FINAL

WORK PLAN

FOR

MODIFICATION No. 4 TO THE REVISED FINAL COMPLIANCE STATUS REPORT INVESTIGATION

FOR

FORMER FIRE TRAINING AREA (HAA-01)
HUNTER ARMY AIRFIELD
SAVANNAH, GEORGIA

Prepared for

U.S. Army Corps of Engineers
Savannah District
Contract Number DACA21-97-D-0034-0011
Delivery Order 0011

Prepared by

Law Engineering and Environmental Services, Inc.
3200 Town Point Drive
Kennesaw, Georgia 30144

October 2001

LAWGIBB GROUP

October 28, 2001

U.S. Army Corps of Engineers Savannah District
Attn: Mr. Michael Sydow, P.E.
CESAS-PM-H
100 West Oglethorpe Avenue
Savannah, Georgia 31402-0889

Subject: **Final Work Plan for Modification No. 4 to the Revised Final Compliance Status Report Investigation Former Fire Training area, Hunter Army Airfield Contract No. DACA21-97-D-0034-0011 LAW Project No. 12001-9-3411**

Dear Mr. Sydow:

Law Engineering and Environmental Services, Inc. (LAW) is pleased to submit this Final Work Plan to the Revised Final Compliance Status Report Investigation for additional field activities to be conducted at the Former Fire Training Area, Hunter Army Airfield, Savannah, Georgia. This field effort represents Modification No. 4 to LAW's Basic Statement of Work to provide Updated Compliance Status Report activities for the Former Fire Training Area.

All reviewer comments on the Draft Work Plan have been incorporated into this final document. This Final Work Plan addresses the technical approach for the additional investigations and closely correlates with the technical approach submitted with the Fee Proposal for Modification No. 4.

We look forward to providing theses services to assist the Fort Stewart and Hunter Army Airfield environmental compliance and restoration programs. Please contact us at (770) 421-3400 if you have any questions.

Sincerely,

LAW ENGINEERING AND ENVIRONMENTAL SERVICES, INC.

David M. Wilderman, P.G.
Senior Geologist

David B. Goershel, P.G.
Deputy Program Manager

cc: see attached distribution list

Addressee	Copies
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Commander HQ 3rd Infantry Division (Mechanized) and Fort Stewart Attention: Ms. Melanie Little 5729 East 110th Place Tulsa, OK 74137	1

PROJECT REVIEW COMMENTS			Date: 10-19-01	1 of 2 Pages
Project Name, & Location: CSR at FTA, Hunter Army Airfield, GA		To: LAW (D.Wilderman)	From: *(Section)* CESAS-EN-GH *(Reviewer) Wes Smith*	
Cmt. No.	Page No./ Section No.	COE Type comments here:	A-E Response: A-E type your response here.	COE Review Action & Date
1	Dist. List	Melanie's new address is: 5729 East 110th Place Tulsa, OK 74137	Acknowledged.	
2	List of Abbreviations	Unites States **Army** Corps of Engineers, Savannah District	Text Modified.	
3	Page 1-1 2nd Para.	Unites States **Army** Corps of Engineers, Savannah District	Text Modified.	
4	Page 3-2 2nd Para.	...will be advanced **up** to 4 to 5....	Text Modified.	
5	Page 3-3 2nd Para	One soil sample will be collected for laboratory analysis **from the depth intervals shown in Table 1** from each of the soil borings SB-45.....	Text Modified.	
6	Page 3-3 Last Para.	~~**Existing**~~ **M**onitoring well HMW-22....	Text Modified.	

☒ Continued on Next Page ☐ End of Comments

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PROJECT REVIEW COMMENTS			2 of 2 Pages:
CSR at FTA, Hunter Army Airfield, GA		From: *(Section)* *(Reviewer)*	CESAS-EN-GH Wes Smith

Cmt. No.	Page No./ Section No.	COE Type comments here:	A-E Response: A-E type your response here.	COE Review Action & Date
7	Page 3-4 3rd Para.	Well development will be completed at least 48 ~~**days**~~ **hours** before sampling….	Text Modified.	
8	Page 3-6 IDW Sec.	LAW should profile IDW and provide disposal recommendations. Fort Stewart will review disposal recommendations and concur if appropriate.	Text Modified.	
9	Page 3-7 Sec.3.9	The CESAS **and Fort Stewart** will review the document…..	Text Modified.	

☐ Continued on Next Page ☒ End of Comments

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3200 Town Point Drive
Kennesaw, Georgia 30144

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LIST OF ABBREVIATIONS AND ACRONYMS

bgs	below ground surface
CESAS	United States Army Corps of Engineers, Savannah District
CSR	Compliance Status Report
DQE	Data Quality Evaluation
EPD	Environmental Protection Division
FID	Flame ionization detector
ft	feet
FTA	Former Fire Training Area
HSRA	Hazardous Site Response Act
HSI	Hazardous Site Inventory
IDW	investigation-derived waste
ID	inside diameter
LAW	Law Engineering and Environmental Services, Inc.
NTU	Nephelometric turbidity unit
OD	outside diameter
PID	Photoionization detector
QCSR	Quality Control Summary Report
RCRA	Resource Conservation Recovery Act
RRS	Risk Reduction Standard
SVOCs	semi-volatile organic compounds
TOC	top of casing
TBD	to be determined
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VOCs	volatile organic compounds
WWTP	Wastewater Treatment Plant

1.0 INTRODUCTION

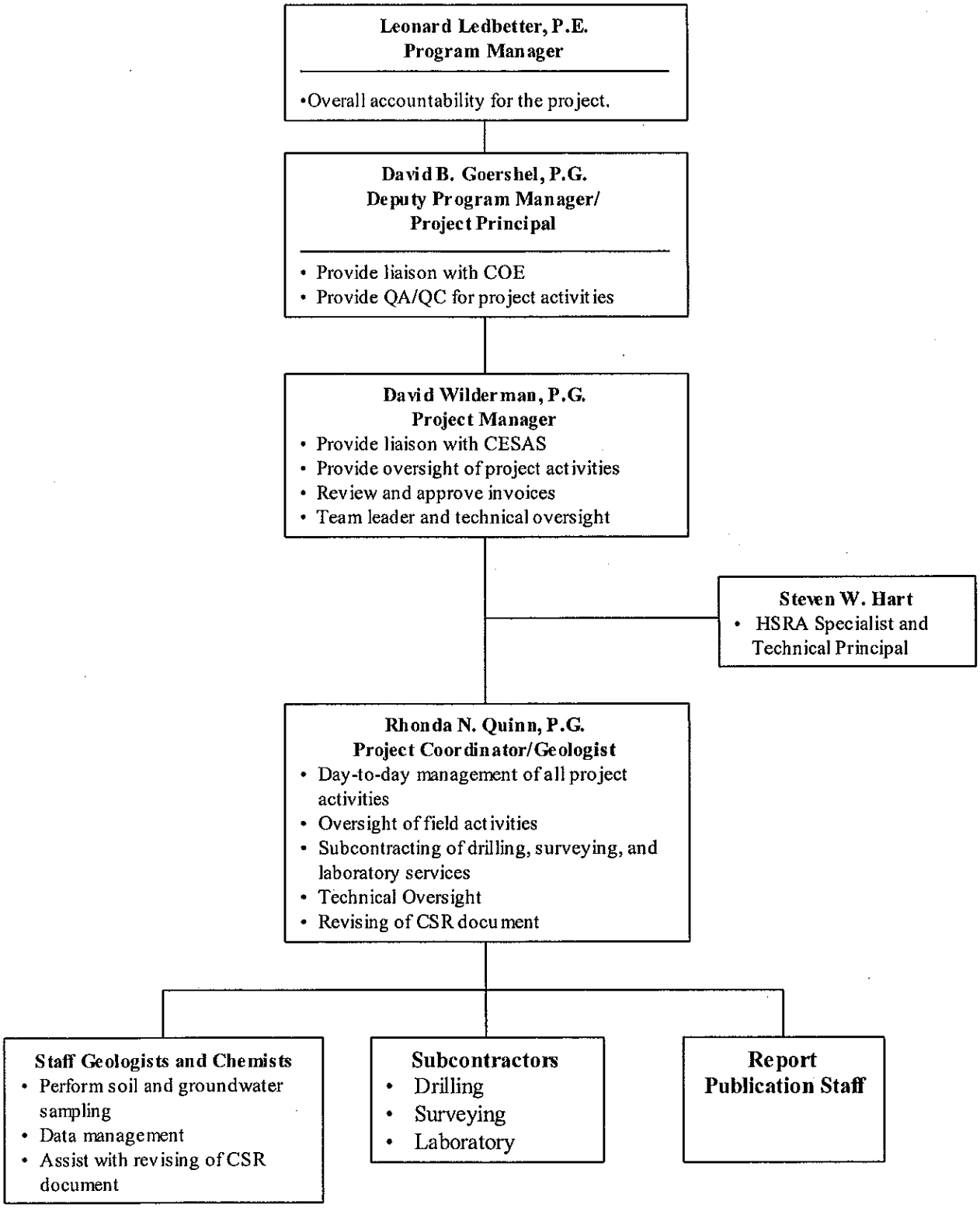
This Work Plan supplements the *Final Work Plan Addendum for Compliance Status Report (CSR) for the Former Fire Training Area, Hunter Army Airfield* (LAW, 1999a) and the *Letter Work Plan, Modification No. 1 Updated Compliance Status Report* (LAW, 1999b). This Work Plan is submitted to support additional field investigation, data analysis and reporting efforts to revise the Compliance Status Report (CSR), dated March 31, 2000, for the Former Fire Training Area at Hunter Army Airfield in Savannah, Georgia.

Law Engineering and Environmental Services, Inc. (LAW) was contracted by the United States Army Corps of Engineers, Savannah District (CESAS) to provide a CSR for the Former Fire Training Area (FTA) at Hunter Army Airfield in Savannah, Georgia. The CSR was submitted to the Georgia Environmental Protection Division (EPD) on March 31, 2000. The Georgia EPD provided comments in a letter of Notice of Deficiency on the CSR on January 5, 2001. Fort Stewart/Hunter Army Airfield responded to the comments with Response to Comment documents on March 5 and April 19, 2001 proposing additional field investigations to complete delineation of soil and groundwater contamination. On May 8, 2001, the Georgia EPD accepted the responses to comments and the proposed additional field investigations. The additional field investigations to support the revision of the March 31, 2000 CSR include collecting soil samples from 10 soil borings, installing 2 new monitoring wells and collecting groundwater samples in the 2 new wells, and collecting groundwater samples from 2 existing wells at the Former FTA. Six surface water samples will be collected from drainage ditches located adjacent to the Former FTA by CESAS personnel.

The data collected from the additional soil and groundwater samples and the surface water data will be used along with the existing data to complete the delineation of the soil and groundwater contamination at the Former FTA. The new and existing analytical and hydrogeologic results will be presented in the revised CSR.

