ORIGINAL
(Red)

R-585-4-4-8

SITE INSPECTION OF COKER'S LANDFILL NO. 1 PREPARED UNDER

TDD NO. F3-8211-36B
EPA NO. DE-04
CONTRACT NO. 68-01-6699

FOR THE

HAZARDOUS SITE CONTROL DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 28, 1984

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY	REVIEWED BY	APPROVED BY
Donald Messinger	William Wentworth	
DONALD MESSINGER GEOLOGIST	WILLIAM WENTWORTH ASST. MANAGER, REPORTS	GARTH GLENN MANAGER, FIT III

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ORIGINAL
(Red)

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

TABLE OF CONTENTS

SECTION		PAGE
1.0	INTRODUCTION	1-1
1.1	AUTHORIZATION	1-1
1.2	SCOPE OF WORK	1-1
1.3	SUMMARY	1-1
2.0	THE SITE	2-1
2.1	LOCATION	2-1
2.2	SITE LAYOUT	2-1
2.3	OWNERSHIP HISTORY	2-1
2.4	SITE USE HISTORY	2-1
2.5	PERMIT AND REGULATORY ACTION HISTORY	2-2
2.6	REMEDIAL ACTION TO DATE	2-2
3.0	ENVIRONMENTAL SETTING	3-1
3.1	SURFACE WATERS	3-1
3.2	GEOLOGY AND SOILS	3-1
3.3	GROUNDWATERS	3-2
3.4	CLIMATE AND METEROLOGY	3-2
3.5	LAND USE	3-2
3.6	POPULATION DISTRIBUTION	3-3
3.7	WATER SUPPLY	3-3
3.8	CRITICAL ENVIRONMENTS	3-3
4.0	WASTE TYPES AND QUANTITIES	4-1
5.0	FIELD TRIP REPORT	5-1
5.1	SUMMARY	5-1
5.2	PERSONS CONTACTED	5-1
5.2.1	PRIOR TO FIELD TRIP	5-1
5.2.2	AT THE SITE	5-1
5.3	SAMPLE LOG	5-2
5.3.1	ORGANIC	5-2
5.3.2	INORGANIC	5-4
5.4	FIELD OBSERVATIONS	5-6
5.5	PHOTOGRAPH LOG	
5.6	EPA ASSESSMENT	
6.0	LABORATORY DATA	6-1
6.1	SUMMARY	6-1
6.2	QUALITY ASSURANCE REVIEW	6-2
6.2.1	ORGANIC	6-2
6.2.2	INORGANIC	6-5
7.0	TOXICOLIGICAL EVALUATION	7-1
7.1	SUMMARY	7-1
7.2	SUPPORT DATA	7-2

100007

ORIGINAL
(Red)

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

APPENDICES

A.	1.0 COPY OF TDD	A-1
B.	1.0 MAPS AND SKETCHES 1.1 SITE LOCATION MAP 1.2 SAMPLE LOCATION SKETCH (3/4/83) 1.3 SAMPLE LOCATIONS PRIOR TO 3/4/83 1.4 GENERALIZED GEOLOGIC CROSS-SECTION (FIGURE 3-1) 1.5 WATER TABLE CONTOUR MAP (FIGURE 3-2)	B-1
C.	1.0 REFERENCES	C-1
D.	1.0 SUMMARY OF COKER'S NO. 1	D-1
E.	1.0 QUALITY ASSURANCE SUPPORT DOCUMENTATION	E-1
F.	1.0 WELL INVENTORIES	F-1

100008

SECTION I

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ORIGINAL
(Red)

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

1.0 INTRODUCTION

1.1 Authorization

NUS Corporation performed this work under Environmental Protection Agency Contract No. 68-01-6699. This specific report was prepared in accordance with Technical Directive Document No. F3-8211-36B for the Coker's Landfill No. 1 in Cheswold, Delaware.

1.2 Scope Of Work

NUS Corporation was tasked to perform a site inspection/sampling of Coker's Landfill No. 1 in Cheswold, Delaware.

1.3 Summary

The Coker's No. 1 landfill was used between 1962 and 1976 for the disposal of latex rubber sludges, generated by Reichold Chemicals, Inc. The 9 to 10 acre site is located north of Route 152 in Cheswold, Delaware. The Willis Branch flows eastward at the base of the slope which forms the landfill's northern boundary. Leachate seeps discharge to the Willis Branch from the toe of the landfill. Waste disposal at the site was handled by Coker's Sanitation Service of Cheswold, Delaware, who leased the property from John Schmidt. The lease has since expired, and the property has been transferred back to the owner.

The first 2 aquifers beneath the site are of concern as area homes use well water, and wastes were reportedly disposed of in unlined trenches excavated into moderate to highly permeable soils. The water-table aquifer apparently flows to the northeast (see figure 3.3, appendix B) away from private drinking water wells. Leaky confining beds provide downward movement into a second aquifer (Cheswold Aquifer) which flows to the southeast and serves as the main water source for the city of Dover, DE.

Previous aqueous samplings of leachate and the Willis Branch indicated the presence of various phthalates, chloroform, and nitrophenols, as well as elevated levels of arsenic and lead.

100010

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

Sampling done by FIT III included aqueous and sediment samples of the Willis Branch, leachate seeps and adjacent drinking water wells. Pentachlorophenol, acetone, and bis(2-chloroethyl)ether were identified in the leachate seeps. Sample analyses of off-site wells showed no contaminants of concern.

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SECTION 2

100012

2.0 THE SITE

2.1 Location

The subject site is located in a rural area outside Cheswold, Delaware, approximately 5,500 feet northwest of the intersection of Routes 92 and 42.

2.2 Site Layout

Coker's Landfill No. 1 is a 9 to 10 acre tract of land located several hundred feet north of County Route 152. The site, which has been inactive since 1977, is a clearing in the woods which supports grassy vegetation. Further north, the landfill area drops off in a relatively steep slope, bordering the Willis Branch, which runs west to east less than 100 feet from the toe of the slope. Leachate seeps and pools are prominent along the northwest, north, and eastern toe of the landfill slope. Access to the site is via a dirt haul road, which is secured by a chain at the site entrance.

2.3 Ownership History

The Coker's No. 1 property is owned by John Schmidt. The property was leased by Carlton Coker of Coker's Sanitaton Service for the disposal of latex process wastes generated by Reichold Chemical's Cheswold Plant.

2.4 Site Use History

The Coker's No. 1 site was used between 1962 and 1976 for the disposal of latex rubber sludges, which were generated by Reichold Chemicals, Inc. of Cheswold, Delaware. Wastes were disposed of in unlined, excavated trenches.

2.5 Permit and Regulatory Action History

Disposal of wastes at Coker's No. 1 was done under various applicable state disposal permits. A complete chronology of site activities and permit and regulatory action can be found in appendix D.

2.6 Remedial Action To Date

To date, no remedial activities have been initiated at the site.

CTION 3

100015

3.0 ENVIRONMENTAL SETTING

3.1 Surface Waters

The Willis Branch, which flows to the east, drains the northwest and northern portions of the site. This flow is joined downstream by a north-flowing, unnamed tributary which drains the eastern perimeter of the site. The Willis Branch discharges into the Leipsic River via a recreational lake named Garrison's Lake.

The Leipsic River, according to Delaware Water Pollution Control Regulations, is used as an industrial water supply, as well as a recreational source.

3.2 Geology and Soils

No monitoring well or site-specific subsurface information is currently available for the subject site. Boring logs of monitoring wells drilled to a maximum depth of 80 feet for Coker's Landfill No. 2 (located 600 to 800 feet southwest of the site) indicate the area is underlain by some 15 to 20 feet of brown to brown-gray silt, sand, silty sand, and minor gravel above 3 to 5 feet of gray silty clay. The lower 50 to 55 feet of the profile consists of gray fine sand.

Water levels in Coker's No. 2 suggest the middle silty clay unit to be a semi-confining zone, which based on comparison with drill logs from the Cheswold municipal well study (see section 3.7), separates the Pleistocene aged Columbia Group deposits from underlying sediments of the Miocene aged Chesapeake Group (reported by Cheswold's consultant to be the Cheswold Aquifer). According to Leahy (1982), several aquifers have been identified in the Chesapeake Group on the peninsula, including the Pocomoke, Manokin, Frederica, Federalsburg, and Cheswold aquifers.

According to the U.S. Soil Conservation Service, soils in the area are mainly Sassafras sandy loams in cultivated areas, or Fallsington loams in woodlands. Topsoils are not defined in Coker's No. 2 boring logs.

100016

Sassafras soils are well drained and relatively permeable. Fallsington soils are poorly drained with a water table at or near the surface. Both soil types are noted as being weathered from sandy material.

3.3 Groundwaters

As noted in section 3.2, two aquifers systems have been identified in the Cheswold area. A shallow water-table aquifer in the relatively permeable Columbia Formation and a deeper, regional system reported to include the Cheswold Aquifer. According to the municipal study, the 2 aquifer systems are separated, and the lower is, in places, confined by about 20 feet of heterogeneous clayey-silt, interbedded with minor sandy units. Pump tests from the same study also confirmed the "leaky" nature of the confining unit between aquifers and the capacity for vertical downward movement between water-bearing units. Flow direction in the deeper aquifer system is suspected to be to the south toward high pumping centers in Dover.

As previously mentioned in section 3.2, there are no monitoring wells or site-specific subsurface logs for the Coker's No. 1 landfill. Figure 3-2, based on the U.S.G.S. hydro mapping of the Dover Quadrangle, shows the groundwater flow direction in the water-table aquifer to be west-northwest. This flow direction is substantiated by water levels in monitoring wells on Coker's No. 2.

3.4 Climate and Meterology

Kent County has a continental type climate. Annual precipitation at Dover is 46 inches annually. Monthly distribution is fairly uniform throughout the year.

3.5 Land Use

According to the 1964 Census of Agriculture, farms occupied about 61 percent of Kent County's land area. The majority of land, in the vicinity of the landfill, is used for corn and soybean crops.

3.6 Population Distribution

Based on information taken from the 1981 photorevised U.S.G.S. Dover Topographic Quadrangle, the population within a 3-mile radius of the site is estimated at 4,062. Each dwelling was assigned a population of 3.8 persons.

3.7 Water Supply

Local residents in the area of Coker's No. 1 use domestic water wells, located in either of the first 2 aquifers, for drinking water supplies. The lower Cheswold aquifer also serves as the main water supply source for Dover, Delaware. Municipal water services terminate approximately 2 miles south of the site. The municipal water supply is reportedly obtained from wells set into the Cheswold aquifer. The closest municipal well to Coker's Landfill No. 1 is located in Dover, approximately 10 miles south of the site.

Cheswold is preparing to install a municipal well water distribution system, according to Mayor Dorothy Dempsey. A central well has been drilled to a depth of 120 feet on Old Schoolhouse Road in Cheswold, which is approximately 8,300 feet southeast of the site. The well is cased off to a depth of 40 or 50 feet.

3.8 Critical Environments

According to Mr. Lloyd Alexander, Wildlife Management Administrator and Endangered Species Coordinator, of the Delaware Fish and Wildlife Division, there are no critical environments in the Cheswold area,

SECTION

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ORIGINAL

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

4.0 WASTE TYPES AND QUANTITIES

Waste types disposed of at the site reportedly to have included sludges containing about 30 percent solids, and vacuum filter cake from the manufacture of latex rubber.

According to state and EPA records, approximately 150 tons of latex rubber sludge per month were disposed of at the site over a period of about 15 years.

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SECTION 5

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Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

5.0 FIELD TRIP REPORT

5.1 Summary

NUS FIT III personnel Donald Messinger, Christopher Dietz, and David Hassrick conducted a site inspection of Coker's Landfill No. 1 on March 4, 1983. Aqueous and sediment samples of leachate seeps and surface water drainages, and area home wells were collected. Permission to sample was granted to NUS FIT III by the site owner, John Schmidt, in a telecon on March 1, 1983. Several day of heavy rain preceded the field sampling.

5.2 Persons Contacted

5.2.1 Prior to Field Trip

Donald Lloyd, Plant Manager (302) 736-9246
Allan Kulka, Plant Engineer (302) 736-9220
Jim Owens (302) 736-9221
Ricky Bingham (302) 736-9226
Reichold Chemicals, Inc.
Cheswold Plant
County Road 153
Cheswold, DE 19936

Genieveve Kowinsky
RD No. 5 Box 130
Dover, DE 19901
(302) 653-5333

Carlton Coker
Coker's Sanitation Service
RD No. 4 Box 173A
Dover, DE 19901

Joseph Kowinsky
Coker's Nos. 2 and 3 property owner
RD No. 5 Box 130
Dover, DE 19901
(302) 653-8243

Robert Touhey
DE/DNREC
Dover, DE 19901
(302) 736-5722

John Schmidt
Coker's No. 1 property owner
Dover, DE 19901
(302) 653-7649

5.2.2 At The Site

Allan Kulka
Don Lloyd
Karl Seidenspinner
LeRoy Carney
Reichold Chemicals, Inc.
Cheswold Plant
County Road 153
Cheswold, DE 19936

Joseph Kowinsky
Coker's Nos. 2 and 3 property owner
RD No. 5 Box 130
Dover, DE 19901
(302) 653-8243

Dorothy Dempsy
Mayor of Cheswold
Box 32, Cheswold
Cheswold, DE 19936
(302) 734-4932

Fred Kowinsky
RD No. 5 Box 130
Dover, DE 19901
(302) 674-5431

100022

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

5.3 Sample Log

5.3.1 ORGANIC SAMPLE LOG

SAMPLE NO.	DESCRIPTION	PHASE/CONC.	DATE	TIME	TAG NO.
C-2748	Genevieve Kowinsky Well	Aq / Low	3/2/83	1305	3-12751, 52 (extr) 3-12753 (VOA)
C-2749	Arthur Armstrong Well	Aq / Low	3/2/83	1530	3-12756, 57 (extr) 3-12758 (VOA)
C-2750	Fred Kowinsky Well	Aq / Low	3/2/83	1617	3-12761, 62 (extr) 3-12763 (VOA)
C-2758	Unnamed Willis Branch Downstream	Aq / Low	3/3/83	1210	3-12798, 99 (extr) 3-12800 (VOA)
C-2759	Unnamed Willis Branch Downstream	Solid/Low	3/3/83	1210	3-12953 (extr & VOA)
C-2760	Willis Branch Upstream	Aq / Low	3/3/83	1340	3-12955, 56 (extr) 3-12957 (VOA)
C-2761	Willis Branch Upstream	Solid/Low	3/3/83	1340	3-12960 (extr. & VOA)
C-2762	Blank	Aq / Low	3/3/83	1435	3-12962, 63 (extr) 3-12964

100023

ORIGINAL (Red)

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

5.3.1 ORGANIC SAMPLE LOG

SAMPLE NO.	DESCRIPTION	PHASE/CONC.	DATE	TIME	TAG NO.
C-2763	Wm. Lewis Well	Aq / Low	3/3/83	1645	3-12967,68 (extr) 3-12969 (VOA)
C-2767	Willis Branch Downstream	Aq / Low	3/4/83	1130	3-12984, 85 (extr) 3-12986 (VOA)
C-2768	Willis Branch Downstream	Solid/Low	3/4/83	1130	3-12989 (extr & VOA)
C-2769	Coker's No. 1 Leachate	Aq / Low	3/4/83	1130	3-12991, 92 (extr) 3-12993 (VOA)
C-2770	Blank	Solid/Low	3/4/83	1200	3-12996 (extr & VOA)

NOTE: All samples analyzed for organic priority pollutants by West Coast Technical Service, 17605 Fabrica Way, Suite D, Cerritos, CA 90701

100024

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

5.3.2 INORGANIC SAMPLE LOG

SAMPLE NO.	DESCRIPTION	PHASE/CONC.	DATE	TIME	TAG NO.
MC-0344	G. Kowinsky Well	Aq / Low	3/2/83	1305	3-12754 (HNO_3) 3-12755 (NaOH)
MC-0451	Arthur Armstrong Well	Aq / Low	3/2/83	1530	3-12759 (NHO_3) 3-12760 (NaOH)
MC-0452	F. Kowinsky Well	Aq / Low	3/2/83	1617	3-12764 (HNO_3) 3-12765 (NaOH)
MC-0460	Unnamed Willis Branch Downstream	Aq / Low	3/3/83	1210	3-12951 (HNO_3) 3-12952 (NaOH)
MC-0461	Unnamed Willis Branch Downstream	Solid/Low	3/3/83	1210	3-12954 (HNO_3, NaOH)
MC-0462	Willis Branch Upstream	Aq / Low	3/3/83	1340	3-12958 (HNO_3) 3-12959 (NaOH)
MC-0463	Willis Branch Upstream	Solid/Low	3/3/83	1340	3-12961 (HNO_3, NaOH)
MC-0464	Blank	Aq / Low	3/3/83	1435	3-12965 (HNO_3) 3-12966 (NaOH)

100025

ORIGINAL (Red)

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

5.3.2 INORGANIC SAMPLE LOG

SAMPLE NO.	DESCRIPTION	PHASE/CONC.	DATE	TIME	TAG NO.
MC-0465	Wm. Lewis Well	Aq / Low	3/3/83	1645	3-12970 (HNO_3) 3-12971 (NaOH)
MC-0469	Willis Branch Downstream	Aq / Low	3/4/83	1130	3-12987 (HNO_3) 3-12988 (NaOH)
MC-0470	Willis Branch Downstream	Solid/Low	3/4/83	1130	3-12990 (HNO_3, NaOH)
MC-0471	Coker's No. 1 Leachate	Aq / Low	3/4/83	1130	3-12994 (HNO_3) 3-12995 (NaOH)
MC-0472	Blank	Solid/Low	3/4/83	1200	3-12997 (HNO_3, NaOH)

Note: All samples analyzed for inorganic priority pollutants by California Analytical Laboratories, Inc., 5895 Power Inn Road, Sacramento, CA 95824

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5.4 Field Observations

- Access to the site is by a dirt haul road, which is chained-off to prevent vehicular access.
- There is no fence to prevent entrance to the site on foot.
- The site consists of an open, grassy field encircled by trees.
- Old trenches were distinguishable as shallow, scattered depressions.
- No noticeable odor, stained soil, or stressed vegetation were noted.
- The landfill ends to the north (toward Willis Branch) in a relatively steep, 12 to 15 foot slope.
- Multiple reddish/orange seeps were observed emanating from the toe of the slope forming leachate pools which flowed into the Willis Branch less than 100 yards to the north. Leachate (estimated at greater than 20 gallons per minute) entering the stream from combined seepage may have been the result of heavy rains from the previous days.
- HNU background readings were 1 ppm; seeps registered 2 ppm.
- Samples were collectd from the sink in the greenhouse of the Lewis residence. The sink was visibly stained with iron. Reportedly, the Lewis well, which is 72 feet in depth, is located under a windmill east of the main house.

100027

TDD No. F3-8211-36

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT

REGION	SITE NUMBER (to be assigned by HQ)
III	DE-04

GENERAL INSTRUCTIONS: Complete Sections I and III through XV of this form as completely as possible. Then use the information on this form to develop a Tentative Disposition (*Section II*). File this form in its entirety in the regional Hazardous Waste Log File. Be sure to include all appropriate Supplemental Reports in the file. Submit a copy of the forms to: U.S. Environmental Protection Agency; Site Tracking System; Hazardous Waste Enforcement Task Force (*EN-335*); 401 M St., SW; Washington, DC 20460.

I. SITE IDENTIFICATION

A. SITE NAME	B. STREET (or other identifier)		
Coker's Landfill No. 1	County Route 152		
C. CITY	**D. STATE**	**E. ZIP CODE**	**F. COUNTY NAME**
Cheswold	DE	19936	Kent

G. SITE OPERATOR INFORMATION

1. NAME		2. TELEPHONE NUMBER	
Carlton Coker/Coker's Sanitation Service		(302) 734-5092	
3. STREET	**4. CITY**	**5. STATE**	**6. ZIP CODE**
Route 42	Cheswold	DE	19936

H. REALTY OWNER INFORMATION (*if different from operator of site*)

1. NAME		2. TELEPHONE NUMBER	
John Schmidt		302) 653-7649	
3. CITY		**4. STATE**	**5. ZIP CODE**
Dover		DE	19901

I. SITE DESCRIPTION

Inactive landfill used for disposal of latex sludge in unlined trenches.

J. TYPE OF OWNERSHIP

☐ 1. FEDERAL ☐ 2. STATE ☐ 3. COUNTY ☐ 4. MUNICIPAL ☒ 5. PRIVATE

II. TENTATIVE DISPOSITION (*complete this section last*)

A. ESTIMATE DATE OF TENTATIVE DISPOSITION (*mo., day, & yr.*)

B. APPARENT SERIOUSNESS OF PROBLEM

☐ 1. HIGH ☒ 2. MEDIUM ☐ 3. LOW ☐ 4. NONE

C. PREPARER INFORMATION

1. NAME	2. TELEPHONE NUMBER	3. DATE (*mo., day, & yr.*)
Donald J. Messinger	(215) 687-9510	4/5/83

III. INSPECTION INFORMATION

A. PRINCIPAL INSPECTOR INFORMATION

1. NAME	2. TITLE	
Donald J. Messinger	Geologist	
3. ORGANIZATION		**4. TELEPHONE NO.** (*area code & no.*)
NUS Corporation		(215)687-9510

B. INSPECTION PARTICIPANTS

1. NAME	2. ORGANIZATION	3. TELEPHONE NO.
Don Messinger	NUS Corporation	(215) 687-9510
Dave Hassrick	NUS Corporation	(215) 687-9510
Chris Dietz	NUS Corporation	(215) 687-9510

C. SITE REPRESENTATIVES INTERVIEWED (*corporate officials, workers, residents*)

1. NAME	2. TITLE & TELEPHONE NO.	3. ADDRESS
Allan Kulka	Plant Engineer (302)736-9220	Reichold Chemicals Inc. County Route 155, Cheswold, DE
John Schmidt	Property Owner (302)653-7649	RD #5 Route 92 Cheswold, DE
		100028

Continued From Front

III. INSPECTION INFORMATION (continued)

D. GENERATOR INFORMATION (sources of waste)

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE GENERATED
Reichold Chemicals	(302)736-9220	County Route 153, Cheswold, DE	latex sludge

E. TRANSPORTER/HAULER INFORMATION

1. NAME	2. TELEPHONE NO.	3. ADDRESS	4. WASTE TYPE TRANSPORTED
Carlton Coker	(302)734-5092	Route 42, Cheswold, DE	latex sludge

F. IF WASTE IS PROCESSED ON SITE AND ALSO SHIPPED TO OTHER SITES, IDENTIFY OFF-SITE FACILITIES USED FOR DISPOSAL.

1. NAME	2. TELEPHONE NO.	3. ADDRESS

G. DATE OF INSPECTION (mo., day, & yr.)	H. TIME OF INSPECTION	I. ACCESS GAINED BY: (credentials must be shown in all cases)
March 4, 1983	0900-1200	[X] 1. PERMISSION [ ] 2. WARRANT

J. WEATHER (describe)

Sunny, warm, 63°

IV. SAMPLING INFORMATION

A. Mark 'X' for the types of samples taken and indicate where they have been sent e.g., regional lab, other EPA lab, contractor, etc. and estimate when the results will be available.

1. SAMPLE TYPE	2. SAMPLE TAKEN (mark 'X')	3. SAMPLE SENT TO:	4. DATE RESULTS AVAILABLE
a. GROUNDWATER			
b. SURFACE WATER (2 taken)	X	Up and downstream Willis Branch	3/29/83
c. WASTE		Organics sent to: West Coast Technical Service	
d. AIR		Inorganics sent to: California Analytical Laboratories, Inc.	
e. RUNOFF			
f. SPILL			
g. SOIL			
h. VEGETATION			
i. OTHER (specify) leachate seep(s)	X	Composite of leachate	3/29/83

B. FIELD MEASUREMENTS TAKEN (e.g., radioactivity, explosivity, PH, etc.)

1. TYPE	2. LOCATION OF MEASUREMENTS	3. RESULTS		
HNU, pH, specific		HNU	pH	Spec. Conduct.
Conductance	Willis Branch Up	1ppm	6.0	10ppm
100029	Willis Branch Down	1ppm	6.49	4ppm
	Leachate seep(s)	2ppm	--	100029

Continue On Page 3

ORIGINAL (Red)

Continued From Page 2

IV. SAMPLING INFORMATION (continued)

C. PHOTOS

1. TYPE OF PHOTOS: [X] a. GROUND [ ] b. AERIAL

2. PHOTOS IN CUSTODY OF: NUS Corporation, FIT III

D. SITE MAPPED?

[X] YES. SPECIFY LOCATION OF MAPS: Site sketch map

E. COORDINATES

1. LATITUDE (deg.-min.-sec.): 39° 12' 55"

2. LONGITUDE (deg.-min.-sec.): 75° 36' 40"

V. SITE INFORMATION

A. SITE STATUS

[ ] 1. ACTIVE (Those industrial or municipal sites which are being used for waste treatment, storage, or disposal on a continuing basis, even if infrequently.)

