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Field Sampling Report
for the
Advanced Environmental Technology Site
at
Building 600-84 Iowa Army Ammunition Plant

February, 2001

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Project Description and Objectives

An Environmental Baseline Study was conducted for Building 600-84 and the open field area east and south of this specific building at the Iowa Army Ammunition Plant. The survey was composed of surface soil samples in areas previously used around the site. The purpose was to identify areas of soil contamination as part of an Environmental Baseline Study (EBS) prior to the reuse of the area for a new facility to be built by Advanced Environmental Technology, Inc.

The area of interest extends 50 feet east of Building 600-84 to the location where AET will put a septic system and an area 30 by 90 feet south of the southeast corner of the building where AET Unit 1 will be built. The area south of the wall of Building 600-84 is the main area of interest. The total area is less than a quarter of an acre.

The purpose of the present study was to follow up on previous studies of this site by Jaycor and also to meet requirements of the Federal Facilities Agreement between EPA Region 7 and the US Army. The previous study by Jaycor of this area found no contaminants at all below the surface and minor contaminants in surface soils. This study further defines the surface soils.

The study also serves as a Real Estate site assessment to identify what level of contamination was present in the surface soil before the new AET operation begins construction on the site. The study establishes an environmental baseline for soils in this specific area.

The AET project will in the future utilize additional areas south of Building 600-84, an area west of line 8, and areas in the 5B complex. These areas are not included in this study and will either be studied by the US Army Corps of Engineers Omaha Office or by additional site specific studies using the approaches given here. Separate documentation will be prepared and submitted to EPA for each of those future areas prior to use of them.

Site History and Background

Building 600-84 at the Iowa Army Ammunition Plant was previously used as a facility to test fire small items in metal vessels that had been manufactured at the other facilities at the Iowa Army Ammunition Plant. The facility was constructed in 1941 and operated from 1942 until 1945, when production was suspended after the end of World War II. Production resumed in 1949 during the Korean War and was intensified during the VietNam War. The facility has not been in use since that time.

In the open area south of the facility known as the patio, limited testing of specific items was conducted. The area south of the building was used to test fire the inside charges of grenades only. No complete ordnance items were tested in this area. In review of the historical data obtained from several knowledgeable and long-term employees, American Ordnance, the operator of the facility, determined that the probability of unexploded ordnance (UXO) in or around Building 600-84 is extremely low. All previous outdoor testing in the area known as the patio was conducted in barricades. Any "duds" or malfunctions of charges were accounted for and consequently dealt with before any personnel left the area. American Ordnance has researched

the subject and approved the area for soil sampling. A similar finding was made prior to the previous sampling effort by Jaycor and the area was already previously soil sampled by Jaycor with complete safety.

An area north of Building 600-84 known as the tripod area is not a part of this site and is not relevant to the AET project.

Location of Samples

Extending from the southeast corner of Building 600-84 to the south, AET will be building a new treatment facility. Figure 1 presents the soil sample locations. Figure 2 gives outlines the construction area for the new facility without the sampling data shown. The scale of these figures is 1" = 50'.

The soils samples were located in 5 composite groups with 3 surface samples making up each group. This compositing approach was selected because the purpose of the study is a Phase 1 real estate assessment to determine the occurrence or absence of contamination in these areas only. The general purposes of all of the sampling is to determine if sweepings or spillage from previous activities has occurred and to document the pre-existing conditions at the construction site.

The following 5 areas were sampled using the following rationale for the effort;

East of building 600-84 and northeast of the barricade a new septic system will be installed and the surface soils in this area will be disturbed during construction. This area was sampled to determine if spillage from previous activities has occurred and to document the pre-existing conditions. The field duplicate sample for this study was taken from this area.

The east edge of the parking lot and the west edge of the septic field was sampled to determine if sweepings or spillage from previous activities has occurred and to document the pre-existing conditions.

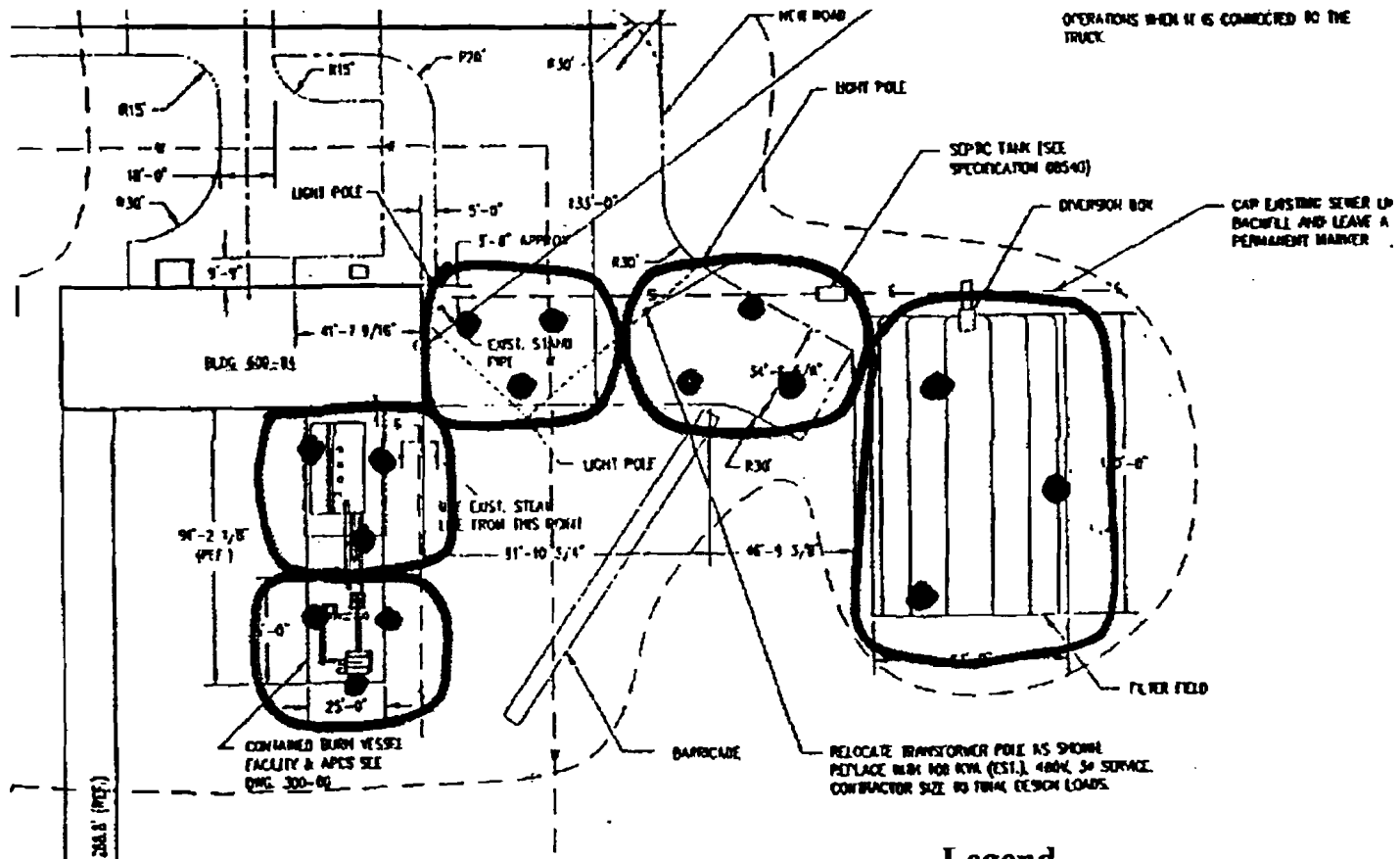
The access area immediately east of Building 600-84 was sampled to determine if sweepings or spillage from previous activities has occurred and to document the pre-existing conditions.

The north end of the construction site for the AET treatment facility was sampled to determine if sweepings or spillage from previous activities has occurred and to document the pre-existing conditions.



The south end of the construction site for the AET treatment facility was sampled to determine if sweepings or spillage from previous activities has occurred and to document the pre-existing conditions.

No releases of hazardous materials have occurred at this site since the activities at the site ceased or since the Jaycor study was conducted the site has been inactive.

Figure 1. Location of Surface Soil Samples and Soil Sample Composite Groups
 Scale 1" = 50'



Legend

- Surface Soil Samples 
- Soil Sample Composite Groupings 

Previous Studies

Numerous studies have been previously conducted at the Iowa Army Ammunition Plant under the CERCLA and RCRA programs. The entire site has been subject to many actions under CERCLA and the RCRA corrective action program. There is a Record of Decision and a Federal Facilities Compliance in effect at the facility, however, Building 600-84 is not an issue in these documents.

Specifically, this site was sampled in the study entitled, "Remedial Investigation/Risk Assessment," Iowa Army Ammunition Plant, Middletown, Iowa Volume 2 of 11, Prepared for US Army Environmental Center, Aberdeen Proving Ground, prepared by Jaycor and ICAIR Life Systems, May 21, 1996. This study investigated the Building 600-84 area and provides a good indication of the situation at this site. Figure 3 shows the locations of the soil samples taken in the Building 600-84 area during that study.

Surface Water Runoff

The area of interest around Building 600-84 is very flat. Surface runoff is rare and when runoff occurs it flows south east toward in the Brush Creek watershed through shallow surface drainages. The change in elevation across the area is less than 5 feet.

IAAAP Geology and Hydrogeology

The geology at the IAAAP is typical of southeastern Iowa which is made up of loess and till deposits overlying bedrock. The alluvial deposits are discontinuous and generally less than 50 to 60 feet thick. The loess deposits ranges from 2 feet thick on the west side of the facility to 6 feet thick on the east. The thickness of the till varies considerably across the facility, varying from 12 feet thick on the southwest side of the facility to 85 to 140 feet thick on the north. Stream erosion has removed the till in some valleys, where the streams are now incised into the underlying bedrock.

The bedrock underlying the IAAAP consists largely of Mississippian to Cambro-Ordovician carbonate rocks that are interbedded with shales and sandstones of varying thickness (Harris et al. 1964). Pennsylvanian shales are present locally (Jaycor, 1992). Bedrock at the IAAAP generally strikes northwest-southeast and dips gently northeast; this contrasts with the regional southwest dip. Bedrock encountered during the drilling of bedrock monitoring wells at the IAAAP includes the Mississippian Keokuk Formation and Burlington Limestone. Along with the Warsaw Formation (described above), these formations comprise the Mississippian aquifer in the area.

Two of the four regional aquifers have been studied in investigations at the IAAAP: the shallow aquifer and the underlying Mississippian aquifer. The water table in the shallow aquifer is quite shallow due to the relatively impermeable nature of the glacial deposits. Groundwater in the shallow aquifer is often perched, and vertical migration and communication with the underlying bedrock aquifer is absent or very limited. The Keokuk and Burlington formations are as one

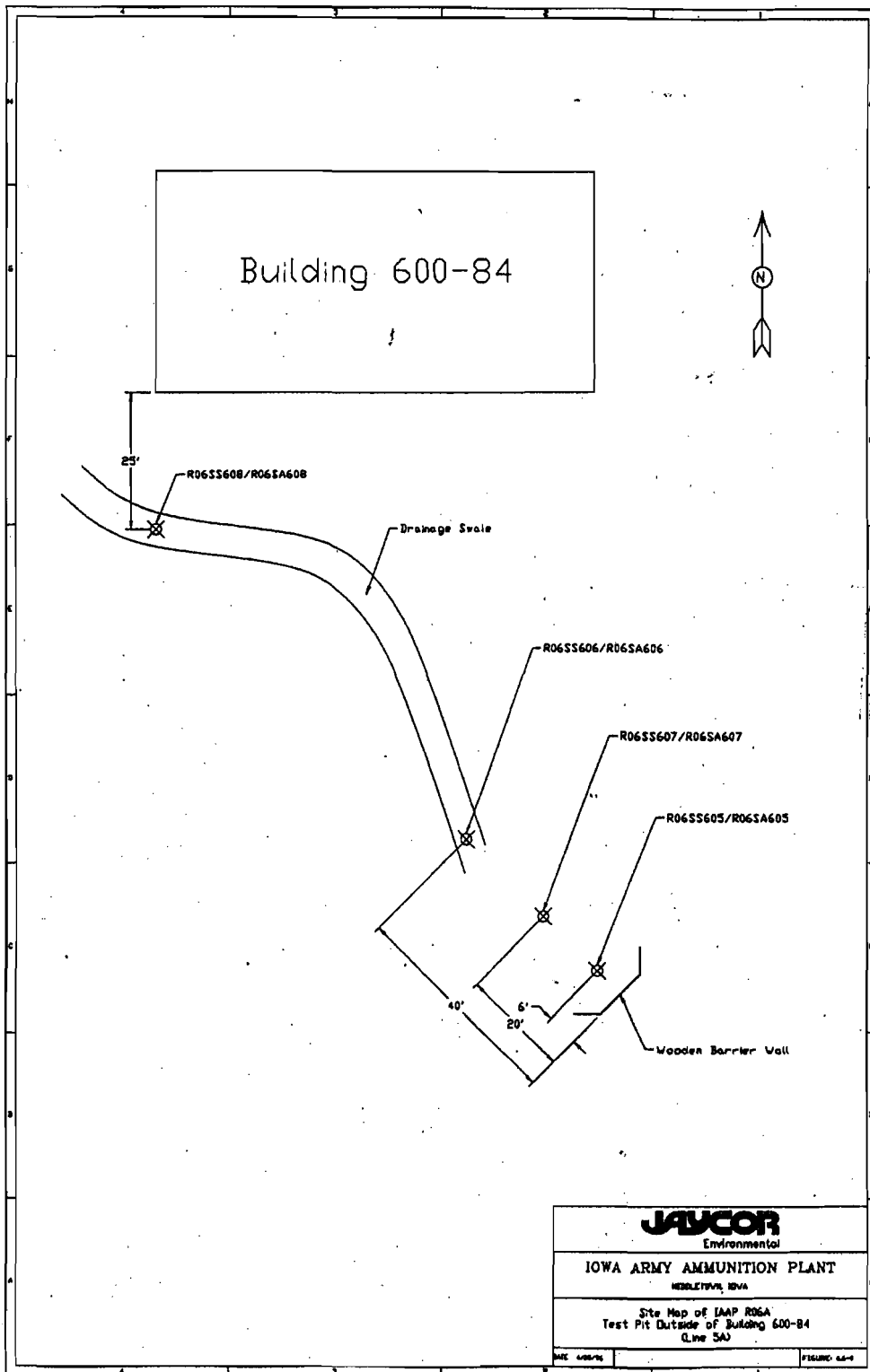


Figure 3. Location of Jaycor Soil Samples Taken in Prior Study at Building 600-84.

