: P7311

Aroclor 1221/1254

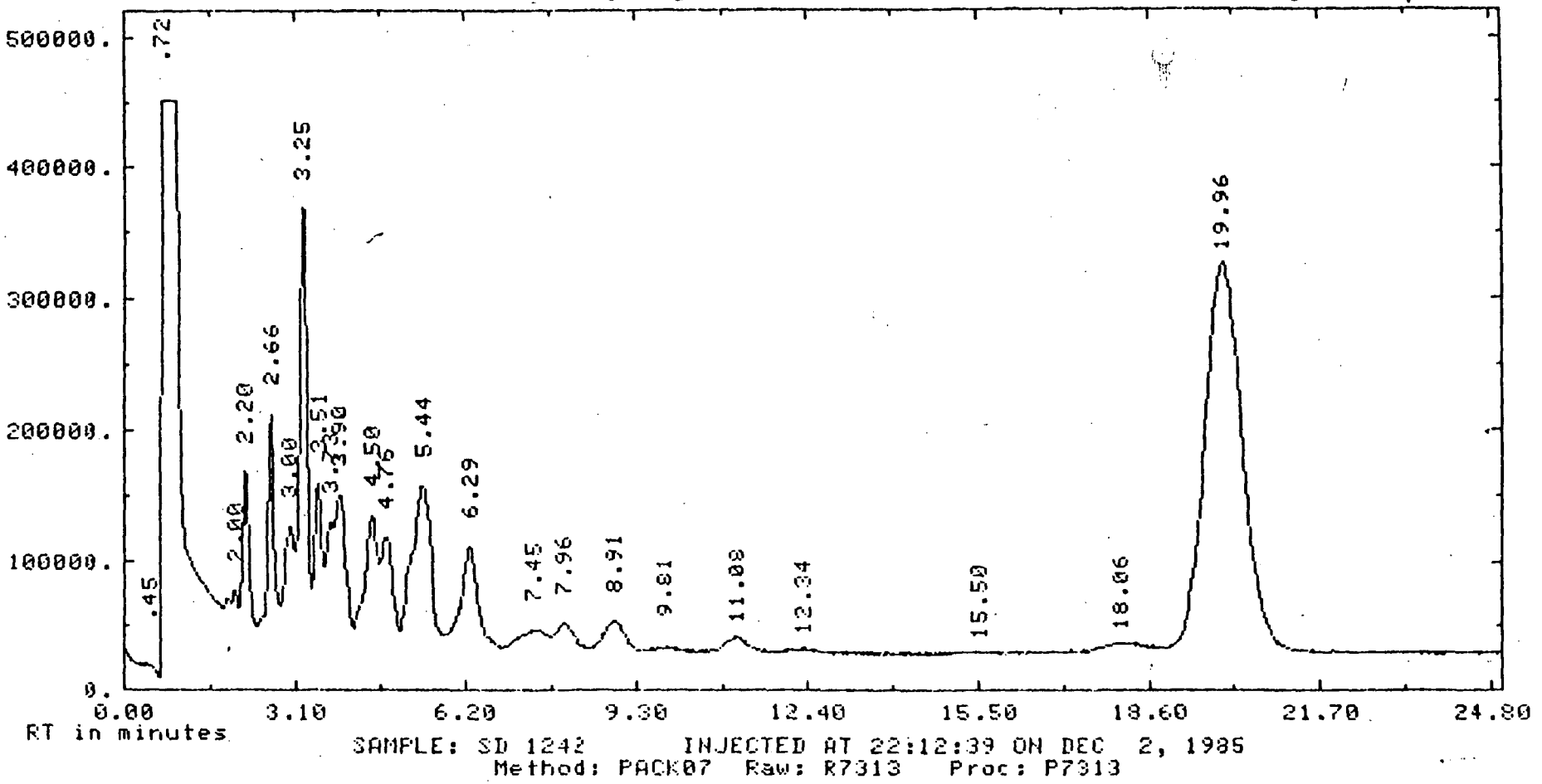
SP 2250/2401



SAMPLE: SD 1221/1254 INJECTED AT 21:46:19 ON DEC 2, 1985
Method: PACK07 Raw: R7312 Proc: P7312

Aroclor 1242

SP2250/2401

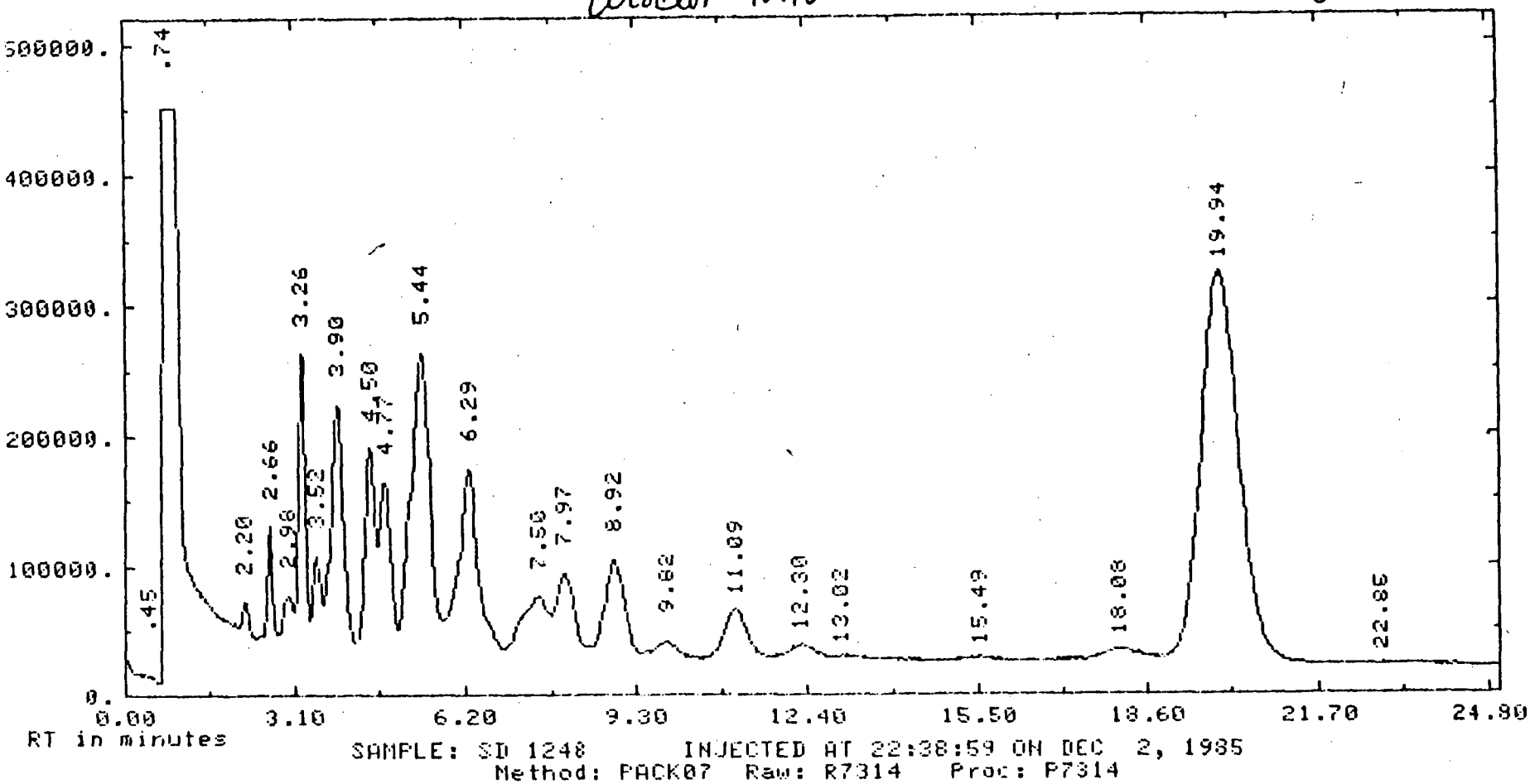


SAMPLE: SD 1242 INJECTED AT 22:12:39 ON DEC 2, 1985

Method: PACK07 Raw: R7313 Proc: P7313

Aroclor 1248

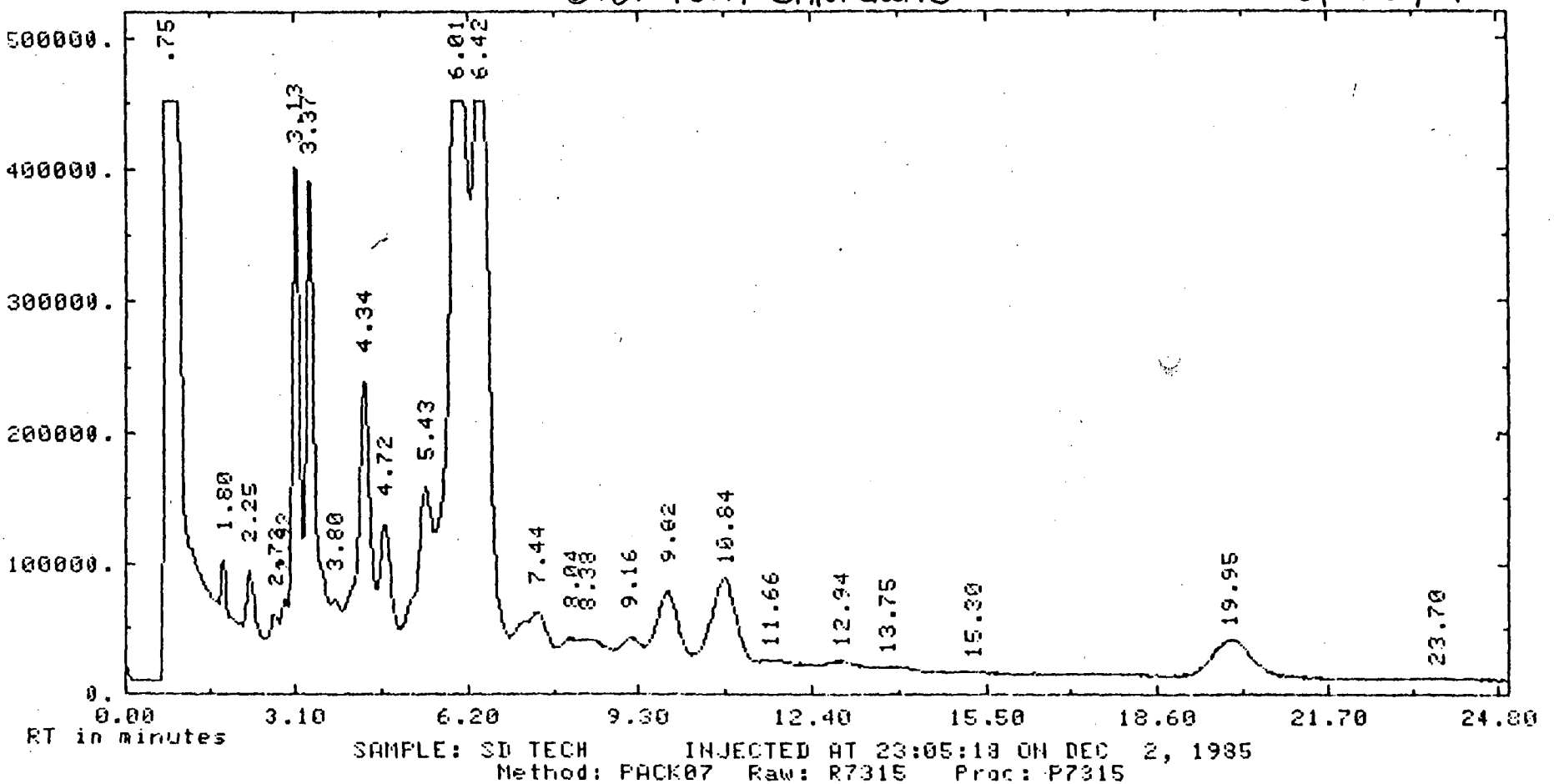
SP 2250/2401



SAMPLE: SD 1248 INJECTED AT 22:38:59 ON DEC 2, 1985

Method: PACK07 Raw: R7314 Proc: P7314

S.D. Tech Chlordane SP 2250/2401



SAMPLE: SD TECH INJECTED AT 23:05:18 ON DEC 2, 1985
Method: PACK07 Raw: R7315 Proc: P7315

