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June 27, 2000

#### VIA OVERNIGHT MAIL

Chief, Bureau of Hazardous Waste Facilities (3 copies) Division of Solid and Hazardous Materials New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233-7252

#### Re: Ciba Site, Glens Falls, New York, EPA ID No. NYD002069748 HWM Permit Number 5-5234-00008/00096 (Expires 1/6/2002)

Dear Sir:

Please find enclosed the "Groundwater Investigation Report, Area Southeast of Pretreatment Plant SWMU," for the above site.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions in this matter, please contact me by telephone at (302) 5946581, by facsimile at (302) 594-7255, or by postal service at the above address.

Sincerely

Glen H. Schmiesing, P. E. Glens Falls Project Manager for Hercules Incorporated

GHS: Enclosure (3 sets) 0054-ltr

Chief, Bureau of Hazardous Waste Facilities, NYSDEC June 27, 2000 Groundwater Investigation Report, Area SE of Pretreatment Plant SWMU Page 2

#### cc: w/enclosure

Regional Solid & Hazardous Materials Engineer, NYSDEC, Region 5, Ray Brook, NY Chief, RCRA Programs Branch, U.S. EPA Region II, NY, NY J. H. Tucker - Ciba Specialty Chemicals Corporation, Toms River, NJ (2 copies) Hercules Incorporated, Glens Falls, NY



JUN 2 8 2000

BUREAU OF RADIATION & HAZARDOUS SITE MANAGEMENT DIVISION OF SOLID & HAZARDOUS MATERIALS

## GROUNDWATER INVESTIGATION REPORT AREA SOUTHEAST OF PRETREATMENT PLANT SWMU CIBA SITE, GLENS FALLS, NEW YORK

Prepared for:

Hercules Incorporated Hercules Plaza Wilmington, Delaware 19894

## Prepared by:

Brown and Caldwell 440 Franklin Turnpike Mahwah, New Jersey 07430

June 2000

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#### TABLE OF CONTENTS

#### Page No.

1.0	INTI	RODUCTION
2.0	BAC	KGROUND AND AREA OF INVESTIGATION
3.0	INVI	ESTIGATIVE METHODS AND PROCEDURES
	3.1 3.2 3.3 3.4 3.5 3.6	Soil Borings3-1Well Point Installation3-2Staff Gauge Installation3-3Location and Elevation Survey3-3Water Level Measurements3-3Sampling and Analysis of Groundwater and Surface Water3-5
4.0	INV	ESTIGATIVE FINDINGS 4-1
	4.1 4.2 4.3	Overburden Stratigraphy
5.0	CON	NCLUSIONS AND RECOMMENDATIONS
	5.1 5.2	Conclusions
REI	FEREI	NCES
API	PEND	ICES

- Appendix A Letter of Approval for Work Plan from NYSDEC
- Appendix B Soil Boring Logs
- Appendix C Well Construction Logs
- Appendix D Survey Data
- Appendix E Water Level Data
- Appendix F Field Data Sheets
- Appendix G Laboratory Data Package

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## LIST OF TABLES

<u>Table No.</u>	Title	Follows <u>Page No.</u>
4-1	Summary of Groundwater and Surface Water Quality Data	4-3

## LIST OF FIGURES

<u>Figure No.</u>	Title	Follows <u>Page No.</u>
2-1	Location Map, Area Southeast of Pretreatment Plant SWMU	2-1
4-1	Generalized Structural Contour Map, Top of Lacustrine Clay Uni	t 4-1
4-2	Hydrogeologic Cross-Section	4-2
4-3	Generalized Potentiometric Surface Map, Overburden Water-Bearing Zone, April 5, 2000	4-2
4-4	Total Cyanide in Groundwater and Surface Water, April 2000	4-3

#### **1.0 INTRODUCTION**

The "CMI Groundwater Plan Technical Monitoring Approach" (Eckenfelder Engineering, P.C., April 1999) was submitted as Attachment E of the Final Corrective Measures (CM) Design for the Ciba Site near Glens Falls, New York. In a letter to Hercules Incorporated (Hercules) and Ciba Specialty Chemicals Corporation (Ciba), dated September 9, 1999, the New York State Department of Environmental Conservation (NYSDEC) provided comments on that document and additional requirements with respect to groundwater monitoring at the site. In that letter, the NYSDEC required an additional investigation of groundwater conditions in the overburden water-bearing zone in the area downgradient of the Pretreatment Plant Solid Waste Management Unit (SWMU). On January 28, 2000 a work plan for the additional investigation, entitled "Groundwater Investigation Work Plan, Area Southeast of Pretreatment Plant SWMU, Ciba Site, Glens Falls, New York" (Brown and Caldwell, January 2000) (referred to hereafter as the "Work Plan") was submitted by Hercules and Ciba to the NYSDEC. On March 6, 2000 Hercules and Ciba received conditional approval of the Work Plan from the NYSDEC in a letter dated February 22, 2000 (see Appendix A).

The objective of the investigation is to evaluate the extent and discharge area of the cyanide plume in the groundwater that originates from the Pretreatment Plant SWMU.

Section 2.0 provides general background information with regard to existing information and site conditions for the area of investigation. Section 3.0 describes the investigative methods and procedures. Section 4.0 discusses the findings of the investigation. Section 5.0 presents the conclusions and recommendations based on the investigative findings.

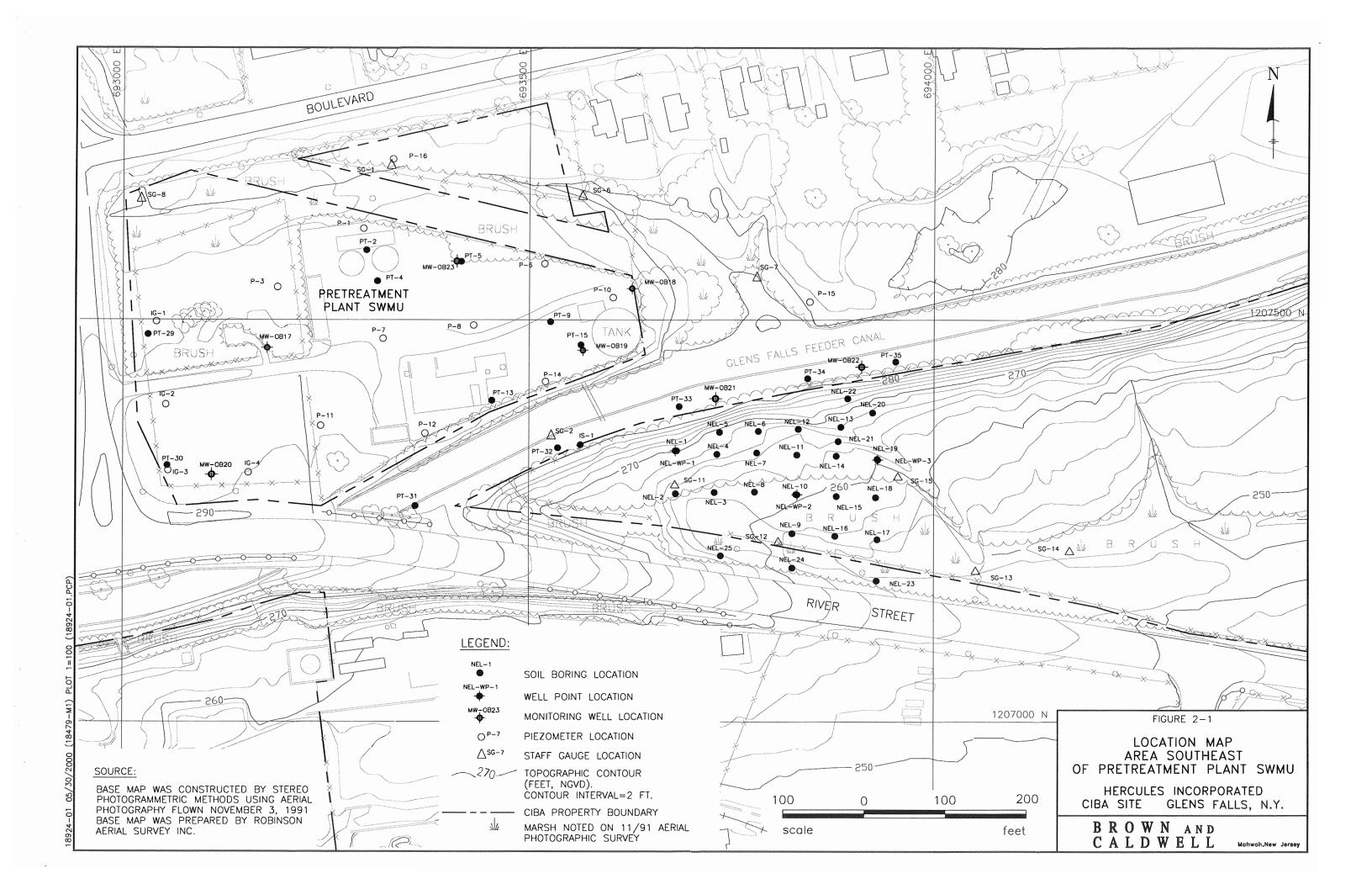
#### 2.0 BACKGROUND AND AREA OF INVESTIGATION

Several investigations have been conducted at the Pretreatment Plant SWMU as part of the RCRA Facility Assessment (RFA) and RCRA Facility Investigation (RFI) pursuant to the Hazardous Waste Management (HWM) Permit for the site. The findings of these studies are provided in the following documents:

- "RFA Sampling Visit, Pretreatment Plant, CIBA –GEIGY Site, Glens Falls, New York" (Eckenfelder Engineering, P.C., July 1992)
- "Pretreatment Plant Addendum to RFI Task I Report, CIBA-GEIGY Site, Glens Falls, New York" (Eckenfelder Inc., December 1992)
- "Groundwater Addendum to RFA Report for Pretreatment Plant SWMU, CIBA-GEIGY Site, Glens Falls, New York" (Eckenfelder Engineering, P.C., September 1993)
- "RFI Report for the Pretreatment Plant SWMU, CIBA-GEIGY Site, Glens Falls, New York" (Eckenfelder Inc., October 1994).

Presented in the following paragraphs is a brief description of the Pretreatment Plant SWMU and surrounding area, and background information pertinent to the investigation described herein. For more information and detail, please refer to the above-listed documents.

The Pretreatment Plant SWMU is part of the Ciba Site, which is located in the Town of Queensbury, New York, just east of the City of Glens Falls. It occupies approximately four acres and is situated north of the Glens Falls Feeder Canal and River Street, and east of Quaker Road (see Figure 2-1).



indicate that the cyanide concentrations decrease to levels below or near the Groundwater Protection Concentration (GWPC) of  $100 \,\mu$ g/L in all downgradient directions except to the southeast. Sampling of monitoring well MW-OB21, located to the southeast and downgradient of the Pretreatment Plant SWMU, indicates that cyanide concentrations several times greater than the GWPC have migrated from the Pretreatment Plant SWMU, beneath the Feeder Canal.

The land surface of the Pretreatment Plant SWMU is generally flat-lying, and contains paved and unpaved surfaces, remnant foundations, and open vegetated fields. Several structures exist in the eastern portion of the site, including a treatment building and an above-ground wastewater storage tank. Directly to the north and east are vegetated and marshy areas that grade away from the SWMU. A small stream flows near the northern boundary of the SWMU and into a marsh area to the east. This marsh area drains to the Feeder Canal through an open section in the northern canal wall. The Feeder Canal is situated adjacent to the Pretreatment Plant SWMU and comprises much of its southern boundary.

During the first half of 2000, shallow soils in the eastern portion of the Pretreatment Plant SWMU were removed and replaced with clean fill as part of the approved Corrective Measures for the site. The removed soils were placed in the Corrective Action Management Unit (CAMU) at the Main Plant Site.

The area southeast of the Pretreatment Plant and south of the Feeder Canal is the area of primary focus for this investigation. With the exception of the path adjacent to the Feeder Canal, this property is owned by Ciba. In this area, the land surface slopes steeply (40 to 50 percent) to the south-southeast for approximately 30 feet. Further south, the slope is more gentle. A marsh area is located within the gently sloping area. Within the marsh area, a small stream flows from west to east. At the western end of the marsh area, a tile pipe protrudes from a shallow embankment. Flow from this pipe contributes water to the marsh and stream. The source of the water in the pipe is unknown, but is suspected to originate from the Feeder Canal.

Beneath the eastern portion of the Pretreatment Plant SWMU, total cyanide concentrations of over 7,000  $\mu$ g/l have been measured in the groundwater within the overburden water-bearing zone. Monitoring of locations surrounding this area

#### **3.0 INVESTIGATIVE METHODS AND PROCEDURES**

#### **3.1 SOIL BORINGS**

Twenty-two soil borings (NEL-1 through NEL-22) were drilled to evaluate the soil types and degree of saturation in the area south of the Feeder Canal and north (upgradient) of the stream within the marsh area. Most of the borings were drilled on an approximately 50-foot by 50-foot grid pattern, although in general, the northernmost borings on the grid were shifted to positions adjacent to the base of the steep slope. Three shallow soil borings (NEL-23 through NEL-25) were drilled south of the stream. Due to physical limitations on access, particularly in the area north of the stream, the soil borings were drilled manually with a stainless steel soil corer. Typically, the borings were sampled and described from ground surface to the top of a deposit referred to as the lacustrine clay unit (see Section 4.1). However, at some locations the top of the clay unit was not encountered because of operational limitations of the soil corer associated with depth, soil type and degree of soil saturation. The soil samples were described in accordance with the Burmister Soil Classification and the Unified Soils Classification (USCS). Logs of the soil borings are provided in Appendix B. The position of each boring was spotted on a map based on measurements from nearby landmarks and ground surface features.

After the soil borings were completed they were abandoned. Some degree of caving of the borehole walls occurred in each of the borings prior to abandonment, as determined by depth soundings. The remainder of the hole was filled with soil cuttings from the boring. Each boring location was then marked with a stake labeled with the boring designation.

3-1

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#### 3.2 WELL POINT INSTALLATION

Three well point locations were selected based on the information obtained from the soil borings. The well points were installed downgradient and cross-gradient of MW-OB21 at locations where the saturated thickness of relatively permeable deposits above the lacustrine clay unit is sufficient to allow for sampling of groundwater from a well point. The well points, designated NEL-WP-1, NEL-WP-2, and NEL-WP-3 were installed adjacent to soil borings NEL-1, NEL-10 and NEL-19, respectively. The boreholes for the construction of the three well points were drilled manually with a four-inch diameter stainless steel hand auger. The hand augers could not be advanced past three to four feet below grade due to saturated soils running into the borehole. The hand augers were decontaminated between the drilling of the boreholes for each well point with an Alconox<sup>®</sup> scrub and clean water rinse, followed by a distilled water rinse.

The well points are constructed of one-inch diameter, flush-threaded PVC, with a 2<sup>1</sup>/<sub>2</sub>-foot long slotted well screen at the base (0.010-inch slot). Teflon<sup>®</sup> tape was wrapped onto the male threaded joints prior to coupling the joints. The base of the well screen was positioned at a depth below the groundwater table as indicated by observations from the adjacent boring and the boring for the well point. Filter pack sand was placed in the annulus between the borehole and the PVC from the base of the borehole, across the screen interval, to a point approximately a <sup>1</sup>/<sub>2</sub>-foot to one-foot below ground surface. Soil cuttings from the drilling of the borehole for the well point were backfilled and tamped into the remainder of the hole. A vented PVC cap was then placed on the top of the PVC casing.

The well points were developed using disposable bailers until the degree of turbidity in the produced water remained consistent based on visual observation, or until the well

point was evacuated. The volume of water produced during the development, and the duration of the development, are provided in the well point construction logs in Appendix C.

#### 3.3 STAFF GAUGE INSTALLATION

Staff gauges were installed at four locations within the marsh area. Three of these staff gauges, SG-12, SG-13, and SG-14, were installed along the small stream that flows within the marsh. The fourth, SG-15, was installed in a small area of standing water in the northern part of the marsh. These staff gauges were established by placing stakes adjacent to, or within, the stream or open water such that the top of the stake can be used as a reference point for measuring surface water elevations with a water level meter. An additional staff gauge, SG-11, was established to allow water level measurements of the flow from the tile pipe in the western portion of the marsh. This staff gauge consists of a painted mark on the crown of the tile pipe.

#### 3.4 LOCATION AND ELEVATION SURVEY

The location and ground surface elevation of the soil borings, staff gauges, and well points were surveyed. The top of the PVC casing on each well point and the top of each staff gauge were surveyed for elevation to provide a water level measurement reference point. The survey was conducted by New York State licensed surveyors from Van Dusen and Steves, L.L.C. The survey data are provided in Appendix D.

3-3

#### 3.5 WATER LEVEL MEASUREMENTS

On April 5, 2000, water levels were measured at the following locations:

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Wells	Staff Gauges
NEL-WP-1 NEL-WP-2 NEL-WP-3 MW-OB21 MW-OB22	SG-2 (Feeder Canal) SG-11 (Tile pipe) SG-12 (Stream in marsh area) SG-13 (Stream in marsh area) SG-14 (Stream in marsh area) SG-15 (Marsh)

The water levels in the well points were recovered to static conditions following the well development/purging conducted on the previous day based on field observations of the recovery rates during the well development. The water level data are provided in Appendix E.

The water levels were measured using an electronic water level indicator. The indicator probe was lowered into the well or from the top of the staff gauge until the indicator signaled that water was encountered. The probe was then raised above the water level and then slowly lowered again until water was encountered. The indicator tape was held against the inside of the well casing, or against the staff gauge, at the reference point designated for water level measurements and a depth to water reading recorded. This procedure was repeated three times or until a consistent value was obtained. The value was recorded to the nearest 0.01 feet. The probe was then raised to the surface. The probe and the wetted portion of the cable was then raised to the surface. The probe and the wetted portion of the cable was then raised to the non-phosphate detergent (Alconox<sup>®</sup>) wash and a distilled water rinse.

# 3.6 SAMPLING AND ANALYSIS OF GROUNDWATER AND SURFACE WATER

On April 4 and 5, 2000, groundwater samples were collected from the following wells:

NEL-WP-1	MW-OB21
NEL-WP-2	MW-OB22
NEL-WP-3	

Prior to groundwater sampling, the depth to the bottom of the well and the depth to static water level was measured in each monitoring well. These measurements were used to calculate the volume of water in the well. Water levels were measured as described in Section 3.5. The depth to the bottom of the well was measured by lowering the water level probe to the bottom of the well. The tape was then raised until the tension indicated the probe tip was positioned at the bottom of the well. A measurement from the water level reference point on the top of the well casing was then recorded. This measurement was adjusted for the length of the probe below the zero point, if necessary.

Wells were purged of three well volumes of water, or completely evacuated, depending on the recharge rates, prior to sampling. For the newly installed well points, the wells were purged directly following their initial development. The well points were purged using disposable polyethylene bailers, with new bailers being used for each well point. The monitoring wells (MW-OB21 and MW-OB22) were purged using dedicated PVC bailers. The purged groundwater was collected in buckets to allow for measuring the volumes, and following sampling was poured on the ground near the well and allowed to infiltrate.

Groundwater samples were collected from the wells and well points using the bailers with which they were purged. Pursuant to the groundwater monitoring plan for the site ("Groundwater Monitoring Plan, CIBA-GEIGY Site, Glens Falls, New York, [Eckenfelder Inc., March 1997]), the samples were collected within 24 hours of completion of purging. The samples for total cyanide analysis were poured from the bailer into 1,000 mL plastic bottles supplied by the laboratory, and preserved with sodium hydroxide to maintain a pH greater than 12. The bottles were then placed in a cooler containing ice in a sealed plastic bag. After the collection of the sample for cyanide analysis, additional sample was collected and pH, specific conductivity, and temperature (i.e., field parameters) were measured on the sample in the field. The pH was measured using an Oakton pHTestr 2 meter. The specific conductivity and temperature were measured using a Yellow Springs Instruments (YSI) Model 3000 meter. Both meters were calibrated prior to the measurements. The field data sheets for the groundwater samples are provided in Appendix F.

On April 5, 2000, surface water samples were collected at the following locations for total cyanide analysis:

SG-14	
SG-15	

The samples were collected from the surface water body using clean glass jars. The samples were then transferred into 1000 mL plastic bottles supplied by the laboratory, and preserved with sodium hydroxide to maintain a pH greater than 12. The bottles were then placed in a cooler containing ice in a sealed plastic bag.

After the collection of the sample for cyanide analysis, additional sample was collected and pH, specific conductivity, and temperature (i.e., field parameters) were measured

on the sample in the field using the same equipment as described previously for the groundwater samples. Field parameters were also measured on a sample from the Feeder Canal, which was collected from directly north of well MW-OB21. The field data sheets for the surface water samples are provided in Appendix F.

11

As a field quality assurance/quality control (QA/QC) measure, a duplicate sample and an equipment blank were collected and submitted for total cyanide analysis. The duplicate sample was collected from location SG-14. The equipment blank was prepared by pouring analyte-free water, which was supplied by the laboratory, into a new disposable polyethylene bailer (as used for groundwater sampling), then into a clean glass jar (as used for surface water sampling), and finally into a sample bottle. The duplicate and equipment blank were preserved in the same fashion as the other samples described above.

After sample collection, the sample bottles were labeled and placed in a cooler containing ice in sealed plastic bags. The samples were shipped in the cooler to the laboratory via overnight courier, Federal Express. The custody of the samples was documented using chain-of-custody forms. The forms were filled-out by the samplers and placed in the cooler prior to relinquishing the cooler to the courier. A signed custody seal was also placed across the closed juncture between the lid and the main body of the cooler prior to relinquishing the cooler to the courier.

The total cyanide analyses were conducted using USEPA Method 9012A. The analyses were performed by Eckenfelder Laboratory, LLC, which is certified by the New York State Department of Health. The analyses were conducted in accordance with the Quality Assurance Project Plan (QAPjP) for the site. The laboratory data package is provided in Appendix G. The analytical data were internally validated by the laboratory and reviewed by the Brown and Caldwell project manager. The results of the Matrix Spike/Matrix Spike Duplicate (MS/MSD) analyses indicated that the spike recovery was greater than the control limits (see "Case Narrative" in Appendix G). Thus, the data associated with these MS/MSD samples were qualified with an "N". The higher recovery may be due to sample matrix interference or a slight over-addition of the spike solution to the MS/MSD. If due to matrix interference, the sample results would be biased toward greater than actual cyanide concentrations. The data are considered usable.

#### 4.0 INVESTIGATIVE FINDINGS

#### 4.1 OVERBURDEN STRATIGRAPHY

The nature of the overburden deposits in and near the area of this investigation is described below. The characterization of these deposits is based on the findings of this investigation and previous investigations described in the documents listed in Section 2.0.