[X] 2. INACTIVE (Those sites which no longer receive wastes.)

[ ] 3. OTHER (specify): _____ (Those sites that include such incidents like "midnight dumping" where no regular or continuing use of the site for waste disposal has occurred.)

B. IS GENERATOR ON SITE?

[X] 1. NO [ ] 2. YES (specify generator's four-digit SIC Code): _____

C. AREA OF SITE (in acres): Approx. 10 acres

D. ARE THERE BUILDINGS ON THE SITE?

[X] 1. NO [ ] 2. YES (specify):

VI. CHARACTERIZATION OF SITE ACTIVITY

Indicate the major site activity(ies) and details relating to each activity by marking 'X' in the appropriate boxes.

'X'	A. TRANSPORTER	'X'	B. STORER	'X'	C. TREATER	'X'	D. DISPOSER
	1. RAIL		1. PILE		1. FILTRATION	X	1. LANDFILL
	2. SHIP		2. SURFACE IMPOUNDMENT		2. INCINERATION		2. LANDFARM
	3. BARGE		3. DRUMS		3. VOLUME REDUCTION		3. OPEN DUMP
X	4. TRUCK		4. TANK, ABOVE GROUND		4. RECYCLING/RECOVERY		4. SURFACE IMPOUNDMENT
	5. PIPELINE		5. TANK, BELOW GROUND		5. CHEM./PHYS./TREATMENT		5. MIDNIGHT DUMPING
	6. OTHER (specify):		6. OTHER (specify):		6. BIOLOGICAL TREATMENT		6. INCINERATION
					7. WASTE OIL REPROCESSING		7. UNDERGROUND INJECTION
					8. SOLVENT RECOVERY		8. OTHER (specify):
					9. OTHER (specify):		

E. SUPPLEMENTAL REPORTS: If the site falls within any of the categories listed below, Supplemental Reports must be completed. Indicate which Supplemental Reports you have filled out and attached to this form.

[ ] 1. STORAGE [ ] 2. INCINERATION [ ] 3. LANDFILL [ ] 4. SURFACE IMPOUNDMENT [ ] 5. DEEP WELL

[ ] 6. CHEM/BIO/PHYS TREATMENT [ ] 7. LANDFARM [ ] 8. OPEN DUMP [ ] 9. TRANSPORTER [ ] 10. RECYCLOR/RECLAIMER

VII. WASTE RELATED INFORMATION

A. WASTE TYPE

[ ] 1. LIQUID [ ] 2. SOLID [X] 3. SLUDGE [ ] 4. GAS

B. WASTE CHARACTERISTICS

[ ] 1. CORROSIVE [ ] 2. IGNITABLE [ ] 3. RADIOACTIVE [ ] 4. HIGHLY VOLATILE

[X] 5. TOXIC [ ] 6. REACTIVE [ ] 7. INERT [ ] 8. FLAMMABLE

[X] 9. OTHER (specify): Potential carcinogenic compounds (ie acrylonitrile) contained in process sludge.

C. WASTE CATEGORIES

1. Are records of wastes available? Specify items such as manifests, inventories, etc. below.

Generator: Riechold Chemical, Inc. Cheswold Delaware Plant

100030

Continue On Reverse

Continued From Front

VII. WASTE RELATED INFORMATION (continued)

2. Estimate the amount (specify unit of measure) of waste by category, mark 'X' to indicate which wastes are present.

a. SLUDGE	b. OIL	c. SOLVENTS	d. CHEMICALS	e. SOLIDS	f. OTHER
AMOUNT Unknown	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT
UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE	UNIT OF MEASURE
X (1) PAINT, PIGMENTS	X (1) OILY WASTES	X (1) HALOGENATED SOLVENTS	X (1) ACIDS	X (1) FLYASH	X (1) LABORATORY, PHARMACEUT.
(2) METALS SLUDGES	(2) OTHER (specify):	(2) NON-HALOGNTD. SOLVENTS	(2) PICKLING LIQUORS	(2) ASBESTOS	(2) HOSPITAL
(3) POTW		(3) OTHER (specify):	(3) CAUSTICS	(3) MILLING/MINE TAILINGS	(3) RADIOACTIVE
(4) ALUMINUM SLUDGE			(4) PESTICIDES	(4) FERROUS SMELTING WASTES	(4) MUNICIPAL
X (5) OTHER (specify): Latex sludge			(5) DYES/INKS	(5) NON-FERROUS SMLTG. WASTES	(5) OTHER (specify)
			(6) CYANIDE	(6) OTHER (specify):	
			(7) PHENOLS		
			(8) HALOGENS		
			(9) PCB		
			(10) METALS		
			X (11) OTHER (specify): butadiene, styrene, and acrylonitrile (as per Plant Engineer statement)		

D. LIST SUBSTANCES OF GREATEST CONCERN WHICH ARE ON THE SITE (place in descending order of hazard)

1. SUBSTANCE	2. FORM (mark 'X') a. SOLID	b. LIQ.	c. VAPOR	3. TOXICITY (mark 'X') a. HIGH	b. MED.	c. LOW	d. NONE	4. CAS NUMBER	5. AMOUNT	6. UNIT
acrylonitrile	X			X				107-13-1	Unknown	--
zinc	X			X				7440-66-6	Unknown	--
bis-2(chloroethyl) ether		X		X				111-44-4	28	ug/l
pentachlorophenol	X							87-36-5	10	ug/l

VIII. HAZARD DESCRIPTION

FIELD EVALUATION HAZARD DESCRIPTION: Place an 'X' in the box to indicate that the listed hazard exists. Describe the hazard in the space provided.

☐ A. HUMAN HEALTH HAZARDS

See section VIII (D)

1600 31

Continued From Page 4

ORIGINAL (Red)

VIII. HAZARD DESCRIPTION (continued)

[X] B. NON-WORKER INJURY/EXPOSURE

Possibility of non-worker exposure exists. See section VIII(Ø) below.

[ ] C. WORKER INJURY/EXPOSURE

None reported.

[X] D. CONTAMINATION OF WATER SUPPLY

Possible contamination of both the unconfined (water table) and deeper confined (Cheswold) aquifers due to leaching of latex sludge from the unlined disposal site. Both aquifers are the main drinking water sources for the area. The Cheswold is a regional aquifer used for water supplies in Dover.

[ ] E. CONTAMINATION OF FOOD CHAIN

Corn and soybean fields lie to the north and south, respectively.

[X] F. CONTAMINATION OF GROUND WATER

See section VIII (D) above.

[X] G. CONTAMINATION OF SURFACE WATER

Probable contamination of Willis Branch due to latex sludge leachate runoff from the disposal area. Such leachate was observed and sampled during the latest field investigation.

100032

Continue On Reverse

Continued From Front

VIII. HAZARD DESCRIPTION (continued)

☐ H. DAMAGE TO FLORA/FAUNA

None reported or observed.

☐ I. FISH KILL

None reported or observed.

☐ J. CONTAMINATION OF AIR

None reported or observed. HNU readings were at or slightly above ambient levels.

☐ K. NOTICEABLE ODORS

None

☒ L. CONTAMINATION OF SOIL

Unknown but probable due to sandy nature.

☐ M. PROPERTY DAMAGE

None reported.

100133

 Continue On Page 7

Continued From Page 6

ORIGINAL (Red)

VIII. HAZARD DESCRIPTION (continued)

☐ N. FIRE OR EXPLOSION

None reported.

☒ O. SPILLS/LEAKING CONTAINERS/RUNOFF/STANDING LIQUID

Multiple reddish/orange/gray leachate seeps with rainbow sheen on surface appear at the toe of the northern slope of the site.

☐ P. SEWER, STORM DRAIN PROBLEMS

Not applicable.

☐ Q. EROSION PROBLEMS

None reported or observed.

☒ R. INADEQUATE SECURITY

Chain across old access road only prevents vehicular access. No fence to prevent walk-ons.

☐ S. INCOMPATIBLE WASTES

None reported.

100034

VIII. HAZARD DESCRIPTION (continued)

☐ T. MIDNIGHT DUMPING

None observed or reported.

☐ U. OTHER (specify):

IX. POPULATION DIRECTLY AFFECTED BY SITE

A. LOCATION OF POPULATION	B. APPROX. NO. OF PEOPLE AFFECTED	C. APPROX. NO. OF PEOPLE AFFECTED WITHIN UNIT AREA	D. APPROX. NO. OF BUILDINGS AFFECTED	E. DISTANCE TO SITE (specify units)
1. IN RESIDENTIAL AREAS	30	--	8	¼ mile
2. IN COMMERCIAL OR INDUSTRIAL AREAS				
3. IN PUBLICLY TRAVELLED AREAS				
4. PUBLIC USE AREAS (parks, schools, etc.)				

X. WATER AND HYDROLOGICAL DATA

A. DEPTH TO GROUNDWATER (specify unit)	B. DIRECTION OF FLOW	C. GROUNDWATER USE IN VICINITY
3 to 6 feet	W. T. aquifer to NE and down to Ches. aquifer to SE	Domestic water supply
D. POTENTIAL YIELD OF AQUIFER	**E. DISTANCE TO DRINKING WATER SUPPLY (specify unit of measure)**	**F. DIRECTION TO DRINKING WATER SUPPLY**
Low to high	<650 feet	South

G. TYPE OF DRINKING WATER SUPPLY

☒ 1. NON-COMMUNITY < 15 CONNECTIONS* ☐ 2. COMMUNITY (specify town): > 15 CONNECTIONS

☐ 3. SURFACE WATER ☒ 4. WELL

 Continue On Page 9

100035

ORIGINAL
(Red)

Continued From Page 8

X. WATER AND HYDROLOGICAL DATA (continued)

H. LIST ALL DRINKING WATER WELLS WITHIN A 1/4 MILE RADIUS OF SITE

1. WELL	2. DEPTH (specify unit)	3. LOCATION (proximity to population/buildings)	4. NON-COMMUNITY (mark 'X')	5. COMMUNITY (mark 'X')
Private	85 feet	Joseph Kowinsky residence	X	
		RD #5 Box 130, Dover, DE (302)653-8243		
Private	95 feet	Genevieve Kowinsky residence	X	
		RD #5 Box 130, Dover, DE (302) 653-5333		

I. RECEIVING WATER

1. NAME: Willis Branch

☐ 2. SEWERS ☒ 3. STREAMS/RIVERS ☐ 4. LAKES/RESERVOIRS ☐ 5. OTHER (specify):

6. SPECIFY USE AND CLASSIFICATION OF RECEIVING WATERS

Tributary of Leipsic River. Feeds Garrison's Lake which may be used for recreation.

XI. SOIL AND VEGITATION DATA

LOCATION OF SITE IS IN:

☐ A. KNOWN FAULT ZONE ☐ B. KARST ZONE ☐ C. 100 YEAR FLOOD PLAIN ☐ D. WETLAND

☐ E. A REGULATED FLOODWAY ☐ F. CRITICAL HABITAT ☒ G. RECHARGE ZONE OR SOLE SOURCE AQUIFER

XII. TYPE OF GEOLOGICAL MATERIAL OBSERVED

Mark 'X' to indicate the type(s) of geological material observed and specify where necessary, the component parts.

'X'	A. OVERBURDEN	'X'	B. BEDROCK (specify below)	'X'	C. OTHER (specify below)
X	1. SAND	X	Columbia Formation sands and gravels overlie Miocene age Chesapeake		
	2. CLAY		sands and silts		
X	3. GRAVEL				

XIII. SOIL PERMEABILITY

☐ A. UNKNOWN ☐ B. VERY HIGH (100,000 to 1000 cm/sec.) ☐ C. HIGH (1000 to 10 cm/sec.)
☐ D. MODERATE (10 to .1 cm/sec.) ☐ E. LOW (.1 to .001 cm/sec.) ☐ F. VERY LOW (.001 to .00001 cm/sec.)

G. RECHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS: Possible recharge area for Chesapeake Groun aquifers

H. DISCHARGE AREA

☐ 1. YES ☐ 2. NO 3. COMMENTS:

I. SLOPE

1. ESTIMATE % OF SLOPE: Flat

2. SPECIFY DIRECTION OF SLOPE, CONDITION OF SLOPE, ETC.:

J. OTHER GEOLOGICAL DATA

Underlying confined aquifer (Cheswold) is primary drinking water source for Dover, DE area. Both deeper and unconfined upper aquifer are only water source for local residents. The two aquifers may be interconnected in Cheswold area.

Continued From Front

XIV. PERMIT INFORMATION

List all applicable permits held by the site and provide the related information.

A. PERMIT TYPE (e.g., RCRA, State, NPDES, etc.)	B. ISSUING AGENCY	C. PERMIT NUMBER	D. DATE ISSUED (mo., day, & yr.)	E. EXPIRATION DATE (mo., day, & yr.)	F. IN COMPLIANCE (mark 'X') 1. YES	2. NO	3. UNKNOWN
State	DE WARA	APC 70/35	9/8/69				X
State	DE DNREC	APC 74/83	9/11/83				X
	1977 - site closed						

XV. PAST REGULATORY OR ENFORCEMENT ACTIONS

☒ NONE ☐ YES *(summarize in this space)*

NOTE: Based on the information in Sections III through XV, fill out the Tentative Disposition *(Section II)* information on the first page of this form.

100037

SECTION 6

100038

6.0 LABORATORY DATA

6.1 Sample Data Summary

100039

TDD Number E3-8211-36 B
EPA Number DE-04

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

[X] Organic [ ] Inorganic

Site Name COKER'S Landfill No. 1
Date of Sample 3/2/83 - 3/4/83

10004

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	benzene	chloroform	1,1,1-trichloro ethane	ethylbenzene	methylene chloride	toluene	alpha-BHC	pentachloro-phenol	phenol	bis(2-chloro-ethyl) ether	bis(2-ethylhexyl) phthalate	acetone	2-butanone	benzoic acid
C 2748	G. Kennedy Well	AQ/LO	µg/l					12◊							10◊		
C 2749	A. Armstrong Well	AQ/LO	µg/l					13◊						30◊	8◊		
C 2750	F. Kennedy Well	AQ/LO	µg/l					12◊						10◊		3K	
C 2758	Unnamed Willis Br. Downstr.	AQ/LO	µg/l					15◊							27◊		
C 2759	Unnamed Willis Br. Downstream	SOIL/LO	µg/kg			13K◊		59◊							54◊		
C 2760	Willis Branch Upstream	AQ/LO	µg/l					15◊						16◊	12◊		
C 2761	Willis Branch Upstream	SOIL/LO	µg/kg			24K◊		63◊							57◊		
C 2762	Blank	AQ/LO	µg/l	3K	19			26	3K			10K			13	9K	
C 2763	Willis Lewis Well	AQ/LO	µg/l					9K◊									
C 2767	Willis Branch Downstream	AQ/LO	µg/l					10◊						9K◊			
C 2768	Willis Branch Upstream	SOIL/LO	µg/kg			16K◊		68◊							51◊		
C 2769	Coker No. 1 Leachate	AQ/LO	µg/l					9K◊		0.2◊	10K		28	4K◊	190		
C 2770	Blank	SOIL/LO	µg/kg			8K		78							4		

NOTE: For a review of this data and non target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

K-Approximate value: detected below quantitation limit.

ORIGINAL

TDD Number F3-8211-36 B
EPA Number DE-04

SAMPLE DATA SUMMARY
TARGET COMPOUNDS

[ ] Organic [X] Inorganic

Site Name Cokers Landfill No. 1
Date of Sample 3/2/83 - 3/4/83

Compounds Detected

Sample Number	Sample Description and Location	Phase	Units	Aluminum	Chromium	Barium	Cadmium	Copper	Iron	Lead	Manganese	Zinc	Boron	Selenium	Antimony		Remarks
MC 0344	G. Kowalsky Well	AQ/LO	ug/l					99	1500		54		1200◊	4.7			
MC 0451	A. Armstrong Well	AQ/LO	ug/l				2.5◊	110	1300		98		780◊	2.3			
MC 0452	F. Kowalsky Well	AQ/LO	ug/l	1900				120	790		130	84	620◊				
MC 0460	Unnamed Willis Br. Downstrm	AQ/LO	ug/l	640◊					500		73		440◊				
MC 0461	Unnamed Willis Br. Downstrm	SOL/LO	mg/kg	315			0.15◊		500	2.3	15	4.3	20◊				
MC 0462	Willis Branch Upstream	AQ/LO	ug/l	400◊					460		40		430◊				
MC 0463	Willis Branch Upstream	SOL/LO	mg/kg	600	2.8			5.0	725	0.32◊	3.8	1.4	20◊				
MC 0464	Blank	AQ/LO	ug/l										480◊				
MC 0465	Weathers Well	AQ/LO	ug/l						2000		180	25	430◊				
MC 0469	Willis Branch Downstream	AQ/LO	ug/l	280◊					380◊		56	13	460◊				
MC 0470	Willis Branch Downstream	SOL/LO	mg/kg	330		7.0			720	0.80◊	54	3.3	180	<0.1	1.7		
MC 0471	Cokers No. 1 Leachate	AQ/LO	ug/l	460◊		2100			102000		11000	150	760◊				
MC 0472	Blank	SOL/LO	mg/kg						4.5	0.34			19◊				

NOTE: For a review of this data and non-target, tentatively identified compounds, please see the Analytical Quality Assurance section of this report.

(Rev. 10/81)

6.2 Quality Assurance Review

6.2.1 Organic Data: Lab Case 1541

6.2.1.1 Introduction

The findings offered in this report are based upon a general review of sample data generated by a contract analytical laboratory. Blank analysis results, surrogate and matrix spike recoveries, duplicate analysis results, pesticide confirmations, and tentatively identified compounds were examined in detail.

6.2.1.2 Qualifiers

It is recommended that this data package be utilized only with the following qualifier statements:

- All positive results for methylenechloride, 1,1,1-trichloroethane, 2-butanone, bis(2-ethylhexyl)phthalate, and alpha BHC may be questionable, as well as results for certain tentatively identified compounds.

- Results for acetone may be questionable for samples C-2749, C-2750, and C-2760.

- Detection limits for some base/neutral compounds in sample C-2769 may be significantly higher than those reported.

6.2.1.3 Findings

- Blank analyses revealed the presence of methylene chloride, 1,1,1-trichloroethane, 2-butanone, and acetone at levels sufficient to question the aforementioned results for these parameters. (The results for acetone in other samples were not questioned since they were more than ten times the blank results.)

- Bis(2-ethylhexyl)phthalate was detected in samples C-2767 and C-2769 at less than detection limits, and this compound is a common lab contaminant.

- Zero recovery was reported for one of the two base/neutral surrogate compounds in sample C-2769.

- Tentatively identified compounds of confident matching quality, which are not suspected artifacts/contaminants, are listed on the appropriate form of the support documentation appendix to this report.

- Alpha BHC was detected in sample C-2769 at a concentration too low to be confirmed by GC/MS. However, three pieces of evidence suggest that the two column GC confirmation for BHC may not be confident:

  1. Alpha BHC exhibits only a single GC peak, and thus has only one characteristic retention time, unlike pesticides that exhibit a more unique fingerprint pattern of several peaks.

  2. Many other nearby peaks were also seen in the capillary column run, which suggests the possibility of interferences.

  3. The retention time for the suspected BHC peak in the capillary column sample run was three seconds different than in the standard injected immediately preceding this sample. (Capillary column retention time reproducibility is normally somewhat better than this for a peak with a retention time of about 10 minutes.)

6.2.1.4 Summary

The attached Quality Assurance Review has identified several areas of concern; blank contamination, surrogate recoveries, pesticide confirmations, and tentatively identified compounds. Please see the accompanying support documentation appendix to this report for specifics on this Quality Assurance Review.

Report prepared by Russell J. Sloboda Date: June 2, 1983

100043

6.2.2 Inorganic Data: Lab Case No. 1541

6.2.2.1 Introduction

The findings offered in this report are based upon a general review of all available sample data, blank results, and quality assurance documentation.

6.2.2.2 Qualifiers

It is recommended that this data package be utilized only with the following qualifier statements:

- All positive results for boron may be questionable.
- Results for aluminum may be questionable for samples MC-0460, MC-0462, MC-0469, and MC-0471.
- Results for iron may be questionable for sample MC-0469.
- Results for lead may be questionable for samples MC-0463 and MC-0470.
- Results for cadmium may be questionable for samples MC-0451 and MC-0461.
- Detection limits for lead, thallium, and cadmium may be slightly higher than reported.

6.2.2.3 Findings

- Blank analysis revealed the presence of boron, aluminum, iron, lead, and cadmium at levels sufficient to question the aforementioned results for these parameters.
- Matrix spike recoveries for lead, thallium, and cadmium were below established control limits.

100044

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

6.2.2.4 Summary

The attached Quality Assurance Review has identified two areas of concern; blank contamination and poor spike recoveries. Please see the accompanying support documentation appendix for specifics on this Quality Assurance Review.

Report prepared by James A. Daley Date: May 5, 1983

100045

SECTION 7

100046

7.0 TOXICOLOGICAL EVALUATION

7.1 Summary

Priority pollutant analysis of groundwater, surface water, leachate, and sediment samples from the Coker's Landfill No. 1 site, and a selection of drinking water wells in the vicinity indicate no imminent or severe toxicological threat to human health or the environment. Aqueous samples from drinking water wells revealed no priority pollutants exceeding Primary Maximum Contaminant Levels (MCL) for Delaware or recommended Ambient Water Quality Criteria for the protection of human health. Iron and manganese were reported at concentrations exceeding recommended Secondary MCLs in all drinking water wells sampled. The presence of iron and manganese in these wells is of aesthetic rather than toxicologic concern. Sizable concentrations of iron and manganese were reported in almost all groundwater samples and may be characteristic of area groundwater.

Sizable concentrations of iron and manganese were reported in composite leachate seeps from Coker's No. 1 but apparently have not affected area surface waters.

No notable organic or inorganic contamination was reported in any surface waters sampled.

7.2 Support Data

The Lewis well, used for drinking water, is located northwest of Coker's No. 1 and approximately 2/3 mile from the site. Priority pollutants analysis of the Lewis well indicated no reliable evidence of organic contamination. Inorganic analysis revealed iron (2,000 ug/l) and manganese (180 ug/l) at concentrations exceeding the recommended Secondary Maximum Contaminant Levels (MCL) of 300 and 50 ug/l, respectively. The criteria for iron and manganese are aesthetic rather than toxicologic standards. Iron and manganese at concentrations equivalent to those reported in the Lewis well may impart objectionable tastes to water as well as stain laundry and plumbing fixtures. No other inorganic pollutants at levels of concern were reported in the Lewis well.

300047

(Rev)

Site Name: Coker's Landfill No. 1
TDD No.: F3-8211-36B

Composite samples of the leachate seep emanating from Coker's No. 1 indicated trace levels of potentially carcinogenic bis(2-chloroethyl)ether (28 ug/l) as well as pentachlorophenol (10 ug/l) and less toxic acetone (190 ug/l). HNU readings of the seep were 2ppm (background: 1ppm) confirming the presence of traces of organic contaminants. Bis(2-chloroethyl)ether and acetone are not significantly toxic to freshwater aquatic life at low concentrations and no measurable effects on wildlife would be expected if the reported concentrations of these hydrocarbons were to reach Willis Branch (located north of Coker's No. 1). The Chronic Ambient Water Quality Criterion (AWQC) for the protection of freshwater aquatic life for pentachlorophenol is 3.2 ug/l, which is less than the EPA required detection limit of 10 ug/l. Pentachlorophenol photooxidizes in surface waters and the concentration of pentachlorophenol reported in the leachate may not persist long enough to have a discernible effect on freshwater aquatic life. Chlorinated phenols are among the compounds produced by photolytic destruction of pentachlorophenol and these photolytic products may produce aesthetically objectionable tainting of edible fish. Note, however, that no chlorinated phenols designated as priority pollutants were reported above detection limits in Willis Branch.

Inorganic contaminants reported in the composite leachate sample included 102,000 ug/l of iron and 11,000 ug/l of manganese. High concentrations of iron may form ferric hydroxide flocs in surface water that can coat fish gills and exert a smothering effect. However, current aqueous samples from nearby Willis Branch indicate iron at concentrations of 380-725 ug/l, which are below the recommended AWQC for the protection of freshwater aquatic life of 1,000 ug/l. No other contaminants at levels of concern were reported in the leachate seep, upstream or downstream on Willis Branch (aqueous or sediment samples).