Scale 1" = 25'

hydrogeologic unit and comprise the Mississippian or uppermost bedrock aquifer at the IAAAP. Groundwater moves through fractures, or along bedding planes in these rocks, resulting in local differences in flow velocity and direction because the flow direction is partly dependent on the orientation of the fractures transmitting the groundwater. Most studies have concluded that groundwater flow follows the bedrock topography, which slopes to the southeast, reasonably consistent with regional flow patterns. Bedrock beneath the IAAAP is reported to dip northeast, however, suggesting that local flow could potentially be to the northeast along bedding planes.

A previous soil sampling report on the site was issued May 21, 1996 by Jaycor for the US Army Environmental Center. In that study 4 shallow soil samples and 4 deeper samples taken at the 3 foot depth of soil were collected in the area south of the building. The study took a total of 8 samples. These sample locations are shown in Figure 3. There was one surface measurement of 0.57 ug/g of 2,4,6 TNT and surface measurement of 801 ug/g of cadmium. The other 6 samples were clean. No contamination has previously been found at a depth of three feet and since there is no reason to suspect contamination at depth in the soils. There is no evidence of any kind of chemical discharges to the ground or of any buried piping or other structures that could influence deeper soils or ground water. This study focused on the area where contamination most likely would exist, that being the surface soils.

The AET project to be developed at the site initially covers the area shown in Figure 2. The area to be disturbed extends 90 feet from the southeast corner of Building 600-84 and is 30 feet wide. This is the only area to be disturbed in the first Phase of the AET project and the sampling was focused on this area.

Field Activities

The following section describes the field activities as recorded in the Field Sample Log Book.

Date and Location

Sampling was conducted on October 15, 2000 at Building 600-84 on the Iowa Army Ammunition Plant. The team consisted of Ron Gregg of AET and Ron Durbin of American Ordnance.

Field Conditions

Weather was overcast but not raining. Temperature was 60 degrees at 9 am and warmed up to 70 degrees during the day. Wind was 5 mph. The ground was a little damp from rain the previous day. The team met at 9 am and entered the plant through gate 4 in a pickup truck. All gear was in the back of the truck. A security check in was made at Gate 4 and the team and the vehicle were given appropriate badges. The vehicle proceed to Building 600-84 and parked at the east end of the building .

Personnel Protective Equipment

Personnel protective gear for the study was put on. Tyvek suits, yellow rubber overshoes, cotton glove liners, and green outer gloves, hat hats, and steel toed boots were put on in the parking area. Sampling equipment was unloaded from the truck and the bed of the pickup was set up to handle the soil cores, to conduct the decon operations, to composite and package the samples, and to prepare the field paper work.

Locating the Samples in the Field

The location of each of the 15 soil core sample sites was measured to establish an accurate location. The sample site each is representative of a larger area and because a compositing method was used for the soil samples, the field survey technique was more than adequate to locate the sample locations.

From Figure 1, in the " Site Assessment Project Plans," the distance in feet from the southwest corner of Building 600-84 to each sample location was determined. Using a compass and the 100 foot cloth tape, the distances to each sample site were determined from Figure 1 and were laid out in the field using a wooden stake with the sample location written onto it with a marker pen was hammered into the ground at the sample site. The core samples were taken at these locations. Tall grass was removed from the sample locations so the core sampler could operate properly. Core location wooden stakes were hammered deep into the ground and left onsite for future reference.

Procedures for Mini Rae 2000 Photo Ionization Device

At each sample site the PID was used to determine if volatile organic compounds were present. The instrument was precalibrated at Environ Supply Services, Inc. prior to going to the field by a qualified calibration technician. A copy of the calibration certificate is included in the records for this report.

The PID was turned on at each station and allowed to come up to operating temperature and to attain ready status. The gas collection tube was held near the ground surface and passed back and forth over the sample location. prior to driving the core sampler. The PID was left on for 30 seconds and the area around the sample stake was completely checked for VOC readings.

Readings on the PID were recorded in the sample log book for each sample location. The PID was fully charged the night before the sampling and exhibited full charge all during the field work.

Organic vapors were not found at the site. This is consistent with the expectations. There was no reason to expect organic vapors at the site and none were found.

Soil Core Sampling Procedures

The stainless steel core sampler was initially cleaned using decon solution and all parts were scrubbed in the stainless steel basin with the scrub brush. Then the sampler was rinsed three times with distilled water and allowed to air dry. The sampler was then loaded with a clean, new plastic

sleeve 12 inches in length. The core barrel was screwed into the hammer device and all joints were tightened.

At the point where the wooden stake had been located the core sampler was pounded into the ground using the hammer device. Ten to twenty blows of the hammer device were required to drive the core barrel into the soil until it was flush with the ground surface. Reversing the procedure, the core barrel was extruded from the ground. The core barrel was removed with the hammer device and the 12 inch plastic sleeve was removed. End caps were placed on both ends of the plastic sleeve and duct taped into place. The core sample was labeled and placed into a black plastic bag and placed into the cooler.

Core Sampler Cleaning Procedure

The core sampler was completely disassembled and the pieces were placed into the stainless steel cleaning bowl. Decon solution was added to the bowl and the scrub brush was used to thoroughly scrub and clean all the parts. After cleaning each part of the coring device was rinsed three times with distilled water and allowed to air dry prior to the next use.

Decon Solution

Decon solution was prepared prior to beginning sampling. A 1% solution of Enviro Supply & Services, Inc. Liquid Detergent, Free of Phosphates was made of distilled water and detergent. The mix was 1 1/4 ounces of detergent and 128 ounces or 1.0 gallon of distilled water. The solution was made up in a one gallon distilled water container prior to beginning the study.

Distilled water was purchased from a local HY-VEE Supermarket for rinsing all of the equipment.

Sampling Waste Disposal

All disposable clothing including tyvek suits, glove liners, and other trash was placed into a large trash bag. Excess soil from the sampler and from the wash basin were also placed into the trash bag. The trash was collected to the end of the day when all waste materials has been collected. The small amount of rinse waters were collected in two empty distilled water containers and were placed into the plastic bag. The plastic bag was sent to the contaminated waste processor for disposal.

Description of Each Core Sample Location

Core Sample 1-1

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area.

Core Sample 1-2

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area.

Core Sample 1-3

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area.

Core Sample 2-1

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area.

Core Sample 2-2

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area.

Core Sample 2-3

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area. Rocks were found in the core sample.

Core Sample 3-1

The sample was taken near the fire hydrant and near the door of 600-84. the site had gravel and mixed grass. Three inches of gravel were removed with a shovel to all the core sample to be driven 12 inches below the gravel level. the PID reading was 0.0 ppm.

Core Sample 3-2

The site was in the center of the parking lot. Gravel was packed very hard and the core had to be removed to allow the core sampler to be driven.

Six inches of gravel were removed with a shovel to all the core sample to be driven 12 inches below the gravel level. The PID reading was 0.0 ppm.

Core Sample 3-3

Taken near the transformer and barrier. Three inches of gravel were removed to allow the core sampler to be driven. The core was driven to 12 inches below the gravel.

Core Sampler 4-1

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area.

Core Sample 4-2

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area.

Core Sample 4-3

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area.

Core Sample 5-1

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area. No items or debris were observed in this area. the area appears to be undisturbed.

Core Sample 5-2

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area.

Core Sample 5-3

Tall grass surrounded the sample site and was removed around the sample stake so the core sample could be taken. The PID reading was 0.0 ppm. No other items or debris were observed in the area. A groove of trees starts here and proceeds out toward the east.

Compositing Soils Cores and Subsampling

The 3 core samples were composited for each of the 5 sample areas 1, 2, 3, 4, and 5.

Table 1. List of Samples and Sampling Data

Composite Group	Sample Number	Sample Container	Optimum Sample Volume/Mass 1.	Holding Time	Preservative	Parameters for Analysis	Analytical Method
1	S-1m	wide mouth glass jar	fill jar	2	4	8 RCRA metals	Method 6010B/7471
1	S-1e	wide mouth glass jar	fill jar	3	4	Explosives	Method 8330
2	S-2m	wide mouth glass jar	fill jar	2	4	8 RCRA metals	Method 6010B/7471
2	S-2e	wide mouth glass jar	fill jar	3	4	Explosives	Method 8330
3	S-3m	wide mouth glass jar	fill jar	2	4	8 RCRA metals	Method 6010B/7471
3	S-3e	wide mouth glass jar	fill jar	3	4	Explosives	Method 8330
4	S-3m	wide mouth glass jar	fill jar	2	4	8 RCRA metals	Method 6010B/7471
4	S-4e	wide mouth glass jar	fill jar	3	4	Explosives	Method 8330
5	S-4m	wide mouth glass jar	fill jar	2	4	8 RCRA metals	Method 6010B/7471
5	S-5e	wide mouth glass jar	fill jar	3	4	Explosives	Method 8330
5, Field duplicate	S-6m	wide mouth glass jar	fill jar	2	4	8 RCRA metals	Method 6010B/7471
5, Field duplicate	S-6e	wide mouth glass jar	fill jar	3	4	Explosives	Method 8330
4, Soil matx spike	S-7m	wide mouth glass jar	fill jar	2	4	8 RCRA metals	Method 6010B/7471
4, Soil matx spike	S-7e	wide mouth glass jar	fill jar	3	4	Explosives	Method 8330
Field Blank	W-1a	Glass vial	fill vial	2	nitric acid, 4	8 RCRA metals	Method 6010B/7471
Field Blank	W-1b, W-1c	2x1000mls amber bottle	fill bottle	3	4	Explosives	Method 8330
Equipment Blank (rinsate sample)	W-2a	Glass vial	fill vial	2	nitric acid, 4	8 RCRA metals	Method 6010B/7471
Equipment Blank (rinsate sample)	W-2b, W-2c	2x1000mls amber bottle	fill bottle	3	4	Explosives	Method 8330
Footnotes							
1	amount necessary for analysis and quality control per method requirements						
2	6 months						
3	7 days until extraction for waters, 14 days until extraction for solids, then 40 days until analysis						
4	store in cooler with wet ice as a preservative at all times after collection and during shipping.						

Core samples were placed into the stainless steel sampling bowl by extruding the soil from the plastic sleeve with the PVC soil extruder. The PVC extruder was completely deconned between uses. Cores from the three stations in each area were placed into the bowl and mixed with the stainless steel spoon. Soil was completely mixed for 15 minutes and all lumps were broken and thoroughly mixed.

Upon completion of the soil mixing, two wide mouthed glass jars supplied by Test America, Inc. were filled by holding the jar over the bowl and filling the jar with the spoon. The jars were filled to 90% full and the lids were firmly screwed into place. One jar was labeled for explosive analysis and 1 jar was labeled for metal analysis. A duplicate set of jars was filled for sample area 5 to be used as the field duplicate.

A duplicate set of jars was filled for sample area 4 to be used in the laboratory as a matrix spike sample.

Preparation of Field Blank Water Samples

The distilled water used for rinsate was used for the field blank. One 250 ml bottle filled with nitric acid preservative was filled for metals analysis. Two 1000 ml. amber bottles were filled with distilled water for explosives analysis.

Filled bottles were then labeled, placed into bubble wrap, and then placed into the cooler.

Preparation of Decon Water Rinsate Samples

After the soil sampler was cleaned out and triple rinsed, additional rinsate water up to a volume of 2,250 ml was placed into the cleaning bowl. One 250 ml plastic bottle with nitric acid preservative was filled from the cleaning bowl using a funnel that had been deconned. Then two 1000 ml amber bottles were then filled with the rinsate water.

Filled bottles were then labeled, placed into bubble wrap, and then placed into the cooler.

Sample Labeling

Each soil core sample was labeled to designate the sample area and the core sample number. For example 1-3 means sample area 1, core number 3. Fifteen core samples were taken and stored in the cooler prior to compositing.

Soil subsamples were labeled as follows;

S-1e, S-1m, Site 1 explosives, metals
 S-2e, S-2m Site 2 explosives, metals
 S-3e, S-3m Site 3 explosives, metals
 S-4e, S-4m Site 4 explosives, metals
 S-5e, S-5m Site 5 explosives, metals

S-6e, S-6m Site 5 duplicate explosives, metals
 S-7e, S-7m Site 4 soil matrix spike explosives, metals

Test America labels were placed on the 2 plastic bottles, 4 amber glass bottles, and the 14 soil sample jars. Data was recorded on the labels as required and they were coordinated with the chain-of-custody record and the sample analysis request form.

