THIS FILE IS CLOSED

THE MATERIAL ENCLOSED IN THIS FILE BEGINS ON:

DATE: 01 DEC 2000

AND ENDS ON:

DATE: 31 July 2001

THERE IS MORE RECENT INFORMATION IN THE NEXT FILE ON THIS SITE

01 DEC 2000

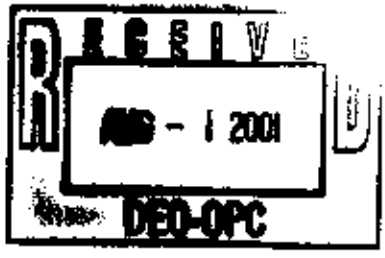
31 MAY 2001

GeoEnvironmental Associates, LLC | MARTIN&SLAGLE

ROBERT L. MARTIN, LG
Principal Geologist

CHRISTINE E. SLAGLE
Principal Scientist

July 31, 2001



FILE COPY

Ms. Gretchen Zmitrovich
Office of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289-0385

SUBJECT: Drainage Channel PCB Assessment Work Plan
Kuhlman Electric Corporation
Crystal Springs, Mississippi

Dear Ms. Zmitrovich:

Enclosed are two copies of the *Drainage Channel PCB Assessment Work Plan* for your review and approval. If you have any questions or comments, please contact Anastasia Hamel at (810) 497-4503 or me at (828) 669-3929.

Sincerely,
MARTIN & SLAGLE GEOENVIRONMENTAL ASSOCIATES, L.L.C

Robert L. Martin, L.G.
Principal Geologist

Enclosures

Cc.: Anastasia Hamel (2 copies)
Al Thomas
Tom Lupo
Scott Schang
Walter Rielley
Craig Brown
Charles O. Peel, P.G.

828.669.3929 • 828.669.5289 Fax
PO Box 1023 • 208 Sutton Avenue • Black Mountain NC 28711

City of Crystal Springs

FILE COPY

July 30, 2001

Ms. Anastasia Hamel
Director of Environmental Programs
BorgWarner, Inc.
11955 East Nine Mile Road
Warren, Michigan 48089

Re: Kuhlman Electric Corporation, Crystal Springs, MS
Borg Warner Response to EPA Comments

Dear Ms. Hamel:

We have reviewed the response to comments submitted to US EPA Region IV and to the Mississippi Department of Environmental Quality concerning the work plan for remediation of the Kuhlman plant site. We consider it inappropriate to comment on the response to comments outside the context of the revised workplan. Accordingly, we reserve the right to object to any and all issues raised by the revised workplan. We specifically remind BorgWarner, US EPA, and MDEQ that the City of Crystal Springs is a current owner of surface rights at the site and that the City of Crystal Springs has not agreed that any use restriction can be placed on the site.

The City of Crystal Springs believes the release site encompasses the entire contaminated area including private lots, the Kuhlman plant site, the drainage ditches from the site, Lake Chautauqua, and any contaminated drainage area from the lake. Accordingly, we continue our call for a comprehensive assessment plan, remediation plan, and schedule for the entire site.

The City of Crystal Springs notes especially that a risk assessment available in the public record with likely biases favorable to Borgwarner found an acceptable exposure of 50 ppm residual PCBs. To avoid straining the credibility of all involved, significant explanation will be necessary as to why a target remediation goal of 100 ppm PCBs will be proposed.

We await the revised workplan prior to further comments.

If you have any questions call me at 601/892-1210.

Sincerely,

Walter J. Rielley, III
Mayor

cc: Jerry Banks, MDEQ
Craig Brown, US EPA Region IV
Bill Stewart, Stewart Consultants, Inc.
Bill Owen, Williford, Gearhart & Knight
Bob Lawrence, City Attorney

FILE COPY

COMMENTS ON THE REMEDIATION WORK PLAN FOR KUHLMAN ELECTRIC PLANT SITE, KUHLMAN ELECTRIC CORPORATION, CRYSTAL SPRINGS, MISSISSIPPI, MAY 2001

RESTRICTED USE

The City of Crystal Springs is a current owner of surface rights at the Kuhlman plant. Comments on the proposed remediation work plan shall not be interpreted to mean the City agrees to any restricted use of the property.

The City of Crystal Springs understands MDEQ regulations to explicitly require agreement of all current owners of surface rights at the site to use restrictions as a prerequisite for MDEQ agreeing to remediation based on restricted use conditions. Absent all current owner agreement, unrestricted clean up levels, i.e. 1 ppm PCBs, applies to the site.

The City of Crystal Springs believes it premature to agree to use restrictions prior to completion of characterization and remediation plans for the drainage path to Lake Chautauqua, Lake Chautauqua, and the drainage path from Lake Chautauqua.

Data indicating concentrations of PCBs and other COCs beneath the existing plant floor slab must be provided to the City.

RISK ASSESSMENT

A. FUTURE USE

The City of Crystal Springs believes it more-probable-than-not given that the majority of businesses do not survive to 100 years of age that the current site user will not be the same user throughout the next 50 years. The City also believes that due to its location there will be considerable development pressure on the site, and, that this development pressure will likely be commercial or high density residential. Given these development pressures the city believes a future use scenario of commercial instead of industrial is most likely -- if a restricted use is to be allowed at all.

Considering plant spaces outside buildings to be low occupancy areas for future use where workers will be present less than 6.7 hours per week adds yet another use restriction to the property. In effect the space must always be parking lots. These areas should be considered potential commercial lots and be classified for future use as high occupancy areas.

The future worker scenario should be for a commercial worker on a typical (0.5 acre) commercial lot.

B. EXPOSURE PATHWAYS

The proposed risk assessment is incomplete because it fails to assess the surface soils, subsurface soils, groundwater, surface water, and sediments exposure pathways.

The presence of PCB solvents in the plant site soils and perched groundwater contamination increases the possibility for groundwater contamination. Since the absence of groundwater contamination has not been confirmed and since this is an issue of public health requiring conservative judgments, the groundwater pathway should be included in the risk assessment or data should be obtained to confirm groundwater is not contaminated. The risk assessment cannot be considered complete until groundwater contamination is ascertained.

The surface water exposure pathway should be quantified since currently available data indicate Lake Chautauqua is contaminated.

The work Plan should contain an ecological risk assessment for Lake Chautaugua, the wetlands upstream of the Lake, and any sensitive ecological areas downstream of the Lake.

C. EXPOSURE SCENARIOS

The risk assessment fails to identify and quantify risks for utility workers and site employees that live in Crystal Springs and are exposed to residual contamination at home, in groundwater, and at Lake Chautauqua.

Quantification of the vapor phase exposure is necessary for workers in the narrow confines of a trench with no air circulation and a PCB solvent present.

Averaging exposure over the entire Kuhlman site is not appropriate for trench workers and other short-term workers whose responsibilities are limited to small areas of the plant site.

The estimate of soil intake provides no justification for the 10 mg/kg PCB contamination "worse case' assumption. The maximum on-site concentration in the trench areas should be the worse case. The 24-hour PM10 NAAQS, if used, should be multiplied by 3 to account for 8-hour activities emitting the 24-hr PM10 contaminates. The validity of using the NAAQS PM10 is questionable since it is common experience that construction sites can be very dusty and emit total particulate matter in addition to PM10. The AP-42 factor for emissions from heavy construction or in-plant roads might be better estimates. Also, the area of the plant is a settled mature neighborhood with minimum dust generation sources. It is reasonable to assume that virtually all of the dust in the area will be from site construction activities. Coverings of pavement and grass should not be considered for dust suppression during construction.

The 6.6-year and 25-year occupational exposure assumptions are too short for workers in Crystal Springs. City workers have much longer work tenures. In Mississippi, seventy percent of the population is native. It is therefore a probable scenario that workers would work on the contaminated site for all of their work life. Assuming a work life starting at 20 and ending at 70 (the new social security retirement age), on-site workers exposure duration should be 50 years.

There is no showing of "technical impracticable" for areas beneath the proposed new slab, the proposed new parking, existing parking, and grassed areas. Therefore the residual cancer risk goal should be 1×10^{-6} in these areas.

Where risk based RGs are not calculated, and other regulatory goals such as MCLs are not applicable, the default RG should be the TRG or the analysis protocol non-detect level.

REMEDIATION ACTIVITIES

The work plan should present evidence that the existing building floor slab is 6 inches thick and meets the minimum thickness criteria for a cap.

The plan should specify quality control measures to ensure the new plant floor will be at least 6 inches thick.

There is no showing that the existing paving that is to serve as a cap meets the minimum cap thickness of 6 inches. Pavement areas should not be considered permanent structures. They are usually the first areas to be disrupted during occupancy changes with adjustments to landscaping among the first priorities of new owners. 40 CFR 761.125 requires that a minimum of 10 inches of soil be removed prior to leaving 1-10 ppm of PCB contamination in place. No explanation is given as to why at least 10 inches of soil beneath the existing paved areas will not be removed. This is especially important since no demonstration has been made that this pavement meets the minimum cap design requirements.

The design storm criteria for the stormwater retention pond and the disposal method for collected stormwater should be specified.

The extent of trench over-excavation in the vertical and horizontal should be specified. Six inches suggested by the specified sand backfill is not enough for the lack of precision of construction excavation. The floor and sidewalls of the excavation should be covered with geotextile to protect workers.

The plan should specify whether PCB contamination above the RG beneath utility trenches will be removed before or after installation of piping and backfill.

The plan fails to adequately identify the geotextile to be used.

There should be no maximum soil removal depth only a minimum soil removal depth of 10 inches. Removal should be controlled exclusively by the RG below ten inches deep.

The conceptual plan and detailed remediation discussions fail to distinguish between the RG for accessible soil areas (40 ppm proposed) and inaccessible soil areas (50 ppm proposed).

The buffer area of 2 feet appears to be arbitrary and too narrow. 40 CFR 761.123 requires spills within 0.1 kilometer of residential property to be cleaned to residential standards and 40 CFR 761.61 allows more stringent clean up standards based on proximity to residential dwellings, hospitals, schools...day care centers...sport fisheries, etc. all of which are located in the vicinity of the Kuhlman plant.

Averaging of samples across the entire Kuhlman site to determine accomplishment of remedial goals is unacceptable to the City. The effect of site wide averaging of sampling results is to place another use restriction on the site. The sampling and thus the remediation would achieve a passable residual risk for only the entire property area covered in the averaging. No future user of a lesser area would be ensured of protection even if no control disturbance or use change occurred. RGs derived in the risk assessment represent average exposure under the conditions of the risk assessment, not average soil concentrations. Averaging of sample results is inconsistent with the high-end exposure requirements of a deterministic risk assessment. The residual risk must be based on the highest exposure. Sampling is already an "averaging" over the sample increment. If averaging is to be acceptable to the City, it will only be acceptable after a through review of the averaging method (the current method reference citation is insufficient to locate the source) and, if the plant site is broken into (1) the area of the proposed new slab, (2) individual high contaminate concentration areas, and (3) other areas at commercial lot increments (0.5 acres).

For determination of sampling grid size the site should be broken into (1) the area beneath the proposed new slab, (2) the areas of high PCB concentrations, and (3) areas outside the foundation slabs divided into commercial lot sizes (0.5 acres).

Procedures to ensure short-term construction workers are not exposed for more than 125 days on site should be specified.