Current status of the groundwater under the Coker's landfill is not known as there are no monitoring wells on-site.

K.A. for
Elizabeth Quinn, Toxicologist

Kenneth G. Symms
Kenneth G. Symms, Ph.D, Toxicologist

100048

APPENDIX A

100049

1. COST CENTER:	REM/FIT ZONE CONTRACT TECHNICAL DIRECTIVE DOCUMENT (TDD)	2. NO.:
ACCOUNT NO.:		F3-8211-36A

3. PRIORITY:	4. ESTIMATE OF TECHNICAL HOURS:	5. EPA SITE ID:	6. COMPLETION DATE:	7. REFERENCE INFO.:
☐ HIGH ☒ MEDIUM ☐ LOW	350	DED980704-910 -078 DE-2,3,4,&5 -810 ~~DED980494504~~		☒ YES ☐ NO ☐ ATTACHED ☒ PICK UP
	4A. ESTIMATE OF SUBCONTRACT COST: 0	5A. EPA SITE NAME: Reichold Chemical Co., Cheswold Landfill & Cokers (1,2,3)	5/26	

8. GENERAL TASK DESCRIPTION:

Conduct a site inspection.

9. SPECIFIC ELEMENTS:

1. Review Preliminary Assessment and state information.
2. Develop a sampling plan: submit to EPA for concurrence.
3. Make appropriate arrangements for sample analysis.
4. Contact appropriate state personnel.
5. Take samples & ship to Lab.
6. Submit S.I. report as per memo dated 1/6/82 from DPO.
7. Review information available from past inspections & summarize data.
8. Summarize and inventory EPA files.
9. Conduct cursory G.W. Survey of study area.

10. INTERIM DEADLINES:

11 DESIRED REPORT FORM: FORMAL REPORT ☒ LETTER REPORT ☐ FORMAL BRIEFING ☐

10. Determine property ownership of 4 sites.
11. Perform H.R.S. on-site (4 sites on one ranking).

OTHER (SPECIFY):

12. COMMENTS: Ammended to include items 7 thru 11.

13. AUTHORIZING RPO: Linda J. Bournazian (SIGNATURE)

14. DATE: 6-8-83

15. RECEIVED BY: ☒ ACCEPTED ☒ ACCEPTED WITH EXCEPTIONS ☐ REJECTED

(CONTRACTOR RPM SIGNATURE)

16. DATE: 6/9/83

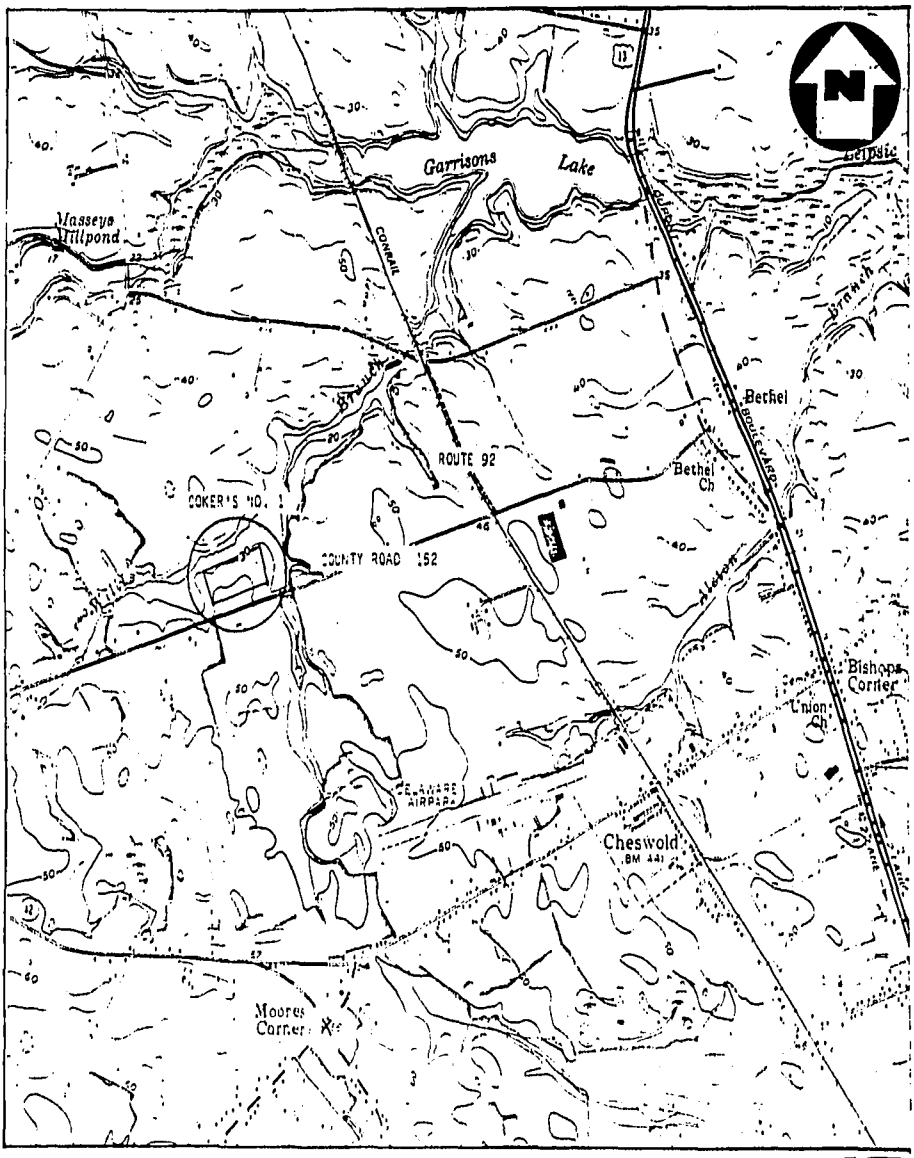
Sheet 1 White – FITL Copy
Sheet 2 Canary – DPO Copy
Sheet 3 Pink – Contracting Officer's Copy (Washington, D. C.)
Sheet 4 Goldenrod – Project Officer's Copy (Washington, D. C.)

100050

APPENDIX B

ORIGINAL
(Red)

SITE NAME COKER'S LANDFILL NO. 1
TDD NO. E3-8211-36
EPA NO. DE-04
TITLE: SITE LOCATION MAP



100052

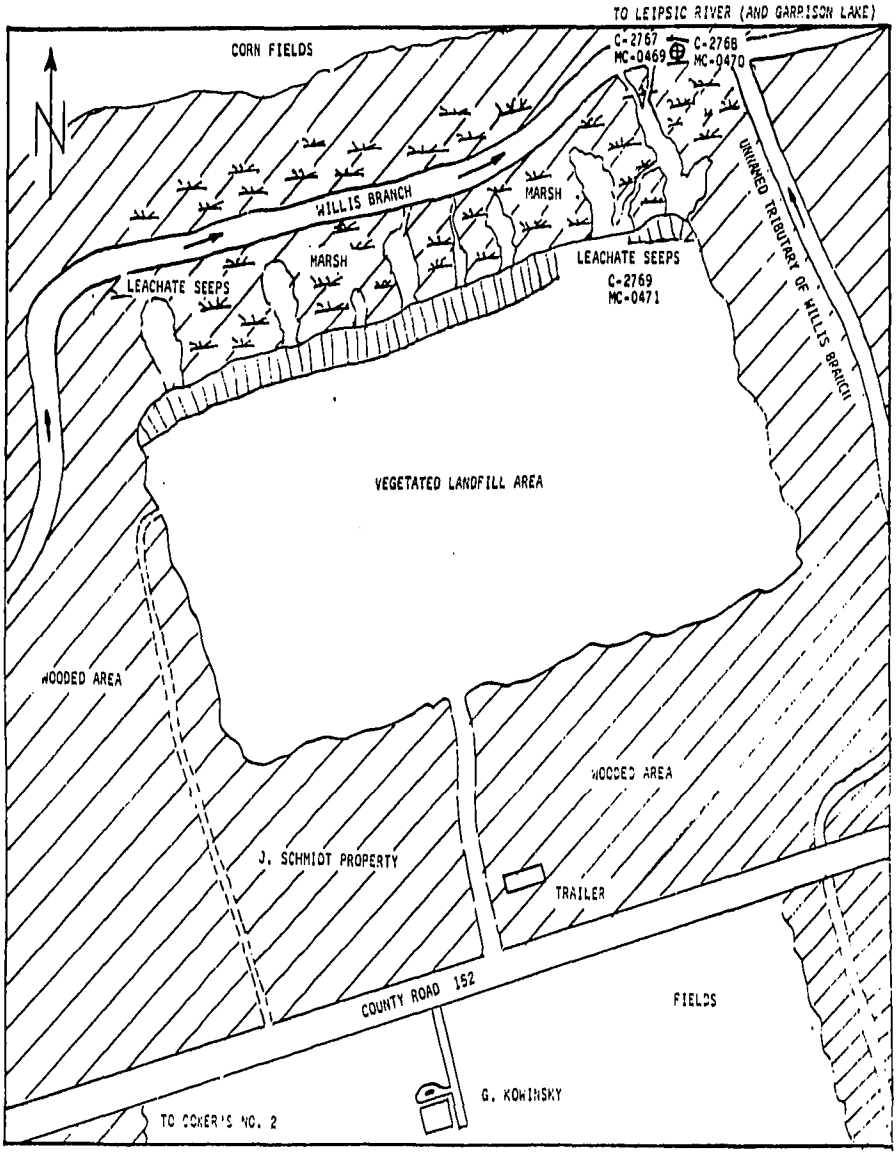
SOURCE: USGS 7.5 MIN. DOVER TOPO QUADRANGLE

SCALE: 1 inch = 2000 feet

NUS CORPORATION
A Halliburton Company

ORIGINAL
(Red)

SITE NAME COKER'S LANDFILL NO. 1
TDD NO. F3-8211-36
EPA NO. DE-04
TITLE: SAMPLE LOCATION SKETCH (3/4/83)



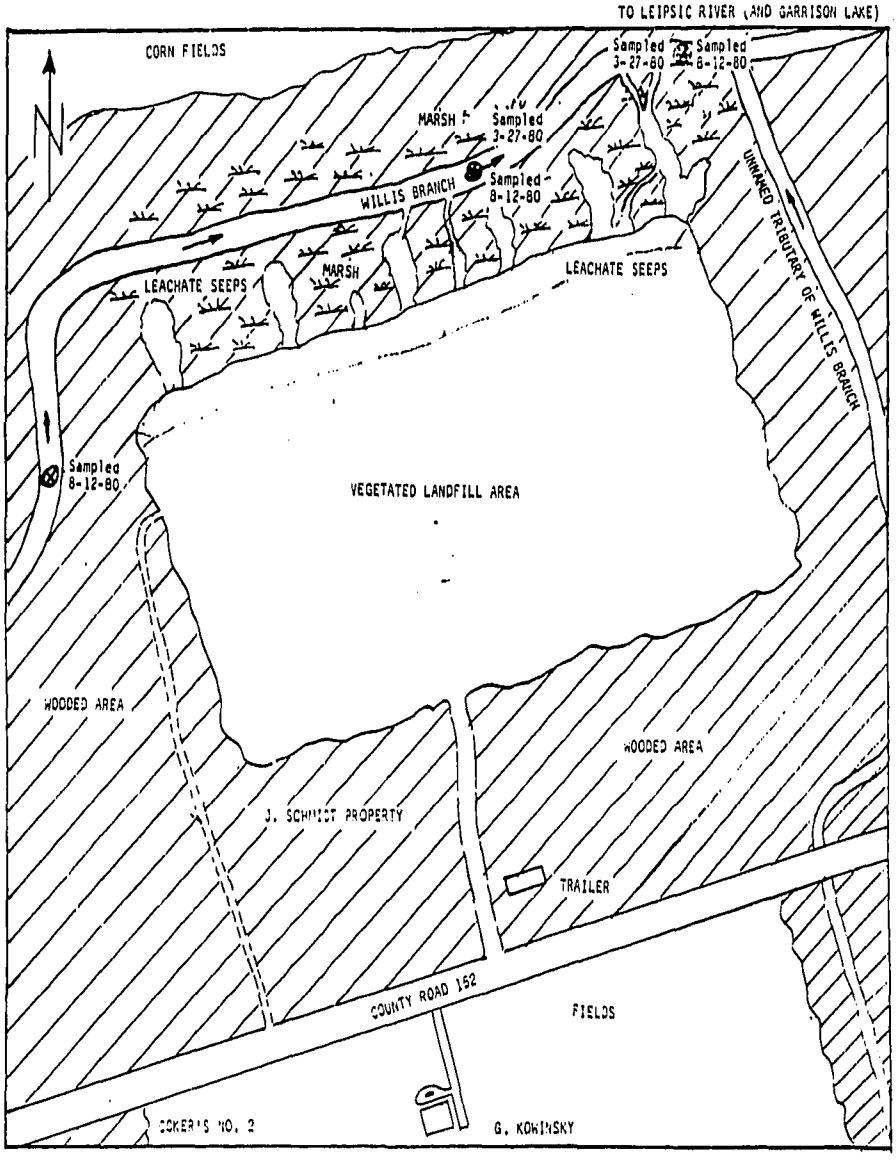
SOURCE: SITE INSPECTION SKETCH 3/4/83

100053

SCALE: Not to scale

NUS CORPORATION
A Halliburton Company

SITE NAME COKER'S LANDFILL NO. 1
TDD NO. F3-8211-36
EPA NO. DE-04
TITLE: SAMPLING LOCATIONS PRIOR TO 3/4/83



SOURCE: SITE INSPECTION SKETCH 3/4/83

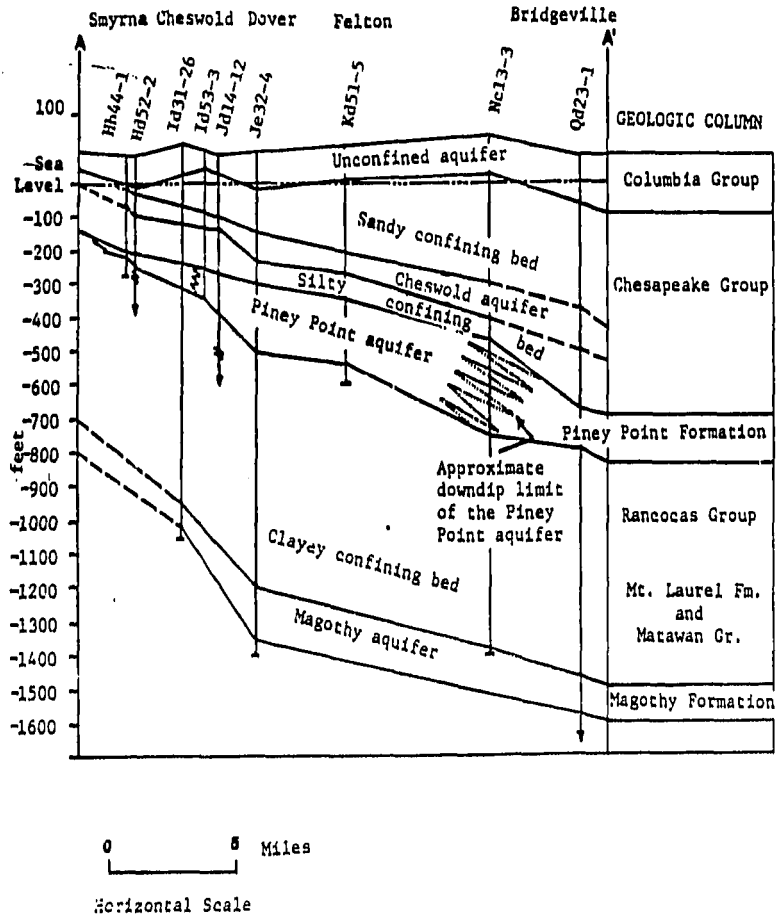
100054

SCALE: Not to scale

NUS CORPORATION
A Halliburton Company

SITE NAME REICHOLD PLANT/COKERS NO. 1,2,3
TDD NO. F3-8211-36
EPA NO. DE-02,03,04,05
TITLE: GENERALIZED GEOLOGIC CROSS-SECTION

FIGURE 3-1



0 5 Miles

Horizontal Scale

Vertical Exaggeration 132x
Line of Section in Figure 1.

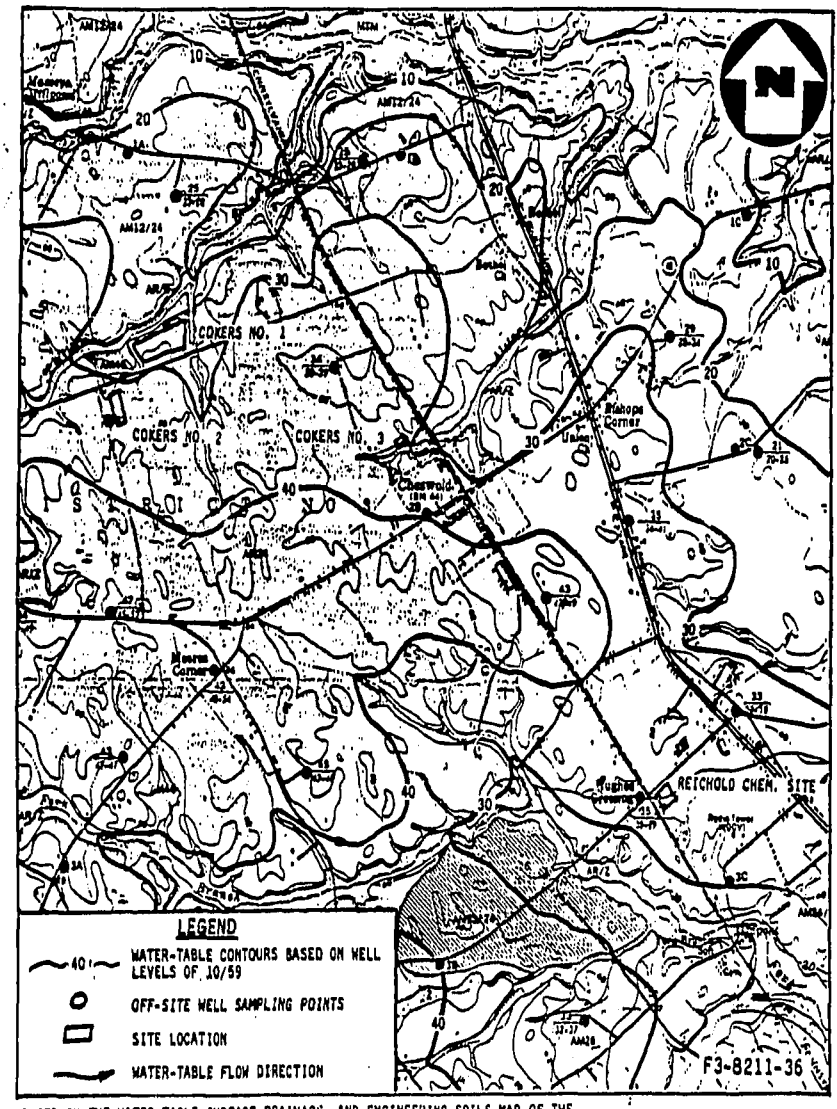
SOURCE: Leahy, p.12, 1982

100055

SCALE: Approximately 1 inch = 5 miles

NUS CORPORATION
A Halliburton Company

ORIGINAL



BASED ON THE WATER-TABLE, SURFACE DRAINAGE, AND ENGINEERING SOILS MAP OF THE DOVER QUADRANGLE, DELAWARE BY JOHN K. ADAMS ET AL, 1964..USGS HYDROLOGIC INVESTIGATIONS ATLAS HA-139. WATER-TABLE OF 10/59. CONTOUR INTERVAL 10 FEET.

FIGURE 3-2

WATER-TABLE CONTOUR MAP
COKERS 1,2,3/ REICHOLD CHEMICAL SITE
CHESWOLD, DE.
1 INCH = APPROX. 2015 FEET

NUS CORPORATION
A Halliburton Company

100056

APPENDIX C

100057

1.0 REFERENCES

1. Soil Survey, Kent County, Delaware, U.S. Department of Agriculture, Soil Conservation Service and Delaware Agricultural Experiment Station, April, 1971.

2. Adams, John K.; Boggess, Durwood H.; Davis, Christian F., Water-Table Surface Drainage and Engineering Soils Maps of the Dover Quadrangle Delaware by Hydrologic Investigations Atlas HA-139, Department of the Interior, U.S. Geological Survey, 1964.

3. Johnston, Richard H. and Leahy, Patrick P., Combined Use of Digital Aquifer Models and Field Base - Flow Data to Identify Recharge Linkage AReas for Artesian Aquifers, Journal of Research, U.S. Geological Survey, Vol. 5, No. 4, July-August 1977, pp. 491-496.

4. U.S.G.S 7.5 Minutes Series Dover, Delaware Topographic Quadrangle, Photorevised 1981.

5. Leahy, Patrick P., Groundwater Resources for the Piney Point and Cheswold Aquifers in Central Delaware as Determined by a Flow Model, U.S. Geological Survey and Delaware Geological Survey, Delaware Geological Survey Bulletin No. 16, July 1982.

6. Water System Feasibility Study for the town of Cheswold, Kent County, Delaware, O'Brien and Gere, 1968, Report and Report Addendum.

APPENDIX D

100059

ORIGINAL
(R...)

Sampling point locations, prior to 3/4/83, and a site sketch appear in Appendix A-2.0.

Between 1962 and 1977, Coker's Sanitation Service disposed of latex rubber sludges generated by Reichold Chemicals, Inc. (Cheswold Plant) in unlined trenches on a 9 to 10 acre tract of land owned by John Schmidt. Disposal permits were issued to Coker's by the Delaware Water and Air Resources Administration on 9/8/69 (Permit APC 70/35).

According to the Delaware DNREC, liquids and sludges were dumped in 6 foot deep trenches and allowed to solidify 1 to 2 weeks by "drainage" and evaporation before being covered. The liquid waste receiving area had been turned over and reused several times. Leachate appears at the toe of the landfill slope adjacent to Willis Branch. Approximately 150 tons per month of latex sludge (30 percent solids) is reported to have been dumped on the site.

A hydrologic study done in 1975 by A.W. Martin Associates states that only inert material should be disposed of at the site and that "proper" hydrogeologic and engineering design be considered to prevent contamination of the water table in the area, should disposal be for any other waste type. Based on the findings of this report and the fact that wastes "probably" contain volatile organics (not inert) including butadiene and styrene, Mike Apgar of DNREC, after his field visit of 4/15/76, suggested to his department that Coker's permit application be rejected in favor of a site less prone to contamination and that the site be engineered to intercept and collect all leachate for suitable disposal. The site inspection by DNREC on 4/15/76 was done in light of Coker's request to handle water soluble latex paint wastes. The Coker's No. 1 landfill closed in 1977.

On 3/27/80, three samples were taken. Upstream and downstream samples of Willis Branch and the seep leachate had less then 10ppb of bis (2ethylhexyl) phthalate and di-n-butyl phthalate. The upstream sample had less than 10ppb of chloroform. A 20ppb level of 4-nitrophenol was reported in the leachate. Inorganic analyses of all 3 samples show levels below ambient water quality standards. It should be noted that the leachate samples show higher levels of arsenic (5ppb vs less than 2 in stream), lead (16ppm vs less than 1 in stream), and barium (600 ppm vs 60 to 76 in stream).

100060

A EPA Case Development study done on 6/27/80 states there was no evidence to confirm or deny Cheswold Aquifer contamination. Further, there was no known contamination to the Willis Branch or wells in the area. The study recommended more monitoring wells be installed and that pending such action, little more could be done to ascertain contamination of the Cheswold Aquifer.

An Ecology and Environment FIT III site inspection and sampling (8-12-80). Aqueous samples of the Willis Branch on the west, north, and east sides of the disposal area show increasing levels of iron, lead, and manganese downstream, possibly as a result of leachate from the site. Although no organics were detected, it should be noted that nitrophenols and phthalates are more likely to be found in sediments than in water.

Based on the results of the FIT III sampling, EPA established a low contamination potential and recommended no action needed.

100001

TABLE I
SAMPLE LOCATION

DATE/POLLUTANT	Reichold Biosludge (ppm)	Reichold Pit sludge (ppm)	Leachate Seep Sample 3/27/80	Downstream Willis Br. 3/27/80	Upstream Willis Br. 3/27/80	Willis Branch East Cokers 1 8/12/80	Willis Branch North Cokers 1 8/12/80	Willis Branch East Cokers 1 8/12/80
Zn	39	15						
Fe	1490	1990				862	1010	1500
Pb	4	6				<40	54	439
Mn	4	2				70	83	103
As	0.3	0.3						
Hg	0.05	0.03						
Al						825	898	1220
4-nitrophenol phenol			20					
bis(2ethylhexyl) phthalate			<10	<10	<10	NO	ORGANICS	DETECTED
butyl benzyl phthalate						NO	ORGANICS	DETECTED
di-n-butyl phthalate			<10	<10	<10	NO	ORGANICS	DETECTED

All units expressed in ug/l unless otherwise noted. All samples are aqueous.
Locations of all sampling points appear in Appendix B - 3.0.