Water samples for field and rinsate blanks were labeled as follows;

W-1a, field blank metals
 W-1b, W-1c, field blank explosives
 W-2a, rinsate metals
 W-2b, W-2c, rinsate explosives

Summary of Field Sampling Quality Control Samples and Procedures

Field duplicate subsamples, for composite group number 5, given sample number S-6e and S-6m, were analyzed to serve as the field duplicate sample. Field duplicate frequency of 1 duplicate sample for the 5 field samples was approved by EPA Region 7.

Soil matrix spike samples, S-7e and S-7m, taken from the area 4 cores composite, were sent to the laboratory where they were spiked by the laboratory with a selected indicator and analyzed to verify the accuracy of the analytical method.

Field blanks of pure deionized decontamination water were prepared in the field. The field blanks, W-1a and W-1b,c were made of the water used for the decontamination of equipment in the field. The water was used for two samples, W-1a analyzed for metals which was preserved with nitric acid and W-1b,c to be analyzed for explosives. These samples were analyzed as water samples and reported accordingly.

Equipment rinsate blanks were collected for analysis. After the sampling equipment was washed with the decontamination solution and washed three times with distilled water, a fourth rinse sample was collected. The water was used for two samples, W-2a analyzed for metals which was preserved with nitric acid and W-2b,c which were to be analyzed for explosives. These samples demonstrated the effectiveness of decontamination procedures.

A summary of the requirements for the quality control samples used is given at the bottom of Table 1.

Sample Analysis Form

A triplicate form was filled out for sample analysis. Sample analysis are summarized below:

S-1e, S-2e, S-3e, S-4e, S-5e, S-6e, S-7e ; soils for explosive analysis

S-1m, S-2m, S-3m, S-4m, S-5m, S-6m, S-7m ; soils for metals analysis

W-1a, W-2a : waters for metal analysis, 250 ml plastic bottles

W-1b, W-1c, W-2b, W-2c : waters for explosives analysis, 1000 ml jars

The sample team had the Federal Express clerk sign the form upon transfer and 2 copies were placed in the cooler on the top of the packing material. The team retained the pink copy.

Specified Analyses

Samples were analyzed for 8 RCRA metals using EPA Method 6010B/7471 and for explosives using EPA Method 8330. The analyses included in these methods are given in the laboratory QC plan in the Site assessment Project Plan.

Table 1 provides a list of samples and sampling data. Table 6.1 in the laboratory quality control manual, in the Site assessment Project Plan, provides additional information.

Cooler and Ice Bags

Plastic zip lock bags were filled with ice and tightly closed. The ice bags were placed into a second black plastic bag which was placed into the bottem of the Test America cooler.

Ice was initially placed in the cooler on the morning of 10-15-2000 and the ice lasted until the morning of 10-16-2000. Coolers were kept outside in the car where the temperature ranged from 40-60 F so the ice melted very little.

The cooler was cleaned and the ice replaced on the morning of 10-16-2000. New ice was added to two ziplock bags which were placed into the black plastic bag.

All samples were able to fit into one cooler so ice was only required in one cooler. The second cooler was not needed.

Chain-of-Custody

Three chain of custody forms were filled out. Because only a single paper copy was provided 3 copies of each of the 3 forms were Xeroxed and stapled together to provide 3 duplicates of each chain of custody record.

The chain-of -custody was signed by Ron Gregg and turned over to the Federal Express agent who signed all nine copies f the forms. The sample team retained one copy and 2 copies of each were placed into the cooler on top of the bubble wrap packing.

Cooler Packing and Shipping

Ice was repacked into zip lock bags 30 minutes prior to shipping. Zip lock bags were placed into black plastic trash bags to prevent water leakage.

Each jar was separately placed in bubble wrap enclosures and all of the jars were placed into a second black plastic bag to further isolate them from the wet ice.

The cooler was tapped shut and sealed with tape. Special tamper proof tape was placed over the lid to provide security from tampering. The chain-of-custody forms (6 total) and sample analysis forms (2 total) were placed in the cooler. A wet ice sticker was placed on top of the cooler.

The Federal Express shipping label was placed on the top of the cooler and a copy was retained. The second cooler was not used and was returned to Test America via Federal Express.

Field Records

Copies of Chain of Custody records and other field records are included for reference in Appendix A of this report.

Results

Laboratory reports are given in Appendix B and provide the actual laboratory results.

Table 2 shows the results of the soil sampling at Building 600-84. The left column gives the analyte of concern for explosives and metals. Across the top are listed the sample numbers. The following paragraph discusses the results shown in the table.

The water quality control samples W-1 and W-2 were non detectable for all explosives and metals. The procedure the laboratory used for analysis is given in the quality control package in Appendix B.

Laboratory Quality Assurance/Quality Control Manual

The Test America Incorporated - Specialized Assays, Inc. laboratory located in Nashville, TN was utilized as the laboratory for this project. A copy of the Test America Incorporated - Specialized Assays, Inc. Laboratory Quality Assurance/Quality Control Manual is included with this "Site Assessment project Plan", is included by reference, and these procedures were used in the laboratory analyses conducted for this study.

Level Three Quality Control

EPA data quality control level three was requires for this study. The quality control data was prepared as part of the analysis by the Test America laboratory in Nashville, TN. The entire level three quality control data package is presented as an appendix to this report as required by EPA. The quality control package is presented in Appendix C.

Table 2. Results of Sampling at Building 600-84 at Iowa Army Ammunition Plant

	W-1	W-2	S-1	S-2	S-3	S-4	S-5	S-6	S-7	Mean
HMX	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RDX	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3,5-TNB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-DNB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetryl	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
NB	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-TNT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Am-DNT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-AM-DNT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,6-DNT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-DNT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	ND	ND	8.66	8.74	4.25	3.76	4.8	5.84	5.05	5.87
Barium	ND	ND	193	98.8	204	184	192	224	2.01	156.83
Cadmium	ND	ND	4.92	7.38	ND	ND	ND	ND	ND	6.15
Chromium	ND	ND	17.1	12.4	14.2	11.9	11.7	15.4	15.2	13.99
Lead	ND	ND	53.7	26.6	ND	15.6	15.9	18.1	14.3	24.03
Mercury	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	ND	ND	1.38	ND	ND	ND	0.96	1.36	ND	0.91
Silver	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

The soil sample analyses for the five composite cores S-1 through S-5 and for the soil duplicate sample S-6 and the soil matrix spike S-7 all came up non detectable for explosives on all samples.

Metal analyses for the same 7 soil core composites also came out as expected. No contamination was found. Arsenic ranged from 3.73 to 8.66 with a mean of 5.871. Barium ranged from 2.01 to 224 with a mean of 156.8. Cadmium ranged from ND to 7.38 with a mean of 6.15. Lead ranged from ND to 53.7 with a mean of 24.03. There was no mercury found in any samples. Selenium ranged from ND to 0.96 with a mean of 0.913. Silver was non detectable for all samples. All of these soil concentrations are well below levels of concern and below soil cleanup action levels.

These results are consistent with the expected findings since there were no previous explosive operations in these areas where AET will add the new facility. Previous activities in the area were in the building and to the south of the AET site. There was no reason to suspect the areas examined in this study would be contaminated and this study confirms that conclusion.

Appendix A

FedEx USA Airbill FedEx Tracking Number 821162138317

SNA22

0215

Sender's Copy

1 From Please print and press hard. Sender's FedEx Account Number
 Date 10-16-2000

Sender's Name Ron Gregg Phone 949-240-6452

Company AET

Address 32872 Bluffside Drive

City Dana Point State CA ZIP 92629

2 Your Internal Billing Reference
First 24 characters will appear on invoice.

3 To Recipient's Name SAMPLE RECEIVING Phone 615-726-0177

Company TEST AMERICA INC

Address 2960 FOSTER CREIGHTON DR

To 'HOLD' at FedEx location, print FedEx address here.
 City NASHVILLE State TN ZIP 37204-3719

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

4a Express Package Service Packages up to 150 lbs. Delivery commitment may be later in some areas.

FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Earliest next business morning delivery to select locations

FedEx 2Day® Second business day FedEx Express Saver® Third business day * FedEx Letter Rate not available. Minimum charge: One-pound rate.

4b Express Freight Service Packages over 150 lbs. Delivery commitment may be later in some areas.

FedEx 1Day Freight® Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day

* Call for Confirmation.

5 Packaging * Declared value limit \$500

FedEx Letter® FedEx Pak® Other Pkg. Includes FedEx Box, FedEx Tube, and customer pkg.

6 Special Handling

Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes HOLD Weekday at FedEx Location Not available with FedEx First Overnight HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? One box must be checked.

No Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice Dry Ice, 8, UN 1845 x _____ kg

Dangerous Goods cannot be shipped in FedEx packaging. Cargo Aircraft Only

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

Sender Acct. No. in Section 1 Recipient Third Party Credit Card Cash/Check will be billed.

FedEx Acct. No. / Credit Card No. 1499-6491-6 Exp. Date

Total Packages	Total Weight	Total Declared Value ¹
		\$.00

¹Our liability is limited to \$100 unless you declare a higher value. See back for details. FedEx Use Only

8 Release Signature Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

359

0139453814

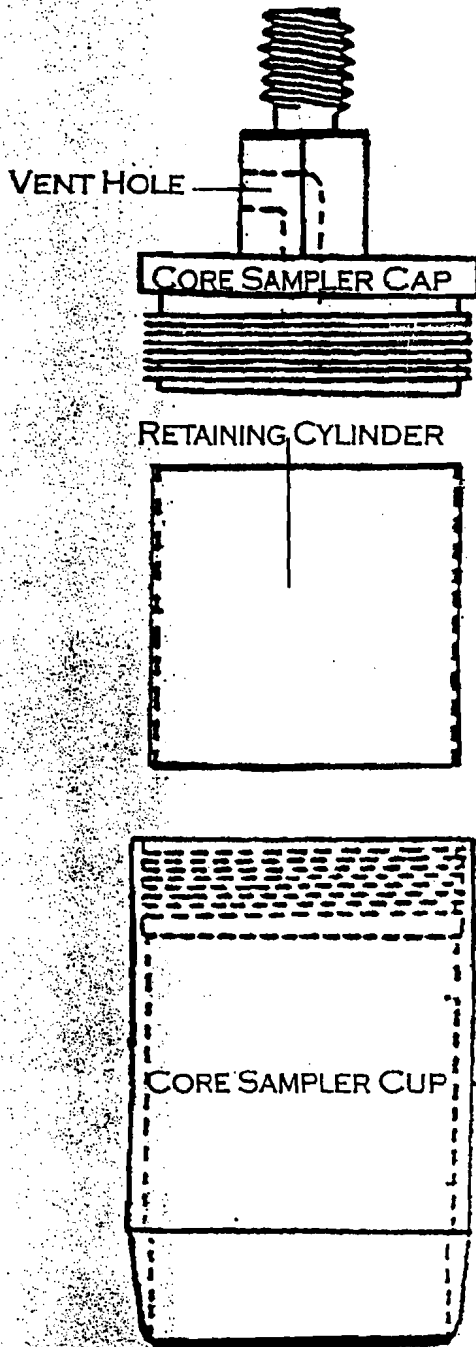
STATION - FEDEX COPY FOR YOUR RECORDS

22



AMS

CORE SAMPLER



USING THE CORE SAMPLER

Check to see that the Core Sampler is tight and Retaining Cylinder is in place.

Thread the Hammer Attachment to the Core Sampler Cap and tighten to approximately 140 lbs.

Drive Core Sampler into soil until Core Sampler Cap is even with the surface of the soil, then extract sampler by driving upward with Hammer Attachment.

Unthread Core Sampler Cap from cup and tip upside down so Retaining Cylinder will slide out. Cap the ends of the Retaining Cylinder with caps provided.

Before inserting the next Retaining Cylinder, clean soil from Core Sampler Cup. Insert Retaining Cylinder, thread cup and cap together.

You are ready to take the next sample.

NOTE: Be sure that the Vent Hole in Cap is kept open.

If you have any questions please call:
1-800-635-7330

The AMS Core Sampler is designed to accept plastic, aluminum, brass, Teflon and stainless steel Retaining Cylinders. It comes with an aluminum Retaining Cylinder and two plastic caps. Additional caps are available. The Core Sampler is designed to be used with the Hammer Attachment.