Five copies of any Remediation Report must be submitted to the City of Crystal Springs.

POST REMEDIATION ACTIONS

Inspection files should be maintained on-site for a minimum of five years. Notice should be given to MDEQ and the City when sediments are observed in site runoff.

The NPDES stormwater permit should be formally modified to incorporate PCB monitoring.

Add a requirement that repair of the cap must begin within 72 hours of discovery of damage.

IT Corporation
11560 Great Oaks Way, Suite 500
Alpharetta, GA 30022-2424
Tel. 770.475.8994
Fax. 770.777.9545

A Member of The IT Group

the igroup

July 24, 2001

Ms. Gretchen Zmitrovich
Mississippi Department of Environmental Quality
101 West Capital Street
Jackson, MS 39210

Mr. Craig Brown
US Environmental Protection Agency
61 Forsyth Street, SW
Atlanta, GA 30303

Subject: Revised Soil Removal Work Plan Submittal
AKT Gravel Pit
Crystal Springs, MS

Dear Ms. Zmitrovich and Mr. Brown:

On behalf of Kuhlman Electric Corporation, IT Corporation is submitting the attached work plan for Soil Removal at the AKT Gravel Pit. The submittal is in response to a requirement of Administrative Order 4165-00 of the Mississippi Commission of Environmental Quality. The work plan has been revised from the plan dated April 19, 2001, based on the request from additional site data..

If you have any questions, please contact me at (770) 677-7790 or Scott Schang of Latham & Watkins at (202) 637-2115.

Sincerely,
IT Corporation

A. Robert Thompson, CHMM
Operations Manager

attachment

cc: Thomas Minnich - Kuhlman Electric Corporation
Paul Acheson - Kuhlman Electric Corporation
Al Thomas - Kuhlman Electric Corporation
Scott Schang - Latham & Watkins
Anastasia Hamel - BorgWarner Inc.
Thomas Lupo - Seyfarth, Shaw, Fairweather & Geraldson
Richard Craig - Marsh Risk & Insurance Services

GeoEnvironmental Associates, LLC | MARTIN&SLAGLE

ROBERT L. MARTIN, LG
Principal Geologist

CHRISTINE E. SLAGLE
Principal Scientist

MEMO

To: Gretchen Zmitrovich
From: Martin & Slagle
Date: July 18, 2001

Re: Revised Maps for Site Remediation Reports
Medical Center and Dabney-Smith Properties
Crystal Springs, Mississippi

Enclosed please find two copies of the revised maps for Medical Center Property.

If you have any questions, please feel free to contact me at (828) 669-3929.

D. J. Martin

Administrative Assistant
Martin & Slagle

DJM/dbm
Enclosures

828.669.3929 • 828.669.5289 Fax
PO Box 1023 • 208 Sutton Avenue • Black Mountain NC 28711

GeoEnvironmental Associates, LLC | MARTIN&SLAGLE FILE COPY

ROBERT L. MARTIN, LG
Principal Geologist

CHRISTINE E. SLAGLE
Principal Scientist

July 13, 2001

Ms. Gretchen Zmitrovich
Office of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289-0385

SUBJECT: Revised Maps for Site Remediation Reports
Medical Center and Dabney-Smith Properties
Crystal Springs, Mississippi

Dear Ms. Zmitrovich:

Enclosed are revised maps for the Site Remediation Reports for the Medical Center and Dabney/Smith properties in Crystal Springs, Mississippi submitted to the Mississippi Department of Environmental Quality (MDEQ) in April 2001. Laboratory data sheets are included for samples GS-1, GS-2, and GS-3, which were collected from beneath the shed buildings on the Dabney/Smith property.

Two sets of maps for each site are included in this submittal. All information included in this package should be attached to the appropriate Site Remediation Report when transmitted to the property owners.

If you have any questions or comments, please contact me at (828) 669-3929.

Sincerely,
MARTIN & SLAGLE GEOENVIRONMENTAL ASSOCIATES, L.L.C

Robert L. Martin

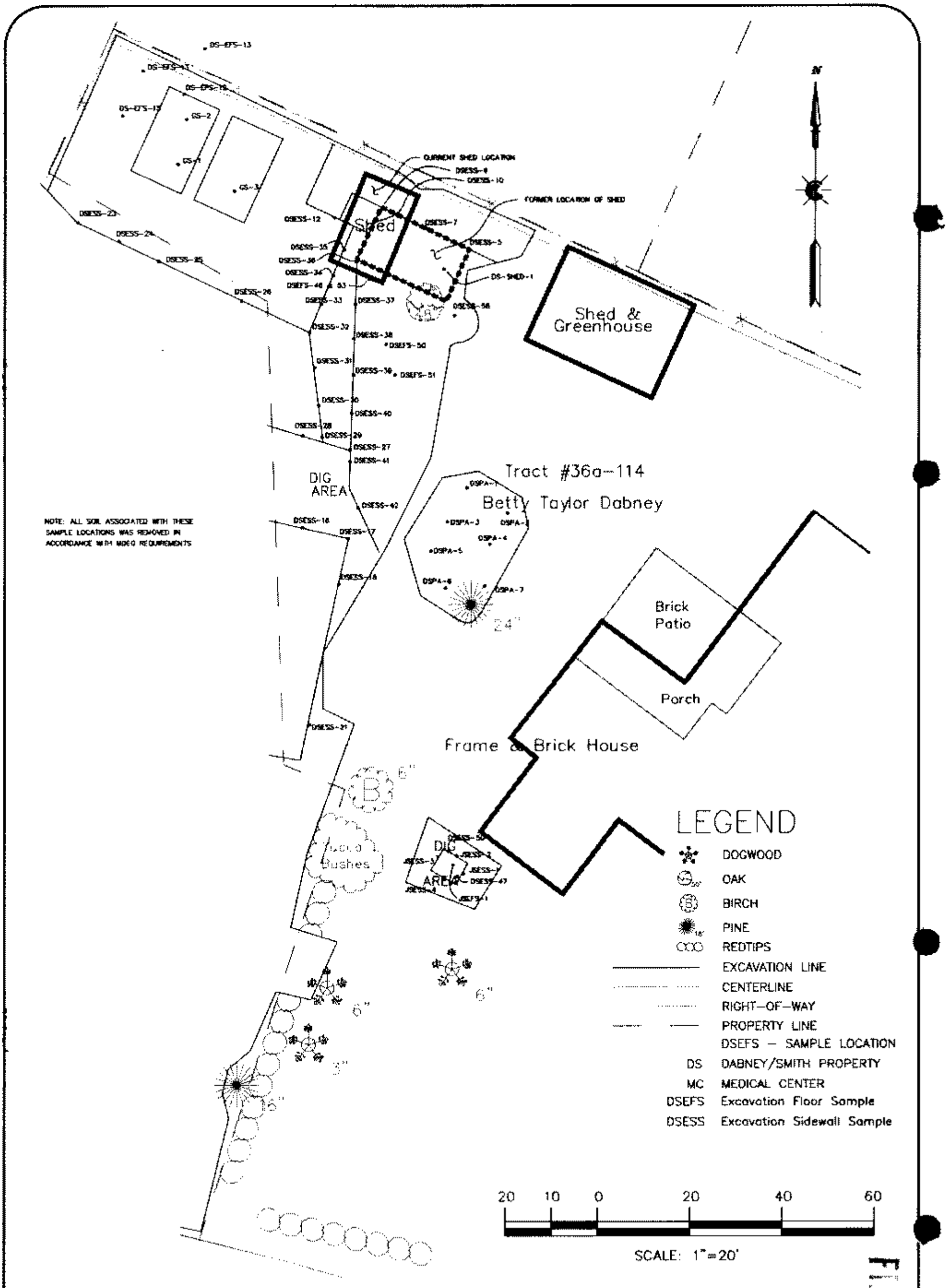
Robert L. Martin, L.G.

Principal Geologist

Attachments

Cc.: Anastasia Hamel (2 copies)
Al Thomas
Tom Lupo
Scott Schang
Walter Rielley

828.669.3929 • 828.669.5289 Fax
PO Box 1023 • 208 Sutton Avenue • Black Mountain NC 28711



GeoEnvironmental Associates, LLC MARTIN&SLAGLE PO Box 1023 Black Mountain NC 28711 828.669.3929 828.669.5289	PREPARED FOR: **BorgWarner Inc.**	SURVEYED BY: *MAPTECH, INC.* PROJECT NO.: BW00-1 DWG NO.: 326A-0343-1100-103-01c DRWN. DGR CHK. RLM REV: 1 DATE: 7/13/01	SITE REMEDIATION Dabney Smith Property SAMPLE LOCATION MAP	SCALE 1"=20'	FIGURE 3

LEGEND

- CENTERLINE
- RIGHT-OF-WAY
- PROPERTY LINE
- EXCAVATION LINE
- • MCEFS = SAMPLE LOCATION
- MC MEDICAL CENTER PROPERTY
- DS DABNEY/SMITH PROPERTY
- MCEFS Excavation Floor Sample
- MCESS Excavation Sidewall Sample
- OAK
- PINE

NOTE: ALL SOIL ASSOCIATED WITH THESE SAMPLE LOCATIONS WAS REMOVED AND DISPOSED OF IN ACCORDANCE WITH MDEQ REQUIREMENTS.

N

Shed

DIG AREA

Tract #36a-114.1

Dr. William F. Kraoss, II

&

Dr. Micheal H. Albert

DIG AREA

Covered Carport

1 Story Brick Bldg.

DIG AREA

Porch

DIG AREA

DIG AREA

LEE AVENUE

20 10 0 20 40 60

SCALE: 1"=20'