2.0 PROJECT ORGANIZATION

The organization for the project is presented below.



3.0 FIELD ACTIVITIES

Field activities for the Former Fire Training Area (FTA) will consist of collecting soil samples from 10 soil borings, installing 2 new monitoring wells, and collecting groundwater samples from the 2 new monitoring wells and 2 existing wells. CESAS personnel will collect surface water samples from 6 locations in the adjacent drainage ditches. The soil and groundwater sampling locations are shown on Figure 1. The surface water sampling locations will be determined in the field by CESAS personnel.

The soil, groundwater, and surface water samples will be analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), chromium, barium, and the eight Resource Conservation Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver). Tables 1 through 3 provide summaries of the soil, groundwater, and surface water sampling programs.

3.1 SOIL BORINGS AND SOIL SAMPLING

A total of 10 soil borings will be advanced for the collection of soil samples for laboratory analyses. These soil samples will be used to further delineate the horizontal and vertical extent of metals, VOCs, and SVOCs previously detected in the soils at the Former FTA. Eight of the soil borings (SB-43 to SB-50) will be advanced at locations shown on Figure 1. Two additional soil borings (SB-51 and SB-52) will be located in the field based upon the analytical results of the soil samples collected from the initial 8 borings. The proposed sample depths and laboratory analyses are summarized on Table 1.

The rationale for the soil sampling is described as follows. Subsurface (greater than 2 feet below ground surface [bgs]) soil samples from soil boring SB-43 will be used to delineate VOCs and SVOCs that were previously detected in the subsurface soils at HMW-14R. Soil samples from soil boring SB-43 will also be used to delineate chromium above site-specific background concentrations that was previously detected in the subsurface soil at HMW-13. Subsurface soil samples from soil boring SB-44 will be used to delineate SVOCs previously detected in the subsurface soils at SB-30 and chromium which was previously detected in the subsurface soil at HMW-13. A surface (0 to 2 feet bgs) soil sample from soil boring SB-45 will be used to delineate SVOCs previously detected in the surface soil at SB-35.

Subsurface soil samples from soil boring SB-46 will be used to delineate VOCs and SVOCs previously detected in the subsurface soils at HMW-14R and chromium which was previously detected in the subsurface soils at HMW-13. A subsurface soil sample from soil boring SB-47 will be used to delineate barium above site-specific background concentration that was previously detected in the subsurface soils at SB-13. A subsurface soil sample from soil boring SB-48 will be used to delineate chromium above site-specific background concentrations, which was previously detected in the subsurface soils at HMW-11. Surface soil samples from soil borings SB-49 and SB-50 will be used to delineate SVOCs that were previously detected in the surface soils at SB-35. Soil borings SB-51 and SB-52 will be advanced if there are data gaps in the soils data from soil borings SB-43 to SB-50 used to delineate the extent of soil contamination.

Three of the soil borings (SB-43, SB-44, and SB-46) will be advanced to groundwater while 5 of the soil borings (SB-45, SB-47, SB-48, SB-49, and SB-50) will be advanced up to 4 to 5 feet bgs as shown on Table 1. Soil borings SB-51 and SB-52 will be advanced to depth based on the analytical results of the soil samples collected from the initial 8 borings (SB-43 to SB-50). Soil borings advanced to groundwater will be drilled with a truck-mounted drill rig equipped with hollow-stem augers. Soil sampling and penetration testing will be performed in general accordance with ASTM D 1586 and USACE guidance document EM200-1-3 *Requirements for the Preparation of Sampling and Analysis Plan*. Soil samples will be collected continuously on two-foot centers from the ground surface to groundwater. Soil samples will be obtained with a standard 1.375-inch inside diameter (ID), 2-inch outside diameter (OD), steel split-tube sampler. The sampler will be first seated 6 inches to penetrate loose cuttings, and then driven an additional 12 inches with blows of a 140-pound hammer falling 30 inches. Borings advanced to less than five feet bgs will be advanced using stainless-steel hand augers.

The soil samples will be screened in the field for potential contamination using a headspace gas analysis and visual evidence. A small portion of each soil sample will be placed in a self-sealing plastic bag and placed to the side to allow for volatilization. A flame ionization detector (FID) or a photoionization detector (PID) will be used to analyze the headspace gas in the bag. The FID and PID give a relative response to the presence of VOCs, but do not identify individual VOC constituents. The soil samples will also be inspected for visual evidence of contamination, e.g., free-phase product and/or staining. The results of the field screening will be used to select samples for laboratory analysis. Soil samples from split-tube samplers will be gently removed from the split-tube and placed on clean aluminum foil and

securely wrapped and sealed with the aluminum foil and placed on ice pending the results of the headspace gas analysis and completion of visual inspection.

One to two soil samples will be selected from each borehole (Table 1) for laboratory analysis. Two soil samples will be selected for laboratory analysis from each of the soil borings SB-43, SB-44 and SB-46. One of the soil samples will be selected from the vadose zone for laboratory analyses from the two-foot interval exhibiting the highest detected organic vapor concentration in the headspace and/or has visual evidence of contamination. The second soil sample selected for laboratory analysis will be from the two-foot interval in the vadose zone prior to encountering groundwater, which is estimated to be 8 to 10 feet bgs. One soil sample will be collected for laboratory analysis from the depth intervals shown in Table 1 from each of the soil borings SB-45, SB-47, SB-48, SB-49, and SB-50. Soil samples for laboratory analyses from soil borings SB-51 and SB-53 will be selected based on the analytical results of the soil samples from the initial 8 soil borings.

Soil samples designated for VOC analysis will be collected using EnCore™ sampling devices. Three EnCore™ samples will be collected from the two-foot interval selected for laboratory analysis.

Each soil sample will be analyzed for either VOCs, SVOCs, barium or chromium. Table 1 specifies the laboratory analyses for each soil sample. The soil samples will be analyzed on 24 to 48-hours laboratory turn around-times as shown on Table 1.

The soil borings will be properly abandoned or completed as permanent monitoring wells upon completion of soil sampling. Soil boring SB-43 will be completed as monitoring well HMW-21 and soil boring SB-46 will be completed as monitoring well HMW-22. Soil borings SB-44, SB-45, and SB-47 through SB-52 will be properly abandoned by filling the borehole with a cement-bentonite grout tremied from the bottom of the borehole to the ground surface.

3.2 MONITORING WELL INSTALLATION AND GROUNDWATER SAMPLING

Two additional monitoring wells (HMW-21 and HMW-22 on Figure 1) will be installed north of the dirt road that bounds the northern portion of the Former FTA. The monitoring wells will be installed to fill data gaps related to delineation of the extent of VOC groundwater contamination previously detected in monitoring well HMW-14R. Monitoring well HMW-21 will be installed in soil boring SB-43 upon

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completion of soil sampling. Monitoring well HMW-22 will be installed in soil boring SB-46. Monitoring well HMW-21 will be installed within mature woodlands and will require moderate clearing to obtain access to the proposed well location. Monitoring wells HMW-3 and HMW-14R will be sampled and analyzed to confirm previous analytical results.

The monitoring wells will be installed via the hollow-stem auger method using 6.25-inch I.D. hollow stem augers. The monitoring wells will be installed such that approximately 7 feet of water will be available in the well. Therefore, each well may be installed to a depth less or greater than 20 feet depending upon site conditions. The monitoring wells will be constructed of 2-inch diameter, Schedule 40 PVC screen and riser. Based upon sand pack and screen size calculations, a 10-foot length of 0.006-inch slotted screen and 30/60 sand pack will be used to construct each monitoring well. The remainder of the monitoring wells will be installed in accordance with guidance set forth in U.S. Army Corps of Engineers document EM1110-1-4000, *Monitoring Well Design, Installation, and Documentation at Hazardous and/or Toxic Waste Sites.* The monitoring wells will be installed under the direction of a Georgia Registered Professional Geologist.

The monitoring wells will be developed using pump-and-surge techniques by using either a bladder pump equipped with surge rings or a Whale™ pump and a surge block. The monitoring wells will be developed until a minimum of 5 well volumes have been removed, the nephelometric turbidity units (NTUs) are below 5 and less than 0.1-foot of sediment remains at the bottom of the monitoring well, and pH, specific conductance, and temperature measurements have stabilized. Based upon historical records, it is anticipated that the monitoring wells can be developed within 6 hours of development time. In the event the monitoring wells cannot be developed within the 6 hour maximum, the CESAS Technical Project Manager will be notified for direction. Well development will be completed at least 48 hours before sampling of the new monitoring wells. A picture of the groundwater collected from the developed monitoring well will be made of at least a one liter clear glass sample container of the water, using 35 mm color print film, suitable back-light and background, and close enough to show the clarity of the water.

The two new and two existing monitoring wells will be sampled using low-flow sampling techniques with either a peristaltic pump and teflon-lined tubing or stainless steel and teflon bladder pump. Groundwater samples will be collected and analyzed for VOCs, SVOCs, and total RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver) as outlined on Table 2. Per USACE guidance (EM200-1-3) and USEPA Region IV Standard Operating Procedures (USEPA, 1996), the monitoring

well will be purged until a minimum of 3 well volumes have been removed, until pH, specific conductance, and temperature have stabilized and the turbidity is less than 5 NTUs. Decontamination of the equipment will be conducted in accordance with procedures set forth in USACE guidance document EM200-1-3 *Requirements for the Preparation of Sampling and Analysis Plans*. In the event that turbidity cannot be reduced to less than 5 NTUs during the anticipated purging time, the CESAS Technical Project Manager will be notified for direction.

3.3 WATER LEVEL MEASUREMENT

A complete set of water-level measurements will be collected from monitoring wells HMW-1 through HMW-22, including HMW-14R, prior to demobilization from the site. Procedures and equipment for water-level measurements are presented in USACE guidance document EM200-1-3 *Requirements for the Preparation of Sampling and Analysis Plans*.

3.4 SURFACE WATER SAMPLING

Six surface water samples will be collected and analyzed from the drainage ditches that are adjacent to the former FTA to determine if the groundwater discharge to the ditches is affecting surface water quality. CESAS personnel will locate the six surface water sampling locations in the drainage ditches that are adjacent to the former FTA. The surface water samples will be collected at the stormwater discharge points into the ditches and at two locations downstream. CESAS personnel will also collect the surface water samples and submit the samples to the analytical laboratory for analysis. Each surface water sample will be analyzed for VOCs, SVOCs, and RCRA metals (Table 3). CESAS will provide LAW with the analytical data from the surface water samples. LAW will conduct a data quality evaluation of the surface water analytical data and include the data in the revised CSR.