SHIPPING REQUEST

Request Number: 29816

Requested by: Relda Huggins

Client: AET, INC. 9931
RON GREGG
32872 BLUFFSIDE DRIVE
DANA POINT, CA 92629

Project:
9492406452

```

*****
*
* Ship to this alternate address:
*
*     ARMY AMMUNITION PLANT 3197532984
*
*     ATT: RON DURBAN
*     304 CRESCENT DRIVE
*     MIDDLETON IA 52638
*****

```

Send cooler

Bulk Supply Shipment:

14 4oz JARS

COOLER MANIFEST

Supply Request #: 29816

AET, INC.
RON GREGG
32872 BLUFFSIDE DRIVE
DANA POINT, CA 92629

Project:

PLEASE READ CAREFULLY

- ** If this order is not complete, or, if you have questions, please call us at 1-800-765-0980.
- *** CAUTION! Some the bottles may contain a small amount of acid or base as a preservative. DO NOT DISCARD this material and DO NOT ALLOW CONTACT with the skin or clothing. If contact occurs wash immediately with water.
- *** All bottles must be well wrapped to prevent breakage during shipment. BOTTLES MUST BE SECURED FROM MOVING IN THE COOLER DURING SHIPMENT!!!
- *** Ice must be bagged. Do not use loose ice! Ice must not be used to prevent movement of bottles since it will melt during transport. FED-EX will hold any cooler that appears to be leaking -- even if it is water from melted ice!
- *** IF YOU ARE SHIPPING A NON-AQUEOUS LIQUID OR ORGANIC SOLID be aware that it might be classified as a dangerous material for shipping purposes. You must comply with DOT regulations for shipping these materials. CONTACT THE LABORATORY FOR SHIPPING INFORMATION!!!!
- *** Place the FED-EX label on the top of the cooler -- otherwise the cooler will be turned onto its side to allow processing by FED-EX -- THIS COULD RESULT IN LEAKAGE FROM THE COOLER!
- ** If you are shipping samples to the laboratory and require Saturday Deliver from Federal Express, you must mark the cooler with a yellow Saturday Deli Sticker and also check the boxes on the airbill for Priority Overnight AND Saturday Delivery. Failure to mark the cooler in this manner may result i

COOLER RETURN CHECKLIST

- * ICE IS BAGGED IN ZIPLOCK BAGS OR CONTAINED IN A PLASTIC COOLER LINER
- * BOTTLES HAVE BEEN WRAPPED AND SECURED FROM MOVEMENT INSIDE COOLER
- * "CONTAINS WET ICE" STICKER HAS BEEN AFFIXED TO TOP OF COOLER
- * FED-EX AIRBILL IS ATTACHED TO THE TOP OF THE COOLER
- * NO SAMPLES SHOULD BE SHIPPED IN STYROFOAM OR CARDBOARD BOXES
- * SECURELY TAPE THE COOLER -- INCLUDING ALL SEAMS
- * NOTE SPECIAL PRECAUTIONS FOR SHIPPING DANGEROUS OR UNKNOWN MATERIALS

ADHERENCE TO THESE GUIDLELINES WILL ASSURE THE ON-TIME DELIVERY OF YOUR SAMPLES. ANY PACKAGE THAT APPEARS TO BE LEAKING OR IS IMPROPERLY SECURED WILL NOT BE DELIVERED BY FED-EX!

SUPPLY REQUEST

This shipment should contain all of the properly preserved bottles required to collect the samples for this sampling event as described by phone.

For *EACH* of the 2 WATER samples requiring the following analyses:

Explosives
Metals

Collect the following:

- 1 "250 ml" plastic bottle with nitric acid preservative (red label)
- 2 "1000 ml" amber glass bottle with no preservative (white label)

Bulk Supply Shipment:

14 4oz JARS

EnviroSupply & Service
INC.
(800) 201-8150
Last Calibrated: 10-13-00
Next Service:
Calibration Gas: ISO
100 PPM



Ice

MUST BE SEALED

in supplied trash liner
before cooler is
given to
overnight
carrier.

Appendix B

ANALYTICAL REPORT

AET, INC. 9931
 RON GREGG
 32872 BLUFFSIDE DRIVE
 DANA POINT, CA 92629

Lab Number: 00-A148220
 Sample ID: W-1
 Sample Type: water
 Site ID:

Project:
 Project Name: AET BLDG 600-84
 Sampler: RON DURBIN

Date Collected: 10/15/00
 Time Collected: 14:00
 Date Received: 10/17/00
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
EXPLOSIVES										
HMX	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
RDX	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
1,3,5-TNB	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
1,3-DNB	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
Tetryl	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
NB	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
2,4,6-TNT	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
4-Am-DNT	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
2-Am-DNT	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
2,6-DNT	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
2,4-DNT	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
2-NT	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
4-NT	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
3-NT	ND	mg/l	0.00050	0.00050	1	10/21/00	9:51	Noorbakhsh	8330	1046
METALS										
Arsenic, Total	ND	mg/l	0.0050	0.0050	1	10/24/00	7:09	G.Robinson	6010B	9070
Barium, Total	ND	mg/l	0.0100	0.0100	1	10/24/00	7:09	G.Robinson	6010B	9070
Cadmium, total	ND	mg/l	0.0010	0.0010	1	10/24/00	7:09	G.Robinson	6010B	9070
Chromium, total	ND	mg/l	0.0050	0.0050	1	10/24/00	7:09	G.Robinson	6010B	9070
Lead	ND	mg/l	0.0030	0.0030	1	10/24/00	7:09	G.Robinson	6010B	9070
Mercury, Total	ND	mg/l	0.00020	0.00020	1	10/20/00	10:20	G.McCord	7470	9047
Selenium, Total	ND	mg/l	0.0050	0.0050	1	10/24/00	7:09	G.Robinson	6010B	9070
Silver, Total	ND	mg/l	0.00500	0.00500	1	10/24/00	7:09	G.Robinson	6010B	9070

ND - Not detected at the report limit.

Sample report continued . . .

Test America

INCORPORATED

ANALYTICAL REPORT

Laboratory Number: 00-A148220
Sample ID: W-1

Page 2

Sample Extraction Data

Parameter	Wt/Vol		Date	Analyst	Method
	Extracted	Extract Vol			
Explosives	400. ml	20.0 ml	10/20/00	D.Yeager	8330

Surrogate	% Recovery	Target Range
3,4-DNT, surrogate	93.	35. - 125.

- Recovery outside Laboratory historical limits.

These results relate only to the items tested.
This report shall not be reproduced except in full and with permission of the laboratory.

Report Approved By: W. Lane Report Date: 10/24/00

Paul E. Lane, Jr., Lab Director	Gail A. Lage, Technical Serv.
Michael H. Dunn, M.S., Technical Director	Glenn L. Norton, Technical Serv.
Johnny A. Mitchell, Dir. Technical Serv.	Kelly S. Comstock, Technical Serv.
Eric S. Smith, Assistant Technical Director	Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 131

End of Sample Report.

Test America

INCORPORATED

ANALYTICAL REPORT

AET, INC. 9931
RON GREGG
32872 BLUFFSIDE DRIVE
DANA POINT, CA 92629

Lab Number: 00-A148221
Sample ID: W-2
Sample Type: water
Site ID:

Project:
Project Name: AET BLDG 600-84
Sampler: RON DURBIN

Date Collected: 10/15/00
Time Collected: 15:00
Date Received: 10/17/00
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
EXPLOSIVES										
HMX	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
RDX	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
1,3,5-TNB	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
1,3-DNB	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
Tetryl	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
NB	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
2,4,6-TNT	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
4-Am-DNT	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
2-Am-DNT	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
2,6-DNT	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
2,4-DNT	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
2-NT	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
4-NT	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
3-NT	ND	mg/l	0.00050	0.00050	1	10/21/00	10:18	Noorbakhsh	8330	1046
METALS										
Arsenic, Total	ND	mg/l	0.0050	0.0050	1	10/24/00	7:09	G.Robinson	6010B	9070
Barium, Total	ND	mg/l	0.0100	0.0100	1	10/24/00	7:09	G.Robinson	6010B	9070
Cadmium, total	ND	mg/l	0.0010	0.0010	1	10/24/00	7:09	G.Robinson	6010B	9070
Chromium, total	ND	mg/l	0.0050	0.0050	1	10/24/00	7:09	G.Robinson	6010B	9070
Lead	ND	mg/l	0.0030	0.0030	1	10/24/00	7:09	G.Robinson	6010B	9070
Mercury, Total	ND	mg/l	0.00020	0.00020	1	10/20/00	10:20	G.McCord	7470	9047
Selenium, Total	ND	mg/l	0.0050	0.0050	1	10/24/00	7:09	G.Robinson	6010B	9070
Silver, Total	ND	mg/l	0.00500	0.00500	1	10/24/00	7:09	G.Robinson	6010B	9070

ND - Not detected at the report limit.

ple report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148221
Sample ID: W-2

Page 2

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Analyst	Method
Explosives	400. ml	20.0 ml	10/20/00	D. Yeager	8330

Surrogate	% Recovery	Target Range
3,4-DNT, surrogate	88.	35. - 125.
# - Recovery outside Laboratory historical limits.		

These results relate only to the items tested.
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permission of the laboratory.

Report Approved By: *Paul E. Lane, Jr.* Report Date: 10/24/00

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 131

End of Sample Report.

ANALYTICAL REPORT

AET, INC. 9931
 RON GREGG
 32872 BLUFFSIDE DRIVE
 DANA POINT, CA 92629

Lab Number: 00-A148222
 Sample ID: S-1
 Sample Type: Soil
 Site ID:

Project:
 Project Name: AET BLDG 600-84
 Sampler: RON DURBIN

Date Collected: 10/15/00
 Time Collected: 10:00
 Date Received: 10/17/00
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
EXPLOSIVES										
HMX	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
RDX	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
1,3,5-TNB	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
1,3-DNB	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
Tetryl	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
NB	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
2,4,6-TNT	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
4-Am-DNT	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
2-Am-DNT	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
2,6-DNT	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
2,4-DNT	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
2-NT	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
4-NT	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
3-NT	ND	mg/kg	0.500	0.500	1	10/19/00	19:52	Noorbakhsh	8330	212
METALS										
Arsenic	8.66	mg/kg	0.984	0.984	1	10/24/00	7:15	G.Robinson	6010B	8172
Barium	193.	mg/kg	0.984	0.984	1	10/24/00	7:15	G.Robinson	6010B	8172
Cadmium	4.92	mg/kg	0.984	0.984	1	10/24/00	7:15	G.Robinson	6010B	8172
Chromium	17.1	mg/kg	0.984	0.984	1	10/24/00	7:15	G.Robinson	6010B	8172
Lead	53.7	mg/kg	0.984	0.984	1	10/24/00	7:15	G.Robinson	6010B	8172
Mercury	ND	mg/kg	0.101	0.100	1	10/23/00	9:23	G.McCord	7471	8103
Selenium	1.38	mg/kg	0.984	0.984	1	10/24/00	7:15	G.Robinson	6010B	8172
Silver	ND	mg/kg	0.984	0.984	1	10/24/00	7:15	G.Robinson	6010B	8172

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148222
 Sample ID: S-1

Page 2

TCLP Results

Analyte	Result	Units	Reg Limit	Matrix Spike	Date	Method
				Recovery (%)		

ND - Not detected at the report limit.

Sample Extraction Data

Parameter	Wt/Vol		Date	Analyst	Method
	Extracted	Extract Vol			
Explosives	2.00 gm	20.0 ml	10/18/00	J. Rudden	8330

Surrogate	% Recovery	Target Range
3,4-DNT, surrogate	97.	65. - 153.
# - Recovery outside Laboratory historical limits.		

All results reported on a wet weight basis.

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148222
Sample ID: S-1

Page 3

These results relate only to the items tested.
This report shall not be reproduced except in full and with
permission of the laboratory.

Report Approved By: *Paul E. Lane, Jr.*

Report Date: 10/24/00

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 131

End of Sample Report.

ANALYTICAL REPORT

AET, INC. 9931
 RON GREGG
 32872 BLUFFSIDE DRIVE
 DANA POINT, CA 92629

Lab Number: 00-A148223
 Sample ID: S-2
 Sample Type: Soil
 Site ID:

Project:
 Project Name: AET BLDG 600-84
 Sampler: RON DURBIN

Date Collected: 10/15/00
 Time Collected: 10:30
 Date Received: 10/17/00
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
EXPLOSIVES										
HMX	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
RDX	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
1,3,5-TNB	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
1,3-DNB	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
Tetryl	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
NB	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
2,4,6-TNT	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
4-Am-DNT	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
2-Am-DNT	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
2,6-DNT	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
2,4-DNT	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
2-NT	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
4-NT	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
3-NT	ND	mg/kg	0.493	0.493	1	10/19/00	20:47	Noorbakhsh	8330	212
METALS										
Arsenic	8.74	mg/kg	0.971	0.971	1	10/24/00	7:15	G.Robinson	6010B	8172
Barium	98.8	mg/kg	0.971	0.971	1	10/24/00	7:15	G.Robinson	6010B	8172
Cadmium	7.38	mg/kg	0.971	0.971	1	10/24/00	7:15	G.Robinson	6010B	8172
Chromium	12.4	mg/kg	0.971	0.971	1	10/24/00	7:15	G.Robinson	6010B	8172
Lead	26.6	mg/kg	0.971	0.971	1	10/24/00	7:15	G.Robinson	6010B	8172
Mercury	ND	mg/kg	0.100	0.100	1	10/23/00	9:23	G.McCord	7471	8103
Selenium	ND	mg/kg	0.971	0.971	1	10/24/00	7:15	G.Robinson	6010B	8172
Silver	ND	mg/kg	0.971	0.971	1	10/24/00	7:15	G.Robinson	6010B	8172

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148223
Sample ID: S-2

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TCLP Results

Analyte	Result	Units	Reg Limit	Matrix Spike	Date	Method
				Recovery (%)		

ND - Not detected at the report limit.

Sample Extraction Data

Parameter	Wt/Vol		Date	Analyst	Method
	Extracted	Extract Vol			

Explosives	2.03 gm	20.0 ml	10/18/00	J. Rudden	8330

Surrogate	% Recovery	Target Range

3,4-DNT, surrogate	96.	65. - 153.
# - Recovery outside Laboratory historical limits.		

All results reported on a wet weight basis.