Environmental
LABORATORY, INC.
5854 Butternut Drive, East Syracuse, NY 13057

New York State
Approved Laboratory
(315) 446-8795

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 28 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5953

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 08/07/86
JOB #	: 405.231.00	DATE COLLECTED	: 08/07/86
LOCATION	: MW2	TIME COLLECTED	: 1040
METHOD	:GRAB		

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	0.500	mg/l
PHENOL-SOL	<0.010	mg/l
BENZENE	<5.0	ug/l
TOLUENE	<5.0	ug/l
ETHYLBENZENE	<5.0	ug/l
CHLOROBENZENE	<5.0	ug/l
1,4 DICHLOROBENZENE	<5.0	ug/l
1,3 DICHLOROBENZENE	<5.0	ug/l
1,2 DICHLOROBENZENE	<5.0	ug/l
TOTAL XYLENES	<15.	ug/l
ACENAPHTHENE	<23.	ug/l
ACENAPHTHYLENE	<44.	ug/l
ANTHRACENE	* <49.	ug/l
BENZO(a)ANTHRACENE	<62.	ug/l

Environmental
LABORATORY, INC.
5854 Butternut Drive, East Syracuse, NY 13057

New York State
Approved Laboratory
(315) 446-8795

SAMPLE #5953

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)PYRENE	<28.	ug/l
BENZO(b)FLUORANTHENE	<49.	ug/l
BENZO(ghi)PERYLENE	<38.	ug/l
BENZO(k)FLUORANTHENE	<63.	ug/l
CHRYSENE	<41.	ug/l
DIBENZO(a,h)ANTHRACENE	<91.	ug/l
FLUORANTHENE	<27.	ug/l
FLUORENE	<50.	ug/l
INDENO(1,2,3-c,d)PYRENE	<59.	ug/l
NAPHTHALENE	<85.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<23.	ug/l
TOX	2.73	ug/l

NOTE:
* ANTHRACENE AND PHENANTHRENE COELUTE AS ONE PEAK ON THE GAS CHROMATOGRAM. THE REPORTED VALUE COULD BE A REFLECTION OF THE CONCENTRATION OF ANTHRACENE, PHENANTHRENE OR A COMBINATION OF BOTH.

CS warrants that any sampling and analyses conducted as part of this report are performed in accordance with the analytical industries recognized methodologies and professional standards. CS will not assume liability for any damages resulting from deficient work other than reperformance or cost of said work and will not accept any liability as a result of data interpretation by the client.

APPROVED BY: Conrad Tafelfp. DATE: AUG 28 1986

Environmental
LABORATORY, INC.
5854 Butternut Drive, East Syracuse, NY 13057

New York State
Approved Laboratory
(315) 446-8795

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 28 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5954

LABORATORY ANALYSIS REPORT

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SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 08/07/86
JOB #	: 405.231.00	DATE COLLECTED	: 08/07/86
LOCATION	: MW3	TIME COLLECTED	: 1130
METHOD	:GRAB		

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	0.120	mg/l
PHENOL-SOL	0.050	mg/l
BENZENE	6.7	ug/l
TOLUENE	11.	ug/l
ETHYLBENZENE	<5.0	ug/l
CHLOROBENZENE	22.	ug/l
1,4 DICHLOROBENZENE	29.	ug/l
1,3 DICHLOROBENZENE	<50.	ug/l
1,2 DICHLOROBENZENE	<250.	ug/l
TOTAL XYLENES	45.	ug/l
ACENAPHTHENE	<41.	ug/l
ACENAPHTHYLENE	146.	ug/l
ANTHRACENE	* <45.	ug/l
BENZO(a)ANTHRACENE	<56.	ug/l

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SAMPLE #5954

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)PYRENE	<43.	ug/l
BENZO(b)FLUORANTHENE	<44.	ug/l
BENZO(ghi)PERYLENE	<34.	ug/l
BENZO(k)FLUORANTHENE	<29.	ug/l
CHRYSENE	<43.	ug/l
DIBENZO(a,h)ANTHRACENE	<83.	ug/l
FLUORANTHENE	37.	ug/l
FLUORENE	110.	ug/l
INDENO(1,2,3-c,d)PYRENE	<53.	ug/l
NAPHTHALENE	<77.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<21.	ug/l
TOX	11.3	ug/l

NOTE:
* ANTHRACENE AND PHENANTHRENE COELUTE AS ONE PEAK ON THE GAS CHROMATOGRAM. THE REPORTED VALUE COULD BE A REFLECTION OF THE CONCENTRATION OF ANTHRACENE, PHENANTHRENE, OR A COMBINATION OF BOTH.

CS warrants that any sampling and analyses conducted as part of this report are performed in accordance with the analytical industries recognized methodologies and professional standards. CS will not assume liability for any damages resulting from deficient work other than reperformance or cost of said work and will not accept any liability as a result of data interpretation by the client.

APPROVED BY: Conrad Teufel Jr. DATE: AUG 28 1986

Environmental
LABORATORY, INC.
5854 Butternut Drive, East Syracuse, NY 13057

New York State
Approved Laboratory
(315) 446-8795

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 28 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5955

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 08/07/86
JOB #	: 405.231.00	DATE COLLECTED	: 08/07/86
LOCATION	: MW4	TIME COLLECTED	: 0830
METHOD	:GRAB		

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	0.030	mg/l
PHENOL-SOL	<0.010	mg/l
BENZENE	<5.0	ug/l
TOLUENE	<5.0	ug/l
ETHYLBENZENE	<5.0	ug/l
CHLOROBENZENE	<5.0	ug/l
1,4 DICHLOROBENZENE	<5.0	ug/l
1,3 DICHLOROBENZENE	<5.0	ug/l
1,2 DICHLOROBENZENE	<5.0	ug/l
TOTAL XYLENES	<15.	ug/l
ACENAPHTHENE	<21.	ug/l
ACENAPHTHYLENE	<41.	ug/l
ANTHRACENE	* <45.	ug/l
BENZO(a)ANTHRACENE	<57.	ug/l

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SAMPLE #5955

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)PYRENE	<86.	ug/l
BENZO(b)FLUORANTHENE	<45.	ug/l
BENZO(ghi)PERYLENE	<35.	ug/l
BENZO(k)FLUORANTHENE	<29.	ug/l
CHRYSENE	<87.	ug/l
DIBENZO(a,h)ANTHRACENE	<84.	ug/l
FLUORANTHENE	<24.	ug/l
FLUORENE	<46.	ug/l
INDENO(1,2,3-c,d)PYRENE	<54.	ug/l
NAPHTHALENE	<78.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<21.	ug/l
TOX	6.01	ug/l

NOTE:
* ANTHRACENE AND PHENANTHRENE COELUTE AS ONE PEAK ON THE GAS CHROMATOGRAM. THE REPORTED VALUE COULD BE A REFLECTION OF THE CONCENTRATION OF ANTHRACENE, PHENANTHRENE, OR A COMBINATION OF BOTH.

CS warrants that any sampling and analyses conducted as part of this report are performed in accordance with the analytical industries recognized methodologies and professional standards. CS will not assume liability for any damages resulting from deficient work other than reperformance or cost of said work and will not accept any liability as a result of data interpretation by the client.

APPROVED BY: Conrad Teufel Jr. DATE: AUG 28 1986

Environmental
LABORATORY, INC.
5854 Butternut Drive, East Syracuse, NY 13057

New York State
Approved Laboratory
(315) 446-8795

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 28 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5956

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 08/07/86
JOB #	: 405.231.00	DATE COLLECTED	: 08/07/86
LOCATION	: MW5	TIME COLLECTED	: 0945
METHOD	:GRAB		

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	0.043	mg/l
PHENOL-SOL	<0.010	mg/l
BENZENE	<5.0	ug/l
TOLUENE	<5.0	ug/l
ETHYLBENZENE	<5.0	ug/l
CHLOROBENZENE	<5.0	ug/l
1,4 DICHLOROBENZENE	<5.0	ug/l
1,3 DICHLOROBENZENE	<5.0	ug/l
1,2 DICHLOROBENZENE	<5.0	ug/l
TOTAL XYLENES	<15.	ug/l
ACENAPHTHENE	<23.	ug/l
ACENAPHTHYLENE	<45.	ug/l
ANTHRACENE	* <50.	ug/l
BENZO(a)ANTHRACENE	<63.	ug/l

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SAMPLE #5956

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)PYRENE	<95.	ug/l
BENZO(b)FLUORANTHENE	<49.	ug/l
BENZO(ghi)PERYLENE	<38.	ug/l
BENZO(k)FLUORANTHENE	<32.	ug/l
CHRYSENE	<96.	ug/l
DIBENZO(a,h)ANTHRACENE	<92.	ug/l
FLUORANTHENE	<27.	ug/l
FLUORENE	<51.	ug/l
INDENO(1,2,3-c,d)PYRENE	<60.	ug/l
NAPHTHALENE	<86.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<24.	ug/l
TOX	2.07	ug/l

NOTE:
* ANTHRACENE AND PHENANTHRENE COELUTE AS ONE PEAK ON THE GAS CHROMATOGRAM. THE REPORTED VALUE COULD BE A REFLECTION OF THE CONCENTRATION OF ANTHRACENE, PHENANTHRENE, OR A COMBINATION OF BOTH.

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APPROVED BY: Conrad Teufel Jr. DATE: AUG 28 1986

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LABORATORY, INC.
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To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 28 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5957

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 08/07/86
JOB #	: 405.231.00	DATE COLLECTED	: 08/07/86
LOCATION	: MW6	TIME COLLECTED	: 1345
METHOD	:GRAB		

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	0.198	mg/l
PHENOL-SOL	<0.010	mg/l
BENZENE	<5.0	ug/l
TOLUENE	<5.0	ug/l
ETHYLBENZENE	<5.0	ug/l
CHLOROBENZENE	<5.0	ug/l
1,4 DICHLOROBENZENE	<5.0	ug/l
1,3 DICHLOROBENZENE	<5.0	ug/l
1,2 DICHLOROBENZENE	<5.0	ug/l
TOTAL XYLENES	<15.	ug/l
ACENAPHTHENE	<22.	ug/l
ACENAPHTHYLENE	<42.	ug/l
ANTHRACENE	* <47.	ug/l
BENZO(a)ANTHRACENE	<59.	ug/l

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SAMPLE #5957

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)PYRENE	<89.	ug/l
BENZO(b)FLUORANTHENE	<46.	ug/l
BENZO(ghi)PERYLENE	<36.	ug/l
BENZO(k)FLUORANTHENE	<30.	ug/l
CHRYSENE	<90.	ug/l
DIBENZO(a,h)ANTHRACENE	<87.	ug/l
FLUORANTHENE	<25.	ug/l
FLUORENE	<48.	ug/l
INDENO(1,2,3-c,d)PYRENE	<56.	ug/l
NAPHTHALENE	<81.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<22.	ug/l
TOX	0.59	ug/l

NOTE:
* ANTHRACENE AND PHENANTHRENE COELUTE AS ONE PEAK ON THE GAS CHROMATOGRAM. THE REPORTED VALUE COULD BE A REFLECTION OF THE CONCENTRATION OF ANTHRACENE, PHENANTHRENE, OR A COMBINATION OF BOTH.