100062

ORIGINAL (Red)

Summary of letters, memos, reports, and analytical data in EPA Files as of 2/8/83. (Red)

Site owned by Mr. John Schmidt, leased to Carlton Coker.

1962-1977 Site active per C.K. Lee notes.

9/8/69 Permit APC 70/35 is issued to C. Coker by Delaware Water and Air Resources Administration.

12/21/72 Letter to Robert R. French, Manager Air Resources Section (DNREC Dela.) from Harry B. Lansing, Plant Manager, Standard Brand Chemical Industries, Inc. (Reichold) re: analysis of bio sludge and pit sludge

	Bio sludge (ppm)	Pit sludge (ppm)
Cr	<1	<1
Zn	39	15
Cu	3	4
Fe	1490	1990
Pb	4	6
Mn	4	2
Ni	1	1
As	<0.3	0.3
Cd	<1	<1
Hg	0.05	0.03

9/11/73 Letter from Robert French (DNREC Dela.) to C.Coker issuing permit APC-74/83 for industrial landfill. Expires 9/11/76. Supercedes Certificate of Approval APC-70/35.

10/3/75 Hydrogeologic study of Coker's No. 1 by A.W. Martin Associates, Inc. states ..."only inert materials should be disposed at this location." Also proper hydrogeologic and engineering design be considered to prevent contamination of the water table in the area, should disposal be for any other waste type (from EPA memo of 4/19/76).

3/8/76 Letter from C.E. Sadler, Process Superintendent, Reichold Polymers, Inc. to Coker's Cesspool Builders re: Dr. L. Go of DNREC request for analysis results of Eimco vaccuum filter cake disposed in landfill. Results required by state prior to approval of new alternate landfill. Filter cake is 75 percent water, balance 55 percent rubber latex solids; 45 percent soluble inorganics (CaOH, FeOH, $CaSO_4$, $CaCO_3$)

100063

ORIGINAL

3/17/76 Letter from Edward H. Richardson Associates, Inc., Environmental Sciences Laboratory to C.E. Sadler DNREC re: results of filter cake analysis

mg/l		mg/l	
Fe	19.2	Cd	1.3
Cr	<0.5	Hg	0.01
Cu	13.9	Zn	22.2
Phenol	0.56	Ni	5.3
Cyanide	<0.026		

4/15/76 Visit to Coker's Sanitation Service Industrial landfill (Coker's No. 1) by Michael Apgar and JoAnn Sipple (DNREC). Samples collected. See 4/19/76 Site Visit Report.

4/19/76 Memo from Michael A. Apgar (DNREC) to Lee T. Go (DNREC) Subject: Coker Landfill Permit Application/Site Visit Report. Standard Brands has dumped on-site for past 15 years. Waste material is semi-solid sludge dried on a vaccuum filter. Drying process instituted at Standard Brands plant 4 years earlier. Liquids (also hauled) and sludges are dumped into separate trenches approx. 6 feet deep. Wastes solidify in 1-2 weeks by drainage and evaporation of fluids and are covered. The liquid waste receiving area has been turned over and reused several times.

Leachate appears at the toe of the landfill slope adjacent to Willis Branch.

Current wastes contain volatile organic chemicals which "probably" include butadiene and styrene. Not inert, cites Martin study of 10/3/75 which states only inert materials should be disposed at this site.

Recommendations: 1) application be rejected in favor of site less prone to contamination, 2) site should be engineered to intercept and collect all leachate for suitable disposal according to current regulations.

100004

1977 Joseph Kowinsky (302--734-5092) well tested (presumably by DNREC?). No problem from landfill as per EPA staff meeting notes, author unknown. Leachate analysis (date unknown). Kowinsky owns property of Coker's No. 2.

mg/l		mg/l	
Fe	650	Total N	39
TOC	157	Ammon.N	34
COD	138	pH	6.8
Cl	25		

1977 Coker's No. 1 closed (inactive).

11/1/79 Site identified on Congressman Eckhardt's list

3/3/80 Preliminary Assessment by Wayne S. Naylor of AFO-EPA. Approx. 150 tons/week of latex sludge dumped with 30% solids. Streams not used for human consumption.

3/27/80 Coker's Nos. 1 and 2 inspected by William Thomas, EPA Engineering Technician, as potential hazardous waste sites. Three samples taken (see next entry).

4/23/80 EPA Site Inspection of 3/27/80 report by William Thomas, EPA Engineering Technician. Site inactive, overgrown. Two mobile homes are located within 100 yards of site in "opposite direction of groundwater flow". 1) private well approximately 50 feet deep in house trailer 100 yards south of entrance of landfill, 2) private well approximately 100 feet deep, 100 yards southeast of landfill.

Cyanide, phenols, and metals listed under wastes present

Sampling :	pH
1) Leachate	6.5
2) Willis Branch upstream	6.6
3) Willis Branch downstream	6.85

For results see Table 1.

Substances of concern: styrene, butadiene, CaOH, Fe (per plant manager).

100065

5/1/80 Letter Trip Report by William Thomas to Ovterio Villa Jr. re: Site inspection of 3/27/80. Leachate pools appear along north edge of landfill adjacent to Willis Branch. Sampled leachate pools and Willis Branch downstream CL1, CL2, CL3. Split with Reichold.

Private wells in the site vicinity were not sampled because, according to DNREC personnel, private wells were in the opposite direction of groundwater flow and therefore, should not be affected by the operation.

Site operated by Carlton Coker, who leases property from John Schmidt (302-653-7649). Latex sludge from Reichold plant transported by Coker to disposal site.

5/5/80 Letter from P.G. Johnson to Daniel K. Donnelly - Chief, Lab Section, re: transmittal of RCRA Results (metals) Coker's Nos. 1 & 2.

5/21/80 Tentative Disposition by William Thomas. Stream samples CL2 and CL3 of 3/27/80 show low level contamination of As and Cr (no nitrophenols). Off-site leachate CL1 shows 20 ug/l nitrophenols, As and Cr. No monitoring wells present. Recommends monitoring wells be installed.

5/23/80 Tentative Disposition by Robin Aitken and Joe Donovan of EPA. Willis Branch 200 yards north of site. No aquatic life known; no intakes known; no fence to prevent access. Investigative activity needed: 1) Sample domestic wells for presence of leachate, 2) Hydrogeologic information as to likelihood and time of leachate contamination of domestic wells, 3) On-site sampling of leachate, 4) Inspection to determine likelihood of site run-off and nature of aquatic life, and 5) Toxicological effects of leachate on health and environment

Farms with domestic wells are 1/2 to 1 mile to the northest of the site.

100066

6/27/80 Case Development Plan by Robin Aitken. DNREC site inspection of 4/76 done in light of Coker landfill permit. Coker requested he be allowed to handle water soluable latex paint wastes. Permit and request denied. To EPA's knowledge, no paint wastes present.

Landfill not lined.

Site overlies Cheswold Aquifier which provides a significant portion of Dover's water supply.

Surface run-off to Willis Branch Run, a trib. of Leipsic River. Leipsic is used for recreation. Site is not a known flood area.

No evidence to confirm or deny Cheswold Aquifer contamination. EPA samples of Willis do not indicate any contamination other than 10 ppb of some phthalate groups. No known well contamination in the area.

Remedies:

1) Careful day to day operation to prevent "walk ons"
2) More monitoring wells required on site perimeters to prove or disprove contamination of Cheswold Aquifer and Willis Branch Run
3) Pending installation of projected monitoring wells, little can be done to ascertain contamination of Cheswold Aquifer, which is of major concern.

7/22/80 Field trip by R. Aitken to familiarize same with site

7/25/80 Site investigation of Coker's No. 1 by Terrance Shannon (E&E) and Carlton Coker. Access by gateless dirt road approximately 10 acres in size. Unlined pits (125x25x15 feet) used for disposal with no control of run-off, or control or treatment of leachate. Number of leachate seeps noted to drain into low, marshy area bordering Willis Branch.

100067

8/12/80 Terrance Shannon, William Sanduick, and C.K. Lee sampled west, north, and east sides of landfill for organics/inorganics.

9/9/80 Site Inspection/Sampling Report by Terrance Shannon. Concern for potential acrylonitriles and Zn in process sludge.

11/26/80 Final Strategy Determination by R. Aitken, J. Donovan. FIT Field Investigation of 8/12/80 established low contamination potential. Site is inactive with no known complaints.
Recommendations: No action needed.

12/17/82 Letter to Chris Altomari from Don Senovich concerning sampling/site inspection plan for all Coker's and Reichold landfills.
NUS suggests: 1) To determine water supply for Cheswold area and study pumpage and influence patterns, 2) Locate and sample deep well(s) up and downgradient of Cheswold (Reichold) landfill No. 3, and 3) Locate and sample deep well(s) downgradient of Coker's Landfill No. 3.

1/27/83 Revised sampling plan by Chris Altomari (EPA) and Don Messinger (NUS) in letter from Chris Altomari to Linda Boornazian.

100068

APPENDIX E

100069

ORIGINAL

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2748
Date Rec'd: 3/3/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: LOW WATER
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: BFBOWA123 VOL076
Lab ID: 25591V3
Date Analyzed: 3/7/83
Circle Units: ug/Kg, ug/L

Level/Matrix: LOW WATER
QC Report #: 6582-73
Spl→Extract: 500ml→10ml
Lab Std ID: 0032-3
Lab ID: 0033-9
Date Extracted: 3-3-83
Date Analyzed: 3-11-83
Circle Units: ug/Kg, ug/L

Volatile Compounds

2V	acrolein	1U
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	
13V	1,1-dichloroethane	
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	✓
44V	methylene chloride	12
45V	methyl chloride	1U
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	✓

Pesticides

89P	aldrin	0.2U
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	✓

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

300070

(Red)

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: 62748
Date Rec'd: 3/3/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: Low WATER
QC Report #: 6582-83
Spl→Extract: 1L→2ml
Lab Std ID: DMSO/HCS592 AA4850

Lab ID: 25591F2
Date Extracted: 3-7-83
Date Analyzed: 3-17-83
Circle Units: ug/Kg, ug/L

Acid Compounds		
21A	2,4,6-trichlorophenol	24
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	

Base/Neutral Compounds		
1B	acenaphthene	24
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	
42B	bis(2-chloroisopropyl)ether	24
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected
K- Detected below quantitation limit

100071

ORIGINAL (Red)

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2748
Date Rec'd: 3/3/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1L→2mL
Lab Std ID: SE54 SPNS592BNAP381

Lab ID: 25591F2
Date Extracted: 3/7/83
Date Analyzed: 3/17/83
Circle Units: ug/Kg ug/L

Acid Compounds

benzoic acid	2u
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	2u
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaphthalene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 5mL
Lab Std ID: BFB0WA123 VOL876
Lab ID: 25591V3
Date Analyzed: 3/7/83
Circle Units: ug/Kg ug/L

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 500L→1mL
Lab Std ID: 25591D1
Lab ID: 25591D3
Date Extracted: 3/3/83
Date Analyzed: 3/20/83
Circle Units: ug/Kg ug/L

Volatile Compounds

acetone	1U
2-butanone	10
carbondisulfide	1U
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin 0.02 u

U- Analyzed for but not detected

K- Detected below quantitation limit

100072

1/83

WEST COAST TECHNICAL SERVICE INC.

ORIGINAL (Red)

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number C2748

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/L	(Surrogates only) Spike Added (ug/L)	% Recovery
Benzene - d6	VOA	47	50	94
1-Chloro-2-Bromopropane	VOA	57	50	114
Toluene - d8	VOA	49	50	94
2-Fluorophenol	BNA	87	101	86
Phenol - d5	BNA	58	105	56
Nitrobenzene - d5	BNA	85	100	85
2-Fluorobiphenyl	BNA	98	101	97
1,2,3,4-TCDD	TCDD	0.144	0.140	103 *

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/L)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.	20J	Xylene isomer	BNA #310	General ES
2.				
3.				
4.		*Asterisked Values are outside QC limits.		
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13				
14.				
15.				
16.				
17.				
18.				100093
19.				

Case #/SAS #: 1541
QC Report #: 6582-73
Level/Matrix: Low water

Laboratory: WCTS, Inc.
Contract #: 6582
Quality Control Report

Sample #: C2748
Lab Std ID: BFBOWAIR3 VOL076
Circle Units: ug/Kg, (ug/L)

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) % Recovery and RPD Summary

Fraction	Compound	Conc. Sample	Conc. Spike Added	Conc. MS	% Recovery MS	Conc. MSD	% Recovery MSD	RPD
VOA	Benzene	14	25	17	68 *	19	76	11
	Toluene	14	25	20	80	22	88	10
	Chlorobenzene	14	25	18	72	19	76	5
	Benzene-d6	47	50	42	84	45	90	7
	Chlorobromopropane	57	50	53	106	54	108	2
	Toluene-d8	48	50	43	86	45	90	5
B/N	1,2,4-Trichlorobenzene	24	NOT SPIKED	N/A	N/A	N/A	N/A	N/A
	Acenaphthene							
	2,6-Dinitrotoluene							
	Di-n-butylphthalate							
	Pyrene							
	N-Nitrosodi-n-propylamine							
	1,4-Dichlorobenzene							
	Nitrobenzene-d5	85	100					
	2-Fluorobiphenyl	98	101					
Acid	Pentachlorophenol	24	NOT SPIKED					
	4-Chloro-3-methylphenol							
	Phenol							
	2-Chlorophenol							
	4-Nitrophenol							
	2-Fluorophenol	87	101					
	Phenol-d5	58	103					

* Asterisked Values are outside QC Limits.

$$RPD = \frac{|MS - MSD|}{\left(\frac{MS + MSD}{2}\right)} \times 100$$

1/83

100014

Case #/SAS #: 1541
QC Report #: 6582-73
Level/Matrix: L/N

Laboratory: WCTS, Inc.
Contract #: 68B2
Quality Control Report

Sample #: C2748
Lab Std ID: 8033-12
Circle Units: ug/Kg, ug/L

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) % Recovery and RPD Summary

Fraction	Compound	Conc. Sample	Conc. Spike Added	Conc. MS	% Recovery MS	Conc. MSD	% Recovery MSD	RPD
Pest.	Aldrin	0.2U	10	7.5	75	10	100	29
	Dieldrin	0.2U	11	9.1	83	11	100	19
	Heptachlor	0.2U	11	7.7	70	11	100	35
	4,4'-DDT	0.2U	10	8.8	88	11	110	22
TCDD	2,3,7,8-TCDD	0.02U	Not spiked	0.02U	Not spiked	0.02U	Not spiked	0
	1,2,3,4-TCDD	0.149	0.140	0.114	81	0.162	116 *	37

* Asterisked Values are outside QC Limits

$$RPD = \frac{|MS - MSD|}{\left(\frac{MS + MSD}{2}\right)} \times 100$$

RPD: VOA's 0 out of 6 outside QC Limits
B/N's — out of — outside QC Limits
Acids — out of — outside QC Limits
Pests 0 out of 4 outside QC Limits
TCDD 0 out of 2 outside QC Limits

Recovery: VOA's 1 out of 12 outside QC Limits
B/N's — out of — outside QC Limits
Acids — out of — outside QC Limits
Pests 0 out of 8 outside QC Limits
TCDD 1 out of 2 outside QC Limits

100875

Case #/SAS #: 1541
QC Report #: 6582-93
Level/Matrix: LOW WATER

Laboratory: WCTS, Inc.
Contract #: 6582
Quality Control Report

Sample #: C2748
Lab Std ID: BFBOW4123, VOL#76,
Circle Units: ug/Kg, ug/L
0032-3

Sample, Matrix Spike (MS), and Matrix Spike Duplicate (MSD) Results

Summary of Unspiked Compounds (HSL's)

Fraction	Compound	Conc. Sample	Conc. MS	Conc. MSD	RPD**	Comments
VOA	METHYLENE CHLORIDE	12	15	16	6	
	2-BUTANONE	10	11	9	2	
	PESTICIDES	0.2U	4U	4U	0	

* Asterisked Values are outside QC Limits
** RPD is calculated based on MS and MSD Results
Note: This Page Lists Compounds on the HSL which were found in the Sample, MS, and MSD. It does not include Tentatively Identified Conpounds which may have been found in the Sample.

$$RPD = \frac{|MS - MSD|}{\left(\frac{MS + MSD}{2}\right)} \times 100$$

1000716

ORIGINAL (Red)

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2749
Date Rec'd: 3/3/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: Low WATER	Level/Matrix: Low WATER
QC Report #: 6582-73	QC Report #: 6582-73
Spl→Extract: 5mL	Spl→Extract: 1L → 1ml
Lab Std ID: BFBCW1A123 VOL076	Lab Std ID: 0032-3
Lab ID: 2599LV1	Lab ID: 0033-13
Date Analyzed: 3/7/83	Date Extracted: 3-3-83
Circle Units: ug/Kg, (ug/L)	Date Analyzed: 3-11-83
	Circle Units: ug/Kg, (ug/L)

Volatile Compounds

2V	acrolein	1U
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	
13V	1,1-dichloroethane	
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	13
45V	methyl chloride	1U
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

Pesticides

89P	aldrin	0.1U
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100077

ORIGINAL (Red)

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: 02749
Date Rec'd: 3/3/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 500ml→2ml
Lab Std ID: SPREAD 2UA391

Lab ID: 2559 F3
Date Extracted: 3-7-83
Date Analyzed: 3-17-83
Circle Units: ug/Kg (ug/L)

Acid Compounds		
21A	2,4,6-trichlorophenol	4u
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	✓

Base/Neutral Compounds		
1B	acenaphthene	4u
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	✓

Base/Neutral Compounds		
42B	bis(2-chloroisopropyl)ether	4u
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	✓

U- Analyzed for but not detected

K- Detected below quantitation limit

100078

ORIGINA
(Red)

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2749
Date Rec'd: 3/3/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 500 ml → 2 ml
Lab Std ID: S554SENS592BNAP391

Lab ID: 25591F3
Date Extracted: 3/7/83
Date Analyzed: 3/7/83
Circle Units: ug/Kg, ug/L

Acid Compounds

benzoic acid	4U
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	4U
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaphthalene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 5 ml
Lab Std ID: BABOWA123 VOL076
Lab ID: 25591V1
Date Analyzed: 3/7/83
Circle Units: ug/Kg, ug/L

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1 l → 10 ml
Lab Std ID: 25591D1
Lab ID: 25591D6
Date Extracted: 3/3/83
Date Analyzed: 3/20/83
Circle Units: ug/Kg, ug/L

Volatile Compounds

acetone	30
2-butanone	8
carbondisulfide	1U
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin	0.007U

U- Analyzed for but not detected
K- Detected below quantitation limit

100079

WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number
C2749

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/L)	(Surrogates only) Spike Added (ug/L)	% Recovery
Benzene - d6	VOA	49	50	98
1-Chloro-2-Bromopropane	VOA	55	50	110
Toluene - d8	VOA	49	50	98
2-Fluorophenol	BNA	192	201	96
Phenol - d5	BNA	154	205	75
Nitrobenzene - d5	BNA	178	200	89
2-Fluorobiphenyl	BNA	202	201	100
1,2,3,4-TCDD	TCDD	0.076	0.070	109 *

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/L)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.	30J	Xylene isomer	Bnx #311	General FIT
2.				
3.		*Asterisked Values are outside QC limits.		
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13				
14.				
15.				
16.				
17.				
18.				100%
19.				

Case #/SAS #: 1541
QC Report #: GS82-73
Level/Matrix: Low/Water

Laboratory: WCTS, Inc.
Contract #: GS82
Quality Control Report

Sample #: C2749
Lab Std ID: 8270 Semi STD CA0031
Circle Units: ug/Kg./(ug/L)

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) % Recovery and RPD Summary

Fraction	Compound	Conc. Sample	Conc. Spike Added	Conc. MS	% Recovery MS	Conc. MSD	% Recovery MSD	RPD
VOA	Benzene	14	NOT SPIKED	N/A	N/A	N/A	N/A	N/A
	Toluene	↓	↓	↓	↓	↓	↓	↓
	Chlorobenzene	↓	↓	↓	↓	↓	↓	↓
	Benzene-d6	49	50	↓	↓	↓	↓	↓
	Chlorobromopropane	55	50	↓	↓	↓	↓	↓
	Toluene-d8	49	50	↓	↓	↓	↓	↓
B/N	1,2,4-Trichlorobenzene	44	99	87	88	70	71	22
	Acenaphthene	44	101	101	100	86	85	16
	2,6-Dinitrotoluene	44	85	110	129	63	74	54 *
	Di-n-butylphthalate	44	85	18	9 *	16	8 *	12
	Pyrene	44	101	134	133	72	71	60 *
	N-Nitrosodi-n-propylamine	44	101	126	125 *	124	123 *	2
	1,4-Dichlorobenzene	44	101	100	99	75	76	29
	Nitrobenzene-d5	178	200	210	105	180	86	15
	2-Fluorobiphenyl	202	201	259	119	154	77	43
Acid	Pentachlorophenol	44	202	59	29 *	82	41	33
	4-Chloro-3-methylphenol	44	100	110	110	71	71	43 *
	Phenol	44	100	83	83	69	69	18
	2-Chlorophenol	44	101	129	128	109	108	17
	4-Nitrophenol	44	403	400	99	252	63	45 *
	2-Fluorophenol	192	201	203	101 *	225	112 *	10
	Phenol-d5	184	205	187	91	165	80	13

* Asterisked Values are outside QC Limits.

$$RPD = \frac{|MS - MSD|}{\left(\frac{MS + MSD}{2}\right)} \times 100$$

I/83

Case # SAS #: [illegible]
QC Report #: [illegible]
Level Matrix: [illegible]

Laboratory: [illegible], Inc.
Contract #: [illegible]
Quality Control Report

Sample #: [illegible]
Lab Sta ID: [illegible]
Circle Units: [illegible]

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) % Recovery and RPD Summary

Fraction	Compound	Conc. Sample	Conc. Added	Spike	Conc. MS	% Recovery MS	Conc. MSD	% Recovery MSD	RPD
Pest.	Aldrin	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Dieldrin								
	Heptachlor								
	4,4'-DDT	[illegible]							
TCDD	2,3,7,8-TCDD	[illegible]	[illegible]						
	1,2,3,4-TCDD	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

* Asterisked Values are outside QC Limits

$$RPD = \frac{MS - MSD}{\frac{MS - MSD}{2}} \times 100$$

RPD: VOA's [illegible] out of [illegible] outside QC Limits
B/N's [illegible] out of [illegible] outside QC Limits
Acids [illegible] out of [illegible] outside QC Limits
Pests [illegible] out of [illegible] outside QC Limits
TCDD [illegible] out of [illegible] outside QC Limits

Recovery: VOA's [illegible] out of [illegible] outside QC Limits
B/N's [illegible] out of [illegible] outside QC Limits
Acids [illegible] out of [illegible] outside QC Limits
Pests [illegible] out of [illegible] outside QC Limits
TCDD [illegible] out of [illegible] outside QC Limits

Date & SAS #: [illegible]
DC Report #: [illegible]
Level Matrix: [illegible]

Laboratory: [illegible] Inc.
Contract #: [illegible]
Quality Control Report

Sample #: [illegible]
Lab Std ID: [illegible]
Circle Units: [illegible]

Sample, Matrix Spike (MS), and Matrix Spike Duplicate (MSD) Results

Summary of Unspiked Compounds (GSL's)

Fraction	Compound	Conc. Sample	Conc. MS	Conc. MSD	RPD**	Comments
[illegible]	None Found	[illegible]	[illegible]	[illegible]	[illegible]	

* Asterisked Values are outside DC Limits
** RPD is calculated based on MS and MSD Results
Note: This Page Lists Compounds of the GSL which were found in the Sample, MS, and MSD. It does not include Tentatively Identified Compounds which may have been found in the Sample.

$$RPD = \frac{MS - MSD}{\frac{MS + MSD}{2}} \times 100$$

10X1R2

Case #/SAS # [illegible] Laboratory [illegible] Inc. Sample # [illegible]
Date Rec'd [illegible] Contract # [illegible] % Moisture N/A