3.5 SURVEYING OF SAMPLING LOCATIONS

Each of the soil boring, groundwater monitoring well, and surface water sampling locations will be surveyed by a licensed surveyor. The horizontal locations will be surveyed to the closest 1.0 foot and referenced to the Georgia State Plane East Zone Coordinate System. A permanent survey mark (control point) will be scribed on top of each monitor well riser casing (TOC) where applicable. Ground level elevations will be surveyed to the closest 0.1 foot, and an elevation of the top of the TOC and surface

water locations will be surveyed to the closest 0.01 foot. Elevations will be referenced to the National Geodetic Vertical Datum of 1929.

3.6 LABORATORY ANALYSIS AND DATA MANAGEMENT

The soil, groundwater, and surface water samples will be analyzed for the suite of constituents listed on Tables 1 through 3. The subcontracted analytical laboratory analysis will be conducted in accordance with the procedures outlined in the Work Plan for the Modification to CSR Investigation. LAW will perform a data quality evaluation (DQE) on the soil, groundwater, and surface water samples submitted for laboratory analysis. The DQE will be used to review the data for precision, accuracy, representativeness, completeness, and comparability. An IRDMIS submittal is not required as part of this Work Plan.

3.7 QUALITY CONTROL SUMMARY REPORT (QCSR)

Due to the limited scope of work and accelerated schedule of the project, a Quality Control Summary Report (QCSR) will not be prepared as part of this investigation. The data obtained during this investigation will be presented in the Revised Final CSR.

3.8 INVESTIGATION-DERIVED WASTE MANAGEMENT AND DISPOSAL

Investigation-derived waste (IDW) in the form of soil cuttings, development and purge water, and decontamination fluids will be generated during the installation of soil borings and monitoring wells. Soil cuttings and development/purge water will be profiled by LAW based upon the results of the soil and groundwater samples collected. LAW will provide disposal recommendations to Fort Stewart for approval. In the event additional characterization sampling is required, or the analytical data indicates that the IDW could be hazardous and requires alternate off-site disposal, additional unscoped costs will be incurred. The IDW is anticipated to be non-hazardous and will consist of the following:

- Approximately 10 drums of soil cuttings will be generated and will be disposed of at an off-site non-hazardous landfill. If analytical results indicate the absence of contamination in the soil cuttings, the soil may be left on site and dressed around the soil boring and monitoring well areas.
- Approximately 6 drums of development/purge water will be generated and will be disposed in the on-base Waste Water Treatment Plant (WWTP). This assumes the analytical results are below the WWTP's discharge limits.

- Approximately 1 drum of personal protective equipment will be generated and will be disposed of at an off-site non-hazardous landfill.

- Approximately 5 drums of decontamination fluids will be generated and will be disposed of in the on-base WWTP. One composite water sample will be collected from the decontamination fluids generated during equipment decontamination. The water sample will be analyzed for VOCS, SVOCs, RCRA metals, pH, and oil and grease.

3.9 REVISED COMPLIANCE STATUS REPORT

The data from this additional soil and groundwater investigation will be incorporated into the Revised Final CSR and will be used to revise the risk reduction standard (RRS) and complete delineation of the soil and groundwater contamination. The additional data will be incorporated into tables, figures, and boring logs. The CESAS and Fort Stewart will review the document and provide comments in two weeks. Once the Revised Final CSR is reviewed, comments from Fort Stewart and Hunter AAF will be compiled and incorporated into the Revised Final CSR and submitted to Georgia EPD on December 12, 2001.

4.0 REFERENCES

LAW, 1999a. Final Work Plan Addendum for Compliance Status Report (CSR) for the Former Fire Training Area, Hunter Army Airfield, Savannah, Georgia. Law Engineering and Environmental Services, Inc. Kennesaw, Georgia, June 29, 1999.

LAW 1999b. Letter Work Plan, Modification No. 1 Updated Compliance Status Report Former Tire Training area, Hunter Army Airfield, Savannah, Georgia. Law Engineering and Environmental Services, Inc., Kennesaw, Georgia, June 29, 1999.

USEPA 1996. USEPA Region 4 Environmental Investigation Standard Operating Procedures and Quality Assurance Manual, May 26, 1996, US Environmental Protection Agency, Region 4, Athens, Georgia.

TABLE 1

Proposed Soil Sampling Program

Proposed Boring	Media to be Sampled	Sample Depth	Laboratory Analyses Required	Number of Samples per Boring	Laboratory Turn-Around Time Required
SB-43 (Boring will be completed as monitoring well HMW-21)	Soil	Highest organic vapor concentration above groundwater based on field screening results Deepest unsaturated soil (Approx. 8-10 ft bgs)	VOCs SVOCs Chromium	2	24-48 hours
SB-44	Soil	Highest organic vapor concentration above groundwater based on field screening results Deepest unsaturated soil (Approx. 8-10 ft bgs)	SVOCs Chromium	2	24-48 hours
SB-45	Soil	0-2 ft bgs	SVOCs	1	24-48 hours
SB-46 (Boring will be completed as monitoring well HMW-22)	Soil	Highest organic vapor concentration above groundwater based on field screening results Deepest unsaturated soil (Approx. 8-10 ft bgs)	VOCs SVOCs Chromium	2	24-48 hours
SB-47	Soil	2-5 ft bgs	Barium	1	24-48 hours
SB-48	Soil	2-4 ft bgs	Chromium	1	24-48 hours
SB-49	Soil	0-2 ft bgs	SVOCs	1	24-48 hours
SB-50	Soil	0-2 ft bgs	SVOCs	1	24-48 hours
SB-51	Soil	TBD	VOCs SVOCs Chromium	1	7-10 days
SB-52	Soil	TBD	VOCs SVOCs Chromium	1	7-10 days

VOCs – Volatile Organic Compounds analyzed using USEPA Method 8260B
SVOCs – Semi- Volatile Organic Compounds analyzed using USEPA Method 8270C
RCRA Metals – Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver analyzed using USEPA Method 6010B

TABLE 2

Proposed Groundwater Sampling Program

Proposed Well	Media to be Sampled	Sample Depth	Laboratory Analyses Required	Number of Samples per Well	Laboratory Turn-Around-Time Required
HMW-21	Groundwater	Screened Interval	VOCs	1	24-48 hours
HMW-22	Groundwater	Screened Interval	VOCs	1	24-48 hours
HMW-3	Groundwater	Screened Interval	VOCs, SVOCs, 8 RCRA Metals	1	7-10 days
HMW-14R	Groundwater	Screened Interval	VOCs	1	7-10 days

VOCs – Volatile Organic Compounds analyzed using USEPA Method 8260B VOCs
SVOCs – Semi- Volatile Organic Compounds analyzed using USEPA Method 8270C
RCRA Metals – Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver analyzed using USEPA Method 6010B

TABLE 3

Proposed Surface Water Sampling Program

Surface Water Sample Identification	Media to be Sampled	Laboratory Analyses Required	Number of Samples per Location	Laboratory Turn-Around-Time Required
HSW-1 (West Ditch)	Surface Water	VOCs, SVOCs, 8 RCRA Metals	1	7-10 days
HSW-2 (West Ditch)	Surface Water	VOCs, SVOCs, 8 RCRA Metals	1	7-10 days
HSW-3 (West Ditch)	Surface Water	VOCs, SVOCs, 8 RCRA Metals	1	7-10 days
HSW-4 (South Ditch)	Surface Water	VOCs, SVOCs, 8 RCRA Metals	1	7-10 days
HSW-5 (South Ditch)	Surface Water	VOCs, SVOCs, 8 RCRA Metals	1	7-10 days
HSW-6 (South Ditch)	Surface Water	VOCs, SVOCs, 8 RCRA Metals	1	7-10 days

VOCs – Volatile Organic Compounds analyzed using USEPA Method 8260B
SVOCs – Semi- Volatile Organic Compounds analyzed using USEPA Method 8270C
RCRA Metals – Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Silver analyzed using USEPA Method 6010B

REPLACE THIS PAGE WITH SCANNED MAP!

PROJECT REVIEW *COMMENTS*	Date: 18 OCT 2001	Page 1 of 2
To: CESAS-EN-GH, W. SMITH	From: **(Section) CESAS-EN-GH** **(Reviewer)Kathleen Campbell- Miles (I. H.)**	
Project and Location: DRAFT WORKPLAN FOR COMPLIANCE STATUS REPORT AT HAAF, FT. STEWART GA, FIRE TRAINING AREA, CONTRACT # DACA-07-D-0034 TASK ORDER NO. 11 LAWGIBB.	Year: 01 FY-01	Line Item No.:

Type of Action: **(Check Appropriate boxes)**	[X] Preliminary [ ] Final [ ] Concept [ ] Other _____	[ ] Geology and Hydrogeology [X] Hazardous and Toxic Waste [ ] Site Development [ ] Soils

Item No.	Drawing No. or Par. No.	Comments	Review Action
1.	Sec 5.0	Do not use the accumulated 5-year project table as the highest levels detected. You are not working in the COC concentrated areas of the project. The table should include the highest (or all) of the contaminants detected in the outer ring, from the last sampling event, only. Unless the field work hits an unexpected unknown plume (a possibility as the sampling gets farther out into areas never sampled before..) levels for this phase should be very, very low. If this is not done I will have to make a lot of comments on procedures based upon the project's worst-case COC levels.	Last two sentences in 2nd paragraph of Section 5.2 replaced with: **Moreover, contaminant concentration in perimeter well and soil boring locations were significantly lower (or not detected) when compared with the earlier data presented in the SSHP. Table 4-1a was provided to update the anticipated hazard assessment in work areas covered under this scope of work (i.e., the perimeter of the former FTA).** Table 4-1a provides only constituents identified in perimeter locations.
2.	Sec 9.1.1	When handling liquids or dust producing, potentially contaminated materials, skin must be protected. Liquid exposures need impervious coverings, dust particles, particulate restricted coverings. Task analysis needs to address when and what types of skin PPE is needed. This general statement is very confusing.	Clarification provided to allow short sleeves only for survey, walk over activities (non-sampling) in perimeter locations.
3.	Sec 9.1.2	This statement is also out of context. Please detail or explain what is meant here.	Statement referencing hip waders deleted.

4.	Sec 11.0	Although high levels of contaminants are not expected from the fire training site, it is not unlikely that the "reaching for background" requirements of HSRA puts the workers into another heretofore unidentified contaminated area. Fifteen minutes was always used as sampling intervals during intrusive work, due to the STEL of benzene being 5 ppm at 15minutes. This practice should not be discontinued. Initial drilling does not take long and the 15-minute interval sampling while drilling should not significantly hinder or slow down the work process. Other work (even if it has open borings) such as well piping & screening may be done under the 30-minute interval procedure.	Text modified in Section 5.4.1 as follows: **Ambient air in the breathing zone at borehole locations will be monitored for organic vapors at least once very 15 minutes during invasive operations. Measurement frequency will be reduced to 30-minute intervals during non-invasive activities (i.e., well construction, grouting, ground-water elevation measurement, etc.).**
5.	Table 11-2	Please include the ionization potential for Methylene chloride, benzene & napthalene, and the lamp[s] that will be available onsite. Note that no work can be conducted should the PID fail. LEL meters are not sufficiently protective to be used as a stand-alone monitor.	A 10.2 ev lamp will be used. This should be sufficient to identify the main constituent of concern, benzene.

