HERCULES

Hercules Incorporated
Research Center
500 Hercules Road
Wilmington, DE 19808-1599
(302) 995-3000
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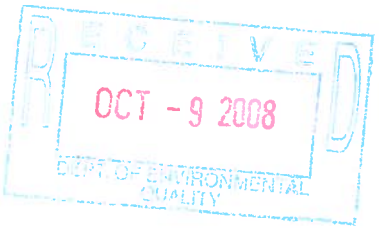
October 9, 2008

Mr. Jerry B. Banks – PE. BCEE – Chief
MDEQ-GARD
Office of Pollution Control
P.O. Box 2261
Jackson, MS 39225-2261



Dear Mr. Banks:

This letter is a follow up response to your letter of June 9, 2008 in which you asked a series of questions related to our planned closure of our impounding basin and equalization tank. Hercules provided MDEQ a response to all the questions on July 7 2008.

To make our responses easier to follow, I have reprinted your questions preceding each response.

MDEQ Question 4. *An analyses of sludge contained in the proposed lagoons. The analyses of a minimum of 2 (two) composite sludge samples from each of the lagoons. depending on the depth and potential layering of the sludges in the lagoons, should include pH, percent solids, sulfide, cyanide, including TCLP analyses for metals, volatiles, semi-volatiles. herbicides, and pesticides. Each composite sample should be comprised of 5 representative sludge samples collected from 5 different areas of the proposed lagoon. In order to process this matter effectively and efficiently the MDEQ recommends that you use an independent third party laboratory for sampling and analysis of these samples.*

Hercules Follow-up Response

Composite samples consisting of five aliquots were collected from Et-10 (SS-3) and two samples were taken from the Impounding Basin (IB). The IB samples were taken from the east (SS-2) and west areas (SS-1) of the basin which are separated by a baffle. The results of the samples SS-2 and SS-3 demonstrated that these sludges were non-hazardous and these waste streams were profiled and accepted at the Pine Belt Regional Landfill. However, the results of SS-1 indicated that the some of the sludges in this part of the Basin may be characteristic Hazardous Waste for Benzene. Hercules then proceeded to reanalyze and resample this section. The results of this analyses are described in the attached report.

Based on the analysis in this report Hercules proposed to remove and dispose of the Hazardous Waste sludges in this section in the following manner:

The western area will be isolated by using sheet pile or other suitable means. Upon removal of the contents of the western portion of the basin, Hercules proposes the collection of confirmatory soil samples. Hercules proposes that the samples shall be collected from the earthen walls and floor. Based on the earthen basin's dimensions, 70' x 65' x 8', Hercules proposes the collection of nine (9) samples from the three (3) walls, three (3) samples per wall, and nine (9) samples from the floor. Sample collection will be in accordance with the protocols outlined by the US EPA Region IV and the Mississippi Department of Environmental Quality. Samples will be collected via the use of Terra Core™ soil samplers, in accordance with USEPA SW-846 Method 5035. The eighteen (18) samples will be submitted to an NELAC approved laboratory for analysis for Benzene by EPA method 8021. If soil sample concentrations are below the MDRQ TRG for Industrial Clean up for benzene, 1.36 ppm, all over excavation activities shall cease. In the event that sample results are found to be greater than 1.36 ppm, over excavation and sampling activities shall recommence.

MDEQ Question 6. *The anticipated time for completion of the proposed closure;*

Hercules Follow-Up Response

We have selected a contractor(s) and plan to start the work in the fourth quarter. The work is planned for completion in 2008.

MDEQ Question 10. *A plan to effectively manage odor during the sludge removal process must be developed. Also, notification of the Mayor and other stakeholders of the proposed closure project should be done well in advance of the actual closure because of all the recent problems in Hattiesburg with odor complaints. Also, we suggest that you include references to the removal of wastewater for treatment and disposal in the letter of notification, especially*

Hercules Follow-up Response

We required bidders in the contractor bid process for the sludge removal to include a plan for how they will manage odor control. Attached is the Clean Harbors plan to address odors during the sludge removal and loading process.

As indicated in the two letters we previously sent MDEQ, we have implemented, or will implement prior to taking the units out of service, all the suggestions that you have provided.

Hercules looks forward to meeting or conducting a conference call with the MDEQ to answer any questions your or your staff may have and to resolve any concerns at your earliest convenience, as Hercules is planning to begin its work promptly. If possible, we would like to set up a conference call on Tuesday, October 14, 2008.

Please feel free to contact me at (414) 461-4000, ext. 157, Tim Hassett at (302) 995-3456 or Charlie Jordan at (601) 584-3360 to set up the meeting, or if you have any questions we may answer by phone.

Sincerely,

Bruce N Hough

for Rod Bolton
Regional Manager

RB/ijc
Enclosures:
1. Clean Harbors Odor Management Plan
2. Sludge Sampling Analyses Report

cc: R. L. Williams/Hercules
T. D. Hassett/Hercules
C. Jordan/Hercules-Hattiesburg

Clean Harbors Odor Management Plan

Hercules Corp.
Hattiesburg, Mississippi

Odor Management & Air Sampling Plan

The following paragraphs outline Clean Harbors' proposed Odor Management and Air Sampling Plan for the Hercules Hattiesburg facility, located in Hattiesburg, Mississippi.

Please note that in addition to the measures described below, the physical and chemical nature of the solidification agent, in this case fly ash, is composed primarily of oxides comprised of silicon, magnesium, and calcium and associated alkalies, which provides odor suppression similar to lime.

Odor Management

Clean Harbors proposes the use of a foam based odor agent for the duration of the project to mask and/or eliminate potential odors encountered from the sludge during dewatering, excavation, solidification and transportation and disposal of sludge. Odor Management activities will be in effect during any period when odors are present or material is being moved.

AC-645 Long Duration Foam is a patented product that produces a thick, long-lasting, viscous foam barrier for immediate control of dust, odors and volatile organic compounds (VOCs). AC-645 is designed for use with Rusmar Pneumatic Foam Units.

AC-645 foam is recognized by the Environmental Protection Agency and the U.S. Army Corps of Engineers as that which provides superior emission control for a period up to 17 hours. AC-645 has been specified for use at Superfund and other hazardous waste sites across the United States and Canada.

The remediation of hazardous waste sites often includes excavation of soil contaminated with odorous compounds. AC-645 has little or no odor itself. It forms a barrier between contaminants and the atmosphere and can be applied during active excavation to provide an immediate and effective barrier to minimize or eliminate odors. It is completely biodegradable and poses no threat to workers, neighboring residents or groundwater. Furthermore, AC-645 will not add to soil volume or treatment costs.

AC-645 can also be applied on top of trucks for emission control during transport of materials such as contaminated soils or sewage sludge. Ammonia tests performed on trucks containing sewage sludge resulted in a drop of concentration levels from 170 ppm prior to foaming down, to 6 ppm following the application of AC-645.

Air Sampling

Clean Harbors proposes using Draeger™ tubes for the daily collection (at a minimum), of air samples. Per the specifications outlined in the RFP, Clean Harbors will utilize 9 tubes for the sampling of sulfide and nitrogen compounds, benzene, toluene, epichlorohydrin, ethylene, ammonia, mercaptans and phenols. Air sampling activities will be in effect during the entire project. Sample results will be logged and reported daily to the Hercules on site Engineer.

In addition, Clean Harbors proposes using a Photo Ionization Device (PID) for the collection of air samples from the perimeter of the field activities zone on an hourly basis, and logging the results for recordkeeping purposes. In the event that an air sampling indicates excessive levels, Clean Harbors will notify Hercules' on site supervisor and request direction for the collection of additional air samples via Draeger™ tubes and propose alternative actions to mitigate problematic odors, such as additional foam control, oxidative or other chemical treatment (hypochlorite addition) as well.

Sludge Sampling Analyses Report

ESI

MEMORANDUM

To: Timothy Hassett
Hercules, Incorporated

From: Charles Coney
Eco-Systems, Inc.

Date: October 3, 2008

Re: Sludge Sample Analyses
Hattiesburg, Mississippi

At your request, Eco-Systems has conducted sampling of sludges from the wastewater impoundment and the wastewater holding tank and submitted those samples for analysis. The purpose of the sludge sampling effort was to characterize the sludge for disposal as part of the forthcoming sludge removal project. In general, the sampling was conducted and the samples were analyzed according to information supplied by Hercules. Initial sampling was conducted on July 1, 2008, and re-sampling of one area was conducted on July 30, 2008 and September 4, 2008. Samples were submitted to TestAmerica Laboratories, Inc. (TestAmerica) of Savannah, Georgia for analysis. A split of the sample collected on July 30, 2008 was also submitted to Bonner Analytical and Testing Company (BATCO).

Background

Hercules began conducting improvements to the Hattiesburg facility in 2006. These improvements include removing unused facilities from the site. Since facility operations no longer require on-site wastewater treatment, wastewater at the site is being discharged, under permit, to the municipal wastewater treatment system. Since the existing wastewater impoundment basin and wastewater holding tank are no longer necessary, Hercules has contracted for the removal and disposal of the sludges contained in the two structures. Following removal of the sludges, the holding tank and structures associated with the impoundment basin will be demolished and removed. The remaining excavations will be backfilled, graded, and landscaped. Prior to backfill of the impoundment, confirmation sampling will be conducted to ensure that soil containing concentrations of constituents above regulatory limits has been removed.

Hercules notified the MDEQ of their intent to close the impoundment basin and holding tank in a letter dated April 22, 2008. In response to the notification, the MDEQ requested in a letter dated June 8, 2008 additional information regarding the closure operations including a request for Hercules to characterize the sludge prior to generation. The sludge sampling reported in this memo was conducted in response to the request from the MDEQ.

Historical Sampling and Analysis

Sludge samples from the site have been analyzed on seven other occasions since 1990. Six of these samples were collected from the wastewater treatment basin, and one sample was collected from the sludge disposal pits, which are located in the northwestern portion of the site. The analyses conducted for the seven samples included TCLP VOCs, SVOCs, and metals. Analysis for TCLP pesticides, herbicides, and PCBs, reactivity, corrosivity, and ignitibility was also conducted on five of the seven samples. Concentrations of benzene, 1,1-dichloroethene, chlorobenzene, 2-butanone, chloroform, methyl phenols, cresols, dieldrin, barium, cadmium, chromium, lead, and selenium have been detected in one or more samples at concentrations less than their respective TCLP limits. Other tests for hazardous characteristics (corrosivity, reactivity, and ignitibility) have not indicated that the sludge is hazardous. Historical analytical results are attached.

Samples Collected July 1, 2008

During the initial sampling, three composite samples were collected. Samples SS-1 & SS-2 were collected from the wastewater impoundment, and sample SS-3 was collected from the wastewater holding tank. Samples SS-1 and SS-2 were each composed of 5 aliquots collected from the perimeter of the wastewater impoundment. The aliquots for sample SS-1 were collected from the west end of the impoundment, and the aliquots for SS-2 were collected from the east end of the impoundment. The western end of the wastewater impoundment, which is the influent end of the impoundment, is approximately one quarter of the total area of the impoundment and is separated from the eastern end of the impoundment by a baffle. The baffle slows the flow of wastewater through the impoundment, which forces heavier solid material to precipitate. Consequently, sludge on the west side of the baffle generally has a higher solid content than sludge on the eastern side of the baffle. Much of the sludge on the western side of the baffle is also covered by resinous cap of dried sludge ranging from approximately six inches to one foot in thickness. Aliquot locations for SS-1 and SS-2 are shown on the attached Figure 1.

Sample SS-3 was composed of two aliquots collected from the platform on the western rim of the tank and one aliquot collected from the platform on the eastern rim of the tank.

Each sample aliquot was collected with a decontaminated hand auger. The samples were collected by pushing the hand auger through the upper, relatively solid, surficial sludge and then, to the extent practical, vertically mixing the aliquot location. This was accomplished by pumping the hand auger from the surface to the base of the sludge or the limit of the auger rods, whichever was shallower. After mixing, the aliquot was collected and placed on clean plastic sheeting. Aliquots were composited in the field using stainless steel spoons and placed in laboratory supplied containers. Samples collected on July 1, 2008 were analyzed according to the TCLP for VOCs, SVOCs, Pesticides, PCB, Herbicides, and Metals, and also for reactive cyanide, reactive sulfide, pH (corrosivity) and percent solids.

Analysis for sample SS-1 detected 1.3 mg/L of benzene in the leachate. Per federal regulations, if TCLP benzene concentrations are 0.5 mg/L, or above, the waste is considered hazardous by the characteristic of toxicity. Benzene was detected in sample SS-2 at a concentration of 0.21 mg/L and was not detected in sample SS-3. Chloroform was also detected in the sample collected from SS-1 at a concentration of 0.19 mg/L, which is less than the TCLP limit of 6 mg/L. Other VOCs were not detected in the three samples.

Total methyl phenols, which are SVOCs, were detected in the three sludge samples at concentrations ranging from 0.18 mg/L in sample SS-3 to 0.72 mg/L in sample SS-2. Methyl Phenols are not listed in 40CRF 261.24, therefore the maximum concentration for toxicity characteristic is not available.

Pesticides, PCBs, herbicides, and metals were not detected. PH ranged from 5.59 in sample SS-1 to 6.89 in sample SS-3. Reactive cyanide and sulfide were not detected.

Sample Collected July 30, 2007

At the request of Hercules, Eco-Systems conducted re-sampling of SS-1 to confirm the presence of benzene at concentrations above the TCLP limit in the western end of the wastewater impoundment. Sample SS-1-073008 was composited from five aliquots that were collected in approximately the same locations as the previous sample SS-1-070108. (The last 6 digits of the sample I.D. are the collection date.) Sample SS-1-073008 was submitted to TestAmerica for analysis of VOCs by the TCLP. A split of the sample was also submitted to BATCO for the same analysis.