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APPROVED BY: Conrad Teufel Jr. DATE: AUG 28 1986

Environmental
LABORATORY, INC.
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New York State
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(315) 446-8795

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 28 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5958

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 08/07/86
JOB #	: 405.231.00	DATE COLLECTED	: 08/07/86
LOCATION	: MW7	TIME COLLECTED	: NA
METHOD	:GRAB		

PARAMETER	RESULTS	UNITS
CYANIDE-T-SOL	0.064	mg/l
PHENOL-SOL	<0.010	mg/l
BENZENE	<5.0	ug/l
TOLUENE	<5.0	ug/l
ETHYLBENZENE	<5.0	ug/l
CHLOROBENZENE	<5.0	ug/l
1,4 DICHLOROBENZENE	<5.0	ug/l
1,3 DICHLOROBENZENE	<5.0	ug/l
1,2 DICHLOROBENZENE	<5.0	ug/l
TOTAL XYLENES	<15.	ug/l
ACENAPHTHENE	<22.	ug/l
ACENAPHTHYLENE	<43.	ug/l
ANTHRACENE	* <48.	ug/l
BENZO(a)ANTHRACENE	<121.	ug/l

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SAMPLE #5958

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)PYRENE	<46.	ug/l
BENZO(b)FLUORANTHENE	<191.	ug/l
BENZO(ghi)PERYLENE	<37.	ug/l
BENZO(k)FLUORANTHENE	<123.	ug/l
CHRYSENE	<93.	ug/l
DIBENZO(a,h)ANTHRACENE	<89.	ug/l
FLUORANTHENE	<26.	ug/l
FLUORENE	<49.	ug/l
INDENO(1,2,3-c,d)PYRENE	<57.	ug/l
NAPHTHALENE	<83.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<23.	ug/l
TOX	0.93	ug/l

NOTE:
*ANTHRACENE AND PHENANTHRENE COELUTE AS ONE PEAK ON THE GAS CHROMATOGRAM. THE REPORTED VALUE COULD BE A REFLECTION OF THE CONCENTRATION OF ANTHRACENE, PHENANTHRENE, OR A COMBINATION OF BOTH.

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APPROVED BY: Conrad Teufel Jr. DATE: AUG 28 1986

APPENDIX G

ANALYTICAL REPORTS FOR SURFACE WATER SAMPLES

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Jan 13 1986

Attention: MARK KOMHOLZ

****

SAMPLE #8074

LABORATORY ANALYSIS REPORT

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SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/26/85
LOCATION	: SW1	TIME COLLECTED	: 1000
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
FREE CYANIDE	0.053	mg/l
CYANIDE-T	0.057	mg/l
PHENOL	0.039	mg/l
BENZENE	48.	ug/l
TOLUENE	24.	ug/l
ETHYLBENZENE	<5.	ug/l
PARA-XYLENE	<5.	ug/l
META-XYLENE /Chlorobenzene*	9.	ug/l
ORTHO-XYLENE	7.	ug/l
PARADICHLOROBENZENE	<5.	ug/l
METADICHLOROBENZENE	<5.	ug/l
ORTHODICHLOROBENZENE	<5.	ug/l
ACENAPHTHENE	11.	ug/l
ACENAPHTHYLENE	50.	ug/l
ANTHRACENE	<66.	ug/l

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SAMPLE #8074

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)ANTHRACENE	<75.	ug/l
BENZO(a)PYRENE	6.	ug/l
BENZO(b)FLUORANTHENE	<30.	ug/l
BENZO(ghi)PERYLENE	<60.	ug/l
BENZO(k)FLUORANTHENE	<60.	ug/l
CHRYSENE	<48.	ug/l
DIBENZO(a,h)ANTHRACENE	<36.	ug/l
FLUORANTHENE	<12.	ug/l
FLUORENE	<33.	ug/l
INDENO(1,2,3-c,d)PYRENE	<232.	ug/l
NAPHTHALENE	210.	ug/l
PHENANTHRENE	<89.	ug/l
PYRENE	<22.	ug/l
TOX	24. **	ug/l

* NOTE - Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram. The reported value could be a reflection of the concentration of Chlorobenzene, Meta-Xylene, or a combination of both. (N.Y.S.D.O.H. procedure 310-19)

NOTE:
**TOX Scan - The results of this scan are not designed for qualification or quantification of any specific organic compound. The results are calculated based upon the chlorine content and response factor of lindane (α-BHC). This does not imply either the presence or absence of lindane itself.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Teufel DATE: JAN 13 1986

Environmental
CS LABORATORY
Division of Calocerinos & Spina Consulting Engineers • 1020 Seventh North Street, Liverpool, NY 13088
(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Jan 13 1986

Attention: MARK KOMHOLZ

****

SAMPLE #8075

LABORATORY ANALYSIS REPORT

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SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/26/85
LOCATION	: SW2	TIME COLLECTED	: 1030
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
FREE CYANIDE	0.006	mg/l
CYANIDE-T	0.060	mg/l
PHENOL	<0.010	mg/l
BENZENE	<5.	ug/l
TOLUENE	<5.	ug/l
ETHYLBENZENE	<5.	ug/l
PARA-XYLENE	<5.	ug/l
META-XYLENE /Chlorobenzene*	<5.	ug/l
ORTHO-XYLENE	<5.	ug/l
PARADICHLOROBENZENE	<5.	ug/l
METADICHLOROBENZENE	<5.	ug/l
ORTHODICHLOROBENZENE	<5.	ug/l
ACENAPHTHENE	<7.	ug/l
ACENAPHTHYLENE	<12.	ug/l
ANTHRACENE	<34.	ug/l

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SAMPLE #8075

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)ANTHRACENE	<31.	ug/l
BENZO(a)PYRENE	<26.	ug/l
BENZO(b)FLUORANTHENE	<33.	ug/l
BENZO(ghi)PERYLENE	<65.	ug/l
BENZO(k)FLUORANTHENE	<65.	ug/l
CHRYSENE	<21.	ug/l
DIBENZO(a,h)ANTHRACENE	<40.	ug/l
FLUORANTHENE	<14.	ug/l
FLUORENE	<14.	ug/l
INDENO(1,2,3-c,d)PYRENE	<253.	ug/l
NAPHTHALENE	<11.	ug/l
PHENANTHRENE	<31.	ug/l
PYRENE	<25.	ug/l
TOX	0.02 **	ug/l

* NOTE-Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram. The reported value could be a reflection of the concentration of Chlorobenzene, Meta-Xylene, or a combination of both.(N.Y.S.D.O.H. procedure 310-19)

NOTE:

** TOX Scan - The results of this scan are not designed for qualification or quantification of any specific organic compound. The results are calculated based upon the chlorine content and response factor of lindane (α-BHC). This does not imply either the presence or absence of lindane itself.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Teufel DATE: JAN 13 1986

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CS LABORATORY
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(315) 457-6711

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Jan 13 1986

Attention: MARK KOMHOLZ

****

SAMPLE #8076

LABORATORY ANALYSIS REPORT

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SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/26/85
LOCATION	: SW3	TIME COLLECTED	: 1100
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS	SPIKE % RECOVERY
FREE CYANIDE	0.014	mg/l	
CYANIDE-T	0.049	mg/l	
PHENOL	0.065	mg/l	
BENZENE	7.7	ug/l	80%
TOLUENE	20.	ug/l	90%
ETHYLBENZENE	<5.	ug/l	87%
PARA-XYLENE	<5.	ug/l	87%
META-XYLENE/Chlorobenzene*	10.	ug/l	89%
ORTHO-XYLENE	12.	ug/l	90%
PARADICHLOROBENZENE	<5.	ug/l	98%
METADICHLOROBENZENE	<5.	ug/l	84%
ORTHODICHLOROBENZENE	<5.	ug/l	84%
ACENAPHTHENE	<16.	ug/l	
ACENAPHTHYLENE	<26.	ug/l	
ANTHRACENE	<31.	ug/l	

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SAMPLE #8076

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)ANTHRACENE	<74.	ug/l
BENZO(a)PYRENE	<118.	ug/l
BENZO(b)FLUORANTHENE	<29.	ug/l
BENZO(ghi)PERYLENE	<59.	ug/l
BENZO(k)FLUORANTHENE	<135.	ug/l
CHRYSENE	<47.	ug/l
DIBENZO(a,h)ANTHRACENE	<36.	ug/l
FLUORANTHENE	<32.	ug/l
FLUORENE	<32.	ug/l
INDENO(1,2,3-c,d)PYRENE	<229.	ug/l
NAPHTHALENE	<10.	ug/l
PHENANTHRENE	<28.	ug/l
PYRENE	<22.	ug/l
TOX	0.45 **	ug/l

* Note-Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram. The reported value could be a reflection of the concentration of Chlorobenzene, Meta-Xylene, or a combination of both.(N.Y.S.D.O.H. procedure 310-19)

NOTE:

**TOX Scan - The results of this scan are not designed for qualification or quantification of any specific organic compound. The results are calculated based upon the chlorine content and response factor of lindane (γ-BHC). This does not imply either the presence or absence of lindane itself.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Teufel DATE: JAN 13 1986

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To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Jan 13 1986

Attention: MARK KOMHOLZ

****

SAMPLE #8077

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 11/27/85
JOB #	: 405.231.00	DATE COLLECTED	: 11/26/85
LOCATION	: SW4	TIME COLLECTED	: 1130
PRICE CODE	: STANDARD	METHOD	: GRAB

PARAMETER	RESULTS	UNITS
FREE CYANIDE	0.013	mg/l
CYANIDE-T	0.033	mg/l
PHENOL	0.104	mg/l
BENZENE	7.	ug/l
TOLUENE	14.	ug/l
ETHYLBENZENE	<5.	ug/l
PARA-XYLENE	<5.	ug/l
META-XYLENE/Chlorobenzene*	6.	ug/l
ORTHO-XYLENE	7.	ug/l
PARADICHLOROBENZENE	<5.	ug/l
METADICHLOROBENZENE	<5.	ug/l
ORTHODICHLOROBENZENE	<5.	ug/l
ACENAPHTHENE	<15.	ug/l
ACENAPHTHYLENE	<26.	ug/l
ANTHRACENE	<30.	ug/l

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SAMPLE #8077

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(a)ANTHRACENE	<73.	ug/l
BENZO(a)PYRENE	<116.	ug/l
BENZO(b)FLUORANTHENE	<29.	ug/l
BENZO(ghi)PERYLENE	<116.	ug/l
BENZO(k)FLUORANTHENE	<134.	ug/l
CHRYSENE	<47.	ug/l
DIBENZO(a,h)ANTHRACENE	<177.	ug/l
FLUORANTHENE	<31.	ug/l
FLUORENE	<12.	ug/l
INDENO(1,2,3-c,d)PYRENE	<227.	ug/l
NAPHTHALENE	<10.	ug/l
PHENANTHRENE	<28.	ug/l
PYRENE	<55.	ug/l
TOX	1.7 **	ug/l

* Note- Chlorobenzene and Meta-Xylene coelute as one peak on the Gas Chromatogram. The reported value could be a reflection of the concentration of Chlorobenzene, Meta-Xylene, or a combination of both. (N.Y.S.D.O.H. procedure 310-19)

NOTE:

** TOX Scan - The results of this scan are not designed for qualification or quantification of any specific organic compound. The results are calculated based upon the chlorine content and response factor of lindane (α-BHC). This does not imply either the presence or absence of lindane itself.

All analyses were conducted in accordance with operating conditions as set forth in current EPA, ASTM and/or Standard Methods unless otherwise specified.