PROJECT REVIEW COMMENTS (Continuation Sheet)	Date: 18 OCT 2001	Page 2 of 2
Project and Location: DRAFT WORKPLAN FOR COMPLIANCE STATUS REPORT AT HAAF, FT. STEWART GA, FIRE TRAINING AREA, CONTRACT # DACA-07-D-0034 TASK ORDER NO. 11 LAWGIBB.	FY-01	Section:

Item No.	Drawing No. or Par. No.	Comments	Review Action
6.	Sec 15	Please state who the SSHO will be.	John Martin will be the SSHO. Text added.
7.	Sec 18	Please use most recent ACGIH TLV booklet, 2001.	The 2001 TLVs will be referenced. We did not have a copy of this publication and have ordered it. We will include the appropriate references when it arrives by Fed-Ex.
8.	CERTIFI-CATES	Certificates are not up to date. Please send current ones. [See table below].	All updated certificates will be forwarded by fax to the USACE for review by mid day, 26 OCT 01. Copies of all certificates will be added to the SSHP Addendum No. 1.

SAD Form 3058a-R 1 Aug 80

COMPLIANCE STATUS REPORT AT HAAF, FT. STEWART GA, FIRE TRAINING AREA, CONTRACT # DACA-07-D-0034 TASK ORDER NO. 11 LAWGIBB.

BLANK BOXES SHOW NO CERTIFICATE WAS SUBMITTED rev'd: 18 Oct 2001

LAWGIBB	*40*	*8*	*RESP. FIT TEST*	*MEDICAL*	*cpr*	*FIRST AID*	*SUPERVISOR*
NATIONS	88	7/02		4/00 [2YR]	9/02		9/91
MARTIN NOT CLEARED FOR WORK	12/00	11/02/00		10/22/99 EXPIRES BEFORE FIELD WORK BEGINS	? [EXP'S 7/02]	7/00	8/00
WILLIAMSON NOT CLEARED FOR WORK PAST 11/1/01	5/99	6/01		11/2/99 [EXPRS 11/01]	11/99 [EXPRS 11/01]	11/99 EXPRS 11/24/01	
DURDEN	6/01	NA		6/01*			

CESAS-EN-GH 18 October 2001

MEMORANDUM THRU EN-G

FOR SO

SUBJECT: DRAFT WORKPLAN FOR COMPLIANCE STATUS REPORT AT HAAF, FT. STEWART GA, FIRE TRAINING AREA, CONTRACT # DACA-07-D-0034 TASK ORDER NO. 11 LAWGIBB.

The above SSHP has been reviewed and found:

_____Acceptable. Fieldwork may proceed.

___XX_____Unacceptable. Unresolved issues must be addressed before SSHP is accepted.

KATHLEEN CAMPBELL-MILES, CSP
Industrial Hygienist, HTRW Section

ADDENDUM No. 1 to APPENDIX C

FINAL SITE SAFETY AND HEALTH PLAN
COMPLIANCE STATUS REPORT (AUGUST 1999)

FORMER FIRE TRAINING AREA, HUNTER ARMY AIR FIELD

Prepared by:

Law Engineering and Environmental Services, Inc.
3200 Town Point Drive
Kennesaw, GA 30144

Prepared for:

U.S. Army Corps of Engineers
Savannah District
100 West Oglethorpe Avenue
Savannah, GA 31202

OCTOBER 2001

CERTIFIED INDUSTRIAL HYGIENIST AUTHORIZATION

SITE:	Hunter Army Air Field
LOCATION:	Savannah, Georgia
CLIENT CONTACT NO:	DACA21-07-D-0034, Task Order No. 11
TITLE:	Addendum No. 1 – Final Site Safety and Health Plan
COMPANY:	Law Engineering and Environmental Services, Inc.
PROJECT NO.:	12001-9-3411

I undersigned, have reviewed the attached Site Safety and Health Plan. Based on my review and using the Standard of Care appropriate for Certified Industrial Hygienists, the attached Site Safety and Health Plan complies with the applicable portions of 29 CFR 1910.120 as they apply to completing environmental investigations at U.S. Army Corps of Engineers Hazardous, Toxic and Radioactive Waste sites.

Darrell B. Hunt — 28 Oct 2001

Darrell B. Hunt, Certified Industrial Hygienist — Date

Approved provisionally with the agreement that no site work will begin until adequate documentation is received for all staff to complete the requirements matrix in Attachment 1.

TABLE OF CONTENTS

LIST OF ATTACHMENTS

LIST OF TABLES

1.0 PURPOSE OF SITE SAFETY AND HEALTH PLAN ADDENDUM

The purpose of this addendum is to provide additional clarification, updated information and changes to requirements as needed to the August 1999 Final Site Safety and Health Plan (SSHP). This addendum is not a stand-alone document and must be used in conjunction with the August 1999 SSHP. Updates, changes and clarifications to each of the sections in the August 1999 SSHP are noted in the corresponding sections of this SSHP Addendum No. 1.

2.0 SCOPE OF HEALTH AND SAFETY PLAN

No changes or additions have been made to this section.

3.0 REGULATORY AUTHORITY

No changes or additions have been made to this section.

4.0 SITE DESCRIPTION AND CONTAMINATION CHARACTERIZATION

Section 4.1 Base Description - Replacements to Tables 4-1 and 4-2 in the original SSHP are provided in Tables 4-1a and 4-2a. These tables summarize additional analytical results on soil and ground water collected during field activities for the Compliance Status Report (CSR) (LAW 2000). In addition, these samples were collected from perimeter locations around the former FTA and are therefore more representative of conditions anticipated under this scope of work.

TABLE 4-1a

SUMMARY OF CHEMICALS PREVIOUSLY DETECTED IN SITE PERIMETER GROUND-WATER SAMPLES
October 1995 to January 2000
Hunter Army Airfield FTA
Savannah, Georgia

Chemical	Maximum Detected Ground Water Concentrations (mg/L)
METALs	
Arsenic	ND
Barium	0.095
Chromium, total	ND
Lead	0.0173
SVOCs	
2-4-Dimethylphenol	ND
Naphthalene	0.0348
VOCs	
Acetone	ND
Benzene	0.104
Ethylbenzene	0.0057
Toluene	ND
Xylenes, total	0.378
Cis-1,2-dichloroethylene	0.22
Trans-1,2-dichloroethylene	0.009

Source: Compliance Status Report Former Fire Training Area, Hunter Army Airfield Fire Training Area, Fort Stewart, Savannah, Georgia (LAW, 2000)

ND – Not Detected

Prepared by: DW 10-28-01
Checked by: DBH 10-28-01

TABLE 4-2a

SUMMARY OF CHEMICALS PREVIOUSLY DETECTED IN SITE PERIMETER SOIL SAMPLES
July 1999 to January 2000
Hunter Army Airfield FTA, Savannah, Georgia

Chemical	Maximum Detected Concentrations (mg/kg)	
	Surface	Subsurface
Organo-chlorine Pesticides		
Dieldrin	0.043	ND
Methoxychlor	0.14	ND
VOCs		
Acetone	0.17	0.14
Benzene	ND	ND
2-Butanone	ND	ND
Chloromethane	ND	ND
Chlorobenzene	ND	ND
cis-1,2-dichloroethene	ND	0.27
Ethylbenzene	ND	ND
Methylene Chloride	ND	ND
Tetrachloroethene	0.0061	ND
trans-1,2-dichloroethene	ND	0.013
Trichlorofluoromethane	0.014	ND
Toluene	0.02	ND
Xylene	ND	ND
SVOCs		
Anthracene	7.5	5.7
Acenaphthene	1.7	2.3
Acenaphthylene	3.6	6.6
Benzo(a)anthracene	34	18
Benzo(b)fluoranthene	28	13
Benzo(k)fluoranthene	27	13
Benzo(g,h,i)perylene	14	12
Benzo(a)pyrene	26	20
bis(2-ethylhexyl) phthalate	0.39	0.43
Chrysene	33	20
Dibenzo(a,h) anthracene	3.9	4.2
Di-n-butyl phthalate	ND	ND
Diethyl phthalate	ND	ND
2,4-Dinitrotoluene	ND	ND
Fluoranthene	72	24
Fluorene	3.9	3.7
Indeno(1,2,3-cd) Pyrene	16	11
Naphthalene	0.53	ND
Phenanthrene	39	19
Pyrene	49	26

Source: Compliance Status Report Former Fire Training Area, Hunter Army Airfield Fire Training Area, Fort Stewart, Savannah, Georgia (LAW, 2000)

ND – Not Detected

Prepared by: DJ 10.28.01
Checked by: DBH 10-28-01

5.0 HAZARD ASSESSMENT/RISK ANALYSIS

Section 5.2 Chemical Indicators of Hazard - Addendum to Table 5.1, summarizing the important properties of constituents of concern, are provided. IDLH and OSHA PEL values for the following constituents of concern have been updated as follows:

TABLE 5.1 ADDENDUM

IMPORTANT PROPERTIES OF CONSTITUENTS OF CONCERN
Hunter Army Airfield FTA
Savannah, Georgia

Constituent	OSHA PEL	IDLH
Chromium	0.5 to 1 mg/m3 (Cr II/III- Cr)	250 mg/m3
Methylene Chloride	25 ppm (8 hours) and 125 ppm (15 minutes)	2300 ppm
Trichlorofluoromethane	1000	2000 ppm

Sources:

OSHA Regulations: http://www.osha-slc.gov/OshStd_toc/OSHA_Std_toc_1910.html?General+Industry=General+Industry (on-line date stamped 10/2/01)

NIOSH Pocket Guide: http://www.cdc.gov/niosh/npg/npgdname.html

Please note that some of the constituents previously detected in ground water and presented in Table 4-1 of the August 1999 SSHP were not detected in ground-water samples collected as part of the CSR. Moreover, contaminant concentrations in perimeter well and soil boring locations were significantly lower (or not detected) when compared with the earlier data presented in the SSHP. Table 4-1a was provided to update the anticipated hazard assessment in work areas covered under this scope of work (i.e., the perimeter of the former FTA).

Section 5.4.1 Action Levels: Organic Vapor Photoionization Detector and Detector Tubes – Ambient air in the breathing zone at borehole locations will be monitored for organic vapors at least once every 15 minutes during invasive operations. Measurement frequency will be reduced to 30-minute intervals during non-invasive activities (i.e., well construction, grouting, ground-water elevation measurement, etc.). The primary indicator of airborne organic vapor hazard at this site is now considered to be benzene.