The lower portion of the overburden consists of a relatively thick accumulation of predominantly silty clay deposited within a former lake bed during the Pleistocene Epoch. This silty clay is referred to as the lacustrine clay unit. Based on nearby borings that were drilled to bedrock, this unit directly overlies bedrock. The lacustrine clay unit is typically varved, exhibiting very thin layers that are more siltrich or sand-rich. Figures 4-1 and 4-2 present a structural contour map the surface of the lacustrine clay unit, and a hydrogeologic cross-section through the area of the investigation, respectively. Beneath most of the Pretreatment Plant SWMU, the clay surface undulates between relatively high and low areas (see Figure 4-1). In the eastern portion of the SWMU, the clay surface dips to the southeast. The general southeasterly dip continues under, and to the south of, the Feeder Canal, into the area of this investigation. Directly south of the Pretreatment Plant SWMU, the clay was apparently partially excavated to construct the Feeder Canal, as its surface is above the approximate base of the canal (see Figure 4-1). To the east, in the vicinity of well MW-OB21, the clay surface is below the base of the canal.

The thickness of the deposits overlying the lacustrine clay unit have been measured between approximately 8 and 24 feet directly south of the Feeder Canal. South of the steep slope adjacent to the canal, these deposits are much thinner, with the surface of the lacustrine clay lying fairly close to the ground surface in many areas (see

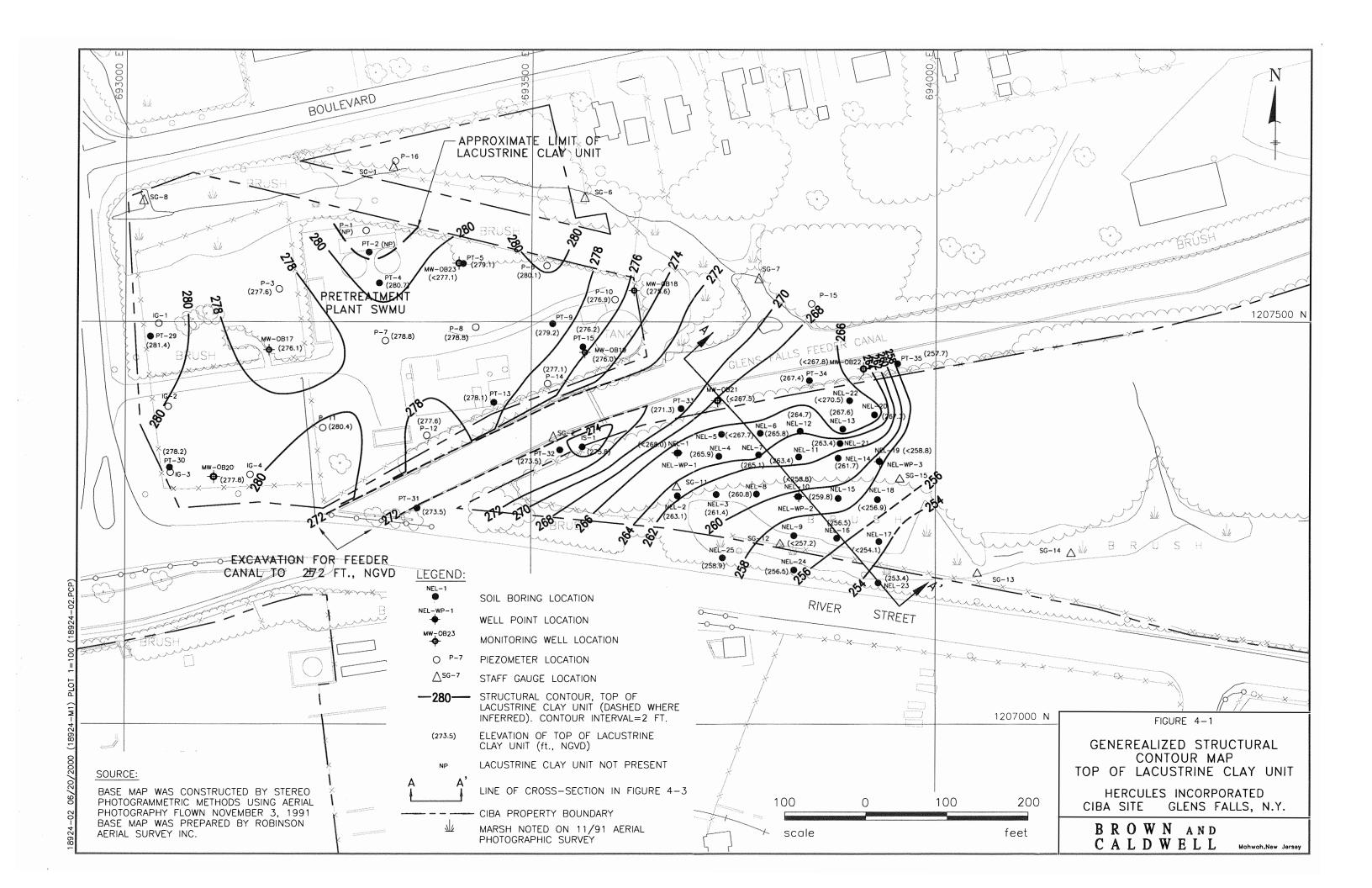


Figure 4-2). The thicker deposits directly south of the canal are predominantly sand, with some silt and clay components and layers. The thinner deposits to the south contain varying proportions of sand, silt and clay. These deposits are a combination of lacustrine sediments associated with later stages of the former lake in which the underlying clay unit was formed, and local fill that may have be associated with the construction of the canal and associated features, and/or subsequent utility installations.

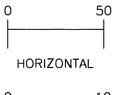
#### 4.2 GROUNDWATER FLOW

Groundwater in the overburden water-bearing zone in the vicinity of the Pretreatment Plant SWMU flows laterally through the relatively permeable fill and lacustrine deposits above the lacustrine clay unit. The lacustrine clay unit, situated at the base of the overburden, has a relatively low hydraulic conductivity and retards the vertical migration of groundwater. Thus, the clay unit forms the lower boundary of the overburden water-bearing zone. Due to the thinness of the saturation above the clay unit throughout most of the area in the vicinity of the Pretreatment Plant SWMU, the configuration of the surface of the clay unit likely influences horizontal groundwater flow directions in the more permeable material above.

A groundwater potentiometric surface map (i.e., groundwater table map) of the overburden water-bearing zone in the area of investigation was prepared based on the water levels measured on April 5, 2000 and is provided in Figure 4-3. The hydrogeologic cross-section in Figure 4-2 also depicts this same potentiometric surface.

The potentiometric surface map indicates that groundwater flows to the south and southeast from the vicinity of the Feeder Canal, near wells MW-OB21 and MW-OB22, toward the marsh area and stream to the south, where it discharges. As discussed in the "RFI Report for the Pretreatment Plant SWMU, CIBA-GEIGY Site, Glens Falls,

A' SE A NW MW-0B21 -WP-2 NEL-7 16 Ц Ц Z 23 NEL FEEDER 1 Ч И П CANAL -TOWPATH 282 CANAL SEDIMENT 278 274 NGVD) 270 CLAY (FT., 266 262 ELEVATION STREAM 258 CLAY 254 CLAY 250 SCALE

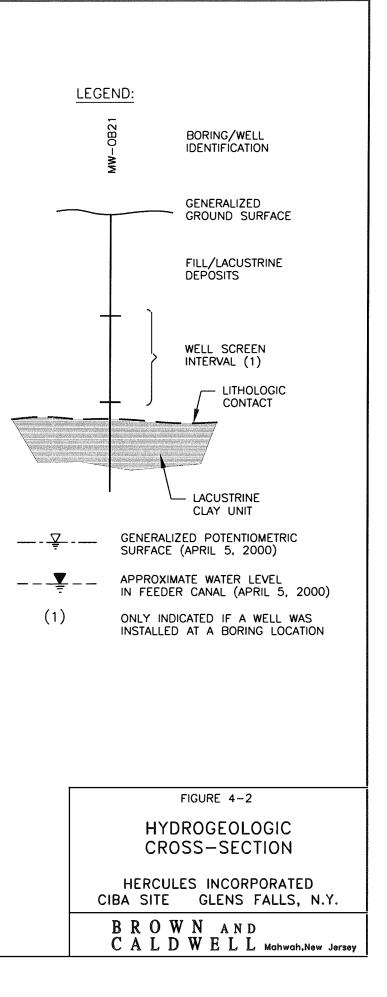




NOTE: SEE FIGURE 4-1 FOR CROSS-SECTION ORIENTATION.

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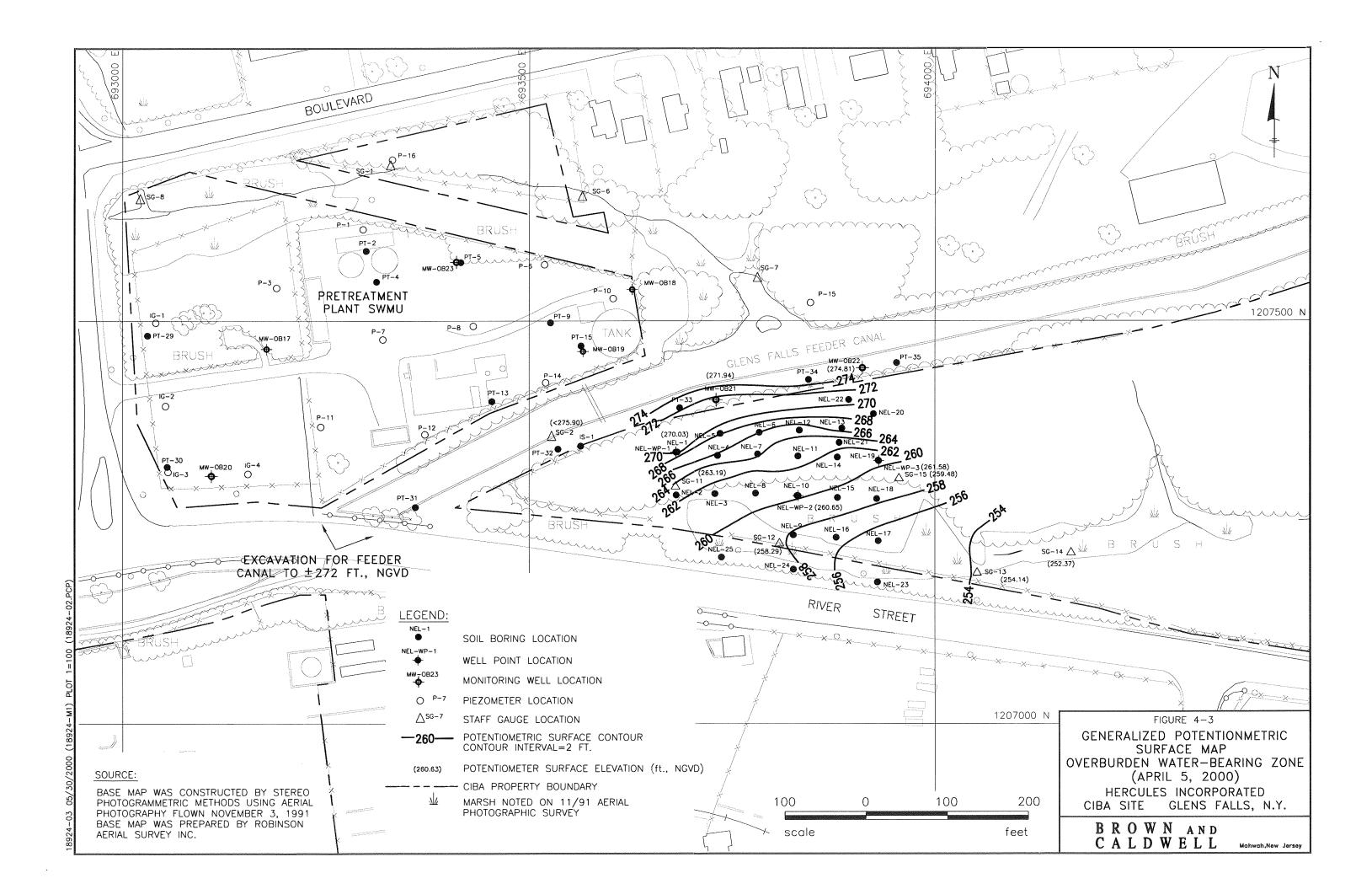
New York" (Eckenfelder Inc., October 1994), and previously in this document, because the surface of the clay unit is above the base of the Feeder Canal to the west of MW-OB21, groundwater apparently does not flow directly southward from the Pretreatment Plant SWMU beneath the canal. Rather, it apparently migrates to the east, parallel to the canal, to where the clay unit dips below the base of the canal, and then flows to the south.

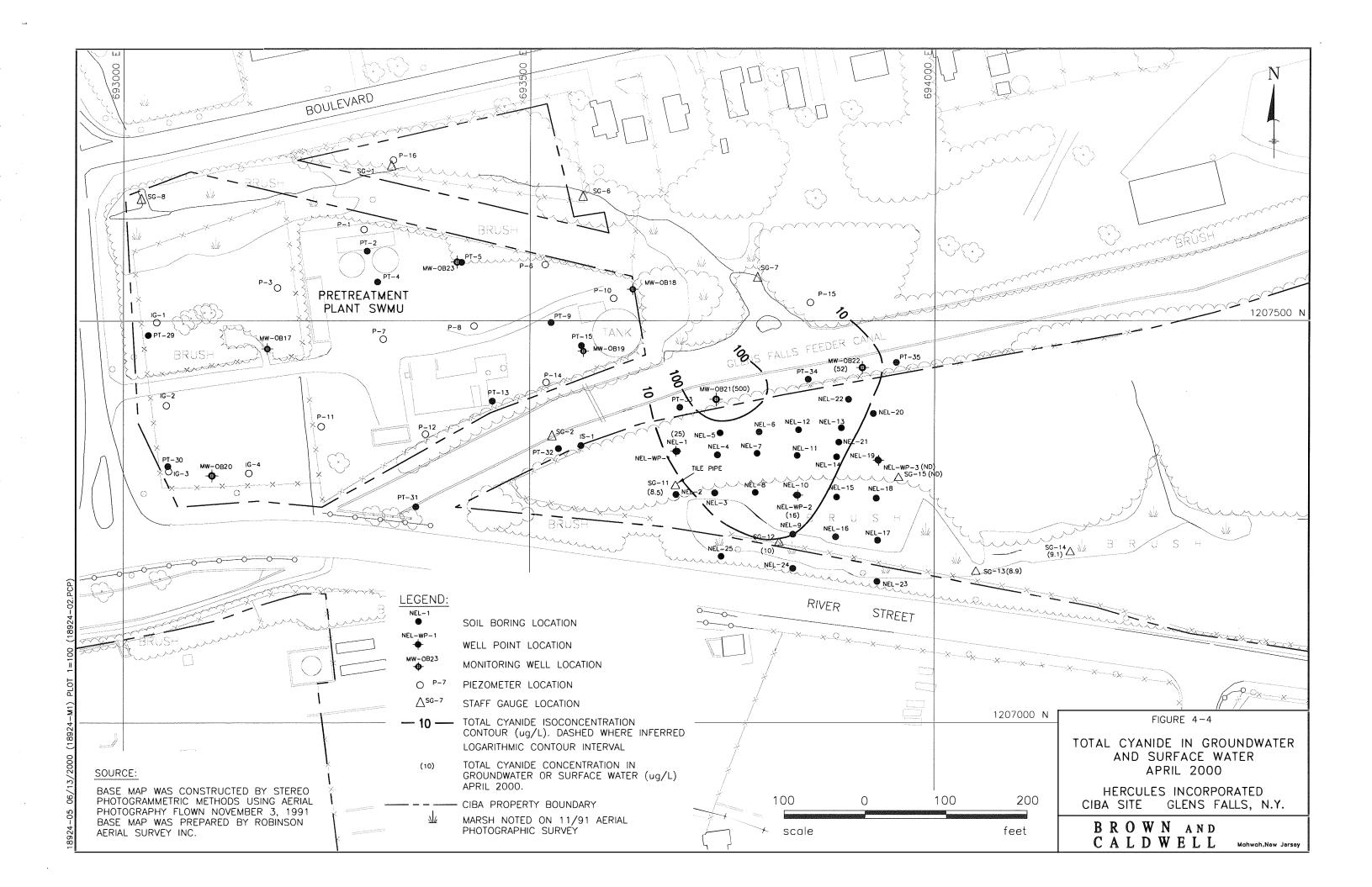
#### 4.3 GROUNDWATER QUALITY

The results of the total cyanide analyses and field parameter measurements on the groundwater and surface water samples are provided in Table 4-1. Figure 4-4 presents an isoconcentration map of the total cyanide concentrations using a logarithmic contour interval beginning at 10  $\mu$ g/l. The GWPC for total cyanide is 100  $\mu$ g/l.

The cyanide concentrations are highest at MW-OB21, and decrease substantially in both the downgradient and cross-gradient directions. With the exception of MW-OB21, the cyanide concentrations measured in the area southeast of the Pretreatment Plant SWMU are below the GWPC. MW-OB21 is the sample location to which groundwater from the area of high cyanide concentrations at the Pretreatment Plant SWMU apparently has the shortest, most direct flow path.

Wells MW-OB21 and MW-OB22 are sampled and analyzed for total cyanide as part of the semi-annual groundwater monitoring for the Ciba Site (see "Groundwater Monitoring Plan, CIBA-GEIGY Site, Glens Falls, New York, [Eckenfelder Inc., March 1997]). The concentrations measured in the samples from these wells for this investigation are generally consistent with those measured during preceding monitoring events.





#### TABLE 4-1

Location	Date	Total	pН	Conductivity	Temperature
	Sampled	Cyanide		(mS/cm)	(°C)
		$(\mu g/l)$			
Feeder Canal	4/4/00	NA (a)	8.1	0.632	10.2
SG - 11 (Tile Pipe)	4/5/00	8.5	7.6	0.628	6.4
SG - 12	4/5/00	10	7.8	0.631	6.2
SG - 13	4/5/00	8.9	7.6	0.626	5.2
SG - 14	4/5/00	9.1	7.7	0.607	5.7
DUP-040500 (SG-14)	4/5/00	11	NA	NA	NA
SG - 15	4/5/00	5.0 U(b)	7.2	0.396	4.4
MW - OB21	4/4/00	500	7.1	1.256	10.1
MW - OB22	4/4/00	52	8.6	0.578	7.4
NEL - WP - 1	4/5/00	25	7.4	0.590	4.3
NEL - WP - 2	4/5/00	16	7.2	0.389	5.4
NEL - WP - 3	4/5/00	5.0 U	6.9	0.493	5.0

#### SUMMARY OF GROUNDWATER AND SURFACE WATER QUALITY DATA

(a) NA - Data not available.

(b) U - Constituent not detected above reporting limit.

Value to left of U is reporting limit.

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#### 5.1 CONCLUSIONS

The following conclusions are made based on the findings of this investigation, and previous investigations:

- Groundwater flows to the south and southeast from the vicinity of the Feeder Canal, near wells MW-OB21 and MW-OB22, toward the marsh area and stream to the south, where it discharges. Because the surface of the lacustrine clay unit is above the base of the Feeder Canal to the west of MW-OB21, groundwater apparently does not flow directly southward from the Pretreatment Plant SWMU beneath the canal. Rather, it apparently migrates to the east, parallel to the canal, to where the clay unit dips below the base of the canal, and then flows to the south.
- The total cyanide concentrations in groundwater south of the Feeder Canal are highest at well MW-OB21. MW-OB21 is the sample location to which groundwater from the area of high cyanide concentrations at the Pretreatment Plant SWMU apparently has the shortest, most direct flow path. Cyanide concentrations decrease substantially in both the downgradient and cross-gradient directions from MW-OB21.
- Total cyanide concentrations in groundwater southeast and downgradient of the Pretreatment Plant SWMU are below the GWPC, with the exception of those measured at MW-OB21.

#### 5.2 RECOMMENDATIONS

The extent to which total cyanide concentrations originating from the Pretreatment Plant SWMU are above the GWPC was determined by this investigation. Thus, the objective of the investigation was met. No further investigative action is recommended.

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#### REFERENCES

- Brown and Caldwell, January 2000. "Groundwater Investigation Work Plan, Area Southeast of Pretreatment Plant SWMU, Ciba Site, Glens Falls, New York".
- Eckenfelder Engineering, P.C., July 1992. "RFA Sampling Visit, Pretreatment Plant, CIBA-GEIGY Site, Glens Falls, New York".
- Eckenfelder Engineering, P.C., September 1993. "Groundwater Addendum to RFA Report for Pretreatment Plant SWMU, CIBA-GEIGY Site, Glens Falls, New York".
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- Eckenfelder Inc., July 1993. "Quality Assurance Project Plan for the RCRA Facility Investigation and Groundwater Monitoring at the CIBA-GEIGY Site, Glens Falls, New York".
- Eckenfelder Inc., October 1994. "RFI Report for the Pretreatment Plant SWMU, CIBA-GEIGY Site, Glens Falls, New York".
- Eckenfelder Inc., March 1997. "Groundwater Monitoring Plan, CIBA-GEIGY Site, Glens Falls, New York".
- New York State Department of Environmental Conservation (NYSDEC), September 1999. Letter from G. Casper (NYSDEC) to G. Schmiesing (Hercules), September 9, 1999.
- New York State Department of Environmental Conservation (NYSDEC), February 2000. Letter from G. Casper (NYSDEC) to G. Schmiesing (Hercules), February 22, 2000.

**R-1** 

\\BCMAH02\PROJECTS\^J\18924\GWIR053000(gw inv rpt area se ptmnt plant swmu).DOC 06/20/00

New York State Department of Environmental Conservation

# Division of Solid and Hazardous Materials

Bureau of Radiation & Hazardous Site Management, Room 450 50 Wolf Road, Albany, New York 12233-7252 Phone: (518) 457-9253 • FAX: (518) 457-9240

Website: www.dec.state.ny.us

Mr. Glen Schmiesing Hercules, Incorporated Hercules Plaza Wilmington, Delaware 19894

February 22, 2000	
Post-it" Fax Note 7671	Date 3/6/00 pages Z
Tamp zip Queil	From Gary Castler
Co.Dept Fekenfelder	CO. AYSDEC
Phone #	Phone #
Fax (201) 818-6057	Fax #

Dear Mr. Schmiesing:

Re: Ciba-Geigy Approval- PTP and Area West of Main Plant Work Plans

The Department has reviewed your Work Plans for additional investigative work at the Glens Falls site. The Work Plans are conditionally approved in accordance with the respective additional requirements, comments, and clarifications outlined below.