Organics Analysis Data Sheet

Level/Matrix	[illegible]	Level/Matrix	[illegible]
QC Report #	[illegible]	QC Report #	[illegible]
Sol Weight	[illegible]	Sol Weight	[illegible]
Lab Std ID	[illegible]	Lab Std ID	[illegible]
Lab ID	[illegible]	Lab ID	[illegible]
Date Analyzed	[illegible]	Date Extracted	[illegible]
Dilution Factor	[illegible]	Date Analyzed	[illegible]
		Dilution Factor	[illegible]

Volatile Compounds

2V	Acrolein	1V	Pesticides
3V	Acrylonitrile	90P	Aldrin
4V	benzene	80P	dieldrin
5V	carbon tetrachloride	91P	chlordane
7V	chlorobenzene	92P	4,4' DDT
10V	1,2 dichloroethane	93P	4,4' DDE
11V	1,1,1 trichloroethane	94P	4,4' DDD
13V	1,1 dichloroethane	95P	alpha endosulfan
14V	1,1,2 trichloroethane	96P	beta endosulfan
15V	1,1,2,2 tetrachloroethane	97P	endosulfan sulfate
16V	chloroethane	98P	endrin
17V	bis(chloromethyl)ether	99P	endrin aldehyde
18V	2 chloroethylvinyl ether	100P	heptachlor
23V	chloroform	101P	heptachlor epoxide
27V	1,1 dichloroethylene	102P	alpha BHC
30V	1,2 trans dichloroethylene	103P	beta BHC
32V	1,2 dichloropropane	104P	gamma BHC
33V	1,3 dichloropropane	105P	delta BHC
38V	ethylbenzene	106P	PCB 1242
44V	methylene chloride	107P	PCB 1254
45V	methyl chloride	108P	PCB 1221
46V	methyl bromide	109P	PCB 1232
47V	bromoform	110P	PCB 1248
48V	dichlorobromomethane	111P	PCB 1260
49V	trichlorofluoromethane	112P	PCB 1016
50V	dichlorodifluoromethane	113P	toxaphene
51V	chlorodibromomethane		
95V	tetrachloroethylene		
96V	toluene		
97V	trichloroethylene		
98V	vinyl chloride		

0.111

1000094

* Analyzed for but not detected
* Data not below quantitation limit
** Detected below the MDL data rejected

Case #/SAS # [illegible] Laboratory [illegible], Inc. Sample # [illegible]
Date Rec'd [illegible] Contract # [illegible] % Moisture [illegible]

Organics Analysis Data Sheet

Level/Matrix [illegible] Lab ID [illegible]
QC Report # [illegible] Date Extracted [illegible]
Spl Extract [illegible] Date Analyzed [illegible]
Lab Std ID [illegible] Circle Units [illegible]

Acid Compounds			Base/Neutral Compounds		
21A	2,4,6-trichlorophenol	[illegible]	42B	bis(2-chloroisopropyl)ether	[illegible]
22A	p-chloro-m-cresol		43B	bis(2-chloroethoxy)methane	
24A	2-chlorophenol		52B	hexachlorobutadiene	
31A	2,4-dichlorophenol		53B	hexachlorocyclopentadiene	
34A	2,4-dimethylphenol		54B	isophorone	
37A	2-nitrophenol		55B	naphthalene	
38A	4-nitrophenol		56B	nitrobenzene	
39A	2,4-dinitrophenol		61B	N-nitrosodimethylamine	
40A	4,6-dinitro-o-cresol		62B	N-nitrosodiphenylamine	
44A	pentachlorophenol		63B	N-nitrosodi-n-propylamine	
45A	phenol		66B	bis(2-ethylhexyl)phthalate	
Base/Neutral Compounds			67B	butyl benzyl phthalate	
1B	acenaphthene	[illegible]	68B	di-n-butyl phthalate	
3B	benzidine		69B	di-n-octyl phthalate	
8B	1,2,4-trichlorobenzene		70B	diethyl phthalate	
9B	hexachlorobenzene		71B	dimethyl phthalate	
12B	hexachloroethane		72B	benzo(a)anthracene	
18B	bis(2-chloroethyl)ether		73B	benzo(a)pyrene	
20B	2-chloronaphthalene		74B	3,4-benzofluoranthene	
25B	1,2-dichlorobenzene		75B	benzo(k)fluoranthene	
26B	1,3-dichlorobenzene		76B	chrysene	
27B	1,4-dichlorobenzene		77B	acenaphthylene	
28B	3,3'-dichlorobenzidine		78B	anthracene	
35B	2,4-dinitrotoluene		79B	benzo(ghi)perylene	
36B	2,6-dinitrotoluene		80B	fluorene	
37B	1,2-diphenylhydrazine		81B	phenanthrene	
	1,4-azobenzene		82B	dibenzo(a,h)anthracene	
39B	fluoranthene		83B	indeno(1,2,3-cd)pyrene	
40B	4-chlorophenyl phenyl ether		84B	pyrene	
41B	4-bromophenyl phenyl ether				

[illegible]

Case #/SAS #: [illegible] Laboratory: [illegible] Sample #: C2750
Date Recd: 3/3/83 Contract #: [illegible] % Moisture: N/A

Organics Analysis Data Sheet
Non-Priority, Pollutant Ext. Compounds and Dioxin

Level/Matrix: [illegible] Lab ID: 3359IE7
QC Report #: [illegible] Date Extracted: 3/7/83
Spl→Extract: [illegible] Date Analyzed: 3/9/83
Lab Std ID: [illegible] Circle Units: ug/Kg, ug/L

Acid Compounds		Base/Neutral Compounds	
benzoic Acid	[illegible]	aniline	[illegible]
2-methylphenol	[illegible]	benzylalcohol	
4-methylphenol		1-nitroaniline	
2,4,6-trichlorophenol		dibenzofuran	
		2-methylnaphthalene	
		2-nitroaniline	
		3-nitroaniline	
		4-nitroaniline	

Level/Matrix: [illegible] Level/Matrix: [illegible]
QC Report #: [illegible] QC Report #: [illegible]
Spl→Extract: [illegible] Spl→Extract: [illegible]
Lab Std ID: [illegible] Lab Std ID: [illegible]
Lab ID: [illegible] Lab ID: 3359IA7
Date Analyzed: 3/7/83 Date Extracted: 3/3/83
Circle Units: ug/Kg, ug/L Date Analyzed: 3/4/83
Circle Units: ug/Kg, ug/L

Volatile Compounds		Dioxin	
Acetone	[illegible]	1298 2,3,7,8-tetrachlorodibenzo-p-dioxin	0.007U
2-Butanone	[illegible]		
Carbondisulfide			
2-Hexanone			
4-methyl-2-pentanone			
Styrene			
Vinyl Acetate			
Xylene			

U- Analyzed for but not detected
K- Detected below quantitation limit

100086

1/83

ORIGINAL

WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No:_____

Sample Number
C2750

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/L)	(Surrogates only) Spike Added (ug/L)	% Recovery
Benzene - d6	VOA	45	50	90
1-Chloro-2-Bromopropane	VOA	54	50	108
Toluene - d8	VOA	46	50	92
2-Fluorophenol	BNA	44	101	44
Phenol - d5	BNA	31	103	30
Nitrobenzene - d5	BNA	96	100	96
2-Fluorobiphenyl	BNA	74	101	73
1,2,3,4-TCDD	TCDD	0.074	0.070	105 *

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/L)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.	20J	Column Artifact	BNA #353	General FIT
2.	30J	Column Artifact	BNA #477	General FIT
3.	10J	Column Artifact	BNA #608	General FIT
4.				
5.		*Asterisked Values are outside QC limits		
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13				
14.				
15.				
16.				
17.			100082	
18.				
19.				

ORIGI...

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2758
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: [illegible]
Lab ID: 2559[illegible]
Date Analyzed: 3-7-83
Circle Units: ug/Kg, ug/L

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1L→1Ml
Lab Std ID: 0032-3
Lab ID: 0034-24
Date Extracted: 3-5-83
Date Analyzed: 3-11-83
Circle Units: ug/Kg, ug/L

Volatile Compounds

2V	acrolein	14
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	
13V	1,1-dichloroethane	
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	15
45V	methyl chloride	14
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

Pesticides

89P	aldrin	0.1U
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100088

1/83

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2758
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: Low Water Lab ID: 25598F7
QC Report #: 6582-73 Date Extracted: 3-8-83
Spl→Extract: 1l→2ml Date Analyzed: 3-17-83
Lab Std ID: SE545EN5593-BNAP382 Circle Units: ug/Kg, ug/L

Acid Compounds

21A	2,4,6-trichlorophenol	2U
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	

Base/Neutral Compounds

1B	acenaphthene	2U
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	

Base/Neutral Compounds

42B	bis(2-chloroisopropyl)ether	2U
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected

K- Detected below quantitation limit

100089

ORIGINAL (Red)

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: E2758
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1l→2ml
Lab Std ID: SE54SENDS93-BNAP382

Lab ID: 25598F7
Date Extracted: 3-8-83
Date Analyzed: 3-17-83
Circle Units: ug/Kg, ug/L

Acid Compounds

benzoic acid	2U
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	2U
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaphthalene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: BEBOWA122VOL073
Lab ID: 25598V6
Date Analyzed: 3/7/83
Circle Units: ug/Kg, ug/L

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1l→1ml
Lab Std ID: 25598D8
Lab ID: 25598D8
Date Extracted: 3/5/83
Date Analyzed: 3/21/83
Circle Units: ug/Kg, ug/L

Volatile Compounds

acetone	1U
2-butanone	2T
carbondisulfide	1U
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin 0.007U

U- Analyzed for but not detected

K- Detected below quantitation limit

100090

WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number
C2758

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/L)	(Surrogates only) Spike Added (ug/L)	% Recovery
Benzene - d6	VOA	40	50	80
1-Chloro-2-Bromopropane	VOA	43	50	86
Toluene - d8	VOA	39	50	78
2-Fluorophenol	BNA	98	101	97
Phenol - d5	BNA	51	103	49
Nitrobenzene - d5	BNA	55	100	55
2-Fluorobiphenyl	BNA	39	101	58 *
1,2,3,4-TCDD	TCDD	0.054	0.070	78

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/L)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.				
2.		*Asterisked Values are outside QC limits.		
3.				
4.				
5.				
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16.				
17.				
18.				100091
19.				

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2759 ORIGINAL
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: 25.97%

Organics Analysis Data Sheet

Level/Matrix: LOW SOIL
QC Report #: 6582-74
Spl→Extract: 1.0056
Lab Std ID: BFBONA184 V0L077
Lab ID: 25599V3
Date Analyzed: 3/8/83
Circle Units: ug/Kg, ug/L

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 5.040→10ml
Lab Std ID: 0036-3
Lab ID: 0038-11
Date Extracted: 3-9-83
Date Analyzed: 3-12-83
Circle Units: ug/Kg, ug/L

Volatile Compounds

2V	acrolein	5u
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	13K
13V	1,1-dichloroethane	5u
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	59
45V	methyl chloride	5u
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

Pesticides

89P	aldrin	20u
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100092

ORIGINAL

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: 02757 (Red)
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: 25.9%

Organics Analysis Data Sheet

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 30.4g→10ml
Lab Std ID: 030583S74 BNA38B

Lab ID: 2559FS
Date Extracted: 3-9-83
Date Analyzed: 3-18-83
Circle Units: ug/Kg ug/L

Acid Compounds

21A	2,4,6-trichlorophenol	200u
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	

Base/Neutral Compounds

1B	acenaphthene	200u
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	
42B	bis(2-chloroisopropyl)ether	200u
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected

K- Detected below quantitation limit

100093

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2759
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: 25.97%

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 50.4g→10ml
Lab Std ID: SE54SENS594 BNAP383

Lab ID: 25599F5
Date Extracted: 3/9/83
Date Analyzed: 3/18/83
Circle Units: ug/Kg ug/L

Acid Compounds

benzoic acid	200U
2-methylphenol	↓
4-methylphenol	↓
2,4,5-trichlorophenol	↓

Base/Neutral Compounds

aniline	200U
benzylalcohol	↓
4-chloroaniline	↓
dibenzofuran	↓
2-methylnaphthalene	↓
2-nitroaniline	↓
3-nitroaniline	↓
4-nitroaniline	↓

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 1.005g
Lab Std ID: BEBOWA924 VOL077
Lab ID: 25599V3
Date Analyzed: 3/18/83
Circle Units: ug/Kg ug/L

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 5.0g→1ml
Lab Std ID: 25598D4
Lab ID: 25599D5
Date Extracted: 3/9/83
Date Analyzed: 3/20/83
Circle Units: ug/Kg ug/L

Volatile Compounds

acetone	5U
2-butanone	5U
carbondisulfide	5U
2-hexanone	↓
4-methyl-2-pentanone	↓
styrene	↓
vinyl acetate	↓
o-xylene	↓

Dioxin

129B . 2,3,7,8-tetrachlorodibenzo-p-dioxin	2U

U- Analyzed for but not detected

K- Detected below quantitation limit

100094

WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number
C2759

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/Kg	(Surrogates only) Spike Added (ug/Kg)	% Recovery
Benzene - d6	VOA	170	240	71
1-Chloro-2-Bromopropane	VOA	220	240	92
Toluene - d8	VOA	170	240	71
2-Fluorophenol	ACID	25800	20900	114 *
Phenol - d5	ACID	24300	20700	117 *
Nitrobenzene - d5	B/N	25000	21500	116
2-Fluorobiphenyl	B/N	17200	20900	82
1,2,3,4-TCDD	TCDD	2.4	14	17 *

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/Kg)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.		*Asterisked Values are outside QC limits.		
2.				
3.				
4.				
5.				
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17.				100095
18.				
19.				

17605 Fabrica Way Cerritos, California 90701 213/921-9831

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2760
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: BROMINEX VOLOT
Lab ID: 25SGRUN
Date Analyzed: 3-7-83
Circle Units: ug/Kg, (ug/L)

Level/Matrix: LOW WATER
QC Report #: 6582-73
Spl→Extract: 1L→10ml
Lab Std ID: 0032-3
Lab ID: 0034-25
Date Extracted: 3-5-83
Date Analyzed: 3-11-83
Circle Units: ug/Kg, (ug/L)

Volatile Compounds

2V	acrolein	U
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	
13V	1,1-dichloroethane	
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	✓
44V	methylene chloride	K
45V	methyl chloride	U
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	✓

Pesticides

89P	aldrin	OMIT
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	✓

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100096

ORIGINAL (Red)

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: 02760
Date Rec'd: 3/4/83 Contract #: 6382 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: LOW WATER
QC Report #: 65[illegible]-73
Spl→Extract: [illegible]
Lab Std ID: STANDARD RMAPSEL

Lab ID: 25591F10
Date Extracted: 3-8-83
Date Analyzed: 3-19-83
Circle Units: ug/Kg, (ug/L)

Acid Compounds

21A	2,4,6-trichlorophenol	24
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	

Base/Neutral Compounds

1B	acenaphthene	24
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	
42B	bis(2-chloroisopropyl)ether	24
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected

K- Detected below quantitation limit

100097

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2760
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1l→2ml
Lab Std ID: SE54SENS593BNAP382

Lab ID: 25598F10
Date Extracted: 3/8/83
Date Analyzed: 3/17/83
Circle Units: ug/Kg, ug/L

Acid Compounds

benzoic acid	7U
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	7U
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaphthalene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: BFBOWA122VOL073
Lab ID: 25598V8
Date Analyzed: 3/7/83
Circle Units: ug/Kg, ug/L

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1l→1ml
Lab Std ID: 25598D8
Lab ID: 25598D12
Date Extracted: 3/5/83
Date Analyzed: 3/21/83
Circle Units: ug/Kg, ug/L

Volatile Compounds

acetone	16
2-butanone	12
carbondisulfide	1U
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin 0.007U

U- Analyzed for but not detected

K- Detected below quantitation limit

100098

WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number
C2760

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/L)	(Surrogates only) Spike Added (ug/L)	% Recovery
Benzene - d6	VOA	43	50	86
1-Chloro-2-Bromopropane	VOA	47	50	94
Toluene - d8	VOA	43	50	86
2-Fluorophenol	BNA	87	101	86
Phenol - d5	BNA	44	103	43
Nitrobenzene - d5	BNA	68	100	68
2-Fluorobiphenyl	BNA	50	101	50
1,2,3,4-TCDD	TCDD	0.070	0.070	100 *

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/L)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.		*Asterisked Values are outside QC limits		
2.				
3.				
4.				
5.				
6.				
7.				
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17.				
18.				
19.				

100099

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2761
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: 21.37%

Organics Analysis Data Sheet

Level/Matrix:	LOW SOIL	Level/Matrix:	LOW SOIL
QC Report #:	6582-74	QC Report #:	6582-74
Spl→Extract:	1.0416	Spl→Extract:	5.020 → 10ml
Lab Std ID:	15EBNA124 UOLOTT	Lab Std ID:	00316-3
Lab ID:	26699V4	Lab ID:	00317-13
Date Analyzed:	183	Date Extracted:	3-9-83
Circle Units:	(ug/Kg) ug/L	Date Analyzed:	3-12-83
		Circle Units:	(ug/Kg) ug/L

Volatile Compounds

2V	acrolein	54
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	24K
13V	1,1-dichloroethane	54
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	63
45V	methyl chloride	54
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

Pesticides

89P	aldrin	20UL
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100100

ORIGINAL

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: CZ761
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: 21.37%

Organics Analysis Data Sheet

Level/Matrix: Low soil
QC Report #: 6582-74
Spl→Extract: 50.5g→10ml
Lab Std ID: [illegible]

Lab ID: 25599F6
Date Extracted: 3-9-83
Date Analyzed: 3-28-83
Circle Units: (ug/Kg) ug/L

Acid Compounds

21A	2,4,6-trichlorophenol	200u
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	✓

Base/Neutral Compounds

1B	acenaphthene	200u
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	✓

Base/Neutral Compounds

42B	bis(2-chloroisopropyl)ether	200u
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	✓

U- Analyzed for but not detected

K- Detected below quantitation limit

100101

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2761
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: 21.37%

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 50.2g → 10ml
Lab Std ID: SE54SEN3594 [illegible]383

Lab ID: 25599F6
Date Extracted: 3/9/83
Date Analyzed: 3/18/83
Circle Units: ug/Kg, ug/L

Acid Compounds

benzoic acid	200u
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	200u
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaphthalene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 1.04g
Lab Std ID: BEBOWB/24 VOL Ø77
Lab ID: 25599V4
Date Analyzed: 3/8/83
Circle Units: ug/Kg, ug/L

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 5.0g → 1ml
Lab Std ID: 25598D1
Lab ID: 25599D6
Date Extracted: 3/9/83
Date Analyzed: 3/26/83
Circle Units: ug/Kg, ug/L

Volatile Compounds

acetone	5u
2-butanone	5T
carbondisulfide	5u
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin	2u

U- Analyzed for but not detected

K- Detected below quantitation limit

100102

WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number: CZ76d

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/Kg	(Surrogates only) Spike Added (ug/Kg)	% Recovery
Benzene - d6	VOA	180	240	75
1-Chloro-2-Bromopropane	VOA	240	240	100
Toluene - d8	VOA	190	240	79
2-Fluorophenol	ACID	18700	20900	89
Phenol - d5	ACID	20100	20700	97
Nitrobenzene - d5	B/N	22600	21500	105
2-Fluorobiphenyl	B/N	13200	20900	63
1,2,3,4-TCDD	TCDD	8.0	14	57 *

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/Kg)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.				
2.		*Asterisked Values are outside QC Limits		
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13				
14.				
15.				
16.				
17.				
18.				100103
19.				

17605 Fabrica Way Cerritos, California 90701 213/921-9831

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2762
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: [illegible]
Lab ID: 2559V7
Date Analyzed: 3-7-83
Circle Units: ug/Kg, (ug/L)

Level/Matrix: LOW WATER
QC Report #: 6582-73
Spl→Extract: 1L→10ml
Lab Std ID: 0032-3
Lab ID: 0034-27
Date Extracted: 3-5-83
Date Analyzed: 3-11-83
Circle Units: ug/Kg, (ug/L)

Volatile Compounds

2V	acrolein	14
3V	acrylonitrile	14
4V	benzene	3K
6V	carbon tetrachloride	14
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	
13V	1,1-dichloroethane	
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	19
29V	1,1-dichloroethylene	14
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	26
45V	methyl chloride	14
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	3K
87V	trichloroethylene	14
88V	vinyl chloride	

Pesticides

89P	aldrin	0.14
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100104

ORIGINAL (Red)

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2762
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1L→2mL
Lab Std ID: ~~5E45E5993-ANAP582~~

Lab ID: 25598F8
Date Extracted: 3-8-83
Date Analyzed: 3-17-83
Circle Units: ug/Kg, (ug/L)

Acid Compounds		
21A	2,4,6-trichlorophenol	2u
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	10u

Base/Neutral Compounds		
1B	acenaphthene	2u
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	

Base/Neutral Compounds		
42B	bis(2-chloroisopropyl)ether	2u
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected

K- Detected below quantitation limit

100105

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: e2762
Date Rec'd: 3/4/83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1l→2ml
Lab Std ID: SE54SENS593 BNAP382

Lab ID: 25598F8
Date Extracted: 3/8/83
Date Analyzed: 3/17/83
Circle Units: ug/Kg, ug/L

Acid Compounds

benzoic acid	7U
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	7U
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaphthalene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: BFBOWA122 VOL#73
Lab ID: 25598V7
Date Analyzed: 3/7/83
Circle Units: ug/Kg, ug/L

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1l→1ml
Lab Std ID: 25598D1
Lab ID: 25598D7
Date Extracted: 3/5/83
Date Analyzed: 3/20/83
Circle Units: ug/Kg, ug/L

Volatile Compounds

acetone	1K
2-butanone	9K
carbondisulfide	1U
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin 0.007U

U- Analyzed for but not detected

K- Detected below quantitation limit

100106

WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number
C2782

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/L)	(Surrogates only) Spike Added (ug/L)	% Recovery
Benzene - d6	VOA	35	50	70
1-Chloro-2-Bromopropane	VOA	42	50	84
Toluene - d8	VOA	35	50	70
2-Fluorophenol	BNA	78	101	77
Phenol - d5	BNA	64	103	62
Nitrobenzene - d5	BNA	52	101	51
2-Fluorobiphenyl	BNA	47	100	47
1,2,3,4-TCDD	TCDD	0.075	0.070	108 *

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/L)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.				
2.		* Asterisked Values are outside QC Limits.		
3.				
4.				
5.				
6.				
7.				
8.				
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13				
14.				
15.				
16.				
17.				
18.				
19.				

100107

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2763
Date Rec'd: 3-7-83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: LOW WATER
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: BFB537 V04559
Lab ID: 2560-42
Date Analyzed: 3/8/83
Circle Units: ug/Kg, (ug/L)

Level/Matrix: Low Water
QC Report #: 6582-73
Spl→Extract: 1l → 10mls
Lab Std ID: 0032-3
Lab ID: 0035-29
Date Extracted: 3-8-83
Date Analyzed: 3-11-83
Circle Units: ug/Kg, (ug/L)

Volatile Compounds

2V	acrolein	1U
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	
13V	1,1-dichloroethane	
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	9K
45V	methyl chloride	1U
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

Pesticides

89P	aldrin	0.1 U
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100108

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2763 ORIGINAL
Date Rec'd: 3-7-83 Contract #: 6582 % Moisture: N/A (Rec)

Organics Analysis Data Sheet

Level/Matrix: L.W. Lab ID: 25607F3
QC Report #: 6582-73 Date Extracted: 3-11-83
Spl→Extract: 1L→2mL Date Analyzed: 3-18-83
Lab Std ID: ~~SS6456ND595-BNAP5SH~~ Circle Units: ug/Kg, ug/L

Acid Compounds		
21A	2,4,6-trichlorophenol	2U
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	

Base/Neutral Compounds		
1B	acenaphthene	2U
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	

Base/Neutral Compounds		
42B	bis(2-chloroisopropyl)ether	2U
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected

K- Detected below quantitation limit

100109

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2763
Date Rec'd: 3-7-83 Contract #: 6582 % Moisture: N/A

ORIGINAL

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 1L → 2ml
Lab Std ID: SE54SEN3595 BNAP384

Lab ID: 25607F3
Date Extracted: 3-11-83
Date Analyzed: 3-18-83
Circle Units: ug/Kg, ug/L

Acid Compounds

benzoic acid	2U
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	2U
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaphthalene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: BFB537 UDA559
Lab ID: 25607U2
Date Analyzed: 3-8-83
Circle Units: ug/Kg, ug/L

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 1L → 1ml
Lab Std ID: 25598D8
Lab ID: 25607D2
Date Extracted: 3-8-83
Date Analyzed: 3-21-83
Circle Units: ug/Kg, ug/L

Volatile Compounds

acetone	1U
2-butanone	
carbondisulfide	
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin 0.007U

U- Analyzed for but not detected

K- Detected below quantitation limit

100110

WCTS WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number
C2763

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/L)	(Surrogates only) Spike Added (ug/L)	% Recovery
Benzene - d6	VOA	58	50	116
1-Chloro-2-Bromopropane	VOA	59	50	118
Toluene - d8	VOA	61	50	122 *
2-Fluorophenol	BNA	57	101	56
Phenol - d5	BNA	32	103	31
Nitrobenzene - d5	BNA	86	100	86
2-Fluorobiphenyl	BNA	86	101	85
1,2,3,4-TCDD	TCDD	0.059	0.070	84

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/L)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.	20 J	COLUMN ARTIFACT	BNA #473	GENERAL FIT
2.				
3.		*Asterisked Values are outside QC limits.		
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13				
14.				
15.				
16.				
17.				100122
18.				
19.				