Chemical-specific detector tubes (Draeger tubes for benzene) will be used in conjunction with organic vapor monitoring.

6.0 ACCIDENT PREVENTION

No changes or additions have been made to this section.

7.0 STAFF ORGANIZATION, QUALIFICATIONS, AND RESPONSIBILITIES

The following revisions have been made to Section 7.0:

Section 7.1 Certified Industrial Hygienist - The Certified Industrial Hygienist (CIH) and the Site Manager have been replaced. Mr. Darrell Hunt is the CIH for the project while Mr. John Martin, a Professional Geologist (P.G.), is the Site Manager and SSHO for the project. Resumes and certifications for these personnel are included in Attachment 1. Certifications for support personnel anticipated to be in the field during drilling and sampling activities associated with this work are also provided in Attachment 1.

Section 7.3 Medical Consultant - The medical consultant has been replaced. Dr. Jerry H. Berke, M.D. of Health Resources is the medical consultant for the Law Engineering and Environmental Services, Inc. Kennesaw location.

8.0 TRAINING REQUIREMENTS

No changes or additions have been made to this section.

9.0 PERSONNEL MONITORING AND PROTECTIVE EQUIPMENT

The following revisions have been made to Section 9.0:

Section 9.1.1 Level D PPE – Distinct work clothing for surveying or property boundary (non sampling) activities no longer requires long sleeved shirts due to heat stress considerations.

Section 9.1.2 Modified Level D PPE – Personnel working on intrusive activities (e.g., drilling) will be required to wear Modified Level D PPE. This includes wearing Tyvek (split-backed to increase ventilation is acceptable) or chemical resistant coveralls while performing operations where direct contact with potentially contaminated materials exists. Personnel entering the intrusive activity zone will also be required to wear Modified Level D PPE unless the intrusive activity is temporarily stopped. This condition may occur during periodic breathing zone monitoring.

Modified Level D PPE will also be worn during ground-water sampling and the collecting/logging of soil samples away from drilling operations. These non-intrusive activities are included under Modified level D, but a chemical resistant apron may be used to replace Tyvek or chemical resistant coveralls.

Section 9.2.1 Fit Test – Fit tests are to be conducted annually at a minimum instead of every 6 months.

10.0 MEDICAL SURVEILLANCE

Section 10.1 Medical Examinations – Per LAW's medical consultant (Section 7.3), medical examinations for field personnel are required once every 24 months.

11.0 EXPOSURE MONITORING/AIR SAMPLING PROGRAM

The following revisions have been made to section 11.0:

Section 11.1 Monitoring Equipment Use and Limitations – Table 11-1, summarizing the air monitoring equipment criteria for field investigation activities, has been updated as provided below. No air monitoring will be required for non-intrusive activities performed near the site boundaries or during topographic surveying.

TABLE 11-1 REVISED

AIR MONITORING EQUIPMENT CRITERIA FOR FIELD INVESTIGATIONS
Hunter Army Airfield FTA
Savannah, Georgia

TASKS TO BE PERFORMED	TYPE OF ACTIVITY	MONITORING EQUIPMENT
Soil Borings	Intrusive	Combustible Gas Indicator Oxygen Meter PID/Draeger Tubes*
Monitoring Well Installation/Development	Intrusive	Combustible Gas Indicator Oxygen Meter PID/Draeger Tubes*
Soil Sampling/Logging (away from drilling operations)	Non Intrusive	PID/Draeger Tubes
Ground-Water Sampling	Non Intrusive	PID/Draeger Tubes

* Draeger tube sampling is required when applicable PID readings exceed applicable threshold levels (see Table 11-2)

In addition, Table 11-2, summarizing monitoring equipment and action guidelines has been updated and is provided.

TABLE 11-2 REVISED

MONITORING EQUIPMENT AND ACTION GUIDELINES
Hunter Army Airfield FTA
Savannah, Georgia

* OXYGEN MONITOR[a][b]		COMBUSTIBLE GAS INDICATOR[a] (EXPLOSIMETER)		PHOTOIONIZATION METER (PID) AND CHEMICAL-SPECIFIC DETECTOR TUBES[c]			
Oxygen Level	Action	LEL Levels	Action	PID Levels (ppm)	Draeger Tube Benzene Levels (ppm)		Action
19.5-23.5%	Normal Oxygen Level	0-10%	No explosion hazard	0-1	NA		Modified Level D
		>10%	Explosive hazard exists; stop tasks; evacuate site; notify Site Manager	1-5	and	0-0.5	Modified Level D; begin monitoring for benzene (with 0.5/a Draeger tube) every 15 min.
>23.5%	Fire/Explosion hazard; Stop tasks, evacuate site; notify Site Manager						
<19.5%	Oxygen deficient; Stop tasks, evacuate site; notify Site Manager; upgrade to Level B			5-250	and/or	0.5-25	Level C
				>250	and	>25	Stop work; notify COE regarding need to upgrade to Level B

(a) Monitoring to be conducted at top of borehole
(b) Used in conjunction with combustible gas indicator to confirm combustible gas indicator function
(c) Monitoring to be conducted in breathing zone of worker nearest to borehole; concentrations sustained for 5 min. above background. A 10.2 elecron volt lamp will be used in the PID.

Section 11.2.1 Meteorological Monitoring – Monitoring of weather conditions will be conducted on a daily basis and recorded in the field logbook. The basis of the monitoring will be general observations made by field crew about estimated weather conditions (e.g. sunny, 70's and moderate wind from the south) and not meteorological data collected from instruments.

Section 11.2.4 Logs and Recordkeeping – Instrument calibration information referenced may be recorded in the field logbook instead of the form provided in Figure 11-1.

Section 11.2.5 Heat and Cold Stress Monitoring is replaced by the following sections:

11.2.5 Heat and Cold Stress Monitoring

The SHSO will confirm that all project personnel have the necessary training to prevent personnel injury due to heat and cold, as dictated by weather conditions. The SHSO will also monitor ambient conditions at the site. This monitoring shall commence when the ambient environmental temperature exceeds 70 degrees or falls below 40 degrees Fahrenheit (^{0} F).

11.2.5.1 Cold Stress

Fatal exposures to cold among workers have almost always resulted from exposures involving failure to escape from low environmental air temperatures or from immersion in low temperature water. The single most important aspect of life-threatening hypothermia is the fall in the deep core temperature of the body. The deep core temperature should not fall below 36 degrees Centigrade (°C) (96.8°F). Lower body temperatures will likely result in reduced mental alertness, reduction in rational decision-making capability, loss of consciousness, or death.

Mild to severe pain in the extremities may be the first early warning of cold exposure. During exposure to cold, maximum severe shivering develops when the bodies core temperature has fallen to 35°C (95°F). Useful physical and mental work is limited when severe shivering occurs. Since prolonged cold exposure at temperatures well below freezing can lead to dangerous hypothermia, whole body protections must be provided. If work activities are performed in temperatures below 40°F, adequate insulating clothing to maintain core temperature must be worn by all workers. All workers should be aware of the effects of wind chill on exposed skin. The higher the wind speed, the lower the perceived air temperature in the work area. Permissible cold exposure TLVs for work where dry clothing is worn are shown in Table 11-4.

11.2.5.2 Heat Stress

Heat stress can be a major hazard for field personnel, especially those wearing PPE. Depending upon the ambient conditions and the work being performed, onset of heat stress can be rapid.

Early signs of heat stress include heat rash, heat cramps (muscle spasms), discomfort and drowsiness. Continued heat stress can result in heat exhaustion, with symptoms including pale, cool, moist skin; heavy perspiration; dizziness; nausea; and fainting.

Extreme heat stress can result in heat stroke, as body temperature regulation fails and the body temperature rises to critical levels. Symptoms of heat stroke include red, hot, usually dry skin; absence of or reduced perspiration; nausea; dizziness and confusion; strong; rapid pulse; and coma. Measures to prevent the occurrence of heat stress consist of acclimatization; avoiding overprotection; training and monitoring of personnel wearing PPE; scheduling of work and rest periods; and frequent replacement of fluids.

Ambient monitoring for heat stress prevention will commence when the temperature exceeds 70 degrees Fahrenheit. In addition, all field personnel will be provided rest breaks. The break areas shall be situated so that personnel may remove the chemical-protective clothing (if applicable), rest in a shaded area, and drink cool fluids. Working within protective clothing, such as may be required for this project, places a significant physiological stress upon the worker. For this reason, workers are anticipated to perform work in Modified Level D PPE using chemical resistant aprons or split-backed Tyvek as discussed in Section 9 of this Addendum. The personnel and environmental measurements described below will be conducted for all field personnel on this project.

During hot working conditions, rest breaks shall be established based upon the results of physiological monitoring combined with environmental factors measured using a Wet Bulb Globe Temperature (WBGT) index.

WBGT values are calculated using the following equations:

1. Outdoors with solar load: WBGT = 0.7 NWB + 0.2 GT + 0.1 DB
2. Indoors or outdoors with no solar load: WBGT = 0.7 NWB + 0.3 GT

where: WBGT = Wet Bulb Globe Temperature

NWB = Natural Wet Bulb Temperature
GT = Globe Temperature
DB = Dry Bulb Temperature

The determination of WBGT will be performed by the SHSO, using a Heat Stress Monitor containing a black globe thermometer, a natural wet-bulb thermometer, and a dry-bulb thermometer. The WBGT and the Permissible Heat Exposure Threshold Limit Values from the TLVs and BEIs (Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices), ACGIH, 2001, will be used to determine the Work-Rest schedule. The permissible heat exposure TLVs are for workers not wearing chemical protective clothing (i.e., Tyvek).

Water and electrolyte replacement beverages will be available on ice in the field. Drinking enough fluids will be stressed by the SHSO while in the field on hot days. In addition, workers at the site, when the ambient temperatures exceed 80 degrees Fahrenheit, will be wearing ice vests in order to maintain lower core body temperatures. Ice vest replacement cells will be maintained in a cooler on dry ice and replaced as necessary through the day. Thus, the work/rest regimen will follow the light work load category for acclimatized individuals as cited in Table 11-3a of this Addendum.