#### A. PRE-TREATMENT PLANT

- 1. Based on the assumptions made in the work plan, the depth to the top-of-clay is expected to be within reach of hand auguring equipment. This will likely be the case. However, a contingency plan must be in place to complete the work if the clay surface is deeper than hand auguring can reach. It is assumed that Geoprobe equipment will be able to complete the work, if needed. Please indicate if this is not your intention.
- 2. The work plan implies that no further investigations will be performed in this area if the results of this study define the extent of the groundwater contamination exceeding the groundwater protection concentrations. To clarify, this would be true only if it is demonstrated that there will not be any further spread of the plume beyond its defined extent.

### B. AREA WEST OF MAIN PLANT SITE

- 1. In order to better define the top-of-clay surface in the areas north and west of the planned removal area, additional borings are needed. There appear to be saturated conditions in the overburden near Well AW-B1. However, conditions are not known elsewhere. Please add one more boring near AW-B1 and two more borings near sampling point CC-6 in order to establish three data points at each location. This will provide more precise interpretation of the top-of-clay surface at these locations and allow better placement of the groundwater monitoring points. The additional data will also aid in finding saturated conditions if the initial borings are dry.
- 2. Data from the proposed borings along the top of the slope at the river need to be interpreted beyond the direct boring-to-boring comparison, to determine if there are potential low spots in the top-of-clay surface between the borings. All available data, including the actual boring locations, must be considered in the analysis to determine if additional intermediate borings are justified.





DAY ECCT

COPY

# APPENDIX A

# LETTER OF APPROVAL FOR WORK PLAN FROM NYSDEC

\\BCMAH02\PROJECTS\^J\18924\GWIR053000(gw inv rpt area se ptmnt plant swmu).DOC 06/20/00

.... HISUEL BRHSM

- 3. The top paragraph on page 3-3 states that the well points may be driven to depth. Since the proposal specifies PVC well pipes and screens, this method seems inappropriate. It is assumed that they will be installed in pre-drilled boreholes using the Geoprobe equipment. If other procedures are to be used, further clarification is needed.
- 4. At the bottom of page 3-3 to page 3-4, it is stated that there will be no investigation within the planned soil removal area directly west of MW-OB9. This was discussed and approved in a telephone conversation with your consultant. However, it was also understood that this was only for the immediate investigation, since there was some likelihood that the wastes in this area could be contributing to the observed groundwater contamination at MW-OB9. It was also agreed that the removal operations would likely disturb or destroy any well points that were installed. For these reasons, investigation of this immediate area was deferred. It was only deferred, and not eliminated as a requirement. The need for and exact nature of any further groundwater investigation needed in this area will be reevaluated based on data collected under the scope of this work plan and likely after the waste removal operations have been completed.
- 5. We have interpreted section 3.2.4 to require only one groundwater sample per monitoring point. If water is available, each well must be sampled at least twice during the proposed six-month data collection period, to cover high and low groundwater conditions. If a large number of well points are installed, we might consider a reduced number for sampling, if warranted by the data existing at the time. This will require further discussion.
- 6. Relative to the second paragraph of Section 3.3, and the entire work plan in general, it is necessary to clarify that all determinations and decisions will continue to be based on <u>all</u> <u>available data and site interpretations</u> rather than any particular set of data. I think we are in agreement on this. However, Section 3.3 reads that the need for additional investigations will be based on "the data collected". This could imply only data collected under this work plan.

If you are in agreement with the conditions of this approval, please schedule the field work in accordance with the schedules in the respective work plans. I intend to be present during some phases of the field work and would appreciate at least five business days advance notice before the start of work. If you have any questions, please call me at (518) 457-9253.

Sincerely,

Gary D. Casper Senior Engineering Geologist

cc: J. Reidy, EPA Region II G. Stahler, Region 5, Raybrook :

# APPENDIX B

# SOIL BORING LOGS

\\BCMAH02\PROJECTS\^J\18924\GWIR053000(gw inv rpt area se ptmnt plant swmu).DOC 06/20/00

BROWN A				urface ng Log	Well Name/INEL-1	Location:	Page 1					
	E of PT Plant SWMU					Pr	oject No.:	Start Date	e: 3-24-00			
Client: Hercules:	CIEA Site, Glens F	alls. I	$\langle \rangle$			18	924.001	Finish Dat	e: 3-//-//()			
	DRILLING DA	ATA				SAMPLIN	G METHODS	6				
	Fox/Roger Gray						· · ·	Sampler	Tube	Core		
Contractor: NA							Туре:	N.1	SS Soil Cor			
Equipment: Soil (	Corer (Manual)						Diameter:	MA	2 inch	NA		
Method: N4		0710					Other:	N.4	NA	NA		
	WELL CONSTRU Riser			cree	n		DEVE	VELL LOPMENT	SUF	RVEY DATA TUM: NA		
Material:	NA			N.4			Method: NA		Grade: 271	.5.4		
Diameter (ID):	NA			NA			Duration: NA		TWC: NA			
Coupling:	NA			NA			Gals. Purged:	NA	TPC: NA			
WELL	CONSTRUCTION	soil	CAL		DAT		Slug Test: N	4	North: 1207	7337.385.4		
WELL	CONSTRUCTION	rock	SAP		DAT	A	(cm/sec)		East: 6936	582.5053		
(feet)		Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	OVA (ppm)	Geophysical Comments:	Log: 🗌 yes	🛛 no			
Depth				Rec. (ft.)	RQD			VISUAL SIFICATIO	N	REMARKS		
	Borehole backfilled with cuttings.						material, slig Dark-brown Organic mat Brown to lig to c SAND,	to black fmc SAND, erial. ht brownish gray vf, little to no Silt, loca from 1.5' to 2.5'. Dar	<u>0.5</u> <u>1.0</u> f			

BROW	IN A	ND CALD	WELL	_				urface ng Log	Well Name/ NEL-2		Page 1 of		
		E of PT Plant Siv						oject No.:		e: 31- UU			
Client: He	preules:	CIBA Site, Glen:		$\wedge$			18	924.001		e: 3-21-00			
T		DRILLING								G METHODS			
Contractor		Fox/Roger Gray						Туре:	Sampler NA	Tube	Core		
		Corer (Manual)						Diameter:	NA	2 inch	NA NA		
Method: /								Other:	NA	NA	NA		
nethod. /	VA	WELL CONST	RUCTIC	N					VELL	T			
		Riser			cree	n		DEVEL	OPMENT	DAT	UM: NA		
Material:		NA			NA			Method: NA		Grade: 263.	17		
Diameter	(ID):	NA			N.4			Duration: NA		TWC: NA			
Coupling:		NA			N.4			Gals. Purged:	NA	TPC: NA			
	WELL	CONSTRUCTION	soil	SAN		DAT	۵	Slug Test: NA	4	North: 12072	84.1845		
			rock				<u> </u>	(cm/sec)		East: 69368	1.2211		
Depth (feet)			Samp No.	. Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	🛛 no			
O Depth			Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N F	REMARKS		
		Boreho backfil with cutting	led					SILT. Some	locally mottled and d CLAY, slightly dam	0.4 p			

		ND CALDWI	_				orir	urface ng Log	Well Name/ NEL-3		ר:	Page 1 of
		of PT Plant SiMU						oject No .:	Start Date			
Client: Herc	ules.	CIBA Site, Glens F		V }'			15	924.001	Finish Dat			
Tanaalari	1.1	DRILLING DA	ATA						SAMPLIN	T		
Contractor: (		Fox/Roger Grav						Tupo	Sampler N4	Tub		Core
		Corer (Manual)						Type: Diameter:	N4 N4	55 Seil 2 inc		NA NA
Method: NA								Other:	NA	N.		NA
ne thou. WA		WELL CONSTRU	CTIO	N					ELL	1	SURVEN	
	Τ	Riser	T		cree	en		DEVEL	OPMENT		DATU	
Material:	Ī	NA			N4			Method: NA		Grade:	261.86	
Diameter (I	(D):	NA			NA			Duration: NA		TWC: N	4	
Coupling:		NA			N.4			Gals. Purged:	NA	TPC: N.	4	
W		CONSTRUCTION	soil	SAN		DAT	Δ	Slug Test: NA	1	North:	1207288	5.8201
		Bondinoerion	rock			DAI		(cm/sec)		East: 6	93729.2	2947
Depth (feet)			Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	🛛 no		
O Depth		Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	; RQD	RQD	VISUAL CLASSIFICATION		N REMARKS		MARKS	
		Borehole backfilled with cuttings.						Damp. LACUSTRINE Gray mottled	l CLAY, trace vf Iy damp. Some erial.	0.5		

	ND CALDWE						urface ng Log	Well Name/ NEL-4		ו:	Page 1 of
	E of PT Plant SWMU					Pr	oject No.:	Start Date	e: 3-21-	(11)	
Client: Hercules.	CIBA Site, Glens Fa		V			18	924.001	Finish Dat			
	DRILLING DA	ATA		-				SAMPLIN			
	Fox/Roger Gray						-	Sampler	Tub		Core
Contractor: NA	-						Type:	NA	SS Soil		NA
Equipment: Seil (	Corer (Manual)						Diameter:	NA	2 m		NA
Method: N4	WELL CONSTRU	CTIO	N				Other:	NA	N/A		N,1
	Riser			cree	n		DEVEL	ELL OPMENT		SURVEY	I DATA
Material:	NA		and the second second second	NA			Method: NA		Grade:	267.21	and the second se
Diameter (ID):	NA			NA			Duration: NA		TWC: N	4	
Coupling:	NA			NA			Gals. Purged:	NA	TPC: NA	4	
	CONSTRUCTION	soil	SAN		DAT	•	Slug Test: NA		North:	1207333	3.1160
WELL	CONSTRUCTION	rock	SAP		DAT	A	(cm/sec)		East: 6	93732	1936
(feet)		Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical I Comments:	og: 🗌 yes	🛛 no		
Depth 0		Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			/ISUAL SIFICATIO	N	RE	MARKS
	backfilled with cuttings.						Slightly dam Gold/light-b to Clayey Si material. Sli - - - - - Gold to light	rown f SAND, little s It. Little organic ghtly damp to damp <u>CCLAY</u> brown Silty CLAY. g. Slightly damp to	). 1.3		

BROWN	I AN	D CALDWE	ELL					urface ng Log	Well Name/I NEL-5		:	Page I of I
		of PT Flant SiXMU					Pr	oject No.:	Start Date			
Client: Hercu	iles: Cl	EA Site, Glens Fa		JΎ			18	924.001	Finish Dat			
T		DRILLING DA	TA						SAMPLIN			
Contractor: J		ox/Roger Gray						Туре:	Sampler	Tub SS Seil (		Core
Equipment: S		rer (Manual)						Diameter:	NA	2 Inc		NA NA
Method: NA		er (Manual)						Other:	NA	N.1		NA
		WELL CONSTRUC	CTIO	N					ELL	1		Y DATA
		Riser			cree	n		DEVEL	OPMENT		DATU	
Material:		NA			N.4			Method: NA		Grade: .	270.16	
Diameter (IC	וכ):	NA			NA			Duration: NA		TWC: NA	1	
Coupling:		NA			NA			Gals. Purged:		TPC: NA	1	
WE		NSTRUCTION	soil	SAN	IPLE	DAT	A	Slug Test: NA		North: /.		
			rock					(cm/sec)		East: 68	93735.	6626
Depth (feet)			Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical L Comments:	.og: 🗌 yes	No No		
Depth O			Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD		١	/ISUAL SIFICATIO	N	RE	MARKS
	000000000000000000000000000000000000000	Borehole backfilled with cuttings.						Slightly dam Brown to dau Slightly dam No recovery Brown c SAN saturated.	k-brown mc SAND. b to damp. ID and f GRAVEL, ), little Silt to Claye ted.	<u>1.0</u> <u>1.5</u>		

Project: 6 Client: He		E OF ET ET		ELL			Bo	orir	ng Log	NEL-6		Page Lof I
Client: <i>He</i>			ant SixMU	1	171			Pr	oject No.:	Start Date	e: 3-22-00	
	rcules:	CIBA Site	. Glens Fa	alls, M	JY.	-		18	924.001	Finish Dat	e: 3-22-00	
		DRI	LLING DA	TA						SAMPLIN	G METHODS	
Inspector	: John	Fox/Roge	r Grav					1		Sampler	Tube	Core
Contracto	or: NA								Type:	NA	SS Soil Corei	NA
Equipment	t: Soil (	Corer (Mai	nuai)						Diameter:	NA	2 inch	NA
Method: A	IA								Other:	NA	NA.	NA
			CONSTRU	CTIO		_				ELL OPMENT		EY DATA UM: NA
Malaziak			iser		S	cree	n			UPMENI		
Material:			NA			N4			Method: NA		Grade: 267.2	<b>_</b>
Diameter	(10):		NA			N4			Duration: NA		TWC: NA	
Coupling:			NA			N4			Gals. Purged:		TPC: NA	017000
	WELL	CONSTRUC	CTION	soil rock	SAN	IPLE	DAT	A	Slug Test: NA (cm/sec)	4	North: 12073 East: 69378.	
				TUCK	-					_		5.77.55
(feet)				Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	🛛 no	
Depth (feet)				Run No.	Hydraul. Cond.	Rec. (ft.)	RQD			VISUAL	N R	EMARKS
0	IV . K				cm/sec					SIFICATIO		
-		00,00,000,000	Borehole backfilled with cuttings.						erganic mate e.5' brown trace f Grav	fc SAND, trace Silt vel. Saturated. <u>E CLAY</u> light brown CLAY, nd.	0.5	

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BROWN		ND CALDWE	ELL					urface ng Log	Well Name/		Page 1 of 1
Project: GWI	I - SE	of PT Flant SWMU					Pr	oject No.:	Start Date	e: 3-///=()()	
Client: Herce	ules, i	TIBA Site, Glens Fa	alls, N	V } <sup>.</sup>			15	1924.001	Finish Dat	e: 3-22-00	
		DRILLING DA	ATA						SAMPLIN	G METHODS	
Inspector:	Iohn F	ox/Roger Gray							Sampler	Tube	Core
Contractor:								Туре:	NA	SS Soil Corer	NA
Equipment:	Soil Co	prer (Manual)						Diameter:	NA	2 inch	MA
Method: NA								Other:	NA	NA	NΛ
		WELL CONSTRUC	CTIO						ELL .OPMENT	SURVE	Y DATA
Matarial	-	Riser		S	cree	n			UPMENI		M: NA
Material:		NA			N4			Method: NA		Grade: 265.73	
Diameter (I	ו: (ט	NA			N.4			Duration: NA		TWC: NA	
Coupling:		NA			N.4			Gals. Purged:		TPC: NA	1.0000
W	ELL C	ONSTRUCTION	soil rock	SAM	<b>IPLE</b>	DAT	Α	Slug Test: NA (cm/sec)	L .	North: 120733 East: 693781.	
			TUCK								/ / 9/
(feet)			Samp. No,	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical I Comments:	∟og: ∐ yes	⊠ no	
Depth 0			Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N RE	MARKS
		A Borehole backfilled with cuttings.						Sand. Some Damp to moi LACUSTRINE Gray, light b CLAY, trace Sand. Little	<u>CLAY</u> rown, gold mottled to some vf to c organic material. Moist to saturated 2.5'.	 d 	

]

Client: Hercules: CIBA Site, Glens Falls, NY 18924.001 Finish	Date PLING er ves	DA         Grade: 261.         TWC: N4         TPC: N4         North: 1207         East: 6937         Imo         No         No         No         No         0.5	Core er NA NA NA VEY DATA TUM: NA 8-4
DRILLING DATA       SAM         Inspector: John Fox/Roger Gray       Sample         Contractor: NA       Type:       NA         Equipment: Soil Corer (Manual)       Diameter:       NA         Method: NA       WELL CONSTRUCTION       WELL Diameter:       MA         Material:       NA       NA       Method: NA         Diameter (ID):       NA       NA       Duration: NA         Gais:       NA       NA       Duration: NA         Gais:       NA       NA       Surget: NA         Well CONSTRUCTION       soil rock       SAM       Method: NA         Well CONSTRUCTION       soil rock       Sample DATA       Competition: NA         Gais:       Purget: NA       Soil rock       Sample DATA       Slig Test: NA         Well CONSTRUCTION       soil rock       Sample DATA       Slig Test: NA       Slighty dam:         Weilt CONSTRUCTION       soil rock       Blows/ 6 in.       Rec. (ft.)       USCS       HNU (ppm)       Geophysical Log:       O         Weilt Conduct Material       Borehole backfilled with cuttings.       Borehole backfilled with cuttings.       Borehole backfilled with       Borehole backfilled       Borehole backfilled       Borehole backfilled       Borehole backfil	PLING er ves TION e organia	S METHODS Tube SS Soil Con 2 inch NA SUR DA Grade: 261. TWC: NA TPC: NA North: 1207 East: 6937 ⊠ no N	Соге ет NA NA NA VEY DATA TUM: NA 8-4 286.3511 79.2385
Inspector: John Fox/Roger Gray       Sample         Contractor: NA       Type:         Equipment: Soil Corer (Manual)       Diameter:         Method: NA       Other:         WELL CONSTRUCTION       WELL Development         Material:       NA         Diameter (ID):       NA         NA       NA         Diameter (ID):       NA         NA       NA         Barehole       Sample         Sample       Sample         Method: NA       NA         Diameter (ID):       NA         NA       NA         Barehole       Samp.         Borehole       Barehole         No.       Barehole         Dark brown Clayey SILT. Som         Barehole       Barehole         No.       Barehole         No.       Barehole         No.       Barehole	ves TION e organia	Tube SS Soil Con 2 mch NA SUR DA Grade: 261. TWC: NA TPC: NA North: 1207 East: 6937 North: 1207 East: 6937	Core NA NA NA VEY DATA TUM: NA 8-4 286.3511 79.2385
Contractor: NA       Type:       NA         Equipment: Soil Corer (Manual)       Diameter:       NA         Method: NA       Other:       NA         WELL CONSTRUCTION       WELL         Material:       NA       NA       Method: NA         Diameter (ID):       NA       NA       Method: NA         Coupling:       NA       NA       Method: NA         WELL CONSTRUCTION       Soil       SAMPLE DATA       Slug Test: NA         (cm/sec)       Samp.       Blows/       Rec.       USCS       HNU       Geophysical Log:       Comments:         Total       Run       Hydraul.       Rec.       Rod       VISUAL       CLASSIFICA         O       V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.V.	ves TION e organia	<i>SS Sall Carl</i> <i>2 mch</i> <i>NA</i> <b>SUR</b> <b>DA</b> Grade: <i>261.</i> TWC: <i>NA</i> TPC: <i>NA</i> TPC: <i>NA</i> North: <i>1207</i> East: <i>6937</i> ⊠ no N	ет NA NA NA VEY DATA TUM: NA 8-4 286.3511 79.2385
Equipment: Soil Corer (Manual)       Diameter:       NA         Method: NA       WELL CONSTRUCTION       WELL         Material:       NA       NA         Diameter (ID):       NA       NA         Method: NA       NA       Duration: NA         Gals. Purged: NA       Samp.       Blows/         WELL CONSTRUCTION       Soil       SAMPLE DATA         WELL CONSTRUCTION       Soil       Samp.         Method: NA       NA       Slug Test: NA         (cm/sec)       Samp.       Blows/       Rec.       Comments:         Gals       Run       Hydraul.       Rec.       ClassIFICA         O       VISUAL       ClassIFICA       Black Clayey SILT. Som material. Damp.         Back filled with cuttings.       With cuttings.       Black for aver, litting material. Slightly damp.	ves TION e organia	2 mch NA SUR DA Grade: 261. TWC: NA TPC: NA North: 1207 East: 6937 ∑ no N	NA NA VEY DATA TUM: NA 8-4 286.3511 79.2385
Method: NA     Other:     NA       WELL CONSTRUCTION       Material:     NA     Screen     WELL       Diameter (ID):     NA     NA     Duration: NA       Coupling:     NA     NA     Ouration: NA       WELL CONSTRUCTION     soil rock     SAMPLE DATA     Slug Test: NA (cm/sec)       WELL CONSTRUCTION     soil rock     Samp.     Blows/ 6 in.     Rec. (ft.)     USCS     HNU (ppm)     Geophysical Log:     O       O     No.     Bin.     Rec. (ft.)     RDD     VISUAL CLASSIFICA       O     No.     Borehole back filled with cuttings.     Borehole back filled with cuttings.     Borehole back filled with cuttings.     Borehole back filled with cuttings.     Dark brown Clayey SLT. Som material. Slightly damp.	ves TION e organic	NA       Grade: 261.       TWC: NA       TPC: NA       North: 1207       East: 6937       No	NA <b>VEY DATA</b> <b>TUM: NA</b> 8-4 286.3511 79.2385
WELL CONSTRUCTION         WELL CONSTRUCTION           Riser         Screen         Development           Material:         NA         NA         Method: NA           Diameter (ID):         NA         NA         Duration: NA           Coupling:         NA         NA         Duration: NA           Gals. Purged: NA         Slug Test: NA (cm/sec)         Slug Test: NA (cm/sec)         Slug Test: NA (cm/sec)           Geophysical Log:         No.         Bin.         Rec. (ft.)         USCS         HNU (ppm)         Geophysical Log:         Comments:           Gals         No.         Bin.         Rec. (ft.)         RDD         VISUAL CLASSIFICA           O         No.         Borehole back filled with cuttings.         Borehole back filled with cuttings.         Back Clayey SILT. Som material. Slightly damp.	ves TION e organic	SUR DA Grade: 261. TWC: NA TPC: NA North: 1207 East: 6937 North: 1207 East: 6937	VEY DATA TUM: NA 8-4 286.3511 79.2385
Riser     Screen     DEVELOPMENT       Material:     NA     NA     Method: NA       Diameter (ID):     NA     NA     Duration: NA       Coupling:     NA     NA     Duration: NA       WELL CONSTRUCTION     soil rock     SAMPLE DATA     Slug Test: NA (cm/sec)       WELL CONSTRUCTION     soil rock     SAMPLE DATA     Slug Test: NA (cm/sec)       Wethod:     No.     Blows/ 8 in.     Rec. USCS     HNU (ppm)       Geophysical Log:     O     VISUAL CLASSIFICA       No.     Biows/ 8 in.     Rec. (ft.)     RoD     VISUAL CLASSIFICA       O     No.     Borehole backfilled with cuttings.     Black Clayey SILT. Som material. Damp.     Dark brown Clayey SILT. Som Sightly damp to Sightly damp.	ves TION e organic	DA         Grade: 261.         TWC: N4         TPC: N4         North: 1207         East: 6937         Imo         No         No         No         No         0.5	<b>TUM: NA</b> 8-4 7286.3511 79.2385
Material:     NA     NA       Diameter (ID):     NA     NA       Coupling:     NA     NA       WELL CONSTRUCTION     soil rock     SAMPLE DATA       WELL CONSTRUCTION     soil rock     Samp. 8 in.       Blows/ Bin     Rec. (ft.)     USCS       WELL CONSTRUCTION     Samp. No.       Blows/ Bin     Rec. (ft.)       Run No.     Hydraul. Cond. cm/sec       Run No.     Hydraul. Cond. cm/sec       Black Clayey SILT. Som material. Damp.       Dark brown Clayey SILT. Som material. Sightly damp.	ves TION e organic	Grade: 261. TWC: N4 TPC: N4 North: 1207 East: 6937 N no	84 286.3511 79.2385
Diameter (ID):       NA       NA       Duration: NA         Coupling:       NA       NA       Samp.       SampLE DATA       Gals. Purged: NA         WELL CONSTRUCTION       soil rock       SAMPLE DATA       Slug Test: NA (cm/sec)         Image: Comparison of the second	ves TION e organic	TWC: N4 TPC: NA North: 1207 East: 6937 N no	286.3511 79.2385
Coupling:       NA       NA       Gals. Purged: NA         WELL CONSTRUCTION       soil rock       SAMPLE DATA       Slug Test: NA (cm/sec)         Samp.       Blows/ 6 in.       Rec. (ft.)       USCS       HNU (ppm)       Geophysical Log:       Comments:         Samp.       Blows/ 6 in.       Rec. (ft.)       USCS       HNU (ppm)       Geophysical Log:       Comments:         Samp.       Blows/ 6 in.       Run cond.       Rec. (ft.)       ROD       VISUAL CLASSIFICA         O       V       Borehole backfilled with cuttings.       Borehole backfilled with cuttings.       Blows/ cuttings.       Rec. (ft.)       ROD       Dark brown Clayey SILT. Sand, some f Gravel, littli material. Slightly damp.	ves TION e organic	TPC: NA North: 1207 East: 6937	79.2385
WELL CONSTRUCTION       soil rock       SAMPLE DATA       Slug Test: N4 (cm/sec)         Image: Samp. Samp. No.       Samp. Blows/ 6 in.       Rec. (ft.)       USCS       HNU (ppm)       Geophysical Log: Image: Samp. Comments:         Image: Samp. Samp. Samp. No.       Blows/ 6 in.       Rec. (ft.)       USCS       HNU (ppm)       Geophysical Log: Image: Samp. Comments:         Image: Samp. Samp. Samp. Samp. Samp. No.       Blows/ 6 in.       Rec. (ft.)       RQD       VISUAL CLASSIFICA         Image: Samp. Samp. Samp. Sighty damp.       Borehole backfilled with cuttings.       Borehole backfilled with       Image: Samp. Sighty damp.       Black Clayey SILT. Som material. Slighty damp.	ves TION e organic	North: 1207 East: 6937	79.2385
WELL CONSTRUCTION       rock       SAMPLE DATA       (cm/sec)         Image: Samp of the second seco	ves TION e organic	East: 6937	79.2385
Image: Samp. No.       Samp. No.       Blows/ 6 in.       Rec. USCS       HNU (ppm)       Geophysical Log: Comments:         Image: Samp. No.       Run No.       Hydraul. Cond. cm/sec       Rec. (ft.)       RQD       VISUAL CLASSIFICA         Image: Samp. No.       Borehole backfilled with cuttings.       Borehole backfilled with cuttings.       Borehole backfilled with gold of the same slightly damp.       Image: Slightly damp.	TION e organic	N <u>0.5</u>	
The sector     Run No.     Hydraul. Cond. Cond.     RQD     VISUAL CLASSIFICA       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     0       0     0     0     0     0     0     <	e organio	Nic	REMARKS
Borehole Borehole Bockfilled with cuttings. Borehole CAL Borehole		0.5	
	e organio o damp.	nic 9. <u>1.0</u>	