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2767
Date Rec'd: 3-7-83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: BFB537 VOA559
Lab ID: 2560705
Date Analyzed: 3/8/83
Circle Units: ug/Kg, (ug/L)

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 1l → 10ml
Lab Std ID: 0032-3
Lab ID: 0035-33
Date Extracted: 3-8-83
Date Analyzed: 3-11-83
Circle Units: ug/Kg, (ug/L)

Volatile Compounds

2V	acrolein	1U
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	
13V	1,1-dichloroethane	
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	1D
45V	methyl chloride	1U
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

Pesticides

89P	aldrin	0.1U
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100112

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2767
Date Rec'd: 3-7-83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: L.W. Lab ID: 25607F6
QC Report #: 6582-73 Date Extracted: 3-11-83
Spl→Extract: 1L→2ml Date Analyzed: 3-18-83
Lab Std ID: SE545EN3595-BNAP384 Circle Units: ug/Kg, ug/L

Acid Compounds		
21A	2,4,6-trichlorophenol	2U
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	

Base/Neutral Compounds		
1B	acenaphthene	2U
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	

Base/Neutral Compounds		
42B	bis(2-chloroisopropyl)ether	2U
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	9K
67B	butyl benzyl phthalate	2U
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected

K- Detected below quantitation limit

100113

1/83

ORIGINA

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2767
Date Rec'd: 3-7-83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 1l → 2ml
Lab Std ID: SE54SEN5595 BNAP384

Lab ID: 25607F6
Date Extracted: 3-11-83
Date Analyzed: 3-18-83
Circle Units: ug/Kg, ug/L

Acid Compounds

benzoic acid	2U
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	2U
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaph halene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 5ml
Lab Std ID: BFB537 VOA559
Lab ID: 25607V5
Date Analyzed: 3-8-83
Circle Units: ug/Kg, ug/L

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 1l → 1ml
Lab Std ID: 25598D8
Lab ID: 25607D5
Date Extracted: 3-8-83
Date Analyzed: 3-21-83
Circle Units: ug/Kg, ug/L

Volatile Compounds

acetone	1U
2-butanone	
carbondisulfide	
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin 0.007U

U- Analyzed for but not detected

K- Detected below quantitation limit

100114

ORGANICS ANALYSIS DATA SHEET -

Sample Number
C2767

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. (ug/L)	(Surrogates only) Spike Added (ug/L)	% Recovery
Benzene - d6	VOA	55	50	110
1-Chloro-2-Bromopropane	VOA	50	50	100
Toluene - d8	VOA	56	50	112
2-Fluorophenol	ACID	87	101	86
Phenol - d5	ACID	51	103	50
Nitrobenzene - d5	B/N	103	100	103
2-Fluorobiphenyl	B/N	100	101	99
1,2,3,4-TCDD	TCDD	0.053	0.070	76

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/l)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (specify)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				100215
18.				
19.				

ORIGINAL

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2768
Date Rec'd: 3/7/83 Contract #: 6582 % Moisture: 27.59%

Organics Analysis Data Sheet

Level/Matrix: LOW SOIL
QC Report #: 6582-74
Spl→Extract: 1.0086
Lab Std ID: BFBOWA124 VOL077
Lab ID: 25608V2
Date Analyzed: 3/8/83
Circle Units: ug/Kg, ug/L

Level/Matrix: LS
QC Report #: 6582-74
Spl→Extract: 5.01g → 10mls
Lab Std ID: 0036-3
Lab ID: 0038-15
Date Extracted: 3-9-83
Date Analyzed: 3-12-83
Circle Units: ug/Kg, ug/L

Volatile Compounds

2V	acrolein	5U
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	16K
13V	1,1-dichloroethane	5U
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	6B
45V	methyl chloride	5U
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

Pesticides

89P	aldrin	20U
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100116

ORIGINAL

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2768
Date Rec'd: 3/7/83 Contract #: 6582 % Moisture: 27.5%

Organics Analysis Data Sheet

Level/Matrix: Low soil
QC Report #: 6582-74
Spl→Extract: 50.19→[illegible]
Lab Std ID: [illegible]

Lab ID: 25608F1
Date Extracted: 3-9-83
Date Analyzed: 3-[illegible]-83
Circle Units: ug/Kg, ug/L

Acid Compounds

21A	2,4,6-trichlorophenol	200U
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	

Base/Neutral Compounds

1B	acenaphthene	200U
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	

Base/Neutral Compounds

42B	bis(2-chloroisopropyl)ether	200U
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected

K- Detected below quantitation limit

100117

ORIGINAL

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2768
Date Rec'd: 3/7/83 Contract #: 6582 % Moisture: 27.59%

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 50.1g → 10ml
Lab Std ID: SE54SEWS596 BNAP385

Lab ID: 25608F1
Date Extracted: 3/9/83
Date Analyzed: 3/18/83
Circle Units: ug/Kg, ug/L

Acid Compounds

benzoic acid	200u
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	200u
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaphthalene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 1.00g
Lab Std ID: BFBOWA124 VOL077
Lab ID: 25608V2
Date Analyzed: 3/8/83
Circle Units: ug/Kg, ug/L

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 5.0g → 1ml
Lab Std ID: 25608D1
Lab ID: 25608D3
Date Extracted: 3/9/83
Date Analyzed: 3/21/83
Circle Units: ug/Kg, ug/L

Volatile Compounds

acetone	5u
2-butanone	5u
carbondisulfide	5u
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin	2u

U- Analyzed for but not detected

K- Detected below quantitation limit

100118

ORIGINAL (Red)

WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number
C2768

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/Kg	(Surrogates only) Spike Added (ug/Kg)	% Recovery
Benzene - d6	VOA	220	250	88
1-Chloro-2-Bromopropane	VOA	300	250	120
Toluene - d8	VOA	220	250	88
2-Fluorophenol	ACID	14000	20900	67
Phenol - d5	ACID	17900	20700	86
Nitrobenzene - d5	B/N	21500	21500	100
2-Fluorobiphenyl	B/N	13400	20900	64
1,2,3,4-TCDD	TCDD	11	14	81

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/Kg)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13				
14.				
15.				
16.				
17.				100119
18.				
19.				

17605 Fabrica Way Cerritos, California 90701 213/921-9831

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2769
Date Rec'd: 3-7-83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: LW
QC Report #:
Spl→Extract: 5ml
Lab Std ID: BEB537 VOAS59
Lab ID: 2560746
Date Analyzed: 3/8/83
Circle Units: ug/Kg, (ug/L)

Level/Matrix: LW
QC Report #:
Spl→Extract: 1l → 10mls
Lab Std ID: 0032-3
Lab ID: 0035-34
Date Extracted: 3-8-83
Date Analyzed: 3-11-83
Circle Units: ug/Kg, (ug/L)

Volatile Compounds

2V	acrolein	14
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	
13V	1,1-dichloroethane	
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	9K
45V	methyl chloride	14
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

Pesticides

89P	aldrin	0.1U
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	0.2**
103P	beta-BHC	0.1U
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100120

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2769
Date Rec'd: 3-7-83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet

Level/Matrix: low water
QC Report #:
Spl→Extract: 1 l → 2 ml
Lab Std ID: SES4SEN3595-BNAP384

Lab ID: 25607F7
Date Extracted: 3-13-83
Date Analyzed: 3-18-83
Circle Units: ug/Kg, ug/L

Acid Compounds

21A	2,4,6-trichlorophenol	2u
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	10K
65A	phenol	2u

Base/Neutral Compounds

1B	acenaphthene	2u
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	2u
20B	2-chloronaphthalene	2u
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	

Base/Neutral Compounds

42B	bis(2-chloroisopropyl)ether	2u
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	4K
67B	butyl benzyl phthalate	2u
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected

K- Detected below quantitation limit

100121

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2769
Date Rec'd: 3-7-83 Contract #: 6582 % Moisture: N/A

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 1ℓ→2mℓ
Lab Std ID: SE546ENS595 BNAPSB4

Lab ID: 25607F7
Date Extracted: 3-13-83
Date Analyzed: 3-18-83
Circle Units: ug/Kg, ug/L

Acid Compounds

benzoic acid	2u
2-methylphenol	
4-methylphenol	
2,4,5-trichlorophenol	

Base/Neutral Compounds

aniline	2u
benzylalcohol	
4-chloroaniline	
dibenzofuran	
2-methylnaphthalene	
2-nitroaniline	
3-nitroaniline	
4-nitroaniline	

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 5mℓ
Lab Std ID: BFB537 VDA559
Lab ID: 25607V6
Date Analyzed: 3-8-83
Circle Units: ug/Kg, ug/L

Level/Matrix: LW
QC Report #: 6582-73
Spl→Extract: 1ℓ→1mℓ
Lab Std ID: 25598D8
Lab ID: 25607D6
Date Extracted: 3-8-83
Date Analyzed: 3-21-83
Circle Units: ug/Kg, ug/L

Volatile Compounds

acetone	190
2-butanone	14
carbondisulfide	
2-hexanone	
4-methyl-2-pentanone	
styrene	
vinyl acetate	
o-xylene	

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin	0.007U

U- Analyzed for but not detected

K- Detected below quantitation limit

100122

ORGANICS ANALYSIS DATA SHEET -

Sample Number
C2769

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. (ug/L)	(Surrogates only) Spike Added (ug/L)	% Recovery
Benzene - d6	VOA	61	50	122
1-Chloro-2-Bromopropane	VOA	46	50	92
Toluene - d8	VOA	63	50	126
2-Fluorophenol	ACID	67	101	66
Phenol - d5	ACID	95	103	92
Nitrobenzene - d5	B/N	24	100	ø *
2-Fluorobiphenyl	B/N	67	101	66
1,2,3,4-TCDD	TCDD	0.029	0.070	41 *

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/l)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (specify)
1.	40J	UNKNOWN	VOA # 394	NO GOOD FIT
2.	30J	BENZALDEHYDE	BNA #458	985
3.	100J	UNKNOWN	BNA #541	NO GOOD FIT
4.	80J	UNKNOWN	BNA #797	NO GOOD FIT
5.	20J	UNKNOWN	BNA #854	NO GOOD FIT
6.	100J	4(TETRAMETHYLBUTYL)PHENOL	BNA #946	982
7.	30J	UNKNOWN	BNA #960	NO GOOD FIT
8.	30J	4-HYDROXY-3,5-DIMETHOXY BENZALDEHYDE	BNA #985	972
9.	40J	1(4-HYDROXY-3,5-DIMETHOXYPHENYL)ETHANONE	BNA #1032	995
10.	50J	UNKNOWN	BNA #1084	NO GOOD FIT
11.	200J	PALMITOLEIC ACID	BNA #1155	990
12.	300J	PALMITIC ACID	BNA #1164	983
13.	70J	HYDROCARBON	BNA #1262	GENERAL FIT
14.	30J	UNKNOWN	BNA #1416	NO GOOD FIT
15.	100J	HYDROCARBON	BNA #1519	GENERAL FIT
16.	200J	HYDROCARBON	BNA #1602	GENERAL FIT
17.	100J	HYDROCARBON	BNA #1681	GENERAL FIT 100123
18.				
19.				

*Asterisked Values are outside QC limits.

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2770
Date Rec'd: 3/7/83 Contract #: 6582 % Moisture: 100%

Organics Analysis Data Sheet

Level/Matrix: LOW SOIL
QC Report #: 6582-74
Spl→Extract: 1.0086
Lab Std ID: BFBOWA124 VOL077
Lab ID: 25608V3
Date Analyzed: 3/8/83
Circle Units: ug/Kg ug/L

Level/Matrix: LS
QC Report #: 6582-74
Spl→Extract: 5.00g→10mls
Lab Std ID: 0036-3
Lab ID: 0038-16
Date Extracted: 3-9-83
Date Analyzed: 3-12-83
Circle Units: ug/Kg ug/L

Volatile Compounds

2V	acrolein	54
3V	acrylonitrile	
4V	benzene	
6V	carbon tetrachloride	
7V	chlorobenzene	
10V	1,2-dichloroethane	
11V	1,1,1-trichloroethane	8K
13V	1,1-dichloroethane	54
14V	1,1,2-trichloroethane	
15V	1,1,2,2-tetrachloroethane	
16V	chloroethane	
17V	bis(chloromethyl)ether	
19V	2-chloroethylvinyl ether	
23V	chloroform	
29V	1,1-dichloroethylene	
30V	1,2-trans-dichloroethylene	
32V	1,2-dichloropropane	
33V	1,3-dichloropropane	
38V	ethylbenzene	
44V	methylene chloride	78
45V	methyl chloride	54
46V	methyl bromide	
47V	bromoform	
48V	dichlorobromomethane	
49V	trichlorofluoromethane	
50V	dichlorodifluoromethane	
51V	chlorodibromomethane	
85V	tetrachloroethylene	
86V	toluene	
87V	trichloroethylene	
88V	vinyl chloride	

Pesticides

89P	aldrin	20U
90P	dieldrin	
91P	chlordane	
92P	4,4'-DDT	
93P	4,4'-DDE	
94P	4,4'-DDD	
95P	alpha-endosulfan	
96P	beta-endosulfan	
97P	endosulfan sulfate	
98P	endrin	
99P	endrin aldehyde	
100P	heptachlor	
101P	heptachlor epoxide	
102P	alpha-BHC	
103P	beta-BHC	
104P	gamma-BHC	
105P	delta-BHC	
106P	PCB-1242	
107P	PCB-1254	
108P	PCB-1221	
109P	PCB-1232	
110P	PCB-1248	
111P	PCB-1260	
112P	PCB-1016	
113P	toxaphene	

U- Analyzed for but not detected
K- Detected below quantitation limit
** Detected below GC/MS detection limit

100124

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2770
Date Rec'd: 3/7/83 Contract #: 6582 % Moisture: 100%

Organics Analysis Data Sheet

Level/Matrix: Low soil
QC Report #: 6582-74
Spl→Extract: 50g→[illegible]
Lab Std ID: [illegible]

Lab ID: 25208F2
Date Extracted: 3-9-83
Date Analyzed: 3-18-83
Circle Units: ug/Kg, ug/L

Acid Compounds

21A	2,4,6-trichlorophenol	200u
22A	p-chloro-m-cresol	
24A	2-chlorophenol	
31A	2,4,-dichlorophenol	
34A	2,4-dimethylphenol	
57A	2-nitrophenol	
58A	4-nitrophenol	
59A	2,4-dinitrophenol	
60A	4,6-dinitro-o-cresol	
64A	pentachlorophenol	
65A	phenol	

Base/Neutral Compounds

1B	acenaphthene	200u
5B	benzidine	
8B	1,2,4-trichlorobenzene	
9B	hexachlorobenzene	
12B	hexachloroethane	
18B	bis(2-chloroethyl)ether	
20B	2-chloronaphthalene	
25B	1,2-dichlorobenzene	
26B	1,3-dichlorobenzene	
27B	1,4-dichlorobenzene	
28B	3,3'-dichlorobenzidine	
35B	2,4-dinitrotoluene	
36B	2,6-dinitrotoluene	
37B	1,2-diphenylhydrazine (as azobenzene)	
39B	fluoranthene	
40B	4-chlorophenyl phenyl ether	
41B	4-bromophenyl phenyl ether	

Base/Neutral Compounds

42B	bis(2-chloroisopropyl)ether	200u
43B	bis(2-chloroethoxy)methane	
52B	hexachlorobutadiene	
53B	hexachlorocyclopentadiene	
54B	isophorone	
55B	naphthalene	
56B	nitrobenzene	
61B	N-nitrosodimethylamine	
62B	N-nitrosodiphenylamine	
63B	N-nitrosodi-n-propylamine	
66B	bis(2-ethylhexyl)phthalate	
67B	butyl benzyl phthalate	
68B	di-n-butyl phthalate	
69B	di-n-octyl phthalate	
70B	diethyl phthalate	
71B	dimethyl phthalate	
72B	benzo(a)anthracene	
73B	benzo(a)pyrene	
74B	3,4-benzofluoranthene	
75B	benzo(k)fluoranthene	
76B	chrysene	
77B	acenaphthylene	
78B	anthracene	
79B	benzo(ghi)perylene	
80B	fluorene	
81B	phenanthrene	
82B	dibenzo(a,h)anthracene	
83B	indeno(1,2,3-cd)pyrene	
84B	pyrene	

U- Analyzed for but not detected

K- Detected below quantitation limit

100125

ORIGINAL

Case #/SAS #: 1541 Laboratory: WCTS, Inc. Sample #: C2770
Date Rec'd: 3/7/83 Contract #: 6582 % Moisture: 100%

Organics Analysis Data Sheet
Non-Priority Pollutant HSL Compounds and Dioxin

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 50.0g → 10ml
Lab Std ID: SE54SENS596BNAP385

Lab ID: 25608F2
Date Extracted: 3/9/83
Date Analyzed: 3/18/83
Circle Units: ug/Kg ug/L

Acid Compounds

benzoic acid	200u
2-methylphenol	↓
4-methylphenol	↓
2,4,5-trichlorophenol	↓

Base/Neutral Compounds

aniline	200u
benzylalcohol	↓
4-chloroaniline	↓
dibenzofuran	↓
2-methylnaphthalene	↓
2-nitroaniline	↓
3-nitroaniline	↓
4-nitroaniline	↓

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 1.0089
Lab Std ID: BF80WA24VOL077
Lab ID: 25608V3
Date Analyzed: 3/18/83
Circle Units: ug/Kg ug/L

Level/Matrix: Low Soil
QC Report #: 6582-74
Spl→Extract: 5.0g → 1ml
Lab Std ID: 25608D1
Lab ID: 25608D5
Date Extracted: 3/9/83
Date Analyzed: 3/21/83
Circle Units: ug/Kg ug/L

Volatile Compounds

acetone	54
2-butanone	43
carbondisulfide	54
2-hexanone	↓
4-methyl-2-pentanone	↓
styrene	↓
vinyl acetate	↓
o-xylene	↓

Dioxin

129B 2,3,7,8-tetrachlorodibenzo-p-dioxin	2u

U- Analyzed for but not detected

K- Detected below quantitation limit

100126

WEST COAST TECHNICAL SERVICE INC.

Organics Analysis Data Sheet
Page 3

QC Report No: _____

Sample Number
CZTTD

A. SURROGATE SPIKE RESULTS

COMPOUND	Fraction	Conc. ug/Kg	(Surrogates only) Spike Added (ug/Kg)	% Recovery
Benzene - d6	VOA	220	250	88
1-Chloro-2-Bromopropane	VOA	260	250	104
Toluene - d8	VOA	210	250	84
2-Fluorophenol	ACID	25400	20900	122 *
Phenol - d5	ACID	26200	20700	127 *
Nitrobenzene - d5	B/N	23600	21500	110
2-Fluorobiphenyl	B/N	17600	20900	89
1,2,3,4-TCDD	TCDD	6.3	14	45 *

B. TENTATIVELY IDENTIFIED COMPOUNDS

	CONC. (ug/Kg)	COMPOUND NAME	FRACTION	% Maximum Score Attained Mass Matching Routine: FIT (Specify)
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13				
14.				
15.				
16.				
17.				100127
18.				
19.				

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2090 FTS 8-557-2090

Sample No.
MC0344

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS CASE NO. 1541
LAB SAMPLE ID. NO. P189 QC REPORT NO. P-10

TASK 1 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum	2200	11.	Manganese	54
2.	Chromium	<10	12.	Zinc	<10
3.	Barium	<100	13.	Boron	1200
4.	Beryllium	<5	14.	Vanadium	<200
5.	Cadmium	<1			
6.	Cobalt	<50			mg/l or mg/kg (circle one)
7.	Copper	99			
8.	Iron	1500	15.	Calcium	
9.	Lead	<5	16.	Magnesium	
10.	Nickel	<40	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Arsenic	<10	5.	Mercury	<0.2
2.	Antimony	<20	6.	Tin	<20
3.	Selenium	4.7	7.	Silver	<10
4.	Thallium	<10			

TASK 3 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<10
3.	Sulfide	NR

COMMENTS: low water

100728

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
MC0451

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS
CASE NO. 1541
LAB SAMPLE ID. NO. P190
QC REPORT NO. as ~~P-10~~ P-10

TASK 1 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum	<200	11.	Manganese	98
2.	Chromium	<10	12.	Zinc	<10
3.	Barium	<100	13.	Boron	780
4.	Beryllium	<5	14.	Vanadium	<200
5.	Cadmium	2.5 ~~<10~~			
6.	Cobalt	<50			mg/l or mg/l (circle one)
7.	Copper	110			
8.	Iron	1300	15.	Calcium	
9.	Lead	<5	16.	Magnesium	
10.	Nickel	<40	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Arsenic	<10	5.	Mercury	<0.2
2.	Antimony	<20	6.	Tin	<20
3.	Selenium	2.3	7.	Silver	<10
4.	Thallium	<10			

TASK 3 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<10
3.	Sulfide	NR

COMMENTS: low water

100129

ORIGINAL

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2090 FTS 8-557-2090

Sample No.
mc0452

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS CASE NO. 1541

LAB SAMPLE ID. NO. P191 QC REPORT NO. P-10

TASK 1 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum	1900	11.	Manganese	130
2.	Chromium	<10	12.	Zinc	84
3.	Barium	<100	13.	Boron	620
4.	Beryllium	<5	14.	Vanadium	<200
5.	Cadmium	<1			
6.	Cobalt	<50			mg/l or mg/kg (circle one)
7.	Copper	120			
8.	Iron	790	15.	Calcium	
9.	Lead	<5	16.	Magnesium	
10.	Nickel	<40	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Arsenic	<10	5.	Mercury	<0.2
2.	Antimony	<20	6.	Tin	<20
3.	Selenium	<2	7.	Silver	<10
4.	Thallium	<10			

TASK 3 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<10
3.	Sulfide	NR

COMMENTS: low water

100130

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
MC0460

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS
CASE NO. 1541
LAB SAMPLE ID. NO. P204
QC REPORT NO. P-10

TASK 1 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum	640	11.	Manganese	7.3
2.	Chromium	<10	12.	Zinc	<10
3.	Barium	<100	13.	Boron	440
4.	Beryllium	<5	14.	Vanadium	<200
5.	Cadmium	<1			
6.	Cobalt	<50			mg/l or mg/kg (circle one)
7.	Copper	<50			
8.	Iron	500	15.	Calcium	
9.	Lead	<5	16.	Magnesium	
10.	Nickel	<40	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Arsenic	<10	5.	Mercury	<0.2
2.	Antimony	<20	6.	Tin	<20
3.	Selenium	<2	7.	Silver	<10
4.	Thallium	<10			

TASK 3 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<10
3.	Sulfide	NR

COMMENTS: low water

100131

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
mc0461

APPROVED

INORGANICS ANALYSIS DATA SHEET

LABORATORY NAME CAL LABS CASE NO. 1541
LAB SAMPLE ID. NO. P205 QC REPORT NO. P-10

TASK 1 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)			~~ug/l~~ or mg/kg (circle one)
1.	Aluminum	315	11.	Manganese	15
2.	Chromium	<0.5	12.	Zinc	4.8
3.	Barium	<5	13.	Boron	20
4.	Beryllium	<0.25	14.	Vanadium	<10
5.	Cadmium	<0.013			
6.	Cobalt	<2.5			mg/l or mg/kg (circle one)
7.	Copper	<2.5			
8.	Iron	500	15.	Calcium	
9.	Lead	2.8	16.	Magnesium	
10.	Nickel	<2	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)			~~ug/l~~ or mg/kg (circle one)
1.	Arsenic	<0.5	5.	Mercury	<0.01
2.	Antimony	<1	6.	Tin	<1
3.	Selenium	<0.1	7.	Silver	<0.5
4.	Thallium	<0.5			

TASK 3 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<1
3.	Sulfide	NR

COMMENTS: low soil

100132

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
MC0462

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS
CASE NO. 1541
LAB SAMPLE ID. NO. P-2016
QC REPORT NO. P-10