Analytical results of the sample split submitted to TestAmerica detected benzene at a concentration of 0.44 mg/L. Analytical results of the sample split submitted to BATCO detected benzene at a concentration of 0.586 mg/L. Other VOCs were not detected in either split of sample SS-1-073008.

Samples Collected September 4, 2008

After consideration of previous sludge sample analytical results, a third sampling event was conducted to investigate whether benzene concentrations detected in previous samples collected from the western end of the wastewater impoundment were the result of influence from aliquots collected from a localized area of elevated benzene concentration. During the third sampling event, six samples, SS-5 through SS-10, were collected from discrete locations, which are shown on Figure 1. Samples collected from each of the six locations were mixed vertically, as described for the July 1, 2008 sampling event. The six discrete samples were submitted to TestAmerica for analysis of VOCs by the TCLP.

Benzene concentrations detected in the samples are shown in the Table 1. Benzene concentrations in samples SS-5, SS-6, and SS-8 are above the TCLP limit for benzene.

Benzene concentrations in samples SS-7, SS-9, and SS-10 are below the TCLP limit for benzene. Carbon tetrachloride and chloroform were also detected in sample SS-8 at concentrations less than TCLP limits for those compounds.

TABLE 1
SUMMARY OF TCLP BENZENE ANALYTICAL RESULTS
Samples Collected September 4, 2008

Location	Date Collected	TCLP Benzene (mg/L)
SS-5	9/4/2008	**5.5**
SS-6	9/4/2008	**3.2**
SS-7	9/4/2008	0.4
SS-8	9/4/2008	**3.2**
SS-9	9/4/2008	0.043
SS-10	9/4/2008	0.062
Average Concentration[1]	-	**0.626**
TCLP Limit		0.5

1 - Logarithmic mean

Backfill Material

The excavation that remains after sludge removal and demolition of the wastewater impoundment will be backfilled with soils obtained from an onsite source located in the (describe area of site) portion of the site. In order to characterize potential fill materials, a soil sample from the proposed fill excavation area was collected on August 26, 2008 and submitted for analysis of VOCs, SVOCs, pesticides, herbicides, and PCBs. One VOC, tetrachloroethene, was detected at a concentration of 0.017 mg/kg, which is less than the TRG (restricted use) for tetrachloroethene of 18.2 mg/kg. SVOCs, pesticides, herbicides, and PCBs were not detected in the soil sample collected from the proposed fill excavation area.

Conclusions

Historical analytical results for samples collected between 1990 and 2001 do not indicate that wastewater sludge from the site is characteristically hazardous.

Analytical results for the samples collected from the east end of the wastewater impoundment and from the wastewater holding tank (SS-2 and SS-3) were submitted by Hercules to the MDEQ on September 15 & 18, 2008. Based on these analytical results, the MDEQ approved the waste streams represented by SS-2 and SS-3 for disposal in the Pine Belt Regional Landfill. The approval was provided in a letter dated September 19, 2008 from the MDEQ to the landfill. A copy of the letter is attached.

Based on the analytical results of the discrete samples collected from the western end of the wastewater impoundment on September 4, 2008, there would not appear to be a discrete area of the western end of the wastewater impoundment that is the source of the benzene detected in the earlier, composite samples.

The proposed source for backfill material to be used in the wastewater impoundment area appears suitable for use on site.

Recommendations

It is recommended that confirmation samples be collected from the excavation remaining after demolition of the wastewater impoundment. Confirmation soil samples should be collected from the sidewalls and bottom of the excavation and analyzed for benzene. If benzene is detected at concentrations above the applicable TRG in one or more confirmation samples, additional excavation may be necessary. If saturated soils are encountered in the excavation created by demolition of the wastewater impoundment, a sample of the water from the pit should be submitted for analysis in lieu of soil samples from the bottom of the excavation.

Attachments

Attachment A Historical Analytical Results
Attachment B Figure 1
Attachment C Analytical Results - July 1, 2008
Attachment D Analytical Results - July 30, 2008
Attachment E Analytical Results - September 4, 2008
Attachment F Analytical Results - Backfill Material
Attachment G MDEQ Approval Letter

MEMORANDUM

To: Timothy Hassett
Hercules, Incorporated

From: Charles Coney
Eco-Systems, Inc.

Date: September 22, 2008

Re: Sludge Sample Analyses
Hattiesburg, Mississippi

At your request, Eco-Systems has conducted sampling of sludges from the wastewater impoundment and the wastewater holding tank and submitted those samples for analysis. In general, the sampling was conducted and the samples were analyzed according to information supplied by Hercules. Initial sampling was conducted on July 1, 2008, and re-sampling of one area was conducted on July 30, 2008 and September 4, 2008. Samples were submitted to TestAmerica Laboratories, Inc. (TestAmerica) of Savannah, Georgia for analysis. A split of the sample collected on July 30, 2008 was also submitted to Bonner Analytical and Testing Company (BATCO).

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Samples Collected September 4, 2008

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samples collected from the western end of the wastewater impoundment were the result of influence from aliquots collected from a localized area of elevated benzene concentration. During the third sampling event, six samples, SS-5 through SS-10, were collected from discrete locations, which are shown on Figure 1. Samples collected from each of the six locations were mixed vertically, as described for the July 1, 2008 sampling event. The six discrete samples were submitted to TestAmerica for analysis of VOCs by the TCLP.

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SS-6	9/4/2008	**3.2**
SS-7	9/4/2008	0.4
SS-8	9/4/2008	**3.2**
SS-9	9/4/2008	0.043
SS-10	9/4/2008	0.062
TCLP Limit		0.5

Conclusions

Based on the analytical results of the discrete samples collected on September 4, 2008, there would not appear to be a discrete area of the western end of the wastewater impoundment that is the source of the benzene detected in the earlier, composite samples.

HERCULES

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED
CERTIFIED #: 7005 0390 0000 1703 9301

April 22, 2008

Jan Patton
Bureau of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

Dear Ms. Patton:

The purpose of this letter is to outline Hercules' plans to exit both our industrial wastewater impounding basin and five million gallon wastewater equalization tank. As you are aware, the company is working towards completing two years of major downsizing operations, while at the same time, improving the remaining operations at Hattiesburg.

The exiting of these units, as outlined in our October 25, 2005 letter to Ms. Carla Brown, and subsequent discussions, is scheduled for completion in the 3rd quarter of 2008. The work will soon be awarded to the successful remediation contractor bid. The sludge will be removed and properly disposed in an approved subtitle D landfill. Once the sludge has been removed, without disturbing the clay bottom, the impounding basin will be back-filled with dirt.

During the final cleanout, we would anticipate some localized odor as a result of disturbing the sludge upon its removal. Any odor will most likely be a mercaptan or sulfur type odor. We will utilize the latest technology-based techniques, such as the possibility of pH adjustment, to minimize the generation of any odors. We anticipate the removal of approximately 10,000 cubic yards of sludge from both units.

Attached is a draft letter we intend to send to area residents before we actually start any sludge removal. We solicit any suggestions you may have as to the content of this letter, as well as how to best communicate this project to the City and to our neighbors. Our goal, of course, is to allay any fears or concerns that any of our neighbors may have.

In addition, attached are a total of seven different past sampling events of the sludge material. We would like to update this data and believe that it may be best if the update data is generated by the State. We would be happy to reimburse the State for the cost of any analysis.

We would like to discuss the above with you at your earliest convenience. Please contact Mr. Charles Jordan, our Environmental Professional, at 601-545-3360, or myself at 414-461-4000 ext. 157, so we may discuss our path forward, including community communications.

Sincerely,

Rodney S. Bolton
Regional Manager

Attachments:

cc: Toby Cook, MDEQ, CMRRR: 7005 0390 0000 1703 9318
Rick Sumrall, MDEQ, CMRRR: 7005 0390 0000 1703 9325
Carla Brown, MDEQ, CMRRR: 7005 0390 0000 1703 9332
Willie McKercher, MDEQ, CMRRR: 7005 0390 0000 1703 9349
Tim Hassett, Hercules Incorporated
Roger Moore, Hercules Incorporated

DRAFT

April 22, 2008

Honorable Mayor, Mr. Johnny Dupree, City of Hattiesburg
Mr. Terry Steed, Executive Director, Emergency Management District
Hercules Hattiesburg CAP members
Area Residents

Dear Neighbor:

The purpose of this letter is to make our community leaders and neighbors aware of current and future planned activities at the Hercules Incorporated Hattiesburg, Mississippi, plant. The company is working towards completing two years of major downsizing operations, while at the same time, improving the operations remaining at Hattiesburg.

This is most evident in the plants physical change with the removal of several past plant operating structures at the facility. The plant is also exiting both its industrial wastewater impounding basin and a five million gallon wastewater equalization tank. This is possible because of the major downsizing of operations that has taken place.

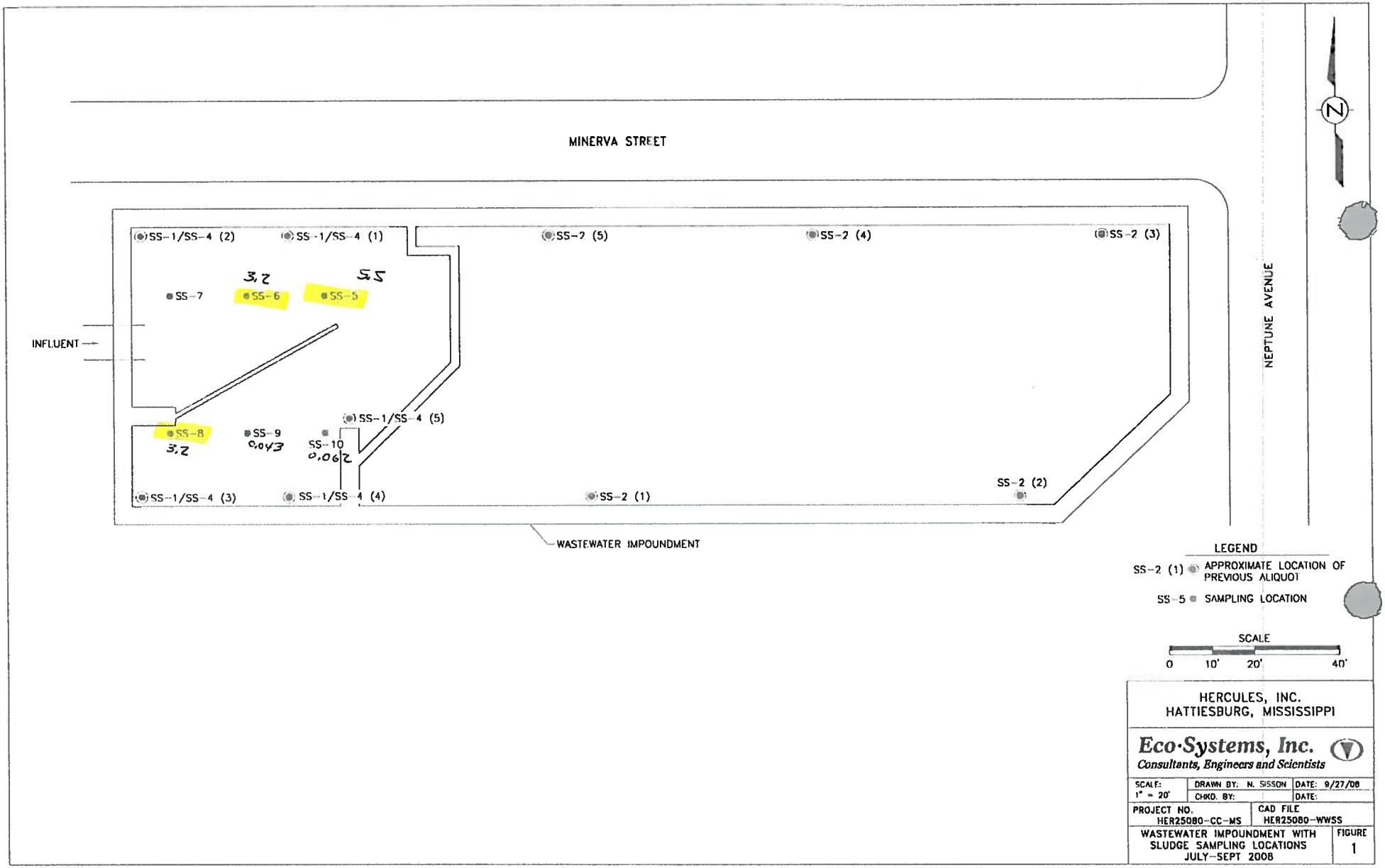
The exiting of both of these wastewater units will involve the cleanout of residual wastewater sludge. This work will be completed in concurrence with the Mississippi Department of Environmental Quality (MDEQ) oversight. The sludge will be removed and properly disposed of in an approved landfill.

The final clean out may generate some localized odors. This may occur when the sludge is disturbed during the removal. We do not expect any odors to create any risk to the community. Any odor will most likely be a mercaptan or sulfur type odor. The human nose can detect these substances at very low levels - levels that are far below levels that might be harmful. We will utilize the latest technology-based techniques, such as the possibility of pH adjustment, and we will monitor any odors as the work progresses. We anticipate both starting and completing this work during the 3rd quarter of 2008.

If you have any questions, or we can provide any additional information, please contact Mr. Charles Jordan, our Environmental Professional, at 601-545-3360, or myself at 414-461-4000 ext. 157.