BR	OWN		ND C		ELL					urface ng Log	Well Name/ NEL-9		Page 1 of .
				Flant SWMU					Pr	oject No.:	Start Date	<b>e:</b> 3-2-0(1	
Client	: Hercu	iles: C		te, Glens F	_	VY'			15	924.001		e: 3-22-00	
				RILLING DA	ATA							G METHODS	
			Fox/Rog	ger Grav						-	Sampler	Tube	Core
	actor:									Type:	NA	SS Sol Corer	N.1
	oment: S	Soil C	oler (N	(anual)						Diameter:	NA	2 mch	NA
Metho	od: NA			CONCTOU	OTIO					Other:	NA	NA	NA
_			WELI	L CONSTRU Riser			Scree				IELL LOPMENT		Y DATA M: NA
Mater	rial	-		NA	-	3	NA		-	Method: NA		Grade: 258.16	
	eter (I	<u>ا</u> ۱۰		NA			NA			Duration: NA		TWC: NA	
Coupl		07.		NA			NA			Gals. Purged:	N/A	TPC: NA	
ooupi					soil					Slug Test: NA		North: 120723	4 5594
	W	ELL C	ONSTR	UCTION	rock	SAN	MPLE	DAT	A	(cm/sec)		East: 693825.	
et)					Samp.	Blows/	Rec.	USCS	HNU	Geophysical	Log: 🗌 yes		
(feet)					No.	6 in.	(ft.)	_	(ppm)	Comments:			
Depth					Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N RE	MARKS
0-		V D	d							Black CLAY	& SILT, trace f Sar c material, saturate	nd,	
		0	D	Borehole backfilled						Black to dai Clay & Silt.	rk gray f SAND, littl Saturated	e0.5	
-	-	00	1.4	with cuttings.							nd of Boring at 1.0'.	1.0	
-	1								1				
										_			
					-								
	-									-			
	-												
6													

		ND CA							urface ng Log	Well Name/I NEL-10		Page I of 1
Projec	ct: GWI-S	E of PT Fla	Int SWMU					Pr	oject No.:	Start Date	: J-21-040	
Client	Hercules:	CIEA Site.	Glens Fa	alls, I	1)			16	3924.001	Finish Dat	B: 3-22-00	
			LLING DA	ATA						SAMPLIN	S METHODS	
Inspe	ctor: John	Fox/Roger	Gray							Sampler	Tube	Core
Contra	actor: NA								Туре:	NA	SS Soil Corei	٨/.١
Equip	ment: Soil	Corer (Mar	nual)						Diameter:	NA	? mch	NA
Metho	d: NA								Other:	NA	NA	N-1
		WELL C	CONSTRU	CTIO					h	ELL	SURVE	EY DATA
			ser		S	cree	en			OPMENT		JM: NA
Mater			VA			NA			Method: NA		Grade: 262.3	0
	ter (ID):		VA			NA			Duration: NA		TWC: NA	
Coupli	ing:	/	VA			NA			Gals. Purged:		TPC: NA	
	WELL	CONSTRUC	TION	soil	SAN	IPLE	DAT	A	Slug Test: NA (cm/sec)	1	North: 120728	
				rock					(CIII/SEC)		East: 693830	0.3001
(feet)				Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	🛛 no	
Depth				Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N RI	EMARKS
0-	٦ <u>۲</u>	D							Black, brown	CLAY & SILT, some	e f	
		0						1.00	material. Sli	some organic ghtly damp.		
		P								vf, f, (c) SAND, littl	<u>0.5</u>	
		0		-		12.1			to no silt. S	lightly damp to dam	p.	
	V.	DE	Borehole		6 B.	-						
		O.	backfilled		1							
	Į μ	DE	with cuttings.									
		0.	our ingo.									
	V	DE							1.3			
		0.										
	V.	DC										
		0										
		D										
	0	0.										
-		C							L			
	0	0		1								
	V.	D,									3.5	
									End of Bori	ng at 3.5'.		
	-								-			
									-			
6									1.1			
0	_							_				

-

			CALDWE	ELL				orir	urface ng Log	Well Name/ NEL-11		:	Page 1 of 1
			Flant Six MU						oject No.:	Start Date			
Client	: Hercules		Site, Giens Fa		V ) .			18	924.001	Finish Dat			
-	1		DRILLING DA	TA						SAMPLIN			
	ctor: John actor: NA	Fox/Re	oger Grav						THERE	Sampler	Tube		Core
		2	(						Type:	NA	55 Soil C		NA
	ment: Soil	Lorer (	Manuali						Diameter:	NA	2 mc	71	NA
Metho	0 <b>d</b> : /V.4				N				Other:	NA	NA		NA
		ME	Riser			cree	n		DEVEL	IELL OPMENT	5	DATU	Y DATA M: NA
Mater	ial.		NA	-		NA			Method: NA	and the second second second	Grade: 2		
	ter (ID):		N.A			NA			Duration: NA		TWC: NA		
Coupl			NA			N4			Gals. Purged:	NA	TPC: N.4		
ocupi		1		soil					Slug Test: NA		North: /.		2 35.12
	WELL	CONST	RUCTION	rock	SAN	<b>IPLE</b>	DAT	Α	(cm/sec)		East: 68		
											-		
(feet)				Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical   Comments:	Log: 🗌 yes	No no		
Depth				Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N	RE	MARKS
-0	D	000000000V	Borehole backfilled with cuttings.						SILT, some of Rootlets. Di	amp. <u>= CLAY</u> ht brown CLAY, little	0.5 		
6	-									1) -			

	ND CALDW		-				urface ng Log	Well Name/ NEL-12		:	Page I of
	E of PT Flant SWMU						oject No.:	Start Date			
Client: Hercules:	CIBA Site, Glens F		$\vee$			15	924.001	Finish Dat			
	DRILLING DA	ATA						SAMPLIN			
Inspector: <i>John</i> Contractor: <i>NA</i>	Fox/Roger Gray						Tupol	Sampler	Tube		Core
Equipment: Soil (	Corer (Manual)						Type: Diameter:	N.4	SS Soil (		NA
Method: NA	Serer (Manuali						Other:	NA NA	2 mc NA		NA NA
	WELL CONSTRU	CTIO	N					ELL	4	l_	DATA
	Riser			cree	n		DEVEL	OPMENT		DATUN	I: NA
Material:	NA			NA			Method: NA		Grade: 2	265.74	
Diameter (ID):	NA			NA			Duration: NA		TWC: NA		
Coupling:	NA			NA			Gals. Purged:		TPC: NA		
WELL	CONSTRUCTION	soil	SAM	IPLE	DAT	A	Slug Test: NA (cm/sec)		North: 12		
	and the second	rock					(CIII/SEC)		East: 69	93832.9	9578
Depth (feet)		Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical L Comments:	.og: 🗌 yes	🛛 no		
		Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			/ISUAL SIFICATIO	N	RE	MARKS
	backfilled with cuttings.							own CLAY, trace to	1.0		

BRO	WN A	ND CALDW	ELL	_				urface ng Log	Well Name/ NEL-13		Page 1
Project	: GWI- SH	E of PT Flant SIM	[/			20		oject No.:	Start Date	2: 3-, '_'- (1)	Page 1 of
		CIBA Site, Glens i		NY.				924.001		e: 3-22 00	
		DRILLING D								G METHODS	
Inspect	or: John	Fox/Roger Grav							Sampler	Tube	Core
	tor: NA							Type:	NA	SS Sol Corel	
Equipme	ent: Soil u	Corer (Manual)						Diameter:	NA	2 mch	NA
Method:	N.4							Other:	NA	NA	NA
		WELL CONSTR	UCTIC						ELL	SURV	EY DATA
		Riser		S	cree	en		DEVEL	OPMENT	DAT	UM: NA
Materia		N.A			N-1			Method: NA		Grade: 268.6	5
	er (ID):	NA			NA			Duration: NA		TWC: NA	
Coupling	g:	NA			N4			Gals. Purged:		TPC: NA	
	WELL	CONSTRUCTION	soil	SAN	<b>1</b> PLE	DAT	A	Slug Test: NA (cm/sec)	4	North: 12073	
-			rock					(cm/sec)		East: 69388	5.4368
(feet)			Samp No.	. Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	🛛 no	
O Depth (feet)			Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N R	EMARKS
		Borehole backfilled with cuttings.						organic mate	LAY. Little rootlets st.	11	

BROWN		ND C		ELL					urface ng Log	Well Name/ NEL-14		
Project: GWI	1- SF	OFFTEL	ant SMML						oject No.:		<b>B:</b> 3-77-710	Page 1 or
Client: Herci					$\langle \rangle$				1924.001		e: 3 22-00	
			ILLING DA					12			G METHODS	
inspector:	John I		the second se							Sampler	Tube	Core
Contractor:	NA	_							Туре:	NA	SS Soil Core	NA NA
Equipment: :	Soil C	Corer (Ma	nual)						Diameter:	NA	2 mch	NA
lethod: NA					1.1				Other:	NA	NA	NA
			CONSTRU	CTIO							SURV	YEY DATA
Aaterial:	ŀ		liser NA		3	NA	:11		Method: NA		Grade: 263.	
Diameter (I	ו יוח		NA			NA			Duration: NA		TWC: NA	()
Coupling:			NA			N.A			Gals. Purged:	NA	TPC: NA	
				soil					Slug Test: NA		North: 12073	331.0152
W	ELL (	CONSTRU	CTION	rock	SAN	MPLE	DAT	A	(cm/sec)		East: 69387	
(feet)				Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	🛛 no	
O Depth (feet)				Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N F	REMARKS
		V.A. V.A	Borehole backfilled with cuttings.						Sand. Some Damp to moi Gold, light b wet. Gold, brown, Moist to wet	rown f SAND. Moist , rust stained SILT. t. <u>E CLAY</u> rown CLAY and vf t	<u>10</u> 	

BROWN	ΙΔΝ	D CALDWE	-					urface	Well Name/		
				-		Bo		ng Log	NEL-15		Page 1 o
		of PT Plant SWMU					Pr	oject No.:		e: 3-2.1-00	
Client: Herci	ules: CI	BA Sile, Glens Fa		VY.			18	1924.001		e: 3-20-00	
		DRILLING DA	TA							G METHODS	
		x/Roger Gray							Sampler	Tube	Core
Contractor:								Туре:	N-1	SS Soil Corei	IIA
	Soil Cor	er (Manual)						Diameter:	NA	2 inch	IJA
lethod: NA								Other:	N/4	N-1	NA
		WELL CONSTRUC	CTIO		0100				IELL .OPMENT	SURVE	Y DATA JM: NA
Aaterial:	-	NA		3	NA	:n		Method: NA		Grade: 260.78	
Diameter (I	ירח <sup>י</sup>	NA NA			NA			Duration: NA		TWC: N4	,
Coupling:		NA			NA			Gals. Purged:	N/A	TPC: NA	
Jouphing.		NA	soil		114			Slug Test: N		North: 120728	0 0305
W	ELL CO	NSTRUCTION	rock	SAN	IPLE	DAT	A	(cm/sec)	1	East: 693880	
										J	
(feet)			Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	(ppm)		Log: 🗌 yes	🛛 no	
5 (f								Comments:			
Depth			Run	Hydraul. Cond.	Rec.	RQD			VISUAL	R	EMARKS
0			No.	cm/sec	(ft.)			CLASS	SIFICATIO	N	
	VD							Dark brown,	black, gray CLAY & nic material and som		
	0.0							roots.		e	
	VPC										
	0.0	Borehole		1.5				-			
	0000	backfilled with						LACUSTRINE		1.0	
	0.0	cuttings.						Gray to brow	WN CLAY. Moist to		
	D.C.							damp.			
	000						1				
1	00										
-	<u>n 7.</u>							End of borin	ig at 2.0'.	2.0	
1								F			
										100	
								L			
_								_			
6											

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: GWI - S	E Of PI	Flant SWM	11									
								oject No.:	Start Date			
Hercules:		Site, Glens i		V			15	224.001	Finish Dat			
		DRILLING D	ATA		_				SAMPLIN			
	Fox/Re	nger Gray						-	and the second sec			Core
												NA
	Corer (	Manuall									h	N.1
: N.A										1		N.A
	WEL						_		OPMENT	5		
						n				Crade		
									N/1			
y.		MA	lioz l	[	INA			-				1 1 1 1 3
WELL	CONST	RUCTION		SA	MPLE	DAT	A	(cm/sec)	- 1			
				Player/	Dee			De se la constant				
			Samp. No.	Blows/ 6 in.	(ft.)	USCS	(ppm)	Geophysical Comments:	Log: 🗀 yes	ino in		
			Run	Hydraul. Cond.	Rec.						RF	MARKS
			NO.	cm/sec	(ITL.)					N		
V.	DD									t.		
0	Q.D.				-							
P'C	0							Gold, brown	rust stained, SILT.			
D	D.							Damp.				
Pic	, d	with						Gold, light h	prown f SAND. Damp.			
D	D	cuttings.										
	10									1.5		
D.	D							Gold, grav	<u>E CLAY</u> CLAY. Slightly damp			
	70.							, 5)	<b>U</b> ,	2.0		
ـــدلنا	استحسب					1		End of bori	ng at 2.0'.			
								-				
								-				
				1.1.20								
						-		-				
							_					
	vetor: NA ent: Soll : NA well Well	tor: John Fox/Ra ctor: N4 ent: Soil Corer ( : NA WEL sl: er (ID): g:	tor: John Fox/Roger Gray ctor: N4 ent: Soil Corer (Manual) : NA WELL CONSTR al: NA er (ID): NA g: NA WELL CONSTRUCTION WELL CONSTRUCTION Borehole backfilled with cuttings.	tor: John Fox/Roger Gray ctor: N4 ent: Soil Corer (Manual) : NA WELL CONSTRUCTIO Riser al: NA er (ID): NA g: NA WELL CONSTRUCTION Soil rock Samp. No. Run No. Borehole backfilled with cuttings.	tor: John Fox/Roger Gray ctor: NA ent: Soil Corer (Manual) : NA WELL CONSTRUCTION al: NA er (ID): NA g: NA WELL CONSTRUCTION Soil SAN rock Samp. Blows/ 6 in. Run No. Blows/ 6 in. Run Cond. cm/sec	tor: John Fox/Roger Gray ctor: NA ent: Soil Corer (Manual) : NA WELL CONSTRUCTION al: NA er (ID): NA g: NA WELL CONSTRUCTION Soil NA WELL CONSTRUCTION Soil SAMPLE Samp. Blows/ Bin. Rec. (ft.) Run Hydraul. Cond. cm/sec Borehole Dackfilled with cuttings.	tor: John Fox/Roger Gray ctor: NA ent: Soil Corer (Manual) : NA WELL CONSTRUCTION MELL CONSTRUCTION are (ID): NA g: NA WELL CONSTRUCTION Samp. Blows/ Run Hydraul. Cond. cm/sec (ft.) ROD Borehole Dackfilled with cuttings.	tor: John Fox/Roger Gray ctor: N4 ent: Soil Corer (Manual) : NA WELL CONSTRUCTION Mit: NA er (ID): NA g: NA WELL CONSTRUCTION Mell CONSTRUCTION Soil SAMPLE DATA WELL CONSTRUCTION Soil Rec. USCS HNU No. Blows/ Rec. (ft.) USCS (hnu Run No. Cond. cm/sec (ft.) RQD With cuttings.	tor: John Fox/Roger Gray etor: NA ent: Soil Corer (Manual) : NA WELL CONSTRUCTION MELL CONSTRUCTION MELL CONSTRUCTION MELL CONSTRUCTION G: NA WELL CONSTRUCTION MA MA Method: NA Duration: NA Gals. Purged: Sug Test: N/ (cm/sec) Sug Test: N/ (cm/sec) Sug Test: N/ (cm/sec) Sug Test: N/ Conments: Run No. Borehole backfulled with cuttings. Borehole backfulled with Cuttings.	tor: John Fov/Roger Gray ctor: N4 ent: Soil Corer (Manual) : NA WELL CONSTRUCTION Riser Screen VELL NA WELL CONSTRUCTION Method: NA Gals. Purged: NA Sug Test: NA (cm/sec) WELL CONSTRUCTION Method: NA Blows/ NA NA WELL CONSTRUCTION NA Method: NA Sug Test: NA (cm/sec) VISUAL Cond. cm/sec NI Borehole backfilled with cuttings. Borehole backfilled with cuttings.	tor: John Fox/Roger Gray ctor: NA ent: Soil Corer (Manual) : NA WELL CONSTRUCTION Riser Screen II: NA MA Screen MELL CONSTRUCTION Screen MELL CONSTRUCTION MA METAL CONSTRUCTION MA METAL CONSTRUCTION MA MA METAL CONSTRUCTION MA MA METAL CONSTRUCTION MA MA METAL CONSTRUCTION MA MA MA METAL CONSTRUCTION MA MA METAL CONSTRUCTION MA MA MA METAL CONSTRUCTION MA MA METAL CONSTRUCTION MA MA MA MA METAL CONSTRUCTION MA MA MA METAL CONSTRUCTION MA MA MA MA MA MA METAL CONSTRUCTION MA MA MA MA MA MA MA MA METAL CONSTRUCTION MA MA MA MA MA MA MA MA MA MA	tor: John Fox/Roger Gray ettor: NA ent: Soil Corer (Manual) : NA WELL CONSTRUCTION Riser Screen Other: NA WELL CONSTRUCTION Riser Screen Other: NA WELL CONSTRUCTION Riser Screen Other: NA WELL CONSTRUCTION Riser Screen Other: NA WELL CONSTRUCTION NA WA WELL CONSTRUCTION Soil NA WA WELL CONSTRUCTION Soil NA WELL CONSTRUCTION Soil Rec. USC HNU Samp. Blows/ No. Bin. Rec. USC HNU Soil Corer No. Signore Samp. Blows/ Samp. Blows/ Signore Samp. Blows/ Signore Samp. Blows/ Samp. Comments: Rum Cond, Cm/sec Rec. Sold, brown rust stained, SILT. Sold, brown rust stained, SILT. Sold, brown f SAND, Damp. LACUSTRINE CLAY Sold for own f SAND, Damp.

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BROWN A	ND CALDWI	ELL					urface ng Log	Well Name/ NEL-17		
	E of PT Plant SixMU			_			oject No.:		e: 3-23-00	Page 1 of
	CIBA Site, Glens F		18				924.001		e: 3-23-00	
	DRILLING D					10			G METHODS	
Inspector: John								Sampler	Tube	Core
Contractor: NA							Туре:	NA	SS Soil Cere	v NA
Equipment: Soil (	Corer (Manual)						Diameter:	NA	2 inch	NA
Method: N4							Other:	NA	NA	NA
	WELL CONSTRU	CTIO					1	IELL	SUR	VEY DATA
	Riser			ree	n			OPMENT		TUM: NA
Material:	NA			NA			Method: NA		Grade: 257.	61
Diameter (ID):	NA			NA			Duration: NA		TWC: NA	
Coupling:	NA			NA			Gals. Purged:		TPC: NA	007 1055
WELL	CONSTRUCTION	soil rock	SAM	PLE	DAT	A	Slug Test: NA (cm/sec)	1	North: 1207 East: 6939	
(feet)		Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	🖾 no	
O Depth (feet)		Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N	REMARKS
	Borehole backfilled with cuttings.						some vf to f Damp. Brown, dark little Silt. R Brown to da to f SAND.	f SAND, little to no ted.	<u></u> 1.0 vf	

0......