APPROVED BY: Conrad Fenfil DATE: JAN 13 1986

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LABORATORY, INC.
5854 Butternut Drive, East Syracuse, NY 13057

New York State
Approved Laboratory
(315) 446-8795

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 27 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5949

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 08/07/86
JOB #	: 405.231.00	DATE COLLECTED	: 08/07/86
LOCATION	: SW1	TIME COLLECTED	: 1000
METHOD	:GRAB		

PARAMETER	RESULTS	UNITS
CYANIDE-T	0.013	mg/l
PHENOL	0.61	mg/l
BENZENE	33.	ug/l
TOLUENE	12.	ug/l
ETHYLBENZENE	<5.0	ug/l
CHLOROBENZENE	<5.0	ug/l
1,4 DICHLOROBENZENE	<5.0	ug/l
1,3 DICHLOROBENZENE	<5.0	ug/l
1,2 DICHLOROBENZENE	<5.0	ug/l
ACENAPHTHENE	<42.	ug/l
ACENAPHTHYLENE	<82.	ug/l
ANTHRACENE	*208.	ug/l
BENZO(a)ANTHRACENE	<58.	ug/l
BENZO(a)PYRENE	<44.	ug/l

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SAMPLE #5949

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(b)FLUORANTHENE	<91.	ug/l
BENZO(ghi)PERYLENE	<35.	ug/l
BENZO(k)FLUORANTHENE	<59.	ug/l
CHRYSENE	<88.	ug/l
DIBENZO(a,h)ANTHRACENE	<85.	ug/l
FLUORANTHENE	<49.	ug/l
FLUORENE	<93.	ug/l
INDENO(1,2,3-c,d)PYRENE	<55.	ug/l
NAPHTHALENE	1050.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<43.	ug/l
TOX	38.7	ug/l

NOTE:
*Anthracene and Phenanthrene coelute as one peak on the gas chromatogram. The reported value could be a reflection of the concentration of Anthracene, Phenanthrene, or a combination of both.

warrants that any sampling and analyses conducted as part of this report are performed in accordance with the analytical industries recognized methodologies and professional standards. CS will not assume liability for any damages resulting from deficient work other than reperformance or cost of said work and will not accept any liability as a result of data interpretation by the client.

APPROVED BY: Edward Fowlkes DATE: AUG 27 1986

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(315) 446-8795

To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 27 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5950

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT	: TONAWANDA COKE COMPANY	DATE RECEIVED	: 08/07/86
JOB #	: 405.231.00	DATE COLLECTED	: 08/07/86
LOCATION	: SW2	TIME COLLECTED	: 1035
METHOD	:GRAB		

PARAMETER	RESULTS	UNITS
CYANIDE-T	0.010	mg/l
PHENOL	<0.010	mg/l
BENZENE	<5.0	ug/l
TOLUENE	<5.0	ug/l
ETHYLBENZENE	<5.0	ug/l
CHLOROBENZENE	<5.0	ug/l
1,4 DICHLOROBENZENE	<5.0	ug/l
1,3 DICHLOROBENZENE	<5.0	ug/l
1,2 DICHLOROBENZENE	<5.0	ug/l
ACENAPHTHENE	<22.	ug/l
ACENAPHTHYLENE	<43.	ug/l
ANTHRACENE	* <48.	ug/l
BENZO(a)ANTHRACENE	<60.	ug/l
BENZO(a)PYRENE	<90.	ug/l

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SAMPLE #5950

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(b)FLUORANTHENE	<94.	ug/l
BENZO(ghi)PERYLENE	<37.	ug/l
BENZO(k)FLUORANTHENE	<61.	ug/l
CHRYSENE	<91.	ug/l
DIBENZO(a,h)ANTHRACENE	<88.	ug/l
FLUORANTHENE	<26.	ug/l
FLUORENE	<48.	ug/l
INDENO(1,2,3-c,d)PYRENE	<57.	ug/l
NAPHTHALENE	<82.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<22.	ug/l
TOX	1.89	ug/l

NOTE:
* Anthracene and Phenanthrene coelute as one peak on the gas chromatogram. The reported value could be a reflection of the concentration of Anthracene, Phenanthrene, or a combination of both.

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APPROVED BY: Brian Tomb DATE: AUG 27 1986

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To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 27 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5951

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT : TONAWANDA COKE COMPANY
JOB # : 405.231.00
LOCATION : SW3
METHOD :GRAB

DATE RECEIVED : 08/07/86
DATE COLLECTED : 08/07/86
TIME COLLECTED : 1045

PARAMETER	RESULTS	UNITS
CYANIDE-T	<0.004	mg/l
PHENOL	0.046	mg/l
BENZENE	7.8	ug/l
TOLUENE	17.0	ug/l
ETHYLBENZENE	<5.0	ug/l
CHLOROBENZENE	14.	ug/l
1,4 DICHLOROBENZENE	9.5	ug/l
1,3 DICHLOROBENZENE	<10.	ug/l
1,2 DICHLOROBENZENE	<10.	ug/l
ACENAPHTHENE	<22.	ug/l
ACENAPHTHYLENE	<43.	ug/l
ANTHRACENE	*<48.	ug/l
BENZO(a)ANTHRACENE	<120.	ug/l
BENZO(a)PYRENE	<45.	ug/l

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SAMPLE #5951

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(b)FLUORANTHENE	<188.	ug/l
BENZO(ghi)PERYLENE	<37.	ug/l
BENZO(k)FLUORANTHENE	<122.	ug/l
CHRYSENE	<91.	ug/l
DIBENZO(a,h)ANTHRACENE	<88.	ug/l
FLUORANTHENE	<27.	ug/l
FLUORENE	<48.	ug/l
INDENO(1,2,3-c,d)PYRENE	<57.	ug/l
NAPHTHALENE	<82.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<22.	ug/l
TOX	3.07	ug/l

NOTE:
*Anthracene and Phenanthrene coelute as one peak on the gas chromatogram. The reported value could be a reflection of the conentration of Anthracene, Phenanthrene, or a combination of both.

arrants that any sampling and analyses conducted as part of this report are performed in accordance with the analytical industries ecognized methodologies and professional standards. CS will not assume liability for any damages resulting from deficient work other nan reperformance or cost of said work and will not accept any liability as a result of data interpretation by the client.

APPROVED BY: [signature] AUG 27 1986

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To: TONAWANDA COKE COMPANY
P.O. BOX A-500
TONAWANDA, NY 14150

Date: Aug 27 1986

Attention: MARK KOMHOLZ

****

SAMPLE #5952

LABORATORY ANALYSIS REPORT

****

SAMPLE SUMMARY

CLIENT : TONAWANDA COKE COMPANY
JOB # : 405.231.00
LOCATION : SW4
METHOD :GRAB

DATE RECEIVED : 08/07/86
DATE COLLECTED : 08/07/86
TIME COLLECTED : 1100

PARAMETER	RESULTS	UNITS
CYANIDE-T	0.008	mg/l
PHENOL	0.059	mg/l
BENZENE	34.	ug/l
TOLUENE	87.	ug/l
ETHYLBENZENE	9.3	ug/l
CHLOROBENZENE	30.	ug/l
1,4 DICHLOROBENZENE	22.	ug/l
1,3 DICHLOROBENZENE	<10.	ug/l
1,2 DICHLOROBENZENE	<10.	ug/l
ACENAPHTHENE	<20.	ug/l
ACENAPHTHYLENE	<40.	ug/l
ANTHRACENE	*<44.	ug/l
BENZO(a)ANTHRACENE	<56.	ug/l
BENZO(a)PYRENE	<42.	ug/l

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SAMPLE #5952

LABORATORY ANALYSIS REPORT

PARAMETER	RESULTS	UNITS
BENZO(b)FLUORANTHENE	<44.	ug/l
BENZO(ghi)PERYLENE	<34.	ug/l
BENZO(k)FLUORANTHENE	<28.	ug/l
CHRYSENE	<43.	ug/l
DIBENZO(a,h)ANTHRACENE	<82.	ug/l
FLUORANTHENE	<24.	ug/l
FLUORENE	<45.	ug/l
INDENO(1,2,3-c,d)PYRENE	<53.	ug/l
NAPHTHALENE	<76.	ug/l
PHENANTHRENE	* SEE	BELOW
PYRENE	<21.	ug/l
TOX	3.56	ug/l

Note:
*Anthracene and Phenanthrene coelute as one peak on the gas chromatogram. The reported value could be a reflection of the concentration of Anthracene, Phenanthrene, or a combination of both.

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AUG 27 1986

APPENDIX H

HRS WORKSHEETS AND DOCUMENTATION RECORDS

Facility name: Tonawanda Coke Corporation (Site 108)

Location: 3875 River Road, Tonawanda, Erie County, New York

EPA Region: 2

Person(s) in charge of the facility:

Name of Reviewer: Malcolm Pirnie, Inc Date: December, 1986

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Site 108 is an inactive landfill which was used for fly ash, cinders and coal tar sludge. The contamination route of most concern is surface water.

NYSDEC No.: 915055-a

Scores: S_M = 9.81 (S_{gw} = 5.42 S_{sw} = 16.08 S_a = 0)

S_{FE} = Not applicable

S_{DC} = 0

HRS COVER SHEET

	S	S^2
Groundwater Route Score (S_{gw})	5.42	29.38
Surface Water Route Score (S_{sw})	16.08	258.57
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		287.95
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		16.97
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		9.81

WORKSHEET FOR COMPUTING S_M

Ground Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	0 (45)	1	45	45	3.1
If observed release is given a score of 45, proceed to line [4]. If observed release is given a score of 0, proceed to line [2].					
[2] Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 (3)	2	6	6	
Net Precipitation	0 1 (2) 3	1	2	3	
Permeability of the Unsaturated Zone	0 1 (2) 3	1	2	3	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			13	15	
[3] Containment	0 1 2 (3)	1	3	3	3.3
[4] Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 (5) 6 7 8	1	5	8	
Total Waste Characteristics Score			23	26	
[5] Targets					3.5
Ground Water Use	0 (1) 2 3	3	3	9	
Distance to Nearest Well/Population Served	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			3	49	
[6] If line [1] is 45, multiply [1] x [4] x [5]. If line [1] is 0, multiply [2] x [3] x [4] x [5]			3105	57,330	
[7] Divide line [6] by 57,330 and multiply by 100		S_{gw} =	5.42		

GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 (45)	1	45	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 (1) 2 3	1	1	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
Physical State	0 1 2 (3)	1	3	3	
Total Route Characteristics Score			10	15	
3 Containment	0 1 2 (3)	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 (5) 6 7 8	1	5	8	
Total Waste Characteristics Score			23	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	0 1 (2) 3	2	4	6	
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	0	40	
Total Targets Score			10	55	
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5			10350	64.350	
7 Divide line 6 by 64,350 and multiply by 100		S_{SW} =	16.08		

SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
[1] Observed Release	0 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
Total Targets Score				39	
[4] Multiply [1] x [2] x [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a =	0		

AIR ROUTE WORK SHEET

Fire and Explosion Work Sheet						
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)	
1 Containment	1 3	1		3	7.1	
2 Waste Characteristics					7.2	
Direct Evidence	0 3	1		3		
Ignitability	0 1 2 3	1		3		
Reactivity	0 1 2 3	1		3		
Incompatibility	0 1 2 3	1		3		
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8		
Total Waste Characteristics Score				20		
3 Targets					7.3	
Distance to Nearest Population	0 1 2 3 4 5	1		5		
Distance to Nearest Building	0 1 2 3	1		3		
Distance to Sensitive Environment	0 1 2 3	1		3		
Land Use	0 1 2 3	1		3		
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5		
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5		
Total Targets Score				24		
4 Multiply 1 x 2 x 3				1,440		
5 Divide line 4 by 1,440 and multiply by 100			S_{FE} = Not applicable			

FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	(0) 1 2 3	1	0	3	8.2
3 Containment	(0) 15	1	0	15	8.3
4 Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 (2) 3 4 5	4	8	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			8	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} =	0		

DIRECT CONTACT WORK SHEET

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Tonawanda Coke Corporation

LOCATION: Site 108 (NYSDEC No. 915055-a)

GROUND WATER ROUTE

APPENDIX H
SITE 108

1. OBSERVED RELEASE

Contaminants detected (5 maximum):

Arsenic, Nickel, TOX

(Phase II Report, Tables 4 & 5, MW-6 & MW-7)

Rationale for attributing the contaminants to the facility:

Downgradient concentrations (MW-7) exceeded upgradient concentrations (MW-6).