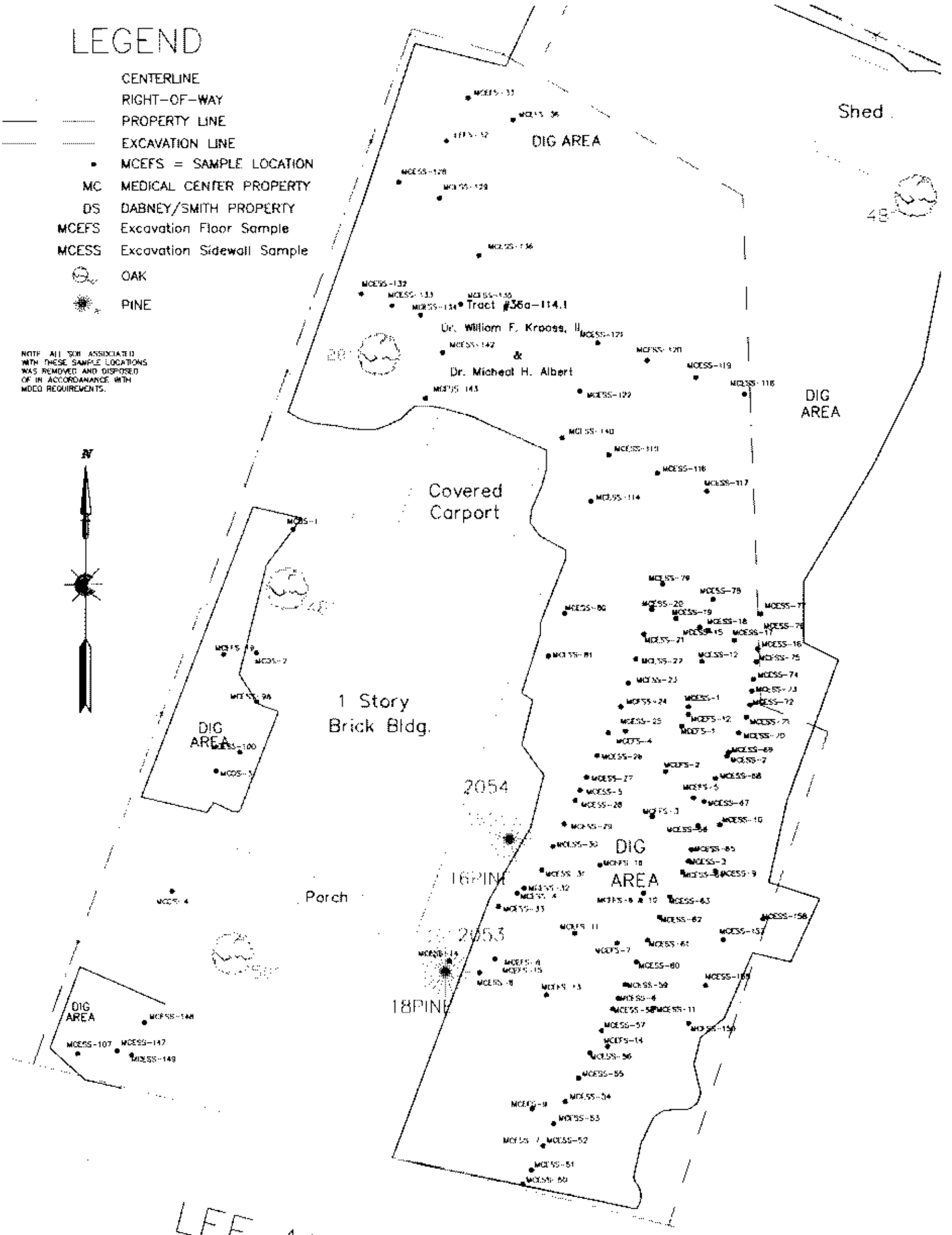
GeoEnvironmental Associates, LLC MARTIN&SLAGLE PO Box 1023 Black Mountain NC 28711 828.669.3929 828 669 5289	PREPARED FOR: **BorgWarner Inc.**	SURVEYED BY: *MAPTECH, INC.* PROJECT NO.: BW00-1 DWG NO. 324A-0343-1100-103-01c DRWN: DGR CHK: RLM REV: 1 DATE: 7/13/01	SITE REMEDIATION Medical Center SAMPLE LOCATION MAP	SCALE 1"=20'	FIGURE 3

FILE COPY

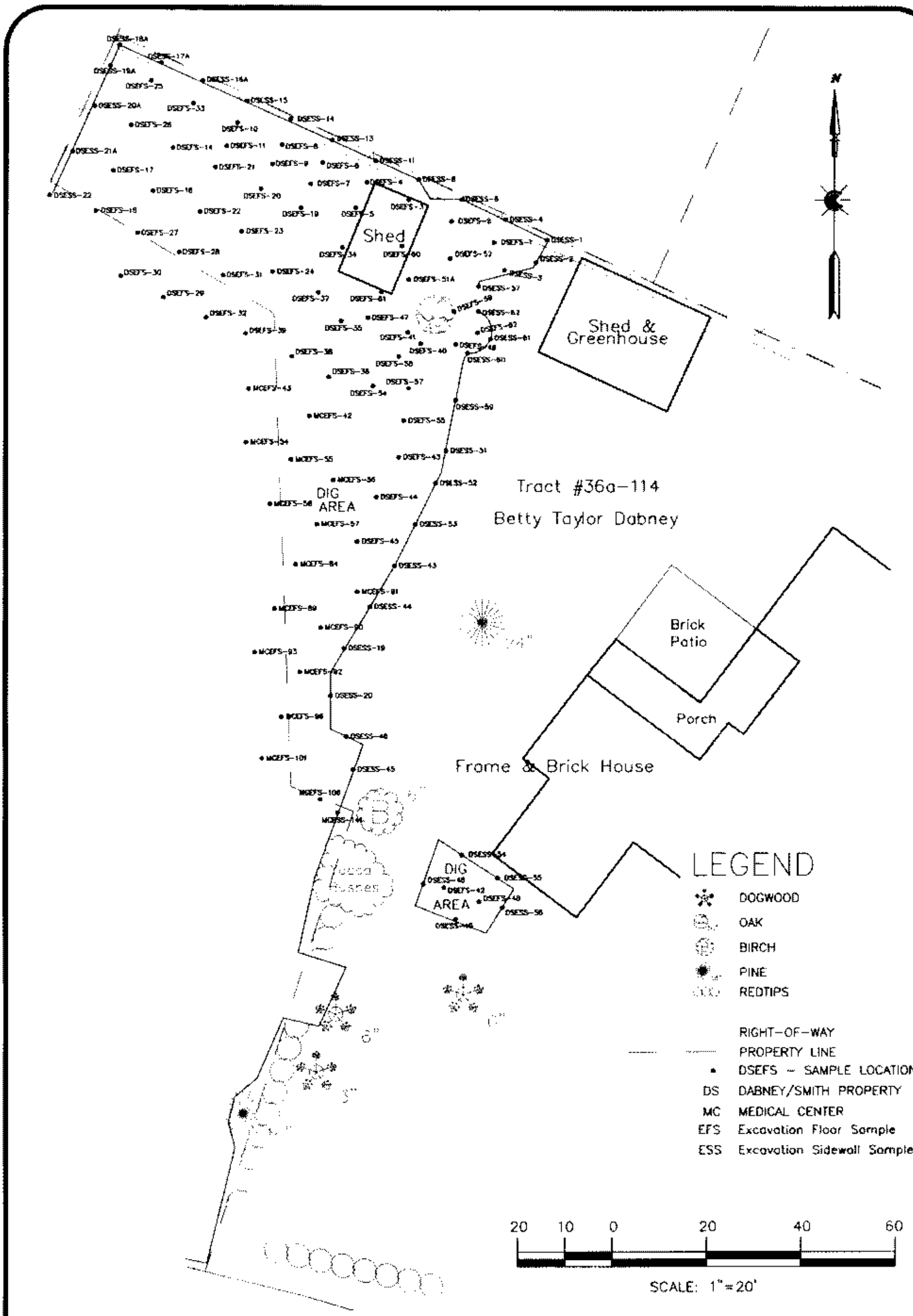
LEGEND

- CENTERLINE
- RIGHT-OF-WAY
- PROPERTY LINE
- EXCAVATION LINE
- MCEFS = SAMPLE LOCATION
- MC MEDICAL CENTER PROPERTY
- DS DABNEY/SMITH PROPERTY
- MCEFS Excavation Floor Sample
- MCESS Excavation Sidewall Sample
- OAK
- PINE

NOTE: ALL SOIL ASSOCIATED WITH THESE SAMPLE LOCATIONS WAS REMOVED AND DISPOSED OF IN ACCORDANANCE WITH MDEQ REQUIREMENTS.



GeoEnvironmental Associates, LLC MARTIN&SLAGLE PO Box 1023 Black Mountain NC 28711 828.669.3929 828.669.5289	PREPARED FOR: **BorgWarner Inc.**	SURVEYED BY: *MAPTECH, INC.*	SITE REMEDIATION Medical Center Property SAMPLE LOCATION MAP PROJECT NO.: BW00-1 DWG NO: 324A-0343-1100-102-01c DRWN: DGR CHK: RLM REV: 1 DATE: 7/13/01	SCALE 1"=20'	FIGURE 3

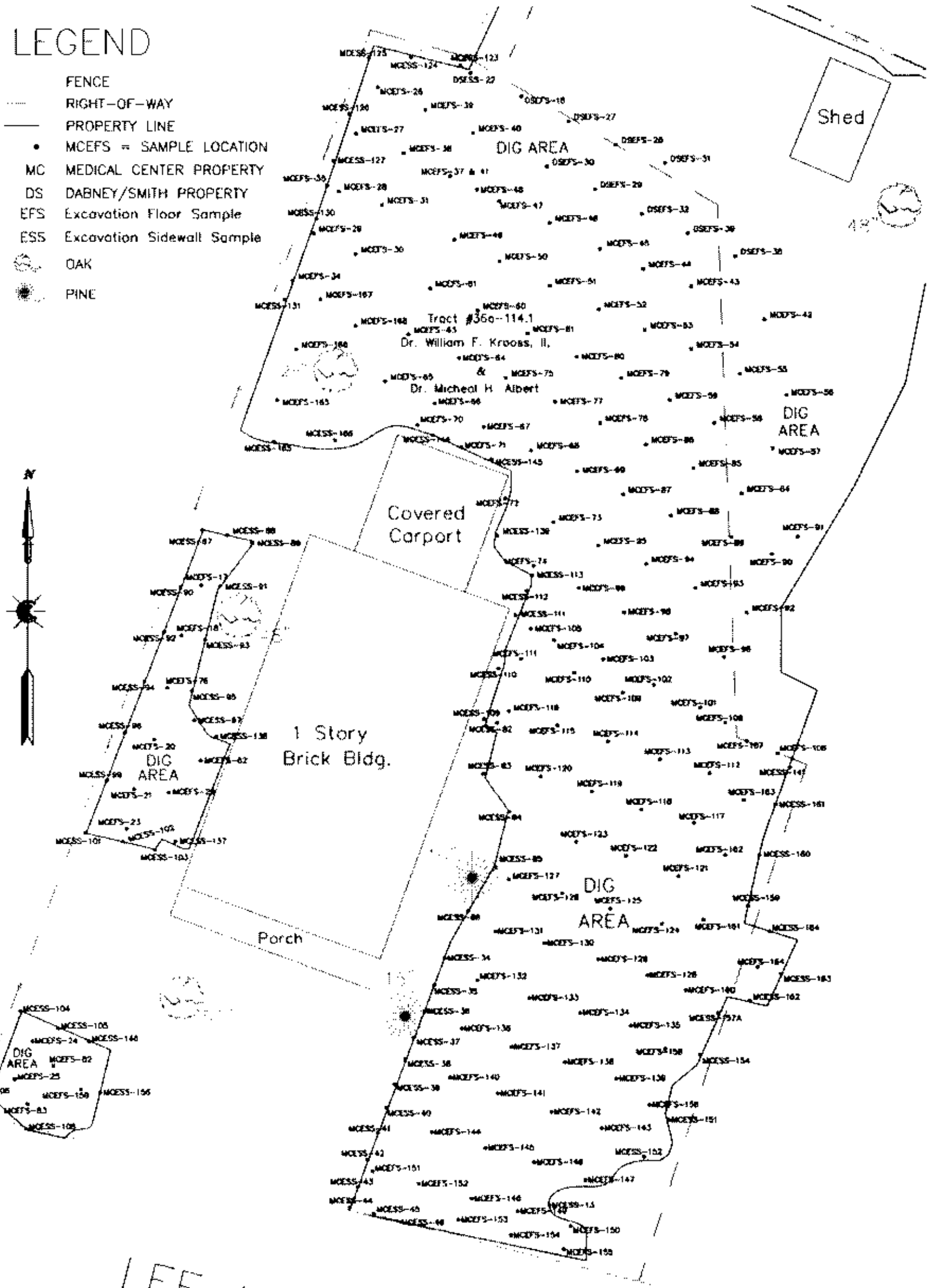


MARTIN&SLAGLE PO Box 1023 Black Mountain NC 28711 828.669.3929 828.669.5289	PREPARED FOR: **BorgWarner Inc.**	SURVEYED BY: *MAPTECH, INC.* PROJECT NO.: BW00-1 DWG NO.: 324A-0343-1100-103-01c DRWN: DGR CHK: RLM REV: 3 DATE: 7/13/01	SITE REMEDIATION Dabney Smith Property SAMPLE LOCATION MAP	SCALE 1"=20'	FIGURE 2