BRC	WN A	ND	CALDWE	-11					urface	Well Name/		n:	
							Bo		ng Log				Page 1 of
			T Plant SixMU						oject No.:	Start Date			
Client:	Hercules:	CIBA	Site, Glens F.		V ) <sup>*</sup>			18	8924.001	Finish Dat			
			DRILLING DA	ATA						SAMPLIN			
		Fox/R	loger Grav						L	Sampler	Tut		Core
	ctor: NA	-							Type:	N.1	SS Soil		NA
	ent: Soil	Corer	(Manuali						Diameter:	N-1	2 11		NA
Method	1: NA			OTIO	N				Other:	NA	N,		N.1
		WE	Riser			Scree	en		DEVEL	IELL .OPMENT		DATUM	IDATA I: NA
Materia	al:		NA			NA			Method: NA	and the second	Grade:	259.12	
	er (ID):		NA			NA			Duration: NA		TWC: N		
Couplin	ng:		NA			NA			Gals. Purged:	NA	TPC: N		
				soil					Slug Test: NA		North:	1207279	0.4937
	WELL	CONS	TRUCTION	rock	SAI	MPLE	DAT	A	(cm/sec)		East: (	593928.7	7617
(feet)				Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical I Comments:	Log: 🗌 yes	🛛 no		
Depth (feet)				Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD		1	VISUAL SIFICATIO	N	RE	MARKS
0-	V	Di							Black to dar	k brown SILT, little ets. Saturated.			
	0	0				-					0.5		
	V.	D							No recovery		<u> </u>		
	0	00	Borehole										
-	P	DC	backfilled with							ID. Saturated.	1.0		
	IN'	OD.	cuttings.						DIOWII I SAN				
	Pic	7									1.5		
	D.	O.D.							No recovery				
	Po	0.0		1									
-	D	P							-				
	. 0												
	D	D							End of herein		2.5		
									End of borin	ig at 2.5°.			
1									Г				
									L.				
-									-				
6							_						

BROWN A	ND CALDWE	=					urface	Well Name/ NEL-19		
					BC		ng Log			Page 1 of
	E of PT Plant SWMU						oject No.:		e: 3-23-00	
Client: Hercines.	CIBA Site, Glens Fa	-	V )			it	924.001		e: 3-23-00	
Inspector: John	Fox/Roger Gray							Sampler	G METHODS Tube	Core
Contractor: NA	en neger erey						Type:	NA	SS Soil Corer	NA
Equipment: Soil C	Corer (Manual)						Diameter:	NA	2 inch	NA
Method: NA							Other:	NA	NA	NΛ
T	WELL CONSTRU	CTIO					W DEVEL	IELL .OPMENT		
Material:	Riser NA		S	cree NA	n		Method: NA		Grade: 261.31	M: NA
Diameter (ID):	NA NA			N.A			Duration: NA		TWC: NA	
Coupling:	NA			NA			Gals. Purged:	NA	TPC: NA	
	CONSTRUCTION	soil	SAM		DAT	A	Siug Test: NA		North: 1207.32	
		rock				_	(cm/sec)		East: 693930	.5594
Depth (feet)		Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes		
		Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N RE	MARKS
	Borehole backfilled with cuttings.						Saturated. Gray f SANE Saturated. No recovery Brown to da Saturated. Gray f SANE Saturated. No recovery End of borir	rk brown mf SAND. ), little Clay. 7.		

BRO	DWN A	ND CALDW	FU					urface	Well Name/		
			_	-		Ba		ng Log			Page
		E of PT Plant SIVML						roject No.:		E: j-2j-()(	
Client:	Hercules:	CIBA Site, Glens F		V }.			18	9924.001		e: 3-23-0	
		DRILLING D	ATA							G METHOD	
		Fox/Roger Gray							Sampler	Tube	Co
	ictor: NA							Type:	N.A	SS Soil Co	
		Corer (Manual)						Diameter:	NA	2 inch	N.
Method	D: NA		IOTIO	A.I				Other:	NA	N.1	N
		WELL CONSTRU Riser			Scree	20			IELL .OPMENT	SUI	RVEY DATA ATUM: NA
Materia	al·	NA			N4	511		Method: NA		Grade: 26	
	er (ID):	NA			N.4			Duration: NA		TWC: NA	(1.(/-/
Couplin		NA			NA			Gals. Purged:	N.1	TPC: NA	
			soil				-	Slug Test: NA			7384.5472
	WELL	CONSTRUCTION	rock	SAI	MPLE	DAT	Α	(cm/sec)		East: 693	
				Discont							
Depth (feet)			Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	(ppm)	Geophysical Comments:	Log: 🛄 yes	🛛 no	
spth			Run	Hydraul.	Rec.	000			VISUAL		
			No.	Cond. cm/sec	(ft.)	RQD			SIFICATIO	N	REMARK
0-	V. <	2						PEAT			
	0	0								0.4	
	N <	70							Organic material.		
	0	0						Saturated.		0.8	
	п.	20							<u>E CLAY</u> CLAY. Slightly damp		
	0							to damp.	SEAT. ONGINY UDIN		
	P	Z								1.5	
		Borehole backfilled	-					End of borin	ig at 1.5'.		
		with cuttings.									
-		currings.						F			
									,		
-								Γ			
								-			
				-							
-								-			
6											
							-				

BR	OWN	٨N	ND CALDWE	ELL					urface	Well Name/I		n:	
							DU		ng Log				Page 1 of 1
			of PT Flant SWMU		177				oject No.:	Start Date			
client.	Hercin	es. c	MBA Site, Glens Fa DRILLING DA		VY			18	924.001	Finish Dat			
Inspec	stor: 10	the F	ORILLING DA							SAMPLING Sampler	Tut		Core
	actor: N		uvnuger brav						Туре:		SS Soil		N-1
			ner (Manual)						Diameter:	N4	2 m		N.1
Metho			MCI (MONICII)						Other:	NA	N/		NJ
ie tho	<b>d.</b> 11A		WELL CONSTRU	CTIO	N					IELL		SURVEN	
		Τ	Riser		the second second	cree	n		DEVEL	OPMENT		DATU	
Materi	al:		NA			NA			Method: NA		Grade:	264.71	
Diame	ter (ID	):	NA			NA			Duration: NA		TWC: N	IA.	
oupli	ng:		NA			NA			Gals. Purged:	NA	TPC: N	A	
	WE		ONSTRUCTION	soil	SAN		DAT	۵	Slug Test: NA	1	North:	12073.18	2.10-19
-				rock					(cm/sec)		East: 8	593882.	044
et)				Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical	Log: 🗌 yes	🛛 no		
) (fe						(10.)		(ppiii)	Comments:				
Depth (feet)				Run	Hydraul. Cond.	Rec.	RQD			VISUAL		RF	MARKS
0-				No.	cm/sec	(ft.)			CLAS	SIFICATIO	N		
	þ	V							Black f SAN material/ Pe	D, little Silt. Organio	C		
	i	D	<u>a</u> .						saturated.				
	Þ	V	9										
	İ	DO											
-	Þ	0	with						-				
	9	DO									1.3		
	P.	0	<u>.</u>						LACUSTRINE Grav-blue	<u>ECLAY</u> CLAY intermixed with	f		
		DD							SAND, little	Silt and			
		00			1.10				Peat/organi saturated.	cs. Wet to	2.0		
1			_						End of borir	ng at 2.0'.			
_									-				
-									F				
_									_				
G					1.150	1							
6									1				

BR	OWN A	ND C	ALDW	ELL					urface ng Log	Well Name/I			Page 1
Projec	t: GIV] - S	EOTPTI	lant SivMt	1					oject No.:	Start Date	e: .:!.;-	(11)	, uge ,
Client:	Hercules:	CIBA SI	te, Glens F	alls, I	17			15	924.001	Finish Date	e: 3-,73-	-(1()	
		D	RILLING D	ATA						SAMPLIN	G METHO	DS	
Inspec	ctor: John	Fox/Rog	ner Grav							Sampler	Tube	e	Core
Contra	actor: NA								Туре:	NA	SS Sell (	Coner	N.1
Equipn	nent: Soil	Corer (M	lanual)						Diameter:	NA	.' Inc	h	NA
Metho	d: NA								Other:	NA	N.A		NA
		WELL		JCTIO		cree				IELL .OPMENT	S		
Materi			Riser NA			NA			Method: NA		Grade: 2		
	ter (ID):		NA			NA			Duration: NA		TWC: NA		
Coupli			NA			NA			Gals. Purged:	NA	TPC: NA		
	iy.		114	soil					Slug Test: NA		North: 12		1.186
	WELL	CONSTR	UCTION	rock	SA	MPLE	DAT	A	(cm/sec)		East: 69		
				TOCK									1015
Depth (feet)				Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	🖾 no		
				Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N	REI	MARKS
0-	V.	PE							Black PEAT	above gray f SAND, Saturated.			
		000							little SILT.	Saturated.			
	N.	Pi	Borehole			1			No recovery		<u>0.5</u>		
		0.0	backfilled with										
-	V.	F	cuttings.		1.1	1.1					1.0		
									End of borin	ig at 1.0'.			
-								0	-				
-									Ī				
-									-				
-	-								-				
				11									
6					1								

ROWN AND CALDWELL								urface ng Log	NEL-2	3		Page 1
t: GWI- S	EOTFTF	lant ShMU	1					Construction of the second second second second	Start Date	: 3-23-	(1()	Page 1
				V Y								
tor: John												Core
								Type:	N.1	SS Soil C	orer	NA
	Corer (M	anual)						Diameter:	N4	2 mc	h	NA
								Other:	NA	NA		NA
	WELL	CONSTRU	CTIO	N				V	, VELL	S		DATA
		Riser		S	Scree	n		DEVEL	OPMENT		DATUM	
al:		N.4			N4			Method: NA		Grade: 2	255.69	
er (ID):		NA			N.4			Duration: NA		TWC: NA		
ng:		N.A			N.4			-				
WELL	CONSTRI	ICTION	soil	SAN		DAT	A		4			
			rock							East: 69	93929.8	947
			Samp.	Blows/	Rec.		HNU	Geophysical	Log: 🗌 yes	🛛 no		
			No.	6 in.	(ft.)	0363	(ppm)	Comments:				
			Dup	Hydraul.	Rec							
			No.		(ft.)	RQD					REN	ARKS
I.V	2.											
20	, C							trace Grave	I. Organic-rich.			
D			-					Saturated.	Fill material.			
2	2	Perchata								0.8		
D	Di	backfilled						Peat/Organi	ic-rich soil.			
	0.							Black SILT	& CLAY, little Sand.			
.V·.	Di	curringer						Organic mat	erial. Saturated.			
	0.									<u> </u>		
D.	D.							Organic mat	erial decreases with			
	.0.							depth. Sat	urated.			
V.	PD					1.00						
0.	0							LACUSTRIN	E CLAY			
<u>[]</u> .								Gray CLAY,	little Sand.	2.3		
									ng at 2.5'.			
								-	.g = 1 = 1 = 1			
										-		
							1	-				
				-			-	-				
			1	1		1	1	1				
						1.1						
	t: GWI- Si Hercules: etor: John actor: NA hent: Soil of d: NA al: er (ID): ng: WELL	t: GWI- SE of PT F Hercules: CIBA Sit DF etor: John Fox/Rog actor: NA hent: Soil Corer (Ma t: NA WELL al: er (ID): ng:	t: GWI- SE of PT Plant SKMU Hercules: CIBA Site, Giens F DRILLING D/ etor: John Fox/Roger Grav actor: NA hent: Soil Corer (Manual) d: NA WELL CONSTRUC Riser al: NA er (ID): NA ng: NA WELL CONSTRUCTION Borehole backfilled with cuttings.	t: GWI- SE of PT Plant SMMU Hercules: CIBA Site, Giens Falls, P DRILLING DATA etor: John Fox/Roger Grav actor: NA ment: Soil Corer (Manual) d: NA WELL CONSTRUCTIO Al: NA er (ID): NA ng: NA WELL CONSTRUCTION Soil rock Samp. No. Run No. Borehole backfilled with cuttings.	t: GWI- SE of PT Plant SWMU Hercules: CIBA Site, Glens Falls, NY DRILLING DATA etor: John Fox/Roger Grav actor: NA hent: Soil Corer (Manual) d: NA WELL CONSTRUCTION Riser S al: NA er (ID): NA hg: NA WELL CONSTRUCTION SAN rock Samp. Blows/ foin. Run Hydraul. Cond. cm/sec Borehole backfilled with cuttings.	t: GWI SE of PT Plant SWMU Hercules: CIBA Site, Glens Falls, NY DRILLING DATA Stor: John Fox/Roger Grav actor: NA ment: Soil Corer (Manual) d: NA WELL CONSTRUCTION Riser Scree al: NA NA er (ID): NA NA ng: NA NA WELL CONSTRUCTION WELL CONSTRUCTION Samp. Blows/ Rec. ft.) Run Hydraul. Cond. (ft.) Run Hydraul. Cond. (ft.) Borehole backfilled with cuttings.	t: GWI- SE of PT Flant SMMU Hercules: CIBA Site, Giens Falls, NY DRILLING DATA etor: John Fox/Roger Grav ictor: NA hent: Soil Corer (Manual) d: NA WELL CONSTRUCTION Riser Screen al: NA NA er (ID): NA NA ng: NA NA WELL CONSTRUCTION WELL CONSTRUCTION Samp. Blows/ foin. Cm/sec Rec. Run Hydraul. Run Cond. Cmd	Image: Construction     State     State     State       DRILLING DATA       WELL CONSTRUCTION       Riser     Screen       al:       NA     NA       WELL CONSTRUCTION     Soil       NA     NA       WELL CONSTRUCTION     Soil       NA     NA       WELL CONSTRUCTION     Soil       NA     NA       NA     NA       WELL CONSTRUCTION     Soil       No.     Blows/       Rec.     USCS       HNU     Cond.       OR     Borehole       Dackfilled     with       Cuttings.     Image: Cuttings.	Loo mig Loog       Project No.:       Hercules: CIBA Site. Giens Falls, NY       DRILLING DATA       DRILLING DATA       Type:       DRILLING DATA       Type:       Diameter:       Other:       Diameter:       Other:       WELL CONSTRUCTION       Riser       Screen       DEVEL       all:       NA     NA       MELL CONSTRUCTION     Soil       Samp.     Blows/       No.     Bilows/       Run     Hydraul.       Rec.     USCS       WELL CONSTRUCTION     Soil       Samp.     Blows/       Run     Hydraul.       Ro     CLLAS:       No.     Black Gray       Saturated.     Black Claye       Organic mat     Gray CLAY, Saturated.	Loot Hig Loog       Borthig Loog       Project No.:       Start Date       Hercules: CIBA Site, Cleas Fails, NY       DRILLING DATA       Sampler       Type:       NA       Well       DEVENUETION       WELL CONSTRUCTION       Soil       SAMPLE DATA       VISUAL CONSTRUCTION       Soil       Samp. Blows/ Rec. (ft.)       OF gent/Cranton       Borehole backfilled with cuttings.       Peat/Organic=rich soil.       Peat/Organ	Image: Construction     Image: Construction       Her cules: CIBA Site, Greens Falls, NY     Project No.:       DRILLING DATA     Sampler       DRILLING DATA     Sampler       DRILLING DATA     Sampler       DRILLING METHO     Sampler       DRILLING DATA     Sampler       DRILLING DATA     Sampler       DRILLING DATA     Sampler       Ctor: MA     Type:       NA     Sis Sout       Ctor: MA     Diameter:       Method: NA     Sis Sout       Construction     Method: NA       Method: NA     Grade::       NA     NA       NA     Sampler       NA     Sam	Lit: GWI-SE of PT Flant SNMU     Project No.:     Start Date: 3-(3-00)       Her cules: CIBA Site, Cleans Falls, NY     ISS(2-00)     Finish Date: 3-(3-00)       DRILLING DATA     SAMPLING METHODS       tor: John Fox/Roger Grav     Sampler     Tube       tor: John Fox/Roger Grav     Diameter:     MA     SS Soil Concr       tor: John Fox/Roger Grav     Diameter:     MA     SS Soil Concr       tor: NA     Diameter:     MA     SS Soil Concr       tor: NA     Diameter:     MA     SS Soil Concr       well     CONSTRUCTION     Well     Survey       al:     NA     NA     MA       of (1D):     NA     NA     NA       Mail:     NA     NA     Method: NA     Grade: 255.69       Mail:     NA     NA     NA     Survey       Mail:     NA     NA     Survey     Survey       Mail:     NA     NA     Survey     Survey       Mail:     NA     NA     Survey     Survey       Well:     CONSTRUCTION     Soil     Salvey

RR		ND CA		-					urface	Well Name/		
חט		ND CA			•		Bo	orir	ng Log	NEL-2	4	Page 1 of
Projec	ct: GWI- S	E of PT Plai	nt SWMU					Pr	oject No.:	Start Date	<b>e:</b> 3=23=00	
Client	Hercules.	CIEA Site,	Glens Fa	alls, M	$\langle \rangle$			15	924.001	Finish Dat	e: 3-23-00	
		DRIL	LING DA	TA						SAMPLIN	G METHODS	
Inspe	ctor: John	Fox/Roger	Gray							Sampler	Tube	Core
Contr	actor: NA								Туре:	NA	SS Soit Corei	IVA
Equip	ment: Soil	Corer (Mani	ual)						Diameter:	NA	? mch	NA
Metho	d: NA								Other:	NA	NA	NA
			ONSTRU	CTIO					W DEVE			EY DATA
4 - 1	1 - I-		ser		S	cree	n			OPMENT		UM: NA
Mater			IA			NA			Method: NA		Grade: 257.9	.1
	ter (ID):		IA			NA			Duration: NA		TWC: NA	
Coupli	ing:	N.	IA			N.4			Gals. Purged:		TPC: NA	
	WELL	CONSTRUCT	TION	soil rock	SAN	IPLE	DAT	A	Slug Test: NA (cm/sec)	4	North: 120719 East: 69382	
set)				Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (DDm)	Geophysical	Log: 📙 yes	🛛 no	
Depth (feet)								(56)(1)	Comments:			
lepti				Run	Hydraul. Cond.	Rec.	RQD			VISUAL	P	EMARKS
0-				No.	cm/sec	(ft.)			CLASS	SIFICATIO	N	
0	V.	20								k brown CLAY & SIL		
		0.		1					Damp.	Sand. Fill material.		
		DC										
	. · · ·	0.	Borehole								<u> </u>	
-		D.O.O	backfilled with			-			Peat/organi	c-rich soil. Wet.	-	
	0	O.D.	cuttings.						1			
	P	Z									1.4	
									Gray, blue, t	olack CLAY, little	$\square$	
									Sand. Satu	rated.		
-						1.1			End of borin	ig at 1.5'.		
-	-								-			
											100	
	1								Γ			
	1											

-

BRO	WN A	ND CALDW	ELL					urface ng Log	Well Name/ NEL-2		n:	
		E of PT Plant SWMD						oject No.:	Start Date			Page 1 of 1
		CIBA Site, Glens F		V ) <sup>.</sup>				1924.001	Finish Dat			
		DRILLING DA							SAMPLIN			
Inspecto	or: John	Fox/Roger Gray							Sampler	Tut		Core
Contract								Туре:	N4	SS Sell		IVA
Equipmer	nt: Seil (	Corer (Manual)						Diameter:	NA	2 m	ch	NA
Method:	NA							Other:	N4	N.	.1	NA
		WELL CONSTRU	CTIO	N					IELL		SURVE	Y DATA
		Riser		S	cree	en			OPMENT		DATU	M: NA
Material:		NA			N-1			Method: NA			260.88	
Diameter		NA			N.A			Duration: N4		TWC: N		
Coupling	:	NA			N.A			Gals. Purged:		TPC: N		•
	WELL	CONSTRUCTION	soil rock	SAN	IPLE	DAT	A	Slug Test: Na (cm/sec)	1		120720 393737.	
Depth (feet)			Samp. No.	Blows/ 6 in.	Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	🛛 no		
O Depth			Run No.	Hydraul. Cond. cm/sec	Rec. (ft.)	RQD			VISUAL SIFICATIO	N	RE	MARKS
		0.1						Damp.	<u>E CLAY</u> gray CLAY, little rated.	2.0		

]

#### APPENDIX C

## WELL CONSTRUCTION LOGS

\\BCMAH02\PROJECTS\^J\18924\GWIR053000(gw inv rpt area se ptmnt plant swmu).DOC 06/20/00

			CALDWE					orir	urface ng Log	Well Name/I	P-1		Page
			T Flant SWMU						oject No.:	Start Date			
Client:	Hercules	s. CIEA	Site, Glens F		VY.			18	1924.001	Finish Date			
			DRILLING DA							SAMPLIN			
			Dennis ) oung	9						Sampler	and the second se	be	Cor
	actor: NA								Type:	NA		1.4	NA.
	d: Manua		Steel Hand Au	ger					Diameter:	NA		!Α 	NA
Method			LL CONSTRU	CTIO	N				Other:	NA	<u>^</u>	/.1	NA
			Riser			Scree	n		DEVEL	ELL OPMENT		SURVE	Y DATA
Materi	al:		FVC			FVC			Method: Baile	er.	Grade	: 271.64	
	ter (ID):		1 in.			1 in.			Duration: 1 hr			273.54	
Couplin			flush			flust	7		Gals. Purged:	appiox. 4	TPC: A		
		0.01107		soil					Slug Test: NA			120733	7.4084
	WELL	CONS	FRUCTION	rock	SA	MPLE	DAI	A	(cm/sec)		East:	693680	.8068
-				Samp.	Blows/	Rec.		HNU	Geophysical	Log: 🗌 yes			
feet				No.	6 in.	(ft.)	USCS	(ppm)	Comments:	Log: 🗀 yes	K no		
Depth (feet)	ſ	7			Hydraul.		-						
Dep				Run No.	Cond.	Rec. (ft.)	RQD			VISUAL SIFICATIO		RE	MARKS
0-	a	6			cm/sec				ULAS.	SIFICATIO	N		
	0	2	Backfilled										
	0	0[.	with								-		
		•	cuttings.										
	•	•	—— Filter Pack					l					
-	. I	*	1 inch PVC riser.					1	-				description
	:		11301.									log for	boring NEL-
		=			· · · · · ·	-							
		=:							_			0	internet da
				1.0	1.1							3.4'.	interval: 1.4
		<u>∃.</u> 1		1.									
			1 inch PVC .010 slot										
			screen.										
-			4 inch						-				
		<b>=</b> .1	diameter borehole.										
	:			1	1								
1 1	1								Γ				
-													
									_				
					1.3.5								
6					1	1.1			1				