(Phase II Report, Tables 4 & 5, MW-6 & MW-7)

* * *

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Permeable zone of fill above clay layer

(Phase II Report, Table 1, MW-6 & MW-7)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

4.9 feet

(Phase II Report, Table 1, MW-6 on 7/9/86)

Depth from the ground surface to the lowest point of waste disposal/ storage:

4 feet

(Phase II Report, Appendix C, Boring Logs for MW-6 & MW-7)

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

32 inches

(NOAA Climatic Atlas of the United States)

Mean annual lake or seasonal evaporation (list months for seasonal):

27 inches

(NOAA Climatic Atlas of the United States)

Net precipitation (subtract the above figures):

5 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Fill and clay.

(Phase II Report, Appendix C, Boring Logs for MW-6 & MW-7)

Permeability associated with soil type:

3×10^{-5} cm/sec

(Phase II Report, Table 2, MW-6 & MW-7)

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Solid or sludge.

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill, no liner or control.

Method with highest score:

See above.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Components of coal tar including polynuclear aromatic hydrocarbons and benzene/toluene/xylenes.

Compound with highest score:

Naphthalene 18

(Sax)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Estimated 500 tons maximum.

Basis of estimating and/or computing waste quantity:

4680 tons/yr x 50 yrs x 0.2% of waste as coal tar.

(NYSDEC Inactive Hazardous Waste Disposal Site Report, 10/83)
(Personal Communication w/Tonawanda Coke)

* * *

5. TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:
At least three facilities in the area utilize groundwater wells:
Dunlop - cooling water
Polymer Applications - cooling water
Clarence Redi-mix - truck cleaning

The aquifer of concern is approximately 4-8 feet below the surface, Given the usage of the wells above, they are undoubtedly deeper and would not draw from the aquifer of concern.
(Reference on wells - Town on Tonawanda Engineer's office - HRS for adjacent Cherry Farms site)

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

None, entire area is on public water supply.

(See above)
Distance to above well or building:

(See above)

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

None.

(See above)

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

None

(See above)

Total population served by ground water within a 3-mile radius:

None

(See above)

SURFACE WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

Cyanide, Phenols, Benzene, Toluene, Chlorobenzene

(Phase II Report, Tables 7 & 8, SW-3 & SW-4)

Rationale for attributing the contaminants to the facility:

Downstream concentrations (SW-4) exceeded upstream concentrations (SW-3).

(Phase II Report, Tables 7 & 8, SW-3 & SW-4)

* * *

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Less than 3%.

(USGS Buffalo NW Quadrangle)

Name/description of nearest downslope surface water:

Niagara River

(USGS Buffalo NW Quadrangle)

Average slope of terrain between facility and above-cited surface water body in percent:

Less than 3%.

(USGS Buffalo NW Quadrangle)

Is the facility located either totally or partially in surface water?

No.

(USGS Buffalo NW Quadrangle)

Is the facility completely surrounded by areas of higher elevation?

No.

(USGS Buffalo NW Quadrangle)

1-Year 24-Hour Rainfall in Inches

2 inches.

(Rainfall Frequency Atlas of the United States)

Distance to Nearest Downslope Surface Water

Less than 1000 feet.

(USGS Buffalo NW Quadrangle)

Physical State of Waste

Solid or sludge.

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill, no liner or control.

Method with highest score:

See above.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Components of coal tar including polynuclear aromatic hydrocarbons and benzene/toluene/xylene.

Compound with highest score:

Napthalene - 18

(Sax)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

Estimated 500 tons maximum.

Basis of estimating and/or computing waste quantity:

4680 tons/year x 50 years x 0.2 percent of waste as coal tar.

(NYSDEC Inactive Hazardous Waste Disposal Site Report, 10/83)
(Personal Communication With Tonawanda Coke)

* * *

5. TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

The Niagara River is used for recreation. Drinking water intakes are farther than 3 miles downstream.

(Hazard Ranking Report for Adjacent Cherry Farm Site)

Is there tidal influence?

No.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None within 2 miles.

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

250 feet.

(USGS Buffalo NW Quadrangle)

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None.

(NYSDEC)

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

No drinking water supplies within 3 miles downstream.

(Hazard Ranking Report for adjacent Cherry Farm Site - Information from Town of Tonawanda Senior Engineer)

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

No data.

Date and location of detection of contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

* * *

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

* * *

3. TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi o to 1 mi 0 to ½ mi 0 to ¼ mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Facility name: Tonawanda Coke Corporation (Site 109)

Location: 3875 River Road, Tonawanda, Erie County.

EPA Region: 2

APPENDIX H
SITE 109

Person(s) in charge of the facility:

Name of Reviewer: Malcolm Pirnie, Inc. Date: December, 1986

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Site 109 is an inactive landfill which was used for bricks rubble and demolition material. The contamination route of most concern is surface water.

NYSDEC No.: 915055-b

Scores: S_M = 4.18 (S_{gw} = 4.24 S_{sw} = 5.87 S_a = 0)

S_{FE} = Not Applicable

S_{DC} = 0

HRS COVER SHEET

	S	S^2
Groundwater Route Score (S_{gw})	4.24	17.98
Surface Water Route Score (S_{sw})	5.87	34.46
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		52.44
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		7.24
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} \,/\, 1.73 = S_M =$		4.18

WORKSHEET FOR COMPUTING S_M

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 (45)	1	45	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 (3)	2	6	6	
Net Precipitation	0 1 (2) 3	1	2	3	
Permeability of the Unsaturated Zone	0 1 (2) 3	1	2	3	
Physical State	(0) 1 2 3	1	0	3	
Total Route Characteristics Score			10	15	
3 Containment	0 1 2 (3)	1	3	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			18	26	
5 Targets					3.5
Ground Water Use	0 (1) 2 3	3	3	9	
Distance to Nearest Well/Population Served	(0) 4 8 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			3	49	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			2430	57.330	
7 Divide line 6 by 57.330 and multiply by 100		S_{gw} =	4.24		

GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	(0) 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 (1) 2 3	1	1	3	
Distance to Nearest Surface Water	0 1 2 (3)	2	6	6	
Physical State	(0) 1 2 3	1	0	3	
Total Route Characteristics Score			7	15	
3 Containment	0 1 2 (3)	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	(0) 1 2 3 4 5 6 7 8	1	0	8	
Total Waste Characteristics Score			18	26	
5 Targets					4.5
Surface Water Use	0 1 (2) 3	3	6	9	
Distance to a Sensitive Environment	0 1 (2) 3	2	4	6	
Population Served/Distance to Water Intake Downstream	(0) 4 6 8 10 / 12 16 18 20 / 24 30 32 35 40	1	0	40	
Total Targets Score			10	55	
6 If line 1 is 45, multiply 1 x 4 x 5. If line 1 is 0, multiply 2 x 3 x 4 x 5			3780	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	5.87		

SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
[1] Observed Release	0 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
[4] Multiply [1] x [2] x [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a =	0		

AIR ROUTE WORK SHEET

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100		S_{FE} = Not applicable			

FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	0 1 2 (3)	1	3	3	8.2
3 Containment	(0) 15	1	0	15	8.3
4 Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 (2) 3 4 5	4	8	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			8	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} =	0		

DIRECT CONTACT WORK SHEET

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Tonawanda Coke Corporation

LOCATION: Site 109 (NYSDEC No. 915055-b)

GROUND WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected (5 maximum):

Cyanide

(Phase II Report, Tables 4 & 5, MW-4 & MW-5)

Rationale for attributing the contaminants to the facility:

Downgradient concentration (MW-5) exceeded upgradient concentration (MW-4).

(Phase II Report, Tables 4 & 5, MW-4 & MW-5)

* * *

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Permeable zone of fill above clay layer.

(Phase II Report, Table 1, MW-4 & MW-5)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

1.9 feet.

(Phase II Report, Table 1, MW-4 on 5/12/86)

Depth from the ground surface to the lowest point of waste disposal/ storage:

3 feet.

(Phase II Report, Appendix C, Boring Logs for MW-4 & MW-5)

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

32 inches.

(NOAA Climatic Atlas of the United States)

Mean annual lake or seasonal evaporation (list months for seasonal):

27 inches.

(NOAA Climatic Atlas of the United States)

Net precipitation (subtract the above figures):

5 inches.

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Fill and clay.

(Phase II Report, Appendix C, Boring Logs for MW-4 & MW-5)

Permeability associated with soil type:

1.3×10^{-5}

(Phase II Report, Table 2, Average for MW-4 & MW-5)

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Solid, consolidated.

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill, no liner or control.

Method with highest score:

See above.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Cyanide, chrysene.

Compound with highest score:

Chrysene, 18

(Sax)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

None. Wastes buried on site are non-hazardous materials such as brick, rubble, etc.

Basis of estimating and/or computing waste quantity:

See above.

* * *

5. TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:
At least three facilities in the area utilize groundwater wells:
Dunlop - cooling water
Ploymer Applications - cooling water
Clarence Redi-mix - truck cleaning
The aquifer of concern is approximately 4-8 feet below the surface. Given the usage of the wells above, they are undoubtedly deeper and would not draw from the aquifer of concern.
(Reference on wells - Town of Tonawanda Engineers office - HRS for adjacent Cherry Farms site)

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:

None; entire area is on public water supply.

(See above)

Distance to above well or building:

(See above)

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

None.

(See above)

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

None.

(See above)

Total population served by ground water within a 3-mile radius:

None.

(See above)

SURFACE WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

Cyanide, Phenols, Benzene, Toluene, Chlorobenzene

(Phase II Report, Tables 7 & 8 & SW-3)

Rationale for attributing the contaminants to the facility:

Contaminants cannot be contributed to facility because there is no upstream sample location.

* * *

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Less than 3%.

(USGS Buffalo NW Quadrangle)

Name/description of nearest downslope surface water:

Niagara River.

(USGS Buffalo NW Quadrangle)

Average slope of terrain between facility and above-cited surface water body in percent:

Less than 3%.

(USGS Buffalo NW Quadrangle)

Is the facility located either totally or partially in surface water?

No.

(USGS Buffalo NW Quadrangle)

Is the facility completely surrounded by areas of higher elevation?

No.

(USGS Buffalo NW Quadrangle)

1-Year 24-Hour Rainfall in Inches

2 inches.

(Rainfall Frequency Atlas of the United States)

Distance to Nearest Downslope Surface Water

Less than 1000 feet

(USGS Buffalo NW Quadrangle)

Physical State of Waste

Solid, consolidated.

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill, no liner or control.

Method with highest score:

See above.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Cyanide, Phenols, Benzene, Toluene, Chlorobenzene.

Compound with highest score:

Cyanide 18

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

None. Wastes buried on-site are non-hazardous bricks, rubble, etc.

Basis of estimating and/or computing waste quantity:

See above.

* * *

5. TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

The Niagara River is used for recreation. Drinking water intakes are farther than 3 miles downstream.

(Hazard Ranking Report for adjacent Cherry Farm site)

Is there tidal influence?

No.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None within 2 miles.

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

1200 feet.

(USGS Buffalo NW Quadrant)

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None.

(NYSDEC)

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

No drinking water supplies within 3 miles downstream.

(Hazard Ranking Report for adjacent Cherry Farm Site - Information from Town of Tonawanda Senior Engineer)

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

No data.

Date and location of detection of contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

* * *

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

* * *

3. TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi o to 1 mi 0 to ½ mi 0 to ¼ mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

Facility name: Tonawanda Coke Corporation (Site 110)

Location: 3875 River Road, Tonawanda, Erie County, New York

EPA Region: 2

Person(s) in charge of the facility:

Name of Reviewer: Malcolm Pirnie, Inc. Date: December, 1986

General description of the facility:

(For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of the facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Site 110 is an inactive landfill which was used for spent iron oxide, wood shavings, coke, ash and cinders. The contamination route of most concern is surface water.