FILE COPY

LEGEND

- FENCE
- RIGHT-OF-WAY
- PROPERTY LINE
- MCEFS = SAMPLE LOCATION
- MC MEDICAL CENTER PROPERTY
- DS DABNEY/SMITH PROPERTY
- EFS Excavation Floor Sample
- ESS Excavation Sidewall Sample
- OAK
- PINE



CeuEnvironmental Associates, LLC MARTIN&SLAGLE PO Box 1023 Black Mountain NC 28711 828.669.3929 828.669.5289	PREPARED FOR: **BorgWarner Inc.**	SURVEYED BY: *MAPTECH, INC.*	SITE REMEDIATION Medical Center Property SAMPLE LOCATION MAP PROJECT NO.: BW00-1 DWG NO: 324A-0343-1100-102-01e DRWN: DGR CHK: RLM REV: 3 DATE: 7/13/01	SCALE 1"=20'	FIGURE 2

FILE COPY

January 26, 2001

Robert Martin
Martin & Slagle, LLC
P.O. Box 1023
Black Mountain, NC 28711

Dear Mr. Martin,

Enclosed is the final Technical Memorandum for work completed at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi during the month of October. If you have any questions concerning this information, please give me a call.

Sincerely,

Richard Johnson

Richard Johnson

Enclosure

Environmental Chemistry Consulting Services, Inc.
2525 Advance Road • Madison, WI 53718 • Phone (608) 221-8700 • FAX (608) 221-4889

TECHNICAL MEMORANDUM

January 26, 2001

To: Robert Martin
Martin & Slagle, LLC

From: Richard Johnson
ECCS, Inc.

Re: Field Analytical Methods – QC Summary
Borg Warner – Kuhlman Electric Facility
Crystal Springs, Mississippi

INTRODUCTION

This Technical Memorandum provides documentation of the field analytical test methods used to analyze soil samples collected on October 27, 2000 during an accelerated site investigation episode at the former Borg Warner and current Kuhlman Electric facility in Crystal Springs, Mississippi. Soil samples were analyzed for polychlorinated biphenyls (PCBs) and chlorinated benzenes by gas chromatography (GC) in accordance with ECCS's Polychlorinated Biphenyl (PCB) Mini Extraction Screening Procedure. A summary of test results is provided in Table 1. A summary of method blanks, laboratory control samples and matrix spike/matrix spike duplicate data is provided in Table 2.

The PCB mini-extraction procedure is based on the existing EPA SW846 methods 8082/8141. The procedure incorporates all the quality control rigors of the full 8082/8141 methods including quantification based on 6-point calibration with continuing calibration verification, surrogate method performance monitoring, method blanks, laboratory control samples (LCS), and matrix spike/matrix spike (MS/MSD) duplicate samples. As such, you should consider these test results as comparable to what you would get from a fixed-based laboratory using the more-widely accepted extraction procedure.

The primary project objective of the sampling and testing episode was to delineate the PCB contamination at and around the site using the accelerated site characterization approach. The mobile laboratory was required to provide data as quickly as possible to keep the accelerated site investigation process on track while trying to maintain a goal of level three data quality.

CASE NARRATIVE

During the one-day episode, 3 samples were collected and analyzed. To maintain rapid turnaround and to meet the project objective, two GCs were operated on a nearly continuous basis.

Quality control including proper calibration, continuing calibration verification, surrogates, method blanks, laboratory control samples and matrix spike/matrix spike duplicate samples was performed at the method-specified intervals. Overall quality of the data is very good. *The following quality related issues should be noted:*

1. All surrogate recoveries were within acceptable ranger.

2. All LCS recoveries were within acceptable ranges. See Table 2.

3. All MS/MSD recoveries were within acceptable ranges. Percent repeatability was also within acceptable ranges. See Table 2.

METHOD SUMMARY

This method employs a mini-extraction procedure and gas chromatography analysis for the detection of PCBs and chlorinated benzenes. Reporting limits are provided in the results Tables. Four grams of sample are dried with anhydrous sodium sulfate and extracted with eight mLs of 80/20 iso-octane/acetone. The extract is then analyzed by Gas Chromatography-Electron Capture Detector (GC-ECD).

Procedure

1. Standards Preparation - Primary standards are prepared from a solution purchased from various vendors at Certified concentrations. Stock standards are prepared in suitable solvents and stored in a freezer when not in use. Secondary standards are prepared in 80/20 iso-octane/acetone and stored in a freezer when not in use. Standard curve mixes for this project was prepared at six concentrations: PCBs – 0.05, 0.10, 0.20, 0.50, 1.0 and 2.0 ug/m; chlorinated benzenes – 0.005, 0.01, 0.02, 0.05, 0.10 and 0.20 ug/ml.

2. Sample Preparation - SOILS: Each sample or quality control sample is prepared in identical fashion. Approximately four grams of silica sand (blanks and control spikes) or sample is transferred into a clean scintillation vial. Four grams of anhydrous sodium sulfate are added to the vial and mixed well. Extra sodium sulfate is added when necessary to assure the sample is dried. A surrogate, spike compound mix (if necessary) and eight mLs of 80/20 iso-octane/ acetone are added to the vial. The vial is shaken for 30 seconds, allowed to settle for 2 minutes, shaken again for 30 seconds, and allowed to settle for 10 minutes. An aliquot of the extract is transferred to an autosampler vial for injection into the GC-ECD.

3. GC-ECD Analysis - A sample aliquot is injected into an HP5890 GC with an ECD equipped with an HP ChemStation for data processing. PCBs were identified by matching retention times of standards to the same retention time in the sample. Regression analysis was performed on each of the selected peak's height verses concentration of the standard using a LN/LN transformed linear regression. For PCBs nine peaks were selected for quantification. The ug/mL value for each peak was added together and divided by the number of peaks selected to obtain the total PCB ug/mL result. *If interference occurred at any of the peaks, these peaks were not included in the* total, and the divisor was reduced accordingly.

4. Quality Control - Quality control consisted of the following items:
   - Continuing calibration standards analyzed every ten samples or less and at the end of a run.
   - Blank and LCS samples analyzed every twenty sample or less with a minimum of one per day.
   - MS/MSD samples analyzed every twenty samples or less with a minimum of one per day.
   - Information is documented in logbook 40 and October run sheets.

5. Instrument Conditions - Two HP5890 gas chromatographs were equipped with RTX-35 capillary columns. Each system had a Leap Technologies A200S auto-sampler and an HP ChemStation for data handling.

Technical Memorandum

Borg Warner / Kuhlman Electric

Crystal Springs, Mississippi

Table 1
FITZGERALD ESTATE PROPERTY
413 Lee Street
Crystal Springs, Mississippi
PCB Concentrations Detected in Soil

					Field Laboratory	
Field Lab Sample ID	Sample ID	Sample Depth (ft bgs)	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)
1386	GS-1		27-Oct-00	14:45	27-Oct-00	**2.2**
1387	GS-2		27-Oct-00	14:53	27-Oct-00	**17** [E]
1388	GS-3		27-Oct-00	15:04	27-Oct-00	**1.3**

[E] = Estimated value, exceeds calibration range.

Table 2

QC Summary

Lab # associated with qc samples: 1386 through 1388

	Matrix Spike	Matrix Spike Duplicate		Blank	LCS
	1386	1386		85	85
Date Analyzed:	10/27/2000	10/27/2000		10/27/2000	10/27/2000

Compound	% Rec		% Rec		% RPD	mg/kg	% Rec
PCB as 1260	140		150		-7%	< 0.1	95.7

GeoEnvironmental Associates, LLC | MARTIN&SLAGLE

FILE COPY

ROBERT L. MARTIN, LG
Principal Geologist

CHRISTINE E. SLAGLE
Principal Scientist

July 12, 2001

Craig Brown
U.S. Environmental Protection Agency, Region IV
AFC Building, 12th Floor
61 Forcyth Street, SW
Atlanta, Georgia 30303

SUBJECT: BorgWarner Inc.'s Response to EPA's Comments
Remediation Work Plan for
Kuhlman Electric Corporation Plant Site
Crystal Springs, Mississippi

Dear Mr. Brown:

Enclosed are BorgWarner Inc.'s responses to EPA's comments on the *Work Plan for Remediation of the Kuhlman Electric Corporation Plant Site* in Crystal Springs, Mississippi. BorgWarner will conduct the remediation under 40 CFR 761.61(a). Proposed changes to the work plan are described in this document.

If you have any questions or comments, please contact Anastasia Hamel at (810) 497-4503 or me at (828) 669-3929.

Sincerely,

MARTIN & SLAGLE GEOENVIRONMENTAL ASSOCIATES, L.L.C

Robert L. Martin, L.G.
Principal Geologist

Attachments

cc.: Anastasia Hamel
Walter Rielley
Al Thomas
Tom Lupo
Scott Schang
Gretchen Zmitrovich

828.669.3929 • 828.669.5289 Fax
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BorgWarner Inc.'s Response to U.S. Environmental Protection Agency Comments on the Remediation Work Plan for the Kuhlman Electric Corporation Plant Site

July 12, 2001

The U.S. Environmental Protection Agency (US EPA) issued comments to Martin & Slagle GeoEnvironmental Associates, LLC on June 21, 2001 in response to the *Remediation Work Plan for Kuhlman Electric Plant Site,* dated May 2001. The following are BorgWarner Inc.'s responses to US EPA's comments on the Work Plan.

The US EPA provided a lengthy general comment that detailed options for approaching remediation of the Kuhlman Electric Corporation (KEC) based on the current regulations. Following is BorgWarner's response to the general comment.

Response to the General Comment:

Based on the June 12, 2001 conference call with US EPA and Mississippi Department of Environmental Quality (MDEQ) representatives, BorgWarner Inc. (BorgWarner) understands that if it modifies the previously submitted Work Plan to state that soils containing concentrations greater than 100 ppm PCBs will be remediated and if it removes all references to risk assessment, then:

- The US EPA will approve the revised work plan for remediation at the Kuhlman Electric Corporation (KEC) plant site in Crystal Springs, Mississippi under the 40 CFR 761.61(a) "Self-Implementing" PCB site clean-up criteria.

- US EPA will grant a variance from the strict confirmation sampling protocol required under 40 CFR 761.61 (a) due to the size of the KEC site.

- MDEQ will accept the 40 CFR 761.61(a) "Self-Implementing" PCB site clean-up criteria for the KEC site.

BorgWarner, based on its understanding of the conditions described above, and provided it receives confirmation that US EPA and MDEQ have accepted its responses to the comments made by US EPA, will modify the previously submitted Work Plan accordingly and reissue it as a Final Work Plan for the remediation of the KEC site.