Sincerely,

Rodney S. Bolton
Regional Manager



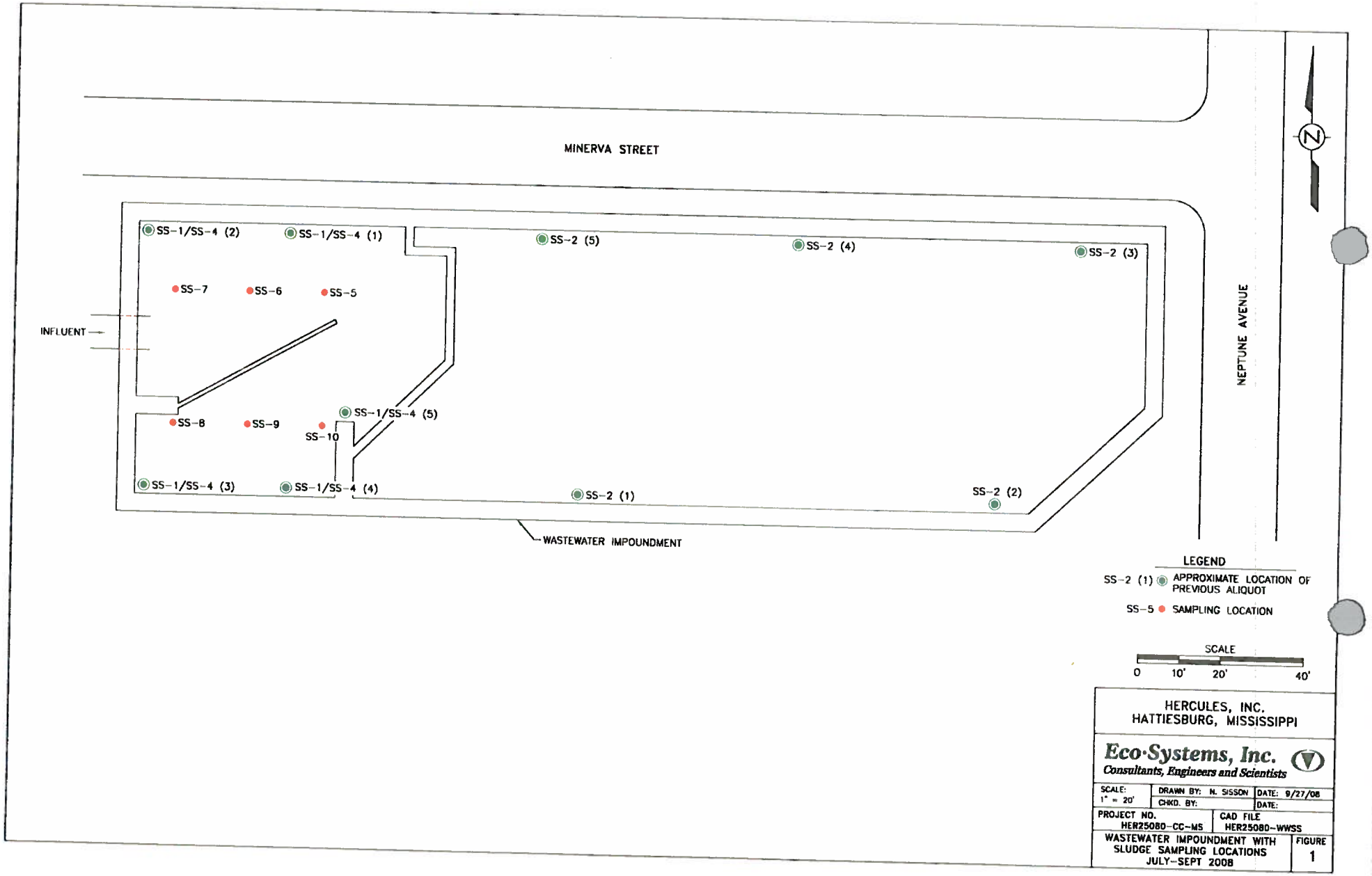
HERCULES, INC.
HATTIESBURG, MISSISSIPPI

Eco·Systems, Inc.
Consultants, Engineers and Scientists

SCALE: 1" = 20'	DRAWN BY: N. SISSON	DATE: 9/27/08
	CHKD. BY:	DATE:
PROJECT NO. HER25080-CC-MS	CAD FILE HER25080-WWSS	

WASTEWATER IMPOUNDMENT WITH SLUDGE SAMPLING LOCATIONS JULY–SEPT 2008

FIGURE 1


MINERVA STREET
NEPTUNE AVENUE
N
SS-1/SS-4 (2)
SS-1/SS-4 (1)
SS-2 (5)
SS-2 (4)
SS-2 (3)
SS-7
SS-6
SS-5
INFLUENT
SS-8
SS-9
SS-10
SS-1/SS-4 (5)
SS-1/SS-4 (3)
SS-1/SS-4 (4)
SS-2 (1)
SS-2 (2)
WASTEWATER IMPOUNDMENT
LEGEND
SS-2 (1) APPROXIMATE LOCATION OF PREVIOUS ALIQUOT
SS-5 SAMPLING LOCATION
SCALE
0 10' 20' 40'
HERCULES, INC.
HATTIESBURG, MISSISSIPPI
Eco·Systems, Inc.
Consultants, Engineers and Scientists
SCALE: 1" = 20'
DRAWN BY: N. SISSON
DATE: 9/27/08
CHKD. BY:
DATE:
PROJECT NO. HER25080-CC-MS
CAD FILE HER25080-WWSS
WASTEWATER IMPOUNDMENT WITH SLUDGE SAMPLING LOCATIONS JULY-SEPT 2008
FIGURE 1

ATTACHMENT A

HISTORICAL ANALYTICAL RESULTS

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

August 08, 2001

1

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 7/27/01
Date Received: 7/30/01
Project #: Current Sludge Pit (7/01)
Client ID #: Current sludge pit
Laboratory ID #: 012875-01
Matrix: Solid
Extraction Method: 1311
Date of Analysis: 8/7/01

TCLP Metals

Parameter	Detection Limit (mg/l)	Results (mg/l)	Regulatory Level (mg/l)
Arsenic	0.50	<0.5	5.0
Barium	1.0	<1.0	100.0
Cadmium	0.10	<0.1	1.0
Chromium	0.20	<0.2	5.0
Lead	0.50	<0.5	5.0
Mercury	0.0020	<0.002	0.20
Selenium	0.50	<0.5	1.0
Silver	0.50	<0.5	5.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

August 08, 2001

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 7/27/01
Date Received: 7/30/01
Project #: Current Sludge Pit (7/01)
Client ID #: Current sludge pit
Laboratory ID #: 012875-01
Matrix: Solid
Extraction Method: 1311
Date of Analysis: 8/7/01

TCLP Volatiles

Parameter	Detection Limit (mg/L)	Results (mg/L)	Regulatory Level (mg/L)
1,1-Dichloroethene	0.10	<0.1	0.70
1,2-Dichloroethane	0.10	<0.1	0.50
2-Butanone (MEK)	2.0	<2.0	200.0
Benzene	0.10	<0.1	0.50
Carbon tetrachloride	0.10	<0.1	0.50
Chlorobenzene	0.10	<0.1	100.0
Chloroform	0.10	<0.1	6.0
Tetrachloroethene	0.10	<0.1	0.70
Trichloroethene	0.10	<0.1	0.50
Vinyl Chloride	0.20	<0.2	0.20

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

August 08, 2001

3

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 7/27/01
Date Received: 7/30/01
Project #: Current Sludge Pit (7/01)
Client ID #: Current sludge pit
Laboratory ID #: 012875-01
Matrix: Solid
Extraction Method: 1311
Date of Analysis: 8/6/01

TCLP BNA

Parameter	Detection Limit (mg/l)	Results (mg/l)	Regulatory Level (mg/l)
1,4-Dichlorobenzene	0.10	<0.1	7.5
2,4,5-Trichlorophenol	0.25	<0.25	400.0
2,4,6--Trichlorophenol	0.25	<0.25	2.0
2,4-Dinitrotoluene	0.10	<0.1	0.13
Cresols	0.10	<0.1	200.0
Hexachloro-1,3-butadiene	0.10	<0.1	0.50
Hexachlorobenzene	0.10	<0.1	0.13
Hexachloroethane	0.10	<0.1	3.0
Nitrobenzene	0.10	<0.1	2.0
Pentachlorophenol	0.25	<0.25	100.0
Pyridine	0.25	<0.25	5.0

Laboratory Manager: Bassam Youssef

SUMMIT ENVIRONMENTAL TECHNOLOGIES, INC.
595 EAST TALLMADGE AVENUE
AKRON, OHIO 44310
TEL: 330/253-8211; FAX: 330/253-4489

CHAIN OF CUSTODY

A2LA CERTIFICATION #: 0724-01

s.e.t.

PROJECT NAME: Current Sludge Pit (7/01) PROJECT LOCATION _____ PO#: _____

CLIENT NAME: Hercules CLIENT ADDRESS 613 W 7th STREET Hattiesburg MS 39401

CONTACT PERSON: Charles Gordon PHONE #: 601-545-7459 FAX #: _____ SAMPLED BY: [signature] SET

#	SAMPLE ID#	MEDIA	TIME	DATE	BTEX 8020	GRO 8015M	DRO 8015M	TPH 418.1	TCLP METALS	TCLP VOCS	TCLP BNAS	TCLP PEST/HERB	OTHERS
~~[illegible]~~	~~[illegible]~~												
CURRENT SLUDGE PIT	SOLID	9:30AM	7-27-9						X	X	X		

01285-01

SPECIAL INSTRUCTIONS: _____

RELINQUISHED BY: [signature] DATE: 7-27-9 RECEIVED BY: [signature] SET DATE: 7-27-01

RECEIVED AT THE LAB BY: [signature] DATE: 7/30/01

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

September 08, 2000

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 8/24/00
Date Received: 8/28/00
Project #: N/A
Client ID #: IB Sludge
Laboratory ID #: 003248-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 9/5/00

TCLP Metals

Parameter	Detection Limit (mg/l)	Results (mg/l)	Regulatory Level (mg/l)
Arsenic	0.010	<0.01	5.0
Barium	1.0	<1.0	100.0
Cadmium	0.0050	0.011	1.0
Chromium	0.050	<0.05	5.0
Lead	0.10	<0.1	5.0
Mercury	0.0020	<0.002	0.20
Selenium	0.020	<0.02	1.0
Silver	0.010	<0.01	5.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 8/24/00
Date Received: 8/28/00
Project #: N/A
Client ID #: IB Sludge
Laboratory ID #: 003248-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 9/1/00

TCLP Volatiles

Parameter	Detection Limit (mg/L)	Results (mg/L)	Regulatory Level (mg/L)
1,1-Dichloroethene	0.10	<0.1	0.70
1,2-Dichloroethane	0.10	<0.1	0.50
2-Butanone (MEK)	2.0	<2.0	200.0
Benzene	0.10	<0.1	0.50
Carbon tetrachloride	0.10	<0.1	0.50
Chlorobenzene	0.10	<0.1	100.0
Chloroform	0.10	<0.1	6.0
Tetrachloroethene	0.10	<0.1	0.70
Trichloroethene	0.10	<0.1	0.50
Vinyl Chloride	0.20	<0.2	0.20

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

September 08, 2000

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 8/24/00
Date Received: 8/28/00
Project #: N/A
Client ID #: IB Sludge
Laboratory ID #: 003248-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 8/31/00

TCLP BNA

Parameter	Detection Limit (mg/l)	Results (mg/l)	Regulatory Level (mg/l)
1,4-Dichlorobenzene	0.10	<0.1	7.5
2,4,5-Trichlorophenol	0.25	<0.25	400.0
2,4,6--Trichlorophenol	0.25	<0.25	2.0
2,4-Dinitrotoluene	0.10	<0.1	0.13
Cresols	0.10	1.8	200.0
Hexachloro-1,3-butadiene	0.10	<0.1	0.50
Hexachlorobenzene	0.10	<0.1	0.13
Hexachloroethane	0.10	<0.1	3.0
Nitrobenzene	0.10	<0.1	2.0
Pentachlorophenol	0.25	<0.25	100.0
Pyridine	0.25	<0.25	5.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

September 08, 2000

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 8/24/00
Date Received: 8/28/00
Project #: N/A
Client ID #: IB Sludge
Laboratory ID #: 003248-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 9/7/00

TCLP Herbicides

Parameter	Detection Limit (mg/l)	Results (mg/l)	Regulatory Level (mg/l)
2,4,5-TP(Silvex)	0.0050	<0.005	1.0
2,4,D	0.020	<0.02	10.0

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

September 08, 2000

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 8/24/00
Date Received: 8/28/00
Project #: N/A
Client ID #: IB Sludge
Laboratory ID #: 003248-01
Matrix: Liquid
Extraction Method: 1311
Date of Analysis: 9/1/00

TCLP Pesticides

Parameter	Detection Limit (mg/l)	Results (mg/l)	Regulatory Level (mg/l)
Chlordane	0.010	<0.01	0.030
Endrin	0.0020	<0.002	0.020
Gamma-BHC	0.0020	<0.002	0.0020
Heptachlor	0.0020	<0.002	0.0080
Heptachlor Epoxide	0.0020	<0.002	0.0080
Methoxychlor	0.0020	<0.002	10.0
Toxaphene	0.10	<0.1	0.50

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

September 08, 2000

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 8/24/00
Date Received: 8/28/00
Project #: N/A
Client ID #: IB Sludge
Laboratory ID #: 003248-01
Matrix: Liquid
Analyst: TRS

Parameter	Method	Detection Limit (mg/l)	Results (mg/l)	Date of Analysis
Reactive Cyanide	7.3.3.2	0.500	<0.50	8/31/00
Reactive Sulfide	7.3.4.2	25.000	150.000	9/1/00

Laboratory Manager: Bassam Youssef

SUMMIT
ENVIRONMENTAL TECHNOLOGIES, INC.
Analytical Laboratories

September 08, 2000

7

Client: Hercules
Address: 613 West 7th ST
Hattiesburg, MS 39401

Date Collected: 8/24/00
Date Received: 8/28/00
Project #: N/A
Client ID #: IB Sludge
Laboratory ID #: 003248-01
Matrix: Liquid
Analyst: BY

Parameter	Method	Results	Date of Analysis
Flash Point	1010	>140F	9/6/00
pH	EPA 150.1	5.01s.u.	9/3/00

Laboratory Manager: Bassam Youssef

SUMMIT ENVIRONMENTAL TECHNOLOGIES, INC.
595 EAST TALLMADGE AVENUE
AKRON, OHIO 44310
TEL: 330/253-8211; FAX: 330/253-4489

CHAIN OF CUSTODY

A2LA CERTIFICATION #: 0724-01

s.e.t.