NYSDEC No.: 915055-c

Scores: S_M = 10.77 (S_{gw} = 4.08 S_{sw} = 18.18 S_a = 0)

S_{FE} = Not applicable

S_{DC} = 0

HRS COVER SHEET

	S	S^2
Groundwater Route Score (S_{gw})	4.08	16.65
Surface Water Route Score (S_{sw})	18.18	330.51
Air Route Score (S_a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		347.16
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2}$		18.63
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_a^2} / 1.73 = S_M =$		10.77

WORKSHEET FOR COMPUTING S_M

Ground Water Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multi-plier	Score	Max. Score	Ref. (Section)
1 Observed Release	(0) 45	1	0	45	3.1
If observed release is given a score of 45, proceed to line 4. If observed release is given a score of 0, proceed to line 2.					
2 Route Characteristics					3.2
Depth to Aquifer of Concern	0 1 2 (3)	2	6	6	
Net Precipitation	0 1 (2) 3	1	2	3	
Permeability of the Unsaturated Zone	0 1 (2) 3	1	2	3	
Physical State	(0) 1 2 3	1	0	3	
Total Route Characteristics Score			10	15	
3 Containment	0 1 2 (3)	1	3	3	3.3
4 Waste Characteristics					3.4
Toxicity/Persistence	0 3 6 9 12 15 (18)	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 (8)	1	8	8	
Total Waste Characteristics Score			26	26	
5 Targets					3.5
Ground Water Use	0 (1) 2 3	3	3	9	
Distance to Nearest Well/Population Served	(0) 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			3	49	
6 If line 1 is 45, multiply 1 x 4 x 5 / If line 1 is 0, multiply 2 x 3 x 4 x 5			2340	57.330	
7 Divide line 6 by 57.330 and multiply by 100		S_{gw} =	4.08		

GROUND WATER ROUTE WORK SHEET

Surface Water Route Work Sheet

Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Release	0 **(45)**	1	45	45	4.1
If observed release is given a value of 45, proceed to line 4. If observed release is given a value of 0, proceed to line 2.					
2 Route Characteristics					4.2
Facility Slope and Intervening Terrain	**(0)** 1 2 3	1	0	3	
1-yr. 24-hr. Rainfall	0 **(1)** 2 3	1	1	3	
Distance to Nearest Surface Water	0 1 **(2)** 3	2	4	6	
Physical State	**(0)** 1 2 3	1	0	3	
Total Route Characteristics Score			5	15	
3 Containment	0 1 2 **(3)**	1	3	3	4.3
4 Waste Characteristics					4.4
Toxicity/Persistence	0 3 6 9 12 15 **(18)**	1	18	18	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 **(8)**	1	8	8	
Total Waste Characteristics Score			26	26	
5 Targets					4.5
Surface Water Use	0 1 **(2)** 3	3	6	9	
Distance to a Sensitive Environment	0 1 **(2)** 3	2	4	6	
Population Served/Distance to Water Intake Downstream	**(0)** 4 6 8 10 12 16 18 20 24 30 32 35 40	1	0	40	
Total Targets Score			10	55	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			11,700	64,350	
7 Divide line 6 by 64,350 and multiply by 100		S_{sw} =	18.18		

SURFACE WATER ROUTE WORK SHEET

Air Route Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
[1] Observed Release	(0) 45	1	0	45	5.1
Date and Location:					
Sampling Protocol:					
If line [1] is 0, the S_a = 0. Enter on line [5]. If line [1] is 45, then proceed to line [2].					
[2] Waste Characteristics					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
	Total Waste Characteristics Score			20	
[3] Targets					5.3
Population Within 4-Mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
	Total Targets Score			39	
[4] Multiply [1] x [2] x [3]				35,100	
[5] Divide line [4] by 35,100 and multiply by 100		S_a =	0		

AIR ROUTE WORK SHEET

Fire and Explosion Work Sheet					
Rating Factor	Assigned Value (Circle One)*	Multiplier	Score	Max. Score	Ref. (Section)
1 Containment	1 3	1		3	7.1
2 Waste Characteristics					7.2
Direct Evidence	0 3	1		3	
Ignitability	0 1 2 3	1		3	
Reactivity	0 1 2 3	1		3	
Incompatibility	0 1 2 3	1		3	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
3 Targets					7.3
Distance to Nearest Population	0 1 2 3 4 5	1		5	
Distance to Nearest Building	0 1 2 3	1		3	
Distance to Sensitive Environment	0 1 2 3	1		3	
Land Use	0 1 2 3	1		3	
Population Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Buildings Within 2-Mile Radius	0 1 2 3 4 5	1		5	
Total Targets Score				24	
4 Multiply 1 x 2 x 3				1,440	
5 Divide line 4 by 1,440 and multiply by 100			S_{FE} = Not applicable		

FIRE AND EXPLOSION WORK SHEET

Direct Contact Work Sheet					
Rating Factor	Assigned Value (Circle One)	Multiplier	Score	Max. Score	Ref. (Section)
1 Observed Incident	0 45	1	0	45	8.1
If line 1 is 45, proceed to line 4 If line 1 is 0, proceed to line 2					
2 Accessibility	(0) 1 2 3	1	0	3	8.2
3 Containment	(0) 15	1	0	15	8.3
4 Waste Characteristics Toxicity	0 1 2 (3)	5	15	15	8.4
5 Targets					8.5
Population Within a 1-Mile Radius	0 1 (2) 3 4 5	4	8	20	
Distance to a Critical Habitat	(0) 1 2 3	4	0	12	
Total Targets Score			8	32	
6 If line 1 is 45, multiply 1 x 4 x 5 If line 1 is 0, multiply 2 x 3 x 4 x 5			0	21,600	
7 Divide line 6 by 21,600 and multiply by 100		S_{DC} =	0		

DIRECT CONTACT WORK SHEET

DOCUMENTATION RECORDS FOR HAZARD RANKING SYSTEM

INSTRUCTIONS: The purpose of these records is to provide a convenient way to prepare an auditable record of the data and documentation used to apply the Hazard Ranking System to a given facility. As briefly as possible summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference that will make the document used for a given data point easier to find. Include the location of the document and consider appending a copy of the relevant page(s) for ease in review.

FACILITY NAME: Tonawanda Coke Corporation

LOCATION: Site 110 (NYSDEC No. 915055-c)

GROUND WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected (5 maximum):

None. Upgradient concentrations (MW-2) were higher than or equal to downgradient concentrations (MW-1).

(Phase II Report, Tables 4 & 5, MW-1 & MW-2)

Rationale for attributing the contaminants to the facility:

See above.

* * *

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifers(s) of concern:

Permeable zone of fill above clay layer.

(Phase II Report)

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

1.9 feet.

(Phase II Report, Table 1, MW-2 on 5/12/86 and 7/9/86)

Depth from the ground surface to the lowest point of waste disposal/ storage:

5 feet.

(Phase II Report, Appendix C, Boring Logs for MW-1 & MW-2)

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

32 inches

(NOAA Climatic Atlas of the United States)

Mean annual lake or seasonal evaporation (list months for seasonal):

27 inches.

(NOAA Climatic Atlas of the United States)

Net precipitation (subtract the above figures):

5 inches.

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

Fill and clay.

(Phase II Report, Appendix C, Boring Logs for MW-1 & MW-2)

Permeability associated with soil type:

3×10^{-4}

(Phase II Report, Table 2, MW-2)

Physical State

Physical state of substances at time of disposal (or at present time for generated gases):

Solid, consolidated.

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill, no liner or control.

Method with highest score:

See above.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

Iron oxide, cyanide.

Compound with highest score:

Cyanide 18, Iron 18.

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

18,200 tons.

Basis of estimating and/or computing waste quantity:

728 tons/year x 50 years x 50% iron oxide.

(NYSDEC Inactive Hazardous Disposal Site Report, 10/83)

* * *

5. TARGETS

Ground Water Use

Use(s) of aquifer(s) of concern within a 3-mile radius of the facility:
At least three facilities in the area utilize groundwater wells:
Dunlop - cooling water
Polymer Applications - cooling water
Clarence Redi-mix - truck cleaning
The aquifer of concern is approximately 4-8 feet below the surface. Given the usage of the wells above, they are undoubtedly deeper and would not draw from the aquifer of concern.
(Reference on wells - Town of Tonawanda Engineers office - HRS for adjacent Cherry Farms site)

Distance to Nearest Well

Location of nearest well drawing from aquifer of concern or occupied building not served by a public water supply:
None, entire area is on public water supply.

(See above)

Distance to above well or building:

See above.

Population Served by Ground Water Wells Within a 3-Mile Radius

Identified water-supply well(s) drawing from aquifer(s) of concern within a 3-mile radius and populations served by each:

None.

(See above)

Computation of land area irrigated by supply well(s) drawing from aquifer(s) of concern within a 3-mile radius, and conversion to population (1.5 people per acre):

None.

(See above)

Total population served by ground water within a 3-mile radius:

None.

(See above)

SURFACE WATER ROUTE

1. OBSERVED RELEASE

Contaminants detected in surface water at the facility or downhill from it (5 maximum):

Cyanide, Benzene, Toluene, Acenaphthylene, Naphthalene

(Phase II Report, Tables 7 & 8, SW-1)

Rationale for attributing the contaminants to the facility:

Location SW-1 is down-slope of the site and contaminant levels are presumably higher than background levels.

(Phase II Report, Tables 7 & 8, SW-1)

* * *

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

Less than 3%

(USGS Buffalo NW Quadrant)

Name/description of nearest downslope surface water:

Niagara River.

(USGS Buffalo NW Quadrant)

Average slope of terrain between facility and above-cited surface water body in percent:

Less than 3%.

(USGS Buffalo NW Quadrant)

Is the facility located either totally or partially in surface water?

No.

(USGS Buffalo NW Quadrant)

Is the facility completely surrounded by areas of higher elevation?

No.

(USGS Buffalo NW Quandrangle)

1-Year 24-Hour Rainfall in Inches

2 inches.

(Rainfall Frequency Atlas of the United States)

Distance to Nearest Downslope Surface Water

2000 feet.

(USGS Buffalo NW Quadrangle)

Physical State of Waste

Solid, consolidated.

* * *

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

Landfill, no liner or control.

Method with highest score:

See above.

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated

Naphthalene, Cyanide, Benzene, Toluene, Acenaphthylene

Compound with highest score:

Naphthalene 18

(Sax)

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

18,200 tons.

Basis of estimating and/or computing waste quantity:

728 tons/year x 50 years x 50% iron oxide.

(NYSDEC Inactive Hazardous Waste Disposal Site Report, 10/83)

* * *

5. TARGETS

Surface Water Use

Use(s) of surface water within 3 miles downstream of the hazardous substance:

The Niagara River is used for recreation. Drinking water intakes are farther than 3 miles downstream.

(Hazard Ranking Report for adjacent Cherry Farm Site)

Is there tidal influence?

No.

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

None within 2 miles.

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

250 feet.

(USGS Buffalo NW Quadrangle)

Distance to critical habitat of an endangered species or national wildlife refuge, if 1 mile or less:

None.

(NYSDEC)

Population Served by Surface Water

Location(s) of water-supply intake(s) within 3 miles (free-flowing bodies) or 1 mile (static water bodies) downstream of the hazardous substance and population served by each intake:

No drinking water supplies within 3 miles downstream.

(Hazard Ranking Report for adjacent Cherry Farm Site - Information from Town of Tonawanda Senior Engineer)

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

No data.