Table 11-3a. Screening Criteria for Heat Stress Exposure (WGBT values in °C and [°F])

	Acclimatized				**Unacclimatized**			
Work Demands	Light	Moderate	Heavy	Very Heavy	Light	Moderate	Heavy	Very Heavy
100 % work	29.5 [85.1]	27.5 [81.5]	26 [78.8]		27.5 [81.5]	25 [77]	22.5 [72.5]	
75% work 25% rest	30.5 [86.9]	28.5 [83.3]	27.5 [81.5]		29 [84.2]	26.5 [79.7]	24.5 [76.1]	
50% work 50% rest	31.5 [88.7]	29.5 [85.1]	28.5 [83.3]	27.5 [81.5]	30 [86]	28 [82.4]	26.5 [79.7]	25 [77]
25% work 75% rest	32.5 [90.5]	31 [87.8]	30 [86]	29.5 [85.1]	31 [87.8]	29 [84.2]	28 [82.4]	26.5 [79.7]

If symptoms of heat stress are exhibited by workers, the pulse rate will be monitored during all tasks (as deemed appropriate by the SHSO). Action guidelines are as follows:

- Pulse rate: Determine normal resting pulse rate prior to start of work. Monitor pulse rate as soon as possible at beginning of rest period. If the rate exceeds the determined normal resting pulse rate by 40 beats per minute (BPM), shorten the next work period by one-third without changing the rest period. If the pulse rate is greater than 40 BPM above the resting pulse rate at the start of the next rest period, shorten the following work cycle again by one-third. Repeat until pulse rate at beginning of rest period is less than 40 BPM above resting pulse rate.

12.0 STANDARD OPERATING PROCEDURES/ENGINEERING CONTROLS AND WORK PRACTICES

The following revisions have been made to Section 12.0:

Section 12.1 General Site Rules/Operating Procedures – Illumination levels do not need to be measured. Fieldwork will be conducted during daylight hours. Adequate natural lighting is expected to be sufficient.

Section 12.2 Site Entry Procedures – Backup equipment and spares will no longer include disinfectant spray for boots and gloves. Gloves are disposable and individuals provide their own boots. Therefore, disinfectant is not needed.

13.0 SITE CONTROL MEASURES

No changes or additions have been made to this section.

14.0 PERSONAL HYGIENE AND DECONTAMINATION

No changes or additions have been made to this section.

15.0 EMERGENCY EQUIPMENT AND FIRST AID REQUIREMENTS

Some of the emergency contacts provided in Table 15-1 have been revised. The following contacts have been replaced:

Title/Name	Office	Home
Project Manager/David Wilderman	(770) 421-3400	(770) 926-3338 (770) 329-4737 (cell)
Project Principal/Dave Goershel	(770) 499-6644	(678) 230-6159 (770) 516-5879 (cell)
SSHO/John Martin	(770) 421-3311	(770) 345-7524
Health and Safety Contact/Darrell Hunt	(770) 421-3435	(770) 977-4851 (678) 910-7014 (cell)

Section 15.4 Spill Control Materials and Equipment – Overpack containers are no longer included as spill containment equipment available on site. Chemicals related to sampling activities are stored in small quantities only and overpack containers are not needed.

16.0 EMERGENCY RESPONSE AND CONTINGENCY PROCEDURES

No changes or additions have been made to this section.

17.0 LOGS, REPORTS AND RECORDKEEPING

Section 17.1 Training and Documentation – Logs and records referenced in this section may be recorded in the field logbook.

18.0 REFERENCES

The following references have been added to Section 18.0:

LAW 2000. Law Engineering and Environmental Services, Inc. (LAW), Compliance Status Report Former Fire Training Area, Hunter Army Airfield Fire Training Area, Fort Stewart, Savannah, Georgia. March, 2000

NIOSH Pocket Guide to Chemical Hazards and Other Databases; U.S. Department of Health and Human Services, Public Health Service, Center for Disease Control and Prevention, DHHS Publication No. 2000-130; July 2000.

ACGIH, 2001. Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices. Publication #0101.

ATTACHMENT 1

RESUMES AND CERTIFICATIONS

Name	Company	40-hr OSHA	8-hr OSHA (expires)	OSHA Supervisor	Fit Test	Medical Clearance	CPR (expires)	First Aid (expires)	DL	SSN
John Martin	LAW	12/10/00	11/19/01	8/18/00	5/30/01		7/2002	7/25/03	X	X
Greg Orzechowski	LAW	3/17/00	4/4/02	7/12/00	10/9/01	5/7/01		4/4/03	X	X
David Wilderman	LAW	6/7/85	10/28/02			10/26/01			X	X
Jason Allwood	Betts Environmental Recovery - Drilling	8/13/99	Issued 4/10/01						X	X
Jeffery Brock	Betts Environmental Recovery - Drilling		24-hr HWO Issued 4/12/01						X	X
Thomas Anthony Walker	Betts Environmental Recovery - Drilling	9/13/96	Issued 7/7/00						X	X
Tony William Betts	Betts Environmental Recovery - Drilling	1/14/94	Issued10/8/2001						X	X
Joseph McVay	Betts Environmental Recovery - Drilling		Issued 2/12/01							
Justin Everett Schmitt	Donaldson Garrett - Surveying	2/9/01							X	X
Brian Leonard Dunlap	Donaldson Garrett - Surveying	11/6/97	Issued 2/9/01						X	X

DARRELL B. HUNT, CIH
Project Manager/Engineer

Education

M.S., Environmental Health, University of Cincinnati, OH, 1978.
B.S., Civil Engineering (environmental emphasis), Oklahoma State University, Stillwater, OK, 1973.

Professional Registrations/Certifications

Certified in the Comprehensive Practice of Industrial Hygiene (CIH) by the American Board of Industrial Hygiene, No. 1564.

Experience Summary

Resource Manager/Project Manager, EHS Compliance and Risk Assessment Services Department – National Technical Center, Law Engineering and Environmental Services, Kennesaw, GA, 2000-Presnet.
Vice President/Director – Environmental Services Division, Southeastern Region, Clayton Group Services, Inc, Kennesaw, GA, 1999-2000.
Global Account Manager for ALCOA, Radian International, 1997-1999.
Principal Project Manager/Engineer, Radian International, LLC, Oak Ridge, TN, 1992-1999.
Operations Section Manager, Radian Corporation, Oak Ridge, TN, 1992-1994.
West Coast Department of Defense Business Coordinator, Radian Corporation, Sacramento, CA, 1989-1992.
Operations Manager/Senior Program Manager, Radian Corporation, Sacramento, CA, 1985-1992.
Program Manager, Radian Corporation, Salt Lake City, UT, 1983-1985.
Senior Industrial Hygiene Engineer, Occupational Safety and Health Division, Radian Corporation, Salt Lake City, UT, 1978-1983.
Guest Researcher, National Institute for Occupational Safety and Health (NIOSH), 1977-1978.
Bioenvironmental Engineer/Chief of Environmental Health Services, USAF Regional Hospital, Shaw AFB, SC, 1973-1977.

Fields of Experience

Mr. Hunt currently manages the EHS Compliance and Risk Assessment Services Department at LAW's National Technical Center.

Prior to joining LAW, Mr. Hunt served as Director of Environmental Services for the Southeastern U.S. for a nationally-based environmental consulting firm. As such, he was responsible for the technical and business operations of the division for all offices in the

southeastern U.S. and for management of major projects and key client interactions and development.

Earlier for another consulting firm, Mr. Hunt served as the Corporate Account Manager and Contract/Program Manager for the Aluminum Company of America (Alcoa), and as a Principal Project Manager/Principal Engineer, Operations Manager, and other key operational and technical roles. In these roles, he served as the focal point for Radian's global support services for Alcoa, and has managed and directed numerous projects for Alcoa and other clients, both private and government, throughout the U.S. and abroad.

Mr. Hunt has managed and participated in programs in a variety of environmental fields including multi-media environmental issues, air quality, hazardous waste, water quality, and industrial hygiene. He has managed both large and small projects/contracts ($5,000 to $8,000,000), varying in duration from one month to five years; and has consistently performed on schedule, in budget, and with high client satisfaction. Among these, he has managed a number of large multi-year master services and indefinite delivery order contracts for key clients such as Alcoa, a major furniture manufacturer, a major chemical company, the U.S. Navy, and the U.S. Army Corps of Engineers.

Mr. Hunt's experience over the past 25 years covers a broad range of environmental program activities including industrial hygiene and environmental health; health risk assessments; community relations; air quality studies; multimedia permitting and environmental assessments; RCRA and CERCLA investigations, designs, and RAs; hazardous waste management; environmental management plans; and wastewater and stormwater management and design. His experience includes:

Occupational and Environmental Health

- Deputy Program Manager for Technical integration program-wide and across all sites for multi-million dollar DOE-Oak Ridge Operations Environmental Restoration Technical Support Contract.

- Managed the remedial action support (site H&S, perimeter air monitoring, community risk analyses, multi-media sampling and analyses) through the Corps of Engineers, during the clean up of the first U.S. Superfund site to be removed from the National Priority List.

- Managed a multi-year, multi-million dollar project assessing residential exposures and impacts relating to subsurface contaminant migration adjacent to a large photographic chemicals plant. Included chemical use inventories; subsurface, indoor and ambient air testing; interviews; risk guideline development; risk assessments; agency interactions; and community relations.

- Conducted exposure control technology evaluations and feasibility studies throughout the secondary lead smelting industry for NIOSH.

- Conducted exposure characterizations and air emissions assessments in the secondary lead smelting industry in a joint project funded by EPA and OSHA.
- Conducted a review and assessment of exposure conditions and controls associated with hydrogen fluoride in glass etching operations at a major lighting products manufacturing plant.
- Directed the exposure assessment of meter burning and metals recycling operations at a metals recovery plant in Pennsylvania.
- Conducted an exposure and engineering controls (ventilation system) assessment for a beryllium foundry.
- Managed a multi-year project for the electric utility industry through EPRI to characterize and assess exposures to particulate constituents in fly ash operations.
- Project Manager for on-call industrial hygiene support services for a leading photographic chemicals and products manufacturer in the U.S.
- Directed and conducted the development and implementation of an occupational lead exposure and control program for 5 can manufacturing plants throughout the U.S. and Canada, including measurements, engineering controls, training, and compliance systems.
- Managed and participated in baseline industrial hygiene evaluations of 8 major U.S. Army installations, establishing the basis for their occupational exposure control programs for all employees.
- Managed a wall-to-wall industrial hygiene monitoring and assessment project for a large nuclear power generating plant in Arizona.
- Managed an exposure assessment project involving HF and HCl emissions from combustion of Freon contaminated propane in businesses and residences.
- Provided health and safety planning support for coal gasification and liquefaction projects and on-site consulting support during start up and shake down of an industrial gasification facility.
- Conducted an exposure assessment study for toxic organics in a can coating and manufacturing plant in California.
- Managed development of baseline occupational exposure profiles for Army National Guard facilities throughout 5 western states.
- Managed a community noise assessment project relating to harmonic sources at a

Tennessee chemical manufacturing plant.

- Directed occupational noise and particulate exposure assessments for a furniture manufacturing plant in Tennessee.

- Senior reviewer for qualitative exposure assessments and program database development for over a dozen manufacturing and chemical plants in the U.S., Mexico, and Europe for a multi-national Fortune 100 company. Additionally, a corporate wide laser safety program guidance document was developed.

- Developed and presented industrial ventilation assessment and design training courses for OSHA industrial hygienists over a several year period.