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148223
Sample ID: S-2

Page 3

These results relate only to the items tested.
This report shall not be reproduced except in full and with
permission of the laboratory.

Report Approved By: Gail A. Lage Report Date: 10/24/00

Paul E. Lane, Jr., Lab Director	Gail A. Lage, Technical Serv.
Michael H. Dunn, M.S., Technical Director	Glenn L. Norton, Technical Serv.
Johnny A. Mitchell, Dir. Technical Serv.	Kelly S. Comstock, Technical Serv.
Eric S. Smith, Assistant Technical Director	Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 131

End of Sample Report.

ANALYTICAL REPORT

AET, INC. 9931
 RON GREGG
 32872 BLUFFSIDE DRIVE
 DANA POINT, CA 92629

Lab Number: 00-A148224
 Sample ID: S-3
 Sample Type: Soil
 Site ID:

Project:
 Project Name: AET BLDG 600-84
 Sampler: RON DURBIN

Date Collected: 10/15/00
 Time Collected: 11:00
 Date Received: 10/17/00
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
EXPLOSIVES										
HMX	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
RDX	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
1,3,5-TNB	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
1,3-DNB	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
Tetryl	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
NB	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
2,4,6-TNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
4-Am-DNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
2-Am-DNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
2,6-DNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
2,4-DNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
2-NT	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
4-NT	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
3-NT	ND	mg/kg	0.498	0.498	1	10/19/00	21:14	Noorbakhsh	8330	212
METALS										
Arsenic	4.25	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Barium	204.	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Cadmium	ND	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Chromium	14.2	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Lead	ND	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Mercury	ND	mg/kg	0.100	0.100	1	10/23/00	9:23	G.McCord	7471	8103
Selenium	ND	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Silver	ND	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148224
Sample ID: S-3

Page 2

TCLP Results

Analyte	Result	Units	Reg Limit	Matrix Spike		Date	Method
				Recovery (%)			

ND - Not detected at the report limit.

Sample Extraction Data

Parameter	Wt/Vol		Date	Analyst	Method
	Extracted	Extract Vol			
Explosives	2.01 gm	20.0 ml	10/18/00	J. Rudden	8330

Surrogate	% Recovery	Target Range
3,4-DNT, surrogate	95.	65. - 153.
# - Recovery outside Laboratory historical limits.		

All results reported on a wet weight basis.

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148224
Sample ID: S-3

Page 3

These results relate only to the items tested.
This report shall not be reproduced except in full and with
permission of the laboratory.

Report Approved By: Gail A. Lage Report Date: 10/24/00

Paul E. Lane, Jr., Lab Director	Gail A. Lage, Technical Serv.
Michael H. Dunn, M.S., Technical Director	Glenn L. Norton, Technical Serv.
Johnny A. Mitchell, Dir. Technical Serv.	Kelly S. Comstock, Technical Serv.
Eric S. Smith, Assistant Technical Director	Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 131

End of Sample Report.

ANALYTICAL REPORT

AET, INC. 9931
 RON GREGG
 32872 BLUFFSIDE DRIVE
 DANA POINT, CA 92629

Lab Number: 00-A148225
 Sample ID: S-4
 Sample Type: Soil
 Site ID:

Project:
 Project Name: AET BLDG 600-84
 Sampler: RON DURBIN

Date Collected: 10/15/00
 Time Collected: 11:30
 Date Received: 10/17/00
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
EXPLOSIVES										
HMX	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
RDX	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
1,3,5-TNB	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
1,3-DNB	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
Tetryl	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
NB	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
2,4,6-TNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
4-Am-DNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
2-Am-DNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
2,6-DNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
2,4-DNT	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
2-NT	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
4-NT	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
3-NT	ND	mg/kg	0.498	0.498	1	10/19/00	21:41	Noorbakhsh	8330	212
METALS										
Arsenic	3.76	mg/kg	0.990	0.990	1	10/24/00	7:15	G.Robinson	6010B	8172
Barium	184.	mg/kg	0.990	0.990	1	10/24/00	7:15	G.Robinson	6010B	8172
Cadmium	ND	mg/kg	0.990	0.990	1	10/24/00	7:15	G.Robinson	6010B	8172
Chromium	11.9	mg/kg	0.990	0.990	1	10/24/00	7:15	G.Robinson	6010B	8172
Lead	15.6	mg/kg	0.990	0.990	1	10/24/00	7:15	G.Robinson	6010B	8172
Mercury	ND	mg/kg	0.101	0.100	1	10/23/00	9:23	G.McCord	7471	8103
Selenium	ND	mg/kg	0.990	0.990	1	10/24/00	7:15	G.Robinson	6010B	8172
Silver	ND	mg/kg	0.990	0.990	1	10/24/00	7:15	G.Robinson	6010B	8172

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148225
 Sample ID: S-4

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TCLP Results

Analyte	Result	Units	Reg Limit	Matrix Spike Recovery (%)	Date	Method
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ND - Not detected at the report limit.

Sample Extraction Data

Parameter	Wt/Vol		Date	Analyst	Method
	Extracted	Extract Vol			
Explosives	2.01 gm	20.0 ml	10/18/00	J. Rudden	8330

Surrogate	% Recovery	Target Range
3,4-DNT, surrogate	95.	65. - 153.
# - Recovery outside Laboratory historical limits.		

All results reported on a wet weight basis.

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148225
Sample ID: S-4

Page 3

These results relate only to the items tested.
This report shall not be reproduced except in full and with
permission of the laboratory.

Report Approved By: Paul E. Lane, Jr.

Report Date: 10/24/00

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 131

End of Sample Report.

ANALYTICAL REPORT

AET, INC. 9931
 RON GREGG
 32872 BLUFFSIDE DRIVE
 DANA POINT, CA 92629

Lab Number: 00-A148226
 Sample ID: S-5
 Sample Type: Soil
 Site ID:

Project:
 Project Name: AET BLDG 600-84
 Sampler: RON DURBIN

Date Collected: 10/15/00
 Time Collected: 12:00
 Date Received: 10/17/00
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
EXPLOSIVES										
HMX	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
RDX	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
1,3,5-TNB	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
1,3-DNB	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
Tetryl	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
NB	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
2,4,6-TNT	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
4-Am-DNT	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
2-Am-DNT	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
2,6-DNT	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
2,4-DNT	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
2-NT	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
4-NT	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
3-NT	ND	mg/kg	0.493	0.493	1	10/19/00	22:09	Noorbakhsh	8330	212
METALS										
Arsenic	4.80	mg/kg	0.960	0.960	1	10/24/00	7:15	G.Robinson	6010B	8172
Barium	192.	mg/kg	0.960	0.960	1	10/24/00	7:15	G.Robinson	6010B	8172
Cadmium	ND	mg/kg	0.960	0.960	1	10/24/00	7:15	G.Robinson	6010B	8172
Chromium	11.7	mg/kg	0.960	0.960	1	10/24/00	7:15	G.Robinson	6010B	8172
Lead	15.9	mg/kg	0.960	0.960	1	10/24/00	7:15	G.Robinson	6010B	8172
Mercury	ND	mg/kg	0.100	0.100	1	10/23/00	9:23	G.McCord	7471	8103
Selenium	0.960	mg/kg	0.960	0.960	1	10/24/00	7:15	G.Robinson	6010B	8172
Silver	ND	mg/kg	0.960	0.960	1	10/24/00	7:15	G.Robinson	6010B	8172

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148226
 Sample ID: S-5

Page 2

TCLP Results

Analyte	Result	Units	Reg Limit	Matrix Spike		Date	Method
				Recovery (%)			

ND - Not detected at the report limit.

Sample Extraction Data

Parameter	Wt/Vol		Date	Analyst	Method
	Extracted	Extract Vol			

Explosives	2.03 gm	20.0 ml	10/18/00	J. Rudden	8330

Surrogate	% Recovery	Target Range

3,4-DNT, surrogate	97.	65. - 153.
# - Recovery outside Laboratory historical limits.		

All results reported on a wet weight basis.

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148226
Sample ID: S-5

Page 3

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permission of the laboratory.

Report Approved By: Gail A. Lage

Report Date: 10/24/00

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 131

End of Sample Report.

ANALYTICAL REPORT

AET, INC. 9931
 RON GREGG
 32872 BLUFFSIDE DRIVE
 DANA POINT, CA 92629

Lab Number: 00-A148227
 Sample ID: S-6
 Sample Type: Soil
 Site ID:

Project:
 Project Name: AET BLDG 600-84
 Sampler: RON DURBIN

Date Collected: 10/15/00
 Time Collected: 12:30
 Date Received: 10/17/00
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
EXPLOSIVES										
HMX	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
RDX	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
1,3,5-TNB	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
1,3-DNB	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
Tetryl	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
NB	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
2,4,6-TNT	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
4-Am-DNT	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
2-Am-DNT	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
2,6-DNT	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
2,4-DNT	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
2-NT	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
4-NT	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
3-NT	ND	mg/kg	0.490	0.490	1	10/19/00	22:36	Noorbakhsh	8330	212
METALS										
Arsenic	5.84	mg/kg	0.973	0.973	1	10/24/00	7:15	G.Robinson	6010B	8172
Barium	224.	mg/kg	0.973	0.973	1	10/24/00	7:15	G.Robinson	6010B	8172
Cadmium	ND	mg/kg	0.973	0.973	1	10/24/00	7:15	G.Robinson	6010B	8172
Chromium	15.4	mg/kg	0.973	0.973	1	10/24/00	7:15	G.Robinson	6010B	8172
Lead	18.1	mg/kg	0.973	0.973	1	10/24/00	7:15	G.Robinson	6010B	8172
Mercury	ND	mg/kg	0.100	0.100	1	10/23/00	9:23	G.McCord	7471	8103
Selenium	1.36	mg/kg	0.973	0.973	1	10/24/00	7:15	G.Robinson	6010B	8172
Silver	ND	mg/kg	0.973	0.973	1	10/24/00	7:15	G.Robinson	6010B	8172

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148227
 Sample ID: S-6

Page 2

TCLP Results

Analyte	Result	Units	Reg Limit	Matrix Spike	Date	Method
				Recovery (%)		

ND - Not detected at the report limit.

Sample Extraction Data

Parameter	Wt/Vol		Date	Analyst	Method
	Extracted	Extract Vol			
Explosives	2.04 gm	20.0 ml	10/18/00	J. Rudden	8330

Surrogate	% Recovery	Target Range
3,4-DNT, surrogate	97.	65. - 153.
# - Recovery outside Laboratory historical limits.		

All results reported on a wet weight basis.

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148227
Sample ID: S-6

Page 3

These results relate only to the items tested.
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permission of the laboratory.

Report Approved By: *Eric S. Smith*

Report Date: 10/24/00

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 131

End of Sample Report.

ANALYTICAL REPORT

AET, INC. 9931
 RON GREGG
 32872 BLUFFSIDE DRIVE
 DANA POINT, CA 92629

Lab Number: 00-A148228
 Sample ID: S-7
 Sample Type: Soil
 Site ID:

Project:
 Project Name: AET BLDG 600-84
 Sampler: RON DURBIN

Date Collected: 10/15/00
 Time Collected: 13:00
 Date Received: 10/17/00
 Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
EXPLOSIVES										
HMX	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
RDX	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
1,3,5-TNB	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
1,3-DNB	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
Tetryl	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
NB	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
2,4,6-TNT	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
4-Am-DNT	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
2-Am-DNT	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
2,6-DNT	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
2,4-DNT	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
2-NT	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
4-NT	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
3-NT	ND	mg/kg	0.488	0.488	1	10/19/00	23:04	Noorbakhsh	8330	212
METALS										
Arsenic	5.05	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Barium	201.	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Cadmium	ND	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Chromium	15.2	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Lead	14.3	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Mercury	ND	mg/kg	0.100	0.100	1	10/23/00	9:23	G.McCord	7471	8103
Selenium	ND	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172
Silver	ND	mg/kg	1.01	1.00	1	10/24/00	7:15	G.Robinson	6010B	8172

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148228
Sample ID: S-7

Page 2

TCLP Results

Analyte	Result	Units	Reg Limit	Matrix Spike		Date	Method
				Recovery (%)			

ND - Not detected at the report limit.

Sample Extraction Data

Parameter	Wt/Vol		Date	Analyst	Method
	Extracted	Extract Vol			

Explosives	2.05 gm	20.0 ml	10/18/00	J. Rudden	8330

Surrogate	% Recovery	Target Range

3,4-DNT, surrogate	93.	65. - 153.
# - Recovery outside Laboratory historical limits.		

All results reported on a wet weight basis.

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 00-A148228
Sample ID: S-7

Page 3

These results relate only to the items tested.
This report shall not be reproduced except in full and with
permission of the laboratory.

Report Approved By: Michael H. Dunn

Report Date: 10/24/00

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director

Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 131

End of Sample Report.

Appendix C

CASE NARRATIVE

Client: AET INCORPORATED (9931)
ATTN: RON GREGG
32872 BLUFFSIDE DRIVE
DANA POINT, CA 92629

Client Project: AET BLDG 600-84

Matrix: SOIL/WATER

Laboratory Project: 212080

Received : 7/2

Date Received: 10/17/00

Date Collected: 10/15/00

Sample Receipt Notes: All samples were received in good condition. No abnormalities were noted at sample login. All analyses were conducted using SW846 methodologies, Update III. Dry weight determination was not requested on the chain of custody for these samples, and all values are reported as wet weight.