Date and location of detection of contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

* * *

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

Most incompatible pair of compounds:

Toxicity

Most toxic compound:

Hazardous Waste Quantity

Total quantity of hazardous waste:

Basis of estimating and/or computing waste quantity:

* * *

3. TARGETS

Population Within 4-Mile Radius

Circle radius used, give population, and indicate how determined:

0 to 4 mi o to 1 mi 0 to ½ mi 0 to ¼ mi

Distance to a Sensitive Environment

Distance to 5-acre (minimum) coastal wetland, if 2 miles or less:

Distance to 5-acre (minimum) fresh-water wetland, if 1 mile or less:

Distance to critical habitat of an endangered species, if 1 mile or less:

Land Use

Distance to commercial/industrial area, if 1 mile or less:

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Distance to residential area, if 2 miles or less:

Distance to agricultural land in production within past 5 years, if 1 mile or less:

Distance to prime agricultural land in production within past 5 years, if 2 miles or less:

Is a historic or landmark site (National Register or Historic Places and National Natural Landmarks) within the view of the site?

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-a

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Tonawanda Coke Site 108	3875 River Road				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Tonawanda	NY	14150	Erie		

09 COORDINATES LATITUDE	LONGITUDE	10 TYPE OF OWNERSHIP (Check one)
42 58 30.0	078 55 40.0	☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION	02 SITE STATUS	03 YEARS OF OPERATION
9 / 85 (MONTH DAY YEAR)	☐ ACTIVE ☒ INACTIVE	1930 (BEGINNING YEAR) 1978 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)

☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☒ G. OTHER Malcolm Pirnie, Inc. (MPI) (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Richard Klippel	Project Manager	MPI	(315) 457-4105
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Mark Wilder	Hydrogeologist	MPI	(315) 457-4105
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
All information based on			( )
Phase II Investigation.			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Richard Klippel	Malcolm Pirnie, Inc.	(315) 457-4105

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Richard Klippel	as above			1 / 28 / 87 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-a

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☒ C. SLUDGE
- ☐ D. OTHER (Specify)
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE
(Measures of waste quantities must be independent)

TONS: 500
CUBIC YARDS:
NO. OF DRUMS:

03 WASTE CHARACTERISTICS (Check all that apply)

- ☒ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☒ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE	500	tons	coal tar
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Cyanide		LF	0.198	mg/l
MES	Arsenic	7440-38-2	LF	0.022	mg/l
MES	Copper	7440-50-8	LF	0.02	mg/l
MES	Nickel	7440-02-0	LF	0.05	mg/l
MES	Zinc	7440-66-6	LF	0.18	mg/l
OCC	TOX		LF	0.93	ug/l

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Investigation. Hazardous substances concentrations from groundwater samples taken on-site at MW-6 and MW-7.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-a

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☒ OBSERVED (DATE: 11/85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Contaminants in shallow groundwater samples, but groundwater from this aquifer is not used. Data from Phase II Investigation.

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☒ OBSERVED (DATE: 11/85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Contaminants in site surface water sample; water is not used. Data from Phase II Investigation.

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

01 ☐ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

01 ☐ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: _____ (Acres) — 04 NARRATIVE DESCRIPTION

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

01 ☐ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE: _____) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE: NY | 02 SITE NUMBER: 915055-a

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential influence on wetlands.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include number of species)

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: _____

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-a

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☒ F. LANDFILL	500	tons
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCINERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER

- ☐ A. BUILDINGS ON SITE

06 AREA OF SITE

20 (Acres)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Wastes are buried on-site with no containment.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

Waste is buried and site is fenced.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-a

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. GT 3 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☒ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 0

03 DISTANCE TO NEAREST DRINKING WATER WELL GT 3 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
4.9 (ft)	West	0 (ft)	_____ (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)

Wells near the site are used for industrial cooling water and undoubtedly draw from a much deeper aquifer.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS Direct infiltration of precipitation	☒ YES ☐ NO	COMMENTS Discharge to on-site stream.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☒ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Niagara River	☐	LT 0.1 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 500 NO. OF PERSONS	B. 2500 NO. OF PERSONS	C. 7500 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

0.5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

800

04 DISTANCE TO NEAREST OFF-SITE BUILDING

0.5 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Industrial Area

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-a

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
Est. 50 (ft)	(ft)		

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
5 (in)	2 (in)	0-2 %	West	0-2 %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

10

☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. (mi)	B. 0.1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

(mi)

ENDANGERED SPECIES:

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AG LAND
A. 0 (mi)	B. 0.5 (mi)	C. (mi)	D. (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site and surrounding area are flat or gently sloped.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-a

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	4	CompuChem Labs and C&S Env. Lab	Now
SURFACE WATER	4	C&S Environmental Laboratory	Now
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Water elevation	

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____ (Name of organization or individual)

03 MAPS ☐ YES ☐ NO

04 LOCATION OF MAPS _____

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Report.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915055-a

II. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Tonawanda Coke Corp		3875 River Road		Tonawanda	NY	14150

PARENT COMPANY (If applicable)

08 NAME	09 D+B NUMBER	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE
Allied Chemical Co.		NA				

IV. REALTY OWNER(S) (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Report.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-a

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
None	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
Allied Chemical Co.	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
NA	

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-a

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-a

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-a

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-a

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION *(Cite specific references, e.g., state files, sample analysis, reports)*

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Tonawanda Coke Site 109	3875 River Road				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Tonawanda	NY	14150	Erie		

09 COORDINATES
LATITUDE: 4 2 58 30.0 | LONGITUDE: 0 7 8 55 40.0

10 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL
☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 9 / / 85 (MONTH DAY YEAR)

02 SITE STATUS: ☐ ACTIVE ☒ INACTIVE

03 YEARS OF OPERATION: 1930 (BEGINNING YEAR) | 1978 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☒ G. OTHER Malcolm Pirnie, Inc. (MPI) (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Richard Klippel	Project Manager	MPI	(315 457-4105
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Mark Wilder	Hydrogeologist	MPI	(315 457-4105
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
All information based on			( )
Phase II Investigation			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Richard Klippel	Malcolm Pirnie, Inc.	(315) 457-4105

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Richard Klippel	as above			1 28 87 (MONTH DAY YEAR)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID
- ☐ B. POWDER, FINES
- ☐ C. SLUDGE
- ☐ D. OTHER _____ (Specify)
- ☐ E. SLURRY
- ☐ F. LIQUID
- ☐ G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- ☐ A. TOXIC
- ☐ B. CORROSIVE
- ☐ C. RADIOACTIVE
- ☐ D. PERSISTENT
- ☐ E. SOLUBLE
- ☐ F. INFECTIOUS
- ☐ G. FLAMMABLE
- ☐ H. IGNITABLE
- ☐ I. HIGHLY VOLATILE
- ☐ J. EXPLOSIVE
- ☐ K. REACTIVE
- ☐ L. INCOMPATIBLE
- ☐ M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			only non-hazardous
OLW	OILY WASTE			substances (e.g. bricks)
SOL	SOLVENTS			were buried on site.
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS			

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Cyanide		LF	0.043	mg/l
OCC	Chrysene	218-01-9	LF	88	ug/l
OCC	Tox		LF	6.01	ug/l

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Investigation. Hazardous substances concentrations from groundwater samples taken on-site at MW-4 and MW-5.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-b

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☐ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: 11/85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION
Contaminants in shallow groundwater samples, but groundwater from this aquifer is not used. Data from Phase II Investigation.

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE: 11/85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION
Contaminants in site surface water sample; water is not used.

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: (Acres) — 04 NARRATIVE DESCRIPTION

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential influence on wetlands.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 0

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☐ F. LANDFILL	0	
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCINERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER

- ☐ A. BUILDINGS ON SITE

06 AREA OF SITE

10 (Acres)

07 COMMENTS

Only non-hazardous wastes (e.g. bricks) are buried on-site.

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Landfill, no containment.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

Waste is buried.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. ☒	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE

A. GT 3 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☒ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 0

03 DISTANCE TO NEAREST DRINKING WATER WELL GT 3 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
1.9 (ft)	West	0 (ft)	_____ (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

Wells near the site are used for industrial cooling water and undoubtedly draw from a much deeper aquifer.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS: Direct infiltration of precipitation.	☒ YES ☐ NO	COMMENTS: Discharge to on-site stream.

IV. SURFACE WATER

01 SURFACE WATER USE (Check one)

☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☒ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Niagara River	☐	0.3 (mi)
	☐	(mi)
	☐	(mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 500 NO. OF PERSONS	B. 2500 NO. OF PERSONS	C. 7500 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION

0.5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE

800

04 DISTANCE TO NEAREST OFF-SITE BUILDING

0.5 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Industrial Area

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☒ B. $10^{-4} - 10^{-6}$ cm/sec ☐ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
Est. 50 (ft)	(ft)		

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
5 (in)	2 (in)	0-2 %	West	0-2 %

09 FLOOD POTENTIAL

SITE IS IN 100 YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. (mi)	B. 0.2 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

(mi)

ENDANGERED SPECIES:

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A. 0 (mi)	B. 0.5 (mi)	C. (mi)	D. (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site and surrounding area are flat or gently sloped.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	4	C&S Environmental Laboratory	Now
SURFACE WATER	2	C&S Environmental Laboratory	Now
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL			
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Water elevation	

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____ (Name of organization or individual)

03 MAPS ☐ YES ☐ NO

04 LOCATION OF MAPS _____

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Report.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

EPA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II. CURRENT OWNER(S) / **PARENT COMPANY** (If applicable)

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
Tonawanda Coke Corp.			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
3875 River Road			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Tonawanda	NY	14150			

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

III. PREVIOUS OWNER(S) (List most recent first) / **IV. REALTY OWNER(S)** (If applicable; list most recent first)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
Allied Chemical Co.			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
NA			

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
None	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
Allied Chemical Co	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
NA	

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-b

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-b

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-b

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

EPA

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915055-c

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER				
Tonawanda Coke Site 110	3875 River Road				
03 CITY	**04 STATE**	**05 ZIP CODE**	**06 COUNTY**	**07 COUNTY CODE**	**08 CONG DIST**
Tonawanda	NY	14150	Erie		

09 COORDINATES
LATITUDE: 42 58 30.0 | LONGITUDE: 078 55 40.0

10 TYPE OF OWNERSHIP (Check one)
☒ A. PRIVATE ☐ B. FEDERAL _____ ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER _____ ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 9 / / 85 (MONTH DAY YEAR)

02 SITE STATUS: ☐ ACTIVE ☒ INACTIVE

03 YEARS OF OPERATION: 1930 (BEGINNING YEAR) 1978 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply)
☐ A. EPA ☐ B. EPA CONTRACTOR _____ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR _____ (Name of firm)
☐ E. STATE ☐ F. STATE CONTRACTOR _____ (Name of firm) ☒ G. OTHER Malcolm Pirnie, Inc. (MPI) (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
Richard Klippel	Project Manager	MPI	(315) 457-4105
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Mark Wilder	Hydrogeologist	MPI	(315) 457-4105
			( )
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
All information based on			( )
Phase II Investigation			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☐ PERMISSION ☐ WARRANT		

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Richard Klippel	Malcolm Pirnie, Inc.	(315) 457-4105

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Richard Klippel	as above			1 / 28 / 87 (MONTH DAY YEAR)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-C

II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply)

- [X] A. SOLID
- [ ] B. POWDER, FINES
- [ ] C. SLUDGE
- [ ] D. OTHER (Specify)
- [ ] E. SLURRY
- [ ] F. LIQUID
- [ ] G. GAS

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS: 18,200
CUBIC YARDS:
NO. OF DRUMS:

03 WASTE CHARACTERISTICS (Check all that apply)

- [X] A. TOXIC
- [ ] B. CORROSIVE
- [ ] C. RADIOACTIVE
- [X] D. PERSISTENT
- [ ] E. SOLUBLE
- [ ] F. INFECTIOUS
- [ ] G. FLAMMABLE
- [ ] H. IGNITABLE
- [ ] I. HIGHLY VOLATILE
- [ ] J. EXPLOSIVE
- [ ] K. REACTIVE
- [ ] L. INCOMPATIBLE
- [ ] M. NOT APPLICABLE

III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	18,200	tons	spent iron oxide

IV. HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
IOC	Cyanide		LF	0.730	mg/l
OCC	Phenol	108-95-2	LF	0.060	mg/l
OCC	TOX		LF	10.0	ug/l

V. FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Investigation. Hazardous substance concentrations from groundwater samples taken on-site at MW-1 and MW-2.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-c

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION — 02 ☐ OBSERVED (DATE: 11/85) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: 0 — 04 NARRATIVE DESCRIPTION

Contaminants in shallow groundwater samples, but groundwater from this aquifer is not used. Data from Phase II Investigation.