PROJECT NAME: _____ PROJECT LOCATION _____ PO#: _____

CLIENT NAME: Hercules CLIENT ADDRESS 613 West 7th St. Hattiesburg Miss 39401

CONTACT PERSON: Charlie Jordan PHONE #: 584-3360 FAX #: _____ SAMPLED BY: Prescott

#	SAMPLE ID#	MEDIA	TIME	DATE	BTEX 8020	GRO 8015M	DRO 8015M	TPH 418.1	TCLP METALS	TCLP VOCS	TCLP BNAS	TCLP PEST/HERB	OTHERS
	mw-1B	sludge	10:00 am	8-24-00					X	X	X	X	RCI

00324801

SPECIAL INSTRUCTIONS: _____

RELINQUISHED BY: J. Prescott DATE: 8-25-00 RECEIVED BY: S.E.T DATE: 8-25-00

BONNER ANALYTICAL TESTING COMPANY
2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES

File Number: BT45075
Collected By: CMC

Sample Date/Time: 05-13-98 @ 1345
Date/Time Rec'd: 05-13-98 @ 1500

TCLP EVALUATION - SLUDGE PIT COMPOSITE

Analyte/Method #	Result	MDL	Date/Time/Analyst
LEACHABLE METALS:			
Arsenic/6010	ND	0.02	05-26-98/1804/GMR
Barium/6010	0.22	0.002	06-01-98/1553/GMR
Cadmium/7130	ND	0.02	05-27-98/1437/SLH
Chromium/7190	ND	0.04	05-21-98/1330/SLH
Lead/6010	ND	0.02	05-21-98/1155/SLH
Mercury/7470	ND	0.001	05-20-98/1546/SLH
Selenium/6010	ND	0.03	06-04-98/1137/SLH
Silver/7760	ND	0.05	05-26-98/1321/SLH
pH, S.U./9045	3.42	±0.01	06-01-98/1142/JDS
REACTIVITY			
Cyanides (mg/kg)/9010	0.04	0.01	06-01-98/1111/JDS
Sulfides (mg/kg)/9030	ND	1	06-01-98/1115/JDS
Ignitability °F/1010	144	±1	06-01-98/1335/JDS

Data reported in mg/L unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

Certified by: _____
Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

sr

BONNER ANALYTICAL TESTING COMPANY
2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES

File Number: BT45075
Collected By: Client

Sample Date/Time: 05-13-98 @ 1345
Date/Time Rec'd: 05-13-98 @ 1500

QA/QC RESULTS

Analyte	Method Blank	Spike Amount	Matrix Spike Recovery %	Matrix Spike Duplicate Recovery %	RPD%
Arsenic	ND	1.0	85.9	92.3	6.38
Barium	ND	0.50	100	98.9	1.1
Cadmium	ND	0.50	96.4	100.4	4
Chromium	ND	0.50	99.0	104	5
Lead	ND	1.0	110.3	100.7	10.11
Mercury	ND	0.003	102	100	1.98
Selenium	ND	2.0	104.1	96.5	7.61
Silver	ND	2.5	96.9	95.9	0.99

All analyses performed in accordance with 40 CFR 136 and amendments.

Certified by: _____
Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

sr

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILES - TCLP - GC/MS ANALYSIS DATA

Client: Hercules
Location: Sludge Pit Composite
File #: BT45075

Collected: 05/13/98 13:45 Client
Extracted: 05/20/98 17:00 CRR
Analyzed: 05/21/98 15:49 CRR

Sample Type: Solid
Analysis Method: 8260
Extraction Method: 1311

TCLP Compound Name	MDL mg/L (ppm)	Regulatory Level (ppm)	SAMPLE			BLANK			MATRIX			MATRIX DUPLICATE		
			Detected Amount mg/L (ppm)	Spike Amount ng	Spike % Recovery	Detected Amount mg/L (ppm)	Spike Amount ng	Spike % Recovery	Detected Amount ng/ml in the extract	Spike Amount ng	Spike % Recovery	Detected Amount ng/ml in the extract	Spike Amount ng	Spike % Recovery
D029 1,1-Dichloroethene	0.002	0.7	ND			ND			46.4	250.0	92.8	45.4	250.0	90.8
D018 Benzene	0.002	0.5	ND			ND			47.1	250.0	94.2	48.4	250.0	96.8
D040 Trichloroethene	0.003	0.5	ND			ND			51.4	250.0	102.8	50.3	250.0	100.6
D021 Chlorobenzene	0.002	100.0	ND			ND			50.7	250.0	101.4	54.0	250.0	108.0
D043 Vinyl Chloride	0.003	0.2	ND			ND			40.5	250.0	81.0	37.3	250.0	74.6
D035 2-Butanone (MEK)	0.01	200.0	0.012			ND			66.0	250.0	132.0	65.0	250.0	130.0
D022 Chloroform	0.002	6.0	ND			ND			45.5	250.0	91.0	47.2	250.0	94.4
D019 Carbon Tetrachloride	0.002	0.5	ND			ND			46.8	250.0	93.6	46.5	250.0	93.0
D028 1,2-Dichloroethane	0.002	0.5	ND			ND			52.0	250.0	104.0	53.5	250.0	107.0
D039 Tetrachloroethene	0.002	0.7	ND			ND			51.1	250.0	102.2	48.4	250.0	96.8
Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
Dibromofluoromethane			48.1	250.0	96.2	50.0	250.0	100.0	47.6	250.0	95.2	50.8	250.0	101.6
Toluene-d8			46.9	250.0	93.8	48.0	250.0	96.0	51.0	250.0	102.0	51.7	250.0	103.4
4-Bromofluorobenzene			47.4	250.0	94.8	44.8	250.0	89.6	44.4	250.0	88.8	48.7	250.0	97.4

Certified by:

Michael S. Bonner,Ph. D.
Bonner Analytical Testing Company

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Client: Hercules
Location: TCLP
File #: BT45075

	Date	Time	Analyst
Collected:	5/13/97	13:45	Client
Extracted:	5/21/97	9:30	JMR
Analyzed:	5/28/97	9:55	JMR

Sample Type: TCLP
Extraction Method: 1311
Analysis Method: 8270

	Compound Name	CAS Number	MDL mg/L (ppm)	SAMPLE Detected Amount mg/L (ppm)	SAMPLE Spike Amount ug	SAMPLE Spike % Recovery	Regulatory Level Amount mg/L (ppm)	BLANK Detected Amount ug/L (ppb)	BLANK Spike Amount ug	BLANK Spike % Recovery	MATRIX Detected Amount ng/ul in the extract	MATRIX Spike Amount ug	MATRIX Spike % Recovery	Matrix Duplicate Detected Amount ng/ul in the extract	Matrix Duplicate Spike Amount ug	Matrix Duplicate Spike % Recovery
D038	Pyridine	110-86-1	0.0025	ND			5.00	ND			26.00	25.00	26.00	22.77	25.00	91.08
D027	1,4-Dichlorobenzene	106-46-7	0.0061	ND			7.50	ND			54.98	100.00	54.98	55.48	100.00	55.48
D023	2-Methylphenol	95-48-7	0.0056	ND			200.00	ND			26.64	150.00	17.76	27.59	150.00	18.39
D025	3/4-Methylphenol	106-44-5	0.0174	ND			200.00	ND			27.51	150.00	18.34	28.07	150.00	18.71
D034	Hexachloroethane	67-72-1	0.0080	ND			3.00	ND			33.45	100.00	33.45	35.31	100.00	35.31
D036	Nitrobenzene	98-95-3	0.0082	ND			2.00	ND			48.88	100.00	48.88	50.21	100.00	50.21
D033	Hexachlorobutadiene	87-68-3	0.0094	ND			0.50	ND			34.31	100.00	34.31	36.09	100.00	36.09
D042	2,4,6-Trichlorophenol	88-06-2	0.0091	ND			2.00	ND			46.68	150.00	31.12	46.07	150.00	30.71
D041	2,4,5-Trichlorophenol	95-95-4	0.0071	ND			400.00	ND			48.12	150.00	32.08	49.80	150.00	33.20
D030	2,4-Dinitrotoluene	121-14-2	0.0083	ND			0.13	ND			88.37	100.00	88.37	87.81	100.00	87.81
D032	Hexachlorobenzene	118-74-1	0.0080	ND			0.13	ND			40.93	100.00	40.93	39.08	100.00	39.08
D037	Pentachlorophenol	87-86-5	0.0125	ND			100.00	ND			147.87	150.00	98.58	129.90	150.00	86.60
	Surrogate Compounds			Detected Amount	Spiked Amount	% Recovery		Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
	2-Fluorophenol			65.64	200.00	32.82		154.68	200.00	77.34	40.64	200.00	20.32 *	35.46	200.00	17.73 *
	Phenol-d6			41.56	200.00	20.78		155.97	200.00	77.99	23.30	200.00	11.65	22.42	200.00	11.21
	Nitrobenzene-d5			73.10	100.00	73.10		65.70	100.00	65.70	38.38	100.00	38.38	36.12	100.00	36.12
	2-Fluorobiphenyl			97.76	100.00	97.76		85.57	100.00	85.57	53.04	100.00	53.04	46.98	100.00	46.98
	2,4,6-Tribromophenol			193.52	200.00	96.76		184.12	200.00	92.06	148.62	200.00	74.31	133.58	200.00	66.79
	Terphenyl-d14			116.10	100.00	116.10		136.08	100.00	136.06	58.80	100.00	58.80	52.96	100.00	52.96

* = Results Outside of QA Limits

Certified by:

Micheal S. Bonner,Ph, D.
Bonner Analytical Testing Company

BONNER ANALYTICAL TESTING COMPANY
QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
PESTICIDE / HERBICIDE - ECD ANALYSIS DATA

Client: Hercules
Sample ID: Sludge Pit Composite
File #: BT45075

	Date	Time	Analyst
Collection:	5/13/98	13:45	CMC
Pesticide Extraction:	5/21/98	9:00	RML
Pesticide Analysis:	5/21/98	20:10	RML
Herbicide Extraction:	5/21/98	13:00	RML
Herbicide Analysis:	5/22/98	8:46	RML

Sample Type: TCLP Extract
Pesticide Extraction Method: SW846 1311 / 3510C
Pesticide Analysis Method: SW846 8081A
Herbicide Extraction Method: SW846 1311 / 8151A
Herbicide Analysis Method: SW846 8151A

EPA HW No.	COMPOUNDS	Regulatory Level ug/L (ppb)	MDL ug/L (ppb)	SAMPLE Detected Amount ug/L (ppb)	SAMPLE Spike Amount ug	SAMPLE Spike % Recovery	METHOD BLANK Detected Amount ug/L (ppb)	METHOD BLANK Spike Amount ug	METHOD BLANK Spike % Recovery	MATRIX SPIKE Detected Amount ug/L (ppb)	MATRIX SPIKE Spike Amount ug	MATRIX SPIKE Spike % Recovery	MATRIX SPIKE DUPLICATE Detected Amount ug/L (ppb)	MATRIX SPIKE DUPLICATE Spike Amount ug	MATRIX SPIKE DUPLICATE Spike % Recovery
	Pesticides														
D012	Endrin *	20.00	0.10	ND			ND			159.2	200	79.60	170.2	200	85.10
D013	Gamma-BHC *	400	0.05	ND			ND			144.9	200	72.45	149.9	200	74.95
D014	Methoxychlor *	10000	0.50	ND			ND			180.7	200	90.35	194.4	200	97.20
D015	Toxaphene	500	1.00	ND			ND								
D020	Chlordane	30.00	0.50	ND			ND								
D031	Heptachlor *	8.00	0.05	ND			ND			140.9	200	70.45	164.5	200	82.25
D031	Heptachlor Epoxide *	8.00	0.10	ND			ND			165.3	200	82.65	155.9	200	77.95
	Herbicides														
D016	2,4-D *	10000	0.50	ND			ND			310.4	400	77.60	353.9	400	88.48
D017	2,4,5-TP (Silvex) *	1000	0.50	ND			ND			334.8	400	83.70	324.1	400	81.03
	SURROGATE COMPOUNDS			Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery	Detected Amount	Spiked Amount	% Recovery
	Decachlorobiphenyl			16.08	20.00	80.40	16.40	20.00	82.00	15.60	20.00	78.00	18.13	20.00	90.65
	2,4-Dichlorophenylacetic acid			34.66	40.00	86.65	35.76	40.00	89.40	36.84	40.00	92.10	38.89	40.00	97.23

* = Matrix Spiking Compounds

Certified by: _____
Michael S. Bonner, Ph.D
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

Phone: (601) 264-2854
2703 Oak Grove Road, Hattiesburg, MS 39402
Fax: (601) 268-7084

"Testing Your World for a Safer Tomorrow"

YOUR COMPANY NAME: Hercules

YOUR COMPANY ADDRESS: Hattiesburg, Ms.