QC NOTES:

EXPLOSIVES by SW846\8330 – BATCH: 1046

Laboratory reagent water was used for MS/MSD analysis due to the limited volume of sample received for all samples in the analytical batch. All analytes were within required historical limits on the MS/MSD and LCS (Laboratory Control Sample) analyses, and all RPD values for the pair were acceptable. All calibration requirements of the method were within limits.

EXPLOSIVES by SW846\8330 – BATCH: 212

Soil Composite S-1E was used for MS/MSD analysis for the analytical batch. All analytes were within required historical limits on the MS/MSD and LCS (Laboratory Control Sample) analyses, and all RPD values for the pair were acceptable. All calibration requirements of the method were within limits.

METALS by SW846 6010B/7470 – Batch 9070/9047

The sample used for MS/MSD analysis was not a member of this sample delivery group. The recoveries for all spike analytes on the MS were within historical limits, and all RPD values for the sample duplicate analysis were acceptable. All analytes were within required historical limits on the laboratory control sample.

METALS by SW846 6010B/7470 – Batch 8172/8172

The sample used for MS/MSD analysis was not a member of this sample delivery group. The recoveries for all spike analytes on the MS were within historical limits, and all RPD values for the sample duplicate analysis were acceptable. All analytes were within required historical limits on the laboratory control sample.

If you have any questions regarding the enclosed data package, please call Johnny Mitchell at 1-800-765-0980.

Thanks



Johnny A. Mitchell
Director, Technical Services

EXPLOSIVES SW846 8330

SUMMARY DATA

SPECIALIZED ASSAYS, INC
2960 FOSTER CREIGHTON DRIVE
NASHVILLE, TN 37204
1-800-765-0980

TestAmerica

INCORPORATED

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Sample Identification

W-1

Matrix: Water
pH:
Units: ug/l
Dilution Factor: 1.
Analysis Method: SW8330
Delivery Group: 212080
Instrument:
Vol Extracted: 400. ml
Extract Vol: 20.0 ml

Lab Sample ID: 00-A148220
Date Sampled:: 10/15/00
Date Received: 10/17/00
Analysis Date: 10/21/00
Analysis Time: 9:51
Sample QC Group: 1046

Extraction Date: 10/20/00

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	HMX	0.5	.. U
121-82-4	RDX	0.5	.. U
99-35-4	1,3,5-TNB	0.5	.. U
99-65-0	1,3-DNB	0.5	.. U
479-45-8	Tetryl	0.5	.. U
98-95-3	NB	0.5	.. U
118-96-7	2,4,6-TNT	0.5	.. U
1946-51-0	4-Am-DNT	0.5	.. U
355-72-78-2	2-Am-DNT	0.5	.. U
606-20-2	2,6-DNT	0.5	.. U
121-14-2	2,4-DNT	0.5	.. U
88-72-2	2-NT	0.5	.. U
99-99-0	4-NT	0.5	.. U
99-08-1	3-NT	0.5	.. U

Sample Identification

W-2

Matrix: Water
 pH:
 Units: ug/l
 Dilution Factor: 1.
 Analysis Method: SW8330
 Delivery Group: 212080
 Instrument:
 Vol Extracted: 400. ml
 Extract Vol: 20.0 ml

Lab Sample ID: 00-A148221
 Date Sampled:: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/21/00
 Analysis Time: 10:18
 Sample QC Group: 1046

 Extraction Date: 10/20/00

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	HMX	0.5	.. U
121-82-4	RDX	0.5	.. U
99-35-4	1,3,5-TNB	0.5	.. U
99-65-0	1,3-DNB	0.5	.. U
479-45-8	Tetryl	0.5	.. U
98-95-3	NB	0.5	.. U
118-96-7	2,4,6-TNT	0.5	.. U
1946-51-0	4-Am-DNT	0.5	.. U
355-72-78-2	2-Am-DNT	0.5	.. U
606-20-2	2,6-DNT	0.5	.. U
121-14-2	2,4-DNT	0.5	.. U
88-72-2	2-NT	0.5	.. U
99-99-0	4-NT	0.5	.. U
99-08-1	3-NT	0.5	.. U

TestAmerica

INCORPORATED

69

Sample Identification

BLANK

Matrix: Water
% Dry Weight:
Units: UG/L
Dilution Factor: 1
Analysis Method: SW8330
Delivery Group: 212080
Instrument:
Volume Extracted: 400.0 ml
Extract Vol: 4.0 ml

Lab Sample ID: BLANK
Date Sampled:
Date Received: 10/17/00
Analysis Date: 10/21/00
Analysis Time: 8:01
Sample QC Group: 1046
Extraction Date:

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	HMX	0.5	U
121-82-4	RDX	0.5	U
99-35-4	1,3,5-TNB	0.5	U
99-65-0	1,3-DNB	0.5	U
479-45-8	Tetryl	0.5	U
98-95-3	NB	0.5	U
118-96-7	2,4,6-TNT	0.5	U
1946-51-0	4-Am-DNT	0.5	U
355-72-78-2	2-Am-DNT	0.5	U
606-20-2	2,6-DNT	0.5	U
121-14-2	2,4-DNT	0.5	U
88-72-2	2-NT	0.5	U
99-99-0	4-NT	0.5	U
99-08-1	3-NT	0.5	U

2A
8330 EXPLOSIVES SURROGATE RECOVERY SUMMARY

Lab Name: Test America

SDG # 212080

	SAMPLE NO.	% Recovery	#	TOT OUT
01	XBLANK W	91		
02	W-1A	93		
03	W-2A	88		
04	BLANK MS	99		
05	BLANK MSD	91		
06	CONTROL W	84		
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Surrogate used: 3,4-Dinitrotoluene

Surrogate LIMITS: 35-125

* : Values outside of contract required QC limits

(+): Surrogate not determined due to interference

D : System Monitoring Compound diluted out

FORM 3D

SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab: Specialized Assays, Inc.

Project: AET BLDG 600-84

Matrix Spike Sample:

SDG: 212080

QC Group: 1046

Compound	Spike Added	Sample Conc	Spike Conc	% Rec	QC Limits
HMX	50	0	46	92	32 - 145
RDX	50	0	48	95	25 - 142
1, 3, 5-TNB	50	0	45	90	10 - 131
1, 3-DNB	50	0	41	82	26 - 129
Tetryl	50	0	52	103	15 - 104
NB	50	0	40	79	21 - 116
2, 4, 6-TNT	50	0	46	92	10 - 150
4-Am-DNT	50	0	50	100	40 - 125
2-Am-DNT	50	0	48	96	30 - 127
2, 6-DNT	50	0	55	110	17 - 127
2, 4-DNT	50	0	42	85	32 - 122
2-NT	50	0	44	89	23 - 106
4-NT	50	0	45	90	20 - 114
3-NT	50	0	44	88	20 - 110

Compound	Spike Added	MSD Conc	% Rec	RPD	RPD Limit	Recovery Limits
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FORM 3D

SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab: Specialized Assays, Inc.			Project: AET BLDG 600-84			
HMX	50	42.5	85	8	64	32 - 145
RDX	50	44.5	89	7	51	25 - 142
1,3,5-TNB	50	41	82	9	66	10 - 131
1,3-DNB	50	37.5	75	9	52	26 - 129
Tetryl	50	46.5	93	10	68	15 - 104
NB	50	34.5	69	14	66	21 - 116
2,4,6-TNT	50	42	84	9	39	10 - 150
4-Am-DNT	50	45	90	11	39	40 - 125
2-Am-DNT	50	43.5	87	10	33	30 - 127
2,6-DNT	50	47.5	95	15	51	17 - 127
2,4-DNT	50	38.5	77	10	46	32 - 122
2-NT	50	39.5	79	12	65	23 - 106
4-NT	50	39	78	14	67	20 - 114
3-NT	50	38.5	77	13	72	20 - 110

Concentration Units: ug/L

RPD: 0 out of 14 outside QC limits.
 Spike Recoveries: 0 out of 28 outside QC limits.

FORM 3Da

SEMI-VOLATILE LABORATORY CONTROL RECOVERY

Lab: Specialized Assays, Inc.

Project: AET BLDG 600-84

SDG: 212080

QC Group: 1046

Compound	Known Value	Conc	% Rec	QC Limits
HMX	50	43.5	87	30-146
RDX	50	40	80	26-151
1,3,5-TNB	50	34.5	69	19-131
1,3-DNB	50	32.5	65	20-140
Tetryl	50	31	62	19-104
NB	50	27.5	55	20-122
2,4,6-TNT	50	35.5	71	21-147
4-Am-DNT	50	41	82	32-142
2-Am-DNT	50	39	78	31-135
2,6-DNT	50	41.5	83	23-131
2,4-DNT	50	33	66	21-142
2-NT	50	31.5	63	20-112
4-NT	50	31.5	63	21-115
3-NT	50	32	64	22-114

Concentration Units: ug/L

Recoveries: 0 out of 14 outside QC limits.

8330 EXPLOSIVES METHOD BLANK SUMMARY

XBLANK W

Lab Name: Test America Lab Sample ID: 15551 wbb
 SDG # 212080 Lab File ID: 1021ex4.002
 Instrument ID: HPLC 4 Date Analyzed: 10/21/00
 Extraction Volume: 400 ml Time Analyzed: 8:01
 Volume Extracted : 20 ml Date Received: 10/17/00
 HPLC Column: Ultracarb 5 (250x4.6 mm) Date Extracted: 10/20/00

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD AND LCS:

	CLIENT ID	LAB ID	LAB FILE ID	DATE	TIME ANALYZED
01	W-1A	148220	1021ex4.006	10/21/00	9:51
02	W-2A	148221	1021ex4.007	10/21/00	10:18
03	BLANK MS	15552 wsb	1021ex4.003	10/21/00	8:28
04	BLANK MSD	15553 wsb	1021ex4.004	10/21/00	8:56
05	CONTROL W	25380 lcs	1021ex4.005	10/21/00	9:23
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

COMMENTS:

75

6C
8330 EXPLOSIVES INITIAL CALIBRATION
UV

Lab Name : Test America Instrument ID: HPLC 4

SDG # 212080 Calibration Date : 10/5/00

Lab File: RF 1= 1005ex4.005
RF 2= 1005ex4.006
RF 3= 1005ex4.007
RF 4= 1005ex4.008
RF 5= 1005ex4.009
RF 6= 1005ex4.010
RF 7= 1005ex4.012

Column : Ultracarb 5 (250x4.6 mm)

COMPOUND	RF 1 2 ppm	RF 2 1 ppm	RF 3 0.5 ppm	RF 4 0.25 pp	RF 5 0.1 ppm	RF 6 0.05 ppm	RF 7 0.01 pp	RF % RSD	AVERAGE RF
HMX	70503	72294	72922	76180	73200	85420	91900	10.4	77488
RDX	85508	89894	96750	110856	126130	84480	81700	17.065	96474
1,3,5-TNB	190240	192363	196974	200540	244080	255800	292000	17.76	224571
1,3-DNB	254581	260260	259664	261688	323060	357860	486300	27.1	314773
Tetryl	138909	142876	140492	140892	138150	157400	188400	12.25	149588
Nitrobenzene	164496	168557	164496	166488	163230	188740	211900	10.4	175415
3,4-DNT Surrogate	94607	97728	96436	97004	117530	129000	158400	21.2	112958
2,4,6-TNT	176323	181274	182404	182784	215060	242700	255700	16.02	205178
4-Amino 2,6-DNT	126710	129500	130656	129140	125600	151080	163700	11.51	136627
2-Amino 4,6-DNT	173710	178769	181358	179668	170840	212120	211000	9.267	186781
2,6-DNT	125263	129084	125704	127848	118960	155380	143500	19.26	132248
2,4-DNT	222664	229022	228052	226192	289960	316780	331500	18.116	263453
2-NT	100828	102473	107444	105888	97610	109040	105200	3.8	104069
4-NT	82857	84168	82624	81708	81708	114020	76500	14.48	86226
3-NT	106801	109286	107494	105104	112780	138180	95300	11.98	110706

AVERAGE RF	158437
AVERAGE RF % RSD	14.71

7C

8330 EXPLOSIVES CONTINUING CALIBRATION CHECK

Lab Name: Test America Column : Ultracarb 5 (250x4.6 mm)
 SDG # 212080 Calibration Date: 10/5/00
 Instrument ID: HPLC 4 Cont. Calib. Date: 10/21/00
 Lab File ID: 1021EX4.001 1.0 PPM STD

COMPOUND	known	actual	%D	MAX %D
HMX	1.00	0.92	8.3	15.0
RDX	1.00	0.91	9.4	15.0
1,3,5-TNB	1.00	0.84	17.4	15.0
1,3-DNB	1.00	0.82	19.8	15.0
Tetryl	1.00	0.94	6.2	15.0
Nitrobenzene	1.00	0.92	8.3	15.0
2,4,6-TNT	1.00	0.91	9.4	15.0
4-Amino 2,6-DNT	1.00	0.95	5.1	15.0
2-Amino 4,6-DNT	1.00	0.94	6.2	15.0
2,6-DNT	1.00	1.06	5.8	15.0
2,4-DNT	1.00	0.78	24.7	15.0
2-NT	1.00	0.95	5.1	15.0
4-NT	1.00	0.95	5.1	15.0
3-NT	1.00	0.95	5.1	15.0