BROWN	AND CAL	DWFI	L				urface	Well Name/		n:	
					BC	-	ng Log			h.c.	Page 1 of
	SE of PT Flant ps: CIBA Site, Gi		۸/):				roject No.:	Start Date			
Ullent, Hercule		NG DATA				15	3924.001	Finish Date			
Inspector: Bo	b C'Neill, Dennis							Sampler	Tut		Core
Contractor: N		cong					Type:	NA	N		NA
	ainless Steel Ha	nd Auder					Diameter:	NA	N		NA
Method: Manua		, a nager					Other:	NA	N		NA
	WELL CON	STRUCT	ION					IELL			Y DATA
	Riser			Scree	en		DEVEL	OPMENT		DATU	M: NA
Material:	PVC			FVC			Method: Baile	19	Grade:	262.31	
Diameter (ID)	: 1 in.			חו 1.			Duration: 1 hr		TWC: 2	64.37	
Coupling:	flush			flust	)		Gals. Purged:		TPC: N		
WEL			- SA	MPLE	DAT	A	Slug Test: NA (cm/sec)	4		120728. 393831.3	
(feet)		Sar No		Rec. (ft.)	USCS	HNU (ppm)	Geophysical Comments:	Log: 🗌 yes	N no		
O Depth (feet)		Ru No		(41)	RQD			VISUAL SIFICATIO	N	RE	MARKS
	Bai with cut b cut cut cut cut cut cut cut cut cut cut	tings. ch PVC								log for I	descriptions see boring NEL-10. interval: 1.3'-3.3

#### WATER LEVEL DATA SOUTHEAST OF PRETREATMENT PLANT SWMU APRIL 5, 2000 (a)

Location	Reference	Depth to	Water
	Elevation	Water	Elevation
	(ft., NGVD)	(ft.)	(ft., NGVD)
MW-OB21	284.03	12.09	271.94
MW-OB22	283.99	9.18	274.81
NEL-WP-1	273.54	3.51	270.03
NEL-WP-2	264.37	3.72	260.65
NEL-WP-3	264.21	2.63	261.58
SG- 2	281.10	> 5.20	< 275.90
SG-11	264.20	1.01	263.19
SG-12	260.27	1.98	258.29
SG-13	255.82	1.68	254.14
SG-14	254.37	2.00	252.37
SG-15	261.99	2.51	259.48

(a) Water levels measured between 8:11 and 8:32

#### APPENDIX F

### FIELD DATA SHEETS

\\BCMAH02\PROJECTS\^J\18924\GWIR053000(gw inv rpt area se ptmnt plant swmu).DOC 06/20/00

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	BROWNAND CALDWELL Glens Falls, NY	GROUNDWATER SAMPLING FIELD DATA SHEET Well Number: <u>MW-Cさえ</u> 1 Sample I.D.:(if different from well no 1
	Client: Hercyles Job No.: 18924.001 Personnel: R. OWeill, D. Young	Date: <u>H-H-CO</u> Time: <u>16:30</u> Weather Conditions: <u>Rainies</u> Air Temperature: <u>55-60°F</u>
	WELL DATA: Casing Diameter: <u>2</u> , □ Stainless Steel □ Galv. Steel Intake Diameter: <u>2</u> , □ Stainless Steel □ Galv. Steel DEPTH TO: Static Water Level: <u>12.2.1 {}</u> Bottom of DATUM: □ Top of Protective Casing ☑ Top of Well Casing CONDITION: Is Well clearly labeled? ☑ Yes □ No Is we Is Prot. Casing/Surface Mount in Good Cond.? Does Weep Hole adequately drain well head? Is Concrete Pad Intact? (not cracked or frst he Is Padlock Functional? ☑ Yes □ No □ Is Inner Casing Properly Capped and Vented? Staging In Well <u>0.7ga</u> To E	el PYPC
-	PURGE DATA:	
	METHOD:       Image: Bailer, Size:       Image: Bladder Pump       Deristaltic Pump       Deristaltic Pump       Image: Bladder Pump       Deristaltic Pump       Image: Bladder Pump       Deristaltic Pump       Image: Bladder Pump       Image: B	Image: Series of the serie
	SAMPLING DATA:         METHOD:	
	SAMPLING EQUIPMENT:       Image: Constraint of the constraint	Contains LNAPL Contains DNAPL
	FIELD DETERMINATIONS OF RECORD:         pH:       7.1         Temperature:       10.1°C         Spec. Cond.:       1.25CmU/, Meter         Hach Kit Results:       Fe:         NO. OF CONTAINERS:       3         Field Blank 1.D.:       E8040500         Trip       REMARKS:         Field Blank 1.D.:       E8040500         Trip       I certify that this sample was collected and handled to age ordance with applic	Blank I.D.: Duplicate I.D.: Fortal Cifande analysis
	Signature: ////////////////////////////////////	Date: 4-17-00 (Rev 3/0/94 - sdm)

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BR	OWN /		CALDWE	ELL	_				urface ng Log	Well Name/			Page 1 d
Projec	t: GWI-	SE of	PT Plant SWMU						roject No.:	Start Date	e: .11-	- [][]	-30.0
Client:	Hercule.	s: CIE	A Site, Glens Fa	alls, I	N Y			15	3924.001	Finish Date	e: .14	- 00	
			DRILLING DA	TA						SAMPLIN			
Inspec	ctor: Bot	O'NE	eill, Dennis Young	2						Sampler		be	Core
Contra	actor: NA								Туре:	NA	٨	IA	NA
Equipm	nent: Sta	ainless	s Steel Hand Au	ger					Diameter:	NA	٨	IA	NA
Method	d: Manua	/							Other:	NA	٨	IA	NA
			WELL CONSTRU	СТІО	N	-				VELL		SURVE	Y DATA
			Riser		S	cree	n		DEVE	OPMENT		DATU	M: NA
Materi	al:		PVC			FVC			Method: Baile	٩٢	Grade	: 261.30	
Diamet	ter (ID):		1 in.			1 in.			Duration: 1/2	hr.	TWC:	264.21	
Couplin	ng:		flush			flush	ו		Gals. Purged:	approx. 1	TPC: /	VA	
		001		soil			DAT		Slug Test: N	4	North:	120732	6.5695
	WELI	L CUN	ISTRUCTION	rock	5AM	MPLE	DAT	A	(cm/sec)		East:	693931.	2712
_				Samp.	Blows/	Dec		HNU	Coorthusiage				
eet				No.	6 in.	Rec. (ft.)	USCS	(ppm)	Comments:	Log: 🗌 yes	K no		
h (f	ſ		Linch DVC						Comments:				
Depth (feet)			1 inch PVC riser.	Run	Hydraul. Cond.	Rec.	RQD			VISUAL		RF	MARKS
0-				No.	cm/sec	(ft.)			CLAS	SIFICATIO	N		
	0	P	Backfilled				1.1						
	<u> </u>	F	with										
			cuttings.										
_			Filter Pack						L		1	_	
												For soil	descriptions boring NEL-19
												log for	bornig till to
												Screen	interval 0.5'-
		=:											
_		<u> </u>	1 inch PVC						L				
			.010 slot										
			screen.										
			< 4 inch										
			diameter borehole.										
	Ŀ	·											
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# APPENDIX D

# SURVEY DATA

\\BCMAH02\PROJECTS\^J\18924\GWIR053000(gw inv rpt area se ptmnt plant swmu).DOC 06/20/00

roje	ct:	97114	
Point	sta	tistics:	

Starting	point	number:	1
Current	point	number:	465

Fri Apr 14 13:58:54 2000

('L' indicates locked point)

2173       1207174.0143       693879.4645       256.19       HYD 472         2174       1207191.6592       693825.7523       257.94       NEL 22         2175       1207206.8700       693737.2680       260.88       NEL 22         2176       1207337.3854       693662.5053       271.54       NEL 22         2177       1207337.4084       693660.8068       271.64       AEL WP         2178       1207337.2503       69360.3786       264.20       SG 11         2180       1207284.4795       693680.2211       263.47       NEL 21         2181       1207284.845       693681.2211       263.47       NEL 21         2181       1207363.867       693732.4936       267.21       NEL 21         2182       1207361.867       693735.6626       270.16       NEL 21         2184       1207361.8687       693761.7797       265.73       NEL 21         2185       1207284.5594       693825.5505       253.16       NEL 21         2185       1207283.3660       693831.5141       262.30       NEL 11         2185       1207283.3660       693832.9578       265.74       NEL 12         2190       1207283.3660       693832.9578       265.74	Point	Current Coordinate Northing	Listing by Point Easting -	Range Elevation	Description
2173         1207174.0143         693879.4645         256.19         HYD 472           2174         1207191.6592         693825.7523         257.94         NEL 22           2175         1207206.8700         693825.7523         271.54         NEL 22           2176         1207337.3854         693682.5053         271.54         NEL 22           2176         1207337.3054         693680.8068         273.54         NEL 22           2178         1207337.2503         693680.2646         273.54         TOP WEL           2179         1207284.4795         693680.2211         263.47         NEL 22           2180         1207284.1845         693681.2211         263.47         NEL 22           2181         1207285.8201         693732.4936         267.21         NEL 22           2182         1207360.3867         693735.6626         270.16         NEL 22           2184         1207361.7035         693763.7735         267.22         NEL 21           2185         1207284.5594         693825.6505         253.16         NEL 21           2185         1207283.360         693831.5141         262.30         NEL 12           2185         1207283.3660         693831.2407         263.87	-				
	2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207	1207174.0143 1207191.6592 1207206.8700 1207337.3854 1207337.4084 1207337.2503 1207294.4795 1207284.1845 1207285.8201 1207333.1160 1207360.3867 1207361.7035 120734.8982 1207286.3511 1207223.7251 1207234.5594 1207283.3706 1207283.3706 1207332.3542 1207364.3230 1207364.3230 1207366.8240 1207349.1049 1207331.0152 1207331.0152 1207231.4443 1207227.1855 1207326.5695 1207326.4794 1207364.5472 1207364.5472 1207364.4522 1207304.4522 1207304.4522 1207304.4522 1207187.0913	693879.4645 693825.7523 693737.2680 693682.5053 693680.8068 693680.8068 693680.3786 693681.2211 693729.2947 693732.4936 693735.6626 693783.7735 693761.7797 693779.2385 693806.5791 693825.6505 693831.5141 .693831.5141 .693831.5141 .693831.2407 693832.9578 693885.4368 .693885.4368 .693882.1044 693879.7723 693885.4368 .693885.4368 .69382.1044 693979.7723 693880.0240 693878.4016 .693930.5594 693931.2712 .693931.2712 .693931.2712 .693931.2716 693924.7463 693893.8613 693956.4774	$256.19$ $257.94$ $260.88$ $271.54$ $271.64$ $273.54$ $264.20$ $263.47$ $261.86$ $267.21$ $270.16$ $267.22$ $265.73$ $261.84$ $260.27$ $253.16$ $262.30$ $262.31$ $\frac{264.37}{263.88}$ $265.74$ $263.65$ $\frac{264.71}{263.16}$ $267.96$ $257.96$ $257.96$ $257.96$ $257.61$ $259.42$ $261.31$ $261.30$ $264.21$ $268.04$ $271.53$ $261.99$ $255.82$	NEL 23 HYD 479 NEL 24 NEL 25 NEL 1 AEL WP1 TOP WELL SG 11 NEL 2 NEL 3 NEL 3 NEL 4 NEL 3 NEL 4 NEL 5 NEL 6 NEL 7 NEL 8 SG 12 NEL 9 NEL 9 NEL 9 NEL 9 NEL 10 NEL 20 NEL 11 NEL 12 NEL 13 NEL 22 SG 15 TOP STK SG 14 TOP STK
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#### APPENDIX E

#### WATER LEVEL DATA

\\BCMAH02\PROJECTS\^J\18924\GWIR053000(gw inv rpt area se ptmnt plant swmu).DOC 06/20/00

-	
BROWNAND CALDWELL Glens Falls, NY	GROUNDWATER SAMPLING FIELD DATA SHEET Well Number: _MW-OB22
Client: Hercules Job No.: 18924.001 Personnel: R. OWE: 11, D. Young	Date: <u>4-4-00</u> Time: <u>1605</u> Weather Conditions: <u>Raining</u> Air Temperature: <u>55-66 F</u>
WELL DATA:         Casing Diameter:       210         Intake Diameter:       210         Stainless Steel       Galv. Steel         DEPTH TO:       Static Water Level:       9.37 (4)         DATUM:       Top of Protective Casing       Top of Well Casin         CONDITION:       Is Well clearly labeled?       Yes       No         Is Prot.       Casing/Surface Mount in Good Cond.         Does Weep Hole adequately drain well head?         Is Concrete Pad Intact?       (not cracked or frst his Padlock Functional?         Is Inner Casing Properly Capped and Vented?         Staging In Well       1.2 gul       To	eel       SEPVC       Teflon®       Open rock       3       .57         if Well:       16.6       4       .65         ing       Top of Well Wizard       5       1.02         ing       Top of Well Wizard       6       1.47         ell clean to bottom?       Yes       No         ? (not bent or corroded)       10       Yes       No         Si Yes       No       No         Meaved)       Yes       No         NA       Is Inner Casing Intact?       Yes       No         Yes       No       1       Yes       No
PURGE DATA: METHOD: Ø Bailer, Size: D Bladder Pump 2" Centrifugal Pump Peristaltic Pump In	Submersible Pump
□ Teflon® MATERIALS: Pump/Bailer: □ Stainless Steel Tu ⊠ PVC □ Other:	□ Teflon <sup>®</sup> bing/Rope: □ Polyethylene ☑ Polypropylene □ Other:
Pumping Rate: Elapsed Time: Was well purged to dryness? Yes X No TIME SERIES DATA: Well Volumes: Temp.:7.4°C	Volume Pumped: 4 gal
pH: <u>8.6</u> Spec. Cond.: <u>0.576 mU/cm</u> DO:	
ORP: ORP: PURGING EQUIPMENT: Dedicated Dedicated Prepared	Off-Site
SAMPLING DATA: METHOD:	Submersible Pump
Other: SAMPLING EQUIPMENT:  Dedicated Prepare	
FIELD DETERMINATIONS OF RECORD: pH: <u>B, 6</u> Temperature: <u>7.4°C</u> Spec. Cond.: <u>1.78°/m</u> Meter Hach Kit Results: Fe: <u>Mn:</u> DO: <u>DO:</u> NO. OF CONTAINERS: <u>I</u> Field Blank I.D.: <u>E80</u> 0500 Trip REMARKS: <u>Forfall</u> Grande Analysis	CO <sub>2</sub> : S:
I sertify that this sample was collected and handled in accordance with appli Signature: 1200 Collected and handled in accordance with appli p foils824 Gwdatasheet XLS	Date: 4-17-000 (Rev 3/6/94 - sam)

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B R O W N AND C A L D W E L L	Hercules Incorporated Ciba Site Glens Falls, NY	GROUNDWATER SAMPLING FIELD DATA SHEET Well Number: <u>NEL-W?-1</u> Sample I.D.:(If different from well no.)
Client: <u>Hercy les</u> Job No.: Personnel: <u>R.C.We:11</u>		Date: <u>4-5-00</u> Time: <u>0839</u> Weather Conditions: <del>1407</del> Claudy SnowFl Air Temperature: <u>+4607</u>
Intake Diameter: _/i ^ DEPTH TO : Static Water DATUM:	□ Stainless Steel □ Galv. Ste Level: <u>3.5/ ff</u> Bottom of ive Casing ♀ Top of Well Casin y labeled? ▲ Yes □ No Is w ing/Surface Mount in Good Cond. Hole adequately drain well head? Pad Intact? (not cracked or frst h	ng
		Submersible Pump 🛛 4" Submersible Pump ertial Lift Pump 🔲 Waterra:HydroLift II □ Teflon®
TIME SERIES DATA: Well	D PVC D Other: Polyethylene Elapsed Time: 56min D Yes D No	bing/Rope:  Polyethylene Polypropylene Other: Nylen Volume Pumped: <u>±4 gal</u> (Reveloped, then per Number of Well Volumes Removed: <u>±22</u>
PURGING EQUIPMENT:	DO: ORP: Dedicated (known) Prepared	
		' Submersible Pump 🛛 4" Submersible Pump Peristaltic Pump 🗅 Waterra: HydroLift II
MATERIALS: Pump/Bailer:	□ Teflon <sup>®</sup> □ Stainless Steel □ PVC ☞ Other: Polyethylenc	□ Teflon <sup>®</sup> Tubing/Rope: □ Polyethylene □ Polypropylene ズ Other: <u>Nylen</u>
SAMPLING EQUIPMENT: Metals samples field filtered? APPEARANCE: COdo	Dedicated	d Off-Site - D Field Cleaned
REMARKS: Total Gyan.	de analysis	Model & S/N: <u>Clathing pH Taster 2</u> / 451 3000 CO <sub>2</sub> : S: Blank I.D.: Duplicate I.D.: Date: 4-17-00

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BROWNAND CALDWELL Hercules Incorporated Ciba Site Glens Falls, NY	GROUNDWATER SAMPLING FIELD DATA SHEET Well Number: <u>NEL-WP-2</u> Sample I.D.:
Client: <u>Hercy les</u> Job No.: <u>18924</u> CC1 Personnel: <u>R.OWeill</u> , <u>D. Yeung</u>	Date: <u>4-5-00</u> Time: <u>CB53</u> Weather Conditions: <u>Claudy, Snow-Flutties</u> Air Temperature: <u>+40°F</u>
Is Inner Casing Properly Capped and Vented?	Well: $5 \cdot 6 \cdot 6 \cdot 7 + 7 \cdot 7$
PURGE DATA:         METHOD:       D Bailer, Size:         Centrifugal Pump       Peristaltic Pump	ertial Lift Pump 🛛 Waterra:HydroLift II
Teflon® MATERIALS: Pump/Bailer:  Stainless Steel Tub PVC Other: Polyethyley	Polypropylene
Pumping Rate: <u>0.09 gpm</u> Elapsed Time: <u>56 min</u> Was well purged to dryness? I Yes X No N TIME SERIES DATA: Well Volumes: Temp.:	Volume Pumped: <u>±5gal</u> (Developed then putged) lumber of Well Volumes Removed: <u>±21</u>
pH:        Spec. Cond.:        DO:        ORP:	
PURGING EQUIPMENT:       X       Dedicated       Prepared C         SAMPLING DATA:       Bailer, Size:       Bailer, Size:       Bladder Pump       2"         O Syringe Sampler       Inertial Lift Pump       Inertial Lift Pump       Inertial Lift Pump       Inertial Lift Pump	Submersible Pump 🛛 4" Submersible Pump Peristaltic Pump 🗖 Waterra: HydroLift II
MATERIALS: Pump/Bailer: Description Description Desc	□ Teflon <sup>®</sup> Tubing/Rope: □ Polyethylene □ Polypropylene २ Other: <u>Aylon</u>
SAMPLING EQUIPMENT:     Dedicated box du     Prepared       Metals samples field filtered?     Image: Samples field filtered?     Image: Samples field filtered?     Image: Samples field filtered?       APPEARANCE:     Image: Clear     Image: Samples field filtered?     Image: Samples field filtered?     Image: Samples field filtered?	Off-Site 🤄 🔲 Field Cleaned
FIELD DETERMINATIONS OF RECORD: pH: 7.2 Temperature: 5.4°C Spec. Cond.: 0.389 / Meter Hach Kit Results: Fe: Mn: DO: NO. OF CONTAINERS: I Field Blank I.D.: Expression Trip REMARKS: Total Cyanide analysis	t. /7. bicy A Model & S/N: <u>Outiton pH Tasti2 / YSI</u> 3000 CO2: S:
I certify that this complet was conocted and transled in accordance with applic Signature: ////////////////////////////////////	Cable regulatory and project protocols. Date: 4-17-00 (Rev J10/94 - sdm)

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B R O W N AND C A L D W E L L	Hercules Incorporated Ciba Site Glens Falls, NY	GROUNDWATER SAMPLING FIELD DATA SHEET Well Number:KEL-WP-3 Sample I.D.:	
Client: <u>Hercy les</u> Job No.:_/ Personnel: <u>R.C.Weill</u> D	18924.001 D. Yeung	Date: <u>4-5-00</u> Time: <u>0908</u> Weather Conditions: <u>Cloudy</u> , <u>snew</u> <u>flutrie</u> Air Temperature: <u>#48-00</u>	5
WELL DATA: Casing Diameter: // Intake Diameter: // DEPTH TO : Static Water Lee DATUM: D Top of Protective CONDITION: Is Well clearly Is Prot. Casing Does Weep He Is Concrete Pa Is Padlock Fur Is Inner Casing	□ Stainless Steel □ Galv. Ste □ Stainless Steel □ Galv. Ste evel: <u>2.63 €+</u> Bottom of e Casing ⊠ Top of Well Casin labeled? ⊠ Yes □ No Is we g/Surface Mount in Good Cond. ole adequately drain well head? ad Intact? (not cracked or frst h	ImageTop of Well Wizard6-ell clean to bottom?YesNo? (not bent or corroded)YesNo? YesNoNo. YesNoNo. NoNoNo. NaIs Inner Casing Intact?YesNo. YesNoNoYes	.16 .37 .65 1.02 1.47
PURGE DATA: METHOD: A Bailer, Size:	D Bladder Pump D 2" : Pump D Peristaltic Pump D Ind D Teflon®	Submersible Pump 🔲 4" Submersible Pump ertial Lift Pump 🔲 Waterra:HydroLift II 🔲 Teflon®	
TIME SERIES DATA: Well V	/olumes:        Temp.:        pH:        . Cond.:        DO:        ORP:     C	bing/Rope: D Polyethylene D Polypropylene $\mathcal{A}$ Other: $\mathcal{N}_{\gamma}/o_{\gamma}$ Volume Pumped: $\underline{\pm}(g_{\alpha})$ (Devilied will fluen pro- Toward drights Number of Well Volumes Removed: $\underline{\pm} g$	iyed lever
SAMPLING DATA:	Dedicated Prepared	Off-Site D Field Cleaned	
METHOD: Difference Bailer, Size: Difference Samples Sampling EQUIPMENT: Metals samples field filtered? APPEARANCE: Difference Clear	npler Inertial Lift Pump I Teflon <sup>®</sup> Stainless Steel PVC Other: Delgethy bree Dedicate Nopeth Prepared Yes No Met ar X Turbid Color: <u>H.biow</u> Yes: No O	△ □ Contains LNAPL □ Contains DNAPL	ሠብ