NAME OF PERSON TO CONTACT: Rudy Harvey, Raymond Poole

CONTACT PERSON'S PHONE:

YOUR PROJECT NO. | YOUR P.O.# | YOUR PROJECT NAME:

YOUR SAMPLE DESCRIPTION	DATE	TIME	MATRIX
Sludge Pit Composite	5/13/98	1:45 PM	Soil

PARAMETERS FOR ANALYSIS: TCLP Comp by ✓; RCI; Semi VOCs; VOA's; Metals

NUMBER OF CONTAINERS

PRESERVATIONS

REMARKS

Turnaround Time

Detection Limits Special Limits Required Yes No

BT45075

RELINQUISHED BY (Signature)	DATE	TIME	RECEIVED BY (Signature)	RELINQUISHED BY (Signature)	DATE	TIME	RECEIVED BY (Signature)
Mike Chandler	5/13/98	3:00 PM					

METHOD OF SHIPMENT	SHIPPED BY (Signature)	COURIER (Signature)	RECEIVED FOR BATCO BY: (Signature)	DATE/TIME

SAMPLE REMAINDER DISPOSAL

RETURN SAMPLE REMAINDER TO CLIENT VIA _____
(SOME SHIPPING CHARGES MAY BE INCURRED)

I REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS

_____ (Signature) _____ (Date)

IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM ADDITIONAL CHARGE OF $25.00 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL.

REVISION DATE 2/94

BONNER ANALYTICAL TESTING COMPANY
2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT34003
Collected By: Client
Sample Date/Time: 08-28-96
Date/Time Rec'd: 08-28-96 @ 1600

TCLP EVALUATION--IMPOUNDMENT BASIN SLUDGE

Analyte/Method #	Result	MDL	Date/Time/Analyst
LEACHABLE METALS:			
Arsenic/6010	ND	0.02	09-06-96/1255/JMD
Barium/6010	0.425	0.002	09-06-96/1255/JMD
Cadmium/7130	ND	0.02	09-05-96/1545/JMD
Chromium/7190	ND	0.04	09-06-96/0900/JMD
Lead/7420	ND	0.15	09-06-96/0920/JMD
Mercury/7470	ND	0.001	09-06-96/1530/JMD
Selenium/6010	ND	0.03	09-06-96/1255/JMD
Silver/7760	ND	0.05	09-05-96/1540/JMD
pH, s.u./9045	5.95	±0.01	09-24-96/1645/RML
REACTIVITY:			
Cyanide (mg/kg)/9010	0.02	0.02	10-03-96/1000/TEB
Sulfide (mg/kg)/9030	64	1	09-23-96/1400/RML
Ignitability °F/1020	>180	±0.5	09-18-96/1045/RML

Data reported in mg/L, unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

Certified by: _____
Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

lr

BONNER ANALYTICAL TESTING COMPANY
2703 OAK GROVE ROAD
HATTIESBURG, MS 39402
PH. (601) 264-2854

Client: HERCULES, INC.

File Number: BT34003
Collected By: Client
Sample Date/Time: 08-28-96
Date/Time Rec'd: 08-28-96 @ 1600

TCLP EVALUATION--IMPOUNDMENT BASIN SLUDGE

Analyte/Method #	Result	MDL	Date/Time/Analyst
Total Solids/---	11.64	0.1	09-23-96/1430/RWC
TKN/351.3	1,350	14	09-10-96/1130/KAW
Ammonia/350.2	180	14	09-19-96/1130/KAW
Phosphorus/365.2	170	0.1	09-18-96/1000/RML
Potassium/6010	32.2	0.6	09-18-96/0825/JMD

Data reported in mg/L, unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

Certified by: _____
Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

lr

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports
Extraction Method - EPA 1311 Analysis Method - SW-846 Method 8270

BT34003 BATCO File # | Hercules COMPANY | TCLP SAMPLE TYPE | Sediment Basin Sludge SAMPLE POINT | Collected: 082896 @ 1400 Analyzed: 091096 @ 1413 DATE TIME

Compound EPA HW NO.	MDL mg/L (ppm)	SAMPLE			REGULATORY LEVEL		BLANK			MATRIX			DUPLICATE MATRIX		
		Detected Concen. mg/L (ppm)	Spike Amt. ug	Spike % Recov	Concen. mg/L (ppm)		Detected Concen. mg/L (ppm)	Spike Amt. ug	Spike % Recov	Detected Concen. ng/ul in the extract	Spike Amt. ug	Spike % Recov	Detected Concen. ng/ul in the extract	Spike Amt. ug	Spike % Recov
D038 Pyridine*	.020	ND			5.0		ND			70.0	100	70.0	65.6	100	65.6
D027 1,4-Dichlorobenzene*	.020	ND			7.5		ND			86.9	100	86.9	76.1	100	76.1
D023 2-Methylphenol*	.020	0.328			200.0		ND			131.4	150	87.6	130.3	150	86.9
D024 3-Methylphenol*	.020	0.506			200.0		ND			140.1	150	93.4	136.5	150	91.0
D025 4-Methylphenol*	.020	0.478			200.0		ND			132.3	150	88.2	128.6	150	85.7
D034 Hexachloroethane*	.020	ND			3.0		NO			79.4	100	79.4	81.0	100	81.0
D036 Nitrobenzene*	.020	ND			2.0		ND			80.0	100	80.0	76.4	100	76.4
D033 Hexachlorobutadiene*	.020	ND			0.5		ND			92.8	100	92.8	82.9	100	82.9
D042 2,4,6-Trichlorophenol*	.020	ND			2.0		ND			135.6	150	90.4	133.6	150	89.1
D041 2,4,5-Trichlorophenol*	.100	ND			400.0		ND			139.1	150	92.7	138.2	150	92.1
D030 2,4 Dinitrotoluene*	.020	ND			0.13		ND			78.1	100	78.1	79.6	100	79.6
D032 Hexachlorobenzene*	.020	ND			0.13		NO			94.3	100	94.3	82.4	100	82.4
D037 Pentachlorophenol*	.100	ND			100.0		ND			140.8	150	93.9	141.1	150	94.1
SURROGATES:															
Fluorophenol		155.2	200	77.6			152.6	200	76.3	100.8	200	50.4	97.8	200	48.9
Phenol-d6		118.1	200	59.1			98.9	200	49.5	71.1	200	35.6	69.3	200	34.6
Nitrobenzene-d5		69.9	100	69.9			85.2	100	85.2	84.7	100	84.7	73.7	100	73.7
Fluorobiphenyl		82.5	100	82.5			81.7	100	81.7	97.8	100	97.8	83.9	100	83.9
2,4,6-Tribromophenol		180.6	200	90.3			201.1	200	100.6	172.4	200	86.2	159.4	200	79.7
Terphenyl-d14		99.4	100	99.4			100.3	100	100.3	78.5	100	78.5	73.4	100	73.4

* MATRIX SPIKING COMPOUNDS

Certified by:

MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILES - GC/MS ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports
Analysis Method - SW-846 (8260)

BT34003 — BATCO File #
HERCULES COMPANY
TCLP EXTRACTION — SAMPLE TYPE
IMPOUNDMENT BASIN SLUDGE — SAMPLE POINT
Collected: 08/28/96 @ 1400
Analyzed: 09/05/96 @ 1537 — DATE TIME

Compound EPA HW NO.	MDL mg/L (ppm)	SAMPLE Detected Concen. mg/L (ppm)	SAMPLE Spike Amt. ng	SAMPLE Spike % Recov	BLANK Detected Concen. mg/L (ppm)	BLANK Spike Amt. ng	BLANK Spike % Recov	REGULATORY LEVEL Concen. mg/L (ppm)		MATRIX (BT34002) Detected Concen. mg/L	MATRIX (BT34002) Spike Amt. ng	MATRIX (BT34002) Spike % Recov	DUPLICATE MATRIX (BT34002) Detected Concen. mg/L	DUPLICATE MATRIX (BT34002) Spike Amt. ng	DUPLICATE MATRIX (BT34002) Spike % Recov
D029 1,1-Dichloroethene	0.05	ND			ND			0.7		0.051	250	101.2	0.053	250	106.0
D018 Benzene	0.05	0.012 J			ND			0.5		0.052	250	104.8	0.051	250	103.0
D040 Trichloroethene	0.05	ND			ND			0.5		0.052	250	103.4	0.054	250	107.4
D021 Chlorobenzene	0.05	ND			ND			100.0		0.056	250	112.4	0.057	250	114.0
D043 Vinyl Chloride	0.1	ND			ND			0.2		0.061	250	122.4	0.051	250	102.6
D035 2-Butanone (MEK)	0.1	0.436			ND			200.0		0.167	250	107.4	0.195	250	162.8
D022 Chloroform	0.05	ND			ND			6.0		0.052	250	103.6	0.056	250	112.6
D019 Carbon Tetrachloride	0.05	ND			ND			0.5		0.054	250	107.6	0.054	250	107.6
D028 1,2-Dichloroethane	0.05	ND			NO			0.5		0.050	250	99.4	0.050	250	99.6
D039 Tetrachloroethene	0.05	ND			ND			0.7		0.056	250	112.6	0.060	250	120.8
		ug/L (ppb)			ug/L (ppb)					ug/L (ppb)			ug/L (ppb)		
Surrogates:															
Dibromofluoromethane		48.7	250	97.4	51.0	250	102.0			49.2	250	98.4	51.4	250	102.8
Toluene-d8		50.7	250	101.4	51.9	250	103.8			50.1	250	100.2	48.3	250	96.6
4-Bromofluorobenzene		55.6	250	111.2	48.0	250	96.0			48.3	250	96.6	51.7	250	103.4

J - results estimated or Below Method Detection Level.

Certified by: 

MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
PESTICIDE/POLYCHLORINATED BIPHENYLS - ECD ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports
Analysis Method - SW-846;8080

BT34003T — BATCO File #
Hercules — COMPANY
TCLP — SAMPLE TYPE
Sediment / Basin Sludge — SAMPLE POINT
Collected: 08/28/96 1400
Analyzed: 09/23/96 2255
DATE TIME

Compound	MDL ug/L (ppb)	SAMPLE Detected Concen. ug/L (ppb)	SAMPLE Spike Amt. ug	SAMPLE Spike % Recov	BLANK Detected Concen. ug/L (ppb)	BLANK Spike Amt. ug	BLANK Spike % Recov	MATRIX Detected Concen. ug/L (ppb)	MATRIX Spike Amt. ug	MATRIX Spike % Recov	DUPLICATE MATRIX Detected Concen. ug/L (ppb)	DUPLICATE MATRIX Spike Amt. ug	DUPLICATE MATRIX Spike % Recov
* Gamma-BHC (Lindane)	0.05	ND			ND			7.74	12.5	61.9	7.49	12.5	59.9
* Heptachlor	0.05	ND			ND			6.35	12.5	50.8	6.62	12.5	53.0
* Endrin	0.10	ND			ND			13.21	25.0	52.8	13.53	25.0	54.1
Heptachlor epoxide	0.05	ND			ND								
* Methoxychlor	0.50	ND			NO			9.63	12.5	77.0	9.00	12.5	72.0
Toxaphene	1.00	ND			ND								
Chlordane	0.50	ND			NO								
* 2,4-D	0.50	ND			ND			1.29	2.0	64.5	1.61	2.0	80.5
* 2,4,5-TP (Silvex)	0.50	ND			ND			1.57	2.0	78.5	0.91	2.0	45.5
Surrogate:													
Tetrachloro-m-xylene		0.182	0.20	91.0	0.075	0.20	37.5	0.100	0.20	50.0	0.064	0.20	32.0
Decachlorobiphenyl		0.116	0.20	58.0	0.059	0.20	29.5	0.111	0.20	55.5	0.107	0.20	53.5
Dichlorophenylacetic acid		1.604	2.00	80.2	2.200	2.00	110.0	1.160	2.00	58.0	0.951	2.00	47.6

Extracted 09/03/96
Herbicide analyzed on 09/26/96 @0734
*Matrix Spiking Compounds

Certified by: _____
MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

Phone: (601) 264-2854 — 2703 Oak Grove Road, Hattiesburg, MS 39402 — Fax: (601) 268-7084

"Testing Your World for a Safer Tomorrow"

BATCO

1. YOUR COMPANY NAME: Hercules
YOUR COMPANY ADDRESS:
NAME OF PERSON TO CONTACT: Charlie Jordan
CONTACT PERSON'S PHONE:

2. YOUR PROJECT NO.: | YOUR P.O.# | YOUR PROJECT NAME:

3.

YOUR SAMPLE DESCRIPTION:	DATE	TIME	MATRIX	TCLP metals	TCLP VOA	TCLP BNA	TCLP Pesticide / TCLP Herbicide	pH, RCI			NUMBER OF CONTAINERS	PRESERVATIONS
Sediment Basin Sludge	8-28	1400		X	X	X	X	X				
(IMPOUNDMENT BASIN SLUDGE)												
SAMPLE IN COOLER 1-gallon CONTAINER												
MUST BE FILTERED												

4. PARAMETERS FOR ANALYSIS: Extraction [illegible]; TCLP metals; TKS; TCLP-VOA; TCLP BNA; TCLP Pesticide; TCLP Herbicide; pH, RCI (X marked for each)

5. REMARKS
Turnaround Time
Detection Limits Special Limits Require Yes No
Please circle one, if Ye please describe belov or include separate sheet detailing requirements.

BT34003

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)

6.