01 ☐ B. SURFACE WATER CONTAMINATION — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ C. CONTAMINATION OF AIR — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ D. FIRE/EXPLOSIVE CONDITIONS — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ E. DIRECT CONTACT — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ F. CONTAMINATION OF SOIL — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 AREA POTENTIALLY AFFECTED: (Acres) — 04 NARRATIVE DESCRIPTION

01 ☐ G. DRINKING WATER CONTAMINATION — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ H. WORKER EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 WORKERS POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

01 ☐ I. POPULATION EXPOSURE/INJURY — 02 ☐ OBSERVED (DATE:) ☐ POTENTIAL ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: — 04 NARRATIVE DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-c

II. HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 ☒ J. DAMAGE TO FLORA — 02 ☐ OBSERVED (DATE: _____) — ☒ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

Potential influence on wetlands.

01 ☐ K. DAMAGE TO FAUNA — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION (Include name(s) of species)

01 ☐ L. CONTAMINATION OF FOOD CHAIN — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ M. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids, Leaking drums) — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ 04 NARRATIVE DESCRIPTION

01 ☐ N. DAMAGE TO OFFSITE PROPERTY — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

01 ☐ P. ILLEGAL/UNAUTHORIZED DUMPING — 02 ☐ OBSERVED (DATE: _____) — ☐ POTENTIAL — ☐ ALLEGED
04 NARRATIVE DESCRIPTION

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

III. TOTAL POPULATION POTENTIALLY AFFECTED: 0

IV. COMMENTS

V. SOURCES OF INFORMATION (Cite specific references, e. g., state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-c

II. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				
☐ D. RCRA				
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

III. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☐ C. DRUMS, ABOVE GROUND		
☐ D. TANK, ABOVE GROUND		
☐ E. TANK, BELOW GROUND		
☒ F. LANDFILL	18,200	tons
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)

- ☐ A. INCINERATION
- ☐ B. UNDERGROUND INJECTION
- ☐ C. CHEMICAL/PHYSICAL
- ☐ D. BIOLOGICAL
- ☐ E. WASTE OIL PROCESSING
- ☐ F. SOLVENT RECOVERY
- ☐ G. OTHER RECYCLING/RECOVERY
- ☐ H. OTHER (Specify)

05 OTHER

- ☐ A. BUILDINGS ON SITE

06 AREA OF SITE

10 (Acres)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☒ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC.

Wastes are buried on-site with no containment.

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE: ☐ YES ☒ NO

02 COMMENTS

Waste is buried.

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

Phase II Investigation.

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

EPA

I. IDENTIFICATION
01 STATE: NY | 02 SITE NUMBER: 915055-c

II. DRINKING WATER SUPPLY

01 TYPE OF DRINKING SUPPLY (Check as applicable)

	SURFACE	WELL
COMMUNITY	A. X	B. ☐
NON-COMMUNITY	C. ☐	D. ☐

02 STATUS

ENDANGERED	AFFECTED	MONITORED
A. ☐	B. ☐	C. ☐
D. ☐	E. ☐	F. ☐

03 DISTANCE TO SITE
A. GT 3 (mi)
B. _____ (mi)

III. GROUNDWATER

01 GROUNDWATER USE IN VICINITY (Check one)

☐ A. ONLY SOURCE FOR DRINKING ☐ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☒ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Limited other sources available) ☐ D. NOT USED, UNUSEABLE

02 POPULATION SERVED BY GROUND WATER 0

03 DISTANCE TO NEAREST DRINKING WATER WELL GT 3 (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
1.9 (ft)	Northeast	0 (ft)	_____ (gpd)	☐ YES ☒ NO

09 DESCRIPTION OF WELLS (Including useage, depth, and location relative to population and buildings)

Wells near site are used for industrial cooling water and undoubtedly draw from a much deeper aquifer.

10 RECHARGE AREA		11 DISCHARGE AREA	
☒ YES ☐ NO	COMMENTS: Direct infiltration of precipitation.	☐ YES ☐ NO	COMMENTS

IV. SURFACE WATER

01 SURFACE WATER USE (Check one) No surface water on-site.

☐ A. RESERVOIR, RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

02 AFFECTED/POTENTIALLY AFFECTED BODIES OF WATER

NAME:	AFFECTED	DISTANCE TO SITE
Niagara River	☐	0.4 (mi)
	☐	_____ (mi)
	☐	_____ (mi)

V. DEMOGRAPHIC AND PROPERTY INFORMATION

01 TOTAL POPULATION WITHIN

ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE
A. 500 NO. OF PERSONS	B. 2500 NO. OF PERSONS	C. 7500 NO. OF PERSONS

02 DISTANCE TO NEAREST POPULATION 0.5 (mi)

03 NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE 800

04 DISTANCE TO NEAREST OFF-SITE BUILDING 0.5 (mi)

05 POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site, e.g., rural, village, densely populated urban area)

Industrial Area

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-c

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. $10^{-6} - 10^{-8}$ cm/sec ☐ B. $10^{-4} - 10^{-6}$ cm/sec ☒ C. $10^{-4} - 10^{-3}$ cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☒ B. RELATIVELY IMPERMEABLE ($10^{-4} - 10^{-6}$ cm/sec) ☐ C. RELATIVELY PERMEABLE ($10^{-2} - 10^{-4}$ cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
Est. 50 (ft)	(ft)		

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE		
		SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
5 (in)	2 (in)	0-2 %	West	0-2 %

09 FLOOD POTENTIAL

SITE IS IN _____ YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE	OTHER
A. _____ (mi)	B. 0.1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

_____ (mi)

ENDANGERED SPECIES: _____

13 LAND USE IN VICINITY

DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS	
		PRIME AG LAND	AG LAND
A. _____ (mi)	B. 0.5 (mi)	C. _____ (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

Site and surrounding area are flat or gently sloped.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-c

II. SAMPLES TAKEN

SAMPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
GROUNDWATER	4	C&S Environmental Laboratory	now
SURFACE WATER			
WASTE			
AIR			
RUNOFF			
SPILL			
SOIL	1	CompuChem Laboratories	now
VEGETATION			
OTHER			

III. FIELD MEASUREMENTS TAKEN

01 TYPE	02 COMMENTS
Water elevation	

IV. PHOTOGRAPHS AND MAPS

01 TYPE ☐ GROUND ☐ AERIAL

02 IN CUSTODY OF _____ (Name of organization or individual)

03 MAPS ☐ YES ☐ NO

04 LOCATION OF MAPS _____

V. OTHER FIELD DATA COLLECTED (Provide narrative description)

VI. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Report.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-c

II. CURRENT OWNER(S) / PARENT COMPANY (If applicable)

II. CURRENT OWNER(S)				PARENT COMPANY (If applicable)			
01 NAME: Tonawanda Coke Corp.		02 D+B NUMBER:		08 NAME:		09 D+B NUMBER:	
03 STREET ADDRESS (P.O. Box, RFD #, etc.): 3875 River Road		04 SIC CODE:		10 STREET ADDRESS (P.O. Box, RFD #, etc.):		11 SIC CODE:	
05 CITY: Tonawanda	06 STATE: NY	07 ZIP CODE: 14150		12 CITY:	13 STATE:	14 ZIP CODE:	
01 NAME:		02 D+B NUMBER:		08 NAME:		09 D+B NUMBER:	
03 STREET ADDRESS (P.O. Box, RFD #, etc.):		04 SIC CODE:		10 STREET ADDRESS (P.O. Box, RFD #, etc.):		11 SIC CODE:	
05 CITY:	06 STATE:	07 ZIP CODE:		12 CITY:	13 STATE:	14 ZIP CODE:	
01 NAME:		02 D+B NUMBER:		08 NAME:		09 D+B NUMBER:	
03 STREET ADDRESS (P.O. Box, RFD #, etc.):		04 SIC CODE:		10 STREET ADDRESS (P.O. Box, RFD #, etc.):		11 SIC CODE:	
05 CITY:	06 STATE:	07 ZIP CODE:		12 CITY:	13 STATE:	14 ZIP CODE:	
01 NAME:		02 D+B NUMBER:		08 NAME:		09 D+B NUMBER:	
03 STREET ADDRESS (P.O. Box, RFD #, etc.):		04 SIC CODE:		10 STREET ADDRESS (P.O. Box, RFD #, etc.):		11 SIC CODE:	
05 CITY:	06 STATE:	07 ZIP CODE:		12 CITY:	13 STATE:	14 ZIP CODE:	

III. PREVIOUS OWNER(S) (List most recent first) / IV. REALTY OWNER(S) (If applicable; list most recent first)

III. PREVIOUS OWNER(S)				IV. REALTY OWNER(S)			
01 NAME: Allied Chemical Co.		02 D+B NUMBER:		01 NAME:		02 D+B NUMBER:	
03 STREET ADDRESS (P.O. Box, RFD #, etc.): NA		04 SIC CODE:		03 STREET ADDRESS (P.O. Box, RFD #, etc.):		04 SIC CODE:	
05 CITY:	06 STATE:	07 ZIP CODE:		05 CITY:	06 STATE:	07 ZIP CODE:	
01 NAME:		02 D+B NUMBER:		01 NAME:		02 D+B NUMBER:	
03 STREET ADDRESS (P.O. Box, RFD #, etc.):		04 SIC CODE:		03 STREET ADDRESS (P.O. Box, RFD #, etc.):		04 SIC CODE:	
05 CITY:	06 STATE:	07 ZIP CODE:		05 CITY:	06 STATE:	07 ZIP CODE:	
01 NAME:		02 D+B NUMBER:		01 NAME:		02 D+B NUMBER:	
03 STREET ADDRESS (P.O. Box, RFD #, etc.):		04 SIC CODE:		03 STREET ADDRESS (P.O. Box, RFD #, etc.):		04 SIC CODE:	
05 CITY:	06 STATE:	07 ZIP CODE:		05 CITY:	06 STATE:	07 ZIP CODE:	

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Report.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-c

II. CURRENT OPERATOR (Provide if different from owner)

01 NAME	02 D+B NUMBER
None	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER

OPERATOR'S PARENT COMPANY (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

III. PREVIOUS OPERATOR(S) (List most recent first; provide only if different from owner)

01 NAME	02 D+B NUMBER
Allied Chemical Co	

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
NA	

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

PREVIOUS OPERATORS' PARENT COMPANIES (If applicable)

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE

08 YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD

10 NAME	11 D+B NUMBER

12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE

14 CITY	15 STATE	16 ZIP CODE

IV. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

Phase II Investigation.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-C

II. ON-SITE GENERATOR

01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE

III. OFF-SITE GENERATOR(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

IV. TRANSPORTER(S)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE
01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
05 CITY	06 STATE / 07 ZIP CODE	05 CITY	06 STATE / 07 ZIP CODE

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-c

II. PAST RESPONSE ACTIVITIES

01 ☐ A. WATER SUPPLY CLOSED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ F. WASTE REPACKAGED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ H. ON SITE BURIAL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ L. ENCAPSULATION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ N. CUTOFF WALLS — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NY	915055-c

II PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NY	915055-C

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☐ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)