Responses to Section-Specific Comments:

The following comments are based on the assumption that BWI will pursue the self-implementing PCB Site clean-up option under §761.61 (a) but most of these comments will apply to a risk-based approval application as well.

COMMENT 1. ***Section 1.0*** *The reference to risk-based remediation goals in item 3 on page 1-6 should be revised to clarify that this is to satisfy Mississippi Department of Environmental Quality (MDEQ) site clean-up requirements.*

RESPONSE: Section 1.4 will be modified to describe the objectives and rationale to reflect the requirements under 40 CFR 761.61(a). Specifically:

- Item 1 under Section 1.4 will be changed to reflect the 40 CFR 761.61(a) 100 ppm PCB concentration clean-up criteria.
- Item 3 will be modified as follows: "Employ regulatory remediation goals based on the continuation of industrial land-use scenarios for the site."
- Item 4 will be changed to "Place restrictions in the deed to ensure that future land-use remains consistent with the current land-use."

Since the site will be remediated to a TSCA regulatory limit under 40 CFR 761.61(a), the MDEQ site clean-up requirements will not be referenced in the Final Work Plan.

COMMENT 2. ***Section 2.0*** *In order to make this clean-up plan conform to §761.61(a) clean-up goals for soil, please change the stated maximum PCB concentration from 550 ppm to 100 ppm in the first paragraph of this section and in the second paragraph on page 2-2. Also, please note that the maximum surface soil concentration without use of a cap is 25 ppm. Item 3 on page 2-1 suggests that only surface soils containing greater than 50 ppm PCBs will be capped. If this is/was BWI's intent, the RWP will have to be modified to conform to this requirement. Alternatively, the allowable limit for PCBs in surface soils for fenced, PCB marked areas is 50 ppm.*

RESPONSE: Section 2 will be revised to describe the basic remediation concept for the KEC plant site based on the criteria established in 40 CFR 761.61(a). The areas that will be remediated will qualify as "low occupancy areas," as defined in 40 CFR 761.3. Therefore, the remedial goal (RG) will be met through the removal of soil containing PCB concentrations greater than 100 ppm and disposal of such soil in a Subtitle "C" landfill.

The main clean-up criterion will be to remediate to the 100 ppm PCB concentration. However, since this remediation will be conducted in conjunction with a plant expansion/construction project, soil with PCB concentrations lower than the remedial goal will also be removed from the site as construction spoil. The additional soil, designated as construction spoil, with PCB concentrations greater than 50 ppm but less than 100 ppm will be removed and disposed in a Subtitle "C" landfill. Soil designated as construction spoil with PCB concentrations between 25 and 50 ppm will be removed and disposed in a Subtitle "D" landfill.

Engineering controls such as capping of all remaining soil with PCB concentrations between 25 and 100 ppm will be implemented. The remediation will be accomplished

under the basic assumption that the maximum PCB concentration in soils that will remain on-site will not exceed 100 ppm, unless their removal threatens the foundation and structural integrity of the existing buildings on-site.

BorgWarner understands that US EPA allows soil containing PCB concentrations of less than 25 ppm to remain uncovered. BorgWarner, however, intends to cover soils of such concentrations at the KEC site.

COMMENT 3. ***Section 3.0*** *The RWP states on page 3-1 that soils containing PCBs at concentrations of 50 ppm or greater will be segregated for off-site disposal in a hazardous waste landfill and that soil removed from the site that contains less than 50 ppm PCBs will be disposed of at an off-site state approved solid waste landfill. EPA is aware that BWI did not characterize the site in conformance with requirements specified at §761.61(a)(5)(i)(B)(2)(i) however, BWI must provide figures depicting excavation boundaries for ≥ 50 ppm and < 50 ppm PCB contaminated soil that will be removed to achieve site clean-up goals and/or to support plant expansion.*

RESPONSE: BorgWarner is aware of the 40 CFR 761.61(a)(5)(i)(B)(2)(i)sample spacing requirements. However, it is BorgWarner's understanding that both US EPA and MDEQ are satisfied with the sample spacing performed during the characterization activities as well as with the consistency of analytical results generated during the assessment phase at the KEC site.

The attached Figure 2 of the Work Plan has been revised to show the major structures planned for the KEC plant expansion. Two additional site-maps have been prepared to show the limits of excavation based on the previously conducted site soil assessments.

The attached Figure 3 of the Work Plan has been revised to show the limits of excavation to a depth of 2 feet below ground surface (bgs) for soil with PCB concentrations greater than 50 ppm as well as for soil with concentrations less than 50 ppm. The limits of excavation, as expressed by the polygons shown on the site-map, were determined based on the sampling grid and analytical data, and were conservatively expanded beyond the areas of concern.

The attached Figure 4 of the Work plan has been revised to show the excavation limits from 2 feet to 6 feet bgs for soil with PCB concentrations greater than 50 ppm.

Section 3.0 of the Final Work Plan will be modified to describe the procedure for handling disposal of the various impacted soils.

COMMENT 4. ***Section 3.0*** *The RWP states on page 3-4 that three soil stockpiles near the building expansion area will be removed and disposed. Please identify these stockpiles by number. And explain how this material will be disposed. From the July 2000, Preliminary Site Characterization Report, EPA has determined that the material in*

stockpiles 2, 4, 6 and 7 must be disposed of as > 50 ppm PCB waste. Characterization data for debris stockpile 5 were not provided. This material must be characterized prior to disposal or disposed of as > 50 ppm PCB waste.

RESPONSE: Seven stockpiles consisting of topsoil and debris from the initial construction activities are located on the north and east side of the plant property. Stockpiles 1, 2, 3, 4, 6, and 7 are soil and Stockpile 5 is asphalt rubble.

Stockpiles 2, 4, 6, and 7 have PCB concentrations in excess of 50 ppm and will be disposed of at a Subtitle "C" landfill.

Stockpiles 1 and 3 have PCB concentrations below 50 ppm and will be disposed of at a Subtitle "D" landfill.

Stockpile #5 is asphalt rubble and was not sampled for PCB content during the assessment of the KEC plant property. Stockpile #5 will be assessed for PCB content with other parking lot asphalt and concrete areas that will be disturbed during the plant expansion and remediation activities. Stockpile #5 samples will be analyzed and the entire stockpile will be disposed of in the appropriate landfill based on its PCB concentration.

Section 3 of the Final Work Plan and the associated figures will be revised to address these stockpile issues.

COMMENT 5. ***Section 3.0*** *Any soil to be removed at the discretion of the inspector as indicated on page 3-4, must be characterized in-situ if not already tested or disposed of as > 50 ppm PCB waste. Post excavation testing from a roll-off box to characterize for off-site disposal is not permissible.*

RESPONSE: All soil within the limits of the plant site was characterized *insitu* during the site assessment. Any soil that will be removed will be destined for disposal based on the analyses previously conducted and presented in the *Preliminary Site Characterization Report* (Ogden, 2000) *and Addendum to the Preliminary Site Characterization Report* (Martin & Slagle, 2001) or on analyses of confirmation samples collected by the remediation field geologists. Any sampling and analysis of soil conducted during the remediation will be for the purposes of confirmation of remediation. No additional soil assessment or sampling is anticipated or planned. No sampling of excavated soil in roll-off boxes will be conducted. Sampling and analysis of concrete and asphalt for characterization purposes will be conducted prior to disturbance of such areas. The respective text within the Final Work Plan will be modified to reflect these changes.

COMMENT 6. ***Section 3.0*** *The description of procedures for handling parking and driveway areas on page 3-5 does not state how this material will be disposed of, nor does this sub-section discuss any existing characterization data for these materials. Any*

asphalt or concrete to be removed for off-site disposal or left on-site must first be characterized, in-situ for PCB content before removal or disturbance. Otherwise, it must be removed and disposed of as > 50 ppm PCB waste.

RESPONSE: Asphalt and concrete will be sampled by the field geologist and analyzed by the on-site laboratory prior to any demolition activities. The field geologist will review the on-site laboratory analytical results and determine disposal options based on PCB concentration. The respective text within Section 3 of the Final Work Plan will be modified to reflect these changes.

COMMENT 7. ***Section 3.0*** *Page 3-7 states that samples of collected storm-water will be analyzed to profile the water for disposal. BWI must specify the criteria for disposition of this material. Applicable decontamination and disposal standards for aqueous PCB remediation waste (water) may be found at §761.79(b)(1).*

RESPONSE: Storm water runoff will be collected from the active and open construction areas in a stormwater retention basin. Storm water samples will be collected from the retention basin and analyzed for PCB concentrations by a certified laboratory. Storm water with concentrations less than 3µg/l PCB will be discharged to the storm sewer under a State of Mississippi temporary discharge permit. Storm water with concentrations greater than 3µg/l PCB will be disposed of at a PCB permitted disposal facility.

COMMENT 8. ***Section 3.0*** *On page 3-7, it is stated that covered areas will consist of at least six inches of clean topsoil and grass. Earlier in the document, it was stated that 10-inch thick clay caps would be used to cover PCB contaminated soil in unpaved areas. It's not clear how unpaved areas containing PCB contaminated soils are to be capped or covered. Clay, concrete or asphalt caps must be used in areas where the soil contains >25 ppm PCBs. The six inches of topsoil would be acceptable above a clay cap or over oil containing ≤ 25 ppm PCBs. Please provide more details on how unpaved areas are to be handled.*

RESPONSE: Unpaved areas with concentrations ≤25 ppm PCB will be covered with 6 inches of topsoil and seeded with grass. Unpaved areas with PCB concentrations >25 ppm and ≤100 ppm will be covered with a 10-inch thick engineered clay. The cap will be composed of select clay compacted to its maximum dry density based on modified proctor tests of the material and meeting the hydraulic permeability requirement of $1x10^{-7}$ cm/sec in accordance with the technical requirements of *40 CFR 761.75(b)(1)(ii).* The finished sub-grade will be covered with 6 inches of topsoil and seeded with grass. The appropriate sections of the text in the Final Work Plan will be revised to clarify these technical requirements.

COMMENT 9. ***Section 3.0*** *The confirmation sampling program described in sub-section 3.4 does not contain sufficient detail to enable EPA to understand how the referenced State of Michigan guidance document will be applied at the KEC site. Does BWI plan to collect individual grab samples for PCBs or is BWI planning to use the grab*

sample results to calculate the mean or a more conservative statistical parameter to compare to the site clean-up standard? What will happen if a grab sample result exceeds the clean-up standard? After removal of additional soil, does the proposed procedure require re-sampling the entire site or just an area of inference associated with the failed sample point?

RESPONSE: BorgWarner intends to collect grab samples of all nodes of the grid that will be laid out within the remediated area of the site. The 25-foot grid spacing was determined based on the calculation documented in the Work Plan per the State of Michigan Department of Environmental Quality Guidance Document that was referenced in the Work Plan and provided to EPA.

If a grab sample concentration exceeds the cleanup criteria, excavation will continue to a depth of at least 1 foot below the node and laterally to a distance of ½ the grid spacing in all directions from the node. Two samples will then be collected from the base of the excavation and analyzed by the on-site laboratory. Only the re-excavated area will be re-sampled if the initial result exceeds the clean-up criteria.