METHOD OF SHIPMENT	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR BATCO BY: (Signature)	DATE/TIM
pickup @ GUARD GATE		CMC	Rhonda [signature]	8-28 1600

SAMPLE REMAINDER DISPOSAL
RETURN SAMPLE REMAINDER TO CLIENT VIA ____________
(SOME SHIPPING CHARGES MAY BE INCURRED)

☐ I REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS
____________ (Signature) ____________ (Date)

IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM ADDITIONAL CHARGE OF $25.00 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL.

REVISION DATE

LK 3766

From Leo

From: Environmental Diagnostic Laboratories
P.O. Box 15098
Hattiesburg, MS 39404-5098
(800) 606-7363 or (601) 264-2222

March 13, 1996

To: Mr. Charles Jordan
Hercules, Inc.
P.O. Box 1937
Hattiesburg, MS 39403

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA13228
Sample Description: I.B Sludge
Sample collection date: 03/05/96
Lab submittal date: 03/05/96
Received by: JPH

Location Code: HERCULES
Sample collector: J HUSBANDS
Time: 11:30
Time: 16:21
Validated by: JPH

Parameter: TCLP Extraction (Leach)
Method reference: SW846-1311
Result: Completed
Date started: 03/06/96
Time started: 16:00

MDL or sensitivity:
Date finished: 03/07/96
Analyst: JFL

Parameter: TCLP Extraction for volatiles
Method reference: SW846-1311
Result: Completed
Date started: 03/06/96
Time started: 16:00

MDL or sensitivity:
Date finished: 03/07/96
Analyst: JFL

Parameter: Acid Digestion
Method reference: SW846-3010
Result: Completed
Date started: 03/11/96
Time started: 08:45

MDL or sensitivity:
Date finished: 03/11/96
Analyst: HPG

Parameter: Mercury water digestion
Method reference: SW846-7470
Result: Completed
Date started: 03/11/96
Time started: 09:45

MDL or sensitivity:
Date finished: 03/11/96
Analyst: HPG

Parameter: TCLP Metals
Method reference: EPA 200's
Result: see below
Date started: 03/11/96
Time started: 13:15

Date finished: 03/11/96
Analyst: HPG

Parameter: TCLP Volatiles
Method reference: SW846-8240
Result: see below
Date started: 03/06/96
Time started: 12:34
Date finished: 03/06/96
Analyst: DCB

Parameter: TCLP Semivolatiles
Method reference: SW846-8270
Result: see below
Date started: 03/07/96
Time started: 14:44
Date finished: 03/07/96
Analyst: WHD

Parameter: BNA Extraction on TCLP Fluid
Method reference: SW846-3510
Result: Completed
Date started: 03/07/96
Time started: 11:45
MDL or sensitivity:
Date finished: 03/07/96
Analyst: RWL

Parameter: % Solids
Method reference: EPA 160.3m
Result: 14.2 %
Date started: 03/06/96
Time started: 09:08
MDL or sensitivity: 1
Date finished: 03/12/96
Analyst: DLV

Parameter: Reactive Cyanide
Method reference: SW846
Result: Not detected mg release/Kg
Date started: 03/06/96
Time started: 08:20
MDL or sensitivity: 10
Date finished: 03/06/96
Analyst: DLV

Parameter: Reactive Sulfide
Method reference: SW846
Result: Less than mg release/Kg
Date started: 03/06/96
Time started: 08:20
MDL or sensitivity: 10
Date finished: 03/06/96
Analyst: DLV

Parameter: Corrosivity (pH)
Method reference: SW846
Result: 5.48 SU
Date started: 03/06/96
Time started: 08:53
MDL or sensitivity: 0.05
Date finished: 03/06/96
Analyst: DLV

Parameter: Ignitability
Method reference: SW846-1010
Result: > 160 deg F
Date started: 03/06/96
Time started: 09:30
MDL or sensitivity: 70
Date finished: 03/06/96
Analyst: DLV

Data for TCLP Metals mg/L:

Component Name	Result	Component MDL
Arsenic	Not detected	0.01
Barium	0.378	0.001

Data for TCLP Metals (continued):

Component Name	Result	Component MDL
Cadmium	Not detected	0.05
Chromium	0.015	0.001
Lead	0.027	0.01
Mercury	Not detected	0.001
Selenium	Not detected	0.01
Silver	0.007	0.001

Data for TCLP Volatiles ug/L:

Component Name		Result	Component MDL
Benzene		95.1	75
Carbon Tetrachloride		Not detected	75
Chlorobenzene		(39.0)	75
Chloroform		Not detected	75
1,2-Dichloroethane		Not detected	75
1,1-Dichloroethene		Not detected	75
2-Butanone		(442)	750
Tetrachloroethene		Not detected	75
Trichloroethene		Not detected	75
Vinyl Chloride		Not detected	150
1,2-Dichloroethane-d4 (surr)	% Recovery	103	
Toluene-d8 (surr)	% Recovery	105	
4-Bromofluorobenzene (surr)	% Recovery	88	

Data for TCLP Semivolatiles ug/L:

Component Name		Result	Component MDL
2-Methylphenol (o-Cresol)		160	100
3- & 4-Methylphenol (m & p Cresol),total		280	100
1,4-Dichlorobenzene		Not detected	100
2,4-Dinitrotoluene		Not detected	100
Hexachlorobenzene		Not detected	100
Hexachlorobutadiene		Not detected	100
Hexachloroethane		Not detected	100
Nitrobenzene		Not detected	100
Pentachlorophenol		Not detected	500
Pyridine		Not detected	200
2,4,5-Trichlorophenol		Not detected	500
2,4,6-Trichlorophenol		Not detected	500
2-Fluorophenol (surr)	% Recovery	64	
Phenol-d5 (surr)	% Recovery	42	
2-Chlorophenol-d4 (surr)	% Recovery	76	
1,2-Dichlorobenzene (surr)	% Recovery	80	
Nitrobenzene-d5 (surr)	% Recovery	46	
2-Fluorobiphenyl (surr)	% Recovery	86	
2,4,6-Tribromophenol (surr)	% Recovery	95	
Terphenyl-d14 (surr)	% Recovery	93	

Sample comments:

Reference Lab Report No. R3766.

Quality Control/Quality Assurance Comments are included on an attached sheet.

If there are any questions regarding this data, please call.

Reviewed by: J. Paul Hollomon, Ph.D.
Laboratory Manager

Org Results To: Charles Jordan @ Hercules
Copy : Leo

Environmental Diagnostic Laboratories, Inc.

39 King Road • Hattiesburg, MS 39402
P.O. Box 15098
Office: 601-264-2222 • Fax: 601-268-2030

CHAIN OF CUSTODY RECORD

PROJ NO. | Project Name: Hercules

Samplers: (signature) J. HUSBANDS / John Husbands

SAMP NO	STA. NO.	DATE	TIME	COMP	GRAB	DESCRIPTION	No. of Containers	Total Chromium	TCLP Metals	TCLP Vols / Semi Vols	RCI Characteristics	% Solids	REMARKS
I.B. Sludge	WWT	3/5/96	11:30	X	[illegible]		1	+					

Relinquished by:	Date	Time	Received by:	Date	Time	Relinquished by:	Date	Time	Received by:	Date	Time
J. H.	3/5/96	11:30AM	L. Lovelace	3/5/96	11:30 AM						

Relinquished by:	Date	Time	Received for Lab by:	Date	Time	REMARKS
Lee Lovelace	3/5/96	5:20 PM	Calvin Guy	3/5/96	1621	IB = Impounding Basin

BONNER ANALYTICAL TESTING COMPANY
2703 Oak Grove Road
Hattiesburg, MS 39402
(601) 264-2854

Client: HERCULES

File Number: BT26020
Collected By: Client

Sample Date/Time: 05-10-95 @ 0800
Date/Time Rec'd: 05-10-95 @ 0910

Corrected Copy

TCLP EVALUATION

Analyte/Method #	Southwest Sludge Pit	MDL	Date/Time/Analyst
LEACHABLE METALS:			
Arsenic/6010	ND	0.02	05-24-95/0910/DB
Barium/6010	0.211	0.003	05-24-95/0910/DB
Cadmium/7130	ND	0.03	05-15-95/1145/DB
Chromium/7190	ND	0.04	05-15-95/1450/DB
Lead/7420	ND	0.15	05-15-95/1350/DB
Mercury/7470	ND	0.001	05-24-95/1132/DB
Selenium/6010	ND	0.03	05-24-95/0910/DB
Silver/7760	ND	0.05	05-15-95/1310/DB
pH S.U./9045	5.18	±0.01	05-15-95/1155/JMD
Reactivity			
Cyanides (mg/kg)/9010	ND	0.02	06-01-95/1320/JMD
Sulfides (mg/kg)/9030	25	1	05-10-95/1600/JMD
Ignitability °F/1010	>200	±1	06-22-95/1700/RWC

Data reported in mg/L, unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

Certified by:

Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY
2703 Oak Grove Road
Hattiesburg, MS 39402
(601) 264-2854

#21578
13978
Cocdata
to S. Jordan

Client: HERCULES

File Number: BT26020
Collected By: Client

Sample Date/Time: 05-10-95 @ 0800
Date/Time Rec'd: 05-10-95 @ 0910

TCLP EVALUATION

Analyte/Method #	Southwest Sludge Pit	MDL	Date/Time/Analyst
LEACHABLE METALS:			
Arsenic/6010	ND	0.02	05-24-95/0910/DH
Barium/6010	0.211	0.003	05-24-95/0910/DH
Cadmium/7130	ND	0.03	05-15-95/1145/DH
Chromium/7190	ND	0.04	05-15-95/1450/DH
Lead/7420	ND	0.15	05-15-95/1350/DH
Mercury/7470	ND	0.001	05-24-95/1132/DH
Selenium/6010	ND	0.03	05-24-95/0910/DH
Silver/7760	ND	0.05	05-15-95/1310/DH
pH S.U./9045	5.18	±0.01	05-15-95/1155/JMD
Reactivity			
Cyanides (mg/kg)/9010	ND	0.02	06-01-95/1320/JMD
Sulfides (mg/kg)/9030	25	1	05-10-95/1600/JMD
Ignitability ^{o}F/1010	≤120	±1	05-10-95/1535/JMD

Data reported in mg/L, unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and amendments.

MDL = Method Detection Limit.

Certified by: Rebecca W Coffman
Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

sr

07-12-1995 01:19PM FROM BONNER A NALYTICAL TESTIN TO 5843226 P.04

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports
Extraction Method - EPA 1311 Analysis Method - SW-846 Method 8270

BT26020 — BATCO File #
Hercules — COMPANY
TCLP — SAMPLE TYPE
sample from back forty — SAMPLE POINT
Collected: 051095 @ 0800
Analyzed: 051895 @ 1305
DATE TIME

Compound / EPA HW NO.	MDL mg/L (ppm)	SAMPLE			REGULATORY LEVEL		BLANK			MATRIX			DUPLICATE MATRIX		
		Detected Concen. mg/L (ppm)	Spike Amt. ug	Spike % Recov	Concen. mg/L (ppm)		Detected Concen. ng/L (ppm)	Spike Amt. ug	Spike % Recov	Detected Concen. ng/ul in the extract	Spike Amt. ug	Spike % Recov	Detected Concen. ng/ul in the extract	Spike Amt. ug	Spike % Recov
D038 Pyridine	.010	ND			5.0		ND			66.8	100	66.8	68.3	100	68.3
D027 1,4-Dichlorobenzene*	.010	ND			7.5		ND			83.0	100	83.0	79.1	100	79.1
D023 2-Methylphenol*	.010	0.208			200.0		ND			145.8	150	97.2	121.0	150	80.7
D024 3-Methylphenol*	.010	0.126			200.0		ND			127.0	150	84.7	104.6	150	69.7
D025 4-Methylphenol*	.010	0.335			200.0		ND			117.5	150	78.3	120.1	150	80.1
D034 Hexachloroethane*	.010	ND			3.0		ND			62.6	100	62.6	63.9	100	63.9
D036 Nitrobenzene*	.010	ND			2.0		ND			92.6	100	92.6	82.3	100	82.3
D033 Hexachlorobutadiene*	.010	ND			0.5		ND			41.1	100	41.1	48.2	100	48.2
D042 2,4,6-Trichlorophenol*	.010	ND			2.0		ND			120.5	150	80.3	102.8	150	68.5
D041 2,4,5-Trichlorophenol*	.050	ND			400.0		ND			125.6	150	83.7	104.5	150	69.7
D030 2,4 Dinitrotoluene*	.010	ND			0.13		ND			107.8	100	107.8	96.6	100	96.6
D032 Hexachlorobenzene*	.010	ND			0.13		ND			86.0	100	57.3	77.2	100	77.2
D037 Pentachlorophenol*	.050	ND			100.0		ND			149.4	150	99.6	138.4	150	92.3
SURROGATES:															
Fluorophenol		81.1	150	54.1			88.6	150	59.1	98.9	150	65.9	75.8	150	50.5
Phenol-d6		67.2	150	44.8			69.4	150	46.3	79.1	150	52.7	63.0	150	42.0
2-Chlorophenol-d4		139.3	150	92.9			150.9	150	100.6	159.0	150	106.0	130.8	150	87.2
1,2-Dichlorobenzene-d4		75.0	100	75.0			77.8	100	77.8	82.3	100	82.3	72.2	100	72.2
Nitrobenzene-d5		99.9	100	99.9			84.6	100	84.6	88.3	100	88.3	75.7	100	75.7
Fluorobiphenyl		91.3	100	91.3			81.7	100	81.7	71.6	100	71.6	69.5	100	69.5
2,4,6-Tribromophenol		153.9	150	102.6			138.9	150	92.6	144.3	150	96.2	124.0	150	82.6
Terphenyl-d14		120.3	100	120.3			119.4	100	119.4	113.5	100	113.5	105.1	100	105.1