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BROWNAND CALDWELL Project: GWInestigation SEOF PTPLant SWMU	ENVIRONMENTAL SAMPLING FIELD DATA SHEET Sample Number: Feedor Curcl Sample I.D.:
Client: Hercules Job No.: 18924.601 Personnel: R. C. Neill, D. Yang	Weather Conditions: <u>Raining</u> Air Temperature: 55-66 F
SAMPLE MEDIUM: SURFICIAL SOIL: Depth Interval: SURFACE WATER: Depth Interval: SURFACE WATER: Depth Interval: OTHER: Describe:	iterval: <u>Surfuce</u>
SAMPLING DATA: SAMPLE COLLECTION EQUIPMENT: Scoop Shovel Direct into sample container Hand Corer Petite Ponar Dredge Eckman Dredge Peristaltic Pump Automated Interval Sampler Pro	e 🛛 Bottle Sampler
SAMPLER CONSTRUCTION: Check as many as apply) Teflon® Stainless Steel Carbon Steel SAMPLE TYPE: SAMPLING EQUIPMENT: Check as many as apply) Check as many as apply (Check as apply) Check as a check	<ul> <li>PVC</li> <li>Polyethylene</li> <li>Polypropylene</li> <li>Other:</li> </ul>
FIELD MEASUREMENT DATA: APPEARANCE (describe): Oily & "Clean" Clear Turbid Colo ODOR?: Yes No , Description: GRAIN SIZE DESCRIPTION: (Use for soils only)	
FIELD DETERMINATIONS: pH: <u>B.</u> Meter Model Temperature: <u>10.2</u> <sup>c</sup> Spec. Cond.: <u>0.632<sup>m</sup>U/cn Meter Model Other:</u>	Blank I.D.: Replicate I.D.:
I certify that this sample was collected and handled in-accordance with applic Signature:	cable regulatory and project protocols. Date: <u>4-17-00</u> (Rev 10/1 92)

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CALDWELL	es Incorporated Ciba Site ens Falls, NY	ENVIRONMENTAL SAMPLING FIELD DATA SHEET Sample Number: <u>5G-11</u> Sample I.D.:(I different from temp no 1
Project: GWInnestigation, SE of PT Client: Hercules Jo Personnel: R. CNeill, D. Young	Plant SWMU b No.: 18924.001	Date: <u>4-5-00</u> Time: <u>9:53</u> Revere: E2 Weather Conditions: <u>Cloudy</u> , Snow Flatting Air Temperature: <u>±40°F</u>
DEEPS SURFA BOTTO	M SEDIMENT	rval:
SAMPLING DATA: SAMPLE COLLECTION EQUIPMENT: Scoop Shovel Direct into Hand Corer Petite Ponar Dred Peristaltic Pump Automated In	ge 🗆 Eckman Dredge	Bottle Sampler
Glas SAMPLE TYPE: Grab Composite	on® hless Steel hon Steel s e □ Other:	<ul> <li>PVC</li> <li>Polyethylene</li> <li>Polypropylene</li> <li>Other:</li> </ul> ff-Site  Field Cleaned
FIELD MEASUREMENT DATA: APPEARANCE (describe): Oily & "Clean" Clear & ODOR?: Ves No , Descriptio GRAIN SIZE DESCRIPTION:	D Turbid Di Color n: <u>Slightbrown fin</u> .6 Meter Model: <u>mU/c</u> Meter Model: JCM 12C 1.D.: <u>EB04050</u> Trip E	slight brown : <u>tint</u> Contains Immiscible Liquid <u>tew suspended solids</u> <u>Culton pHTsH2</u> <u>Meter S/N:</u>
I certify that this sample was dilected and handled Signature:	naccordance with applica	able regulatory and project protocols. Date: 447-00

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BROWN AND CALDWELL	Hercules Incorporated Ciba Site Glens Falls, NY	Sample Number: <u>SG-12</u>
Project: GWInestigation Client: Hercules Personnel: R. CN::11, I	<u>, SE of PT</u> PLATSWMU Job No.: 18924.601 <u>2. Yang</u>	Date: $4-5-00$ Time: $0953$ Weather Conditions: $Cardy 51000$ Fluttine Air Temperature: $\pm 40^{\circ}F$
SAMPLE MEDIUM:	<ul> <li>SURFICIAL SOIL: Depth Int</li> <li>DEEP SOIL: Depth Interval:</li> <li>SURFACE WATER: Depth In</li> <li>BOTTOM SEDIMENT</li> <li>OTHER: Describe:</li> </ul>	nterval: Surface
Hand Corer D Petit		
	<ul> <li>Check as many as apply)</li> <li>Teflon<sup>®</sup></li> <li>Stainless Steel</li> <li>Carbon Steel</li> <li>Glass</li> <li>Composite</li> <li>Other:</li> <li>Dedicated</li> <li>Prepared</li> </ul>	<ul> <li>PVC</li> <li>Polyethylene</li> <li>Polypropylene</li> <li>Other:</li> </ul>
FIELD MEASUREMENT APPEARANCE (describe):	DATA: A Clear I Turbid I Colo , Description: L. He Susper	or: 🛛 Contains Immiscible Liquid
Other:	pH: 7, 8 Meter Mode Cond.: 0,671 m Meter Mode	I: Oakton pH Testr 2 Meter S/N:
		Blank I.D.: Replicate I.D.:
I certify that this same was college	ted and handled in accordinge with appli	cable regulatory and project protocols.

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CALDWELL Project: <u>GWInestigation</u> , SE or Client: <u>Hercules</u> Personnel: <u>R. C.Neill</u> , <u>D. Yau</u> SAMPLE MEDIUM: SAMPLE S	Job No.: 18924.601	
	THER: Describe:	
SAMPLING DATA: SAMPLE COLLECTION EQUIPMENT: Scoop Shovel Direct Hand Corer Petite Ponar Peristaltic Pump Automa	Dredge 🛛 Eckman Dredge	
	Glass posite 🛛 Other:	
FIELD MEASUREMENT DATA: APPEARANCE (describe): Oily & "Clean" & Clean ODOR?: Yes M No , Desc GRAIN SIZE DESCRIPTION:	ar 🗆 Turbid 🗆 Color ription: <u>L.1116 545</u>	: Contains Immiscible Liquid
Other: LABORATORY ANALYSIS: Total	Cipinide	Ockton pHIstr2 Meter S/N:           YSJ Mode 13000 Meter S/N:           Blank I.D.:   Replicate I.D.:
I certify that this sample was collected and h Signature:	andled in accordance with applic.	able regulatory and project protocols. Date: 4-17-00 (Rev 10:1:92)

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BROWNAND CALDWELL Project: <u>GWInestigation</u> S Client: <u>Hercules</u>	Job No .: 18924.001	ENVIRONMENTAL SAMPLING FIELD DATA SHEET Sample Number: <u>5G-14</u> Sample 1.D.: <u>It different from samp no 3</u> Date: <u>4-5-97</u> Time: <u>0936</u> Weather Conditions: <u>Cloudy 5-1990 (Lutjiers</u>
Personnel: R. ONeill, D.	Jaing	Air Temperature: <u>- 40°F</u>
	<ul> <li>SURFICIAL SOIL: Depth Inte</li> <li>DEEP SOIL: Depth Interval: _</li> <li>SURFACE WATER: Depth In</li> <li>BOTTOM SEDIMENT</li> <li>OTHER: Describe:</li> </ul>	terval: 5- face
SAMPLING DATA:		
SAMPLE COLLECTION EQUIPME	ENT:	
□ Hand Corer □ Petite P	Direct into sample container 🛛 Conar Dredge 🖵 Eckman Dredge tomated Interval Sampler 🏼 🏧 O	
SAMPLER CONSTRUCTION:	(Check as many as apply)	
SAMPLE TYPE: 🛎 Grab 🗆	<ul> <li>Teflon<sup>®</sup></li> <li>Stainless Steel</li> <li>Carbon Steel</li> <li>Glass</li> <li>Composite Other:</li> <li>Dedicated Prepared O</li> </ul>	<ul> <li>Polypropylene</li> <li>Other:</li> </ul>
FIELD MEASUREMENT DA APPEARANCE (describe): Oily & "Clean" & ODOR?: Yes & No , GRAIN SIZE DESCRIPTION: "	Clear	: O Contains Immiscible Liquid
Other: LABORATORY ANALYSIS:	fal Grande Field Blank I.D.: EBO40900 Trip B	Outstan pH Tostt 2       Meter S/N:         YSI 3000       Meter S/N:         Blank I.D.:       Replicate I.D.: DVP010 500         A Joints Jacan Juan
I certify that this sample was collected Signature:	and handled in accordance with applic	able regulatory and project protocols. Date: 4-17-00

BROWN AND CALDWELL	Hercules Incorporated Ciba Site Glens Falls, NY	ENVIRONMENTAL SAMPLING FIELD DATA SHEET Sample Number: <u>56 - 15</u> Sample I.D.:(f different from samp no )
Project: <u>GWInestigation</u> Client: <u>Hercules</u> Personnel: <u>R</u> , <u>ONeill</u> , D.	Job No.: 18924.001	Date: <u>4-5-00</u> Time: <u>0121</u> Weather Conditions: <u>Claudy, snaw</u> flutties Air Temperature: <u>I40°F</u>
SAMPLE MEDIUM:	<ul> <li>SURFICIAL SOIL: Depth Inte</li> <li>DEEP SOIL: Depth Interval: _</li> <li>SURFACE WATER: Depth In</li> <li>BOTTOM SEDIMENT</li> <li>OTHER: Describe:</li> </ul>	terval: <u>surface</u>
Hand Corer D Petite		
SAMPLER CONSTRUCTION: SAMPLE TYPE: Ø Grab C SAMPLING EQUIPMENT: Ø	(Check as many as apply)   Teflon <sup>®</sup> Stainless Steel  Carbon Steel  Glass Composite □ Other: Dedicated □ Prepared O	<ul> <li>PVC</li> <li>Polyethylene</li> <li>Polypropylene</li> <li>Other:</li> </ul> ff-Site  Field Cleaned
FIELD MEASUREMENT D APPEARANCE (describe): Oily 2 "Clean" 2 ODOR?: D Yes 2 No	ATA:	: Contains Immiscible Liquid
Other: LABORATORY ANALYSIS: 7	tal Gande	Cake pHT+12       Meter S/N:         KI 3000       Meter S/N:         Blank I.D.:       Replicate I.D.:
I certify that this sample was collecte Signature: Laclard A.C.	d and handled in accordance with applic	able regulatory and project protocols. Date: <u>4-17-00</u> Reviol 192

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# APPENDIX G

# LABORATORY DATA PACKAGE

\\BCMAH02\PROJECTS\^J\18924\GWIR053000(gw inv rpt area se ptmnt plant swmu).DOC 06/20/00

#### **INORGANIC DATA PACKAGE**

PREPARED FOR HERCULES INCORPORATED

MAY 18, 2000

Authorized for Release by 4 1. D. Rick Davis, Vice President

2. Bottu Betty L. DeVille, Inorganic Lab Manager

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## **INORGANIC DATA PACKAGE**

#### G.W.I. SE-PT PLANT

**Prepared for:** 

Hercules Incorporated Hercules Plaza Wilmington, Delaware 19894

Prepared by:

Eckenfelder Laboratory, LLC 227 French Landing Drive Nashville, Tennessee 37228

May 18, 2000

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## TABLE OF CONTENTS

Page#

1

3

4

5

7

8

TABLE OF CONTENTS

CASE NARRATIVE

PARAMETERS REQUESTED

SAMPLE INFORMATION SUMMARY

CHAIN OF CUSTODY RECORDS

SAMPLE RECEIVING LOGS

**INORGANIC SUMMARY REPORTS** 

**INORGANIC QC DATA** 

## INORGANIC CASE NARRATIVE Hercules (G.W.I. SE-PT Plant) 18924.001 April, 2000

Eckenfelder ID	Client ID	
0004037-01	MW-OB22	- 1
0004037-02	MW-OB21	
0004037-03	NEL-WP-1	
0004037-04	NEL-WP-2	·2.44
0004037-05	NEL-WP-3	
0004037-06	SG-15	
0004037-07	SG-14	
0004037-08	SG-13	
0004037-09	SG-12 -	
0004037-10	SG-11	
0004037-11	DUP 040500	
0004037-12	EB-040500	

#### Methods:

The samples were analyzed for total cyanide by SW846 method 9012A.

#### **General Comments:**

#### 1) Instrument Detection Limit (IDL):

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a) The reporting limit (RL) was used in place of the IDL. See "Form X - IN". The RL is defined as no less than the method detection limit (MDL) defined in 40 CFR 136, Appendix B, Revision 1.11.

#### **Specific Comments:**

All analyses performed by the Inorganic section were completed meeting satisfactorily the corresponding specifications for Quality Control with the following exceptions:

## I) Matrix Spike/Matrix Spike Duplicate (MS/MSD) % Recovery Specification Limits are 75-125%

A) Cyanide BATCH: 00H02

1) The MSD percent recovery for sample 0004037-02 (MW-OB21) was outside specification limits for cyanide at 155%. The associated samples are qualified with an "N".

# **Batching Information**

SDG No.: 00H02 Contract: Hercules

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Batch Number: 00H02 - Cyanide

PBW 040700A	PBW 040700A	SAM	WATER
PBW 040700B	PBW	MB	WATER
LCSW 040700A	LCSW	LCS	WATER
0004037-01	MW-OB22	SAM	WATER
0004037-03	NEL-WP-1	SAM	WATER
 0004037-04	NEL-WP-2	SAM	WATER
0004037-05	NEL-WP-3	SAM	WATER
0004037-06	SG-15	SAM	WATER
0004037-07	SG-14	SAM	WATER
0004037-08	SG-13	SAM	WATER
0004037-09	SG-12	SAM	WATER
0004037-10	SG-11	SAM	WATER
0004037-11	DUP 040500	SAM	WATER
0004037-12	EB-040500	SAM	WATER
0004037-02	MW-OB21	SAM	WATER
0004037-02S	MW-OB21S	MS	WATER
0004037-02SD	MW-OB21SD	MSD	WATER

# Hercules GWI SE-PT Plant Parameters Requested

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Lab Sample ID	Field ID	Matrix	Date _Time Sampled	Parameters requested
0004037-01	MW-OB22	Groundwater	4/4/2000 4:05:00 PM	Cyanide
0004037-02	MW-OB21	Groundwater	4/4/2000 4:30:00 PM	Cyanide
0004037-03	NEL-WP-1	Groundwater	4/5/2000 8:39:00 AM	Cyanide
0004037-04	NEL-WP-2	Groundwater	4/5/2000 8:53:00 AM	Cyanide
0004037-05	NEL-WP-3	Groundwater	4/5/2000 9:08:00 AM	Cyanide
0004037-06	SG-15	Groundwater	4/5/2000 9:21:00 AM	Cyanide
0004037-07	SG-14	Groundwater	4/5/2000 9:30:00 AM	Cyanide
0004037-08	SG-13	Groundwater	4/5/2000 9:43:00 AM	Cyanide
0004037-09	SG-12	Groundwater	4/5/2000 9:53:00 AM	Cyanide
0004037-10	SG-11	Groundwater	4/5/2000 10:02:00 AM	Cyanide
0004037-11	DUP 040500	Groundwater	4/5/2000	Cyanide
0004037-12	EB-040500	Groundwater	4/5/2000 11:05:00 AM	Cyanide

# Sample Information Summary for Hercules

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FIELD ID	Eckenfelder Lab ID	Date and Time Sampled	Matrix
MW-OB22	0004037-01	4/4/00 4:05:00 PM	Groundwater
MW-OB21	0004037-02	4/4/00 4:30:00 PM	Groundwater
NEL-WP-1	0004037-03	4/5/00 8:39:00 AM	Groundwater
NEL-WP-2	0004037-04	4/5/00 8:53:00 AM	Groundwater
NEL-WP-3	0004037-05	4/5/00 9:08:00 AM	Groundwater
SG-15	0004037-06	4/5/00 9:21:00 AM	Groundwater
SG-14	0004037-07	4/5/00 9:30:00 AM	Groundwater
SG-13	0004037-08	4/5/00 9:43:00 AM	Groundwater
SG-12	0004037-09	4/5/00 9:53:00 AM	Groundwater
SG-11	0004037-10	4/5/00 10:02:00 AM	Groundwater
DUP 040500	0004037-11	4/5/00	Groundwater
EB-040500	0004037-12	4/5/00 11:05:00 AM	Groundwater
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		Eckenfelder Labora	tory,	C Chain	of Custo	dy Record	(]	Nº 2	21169
Ship to:		Send Results to:		Send Invoi	ice To:		Details:	14- 4	
Edit rafelder Laboratory LLC		Name BOB O'Neill		Name G	len Schu	ulesing	Page 1	of 2	
227 French Landing Drive		Company BOOWN& CALI		Company	Herry	les Inc.	Cooler No		1_10
Nashville, TN 37228 Attn: Analytical Laboratory		Address <u>140 FRANKLT</u> City & State <u>MAHWAL</u>	NTERE	Address		DE DE	Date Ship Shipped B		4/5/00 Ex
(615) 255-2288 (phone)		Phone 201 818 6055	11210143	Phone (30)	2) 594	-653	Turnarour	nd .	SHA.
(615) 256-8332 (fax)		Fax 201 818 6057	······································	Purchase O					otherwise/There RUSH-contact Lab
(615) 400-0253 (mobile)	10					·>> ·/		7 1	D dl'i
Project No./Name 18924.00		). I. SE-PT PLANT		Samplers (			10	rtal	7 Chill
Lab Use Only Date Time Lab # Sampled	Comp./ Grab	Sample Location/Description	Sample Matrix	Field pH/Temp	Field Cond.	ANALYSIS KIQU	IRED .	No. of Bottles	Lab Usn Only Containers/Pre
4037-014/4/00 1605	- G	MW-0B22	GW	K	0.578	Cypnide		.1	1 A WOULD
02 4/4/00 1630	G	MW-OB21	GW	7.1	1.256	Cyanide		1	
4/4/00 1630	G	MW-OBZI MS/MSD	GW			Gyanida	e	22	x
03 4/5/00 0830	1	NEL-WP-1	GW	7.4	0,590	Cyanide		1	
044/5/00 0853	G	NEZ-WP-2	GW		0.389	Cyanide		1	
0.5 4/5/00 0908	G	NEZ-WP-3	GW	6.9	0.493	Cyanide		1	
06 4/5/00 0921	G	SG-15	SW	7.2	0.396	Cyanide		1	
07 4/5/00 0930	G	SG - 14	SW	177 /	0.607	Cyanide		1	
08 4/5/00 0943	G	SG-13	SW		0.626	Cyanide		1	
09 4/5/00 0953	G	SG - 12	SW	7.86,2	0.631	Cyanide		1	
Sample Kit Prep'd by: (Signature)	Date/Tim 3-31-ce	e Received By: (Signature)	REM.	ARKS ature required t	to ensure val		<i>Lab Use</i> VOA He Field Fil	adspace	Y N NY
Relinquished by: (Signature)	24/5700		Tem	p = 2 d. = MU	lan			Containera	Y N NA
Denny ming	1400		_ S Con	d // D			Cust. Sea	uls intact	Y N da
Relinquished by (Signature)	Date/Time	e Received By: (Signature)					Containe		O & A
Received for Laboratory by: (Signature)	Pate/Tim C-OC OT 30	e Work Order No./ Temp (*C					Airbill #	<u></u>	000

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers

	L	i		Ehfel Lat	tory,	Clin	clisto	_, Rec)	i iii	Nº	268
Ship to:				Send Results to:		Send Invo	ice To:		Details:		61100
Eckenfelder Laboratory L						Name			Page	2_ of _2	) 
227 French I		YC.		Company <u>B+C</u> Address <u>440 FEPNKLTN</u>	TALE	Company Address	Sec	- max	Cooler N	o	lo
Nashville, Tl Attn: Analy		atory		City & State MAHWAH, NJ	07430	Address City & Sta	~		Shipped 1	By H	15 bo
(615) 255-22				City & State <u>MAHWAH, NJ</u> Phone <u>201 - 818 - 60</u>	55	Phone Purchase C			Turnarou	nd	SH2, otherwise/There
(615) 256-83. (615) 400-02				Fax 201-R18-60	05.7	Purchase C					RUSH-contact Lab)
Project No./Nam	.0.0	24,001	IG.W.	I. SEPT RANT		Samplers (	Signature	· Cubit J.C	Mil	11	may Jourg
Lab Use Only Lah #	Date Sampled	Time	Comp./ Grab	Sample Location/Description	Sample Matrix	Field pH/Temp	Field Cond.	ANALYSIS REQU	IRED	No. of Bottles	Lab Use Only Containers/Pres.
037-10	4/5/00	1002	G	SG-11	SW	7.6	0.628	Cyanide		1	IA -NOH ILL
AND AND AND AND AND AND AND AND AND AND	4/5/00	0000	G	DUP 040500	w <sup>·</sup>	-		Cyanide Gyanide		1	
12	4/5/00	1105	G	EB-040500	W			Cyanide		1	V
								U			
					ı						
					4						
					1						
1				•							
Sample Kiterep'	d by: (Signatu	ге) ;	Date/Ti 3-31		-	ARKS ature required (	o ensure vali	dity	Lah Use VQA H	Only adspace	Y N Stal
Relinquished by:	(Signature)		Date/Ti	me Received By: (Signature)	34				Field Fi	tered Containers	Y (N) NA
1. ()	hing		415100	400	SG	p= °C nd = MU/	cm		Discrepa		Y WY NA
Relinquished by	(Signature)		Date/Tin						Containe	rs Infact	() N NG
Received for Lal	peratory by:		Date/Fi 4-6-0 0934		2				Alrbill #	<u>FX</u>	0000
ustribution: Oris	ginal and yello	w copies a	ccompany sa	ample shipment to laboratory; Pink re	tained by sai	mplers					6

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers

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-	ECKENFELDER INC.	
	COOLER RECEIPT FORM	
PROJECT: <u>Hercules</u> (BC-NJ)	- GWIJE PTPlant LIMS# CC	×4037-01-7-12
USE OTHER SIDE OF THIS FORM TO NOTE DETA	ILS AND IOR COMPLETE A CORRECTIVE ACTION CONCER	NING CHECK-IN PROBLEMS.
A. PRELIMINARY EXAMINATION PHAS	E: DATE COOLER OPENED: 4-6-00 C-of-C Num	iber 21168-21169
by (print)	(sign)	
1. Did cooler come with a shipping slip (	air bill. etc.)?	(ES NO
If YES, enter carrier Name & air bill n	number here: Fed - Ex #81962946783	<u>.</u>
	er?	NO NO
How many & where: 2-lid		D. Young
3. Were custody seals unbroken and int	tact at the date and time of arrival?	NO
4. Did you screen samples for radioacti	vity using the Gelger Counter?	YES 10
5. Were custody papers sealed in a plas	stic bag & taped inside to the lid?	NO NO
6. Were custody papers filled out prope	rly (ink. signed, etc.)?	YES NO
7. Did you sign custody papers in the a	appropriate place?	NO NO
	y papers? If yes, enter project name at the top of the	
9. If required, was enough ice used?	Type of Ice: <u>cube</u> Temp <u>1.0</u> °C	NO ES NO
10. Have designated person initial here	to acknowledge receipt of cooler: 1911 (d	ate) 4-6-00
B. LOG-IN PHASE: Date samples were	: logged in: 4-7-00	1.0
by (print) B. Richard	(sign)	<u>R</u> P
11. Describe type of packing in cooler:_	Bubble wray, Plastic bags,	<u>Les</u>
12. Were all bottles sealed in separate j	plastic bags?	YES 10
13. Did all bottles arrive unbroken & w	vere labels in good condition?	TES NO
	date, time, signature, preservative, etc.)?	-
15. Did all bottle labels agree with cus	tody papers?	ON CET MO
16. Were correct containers used for the	he tests indicated?	
	to samples?	
	e sent for tests indicated	NO
19. Were bubbles absent in volatile sa	amples? If NO, list by Sample #A	YES NO
	nd status discussed? If yes, give details on the back of	this form YES NO
21. Who was called?	By whom?	(date)

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# CLIENT: Hercules #18924.001; NY State ID# 10925 DATE RECEIVED: 04/06/00 DATE REPORTED: 04/20/00 DATE REVISED: 05/16/00 (A') ECKENFELDER SAMPLE NUMBER 0004037-01

EGRENT LEDER GAM	EENOMBER							
CLIENT SAMPLE DES	MW-OB22 4/4/2000 4:05:00 PM							
ANALYTES	REPORTING LIMITS	USEPA METHOD	UNITS	CONC				
Cyanide	0.0050	9012A	mg/L	0.052				

See attached page for definitions of terms and qualifiers.