COMMENT 10. ***Section 6.0*** *Sub-Section 6.3 described inspection and maintenance activities for grass-covered areas. Referring to comment 8 above, if clay caps are employed in unpaved areas, BWI must include procedures for evaluating and repairing as necessary, clay caps impacted by excessive erosion.*

RESPONSE: The engineered clay cap installed in the unpaved areas will be inspected by KEC on a monthly basis. Inspection checklists will be filled out and maintained on-site for each inspection. The inspector will note any erosion, settlement, desiccation cracking of the clay, wheel ruts, scrapes, dead grass, bare spots, and any other indication that the cap structure integrity has been compromised.

Within 72 hours of discovery, KEC will begin repairs by removing all failed clay soil material to a level within the cap (but not into the underlying soil) where structurally sound cap material is observed. Clean, select clay material will then be placed in the prepared excavation and compacted to its maximum dry density based on modified proctor tests of the material and meeting the hydraulic permeability requirement of $1x10^{-7}$ cm/sec in accordance with the technical requirements of 40 CFR 761.75(b)(1)(ii). The finished subgrade will be covered with 6 inches of topsoil and seeded with grass.

These inspection and repair procedures will be added to Section 6.3 of the Final Work Plan.

COMMENT 11. ***Section 7.0*** *On page 7-3, it is stated that samples designated for fixed lab analysis will be delivered to the mobile lab where the mobile lab will take their aliquot for analysis. The sample jar will then be resealed and shipped to the fix lab where the remaining portion of the sample will be analyzed. While we do not view this practice as consistent with EPA Region 4 sampling procedures, we do not have any serious reservations about it. We would suggest that the samples designated for split*

analysis be thoroughly mixed in the field or at the mobile lab before the mobile lab takes its aliquot for analysis.

RESPONSE: A sentence will be added to the Final Work Plan describing the requirement that the field geologist will thoroughly mix every sample designated for split analysis prior to submitting the sample to the on-site lab for analysis.

FILE COPY

Gretchen Zmitrovich
07/05/2001 11:01 AM

To: ahamel@afs.bwauto.com @ INETDEQ, robmartin001@aol.com @ INETDEQ
cc:

Subject: remediation reports

I have finished reviewing the reports and revised maps for the Dabney/Smith, medical clinic, and duplex properties. In lieu of sending a formal letter, I am submitting my comments to you via e-mail in hopes of expediting the process.

Medical clinic property:
1. On Figure 3, the following sampling locations are mislabeled: MCESS-8 given as KESS-8, MCESS-117 given as E117, MCEFS-5 given as MCEFC-5, MCDS-3 given as MCD5-3, MCDS-4 given as MCD5-4. MCESS-1 is on map twice-once by 18" pine and once in driveway; only have data for one sample. There was no data submitted for the following sampling locations: MCESS-47, MCESS-48, MCESS-49, MCESS-50.

2. The following sampling locations were on both Figures 2 (revised) and Figure 3, but in different locations: MCESS-52, MCESS-53, MCESS-54.

3. On Figure 2, MCEFS-73 is on map twice-once by covered carport and once on the Dabney/Smith-medical clinic property line; only have data for one sample.

4. I have data for the following samples but they are not on either map: MCEFS-6, MCEFS-10, MCEFS-16, MCESS-14, MCESS-15.

Dabney/Smith property:
1. On Figure 3, DSEFS-50 given as DSSEFS-50.

2. On Figure 2 (revised), DSEFS-39 given as EFS-39.

3. I have data for samples DSESS-17 and DSEFS-46, but they are not on either map.

4. On Figure 3, the samples taken around the current shed location are hard to read because of the black outline of the shed. I have data for DSESS-33, DSESS-35, and DSESS-36; however, it appears that only 2 of these are on the map.

5. I took 2 split samples with Kelly on Dec 4. Samples were labeled GS-1 and GS-2. They were taken in the gravel under the roofed area where I believe Jeff kept his boats. These samples are not on the map, nor are the data included in the report.

Duplex property:
I will be issuing a no further action letter on this property.

Submit revised maps, etc. by July 16. Paulette Herring with Dr. Kruss's office has been anxiously calling me for a submittal date on the no further action letter for the medical clinic. Last month I told her by the end of June, first of July. Jeff Smith has also been awaiting his report. These properties were finished months ago and we need to get them their reports and letters as soon as possible.

FILE COPY

CITY OF CRYSTAL SPRINGS
P.O. BOX 473
210 EAST RAILROAD AVE.
CRYSTAL SPRINGS, MS 39059

F A X C O V E R S H E E T

DATE: 7-9-01 **TIME:** _____

TO: Gretchen Imitrovich **PHONE:** 601-961-5240

FAX: 601-961-5300

FROM: Odis & Patricia Robertson **PHONE:** 601/892-1210
CITY OF CRYSTAL SPGS **FAX:** 601/892-4870

RE: _____

Number of pages including cover sheet: _____

Message

I am requesting that a PCB test Analysis be done on our land, which is located on both sides of Little Coyiah Creek. The land is at the corner of Mathis Rd and Hemingston Rd 4101 Mathis. Thanks.

To: Gretchen Dmitrovich

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Consultants in Toxicology

POSSIBLE SOURCES OF

DIOXINS AND DIBENZOFURANS

AT THE KUHLMAN SITE IN CRYSTAL SPRINGS, MISSISSIPPI

BY

RICHARD A. PARENT, PHD, DABT, FATS, RAC, ERT

CONSULTOX, LIMITED

DAMARISCOTTA, MAINE

JUNE 21, 2001

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Exhibit "B"

QUINDUTOX
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POSSIBLE SOURCES OF DIOXINS AND DIBENZOFURANS AT THE KUHLMAN SITE IN CRYSTAL SPRINGS, MISSISSIPPI

One of the main components of the dielectric fluids used at Kuhlman's was Aroclor 1260, which is a mixture of polychlorinated biphenyls and, as indicated below, most probably contained chlorinated dioxins and dibenzofurans. It is my understanding that the other major components of these fluids was chlorinated benzene. The chlorinated benzenes were most probably contaminated with chlorinated dioxins and dibenzofurans. Of course, the PCBs themselves have been shown to have dioxin-like activity. These and other sources of these highly toxic materials are described below.

Dibenzofurans are known to have been produced as a result of the methods used in the commercial production of PCBs, that is, the thermal oxidative cyclization under alkaline conditions (Brown *et al.*, 1988; ATSDR, 1993). Chlorinated dibenzofurans (CDFs) in Aroclor products was first reported in 1975 (1975a, Bowes *et al.*). These authors analyzed samples of unused Aroclors manufactured in 1969 and 1970 and found CDFs containing from four to six chlorine groups per molecule in concentrations ranging from 0.8 to 2.0 mg/kg. In another study, Bowes *et al.* (1975b) used analytical methodology which allowed for congener-specific analysis and found 2,3,7,8-TCDF and 2,3,4,7,8-PeCDF in the range of 0.11 to 0.33 mg/kg and 0.12 to 0.83 mg/kg in unused Aroclor 1254 and Aroclor 1260, respectively. Erickson (1986) found total CDFs as high as 3.8 mg/kg in Aroclor 1260, while Hagenmaier (1987) reported a sample of Clophen A-60 (comparable to Aroclor 1260) contained as high as 48,681 mg/kg of total CDFs. Brown *et al.* (1988), on the other hand, reported 2,3,7,8-TCDF in Aroclor 1260 at levels as high as 63.5 μg/kg, while Hagenmaier (1987) reported levels up to 3077 μg/kg in Clophen A-60.

Dioxins were found also but at lower concentrations in unused PCB mixtures (Hagenmaier, 1987; Malisch, 1994). Clophen A-60, a comparable mixture to the Aroclor 1260, was shown by these authors to contain total dioxin levels from 22 to 46 μg/kg.

Not much data is available on the other major component of dielectric fluids used at Kuhlman (the chlorobenzenes), but the manufacturing process involves nucleophilic substitution by oxygen and pyrolysis mechanisms (Ree *et al.*, 1988) which results in the formation of CDDs and CDFs. While limited data is available on the degree of contamination of chlorobenzenes with dioxins and dibenzofurans, Hutzinger and Fiedler (1991a) have reported the finding of CDDs/CDFs in trichlorobenzene at levels ranging from 0.03 to 0.074 μg/g. They have reported also CDDs/CDFs in samples of 1,2,4,5-tetrachlorobenzene and pentachlorobenzene. In Hexachorobenzene, octachlorodibenzodioxin was found at a level of 6700 μg/kg and octachlorodibenzofuran at a level of 2830 μg/kg (Hutzinger & Fiedler, 1991a). Similarly, the same isomers were found in the range of 50 to 212,000 μg/kg and 350 to 58,300 μg/kg in samples of hexachlorobenzene (Villanueva *et al.*, 1974). CDDs/CDFs have been shown also to be

6

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generated by biotransformation from chlorophenols (Svenson *et al.*, 1989; Oberg *et al.*, 1990; Wagner *et al.*, 1990; Oberg and Rappe, 1992 and Morimoto and Kenji, 1995) and by photolysis of chlorophenols (Waddell *et al.*, 1995).

Richard A. Parent, PhD, DABT, FATS, RAC, ERT
CONSULTOX, LIMITED

6/21/01

Date

d:\secretary\4[illegible]\[illegible]2001.001L

GeoEnvironmental Associates, LLC | MARTIN&SLAGLE

ROBERT L. MARTIN, LG
Principal Geologist

CHRISTINE E. SLAGLE
Principal Scientist

June 29, 2001

Ms. Gretchen Zmitrovich
Office of Pollution Control
Mississippi Department of Environmental Quality
P.O. Box 10385
Jackson, Mississippi 39289-0385

SUBJECT: Addenda to Site Remediation Reports for Medical Center and Dabney-Smith Properties Crystal Springs, Mississippi

Dear Ms. Zmitrovich:

Enclosed are addenda to the Site Remediation Reports for the Medical Center and Dabney/Smith properties in Crystal Springs, Mississippi submitted to the Mississippi Department of Environmental Quality (MDEQ) in April 2001. Remediation of these properties is complete.

Per your request, an additional sample location map has been generated for each site showing the locations of samples collected from within the soil that has been removed from the site and disposed of in accordance with DEQ requirements. Additionally, revisions have been made to the sample location maps showing confirmation of remediation to correct minor errors. A revised summary Table 1 and a field laboratory data errata sheet for the Dabney-Smith property are also included. The revised summary Table 1 was corrected to eliminate duplicated field sample identification numbers. The errata sheet identifies the field sample ID modifications for the field lab data sheets.

Two sets of addenda for each site are included in this submittal. All information included in this package should be attached to the appropriate Site Remediation Report when transmitted to the property owners.

828.669.3929 • 828.669.5289 Fax
PO Box 1023 • 208 Sutton Avenue • Black Mountain NC 28711

If you have any questions or comments, please contact me at (828) 669-3929.