- Conducted and managed numerous indoor air quality investigations, including a tracer gas study at a Seattle high rise office building and detailed low-level organic speciation for a major electronics company's headquarters building in the Silicon Valley.

Site Investigations and Remediation

- Contract and Program Manager for the Hydrogeologic Assessment and Remedial Investigation for Defense Depot - Tracy, California; involving soil gas studies, well installation and development, pump tests, preliminary assessments of additional potential sources and development of findings and recommendations.

- Program manager for the Hill AFB, Utah Phase II Installation Restoration Program (SI/RI) involving assessments of 13 separate areas.

- Project Manager for development of a pre-RFI environmental baseline assessment plan for Holston Army Ammunition Plant.

- Managed support to the Army Corps of Engineers Huntsville Division's Region VIII Defense Environmental Restoration Program (DERP), including a site investigation of a pond and sediment at a former munitions manufacturing site in Colorado

- Site assessment and development of conceptual remedial alternatives for two industrial manufacturing sites in South Carolina with documented hazardous waste deposits in landfills and subsurface chlorinated solvent and petroleum hydrocarbon contamination. This assessment included partial delineation and extent of subsurface contamination, conceptual alternate remedial scenarios, engineering estimates of potential clean-up costs, and technical support in negotiating third party cost cap and environmental liability insurance.

- Project Manager for CERCLA-style site characterizations, remedial investigations, feasibility studies, ecological and human health risk assessments, and preliminary

remedial design for two former landfill and impoundment areas at an aluminum smelting, recycling and milling plant.

- Managed the investigation and closure of a RCRA UST site at an aluminum can manufacturing plant in California.
- Program Manager for multi-year, multi-million dollar assessment of subsurface contamination, migration, and impacts on residential and school properties adjacent to a photographic chemicals plant, including extensive subsurface soil gas studies, exposure and risk assessments, agency interactions, and community relations.
- Project Manager for a turnkey assessment and removal action of a biological treatment pit at an industrial site in Mexico.
- Project Manager for turnkey assessment, design, and clean closure of PCB contaminated soils and railroad ballast at an industrial site in Kentucky, and additionally conducted the site investigation associated with PCE/TCE in groundwater.
- Managed the RCRA clean closure of a former acrolein repackaging plant in California.
- Managed the remedial investigation, risk assessment, alternative assessment, and remediation of a midnight burn site in California, contaminated with metals and PCBs.
- Program Manager for Hill AFB, UT industrial wastewater treatment plant (IWTP) modification, including bench and pilot scale studies, conceptual and detailed design, construction plans and specifications, and Title II services during construction and startup.
- Assessment of potential dry cleaning solvent contamination at two shopping center sites in Tennessee and South Carolina.

THE AMERICAN BOARD OF INDUSTRIAL HYGIENE
INCORPORATED

AMERICAN BOARD OF INDUSTRIAL HYGIENE

Certificate of Registration for practice and examination in the profession of Industrial Hygiene

This is to certify that

Darrell B. Hunt

has met the requirements of the Board through his education, experience and professional ability, and is hereby declared to be

COMPREHENSIVE PRACTICE

of

INDUSTRIAL HYGIENE

Date May 29, 1974

Certificate Number 1564

Neal E. Bates
Chairman of the
Board of Directors

President

Secretary

LAW COMPANIES TRAINING CENTER
OPERATED BY LAW/SPEAR, L.L.C.

112 TownPark Drive, Kennesaw, Georgia, 30144-5508
(770) 499-6700

This is to certify that

John Donald Martin - 18120

has successfully completed the 40- hour training
course "Health & Safety for Hazardous Waste Operations"
as required by OSHA 29 CFR 1910.120(e)

December 10, 1999
Completion Date

December 10, 2000
Expiration Date

Kennesaw, Ga.
Course Location

IACET

Michael Goldman, CIH, Senior Health & Safety Instructor

Mark Beverwyk, CET, Senior Health & Safety Instructor

IACET The Continuing Education Unit ®

59

Onsite Occupational Training

This is to certify that

John D. Martin

has successfully completed Onsite's 8 hour annual HAZWOPER refresher course and is in compliance with 29 CFR 1910.120(e).

At

Kennesaw, GA

On

11/20/00

Expiration Date

11/19/01

ONSITE
OCCUPATIONAL TRAINING

2555 Westside Pkwy, Ste 600, Alpharetta, GA 30004

Certificate Number: **BKGA112000-005**

Student SSN: **338-46-4281**

Daniel A. Lewis
Training Director

99

Onsite Occupational Training

This is to certify that

John D. Martin

has successfully completed Onsite's 8 hour HAZWOPER Management and Supervisor training in compliance with 29 CFR 1910.120(e)(4).

At

Kennesaw, GA

On

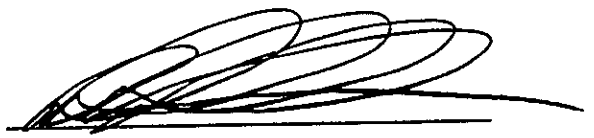
8/18/00

ONSITE
OCCUPATIONAL TRAINING

2555 Westside Pkwy, Ste 600, Alpharetta, GA 30201

Certificate Number: CKGA081800-007

Student SSN: 338-46-4281



Daniel A. Lewis
Training Director

67

RESPIRATOR FIT-TEST RECORD

Name: John Martin

Organization: Law Eng. + Env. Services, Inc.

Date: 5/30/01

I, John Martin, have received a medical examination within the past 12 months and a determination from a licensed physician that I am physically capable of wearing a negative-pressure, air-purifying respirator, in accordance with OSHA regulations (29 CFR 1910.134).

(Signature)

5/30/2001
(Date)

Fit-Test Instructor: E. Curtis

Respirator Manufacturer: 3M

Respirator Model: 7885T / 7800S

Respirator Size: Small

Test Medium: IRRITANT SMOKE

Results of Test: Passed

Special Considerations: Sensitive to Smoke

Keep this card for your records

National Safety Council

COURSE COMPLETION DATE 1-25-00

EXPIRATION DATE 7-25-03

JOHN MARTIN

Has completed the National Safety Council's First Aid Course as presented by:

CREATIVE TEACHING
Training Agency

Clyde Harper
Instructor Name

04882[illegible]
Instructor #

Gerard F. Scannell, President

Security Control # 357924

HEART SAVER

American Heart Association®
Fighting Heart Disease and Stroke

John D Martin

has participated in an American Heart Association Heartsaver Course.

Issue Date: 7/6/00

Recommended Renewal Date: 07/2002

Name of AHA Region: Georgia

Name of CTC: Chattahoochee Tech

Name of Training Site: Law Gibb Group

Instructor's Name: Carol Kemp

Holder's Signature:

ESSEX ENGINEERING CORPORATION
2870 Apple Valley Road, Suite 200
Atlanta, Georgia 30319

Gregory A. Orzechowski 891-076

HAS SUCCESSFULLY COMPLETED THE 8-HOUR REFRESHER "HEALTH & SAFETY TRAINING FOR HAZARDOUS WASTE OPERATIONS" AS REQUIRED BY OSHA 29 CFR 1910.120(e)

Lanos S. Barron, Instructor — Expires: April 4, 2002

---

ard for your records

National Safety Council

COURSE COMPLETION DATE: 04-04-02 EXPIRATION DATE: 04-04-03

GREG ORZECHOWSKI

Has completed the National Safety Council's ~~First Aid Course~~ as presented by

Creative Training Agency

Clyde Harris — Instructor Name — 0488-2666 — Instructor #

Gerard F. Scannell, President

Security Control # 911750

ALL-PRO OCCUPATIONAL TRAINERS

Certify to all that

GREGORY ORZECHOWSKI

Has successfully completed the requirements of

40 HOUR HAZWOPER

In accordance with 29CFR1910.120(e)(3)

March 17, 2000 J. M. Buechner

CERTIFICATE # 000317165

QUALITATIVE RESPIRATOR FIT TEST

NAME: Greg Orzechowski

SOCIAL SECURITY NUMBER: 359-65-6194

RESPIRATOR TYPE: 3M 7000

SIZE: Small

BY: [signature] DATE: 4/20/00

LAW COMPANIES ENVIRONMENTAL TRAINING CENTER

ALL-PRO OCCUPATIONAL TRAINERS

Certify to all that

GREG ORZECHEWSKI

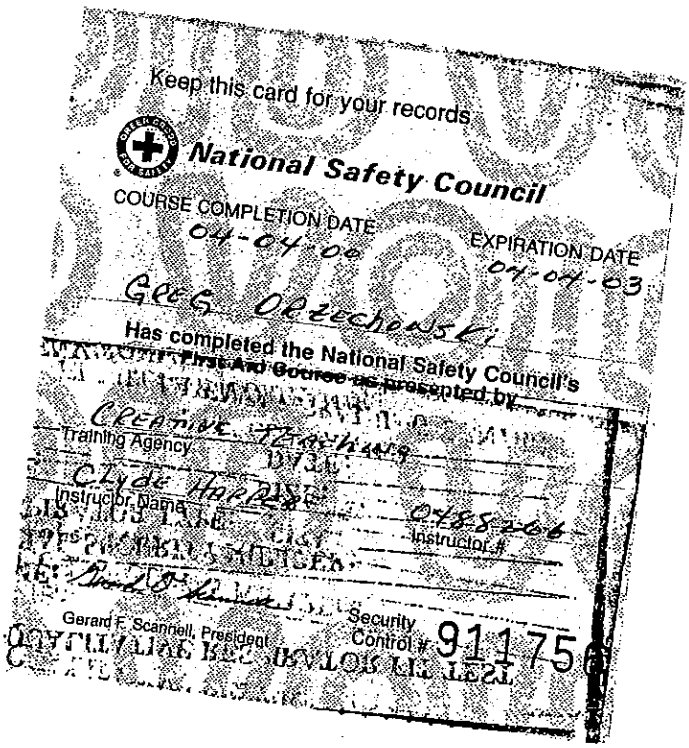
Has successfully completed the requirements of

SITE SUPERVISOR

In accordance with 29CFR1910.120(e)(4)

July 12, 2000 J. M. Buechner

CERTIFICATE # 00071248I



Keep this card for your records

National Safety Council

COURSE COMPLETION DATE
04-04-00

EXPIRATION DATE
04-04-03

Greg Olzechowski

Has completed the National Safety Council's
First Aid Course as presented by

Creative Training

Training Agency

Clyde Harris

Instructor Name

0485206

Instructor #

Gerard F. Scannell, President

Security Control # 91175

RESPIRATOR FIT-TEST RECORD

Name: Gregory A. Orzechowski

Organization: Law Eng. + Env. Services, Inc.