(A') = Revised to correct the result for MW-OB21and to remove the "\*" qualifier.

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615-345-1115

FAX 615-846-5426

## CLIENT: Hercules #18924.001; NY State ID# 10925

DATE RECEIVED: 04/06/00

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DATE REPORTED: 04/20/00

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DATE REVISED: 05/16/00 (A')

ECKENFELDER SAME	CKENFELDER SAMPLE NUMBER									
CLIENT SAMPLE DES	л. Э	MW-OB 4/4/200 4:30:00 F	0							
ANALYTES	REPORTING LIMITS	USEPA METHOD	UNITS	CONC						
Cyanide	0.025	9012A	mg/L	0.50	N					

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State State States

See attached page for definitions of terms and qualifiers.

(A') = Revised to correct the result for MW-OB21and to remove the "\*" qualifier.

## CLIENT: Hercules #18924.001; NY State ID# 10925

DATE RECEIVED: 04/06/00

DATE REPORTED: 04/20/00

DATE REVISED: 05/16/	'00 (A')			- 2		· · · ·	-14			
ECKENFELDER SAMPL	E NUMBER			0004037-	-03	0004037	0004037-	04037-05		
CLIENT SAMPLE DESC	RIPTION/SAMP	PLING DATE		NEL-WP	2-1	NEL-WP-2 NE			EL-WP-3	
				4/5/200 8:39:00 /		4/5/200 8:53:00 /		4/5/200 9:08:00 A		
ANALYTES	REPORTING LIMITS	USEPA METHOD	UNITS	CONC		CONC		CONC		
Cyanide	0.0050	9012A	mg/L	0.025	N	0.016	N	<0.0050	N	

See attached page for definitions of terms and qualifiers.

(A') = Revised to correct the result for MW-OB21and to remove the "\*" qualifier.

and de tra

## CLIENT: Hercules #18924.001; NY State ID# 10925

DATE RECEIVED: 04/06/00

DATE REPORTED: 04/20/00

DATE REVISED: 05/16/00 (A')

ECKENFELDER SAMP	LE NUMBER			0004037-	04037-06 0004037-07		-07	0004037-08		
CLIENT SAMPLE DES	CRIPTION/SAMF	PLING DATE		SG-15		SG-14 SG-			13	
*				4/5/200 9:21:00 A	1	4/5/200 9:30:00		4/5/200 9:43:00 /		
ANALYTES	REPORTING LIMITS	USEPA METHOD	UNITS	CONC		CONC		CONC	1	
Cyanide	0.0050	9012A	mg/L	<0.0050	Ν	0.0091	N	0.0089	N	

See attached page for definitions of terms and qualifiers.

(A') = Revised to correct the result for MW-OB21and to remove the "\*\* qualifier.

## CLIENT: Hercules #18924.001; NY State ID# 10925

ATE RECEIVED: 04/06/00

ATE REPORTED: 04/20/00 DATE REVISED: 05/16/00 (A')

		Construction of the second sec	A CONTRACTOR OF THE OWNER OWNER OWNER OF THE OWNER OWN								
CKENFELDER SAMP	LE NUMBER			0004037	-09	0004037-	10	0004037	-11	0004037-	12
CLIENT SAMPLE DES	CRIPTION/SAMF	PLING DATE		SG-12		SG-11		DUP 040	500	EB-0405	00
		2.*		4/5/200 9:53:00		4/5/200 10:02:00		4/5/200	0	4/5/200 11:05:00	
ANALYTES	REPORTING LIMITS	USEPA METHOD	UNITS	CONC		CONC		CONC		CONC	
Cyanide	0.0050	9012A	mg/L	0.010	N	0.0085	N	0.011	N	<0.0050	N

See attached page for definitions of terms and qualifiers.

(A') = Revised to correct the result for MW-OB21and to remove the "\*" qualifier.

Eckenfelder Laboratory, LLC

Rick Davis

## ANALYTICAL REPORT NOTES, TERMS AND QUALIFIERS (INORGANIC)

#### Notes:

The metals and cyanide reporting limits (RLs) have been statistically determined to be no less than three standard deviations as defined in 40 CFR 136, Appendix B, Revision 1.11. All other reporting limits are referenced from the specific analytical method.

#### <u>Terms</u>:

NA Not Applicable

NR Not Requested

#### Qualifiers:

- B The reported value is less than the practical quantitation limit (PQL, project defined) but greater than or equal to the RL.
- E The reported value is estimated due to the presence of matrix interference.
- N Predigested spike recovery not within control limits.
- W Post digestion spike recovery not within control limits.
- \* RPD or absolute difference for Duplicate analysis not within control limits.
- \*\* Reference Standard Methods 19th edition.
- (1) pH analyzed outside USEPA specified holding time. pH must be measured immediately after sample collection.
- (2) The sample pH did not meet the preservation guidelines. Therefore the pH was adjusted upon receipt.
- (3) The sample had to be diluted because of matrix interferences.
- (4) Reference Standard Methods 17th edition for the distillation method.
- (5) The sample was analyzed out of the USEPA holding time.
- (6) The sample was received in the laboratory out of the USEPA holding time.
- (7) The shipping cooler temperature exceeded 6°C upon receipt to Eckenfelder Laboratory, LLC.
- (8) When the concentration of the analyte is below the detection limit, the detection limit must be divided by the %Solids (in decimal form) in order to obtain the sample's true detection limit on a dry weight basis.

(9) Analysis was subcontracted

## TOTAL METALS

-2A-

#### INITIAL AND CONTINUING CALIBRATION VERIFICATION

Hercules

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Lab Code:	Case No.:

SAS No.:

arts .

SDG NO.: 00H02

0000014

nitial Calibration Source: Fisher

Continuing Calibration Source: Fisher

·\*\* 1).

Concentration Units: ug/L

Initial Calibration			Continu	• • •	1			
Analyte	True	Found %R(1)	True	Found	%R(1)	Found	%R(1)	M
Cyanide	517.0	470.00 90.9	517.0	521.00	100.8	524.0	00 101.4	A

## TOTAL METALS -2A-INITIAL AND CONTINUING CALIBRATION VERIFICATION

ontract: Hercules

Lab Code:

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Case No.:

SAS No.:

SDG NO.: 00H02

itial Calibration Source:

Continuing Calibration Source: Fisher

Concentration Units: ug/L

Initial Calibration		Continu				
Analyte	True	Found %R(1)	True	Found %R(1) Found	d %R(1)	M
Cyanide			517.0	544.00 105.2		AS

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

## **TOTAL METALS** -2A-INITIAL AND CONTINUING CALIBRATION VERIFICATION

ontract: Hercules

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Lab Co	de:	Case No.	: 52	AS No.:		SDG NO.:	00H <b>02</b>	
itia	l Calibrat	ion Source: Fishe	er					
Contin	uing Calib	ration Source: 1	Fisher					10
		Con	centration Unit	s: ug/L		4 a		
5	Analyte	Initial Cal: True	ibration Found %R(1)	Conti	inuing Cali Found	bration %R(1) Found	1 %R(1)	M

Initial Calibration			Continuing Calibration						
Analyte	True	Found %R(1)	True	Found	%R(1)	Found	%R(1)	м	
Cyanide	517.0	520.00 100.6	517.0	515.00	99.6			AS	

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

. 6

## TOTAL METALS

## -3-

#### BLANKS

Contract: Hercules

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Lab Code	Case	No.:	SAS	No.:

SDG NO.: 00H02

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reparation Blank Matrix (soil/water): WATER

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Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

	Initial Calib. Blank		КА		tinuing Blank	Calibra (ug/L)	ation		Preparation Blank	n	
Analyte	(ug/L)	c	1	С	2	С	3	с		С	M
Cyanide	5.	0 0	5.	0 0					5.00	0 0	

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felder Lab	oratories, LLC	2			0000	018
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		64	-3-	3		
			BLANKS			
		a				
act: <u>Hercul</u>			,			
ode:	Case N		SAS No.:		SDG NO.: 00H02	
	k Matrix (soil					
ration Blan	k Concentratio	on Units (ug/I	or mg/kg):	UG/L	(	
T	Initial		· ·			
	Calib. Blank	Co	ntinuing Ca. Blank (ug		Preparation Blank	1
Analyte	(ug/L) C	1 c		с 3	c c	м
Cvanide		1 1			5.000 U	AS
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## TOTAL METALS

#### -3-

#### **BLANKS**

ntract: Hercules

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Lab Code:Case No.:SAS No.:SDG NO.:00H02

eparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

	Initial Calib. Blank	-	in .	inuing Calibr Blank (ug/L)		Preparati Blank	
Analyte	(ug/L) C		C	2 C	3 c	<u> </u>	C M
Cyanide	5.0 U	]	5.0 U				A
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Eckenfelder Laboratories, Ll	C
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# TOTAL METALS -5A-

## SPIKE SAMPLE RECOVERY

h				SAMPLE NO.
				MW-OB21S
Contract: Hercul	es		.z	
ab Code:	Case No.:	SAS No.:	SDG	NO.: 00H02
Matrix (soil/wate	er):WATER		Level (low/med	d): LOW
Solids for Sam	ple: 0.0			

	Conce	entration Units	(ug/	'L or mg/kg dry we	ight): µG/L		
Analyte	OOM CLOY	Spiked Sample Result (SSR)	с	Sample Result (SR)	C Added (SA)	%R	QM
Cyanide	75 - 125	702.6000		504.8000	207.00	95.6	A

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North Contraction

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Form V (PART 1) - IN

		TOTAL	METALS		
			-5A-		
		SPIKE SAM	IPLE RECOVER	RY	
					SAMPLE NO.
					MW-OB21SD
t: Hercul	es				MN-OB213D
le:	Case No.:	S	AS No.:	SDG	NO.: 00H02
(soil/wate	er):WATER		, T	Level (low/me	d): LOW
1	ple: 0.0		28.7		
			1		
		ion Units (ug/	Sample	1970 B	G/L
Analyte		c (SSR) C	Result (SR)	C Added (	SA) %R Q M
Cyanide	75 - 125	825.8000	504.80		7.00 155.1 N AS
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felder Laboratories,					000	0022
		TOTAL M	ETALS			
		-6-				
ъ.		DUPLICA	ATES			
			•		SAMPLE NO	•
					MW-OB21SD	)
act: Hercules				l		
ode: C	ase No.:	SAS	No.:	SDG N	0.: 00H02	
(soil/water): WAT	ER	14 J	Le	vel (low/med)	LOW	
ds for Sample: 0.0	1.54.4.1	· .	% Solids	for Duplicate	:	
	1. N	a - 2				
						-
[ Control	11.	nits (ug/L or			/L	· ·
Analyte Control Limit			mg/kg dry wei Duplicat		T	QM
Analyte Control	11.				T	
Analyte Control Limit	11.	(S) C		e (D) C	RPD	QM
Analyte Control Limit	11.	(S) C 702.6000		e (D) C	RPD	Q M AS
Analyte Control Limit	11.	(S) C 702.6000		e (D) C	RPD	Q M AS
Analyte Control Limit	11.	(S) C 702.6000		e (D) C	RPD	Q M AS
Analyte Control Limit	11.	(S) C 702.6000		e (D) C	RPD	Q M AS
Analyte Control Limit	11.	(S) C 702.6000		e (D) C	RPD	Q M AS
Analyte Control Limit	11.	(S) C 702.6000		e (D) C	RPD	Q M AS
Analyte Control Limit	11.	(S) C 702.6000		e (D) C	RPD	Q M AS

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Ecker	ıfelder	Laboratorie	s, LLC

# TOTAL METALS

#### -7-

#### LABORATORY CONTROL SAMPLE

-ontract: Hercules

ab Code:

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SAS No.:

SDG NO.: 00H02

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0000023

Solid LCS Source:

queous LCS Source: JTBaker

Case No.:

Analyte	Aqueou				.d (mg/kg)	
Cyanide	True 500.0	Found 492.20	8R 98.4	True Found	C	Limits %R
Ichaurge 1	500.01	492.20	30.41			
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## TOTAL METALS -13-PREPARATION LOG

- 257

ontract: Hercules

Tab Code:

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Case No.:

SAS No.:

SDG NO.: 00H02

thod: AS

Sample No.	Preparation Date	Initial Volume	Volume (mL)
DUP 040500	4/7/00	500.00	250
EB-040500	4/7/00	500.00	250
LCSW	4/7/00	100.00	250
MW-OB21	4/7/00	500.00	250
MW-OB215	4/7/00	500.00	250
MW-OB21SD	4/7/00	500.00	250
MW-OB22	4/7/00	500.00	25
NEL-WP-1	4/7/00	500.00	25
NEL-WP-2	4/7/00	500.00	25
NEL-WP-3	4/7/00	500.00	25
PBW	4/7/00	500.00	25
PBW 040700A	4/7/00	500.00	25
SG-11	4/7/00	500.00	25
SG-12	4/7/00	500.00	25
SG-13	4/7/00	500.00	25
SG-14	4/7/00	500.00	25
SG-15	4/7/00	500.00	25

## 0000025

## TOTAL METALS

-14-

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## ANALYSIS RUN LOG

Contract: Hercu	les					_			_		-																
ab Code		Ca	se No.:					SA	S	No	. :						s	DG	N	o.:	: 0	ОH	02				
Instrument ID Nu	mber:	Cyanide						Me	th	od	:	1	AS														
tart Date: 4/1	1/00	rt kasst i i j	en ést.			•	1. a	En	d I	Dat	te:	•	4/	11	/00	<u>)</u> .	-	• '7 .	n n		۶.	P	2	•	•		
	D/F		€ R												ly												
Sample No.	D/E	Time	TR	A L			B A				C R				1					K		A G				Z N	
ICV1	1.00	12:34:																							Π		x
- ICB1	1.00	12:35:																							Π	T	x
PBW 040700A	1.00	12:36:																							T	T	x
BLANK SPK	1.00	12:37:																							Π	T	x
ZZZZZZ	250.00	12:38:											•	•											Π	T	
MW-OB22	1.00	12:39:																							Π	Τ	x
ZZZZZZ	1.00	12:40:													Γ				Γ						Π	T	
ZZZZZZ	1.00	12:41:		T		-									Γ		-									T	
ZZZZZZ	1.00	12:42:																									
NEL-WP-1	1.00	12:43:														Γ	Ι								Π		x
CCV1	1.00	12:44:														Γ	Ι		Γ	Γ					Π	Π	x
NEL-WP-2	1.00	12:46:				T																					x
PBW	1.00	12:47:													Γ				Ι	Ι							x
LCSW	2.00	12:48:			1																						x
NEL-WP-3	1.00	12:49:		1		1						1															x
	1.00	12:50:		T			T						Γ		T	Ι	Γ	Γ	Γ	T	Γ	Γ	Γ				x
SG-14	1.00	12:51:		T					Γ						Γ	Ι	Γ	Γ	T	Τ	Γ	Γ					x
SG-13	1.00	12:52:		ŀ			-													1							x
SG-12	1.00	12:53:		1			1	1									1			T	Ī	T					x
SG-11	1.00	12:54:		T		T				Ι			Γ		Γ	Τ	Ι	Ι	Τ	T	Τ	Γ	Ι				x
DUP 040500	1.00	12:55:	11.00	1:	1	1	1.		1.											1		×.			1.		x
CCV2	1.00	12:56:		T	1	1	1	1	1						1		1	1	1	1							x
EB-040500	1.00	12:58:		T	T	T	T		Γ		Γ		Τ	Γ	T	T	T		T	T	Τ	Τ			Τ	Γ	x
ZZZZZZ	1.00	12:59:			T	T	T		Τ	T			T		T	T	Τ		T	T	Τ	Τ	Ι		Τ	Γ	
ZZZZZZ	1.00	13:00:			T	T			Ι		Τ		T	Τ	T	Τ	Τ	Τ	Τ	T	Γ	Τ					
ZZZZZZ	250.00	13:01:							Ι				Τ	Τ	Τ		T										
ZZZZZZ	1.0	13:02:		T			T	T	Τ	Τ			T	T							T						
ZZZZZZ	1.0	013:03:			T			T		T				T		T		Γ	Γ		Γ	Γ	Γ				
ZZZZZZ	1.0	013:04:		T	T				T						T	T	T		T								
222222	1.0	013:05:			T											Ι	T			T	Ι						
ZZZZZZ	1.0	0 13:06:		T					T	T	T							Τ	T	T	Ι						
ZZZZZZ	1.0	013:07:							T	T		T		T	Ι				Ι	T	Τ	T	Γ	Γ		1	
CCV3	1.0	013:08:							T				T			T											X
CB2	1.0	0 13:10:		T	T	T		T	T	T	T	T	T	T	T	T	T	T	T		T		T			1	X

\* - Denotes additional elements (other than the standard CLP elements) are represented on another Form 14

#### **TOTAL METALS**

-14-

## ANALYSIS RUN LOG

Contract: Hercules

ab	Code
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Case No.:

Cyanide

SAS No.:

SDG No.: 00H02

Instrument ID Number:

Method:" AS

|      |                                      |   |  |   |   |  |   |   | Analytes  |   |   |   |  
   
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|      | 1.00<br>5.00<br>5.00<br>1.00<br>1.00 | 1.00 14:19:<br>1.00 14:20:<br>5.00 14:21:<br>5.00 14:22:<br>5.00 14:23:<br>1.00 14:24:<br>1.00 14:25: | 1.00 14:19:<br>1.00 14:20:<br>5.00 14:21:<br>5.00 14:22:<br>5.00 14:23:<br>1.00 14:24: | 1.00     14:19:       1.00     14:20:       5.00     14:21:       5.00     14:22:       5.00     14:23:       1.00     14:24:       1.00     14:25: | 1.00       14:19:       Image: Base of the second s | 11.00       14:19:       A       S       A         1.00       14:19:       I       I         1.00       14:20:       I       I         5.00       14:21:       I       I         5.00       14:22:       I       I         5.00       14:22:       I       I         1.00       14:23:       I       I         1.00       14:25:       I       I | A       S       A       B         L       B       S       A         1.00       14:19:       I       I         1.00       14:20:       I       I         5.00       14:21:       I       I         5.00       14:22:       I       I         5.00       14:22:       I       I         1.00       14:23:       I       I         1.00       14:24:       I       I | 1.00       14:19:       A       S       A       B       B         1.00       14:19:       A       S       A       E         1.00       14:20:       A       S       A       E         5.00       14:21:       A       S       A       E         5.00       14:22:       A       S       A       E         5.00       14:22:       A       A       S       A       E         1.00       14:23:       A       A       B       S       A       E         1.00       14:25:       A       A       B       A       E       A       E | Image: A star and | 1.00       14:19:       A       S       A       B       B       C       C         1.00       14:19:       A       S       A       E       D       A         1.00       14:20:       A       A       S       A       E       D       A         5.00       14:21:       A       A       S       A       C       C         5.00       14:22:       A       A       A       A       C       C         5.00       14:22:       A       A       A       C       C       C       C         1.00       14:23:       A       A       A       C | 1.00       14:19:       A       A       B       B       C | 1.00       14:19:       A       S       A       B       B       C | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C   
   C       <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C   
   C       C&lt;</td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       C       <thc< t<="" td=""></thc<></thc<></td></thc<></thc<></td></thc<></thc<></td></thc<></thc<></td></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C       C 
     C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C&lt;</td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       C       <thc< t<="" td=""></thc<></thc<></td></thc<></thc<></td></thc<></thc<></td></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C       C       C       C       C    
  C       C <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<></td><td>D/F       Time       % R       A       S       A       B       B       C&lt;</td><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       C       <thc< t<="" td=""></thc<></thc<></td></thc<></thc<></td></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       <thc< th="">       C       <thc< th=""> <thc< th=""></thc<></thc<></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C< | D/F       Time       % R       A       S       A       B       B       C       C       C       C      
C       C <thc< th="">       C       C       <thc< t<="" td=""><td>D/F       Time       % R       A       S       A       B       B       C       <thc< th="">       C       C       <thc< t<="" td=""></thc<></thc<></td></thc<></thc<> | D/F       Time       % R       A       S       A       B       B       C <thc< th="">       C       C       <thc< t<="" td=""></thc<></thc<> |

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والمتعادية والمراسية المراسية

in .

# Blank Spike Recovery Hercules Inc. Job #18924.001

ANALYTE	ВАТСН	SPIKE RESULT	SPIKE ADDED	%REC	UNITS	METHOD
Cyanide, Total	00H02	0.216	0.207	104	mg/L	Lachat

· 75.