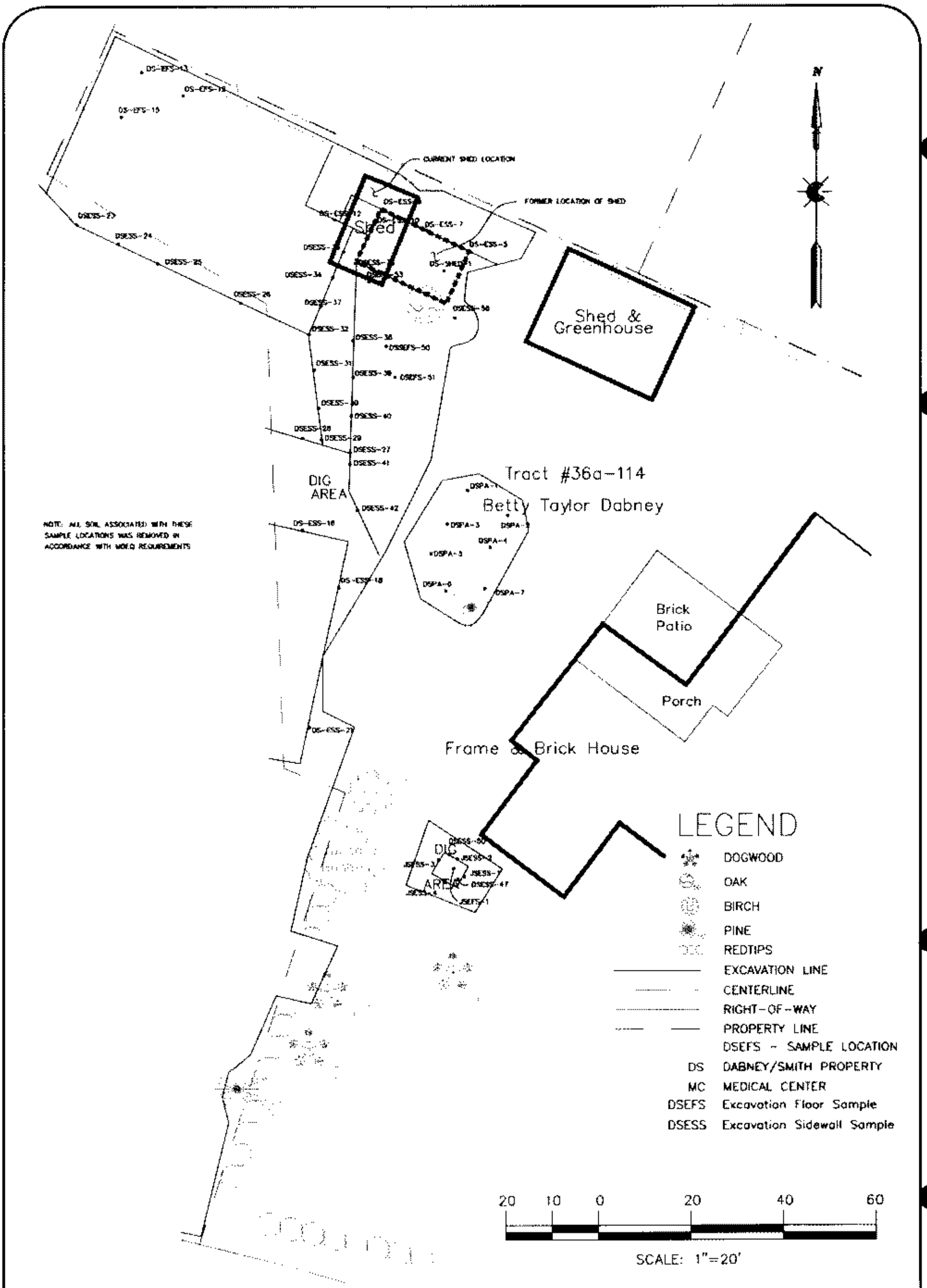
Sincerely,
MARTIN & SLAGLE GEOENVIRONMENTAL ASSOCIATES, L.L.C

Robert L. Martin, L.G.

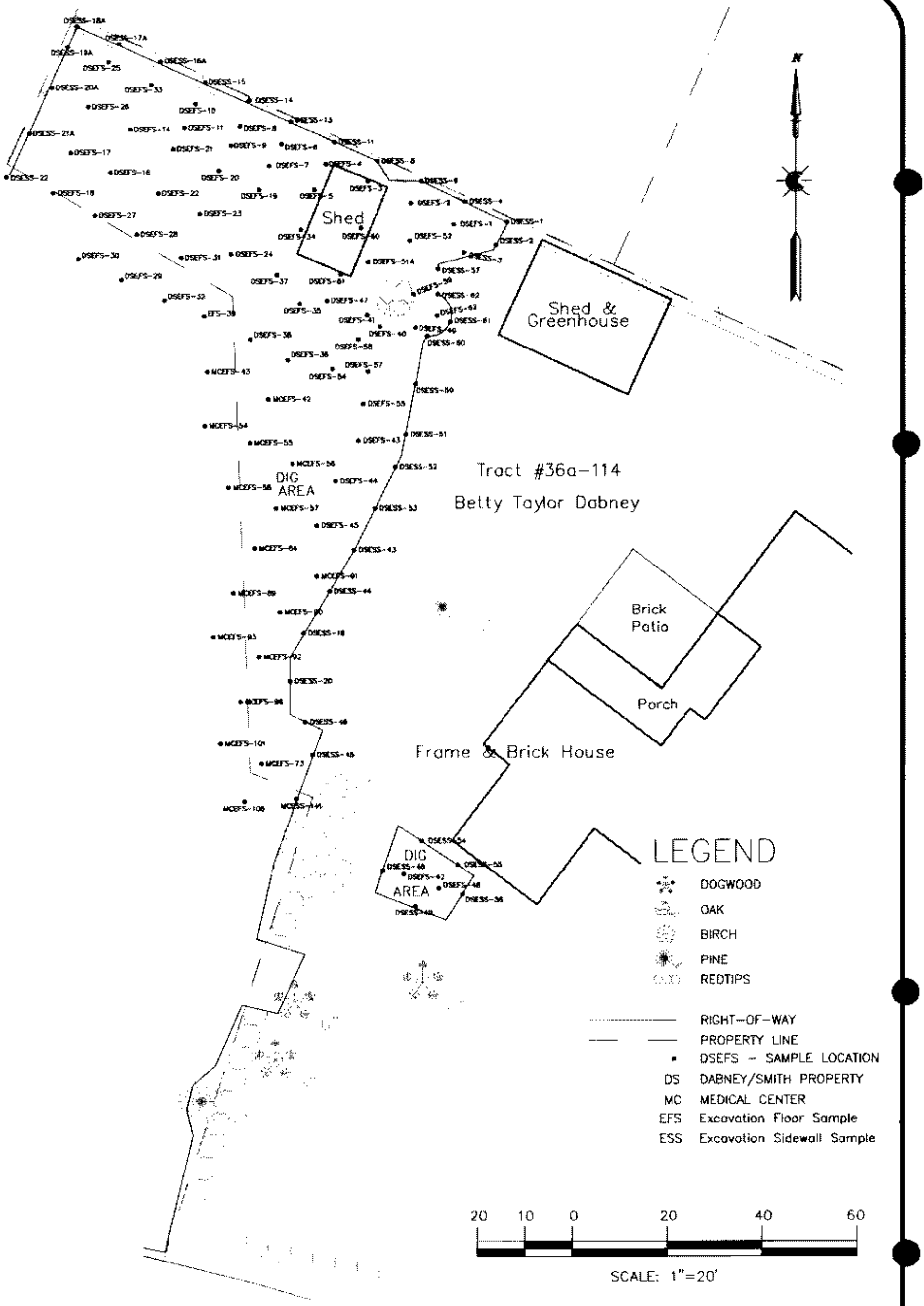
Principal Geologist

Attachments

cc.: Anastasia Hamel (2 copies)
Al Thomas
Tom Lupo
Scott Schang
Walter Rielley



Geological Environmental Associates, LLC MARTIN&SLAGLE PO Box 1023 Black Mountain NC 28711 828.669.3929 828.669.5289	PREPARED FOR: **BorgWarner Inc.**	SURVEYED BY: *MAPTECH, INC.* PROJECT NO.: BW00-1 DWG NO: 324A-0343-1100-103-01e DRWN: DGR CHK: RLM REV: 0 DATE: 6/29/01	SITE REMEDIATION Dabney Smith Property SAMPLE LOCATION MAP	SCALE 1"=20'	FIGURE 3



Geoenvironmental Associates, LLC MARTIN&SLAGLE PO Box 1023 Black Mountain NC 28711 828.669.3929 828.669.5289	PREPARED FOR **BorgWarner Inc.**	SURVEYED BY *MAPTECH, INC.* PROJECT NO: BW00-1 DWG NO: 324A-0343-1100-103-01a DRWN. RRB | CHK. RLM | REV 0 | DATE 4/12/01	SITE REMEDIATION Dabney Smith Property SAMPLE LOCATION MAP	SCALE 1"=20'	FIGURE 2

TABLE 1
SUMMARY OF DATA SHOWING CONFIRMATION OF REMEDIATION

				Field Laboratory		Fixed Laboratory	
Field Lab Sample ID	Sample ID	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Date Analyzed	Concentration (mg/kg)
1428	DS-ESS-1	29-Oct-00	12:29	29-Oct-00	0.82	14-Nov	0.71
1429	DS-ESS-2	29-Oct-00	12:31	29-Oct-00	< 0.10		
1430	DS-ESS-3	29-Oct-00	12:33	29-Oct-00	0.65		
1431	DS-ESS-4	29-Oct-00	12:34	29-Oct-00	0.99		
1432	DS-ESS-5	29-Oct-00	12:38	29-Oct-00	**1.8**		
1433	DS-ESS-6	29-Oct-00	12:40	29-Oct-00	0.72		
1435	DS-ESS-8	29-Oct-00	12:42	29-Oct-00	0.93		
1438	DS-ESS-11	29-Oct-00	12:44	29-Oct-00	0.64		
1440	DS-ESS-13	29-Oct-00	12:46	29-Oct-00	**2.1**		
1441	DS-ESS-14	29-Oct-00	12:47	29-Oct-00	**1.9**	15-Nov	1.6
1442	DS-ESS-15	29-Oct-00	12:48	29-Oct-00	**1.1**		
1443	DS-EFS-1	29-Oct-00	12:36	29-Oct-00	< 0.10		
1444	DS-EFS-2	29-Oct-00	12:38	29-Oct-00	< 0.10		
1445	DS-EFS-3	29-Oct-00	12:39	29-Oct-00	0.34		
1446	DS-EFS-4	29-Oct-00	12:41	29-Oct-00	< 0.10		
1447	DS-EFS-5	29-Oct-00	12:46	29-Oct-00	< 0.10		
1448	DS-EFS-6	29-Oct-00	12:43	29-Oct-00	< 0.10		
1449	DS-EFS-7	29-Oct-00	12:48	29-Oct-00	< 0.10		
1450	DS-EFS-8	29-Oct-00	12:44	29-Oct-00	< 0.10		
1451	DS-EFS-9	29-Oct-00	12:54	29-Oct-00	< 0.10		
1452	DS-EFS-10	29-Oct-00	12:50	29-Oct-00	< 0.10		
1453	DS-EFS-11	29-Oct-00	12:52	29-Oct-00	< 0.10		
1467	DS-ESS-19	29-Oct-00	14:36	30-Oct-00	0.60		
1468	DS-ESS-20	29-Oct-00	14:37	30-Oct-00	0.13		
1470	DS-ESS-16A*	30-Oct-00	12:21	30-Oct-00	**1.7**		
1471	DS-ESS-17A*	30-Oct-00	12:29	30-Oct-00	**1.9**	16-Nov	1.8
1472	DS-ESS-18A*	30-Oct-00	12:37	30-Oct-00	**16** [E]		
1473	DS-ESS-19A*	30-Oct-00	12:38	30-Oct-00	**22** [E]		
1474	DS-ESS-20A*	30-Oct-00	12:38	30-Oct-00	**33** [E]		
1475	DS-ESS-21A*	30-Oct-00	12:41	30-Oct-00	**33** [E]		
1476	DS-ESS-22	30-Oct-00	12:42	30-Oct-00	**9.2** [E]		
1479	DS-EFS-14	30-Oct-00	12:25	30-Oct-00	0.67		
1481	DS-EFS-16	30-Oct-00	12:27	30-Oct-00	< 0.10	16-Nov	<.096
1482	DS-EFS-17	30-Oct-00	12:33	30-Oct-00	0.18		
1483	DS-EFS-18	30-Oct-00	12:35	30-Oct-00	< 0.10		
1484	DS-EFS-19	30-Oct-00	16:20	30-Oct-00	< 0.10		
1485	DS-EFS-20	30-Oct-00	16:24	30-Oct-00	< 0.10		
1486	DS-EFS-21	30-Oct-00	16:28	30-Oct-00	< 0.10		
1487	DS-EFS-22	30-Oct-00	16:32	30-Oct-00	< 0.10		
1488	DS-EFS-23	30-Oct-00	16:36	30-Oct-00	< 0.10		
1489	DS-EFS-24	30-Oct-00	16:40	30-Oct-00	< 0.10		
1503	DS-EFS-25	31-Oct-00	13:45	31-Oct-00	< 0.10		
1504	DS-EFS-26	31-Oct-00	15:40	31-Oct-00	< 0.10		
1531	DS-EFS-29	01-Nov-00	14:45	01-Nov-00	0.18		
1532	DS-EFS-30	01-Nov-00	14:42	01-Nov-00	0.12		
1533	DS-EFS-27	01-Nov-00	14:40	01-Nov-00	< 0.10		