Date: 10/9/01

I, Gregory A. Orzechowski, have received a medical examination within the past ~~12~~ 24 months and a determination from a licensed physician that I am physically capable of wearing a negative-pressure, air-purifying respirator, in accordance with OSHA regulations (29 CFR 1910.134). EFR

(Signature)

10/9/01
(Date)

Fit-Test Instructor: EFR

Respirator Manufacturer: MSA

Respirator Model: 7981S

Respirator Size: Small

Test Medium: IRRITANT SMOKE

Results of Test: Pass

Special Considerations: Sensitive to Smoke

HEALTH RESOURCES

600 West Cummings Park, Suite 3400
Woburn, Massachusetts 01801-6350
Phone: (781) 935 - 8581; (800) 350 - 4511
x: (781) 938 - 4678

Certificate For Respirator Use
29 CFR 1910.134

Employee's Name: Orzechowski, Greg

Social Security No: 259-65-6191

Company: Law Engineering & Environmental Services, Inc.

Company Branch: Kennesaw, GA

Date Of Exam: 03 May 2001

Exam Location: Industrial Medicine Group Jacksonville, FL

I have examined the above named individual and I certify that this employee:

☑ is physically capable ☐ is not physically capable

of using a negative pressure, air supplied respirator and/or powered air purifying respirator subject to the following restrictions:

☐ Respirator use should be limited to air supplied or powered air purifying respirators. (positive pressure)

No respirator use if wheezing and shortness of breath are evident.

Comments:

Note: Prescription eyeglasses, contact lenses or beards cannot be worn with all types of respirators. Any interference with a face-to-face pieces seal is not acceptable. Contact lenses cannot be worn with any supplied air respirator. General safety recommendations indicate that contact lenses should not be worn in areas where there may be a likelihood of chemical splashes.

Jerry Berke M.D.	x Jerry Berke MD	05/07/2001
Authorized Examiner	Signature	Date

HEALTH RESOURCES

600 West Cummings Park, Suite 3400
Woburn, Massachusetts 01801-6350
Phone: (781) 935 - 8581; (800) 350 - 4511
x: (781) 938 - 4678

Surveillance Examination
Medical Release For Job Placement

Employee's Name: Orzechowski, Greg

Social Security No: 259-65-6191

Company: Law Engineering & Environmental Services, Inc.

Company Branch: Kennesaw, GA

Date Of Exam: 03 May 2001

Exam Location: Industrial Medicine Group Jacksonville, FL

Medical Surveillance Exam:

☐ Asbestos ☑ Hazmat ☐ Deleading ☐ Other _____

☐ Initial ☑ Periodic ☐ Exit ☐ Other _____

I have reviewed the examination of the above named individual per OSHA regulations and in my opinion:

☑ I have not detected any medical condition which would place the employee at increased risk of health impairment from work.

☐ I have detected a medical condition which would place an employee at increased risk of health impairment from work in the proposed job assignment.

☐ I have limited the employee's assigned work. Recommended limitations are:

☐ In evaluating the employee, it was determined that the employee is probably fit for work, but laboratory abnormalities were noted which require follow-up before fitness can be determined.

☐ As part of this evaluation, Blood Lead and Zinc Protoporphyrin testing were performed at an OSHA-CDC approved laboratory. Results were within acceptable limits.

☐ Other:

I have informed the employee of the results of the examination and any medical conditions which require further examination or treatment.

For asbestos examinations: The above employee has been informed of the health risks associated with smoking and asbestos exposure.

Jerry Berke M.D. | x [signature] MD | 05/07/2001

Authorized Physician | Signature | Date

NUS CORPORATION
A Halliburton Company

Certificate of Training

THIS CERTIFIES THAT

David Wilderman

has successfully completed a course of instruction in

HAZARDOUS MATERIAL HANDLING

prepared and conducted by the
NUS Corporation, Pittsburgh, Pennsylvania

JUNE 3 – JUNE 7, 1985
DATE

Gary F. Smith, C.S.P.
Director; Health, Safety Training

E. Dennis Escher, P.E.
Vice President

Certificate of Training
IT HAZWOPER Refresher Training Course

Iguana Educational Services certifies that

David M. Wilderman

has successfully completed the

8-Hour Health and Safety
Training Refresher for
Hazardous Waste Site Operations
in accordance with 29 CFR 1910.120.

on Sunday, October 28, 2001.

Thomas L. Coghill

Training Director

Monday, October 28, 2002

Expiration Date

Iguana Educational Services, Inc.
2620 So. Maryland Parkway
Suite 14, Box 283
Las Vegas, NV 89109

HEALTH RESOURCES

600 West Cummings Park, Suite 3400
Woburn, Massachusetts 01801-6350
Phone: (781) 935 - 8581; (800) 350 - 4511
Fax: (781) 938 - 4678

Certificate For Respirator Use
29 CFR 1910.134

Employee's Name: WILDERMAN, DAVID

Social Security No: 265-43-0014

Company: Law Engineering

Company Branch: Kennesaw, GA

Date Of Exam: 26 October 2001

Exam Location: The Marietta Physician Marietta, GA

I have examined the above named individual and I certify that this employee:

☑ is physically capable ☐ is not physically capable

of using a negative pressure, air supplied respirator and/or powered air purifying respirator subject to the following restrictions:

☐ Respirator use should be limited to air supplied or powered air purifying respirators. (positive pressure)

☐ No respirator use if wheezing and shortness of breath are evident.

Comments: TEMPORARY 7 DAY CLEARANCE

Note: Prescription eyeglasses, contact lenses or beards cannot be worn with all types of respirators. Any interference with a face-to-face pieces seal is not acceptable. Contact lenses cannot be worn with any supplied air respirator. General safety recommendations indicate that contact lenses should not be worn in areas where there may be a likelihood of chemical splashes.

Jerry Berke M.D.	x [signature]	10/26/2001
Authorized Examiner	Signature	Date

HEALTH RESOURCES

600 West Cummings Park, Suite 3400
Woburn, Massachusetts 01801-6350
Phone: (781) 935 - 8581; (800) 350 - 4511
Fax: (781) 938 - 4678

Surveillance Examination
Medical Release For Job Placement

Employee's Name: WILDERMAN, DAVID
Social Security No: 265-43-0014
Company: Law Engineering
Company Branch: Kennesaw, GA
Date Of Exam: 26 October 2001
Exam Location: The Marietta Physician Marietta, GA

Medical Surveillance Exam:

☐ Asbestos ☑ Hazmat ☐ Deleading ☑ Other TEMPORARY 7 DAY CLEARANCE

☑ Initial ☐ Periodic ☐ Exit ☐ Other _____

I have reviewed the examination of the above named individual per OSHA regulations and in my opinion:

☑ I have not detected any medical condition which would place the employee at increased risk of health impairment from work.

☐ I have detected a medical condition which would place an employee at increased risk of health impairment from work in the proposed job assignment.

☐ I have limited the employee's assigned work. Recommended limitations are:

☐ In evaluating the employee, it was determined that the employee is probably fit for work, but laboratory abnormalities were noted which require follow-up before fitness can be determined.

As part of this evaluation, Blood Lead and Zinc Protoporphyrin testing were performed at an OSHA-CDC approved laboratory. Results were within acceptable limits.

Other:

I have informed the employee of the results of the examination and any medical conditions which require further examination or treatment.

For asbestos examinations: The above employee has been informed of the health risks associated with smoking and asbestos exposure.

Jerry Berke M.D.	x	10/26/2001
Authorized Physician	Signature	Date

ALL-PRO

Occupational Trainers

Certify to all that

Jason Allwood

Has successfully completed the requirements of

40 HOUR HAZWOPER

In accordance with 29CFR1910.120(e)(3)

Instructor: Daniel E. Buechner

Date: August 13, 1999
City or Metropolitan Area of class attended: Norcross, GA
Certification Number: 990813475

President: ALL-PRO Occupational Trainers, Inc.

ABAG ASSOCIATION OF BAY AREA GOVERNMENTS

CERTIFICATE OF COMPLETION

Jason Allwood

has successfully completed
the course titled

OSHA 8-hr Annual HAZWOPER Refresher 2001

on

April 10, 2001

and has earned
0.8 CEUs (Continuing Education Units) from the program

Terry Bursztynsky, Training Director
Sharon Kendrick, Training Coordinator
www.hazmatschool.com; (510) 464-7964

Paul W. Gantt, REA
Safety Compliance Management, Inc.

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ABAG ASSOCIATION OF BAY AREA GOVERNMENTS

CERTIFICATE OF COMPLETION

Jeffrey Brock

has successfully completed
the course titled

OSHA 24-hr HazWaste Operations Certification

on
April 12, 2001

and has earned
2.4 CEUs (Continuing Education Units) from the program

Terry Bursztynsky, Training Director
Sharon Kendrick, Training Coordinator
www.hazmatschool.com; (510) 464-7964

Paul W. Gantt, REA
Safety Compliance Management, Inc.

BR
Baxter Reilley
Occupational Trainers

Student ID No. BR95200-9189

BAXTER REILLEY

OCCUPATIONAL TRAINERS

CERTIFY THAT

Thomas Anthony Walker, Sr.

has successfully completed

40 Hour Hazardous Waste Operations and Emergency Response Course

In compliance with 29 CFR 1910.120 (e)(3)

9/13/96

Robert E. Clayton
Director of Instruction

Joel Johnson
President, Baxter Reilley Occupational Trainers, Inc.

Presented By

COOEY ENVIRONMENTAL

This is to Certify

ANTHONY WALKER

has completed an 8 hour Refresher course in

Hazardous Materials and Site Investigations

Required by OSHA 29 CFR 1910.120

Presented this Seventh day of July 2000

Julian C. Cooey, P.E., CET

ALL-PRO

Occupational Trainers

Certify to all that

Joe McVay

Has successfully completed the requirements of

8 HOUR REFRESHER

In accordance with 29CFR1910.120(e)(8)

Instructor: Daniel E. Buechner

Date: February 12, 2001
City or Metropolitan Area of class attended: Norcross, GA
Certification Number: 010212068

President: ALL-PRO Occupational Trainers, Inc.

TRAINING COMPLETION CERTIFICATE

This certificate is awarded to

Justin E. Schmitt

For successful completion of the 40 HOUR INITIAL TRAINING HAZWOPER COURSE as required by OSHA 29 CFR 1910.120

Craig D. Willison — Instructor

2/9/01 — Date

Willison & Associates, Inc.

58

TRAINING COMPLETION CERTIFICATE

This certificate is awarded to

Brian L. Dunlap

For successful completion of the 8 HOUR HAZWOPER REFRESHER COURSE as required by OSHA 29 CFR 1910.120

Craig L. Willison — Instructor

2/9/01 — Date

Willison & Associates, Inc.

Presented By

Condor

BRIAN DUNLAP

Has completed a 40 Hour Course in
Hazardous Materials and Site Investigations
required by OSHA 29 CFR 1910.120(e)

Presented this

November 6, 1997

CONDOR GEOTECHNICAL SERVICES, INC

Donald Stanley

BRADFORD PUBLISHING

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