TASK 1 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum	400	11.	Manganese	40
2.	Chromium	<10	12.	Zinc	<10
3.	Barium	<100	13.	Boron	120
4.	Beryllium	<5	14.	Vanadium	<200
5.	Cadmium	<1			
6.	Cobalt	<50			mg/l or mg/kg (circle one)
7.	Copper	<50			
8.	Iron	460	15.	Calcium	
9.	Lead	<5	16.	Magnesium	
10.	Nickel	<40	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Arsenic	<10	5.	Mercury	<0.2
2.	Antimony	<20	6.	Tin	<20
3.	Selenium	<2	7.	Silver	<10
4.	Thallium	<10			

TASK 3 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<10
3.	Sulfide	NR

COMMENTS: low water

100133

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
MC0463

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS
CASE NO. 1541
LAB SAMPLE ID. NO. P207
QC REPORT NO. P-10

TASK 1 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)			~~ug/l~~ or mg/kg (circle one)
1.	Aluminum	600	11.	Manganese	3.8
2.	Chromium	2.8	12.	Zinc	1.4
3.	Barium	<5	13.	Boron	80
4.	Beryllium	<0.15	14.	Vanadium	<20
5.	Cadmium	<0.05			
6.	Cobalt	<2.5			mg/l or mg/kg (circle one)
7.	Copper	5.0			
8.	Iron	725	15.	Calcium	
9.	Lead	0.32	16.	Magnesium	
10.	Nickel	<2	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)			~~ug/l~~ or mg/kg (circle one)
1.	Arsenic	<0.5	5.	Mercury	<0.21
2.	Antimony	<1	6.	Tin	<1
3.	Selenium	<0.1	7.	Silver	<0.5
4.	Thallium	<0.5			

TASK 3 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<1
3.	Sulfide	NR

COMMENTS: low soil

100134

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
MC0464

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS CASE NO. 1541
LAB SAMPLE ID. NO. P208 QC REPORT NO. P-10

TASK 1 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum	<200	11.	Manganese	<15
2.	Chromium	<10	12.	Zinc	<10
3.	Barium	<100	13.	Boron	460
4.	Beryllium	<5	14.	Vanadium	<200
5.	Cadmium	<1			
6.	Cobalt	<50			mg/l or mg/kg (circle one)
7.	Copper	<50			
8.	Iron	<50	15.	Calcium	
9.	Lead	<5	16.	Magnesium	
10.	Nickel	<40	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Arsenic	<10	5.	Mercury	<0.2
2.	Antimony	<20	6.	Tin	<20
3.	Selenium	<2	7.	Silver	<10
4.	Thallium	<10			

TASK 3 (Elements to be identified and measured.)

		ug/l or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<10
3.	Sulfide	NR

COMMENTS: low water · blank

100135

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
MC 0465

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS
CASE NO. 1541
LAB SAMPLE ID. NO. P211
QC REPORT NO. P-~~1412~~ 35 10

TASK 1 (Elements to be identified and measured.)

		ug/l or ~~mg/kg~~ (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum	<200	11.	Manganese	180
2.	Chromium	<10	12.	Zinc	25
3.	Barium	<100	13.	Boron	430
4.	Beryllium	<5	14.	Vanadium	<200
5.	Cadmium	<1			
6.	Cobalt	<50			mg/l or mg/kg (circle one)
7.	Copper	<50			
8.	Iron	2000	15.	Calcium	
9.	Lead	<5	16.	Magnesium	
10.	Nickel	<40	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		ug/l or ~~mg/kg~~ (circle one)			ug/l or ~~mg/kg~~ (circle one)
1.	Arsenic	<10	5.	Mercury	<0.2
2.	Antimony	<20	6.	Tin	<20
3.	Selenium	<2	7.	Silver	<10
4.	Thallium	<10			

TASK 3 (Elements to be identified and measured.)

		ug/l or ~~mg/kg~~ (circle one)
1.	Ammonia	NR
2.	Cyanide	<10
3.	Sulfide	NR

COMMENTS: low water

100136

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
mc0469

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS CASE NO. 1541
LAB SAMPLE ID. NO. P215 QC REPORT NO. P-~~48~~ 10

TASK 1 (Elements to be identified and measured.)

		ug/l or ~~mg/kg~~ (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum	250	11.	Manganese	56
2.	Chromium	<10	12.	Zinc	13
3.	Barium	<100	13.	Boron	460
4.	Beryllium	<5	14.	Vanadium	<200
5.	Cadmium	<1			
6.	Cobalt	<50			mg/l or mg/kg (circle one)
7.	Copper	<50			
8.	Iron	350	15.	Calcium	
9.	Lead	<5	16.	Magnesium	
10.	Nickel	<40	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		ug/l or ~~mg/kg~~ (circle one)			ug/l or ~~mg/kg~~ (circle one)
1.	Arsenic	<10	5.	Mercury	<0.2 ~~<0.02~~
2.	Antimony	<20	6.	Tin	<30
3.	Selenium	<2	7.	Silver	<10
4.	Thallium	<10			

TASK 3 (Elements to be identified and measured.)

		ug/l or ~~mg/kg~~ (circle one)
1.	Ammonia	NR
2.	Cyanide	<10
3.	Sulfide	NR

COMMENTS: low water

100137

ORIGINAL
(Red)

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
MC0470

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS CASE NO. 1541
LAB SAMPLE ID. NO. P2160 QC REPORT NO. P-12 10

TASK 1 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)			~~ug/l~~ or mg/kg (circle one)
1.	Aluminum	330	11.	Manganese	54
2.	Chromium	<0.5	12.	Zinc	3.3
3.	Barium	7.0	13.	Boron	18
4.	Beryllium	<0.31	14.	Vanadium	<20
5.	Cadmium	<0.05			
6.	Cobalt	<2.1			~~mg/l~~ or mg/kg (circle one)
7.	Copper	<2.1			
8.	Iron	720	15.	Calcium	
9.	Lead	0.8	16.	Magnesium	
10.	Nickel	<2	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)			~~ug/l~~ or mg/kg (circle one)
1.	Arsenic	<0.5	5.	Mercury	<0.01
2.	Antimony	1.7	6.	Tin	<1
3.	Selenium	<0.1	7.	Silver	<0.5
4.	Thallium	<0.5			

TASK 3 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<1
3.	Sulfide	NR

COMMENTS: low soil

100138

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
mc0471

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS
CASE NO. 1541
LAB SAMPLE ID. NO. P217
QC REPORT NO. P-~~12~~ 10

TASK 1 (Elements to be identified and measured.)

		ug/l or ~~mg/kg~~ (circle one)			ug/l or ~~mg/kg~~ (circle one)
1.	Aluminum	460	11.	Manganese	11000
2.	Chromium	<10	12.	Zinc	150
3.	Barium	2100	13.	Boron	960
4.	Beryllium	<5	14.	Vanadium	<200
5.	Cadmium	<1			
6.	Cobalt	<50			mg/l or mg/kg (circle one)
7.	Copper	<50			
8.	Iron	102000 ~~2550~~	15.	Calcium	
9.	Lead	<5	16.	Magnesium	
10.	Nickel	<40	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		ug/l or ~~mg/kg~~ (circle one)			ug/l or ~~mg/kg~~ (circle one)
1.	Arsenic	<10	5.	Mercury	<0.2
2.	Antimony	<20	6.	Tin	<20
3.	Selenium	<2	7.	Silver	<10
4.	Thallium	<10			

TASK 3 (Elements to be identified and measured.)

		ug/l or ~~mg/kg~~ (circle one)
1.	Ammonia	NR
2.	Cyanide	<10
3.	Sulfide	NR

COMMENTS: low water

100139

US ENVIRONMENTAL PROTECTION AGENCY
HWI Sample Management Office
P.O. Box 818 – Alexandria, Virginia 22313
703/557-2490 FTS 8-557-2490

Sample No.
MC0472
AAE0478

INORGANICS ANALYSIS DATA SHEET

APPROVED

LABORATORY NAME CAL LABS
CASE NO. 1541
LAB SAMPLE ID. NO. P218
QC REPORT NO. P-AE 10

TASK 1 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)			ug/l or mg/kg (circle one)
1.	Aluminum	<10	11.	Manganese	<0.75
2.	Chromium	<0.5	12.	Zinc	<0.5
3.	Barium	<5	13.	Boron	19
4.	Beryllium	<0.25	14.	Vanadium	<20
5.	Cadmium	<0.05			
6.	Cobalt	<2.5 ~~<0~~			mg/l or mg/kg (circle one)
7.	Copper	<2.5			
8.	Iron	4.5	15.	Calcium	
9.	Lead	0.34	16.	Magnesium	
10.	Nickel	<2	17.	Sodium	

TASK 2 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)			~~ug/l~~ or mg/kg (circle one)
1.	Arsenic	<0.5	5.	Mercury	<0.01
2.	Antimony	<1	6.	Tin	<1
3.	Selenium	<0.1	7.	Silver	<0.5
4.	Thallium	<0.5			

TASK 3 (Elements to be identified and measured.)

		~~ug/l~~ or mg/kg (circle one)
1.	Ammonia	NR
2.	Cyanide	<1
3.	Sulfide	NR

COMMENTS: Soil blank

100140

Project Name Cokers Landfill No. 1
TDD No. F3-8311-36 B
EPA No. _____

QUALITY ASSURANCE REVIEW OF
ORGANIC ANALYSIS LAB DATA PACKAGE

CASE No. 1541
Contract No. 68016582 (Mod. 2)
Laboratory WCTS
Applicable IFB No. WA-82-H055 (Am. 1)

Applicable Sample No's: C2748-C2770
Region III (23 samples)
Reviewer R. Slobada
Review Date 5/31/83

The organic analytical data for this case has been reviewed.
The quality assurance evaluation is summarized in the following table:

REVIEWER'S EVALUATION*	FRACTION				
	Volatiles	Acids	Base/Neutrals	PCB/Pest.	TCDD
Acceptable					✓
Acceptable w/ exceptions	✓ 1	✓ 2	✓ 1	✓ 3	
Questionable					
Unacceptable					

* Definitions of the evaluation score categories are listed on next page.

This evaluation was based upon an analysis of the review items indicated below:

- ☑ Data completeness
- ☑ Blank analysis results
- ☑ Surrogate spike results
- ☑ Matrix spike results
- ☑ Duplicate analysis results
- ☑ Evaluation of confirmations
- ☐ Target compound matching quality
- ☑ Tentatively identified compounds
- ☐ Chromatographic sensitivity checks
- ☐ DFTPP and BFB spectrum tune results
- ☐ Standards
- ☐ Calibration check standards
- ☐ Internal standards performance

Data review forms are attached for each of the review items indicated above.

COMMENTS: 1 See Blank Analysis Results 2 See Surrogate recovery results. 3 See evaluation of Confirmations.

100142

(Red)

DATA EVALUATION SCORE CATEGORIES

ACCEPTABLE: Data is within established control limits, or the data which is outside established control limits does not affect the validity of the analytical results.

ACCEPTABLE WITH EXCEPTION(S): Data is not completely within established control limits. The deficiences are identified and specific data is still valid, given certain qualifications which are listed below.

QUESTIONABLE: Data is not within established control limits. The deficiences bring the validity of the entire data set into question. However, the data validity is neither proved nor disproved by the available information.

UNACCEPTABLE: Data is not within established control limits. The deficiences imply the results are not meaningful.

100142

DATA COMPLETENESS	CONC./MATRIX	LO/AQ								ORIGINAL			
ACTION	TRAFFIC REPT. #	C2748	-49	-50	-51	-52	-53	-54	-55	-56	-57	-58	-5
	LAB I.D. #	85591 F2	-591 F3	-591	✓								
/N:	RUN DATE/TIME	✓		3/17 11:25									
	TARGET CMPD. TAB.	✓											
	TARGET CMPD. D.L.	✓											
	TENT. I.D. CMPD. TAB.	✓											
	SURR. REC.	✓											
	GC SCREEN TAB.	✓											
	GC/MS CHROMATOGRAMS	✓											
	TARGET CMPD. QUAN. LIST	✓											
	TARGET CMPD. SPECTRA	✓											
	TENT. I.D. CMPD. Q.L.	MS											
	TENT. CMPD. LIB. SRCH.	✓											
	CHRO./SENS. CHECKS	✓											
	BFB/DFTPP TUNE DATA	✓											
	I.S. AREAS CHARTS	✓											
	I.S. REL. RESP. FORM	MS											
	PER SHIFT CALIB. CHK.	✓											
	3-POINT CALIBRATIONS	✓											
	FSCC INITIAL CALIB.	MS											
	FSCC ONGOING QC	✓											
	STANDARD CHRO.	✓		[illegible]									
	TARGET CMPD. REF. SPEC.	NA											
	SAMPLE/FIELD BLANK												
	METHOD/INSTR. BLANK												
	LAB DUPLICATE												
	FIELD DUP./REP.												
	MAT. SPK/M. STD.												
EST.:	PEST. TAB.	✓											
	PEST. D.L. TAB.	✓											
	PEST. CHRO.	✓											
	PEST. STD. CHRO.	✓											
	PEST. STD. I.D.	✓											
	2nd COL. CONF.	✓											
	GC/MS CONF.												
	PEST. DUP.												
	PEST. SPK.												
	PEST. BLK.												
CDD	TCDD TAB.	✓											
	TCDD D.L.	✓											
	TCDD EICP	✓											

100143

ORIGINAL

DATA COMPLETENESS	Conc./MATRIX	LO AQ	SOL	AQ →			SOL	AQ	AQ	SOL	AQ	SOL (Red)	
ACTION	TRAFFIC REPT.#	-2760	-61	-62	-63	-64	-65	-66	-67	-68	-69	-70	
	LAB I.D. #	✓											
1/8/N:	RUN DATE/TIME	✓								1/13 14:30	3/14 15:10	✓	
	TARGET CMPD. TAB.	✓											
	TARGET CMPD. D.L.	✓											
	TENT. I.D. CMPD. TAB.	✓											
	SURR. REC.	✓											
	GC SCREEN TAB.	✓											
	GC/MS CHROMATOGRAMS	✓											
	TARGET CMPD. QUAN. LIST	✓											
	TARGET CMPD. SPECTRA	✓											
	TENT. I.D. CMPD. Q.L.	MS											
	TENT. CMPD. LIB. SRCH.	✓											
	CHRO./SENS. CHECKS	✓											
	BFB/DFTPP TUNE DATA	✓											
	I.S. AREAS CHARTS	✓											
	I.S. REL. RESP. FORM	MS											
	PER SHIFT CALIB. CHK.	✓											
	3-POINT CALIBRATIONS	✓											
	FSCC INITIAL CALIB.	MS											
	FSCC ONGOING QC	✓											
	STANDARD CHRO.	✓											
	TARGET CMPD. REF. SPEC	NA											
	SAMPLE/FIELD BLANK			✓								✓	
	METHOD/INSTR. BLANK												✓
	LAB DUPLICATE												✓
	FIELD DUP./REP.												
	MAT. SPK/M. STD.												✓
EST.:	PEST. TAB.	✓											
	PEST. D.L. TAB.	✓											
	PEST. CHRO.	✓											
	PEST. STD. CHRO.	✓											
	PEST. STD. I.D.	✓											
	2nd COL. CONF.	✓											
	GC/MS CONF.												
	PEST. DUP.												✓
	PEST. SPK.												✓
	PEST. BLK.					100144							✓
TCDD	TCDD TAB.	✓											
	TCDD D.L.	✓											
	TCDD EICP	✓											

ORIGINAL

DATA COMPLETENESS	CONC./MATRIX	Lo AQ	→	→	→					→	Low Sol.	Low AQ	Low Sol.
ACTION	TRAFFIC REPT. #	C2748	-49	-50	-51	-52	-53	-54	-55	-56	-57	-58	-5
	LAB ID #	25591 V3	-591 V1	-591	1								
DA:	RUN DATE/TIME	✓			3/7 13:26								
	TARGET CMPD. TAB.	✓											
	TARGET CMPD. D.L.	✓											
	TENT. I.D. CMPD. TAB.	✓											
	SURR. REC.	✓											
	GC SCREEN TAB.	✓											
	GC/MS CHROMATOGRAMS	✓											
	TARGET CMPD. QUAN. LIST	✓											
	TARGET CMPD. SPECTRA	✓											
	TENT. I.D. CMPD. Q.L.	MS											
	TENT. CMPD. LIB. SRCH.	✓											
	CHRO./SENS. CHECKS	NA											
	BFB/DFTPP TUNE DATA	✓											
	I.S. AREAS CHARTS	✓											
	I.S. REL. RESP. FORM	MS											
	PER SHIFT CALIB. CHK.	✓											
	3-POINT CALIBRATIONS	✓											
	FSCC INITIAL CALIB.	NA											
	FSCC ONGOING QC	NA											
	STANDARD CHRO.	✓			3/7 9:43 3/7 10:49								
	TARGET CMPD. REF. SPEC.	NA											
	SAMPLE/FIELD BLANK												
	METHOD/INSTR. BLANK												
	LAB DUPLICATE												
	FIELD DUP./REP.												
	MAT. SPK/M. STD.												
EST.:	PEST. TAB.												
	PEST. D.L. TAB.												
	PEST. CHRO.												
	PEST. STD. CHRO.												
	PEST. STD. I.D.												
	2nd COL. CONF.												
	GC/MS CONF.												
	PEST. DUP.												
	PEST. SPK.												
	PEST. BLK.												
TCDD	TCDD TAB.												
	TCDD D.L.												
	TCDD EICP												
	TCDD BLK.												

100145

DATA COMPLETENESS	CONC./MATRIX	AQ	SOL	AQ			SOL	AQ	AQ	SOL	AQ	SOL
ACTION	TRAFFIC REPT. #	C2760	-61	-62	-63	-64	-65	-66	-67	-68	-69	-70
	LAB I.D. #	✓										
OA:	RUN DATE/TIME	✓										
	TARGET CMPD. TAB.	✓										
	TARGET CMPD. D.L.	✓										
	TENT. I.D. CMPD. TAB.	✓										
	SURR. REC.	✓										
	GC SCREEN TAB.	✓										
	GC/MS CHROMATOGRAMS	✓										
	TARGET CMPD. QUAN. LIST	✓										
	TARGET CMPD. SPECTRA	✓										
	TENT. I.D. CMPD. Q.L.	MS										
	TENT. CMPD. LIB. SRCH.	✓										
	CHRO./SENS. CHECKS	NA										
	BFB/DFTPP TUNE DATA	✓										
	I.S. AREAS CHARTS	✓										
	I.S. REL. RESP. FORM	MS										
	PER SHIFT CALIB. CHK.	✓										
	3-POINT CALIBRATIONS	✓										
	FSCC INITIAL CALIB.	NA										
	FSCC ONGOING QC	NA										
	STANDARD CHRO.	✓										
	TARGET CMPD. REF. SPEC	NA										
	SAMPLE/FIELD BLANK			✓								✓
	METHOD/INSTR. BLANK											
	LAB DUPLICATE											
	FIELD DUP./REP.											
	MAT. SPK/M.STD.											
EST.:	PEST. TAB.											
	PEST. DL TAB.											
	PEST. CHRO.											
	PEST. STD. CHRO.											
	PEST. STD. I.D.											
	2nd COL. CONF.											
	GC/MS CONF.											
	PEST. DUP.											
	PEST. SPK.											
	PEST. BLK.											
CDD	TCDD TAB.											
	TCDD D.L.											
	TCDD EICP											

100346

KEY TO DATA COMPLETENESS FORM

ORIGINAL
(Red)

Abbreviation Used on Form	Description of Checklist Item
CONC./MATRIX	Concentration category submited in analysis request (Low, med, hi); and matrix(s
FRACTION	Fill in acid, base/neutral, acid/base/neutral, or Volatiles analysis
RUN DATE/TIME	Instrument run date (to be used for correlating calibration)
TARGET CMPD. TAB.	Tabulated results for target compounds
TARGET CMPD. D.L.	Detection limits for target compounds
TENT. I.D. CMPD. TAB.	Tabulated results for tentatively identified compounds
SURR. REC.	Surrogate recoveries results
GC SCREEN TAB.	Tabulated GC screen results indicating required level of followup (L, M)
GC/MS CHROMATOGRAMS	Chromatograms of GC/MS analysis runs
TARGET CMPD. QUAN. LIST	Target compounds quantitation list, showing areas, ret. times
TARGET CMPD. SPECTRA	Enhanced and unenhanced spectra of target compound hits
TENT. I.D. CMPD. Q.L.	Quantitation list for tentatively identified compounds.
TENT. CMPD. LIB. SRCH.	Spectra and library match spectra of tentatively identified compoun
CHRO./SENS. CHECKS	EICP's and R.R.F.'s for chromatographic sensitivity checks
BFB/DFTPP TUNE DATA	Spectra, intensity lists, and criteria comparison forms for BFB, DFTPP
I.S. AREAS CHARTS	Internal standards area control charts and description of remedial acti
I.S. REL. RESP. FORM	Internal standards relative response listings for each sample run.
PER SHIFT CALIB. CHK.	Response of calibration check standards versus last calibration std.
3-POINT CALIBRATIONS	Response factors calculated for all applicable multi-point calibrations
FSCC INITIAL CALIB.	Initial calibration data for all compounds (includes correlation coefficient
FSCC ONGOING QC	Response factors of all compounds for each check standard versus calibs
STANDARD CHRO.	Chromatograms of target compound standards
TARGET CMPD. REF. SPEC.	Reference spectra from target compound standard run.
SAMPLE/FIELD BLANK	Equipment rinse or reagent water blank shipped with samples from fi
METHOD/INSTR. BLANK	Method or instrument blank which is prepared at lab
LAB DUPLICATE	Sample which was split by lab for duplicate analysis
FIELD DUP./REP.	Sample which was split or collected twice in the field
MAT. SPK/M. STD.	Matrix spike or method standard (blind, or done by lab.)
PEST. TAB.	Tabulated results for pesticides
PEST. D.L. TAB.	Tabulated detection limits for pesticides
PEST. CHRO.	Chromatograms for pesticide screening
2nd COL. CONF.	Confirmation of pesticide results by using a second GC column and temper
GC/MS CONF.	Confirmation of pesticide results by GC/MS analysis
PEST. DUP., SPK., BLK.	Pesticide duplicate, spike, and blank
PEST. STD. CHRO.	Chromatogram of pesticide standard
PEST. STD. I.D.	Pesticide standard identification form
TCDD	2,3,7,8-tetrachlorodibenzodioxin
TCDD TAB., D.L., EICP, BLK.	TCDD tabulated results, detection limits, extracted ion current profile, bla

KEY TO SYMBOLS USED IN DATA COMPLETENESS TABLE

SYMBOL	MEANING	SYMBOL	MEANING
✓	Data item present	I	Incomplete data ite
NA	Data item not applicable or not required	NC	Data item not clearl explained (units of conc., c
P	Data item within established control limits	* or [number]	See footnote
F	Data item outside established control limits	xx/xx/xx xx:xx	Date/time of run
MS	Missing item		

200124

ORIGINAL

Blank Analysis Results for Target Compounds

The contaminants in the blanks are listed below:

FRACTION	TYPE OF BLANK (Sample, Field, lab, lot, medium, high, solid, aqueous)	SAMPLE NO.	LOT NO. AND SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION)
All	Low Aq. Sample Blank	C2762	HPLC	benzene (3K µg/L) chloroform (19µg/L) methylene chloride (26µg/L) toluene (3K µg/L) phenol (10K µg/L) acetone (1K µg/L) 2-butanone (9K µg/L)
All	Low Solid Sample Blank	C2770	HPLC	1,1,1-trichloroethane (8K µg/kg) methylene chloride (74 µg/kg) 2-butanone (43 µg/kg)
VOA	Low AQ. LAB BLANK	25598V10	Lab	methylene chloride (12 µg/L) 2-butanone (9K µg/L)
VOA	Lab Blank: AQ.	Blank V3	Lab	methylene chloride (13 µg/L)
A/B/N	AQ. LAB Blank	25598F2	Lab	none
Pest	AQ. LAB Blank	0034-16	Lab	none
A/B/N	AQ. LAB Blank	25607F2	Lab	none
VOA	AQ. Lab Blank	25607V1	Lab	methylene chloride (1 µg/L)
A/B/N	AQ. Lab Blank	25607F1	Lab	none
Pest	AQ. Lab Blank	0035-28	Lab	none
A/B/N	AQ LAB BLANK	25591F1	Lab	none
Pest	" " "	0033-8	Lab	none
VOA	Low Solid Lab Blank	25591V1	Lab	methylene chloride (65 µg/kg)
A/B/N	" " " "	25591F1	Lab	none
Pest	" " " "	0037-6	Lab	none

The blank data is compared with the sample data in a tabulation form within the Sample Analytical Data Summary.