* MATRIX SPIKING COMPOUNDS

Certified by: Rashna M Bonner
MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
VOLATILES - GC/MS ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports
Analysis Method - SW-846 (8260)

BT26020	HERCULES	TCLP EXTRACTION	FROM BACK FORTY SW SLUDGE PIT 6' FROM EDGE	Collected: 05/10/95 @ 0800
BATCO File #	COMPANY	SAMPLE TYPE	SAMPLE POINT	Analyzed: 05/12/95 @ 1556
				DATE TIME

Compound EPA HW NO.	MDL mg/L (ppm)	SAMPLE			BLANK			REGULATORY LEVEL		MATRIX (BT26020)				DUPLICATE MATRIX (BT26020)			
		Detected Concen. mg/L (ppm)	Spike Amt. ng	Spike % Recov	Detected Concen. ng/L (ppm)	Spike Amt. ng	Spike % Recov	Concen. mg/L (ppm)		Detected Concen. mg/L	Spike Amt. ng	Spike % Recov		Detected Concen. ng/L	Spike Amt. ng	Spike % Recov	
D029 1,1-Dichloroethene	0.005	ND			ND			0.7		0.050	250	101.4		0.050	250	100.2	
D018 Benzene	0.005	0.202			ND			0.5		0.042	250	84.0J		0.032	250	64.0J	
D040 Trichloroethene	0.005	ND			ND			0.5		0.052	250	104.6		0.050	250	100.8	
D021 Chlorobenzene	0.005	0.001 J			ND			100.0		0.051	250	102.0		0.052	250	103.4	
D043 Vinyl Chloride	0.01	ND			ND			0.2		0.050	250	100.0		0.052	250	103.8	
D035 2-Butanone (MEK)	0.01	0.032 J			ND			200.0		0.039	250	78.6		0.048	250	95.4	
D022 Chloroform	0.005	0.002 J			ND			6.0		0.046	250	92.8		0.051	250	101.6	
D019 Carbon Tetrachloride	0.005	ND			ND			0.5		0.056	250	111.8		0.050	250	100.4	
D028 1,2-Dichloroethane	0.005	ND			ND			0.5		0.052	250	104.0		0.049	250	97.6	
D039 Tetrachloroethene	0.005	ND			ND			0.7		0.059	250	117.8		0.051	250	102.6	
		ug/L (ppb)			ug/L (ppb)					ug/L (ppb)				ug/L (ppb)			
Surrogates:																	
Dibromofluoromethane		43.1	250	86.2	49.0	250	98.0			43.7	250	87.4		44.1	250	88.2	
Toluene-d8		47.3	250	94.6	48.0	250	96.0			48.8	250	97.6		52.3	250	104.6	
4-Bromofluorobenzene		44.8	250	89.6	50.4	250	100.8			49.2	250	98.4		49.8	250	99.6	

J - results estimated or Below Method Detection Level.

Certified by: Michael W. Bonner

MICHAEL W. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

07-12-1995 01:20PM FROM BONNER A NALYTICAL TESTIN TO 5843226 P.06

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
PESTICIDES & HERBICIDES - ECD ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports
Extraction Method EPA 1311. Analysis Method-8080/8150.

BT26020 BATCO File #
Hercules Inc. COMPANY
TCLP EXTRACTION SAMPLE TYPE
Southwest sludge;Pit-6 SAMPLE POINT
Collected: 05/10/95 0800
Analyzed: 05/26/95 2234
DATE TIME

Compound / EPA HW NO.	MDL ug/L (ppb)	SAMPLE Detected Concen. ug/L (ppb)	SAMPLE Spike Amt. ng	SAMPLE Spike % Recov	BLANK Detected Concen. ug/L (ppb)	BLANK Spike Amt. ng	BLANK Spike % Recov	REGULATORY LEVEL Concen. ug/L (ppb)	MATRIX Detected Concen. ug/ml	MATRIX Spike Amt. ng	MATRIX Spike % Recov	DUPLICATE MATRIX Detected Concen. ug/ml	DUPLICATE MATRIX Spike Amt. ng	DUPLICATE MATRIX Spike % Recov
D013 * Lindane	2.68	ND			ND			400.0	1.09	2.0	54.7	1.20	2.0	60.0
D031 * Heptachlor	2.01	ND			ND			8.0	0.75	2.0	37.3	0.87	2.0	43.4
D012 * Endrin	4.02	ND			ND			20.0	1.62	2.0	81.0	1.72	2.0	86.0
D031 * Heptachlor Epoxide	55.6	ND			ND			8.0	1.29	2.0	64.6	1.38	2.0	69.0
D014 * Methoxychlor	117.9	ND			ND			10000.0	1.85	2.0	92.5	1.93	2.0	96.5
D020 Chlordane(technical)	9.38	ND			ND			30.0	ND			ND		
D015 Toxaphene	160.8	ND			ND			500.0	ND			ND		
D017 * 2,4,5-TP (Silvex)	0.28	ND			ND			1000.0	0.94	2.0	47.2	0.99	2.0	49.6
0016 * 2,4 -D	0.11	ND			ND			10000.0	0.85	2.0	42.5	0.917	2.0	45.9
Surrogates:														
Tetrachloro-m-xylene		0.106	0.2	53.0	0.11	0.2	56.8		0.032	0.2	15.9	0.04	0.2	20.0
Dichlorophenylacetic acid		5.670	5.0	113.5	4.35	5.0	87.1		2.40	5.0	48.0	2.37	5.0	47.4
Decachlorobiphenyl		0.220	0.2	110.0	0.29	0.2	148.3		0.183	0.2	91.7	0.19	0.2	95.0

HERBICIDE ANALYZED ON 05/27/95 @ 1152.
* MATRIX SPIKING COMPOUNDS

Certified by: Michael S. Bonner
MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

Phone: (601) 264-2854
2703 Oak Grove Road Hattiesburg, MS 39402
Fax: (601) 268-7084

"Testing Your World for a Safer Tomorrow"

1

YOUR COMPANY NAME: Hercules Inc

YOUR COMPANY ADDRESS: Hattiesburg MS

NAME OF PERSON TO CONTACT: C. Jordan

CONTACT PERSON'S PHONE:

2

YOUR PROJECT NO.:	YOUR P.O.#	YOUR PROJECT NAME:

3 **4**

YOUR SAMPLE DESCRIPTION:	DATE	TIME	MATRIX	PARAMETERS FOR ANALYSIS: TCLP Metals	TCLP - VOA	TCLP - BNA	TCLP Pesticides	TCLP Herbicides	DI Reactivity (Cn + S)	Ignitability	NUMBER OF CONTAINERS	PRESERVATIONS
Sample from BACK FORTY Southwest Sludge Pit - 6' from edge	5-10-95	0800	Soil	X	X	X	X	X	X	X	2	N/A
						BT26020						

5 REMARKS

Turnaround Time

Detection Limits Special Limits Required Yes No
Please circle one. If yes please describe below or include separate sheet detailing requirements.

6

RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)
Joe Powers	5/10/95	0910					

METHOD OF SHIPMENT	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR BATCO BY: (Signature)	DATE/TIME
J.P.				

SAMPLE REMAINDER DISPOSAL

☐ RETURN SAMPLE REMAINDER TO CLIENT VIA _____
(SOME SHIPPING CHARGES MAY BE INCURRED)

☐ I REQUEST BATCO TO DISPOSE OF ALL SAMPLE REMAINDERS

_____ (Signature) _____ (Date)

IF SAMPLE REMAINDER IS DETERMINED TO BE HAZARDOUS, A MINIMUM ADDITIONAL CHARGE OF $250.00 PER SAMPLE WILL BE ASSESSED FOR DISPOSAL.

REVISION DATE 2/94

HERCULES

Hercules Incorporated
West 7th Street
P.O. Box 1937
Hattiesburg, MS 39401-1937
(601) 545-3450

April 22, 1992

Certified Mail - Return Receipt Requested
No. P 904 256 183

John C. Taylor
Office of Pollution Control
P. O. Box 10385
Jackson, MS 39289-0385

April 22, 1992 Inspection

Re your request, please find the attached TCLP extraction data on our wastewater sludge.

Very truly yours,

Charles S. Jordan
Environmental Supervisor

CSJ:mcl
42

Attachments

BONNER ANALYTICAL TESTING COMPANY
658 Weathersby Road
Hattiesburg, MS 39402
(601) 264-2854

Client: Hercules, Inc. (Attn: Charlie Jordan)

File Number: HER090490-19 Sample Date/Time: 9/04/90 0 ?
Collected By: Client Date/Time Rec'd: 9/04/90 0 1400
Date/Time Begun: 9/04/90 0 1400

TCLP Extraction

Parameter	Sludge	MDL	Date/Time/Analyst
LEACHABLE METALS:			
Arsenic	0.214	0.04	9-18-90/1121/LSC
Barium	0.18	0.2	9-18-90/1121/LSC
Cadmium	ND	0.02	9-18-90/1121/LSC
Chromium	0.05	0.04	9-18-90/1121/LSC
Lead	0.15	0.02	9-18-90/1121/LSC
Mercury	ND	0.001	9-18-90/1430/LSC
Selenium	0.154	0.04	9-18-90/1121/LSC
Silver	ND	0.04	9-18-90/1121/LSC
pH	4.10	+0.01	9-19-90/1100/RWC
Total Solids	23.68	0.01	9-19-90/1330/RKM

Data reported in mg/l unless otherwise noted. All analyses performed in accordance with 40 CFR 136 and ammendments.

MDL = Method Detection Limit.

Certified by: _____
Michael S. Bonner, Ph.D.
BONNER ANALYTICAL TESTING COMPANY

ldb

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA

VOLATILES - GC/MS ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports

Analysis Method - CLP Statement of Work for Organic Analysis

HER090490-19 | BATCO File # | HERCULES COMPANY | SLUDGE | SAMPLE TYPE | SLUDGE | SAMPLE POINT | Collected: 090490 | DATE | Analyzed: 091090 | DATE | 0207 | TIME

Compound	MDL ug/L (ppb)	SAMPLE Detected Concen. ug/L (ppb)	SAMPLE Spike Amt. ng	SAMPLE Spike % Recov	BLANK Detected Concen. ug/L (ppb)	BLANK Spike Amt. ng	BLANK Spike % Recov	DUPLICATE Detected Concen. ug/L (ppb)	DUPLICATE Spike Amt. ng	DUPLICATE Spike % Recov	MATRIX Detected Concen. ng/ml	MATRIX Spike Amt. ng	MATRIX Spike % Recov	DUPLICATE MATRIX Detected Concen. ng/ml	DUPLICATE MATRIX Spike Amt. ng	DUPLICATE MATRIX Spike % Recov
-Dichloroethene	5	36.0			BMDL						45.2	250	90.4	47.3	250	94.6
zene	5	7.7			ND						52.7	250	105.4	53.5	250	107.1
chloroethene	5	ND			ND						50.9	250	101.9	52.4	250	104.9
orobenzene	5	ND			ND						50.1	250	100.2	51.0	250	102.1
yl Chloride	10	ND			ND						ND			ND		
utanone (MEK)	10	119.7			ND						ND			ND		
oroform	5	BMDL			ND						ND			ND		
bon Tetrachloride	5	ND			ND						ND			ND		
-Dichloroethene	5	ND			ND						ND			BMDL		
rachloroethene	5	ND			ND						ND			ND		
rogates:																
-Dichloroethane-d4		45.4	250	90.8	49.7	250	99.4				49.1	250	98.2	43.9	250	87.8
uene-d8		52.6	250	105.2	51.1	250	102.3				53.6	250	107.1	48.7	250	97.4
romofluorobenzene		51.2	250	102.5	52.7	250	105.5				59.2	250	118.4	51.7	250	103.4

Certified by:

MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports
Extraction Method - EPA 3520 Analysis Method - CLP Statement of Work for Organic Analysis

HER090490-19 (BATCO File #) | HERCULES COMPANY | SLUDGE (SAMPLE TYPE) | SLUDGE (SAMPLE POINT) | Collected: 09/04/90 | Analyzed: 09/21/90 (DATE) 2148 (TIME)

Compound	MDL ug/L (ppb)	SAMPLE Detected Concen. ug/L	SAMPLE Spike Amt. ug	SAMPLE Spike % Recov	BLANK Detected Concen. ug/L (ppb)	BLANK Spike Amt. ug	BLANK Spike % Recov	DUPLICATE Detected Concen. ug/L (ppb)	DUPLICATE Spike Amt. ug	DUPLICATE Spike % Recov	MATRIX Detected Concen. ng/ul	MATRIX Spike Amt. ug	MATRIX Spike % Recov	DUPLICATE MATRIX Detected Concen. ng/ul	DUPLICATE MATRIX Spike Amt. ug	DUPLICATE MATRIX Spike % Recov
Chlorophenyl-phenyl ether	10	ND			ND						ND			ND		
Nitroaniline	50	ND			ND						ND			ND		
6-Dinitro-2-methyl phenol	50	ND			ND						ND			ND		
Nitrosodiphenylamine	10	ND			ND						ND			ND		
2-Diphenylhydrazine	10	ND			ND						ND			ND		
Bromophenylphenylether	10	ND			ND						ND			ND		
xachlorobenzene *	10	ND			ND						19.6	200	9.8	35.6	200	17.8
ntachlorophenol *	50	ND			ND						ND			ND		
enanthrene	10	ND			ND						ND			ND		
thracene	10	ND			ND						ND			ND		
-n-butylphthalate	10	ND			ND						ND			ND		
uoranthene	10	ND			ND						29.90	100	29.9	54.3	100	54.3
rene	10	ND			ND						ND			ND		
tylbenzylphthalate	10	ND			ND						ND			ND		
nzo(a)anthracene	10	ND			ND						ND			ND		
3'-Dichlorobenzidine	20	BMDL			ND						ND			ND		
rysene	10	ND			ND						ND			ND		
s(ethylhexyl)phthalate	10	BMDL			ND						ND			ND		
-n-octylphthalate	10	ND			ND						ND			ND		
nzo(b)fluoranthene	10	ND			ND						ND			ND		
nzo(k)fluoranthene	10	ND			ND						ND			ND		
nzo(a)pyrene	10	ND			ND						ND			ND		
deno(1,2,3-c,d)pyrene	10	ND			ND						ND			ND		
benzo(a,h)anthracene	10	ND			ND						ND			ND		
nzo(g,h,i)perylene	10	ND			ND						ND			ND		
RROGATES:																
uorophenol			200	47.2		200	89.1					200	63.8		200	41.9
enol-d6			200	21.6		200	62.9					200	34.1		200	28.9
trobenzene-d5			100	47.4		100	100.9					100	52.3		100	53.0
uorobiphenyl			100	43.8		100	90.9					100	47.8		100	47.8
4,6-Tribromophenol			200	87.9		200	104.6					200	93.5		200	55.6
rphenyl-d14			100	69.4		100	79.4					100	120.4		100	54.2