Samples shown in bold were collected from locations along the common boundary with KEC.

* The "A" designation is added to selected field sample IDs to distinguish them from duplicated field sample IDs.

TABLE 1
SUMMARY OF DATA SHOWING CONFIRMATION OF REMEDIATION

				Field Laboratory		Fixed Laboratory	
Field Lab Sample ID	Sample ID	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Date Analyzed	Concentration (mg/kg)
1534	DS-EFS-28	01-Nov-00	14:46	01-Nov-00	< 0.10		
1535	DS-EFS-31	01-Nov-00	14:53	01-Nov-00	< 0.10		
1536	DS-EFS-32	01-Nov-00	14:55	01-Nov-00	< 0.10		
1552	DS-ESS-43	02-Nov-00	16:05	02-Nov-00	0.26		
1553	DS-ESS-44	02-Nov-00	16:15	02-Nov-00	0.19		
1555	DS-EFS-33	03-Nov-00	12:30	03-Nov-00	< 0.10		
1556	DS-EFS-34	03-Nov-00	12:35	03-Nov-00	< 0.10		
1557	DS-EFS-35	03-Nov-00	12:40	03-Nov-00	< 0.10		
1558	DS-EFS-36	03-Nov-00	12:45	03-Nov-00	< 0.10		
1559	DS-EFS-37	03-Nov-00	12:55	03-Nov-00	< 0.10		
1560	DS-EFS-38	03-Nov-00	13:00	03-Nov-00	< 0.10		
1561	DS-EFS-39	03-Nov-00	13:20	03-Nov-00	0.44		
1614	DS-ESS-45	07-Nov-00	9:30	07-Nov-00	0.44		
1615	DS-ESS-46	07-Nov-00	9:25	07-Nov-00	0.32		
1697	DS-EFS-40	15-Nov-00	14:15	15-Nov-00	< 0.10		
1698	DS-EFS-41	15-Nov-00	14:17	15-Nov-00	< 0.10		
1776	DS-ESS-51	27-Nov-00	16:38	27-Nov-00	0.17		
1777	DS-ESS-52	27-Nov-00	16:40	27-Nov-00	0.42		
1778	DS-ESS-53	27-Nov-00	16:41	27-Nov-00	0.39	11-Dec	0.21
1779	DS-EFS-43	28-Nov-00	8:54	28-Nov-00	< 0.10		
1780	DS-EFS-44	28-Nov-00	8:55	28-Nov-00	< 0.10		
1781	DS-EFS-45	28-Nov-00	8:56	28-Nov-00	< 0.10		
1786	DS-EFS-47	28-Nov-00	14:02	28-Nov-00	0.31		
1806	DS-EFS-49	30-Nov-00	13:31	05-Dec-00	0.57		
1822	DS-EFS-51A	05-Dec-00	15:50	05-Dec-00	0.29		
1823	DS-EFS-52	05-Dec-00	15:51	05-Dec-00	< 0.10		
1824	DS-ESS-57	06-Dec-00	13:50	06-Dec-00	0.78	11-Dec	<.14
1826	DS-EFS-54	06-Dec-00	14:02	06-Dec-00	0.34		
1827	DS-EFS-55	06-Dec-00	14:06	06-Dec-00	< 0.10		
1829	DS-ESS-59	07-Dec-00	10:04	07-Dec-00	0.92		
1830	DS-EFS-57	07-Dec-00	10:00	07-Dec-00	0.31		
1831	DS-EFS-58	07-Dec-00	10:01	07-Dec-00	0.33		
1832	DS-EFS-59	07-Dec-00	10:02	07-Dec-00	< 0.10	21-Dec	<.20
1833	DS-EFS-60	07-Dec-00	17:00	07-Dec-00	< 0.10		
1834	DS-EFS-61	07-Dec-00	17:01	07-Dec-00	< 0.10	21-Dec	<.20
AA09856	DS-ESS-60	27-Jan-01	8:14	01-Feb-01	0.20		
AA09857	DS-ESS-61	27-Jan-01	8:15	01-Feb-01	0.63		
AA09858	DS-ESS-62	27-Jan-01	8:16	01-Feb-01	0.44		
1566	MC-EFS-42	03-Nov-00	14:05	03-Nov-00	< 0.10		
1567	MC-EFS-43	03-Nov-00	14:10	03-Nov-00	< 0.10		
1573	MC-EFS-54	03-Nov-00	14:48	04-Nov-00	< 0.10		
1574	MC-EFS-55	03-Nov-00	14:50	03-Nov-00	< 0.10		
1575	MC-EFS-58	03-Nov-00	14:58	04-Nov-00	< 0.10		
1582	MC-EFS-56	03-Nov-00	14:52	04-Nov-00	< 0.10		
1583	MC-EFS-57	03-Nov-00	14:55	04-Nov-00	< 0.10		
1650	MC-EFS-84	07-Nov-00	15:50	08-Nov-00	< 0.10		
1655	MC-EFS-89	07-Nov-00	15:56	08-Nov-00	< 0.10		

Samples shown in bold were collected from locations along the common boundary with KEC.

* The "A" designation is added to selected field sample IDs to distinguish them from duplicated field sample IDs.

TABLE 1
SUMMARY OF DATA SHOWING CONFIRMATION OF REMEDIATION

				Field Laboratory		Fixed Laboratory	
Field Lab Sample ID	Sample ID	Date Collected	Time Collected	Date Analyzed	Concentration (mg/kg)	Date Analyzed	Concentration (mg/kg)
1656	MC-EFS-90	07-Nov-00	15:57	08-Nov-00	< 0.10	18-Nov-00	<0.11
1657	MC-EFS-91	07-Nov-00	15:58	08-Nov-00	< 0.10		
1658	MC-EFS-92	07-Nov-00	15:59	08-Nov-00	< 0.10		
1659	MC-EFS-93	07-Nov-00	16:00	08-Nov-00	< 0.10		
1662	MC-EFS-96	07-Nov-00	16:03	08-Nov-00	0.11		
1666	MC-EFS-101	07-Nov-00	16:08	08-Nov-00	0.12		
1671	MC-EFS-106	07-Nov-00	16:13	08-Nov-00	0.12		
1602	MC-EFS-73	04-Nov-00	16:37	05-Nov-00	< 0.10		
1616	MC-ESS-141	07-Nov-00	9:20	07-Nov-00	0.73		

Samples shown in bold were collected from locations along the common boundary with KEC.
* The "A" designation is added to selected field sample IDs to distinguish them from duplicated field sample IDs.

ERRATA SHEET

Field Laboratory Report
Site Remediation
Dabney-Smith Property
April 2001

1. The prefix "DS" is changed to "JS" per the field notes and chain of custody record for the following field sample identification numbers:

Field Lab Sample ID	Sample ID	Sample Depth (ft bgs)	Date Collected	Time Collected	New Sample ID
1381	DS-ESS-1		26-Oct-00	17:40	JS-ESS-1
1382	DS-ESS-2		26-Oct-00	17:44	JS-ESS-2
1383	DS-ESS-3		26-Oct-00	17:46	JS-ESS-3
1384	DS-ESS-4		26-Oct-00	17:48	JS-ESS-4
1385	DS-EFS-1		26-Oct-00	17:42	JS-EFS-1

2. The suffix "A" is added to the following sample designations:

Field Lab Sample ID	Sample ID	Sample Depth (ft bgs)	Date Collected	Time Collected	New Sample ID
1470	DS-ESS-16		30-Oct-00	12:21	DS-ESS-16A
1471	DS-ESS-17		30-Oct-00	12:29	DS-ESS-17A
1472	DS-ESS-18		30-Oct-00	12:37	DS-ESS-18A
1473	DS-ESS-19		30-Oct-00	12:38	DS-ESS-19A
1474	DS-ESS-20		30-Oct-00	12:38	DS-ESS-20A
1475	DS-ESS-21		30-Oct-00	12:41	DS-ESS-21A

3. The following sample ID was changed from DS-EFS-61 to DS-EFS-62.

Field Lab Sample ID	Sample ID	Sample Depth (ft bgs)	Date Collected	Time Collected	New Sample ID
AA09859	DS-EFS-61		27-Jan-01	8:10	DS-EFS-62

LEGEND

- FENCE
- RIGHT-OF-WAY
- PROPERTY LINE
- MCEFS = SAMPLE LOCATION
- MC MEDICAL CENTER PROPERTY
- DS DABNEY/SMITH PROPERTY
- EFS Excavation Floor Sample
- ESS Excavation Sidewall Sample
- OAK
- PINE

Shed

DIG AREA

Tract #36a-114.1
Dr. William F. Krooss, II,
&
Dr. Michael H. Albert

DIG AREA

Covered Carport

1 Story Brick Bldg.

DIG AREA

DIG AREA

Porch

LEE AVENUE

N

20 10 0 20 40 60

SCALE: 1"=20'

GeoEnvironmental Associates, LLC MARTIN&SLAGLE PO Box 1023 Black Mountain NC 28711 828.669.3929 828.669.5289	PREPARED FOR: **BorgWarner Inc.**	SURVEYED BY: *MAPTECH, INC.*	SITE REMEDIATION Medical Center Property SAMPLE LOCATION MAP PROJECT NO.: BW00-1 DWG NO: 3244-0343-1100-102-01c DRWN: RRB CHK: RLM REV: 0 DATE: 6/12/01	SCALE 1"=20'	FIGURE 2