AVERAGE %D

9.72

7C

8330 EXPLOSIVES CONTINUING CALIBRATION CHECK

Lab Name: Test America Column : Ultracarb 5 (250x4.6 mm)
 SDG # 212080 Calibration Date: 10/5/00
 Instrument ID: HPLC 4 Cont. Calib. Date: 10/21/00
 Lab File ID: 1021EX4.008 1.0 PPM STD

COMPOUND	known	actual	%D	MAX %D
HMX	1.00	0.92	8.3	15.0
RDX	1.00	0.91	9.4	15.0
1,3,5-TNB	1.00	0.84	17.4	15.0
1,3-DNB	1.00	0.82	19.8	15.0
Tetryl	1.00	0.94	6.2	15.0
Nitrobenzene	1.00	0.92	8.3	15.0
2,4,6-TNT	1.00	0.91	9.4	15.0
4-Amino 2,6-DNT	1.00	0.94	6.2	15.0
2-Amino 4,6-DNT	1.00	0.94	6.2	15.0
2,6-DNT	1.00	1.04	3.9	15.0
2,4-DNT	1.00	0.79	23.5	15.0
2-NT	1.00	0.95	5.1	15.0
4-NT	1.00	0.94	6.2	15.0
3-NT	1.00	0.95	5.1	15.0

AVERAGE %D

9.65

8330 EXPLOSIVES ANALYSIS DATA SHEET

BLANK MS

Lab Name: Test America **Lab Sample ID:** 15552 wsb
SDG #: 212080 **Lab File ID:** 1021ex4.003
Matrix: (soil/water) Water **Date Analyzed:** 10/21/00
Extraction Volume: 400 ml **Date Received:** 10/17/00
Volume Extracted : 20 ml **Date Extracted:** 10/20/00
HPLC Column: Ultracarb 5 (250x4.6 mm) **Injection Volume:** 25.0 (uL)

CAS No.	Compound	Concentration Units:			
		mg/L			Q
	HMX		0.046		
	RDX		0.048		
	1,3,5-TNB		0.045		
	1,3-DNB		0.041		
	Tetryl		0.052		
	Nitrobenzene		0.040		
	2,4,6-TNT		0.046		
	4-Amino 2,6-DNT		0.050		
	2-Amino 4,6-DNT		0.048		
	2,6-DNT		0.055		
	2,4-DNT		0.043		
	2-NT		0.045		
	4-NT		0.045		
	3-NT		0.044		

FORM I VOA

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8330 EXPLOSIVES ANALYSIS DATA SHEET

BLANK MSD

Lab Name: Test America **Lab Sample ID:** 15553 wsb
SDG #: 212080 **Lab File ID:** 1021ex4.004
Matrix: (soil/water) Water **Date Analyzed:** 10/21/00
Extraction Volume: 400 ml **Date Received:** 10/17/00
Volume Extracted : 20 ml **Date Extracted:** 10/20/00
HPLC Column: Ultracarb 5 (250x4.6 mm) **Injection Volume:** 25.0 (uL)

CAS No.	Compound	Concentration Units:			
		mg/L			Q
	HMX		0.043		
	RDX		0.045		
	1,3,5-TNB		0.041		
	1,3-DNB		0.038		
	Tetryl		0.047		
	Nitrobenzene		0.035		
	2,4,6-TNT		0.042		
	4-Amino 2,6-DNT		0.045		
	2-Amino 4,6-DNT		0.044		
	2,6-DNT		0.048		
	2,4-DNT		0.039		
	2-NT		0.040		
	4-NT		0.039		
	3-NT		0.039		

FORM I VOA

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8330 EXPLOSIVES ANALYSIS DATA SHEET

CONTROL W

Lab Name: Test America **Lab Sample ID:** 25380 lcs
SDG #: 212080 **Lab File ID:** 1021ex4.005
Matrix: (soil/water) Water **Date Analyzed:** 1021ex4.002
Extraction Volume: 400 ml **Date Received:** 10/17/00
Volume Extracted : 20 ml **Date Extracted:** 10/20/00
HPLC Column: Ultracarb 5 (250x4.6 mm) **Injection Volume:** 25.0 (uL)

CAS No.	Compound	Concentration Units:		Q
			mg/L	
	HMX		0.044	
	RDX		0.040	
	1,3,5-TNB		0.035	
	1,3-DNB		0.033	
	Tetryl		0.031	
	Nitrobenzene		0.028	
	2,4,6-TNT		0.036	
	4-Amino 2,6-DNT		0.041	
	2-Amino 4,6-DNT		0.039	
	2,6-DNT		0.042	
	2,4-DNT		0.033	
	2-NT		0.032	
	4-NT		0.032	
	3-NT		0.032	

1.0 ppm explosive 3-S-SN-200-2,3
 15551 wbb
 15552 wsb
 15553 wsb
 25380 lcs
 148220 W-1A
 148221 W-2A
 1.0 ppm explosive

ep41005.met
 ep41005.met
 ep41005.met
 ep41005.met
 ep41005.met
 ep41005.met
 ep41005.met
 ep41005.met
 ep41005.met

1021ex4.001
 1021ex4.002
 1021ex4.003
 1021ex4.004
 1021ex4.005
 1021ex4.006
 1021ex4.007
 1021ex4.008

Test America

INCORPORATED

Test America

INCORPORATED

Property of Nashville Division
 2960 Foster Creighton Dr.
 Nashville, TN 37204
 (615) 726-0177

EX

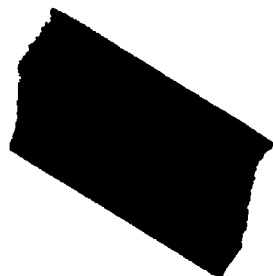
Water 82

Log number	Sample Type/Matrix	Target Date	pH
1. 00-A148220	Ground water	10/24/00	7
2. 00-A148221	Ground water	10/24/00	7

15551 WBB
16652 WSB
18553 WSB

* 25380 CCS

extract by 10/22



PERFORMED BY: [Signature]
ENTERED BY: [Signature]
VERIFIED BY: [Signature]
FINAL APPROVAL _____

EXPLOSIVES EXTRACTIONS - WATER

Worklist #: 9794

Date Created: 10/19/00

Analyst: J. Rudden

Date Extracted: 10/20/00 ^{ee}

Pos	Sample ID	Extraction	Ml's Ext'd	Extract Vol
	1.00-A148220	C	400	20.0
	2.00-A148221		400	

- METHYLENE CHLORIDE:
- ACETONE:
- HEXANE:
- DIETHYL ETHER:
- 1,1,2-TRICHLOROTRIFLUOROETHANE (freon):
- METHANOL:
- ACETONITRILE: P5DX33-1
- SILICA GEL:
- TOLUENE:
- SODIUM CHLORIDE:
- PENTANE:
- FLORISIL:
- SODIUM HYDROXIDE:
- SULFURIC ACID:
- SODIUM SULFATE(anhydrous): P5TA79-3
- HYDROCHLORIC ACID:
- EDTA:
- BORON TRIFLUORIDE/METHANOL(BF-3):
- SODIUM SULFATE (aqueous):
- POTASSIUM HYDROXIDE(37%):
- SULFURIC ACID(25%):
- HEXANE/ACETONE MIX (70:30):

SURROGATE: 5WSN39-4

1ml
1ml } de

SPIKE: 5WSN37-3

LCS:

Oil and Grease Water Bath Temperature:

Soxhlet Extraction Start Time: _____ Finish Time: _____

pH adjustment: NaOH addition: _____ Sulfuric Acid addition: _____

Secondary verification of Samples, Spike, Surrogate, LCS and extraction date by:

EXPLOSIVES EXTRACTIONS - WATER

85

Worklist #: 9794

Date Created: 10/19/00

Analyst: D.Yeager

Date Extracted: 10/20/00

Pos	Sample ID	Extraction	Ml's Ext'd	Extract Vol
1.00	A148220	Completed	400.	20.0
2.00	A148221	Completed	400.	20.0

EXPLOSIVES SW846 8330

SUMMARY DATA

SPECIALIZED ASSAYS, INC
2960 FOSTER CREIGHTON DRIVE
NASHVILLE, TN 37204
1-800-765-0980

Sample Identification

S-1

Matrix: Soil
 % Dry Weight:
 Units: ug/kg
 Dilution Factor: 1.
 Analysis Method: SW8330
 Delivery Group: 212080
 Instrument:
 Grams Extracted: 2.00 g
 Extract Vol: 20.0 ml

Lab Sample ID: 00-A148222
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/19/00
 Analysis Time: 19:52
 Sample QC Group: 212
 Extraction Date: 10/18/00

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	HMX	500	.. U
121-82-4	RDX	500	.. U
99-35-4	1,3,5-TNB	500	.. U
99-65-0	1,3-DNB	500	.. U
479-45-8	Tetryl	500	.. U
98-95-3	NB	500	.. U
118-96-7	2,4,6-TNT	500	.. U
1946-51-0	4-Am-DNT	500	.. U
355-72-78-2	2-Am-DNT	500	.. U
606-20-2	2,6-DNT	500	.. U
121-14-2	2,4-DNT	500	.. U
88-72-2	2-NT	500	.. U
99-99-0	4-NT	500	.. U
99-08-1	3-NT	500	.. U

Sample Identification

S-2

Matrix: Soil
 % Dry Weight:
 Units: ug/kg
 Dilution Factor: 1.
 Analysis Method: SW8330
 Delivery Group: 212080
 Instrument:
 Grams Extracted: 2.03 g
 Extract Vol: 20.0 ml

Lab Sample ID: 00-A148223
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/19/00
 Analysis Time: 20:47
 Sample QC Group: 212
 Extraction Date: 10/18/00

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	HMX	493	.. U
121-82-4	RDX	493	.. U
99-35-4	1,3,5-TNB	493	.. U
99-65-0	1,3-DNB	493	.. U
479-45-8	Tetryl	493	.. U
98-95-3	NB	493	.. U
118-96-7	2,4,6-TNT	493	.. U
1946-51-0	4-Am-DNT	493	.. U
355-72-78-2	2-Am-DNT	493	.. U
606-20-2	2,6-DNT	493	.. U
121-14-2	2,4-DNT	493	.. U
88-72-2	2-NT	493	.. U
99-99-0	4-NT	493	.. U
99-08-1	3-NT	493	.. U

Sample Identification

S-3

Matrix: Soil
 % Dry Weight:
 Units: ug/kg
 Dilution Factor: 1.
 Analysis Method: SW8330
 Delivery Group: 212080
 Instrument:
 Grams Extracted: 2.01 g
 Extract Vol: 20.0 ml

Lab Sample ID: 00-A148224
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/19/00
 Analysis Time: 21:14
 Sample QC Group: 212
 Extraction Date: 10/18/00

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	.....HMX.....	498	.. U
121-82-4	.....RDX.....	498	.. U
99-35-4	.....1,3,5-TNB.....	498	.. U
99-65-0	.....1,3-DNB.....	498	.. U
479-45-8	.....Tetryl.....	498	.. U
98-95-3	.....NB.....	498	.. U
118-96-7	.....2,4,6-TNT.....	498	.. U
1946-51-0	.....4-Am-DNT.....	498	.. U
355-72-78-2	.....2-Am-DNT.....	498	.. U
606-20-2	.....2,6-DNT.....	498	.. U
121-14-2	.....2,4-DNT.....	498	.. U
88-72-2	.....2-NT.....	498	.. U
99-99-0	.....4-NT.....	498	.. U
99-08-1	.....3-NT.....	498	.. U

Sample Identification

S-4

Matrix: Soil
 % Dry Weight:
 Units: ug/kg
 Dilution Factor: 1.
 Analysis Method: SW8330
 Delivery Group: 212080
 Instrument:
 Grams Extracted: 2.01 g
 Extract Vol: 20.0 ml

Lab Sample ID: 00-A148225
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/19/00
 Analysis Time: 21:41
 Sample QC Group: 212
 Extraction Date: 10/18/00

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	HMX	498	.. U
121-82-4	RDX	498	.. U
99-35-4	1,3,5-TNB	498	.. U
99-65-0	1,3-DNB	498	.. U
479-45-8	Tetryl	498	.. U
98-95-3	NB	498	.. U
118-96-7	2,4,6-TNT	498	.. U
1946-51-0	4-Am-DNT	498	.. U
355-72-78-2	2-Am-DNT	498	.. U
606-20-2	2,6-DNT	498	.. U
121-14-2	2,4-DNT	498	.. U
88-72-2	2-NT	498	.. U
99-99-0	4-NT	498	.. U
99-08-1	3-NT	498	.. U

Sample Identification

S-5

Matrix: Soil	Lab Sample ID: 00-A148226
% Dry Weight:	Date Sampled: 10/15/00
Units: ug/kg	Date Received: 10/17/00
Dilution Factor: 1.	Analysis Date: 10/19/00
Analysis Method: SW8330	Analysis Time: 22:09
Delivery Group: 212080	Sample QC Group: 212
Instrument:	
Grams Extracted: 2.03 g	Extraction Date: 10/18/00
Extract Vol: 20.0 ml	

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	HMX	493	.. U
121-82-4	RDX	493	.. U
99-35-4	1,3,5-TNB	493	.. U
99-65-0	1,3-DNB	493	.. U
479-45-8	Tetryl	493	.. U
98-95-3	NB	493	.. U
118-96-7	2,4,6-TNT	493	.. U
1946-51-0	4-Am-DNT	493	.. U
355-72-78-2	2-Am-DNT	493	.. U
606-20-2	2,6-DNT	493	.. U
121-14-2	2,4-DNT	493	.. U
88-72-2	2-NT	493	.. U
99-99-0	4-NT	493	.. U
99-08-1	3-NT	493	.. U