K – Approximate value; detected below quantitation limit.

COMMENTS: (Probable source of contamination, invalid sample results, etc.)

- All positive results for methylene chloride may be questionable, except for sample C2755.
- All positive results for ~~methylene chloride~~ 1,1,1-trichloroethane, and 2-butanone may be questionable, as well as results for acetone in samples C2749, C2750, C2756, C2760, and C2765.
- Bis(2-ethylhexyl)phthalate was detected in samples C2767 and C2769 at less than detection limits, and this compound is a common lab contaminant.
- Results for 1,1-dichloroethylene, ethylbenzene, o-xylene, and tetrachloroethene may be questionable for sample C2751 due to suspected ghosting from a preceding standard run.
- Results for acetone in ~~[illegible]~~ not questioned since over ten times level found in blank.
- Result for trichloroethene in sample C2751 not questioned since level too high to be ughost.

Blank Analysis Results for Tentatively Identified Compounds

ORIGINAL

All tentatively identified compounds found in blank analyses are listed below:

SAMPLE NO.	FRACTION	SCAN NO. (S)	SPECTRUM MATCH INDICES				ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS
			TYPE	SCORE	TYPE	SCORE			
C27G2	A/B/N/N						none		
C2770	A/B/N/N						none		
25578V10	VOA						none		
Blank V3	VOA						none		
25607V1	VOA						none		
25599V1	VOA	437	Fit	935			8 µg/kg	hexamethyl cyclotrisiloxane	
25599F1	A/B/N	329	"	971			6600 µg/kg	" " " " "	
"	"	419	"	975			2000 µg/kg	octamethyl cyclotetrasiloxane	
25591F1	A/B/N						none		
25603F1	A/B/N						none		
25607F2	A/B/N						none		
25598F1	A/B/N	467	Fit	[illegible]			50 µg/L	octamethyl cyclotetrasiloxane	
"	A/B/N	603	"	882			8.8 µg/L	a siloxane	

100149

CASE No.

SURROGATE SPIKE - RECOVERIES

ORIGINAL (Red)

A double asterisk (**) indicates outliers.

	Fraction	TCDD		ACID	ACID	B/N	B/N	VOA	VOA	VOA
	Surrogate	TCDD125I	—	2-fl-φOH	d_5-φOH	d_5-nitro.	2-fl-φ2	d_6-Bz	1-Cl-2B-Ap	d_5-Tolue
	Sample				SURROGATE SPIKE RECOVERIES					
AQ	C2748	103		86	56	85	97	94	114	96
	-49	109		96	75	89	100	98	110	98
	-50	105		44	30	96	73	90	108	92
	-51	66		101	59	95	75	104	98	98
	-52	105		83	53	57	50	94	92	90
	-53	144		76	51	76	63	118	116	116
	-54	82		80	52	53	47	76	80	104
	-55	86		3**	3**	89	81	90	114	92
	-56	105		77	48	51	37**	76	80	74
SOL	-57	75		121	119	112	79	73	100	73
AQ	-58	78		97	49	55	38**	80	86	78
SOL	-59	17**		114	117	116	82	71	92	71
AQ	-60	100		86	43	68	50	86	94	86
SOL	-61	57		89	97	105	63	75	100	79
AQ	-62	109		77	62	51	47	70	84	70
	-63	84		56	31	86	85	116	118	122
	-64	66		82	45	99	92	106	104	108
SOL	-65	46		128	115	112	111	87	109	87
AQ	-66	77		97	55	95	88	106	102	112
AQ	-67	76		86	50	103	99	110	100	112
SOL	-68	81		67	86	100	64	88	120	88
AQ	-69	41		66	92	0**	66	122	92	126
SOL	-70	45		122	127	110	89	88	104	84
	Number									
	Minimum									
	Maximum									
	Average									
	STD. DEV.									

Acceptable limits, according to the Instructional Guide for Reviewing GC/MS data, are as follows:

VOA's	70-130%
Base/neutrals	40-120%
Acids	30-110%

COMMENTS: Detection limits for acid fraction compounds in sample C2755 may be slightly higher than those reported.
• Detection limits for certain base/neutral compounds, possibly including nitroaromatics may be significantly higher than those reported for sample C2769

100150

5.5 PHOTOGRAPH LOG

Photo 1 - D. Hassrick and D. Messinger monitoring leachate seeps along north toe of Cokers No. 1. View facing north.

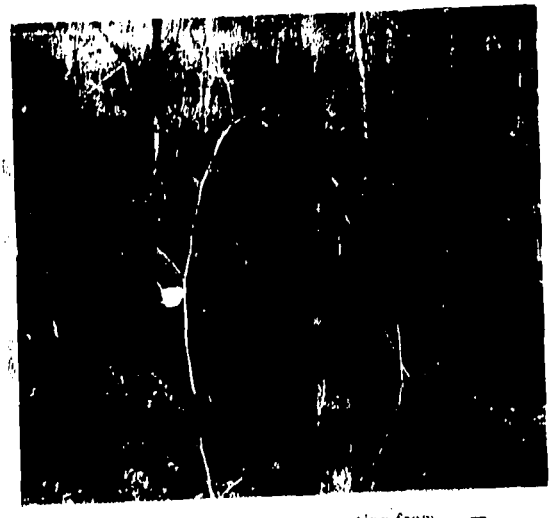


Photo 2 - Leachate seep emanating from along toe of north slope of Cokers No. 1.

100150a

Photo 3 - Collection site of the downstream sample of Willis Branch.

1001506

MATRIX SPIKE RESULTS

The matrix spike results (MSR) for each parameter group were evaluated. The parameters that were reported are listed below along with the MSR guidelines and amount of spike added. A double asterisk (**) indicates outliers.

Compound	Acceptable Range (%)	SAMPLE NUMBER	C2748			C2749			C2757						No serious outliers. Good spike recoveries except note di-n-butyl phthalate below.
		SAMPLE TYPE LO,MED,HI	LO			LO			LOW						
		SOL,AQ,LIQ	AQ			AQ			SOLID						
		BLIND SPIKE													
		SPIKED BY LAB	X			X			X						
		MATRIX SPIKE	X			X			X						
		METHOD STANDARD													
			ADD	REC	%R	ADD	REC	%R	ADD	REC	%R	ADD	REC	%R	COMMENTS
Volatiles															
Chlorobenzene	67-131				72						88				
Toluene	58-132				80						88				
Benzene	56-132				65						80				
Base/Neutrals															
1,2,4-trichlorobenzene	38-108							88			109	**			criteria not realistic
Acenaphthene	57-115							100			103				
2,6-dinitrotoluene	43-113							128	**		107				criteria not realistic
Di-n-butylphthalate	13-113					*	*	9			97				Hydrolysis of phthalate entailing extraction
Pyrene	25-137							135			97				
N-nitrosodi-n-propylamine	34-114							125	**		128	**			criteria not realistic
1,4-dichlorobenzene	33-103							99			101				
Acids															
Pentachlorophenol	19-123							29			79				
Phenol	23- 81							83	**		102	**			criteria not realistic
2-chlorophenol	33-107							128			120				
p-chloro-m-cresol	32-108							110	**		100				criteria not realistic
4-nitrophenol	15- 93							99	**		119	**			criteria not realistic
Pesticides															
Heptachlor	43-125				70						91				
Aldrin	45-109				75						85				
Dieldrin	56-122				83						82				
Other Compounds															
Fraction / Compound															
Pest / 4,4'-DDT					88						85				

100151

DUPLICATE ANALYSIS RESULTS

The applicable duplicate pairs are:

DUPLICATE TYPE (SAMPLE/SPIKE/BLANK)	Spike	Spike	Spike	
SAMPLE NO.'S	C2748	C2749	C2757	
FIELD DUPLICATE				
LAB DUPLICATE	X	X	X	
SAMPLE TYPE LOW/MED/HIGH	LO	LO	Low	
SAMPLE TYPE SOL/AQ/LIQ	AQ	AQ	Solid	
Fraction	V/P	A/B/N	V/A/P/W/P	

The relative percent difference (RPD) for each parameter group was evaluated. The duplicate analysis RPD acceptance criteria should be:

Fraction	Maximum Acceptable Percent Difference
Volatile	15%
Base/Neutral	50%
Acid	40%
Pesticides	40%

The RPDs exceeding the maximum acceptable percent difference were:

Fraction	Compound	Actual RPD	Comparison SAMPLE	CONC.	SAMPLE	CONC.
B/N	2,6-dinitrotoluene	54	C2749	129		74 µg/L
"	Pyrene	60	"	133		71 "
Acid	p-chloro-m-cresol	43	"	110		71 "
"	4-nitrophenol	45	"	99		63 "

Comments: [illegible] considering large number of compounds [illegible] duplicate analyses.

100152

Evaluation of Confirmations of GC Analyses

SAMPLE NO.	Compound	GC column #1				GC column #2				GC/MS DATA							Reported type of confirmation (2col/GC/MS)	Reviewer Confident (Y/N)
		Column: SP2250/2401 conditions: Not listed detector: ECD other:				Column: SE-54 FS capillary col conditions: Not listed detector: ECD other:				column: capillary conditions: detector: other:								
		DATA FROM COLUMN NO. 1: ☒ Ret. or ☐ Rel. Ret. Times in:		Relative Peak Area Ratios		DATA FROM COLUMN NO. 2: ☒ Ret. or ☐ Rel. Ret. Times in:		Relative Peak Area Ratios		DATA FROM GC/MS RUN(S):								
		SAMPLE	STANDARD	SAMPLE	STANDARD	SAMPLE	STANDARD	SAMPLE	STANDARD	Spectrum match? (Y/N)	Level high enough for GC/MS	Which Extract	☐ Ret. or ☐ Rel. Ret. Times in: SAMPLE	STANDARD	Relative Peak Area Ratios SAMPLE	STANDARD		
C2769	α-BHC	0.845 (inj 3/12 16:25)	0.833 → inj 3/12 0.833 → inj 3/12 0.831 → inj 3/12		12:12 12:34 16:36	10.23 (inj. 3/24 14:32)	10.26 → inj. 3/24 10.27 → inj. 3/24 10.21 → inj 3/24		7:57 13:58 ?:?		N						2C	N

↑ extract was cleaned before analysis w/ SO2 ethyl ether/hexane elution on florisil column. However, chromatograms indicate many components remained after cleanup.

↑ early BHC mixtures contained 7% but only 12% of α-level.

Many other peaks present in this run(s). Could be due to interference.

0.06 minute difference in standard Retention times for last standard indicated run offset in last standard. Could be due to operator not starting integrator at same time relative to injection of standard. 3.6 seconds is not very good precision for capillary column runs. Could not tell from solvent peak what exact offset was in each run since solvent peaks did not correlate in standards with compound R.T. offset.

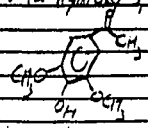
Comments: Result for alpha BHC in sample C2769 may be questionable. Level too low to be confirmed by GC/MS. Capillary column run not sufficient to verify presence.

00153

Tentatively Identified Compound Sample Results

All tentative identifications of confident matching quality, which aren't suspected artifacts/contaminants, are listed b

SAMPLE NO.	FRACTION	SCAN NO. (S)	SPECTRUM MATCH INDICES TYPE	SCORE	ITYPE	SCORE	ESTIMATED CONCENTRATION	COMPOUND NAME	COMMENTS
C2748	A/B/N/V						ND		
C2749	" " " "						ND		
C2750	" " " "						ND		
C2751	" " " "						ND		
C2752	" " " "						ND		
C2753	" " " "						ND		
C2754	A/B/N	694	Fit	956			4 µg/L	hexahydro-2H-azepin-2-one (caprolactum)	
"	VOA						ND		
C2755	A/B/NV						ND		
C2756	A/B/NV						ND		
C2757	" " " "						ND		
C2758	" " " "						ND		
C2759	" " " "						ND		
C2760	" " " "						ND		
C2761	" " " "						ND		
C2763	" " " "						ND		
C2764	" " " "						ND		
C2765	" " " "						ND		
C2766	" " " "						ND		
C2767	" " " "						ND		
C2768	" " " "						ND		
C2769	VOA						ND		
C2769	A/B/N	438	Fit	985			40 µg/L	benzaldehyde	
		946	"	952			100 µg/L	4-(1,3,3-tetramethylbutyl)phenol or isomeric t-m	
		995	"	922			30 µg/L	4-hydroxy-3,5-dimethoxybenzaldehyde or iso	
		1032	"	995			40 µg/L	~~benzaldehyde~~ 1-(4-hydroxy-3,5-dimethoxyphenyl)ethanone	
		1164	Fit	953			200 µg/L	hexadecanoic acid	
		1602	Fit	945			300 µg/L	an alkane of greater than C12 size	
✓	✓	1681	Fit	959			100 µg/L	" " " " " " "	



100154

Project Name Reichold
TDD no. F3-8211-36
EPA no. DE-

Quality Assurance Review of Inorganic Analytical Data Package

Case no. 1541
Contract no. 68-01-6617
Contract Laboratory CAL LABS
Applicable IFB no. WA82-A073
Reviewer JA Daley
Review Date 5/4/83

Applicable Sample no.'s:
MC- 0344, 0451, 0452, 045
0454, 0455, 0456, 0457, 0458,
0459, 0460, 0461, 0462, 04
0464, 0465, 0466, 0467, 04
0469, 0470, 0471, and 047

The inorganic analytical data for this case has been reviewed. The quality assurance evaluation is summarized in the following table:

Reviewer's Evaluation*	Fraction					
	Task I ICP or AA Metals	Task II Furnace AA Metals	Task II Cold Vapor AA Mercury	Task III Cyanide Spot Test	Task III Ammonia	Task III Sulfide
Acceptable			✓	✓		
Acceptable with exception(s)	✓ ◊	✓ ◊				
Questionable						
Unacceptable						

* Definitions of the evaluation score categories are listed on

This evaluation was based upon an analysis of the review items indicated below:

- ☑ Data Completeness
- ☑ Blank Analysis Results
- ☑ Matrix spike results
- ☑ Duplicate analysis
- ☐ Standard additions results
- ☑ Intial calibration verification
- ☑ Continuing calibration verifica
- ☐ Interference QC results
- ☐ Detection limits results
- ☐ Instrument sensitivity reports

Data review forms are attached for each of the review items indicated above.

Comments: ◊ Please see "Blank Analysis Results" and "Matr Spike Results."

100155

(hed)

Data Evaluation Score Categories

Acceptable: Data is within established control limits, or the data which is outside established control limits does not affect the validity of the analytical results.

Acceptable with exception(s):

Data is not completely within established control limits. The deficiences are identified and specific data is still valid, given certain qualifications which are listed below.

Questionable: Data is not within established control limits. The deficiences bring the validity of the entire data set into question. However, the data validity is neither proved nor disproved by the available information.

Unacceptable: Data is not within established control limits. The deficiences imply the results are not meaningful.

ORIGINAL (Red)

INORGANIC DATA COMPLETENESS CHECKLIST

MC	TRAFFIC REPORT #	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	CONC LOW MEDIUM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	MATRIX	AQ	AQ	AQ	AQ	AQ	AQ	AQ	AQ	AQ	[illegible]	AQ	[illegible]
FIELD QC	BLANK												
	DUPLICATE							✓					✓
	SPIKE							✓					✓
TASK I: ICAP or AA metals	Run date	✓	✓	✓									
	TAB. results												
	TAB. D.L.'s	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
	QA Form												
	ICAP Interference QC	✓	✓	✓									
	Instr. Sens.												
TASK II: Furnace AA Metals	Run date	✓	✓	✓	✓								
	TAB. results	✓		✓									
	TAB. D.L.'s	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
	QA Form	✓	✓	✓	✓	✓		✓	✓	✓		✓	
	Instr. Sens.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TASK II: Cold Vapor AA: Mercury	Run date	✓		✓	✓								
	TAB. results	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	TAB. D.L.'s	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
	QA Form		✓	✓			✓	✓	✓	✓			
	Instr. Sens.	✓	✓	✓	✓	✓					✓	✓	✓
TASK III: Cyanide	Run date	✓	✓	✓						✓			
	TAB. results		✓	✓	✓	✓	✓	✓	✓	✓			
	TAB. D.L.'s	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
	QA Form	✓	✓	✓		✓		✓					
	Instr. Sens.	—	—	—	—	—	—	—	—	—	—	—	—
TASK III: Ammonia (NA)	Run date												
	TAB. results												
	TAB. D.L.'s												
	QA Form												
	Instr. Sens.												
TASK III: Sulfide (NA)	Run date												
	TAB. results												
	TAB. D.L.'s												
	QA Form												
	Instr. Sens.												

COMMENTS

NA ≡ NOT ANALYZED MS ≡ MISSING

Δ NOT TABULATED

SUBST. TEST [illegible]

100157

ORIGINAL (Red)

INORGANIC DATA COMPLETENESS CHECKLIST

MC	TRAFFIC REPORT #	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
	CONC. LOW MEDIUM	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	✓
	MATRIX	AQ	[illegible]	AQ	AQ	AQ	[illegible]	AQ	AQ	[illegible]	AQ	[illegible]	✓
FIELD QC	BLANK			✓								✓	
	DUPLICATE												
	SPIKE												✓
TASK I: ICAP or AA Metals	Run date	✓	✓	✓	✓	✓	✓	✓	✓	✓			
	TAB. results	✓	✓	✓	✓	✓							
	TAB. D.L.'s	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	QA Form	✓	✓		✓	✓	✓						
	ICAP Interference QC	✓	✓		✓	✓	✓	✓	✓		✓		
	Instr. Sens.	✓	✓	✓	✓	✓	✓	✓	✓		✓		
TASK II: Furnace AA Metals	Run date	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
	TAB. results	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
	TAB. D.L.'s	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	QA Form	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	
	Instr. Sens.	✓	✓										
TASK II: Cold Vapor AA: Mercury	Run date	✓		✓	✓	✓	✓	✓	✓	✓		✓	
	TAB. results	✓	✓	✓		✓					✓	✓	
	TAB. D.L.'s	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	QA Form	✓			✓	✓	✓						
	Instr. Sens.	✓	✓	✓	✓	✓	✓	✓	✓	✓			
TASK III: Cyanide	Run date	✓	✓		✓	✓	✓	✓		✓	✓	✓	
	TAB. results	✓	✓	✓	✓	✓	✓	✓			✓		
	TAB. D.L.'s	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
	QA Form	✓		✓	✓	✓	✓	✓	✓		✓		
	Instr. Sens.	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	
TASK III: Ammonia (NA)	Run date												
	TAB. results												
	TAB. D.L.'s												
	QA Form												
	Instr. Sens.												
TASK III: Sulfide (NA)	Run date												
	TAB. results												
	TAB. D.L.'s												
	QA Form												
	Instr. Sens.												

COMMENTS

NA ≡ NOT ANALYZED MS ≡ MISSING

Δ [illegible] separately but listed in [illegible] not detected.

✓✓ [illegible]

100155

Case 154

Blank Analysis Results

(Red)

The contaminants in the blanks are listed below:

FRACTION	TYPE OF BLANK (sample, field, calibration, Lab. Prep, low, medium, high, solid, aqueous)	SAMPLE NO.	LOT NO. AND SOURCE OF H_2O	CONTAMINANTS (CONCENTRATION)
ALL	LOW AQ FIELD BLANK	MC 0454	Fisher DISTILLED	B (480 ug/l)
ALL	LOW SOL FIELD BLANK	MC 0472	Fisher DISTILLED	Fe (4.5 mg/kg) Pb (0.34 mg/kg) B (19 mg/kg)
ALL	INITIAL CALIB BLANK	QC Report P-10	LAB	ND
ALL	PREP BLANK 1	QC Report P-10	LAB	Al (102 ug/l) B (350 ug/l) Cd (0.9 ug/l) Fe (54 ug/l)

The blank data is compared with the sample data in a tabulation form within the Sample Analytical Data Summary.

COMMENTS: (Probable source of contamination, invalid sample results, etc.)

[illegible]

- All Results for boron

[illegible]

[illegible]

- [illegible] 0458, [illegible] and 04[illegible]

[illegible]

- [illegible] and MC0461

100159

MATRIX SPIKE RESULTS

The matrix spike results (MSR) for each parameter group were evaluated. The parameters that were reported are listed below along with the MSR guidelines and amount of spike added. A double asterisk (**) indicates outliers. A (MS) indicates results not reported (missing).

[illegible] Only

Compound	Acceptable Range (%)	SAMPLE NUMBER	0455			0451									COMMENTS
		SAMPLE TYPE LO, MED, HI	[illegible]			[illegible]									
		SAMPLE TYPE SOL, AQ, LIQ	[illegible]			[illegible]									
		BLIND SPIKE													
		SPIKED BY LAB	✓												
		MATRIX SPIKE													
		METHOD STANDARD													
			ADD	REC	%R	ADD	REC	%R	ADD	REC	%R	ADD	REC	%R	
Aluminum	80-120					*	*	75							
Chromium	80-120														
Barium	80-120														
Beryllium	80-120														
Cadmium	75-125		*	*	[illegible]										
Cobalt	80-120														
Copper	80-120														
Iron	80-120														
Lead	75-125		*	*	34	*	*	65							
Nickel	80-120														
Manganese	80-120		*	*	75										
Zinc	80-120														
Vanadium	80-120														
Boron	80-120														
Silver	80-120														
Arsenic	75-125														
Antimony	75-125														
Selenium	75-125														
Tin	75-125														
Thallium	75-125		*	*	45										
Mercury	75-125														
Cyanide	80-120														
Sulfide	80-120														
Ammonia	80-120														

Other Compounds

Fraction	Compound

Detection limits for lead, thallium, and cadmium may be slightly higher than reported.

100160

(Red)

DUPLICATE ANALYSIS RESULTS

The applicable duplicate pairs are:

SAMPLE NO.'S	[illegible]	[illegible]		
FIELD DUPLICATE				
LAB DUPLICATE				
SAMPLE TYPE	[illegible]	[illegible]		
Fraction	[illegible]	[illegible]		

The relative percent difference (RPD) for each parameter group was evaluated. The duplicate analysis RPD acceptance criteria should be:

Fraction	Maximum Acceptable Percent Difference
[illegible]	[illegible]
[illegible]	20

The RPDs exceeding the maximum acceptable percent difference were:

Fraction	Compound	Actual RPD	Comparison SAMPLE	CONC.	SAMPLE	CONC.
[illegible]	A2	24	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	A2	33	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Fe	21	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Cd	44	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Fe	67	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Pb	22	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Mn	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Zn	45	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Se	51	[illegible]	[illegible]	[illegible]	[illegible]

Each duplicate analysis was examined in reference to compounds detected in each analysis. Those compounds which were not common to each analysis for the duplicate samples are listed below:

Fraction	Sample No.	Compound	Concentration

Comments:

100161

Standard Addition Results

(Ked)

Documentation indicates a standard addition correction was performed on all spiked samples for parameters having recoveries outside of control limits:

Yes___ No ✓

For the parameters having poor recoveries in the spiked sample(s), standard additions were also performed on all other samples where the following conditions were met:

(1) The sample matrix was similar to the matrix of the sample which was spiked; and (2) The parameters in question were detected with positive results.

Yes___ No___

The parameters with poor spike recoveries are listed below along with the type of standard addition performed. The results for these parameters in other samples which have a similar matrix are also listed below:

sample	description of matrix	parameter	reported concentration	spike recovery	type of standard addi- performed: (none; 1, 2, or 3p

100162

Initial Calibration Verification and Continuing Calibration Verification

Documentation indicates calibrations were performed and checked every ten samples: Yes ✓ No ___

Exceptions: _____

Calibrations and verifications were all within the control limits specified in [illegible] Yes ✓ No ___

Outliers are listed below:

Parameter	Acceptable Range (%)	Calibration Identifier	% of True Value	Comments

Interference QC Results

Documentation indicates interference QC samples were run before and after every ten samples: Yes ✓ No ___

Exceptions: _____

Interference QC results were all within the control limits specified in [illegible] Yes ✓ No ___

Exceptions:

Parameter	Acceptable Range (%)	Interference QC Identifier	% of True Value	Comments

Detection Limits Results

(Red)

Detection limits were reported for all samples analyzed: Yes ✓ No ___

Exceptions: _____

Detection limits were less than or equal to the required detection limits listed in [illegible] Table [illegible]. Yes ✓ No ___

Exceptions: _____

sample no.(s)	parameter	reported detection limit	required detection limit	comments

Instrument Sensitivity Reports

Instrument sensitivity reports were documented for all parameters:

Yes ✓ No ___

Comments: _____

100134

APPENDIX F

Removed for use in
[illegible] documentation.
Another copy is in
Appendix F of
Cohen [illegible] LF
SS report

100165