* TCLP BASE NEUTRALS AND ACIDS

Certified by:
MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

BONNER ANALYTICAL TESTING COMPANY

QUANTITATIVE RESULTS AND QUALITY ASSURANCE DATA
BASE NEUTRALS AND ACIDS - GC/MS ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports
Extraction Method - EPA 3520 Analysis Method - CLP Statement of Work for Organic Analysis

HER090490-19 — BATCO File # | HERCULES COMPANY | SLUDGE — SAMPLE TYPE | SLUDGE — SAMPLE POINT | Collected: 09/04/90 | Analyzed: 09/21/90 DATE 2148 TIME

Compound	MDL ug/L (ppb)	SAMPLE Detected Concen. ug/L (ppb)	SAMPLE Spike Amt. ug	SAMPLE Spike % Recov	BLANK Detected Concen. ug/L (ppb)	BLANK Spike Amt. ug	BLANK Spike % Recov	DUPLICATE Detected Concen. ug/L (ppb)	DUPLICATE Spike Amt. ug	DUPLICATE Spike % Recov	MATRIX Detected Concen. ng/ul in the extract	MATRIX Spike Amt. ug	MATRIX Spike % Recov	DUPLICATE MATRIX Detected Concen. ng/ul in the extract	DUPLICATE MATRIX Spike Amt. ug	DUPLICATE MATRIX Spike % Recov
ridine *	10	ND			ND						ND			ND		
enol	10	ND			ND						43.4	200	21.8	83.9	200	41.9
s(2-chloroethyl)ether	10	ND			ND						ND			ND		
-Chlorophenol	10	ND			ND						48.2	200	24.1	106.7	200	53.4
,3-Dichlorobenzene	10	ND			ND						ND			ND		
,4-Dichlorobenzene *	10	ND			ND						37.3	100	37.3	42.7	100	42.7
nzyl alcohol	10	28.5			ND						ND			ND		
,2-Dichlorobenzene	10	ND			ND						ND			ND		
-Methylphenol *	10	106.5			ND						ND			ND		
s(2-chloroisopropyl) ether	10	ND			ND						ND			ND		
-Methylphenol *	10	ND			ND						ND			ND		
-Methylphenol *	10	ND			ND						ND			ND		
xachloroethane *	10	ND			ND						ND			ND		
-Nitroso-di-N-propylamine	10	ND			ND						42.5	100	42.5	47.2	100	47.2
trobenzene *	10	ND			ND						ND			ND		
ophorone	10	BMDL			ND						ND			ND		
,4-Dimethylphenol	10	BMDL			ND						ND			ND		
-Nitrophenol	10	ND			ND						ND			ND		
nzoic acid	50	BMDL			ND						ND			ND		
s(2-chloroethoxy) methane	10	ND			ND						ND			ND		
,4-Dichlorophenol	10	ND			ND						ND			ND		
,2,4-Trichlorobenzene	10	ND			ND						ND			ND		
phthalene	10	BMDL			ND						ND			ND		
-Chloroaniline	10	ND			ND						ND			ND		
xachlorobutadiene *	10	ND			ND						ND			ND		
-Chloro-3-methylphenol	10	ND			ND						70.7	200	35.3	105.8	200	52.9
-Methylnaphthalene	10	ND			ND						ND			ND		
xachlorocyclopentadiene	10	ND			ND						ND			ND		
,4,6-Trichlorophenol *	10	ND			ND						ND			ND		
,4,5-Trichlorophenol *	50	ND			ND						ND			ND		
-Chloronaphthalene	10	ND			ND						ND			ND		
-Nitroaniline	50	ND			ND						ND			ND		
methylphthalate	10	ND			ND						ND			ND		
enaphthylene	10	ND			ND						ND			ND		
,6-Dinitrotoluene	10	ND			ND						ND			ND		
-Nitroaniline	50	ND			ND						ND			ND		
enaphthene	10	ND			ND						ND			ND		
,4-Dinitrophenol	50	ND			ND						35.1	100	35.1	54.1	100	54.1
-Nitrophenol	50	ND			ND						ND			ND		
benzofuran	10	ND			ND						39.4	200	19.7	66.1	200	33.1
,4 Dinitrotoluene *	10	ND			ND						ND			ND		
ethylphthalate	10	ND			ND						32.8	100	32.8	55.8	100	55.8
uorene	10	ND			ND						ND			ND		
											ND			ND		

* TCLP BASE NEUTRALS AND ACIDS

BONNER ANALYTICAL TESTING COMPANY

QUANITITATIVE RESULTS AND QUALITY ASSURANCE DATA
PESTICIDES & HERBICIDES - ECD ANALYSIS DATA

Chain of Custody Data Required for BATCO Data Management Summary Reports
Analysis Method - CLP Statement of Work for Organic Analysis

HER090490-19 — BATCO File #
HERCULES COMPANY
% SLUDGE — SAMPLE TYPE
SAMPLE POINT
Collected: 09/04/90
Analyzed: 09/13/90 — DATE
1030 — TIME

Compound	MDL ug/L (ppb)	SAMPLE			BLANK			MATRIX			DUPLICATE MATRIX		
		Detected Concen. ug/L (ppb)	Spike Amt. ug	Spike % Recov	Detected Concen. ug/L (ppb)	Spike Amt. ug	Spike % Recov	Detected Concen. ug/L (ppb)	Spike Amt. ug	Spike % Recov	Detected Concen. ug/L (ppb)	Spike Amt. ug	Spike % Recov
Lindane *	1.0	ND			ND			0.167	0.20	83.5	0.163	0.20	81.5
Heptachlor *	1.0	ND			ND			0.151	0.20	75.5	0.173	0.20	86.5
Aldrin	1.0	ND			ND			0.168	0.20	84.0	0.181	0.20	90.5
Dieldrin	1.0	15.4			ND			0.430	0.50	86.0	0.425	0.50	85.0
Endrin *	1.0	ND			ND			0.506	0.50	101.6	0.505	0.50	101.0
p,p-DDT	1.0	ND			ND			0.475	0.50	95.0	0.459	0.50	91.8
Alpha-BHC	1.0	ND			ND			ND			ND		
Beta-BHC	1.0	ND			ND			ND			ND		
Delta-BHC	1.0	ND			ND			ND			ND		
Heptachlor epoxide	1.0	ND			ND			ND			ND		
Endosulfan I	1.0	ND			ND			ND			ND		
4,4-DDE	1.0	ND			ND			ND			ND		
Methoxychlor *	1.0	ND			ND			ND			ND		
Chlordane *(alpha and gamma)	1.0	ND			ND			ND			ND		
Toxaphene *	1.0	ND			ND			ND			ND		
p,p-DDD	1.0	ND			ND			ND			ND		
Endosulfan sulfate	1.0	ND			ND			ND			ND		
Endrin ketone	1.0	ND			ND			ND			ND		
Endosulfan II	1.0	ND			ND			ND			ND		
2,4,5-TP (Silvex) *	1.0	ND			ND			ND			ND		
2,4-Dichlorophenoxy acetic * acid	1.0	ND			ND			ND			ND		
Surrogate:													
Dibutylchlorendate		0.0551	0.1	55.1	0.078	0.1	78.0	0.0915	0.1	91.5	0.077	0.1	77.0
Dichlorophenylacetic acid		0.300	0.5	60.0	0.465	0.5	93.0						

* TCLP PESTICIDES & HERBICIDES

Certified by:

MICHAEL S. BONNER, Ph. D.
BONNER ANALYTICAL TESTING COMPANY

ESI

ATTACHMENT B

FIGURE 1

ESI

ATTACHMENT C

ANALTYICAL RESULTS - JULY 1, 2008

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 680-38282-1

Job Description: Hercules Hattiesburg Sludge TCLP 7/1/08

For:
Hercules Inc.
Research Center - Bldg 8139/15
500 Hercules Road
Wilmington, DE 19808-1599

Attention: Mr. Timothy Hassett

Lidya Gulizia
Project Manager I
lidya.gulizia@testamericainc.com
07/21/2008

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this test report should be directed to the TestAmerica Project Manager who signed this test report.

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

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

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

GC Semi VOA
Method(s) 8151A: Surrogate recovery for the following sample was outside control limits: HER-SS1-070108 (680-38282-1). Re-extraction and re-analysis was performed with acceptable results. Both sets of data have been reported.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

General Chemistry
No analytical or quality issues were noted.

Comments
No additional comments.

METHOD SUMMARY

Client: Hercules Inc.

Job Number: 680-38282-1

Description	Lab Location	Method	Preparation Method
Matrix: Solid			
Volatile Organic Compounds by GC/MS	TAL SAV	SW846 8260B	
Toxicity Characteristic Leaching Procedure (ZHE)	TAL SAV		SW846 1311
Purge and Trap on Leachates	TAL SAV		SW846 5030B
Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)	TAL SAV	SW846 8270C	
Toxicity Characteristic Leaching Procedure	TAL SAV		SW846 1311
Continuous Liquid-Liquid Extraction	TAL SAV		SW846 3520C
Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography	TAL SAV	SW846 8081A_8082	
Toxicity Characteristic Leaching Procedure	TAL SAV		SW846 1311
Continuous Liquid-Liquid Extraction	TAL SAV		SW846 3520C
Chlorinated Herbicides by GC	TAL SAV	SW846 8151A	
Toxicity Characteristic Leaching Procedure	TAL SAV		SW846 1311
Chlorinated Herbicides by GC - Aqueous Prep	TAL SAV		SW846 8151A
Inductively Coupled Plasma - Atomic Emission Spectrometry	TAL SAV	SW846 6010B	
Toxicity Characteristic Leaching Procedure	TAL SAV		SW846 1311
Acid Digestion of Aqueous Samples and Extracts for	TAL SAV		SW846 3010A
Mercury in Liquid Waste (Manual Cold Vapor Technique)	TAL SAV	SW846 7470A	
Toxicity Characteristic Leaching Procedure	TAL SAV		SW846 1311
Mercury in Liquid Waste (Manual Cold Vapor	TAL SAV		SW846 7470A
Reactive Cyanide Analysis using method 9014	TAL SAV	SW846 9014	
Cyanide, Reactive (SW7.3.3)	TAL SAV		SW846 7.3.3
Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides	TAL SAV	SW846 9034	
Sulfide, Reactive (SW7.3.4)	TAL SAV		SW846 7.3.4
Soil and Waste pH	TAL SAV	SW846 9045C	

Lab References:

TAL SAV = TestAmerica Savannah

Method References:

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

METHOD / ANALYST SUMMARY

Client: Hercules Inc.

Job Number: 680-38282-1

Method	Analyst	Analyst ID
SW846 8260B	Bearden, Robert	RB
SW846 8270C	Johnson, Brad	BJ
SW846 8081A_8082	Kellar, Joshua	JK
SW846 8151A	Kellar, Joshua	JK
SW846 8151A	Smith, Crystal	CAS
SW846 6010B	Bland, Brian	BCB
SW846 7470A	Bland, Brian	BCB
SW846 9014	McDonald, Debbie	DM
SW846 9034	McDonald, Debbie	DM
SW846 9045C	Williams, Dyanne	DW

Client: Hercules Inc. Job Number: 680-38282-1

Client Sample ID: **HER-SS1-070108**

Lab Sample ID: 680-38282-1 Date Sampled: 07/01/2008 1530
Client Matrix: Solid Date Received: 07/03/2008 0852

8081A_8082 Organochlorine Pesticides & Polychlorinated Biphenyls by Gas Chromatography-TCLP

Method:	8081A_8082	Analysis Batch: 680-111410		Instrument ID:	GC SemiVolatiles - M
Preparation:	3520C	Prep Batch: 680-110858		Lab File ID:	mg11028.d
Dilution:	1.0	Leachate Batch: 680-110821		Initial Weight/Volume:	20 mL
Date Analyzed:	07/11/2008 1923			Final Weight/Volume:	10 mL
Date Prepared:	07/08/2008 1342			Injection Volume:	1.0 uL
Date Leached:	07/07/2008 1400			Column ID:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/L)	Qualifier	RL
Chlordane (technical)		<0.025		0.025
Endrin		<0.0050		0.0050
gamma-BHC (Lindane)		<0.0025		0.0025
Methoxychlor		<0.025		0.025
Heptachlor		<0.0025		0.0025
Heptachlor epoxide		<0.0025		0.0025
Toxaphene		<0.25		0.25

Surrogate	%Rec	Acceptance Limits
Tetrachloro-m-xylene	56	35 - 120
DCB Decachlorobiphenyl	67	14 - 115