Sample Identification

S-6

Matrix: Soil	Lab Sample ID: 00-A148227
% Dry Weight:	Date Sampled: 10/15/00
Units: ug/kg	Date Received: 10/17/00
Dilution Factor: 1.	Analysis Date: 10/19/00
Analysis Method: SW8330	Analysis Time: 22:36
Delivery Group: 212080	Sample QC Group: 212
Instrument:	
Grams Extracted: 2.04 g	Extraction Date: 10/18/00
Extract Vol: 20.0 ml	

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	.....HMX.....	490	.. U
121-82-4	.....RDX.....	490	.. U
99-35-4	.....1,3,5-TNB.....	490	.. U
99-65-0	.....1,3-DNB.....	490	.. U
479-45-8	.....Tetryl.....	490	.. U
98-95-3	.....NB.....	490	.. U
118-96-7	.....2,4,6-TNT.....	490	.. U
1946-51-0	.....4-Am-DNT.....	490	.. U
355-72-78-2	.....2-Am-DNT.....	490	.. U
606-20-2	.....2,6-DNT.....	490	.. U
121-14-2	.....2,4-DNT.....	490	.. U
88-72-2	.....2-NT.....	490	.. U
99-99-0	.....4-NT.....	490	.. U
99-08-1	.....3-NT.....	490	.. U

Sample Identification

S-7

Matrix: Soil
 % Dry Weight:
 Units: ug/kg
 Dilution Factor: 1.
 Analysis Method: SW8330
 Delivery Group: 212080
 Instrument:
 Grams Extracted: 2.05 g
 Extract Vol: 20.0 ml

Lab Sample ID: 00-A148228
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/19/00
 Analysis Time: 23:04
 Sample QC Group: 212
 Extraction Date: 10/18/00

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	HMX	488	.. U
121-82-4	RDX	488	.. U
99-35-4	1,3,5-TNB	488	.. U
99-65-0	1,3-DNB	488	.. U
479-45-8	Tetryl	488	.. U
98-95-3	NB	488	.. U
118-96-7	2,4,6-TNT	488	.. U
1946-51-0	4-Am-DNT	488	.. U
355-72-78-2	2-Am-DNT	488	.. U
606-20-2	2,6-DNT	488	.. U
121-14-2	2,4-DNT	488	.. U
88-72-2	2-NT	488	.. U
99-99-0	4-NT	488	.. U
99-08-1	3-NT	488	.. U

Sample Identification

BLANK

Matrix: Soil
 % Dry Weight: 100
 Units: UG/KG
 Dilution Factor: 1
 Analysis Method: SW8330
 Delivery Group: 212080
 Instrument:
 Grams Extracted: 30.0 g
 Extract Vol: 1.0 ml

Lab Sample ID: BLANK
 Date Sampled:
 Date Received: 10/17/00
 Analysis Date: 10/19/00
 Analysis Time: 17:35
 Sample QC Group: 212
 Extraction Date:

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
2691-41-0	HMX	500	U
121-82-4	RDX	500	U
99-35-4	1,3,5-TNB	500	U
99-65-0	1,3-DNB	500	U
479-45-8	Tetryl	500	U
98-95-3	NB	500	U
118-96-7	2,4,6-TNT	500	U
1946-51-0	4-Am-DNT	500	U
355-72-78-2	2-Am-DNT	500	U
606-20-2	2,6-DNT	500	U
121-14-2	2,4-DNT	500	U
88-72-2	2-NT	500	U
99-99-0	4-NT	500	U
99-08-1	3-NT	500	U

95

2A

8330 EXPLOSIVES SURROGATE RECOVERY SUMMARY

Lab Name: Test America

SDG # 212080

	SAMPLE NO	% Recovery	#	TOT OUT
01	XBLANK S	94		
02	SOIL COMPOSITE S-1E	97		
03	SOIL COMPOSITE S-2E	96		
04	SOIL COMPOSITE S-3E	95		
05	SOIL COMPOSITE S-4E	95		
06	SOIL COMPOSITE S-5E	97		
07	SOIL COMPOSITE S-6E	97		
08	SOIL COMPOSITE S-7E	93		
09	SOIL COMPOSITE S-1E MS	92		
10	SOIL COMPOSITE S-1E MSD	92		
11	CONTROL S	97		
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

Surrogate used: 3,4-Dinitrotoluene

Surrogate LIMITS: 65-153

* : Values outside of contract required QC limits

(+): Surrogate not determined due to interference

D : System Monitoring Compound diluted out

Test America

SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab: Specialized Assays, Inc.

Project: AET BLDG 600-84

Matrix Spike Sample:

SDG: 212080

QC Group: 212

Compound	Spike Added	Sample Conc	Spike Conc	% Rec	QC Limits
HMX	10000	0	9600	96	72 - 167
RDX	10000	0	9200	92	58 - 174
1,3,5-TNB	10000	0	9000	90	39 - 185
1,3-DNB	10000	0	8300	83	56 - 177
Tetryl	10000	0	9500	95	35 - 161
NB	10000	0	9400	94	65 - 171
2,4,6-TNT	10000	0	9100	91	64 - 175
4-Am-DNT	10000	0	9800	98	59 - 171
2-Am-DNT	10000	0	9600	96	59 - 165
2,6-DNT	10000	0	10000	100	62 - 166
2,4-DNT	10000	0	9100	91	68 - 167
2-NT	10000	0	9900	99	68 - 161
4-NT	10000	0	9800	98	74 - 159
3-NT	10000	0	10000	100	72 - 157

Compound	Spike Added	MSD Conc	% Rec	RPD	RPD Limit	Recovery Limits
HMX	0	0	96	0	25	72 - 167
RDX	0	0	93	1	29	58 - 174
1,3,5-TNB	0	0	90	0	46	39 - 185
1,3-DNB	0	0	83	0	32	56 - 177
Tetryl	0	0	96	1	75	35 - 161
NB	0	0	94	0	46	65 - 171
2,4,6-TNT	0	0	91	0	22	64 - 175
4-Am-DNT	0	0	98	0	60	59 - 171
2-Am-DNT	0	0	95	1	38	59 - 165
2,6-DNT	0	0	100	0	60	62 - 166
2,4-DNT	0	0	92	1	59	68 - 167
2-NT	0	0	108	9	33	68 - 161
4-NT	0	0	102	4	32	74 - 159
3-NT	0	0	101	1	33	72 - 157

Test America

SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab: Specialized Assays, Inc.

Project: AET BLDG 600-84

Concentration Units: ug/kg

RPD: 0 out of 14 outside QC limits.

Spike Recoveries: 0 out of 28 outside QC limits.

FORM 3Da

SEMI-VOLATILE LABORATORY CONTROL RECOVERY

Lab: Specialized Assays, Inc.

Project: AET BLDG 600-84

SDG: 212080

QC Group: 212

Compound	Known Value	Conc	% Rec	QC Limits
HMX	10000	10000	100	77-138
RDX	10000	10000	100	81-136
1,3,5-TNB	10000	8800	88	17-115
1,3-DNB	10000	8600	86	82-131
Tetryl	10000	9100	91	33-96
NB	10000	9700	97	83-131
2,4,6-TNT	10000	9300	93	74-132
4-Am-DNT	10000	10100	101	79-139
2-Am-DNT	10000	9700	97	77-134
2,6-DNT	10000	10400	104	77-138
2,4-DNT	10000	9400	94	80-132
2-NT	10000	10100	101	71-134
4-NT	10000	9900	99	72-139
3-NT	10000	10100	101	68-137

Concentration Units: ug/kg

Recoveries: 0 out of 14 outside QC limits.

99

4C

SAMPLE NO.

8330 EXPLOSIVES METHOD BLANK SUMMARY

XBLANK S

Lab Name: Test America Lab Sample ID: 15390 sbb
 SDG # 212080 Lab File ID: 1017ex4.090
 Instrument ID: HPLC 4 Date Analyzed: 10/19/00
 Extraction Volume: 20 ml Time Analyzed: 17:35
 Volume Extracted : 2 g Date Received: 10/17/00
 HPLC Column: Ultracarb 5 (250x4.6 mm) Date Extracted: 10/18/00

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD AND LCS:

CLIENT ID	LAB ID	LAB FILE ID	DATE	TIME ANALYZED
01	SOIL COMPOSITE S-1E	148222	1017ex4.095	10/19/00 19:52
02	SOIL COMPOSITE S-2E	148223	1017ex4.097	10/19/00 20:47
03	SOIL COMPOSITE S-3E	148224	1017ex4.098	10/19/00 21:14
04	SOIL COMPOSITE S-4E	148225	1017ex4.099	10/19/00 21:41
05	SOIL COMPOSITE S-5E	148226	1017ex4.100	10/19/00 22:09
06	SOIL COMPOSITE S-6E	148227	1017ex4.101	10/19/00 22:36
07	SOIL COMPOSITE S-7E	148228	1017ex4.102	10/19/00 23:04
08	SOIL COMPOSITE S-1E MS	15391 ssb	1017ex4.093	10/19/00 18:57
09	SOIL COMPOSITE S-1E MSD	15392 ssb	1017ex4.094	10/19/00 19:24
10	CONTROL S	25354 lcs	1017ex4.096	10/19/00 20:19
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

COMMENTS:

6C
8330 EXPLOSIVES INITIAL CALIBRATION
 UV

Lab Name : Test America Instrument ID: HPLC 4

SDG # 212080 Calibration Date : 10/5/00

Lab File: RF 1= 1005ex4.005
 RF 2= 1005ex4.006
 RF 3= 1005ex4.007
 RF 4= 1005ex4.008
 RF 5= 1005ex4.009
 RF 6= 1005ex4.010
 RF 7= 1005ex4.012

Column : Ultracarb 5 (250x4.6 mm)

COMPOUND	RF 1	RF 2	RF 3	RF 4	RF 5	RF 6	RF 7	RF	AVERAGE
	2 ppm	1 ppm	0.5 ppm	0.25 pp	0.1 ppm	0.05 ppm	0.01 pp	% RSD	RF
HMX	70503	72294	72922	76180	73200	85420	91900	10.4	77488
RDX	85508	89894	96750	110856	126130	84480	81700	17.065	96474
1,3,5-TNB	190240	192363	196974	200540	244080	255800	292000	17.76	224571
1,3-DNB	254581	260260	259664	261688	323060	357860	486300	27.1	314773
Tetryl	138909	142876	140492	140892	138150	157400	188400	12.25	149588
Nitrobenzene	164496	168557	164496	166488	163230	188740	211900	10.4	175415
3,4-DNT Surrogate	94607	97728	96436	97004	117530	129000	158400	21.2	112958
2,4,6-TNT	176323	181274	182404	182784	215060	242700	255700	16.02	205178
4-Amino 2,6-DNT	126710	129500	130656	129140	125600	151080	163700	11.51	136627
2-Amino 4,6-DNT	173710	178769	181358	179668	170840	212120	211000	9.267	186781
2,6-DNT	125263	129084	125704	127848	118960	155380	143500	19.26	132248
2,4-DNT	222664	229022	228052	226192	289960	316780	331500	18.116	263453
2-NT	100828	102473	107444	105888	97610	109040	105200	3.8	104069
4-NT	82857	84168	82624	81708	81708	114020	76500	14.48	86226
3-NT	106801	109286	107494	105104	112780	138180	95300	11.98	110706

AVERAGE RF	158437
AVERAGE RF % RSD	14.71

7C

8330 EXPLOSIVES CONTINUING CALIBRATION CHECK

Lab Name: Test America **Column :** Ultracarb 5 (250x4.6 mm)
SDG # 212080 **Calibration Date:** 10/5/00
Instrument ID: HPLC 4 **Cont. Calib. Date:** 10/19/00
Lab File ID: 1017EX4.092 **.010 PPM STD**

COMPOUND	known	actual	%D	MAX %D
HMX	0.01	0.009	10.5	15.0
RDX	0.01	0.010	0.0	15.0
1,3,5-TNB	0.01	0.010	0.0	15.0
1,3-DNB	0.01	0.008	22.2	15.0
Tetryl	0.01	0.014	33.3	15.0
Nitrobenzene	0.01	0.008	22.2	15.0
2,4,6-TNT	0.01	0.011	9.5	15.0
4-Amino 2,6-DNT	0.01	0.021	71.0	15.0
2-Amino 4,6-DNT	0.01	0.022	75.0	15.0
2,6-DNT	0.01	0.018	57.1	15.0
2,4-DNT	0.01	0.011	9.5	15.0
2-NT	0.01	0.011	9.5	15.0
4-NT	0.01	0.006	50.0	15.0
3-NT	0.01	0.007	35.3	15.0

AVERAGE %D

28.95

7C

8330 EXPLOSIVES CONTINUING CALIBRATION CHECK

Lab Name: Test America Column : Ultracarb 5 (250x4.6 mm)
 SDG # 212080 Calibration Date: 10/5/00
 Instrument ID: HPLC 4 Cont. Calib. Date: 10/19/00
 Lab File ID: 1017EX4.103 .010 PPM STD

COMPOUND	known	actual	%D	MAX %D
HMX	0.01	0.009	10.5	15.0
RDX	0.01	0.011	9.5	15.0
1,3,5-TNB	0.01	0.009	10.5	15.0
1,3-DNB	0.01	0.009	10.5	15.0
Tetryl	0.01	0.015	40.0	15.0
Nitrobenzene	0.01	0.008	22.2	15.0
2,4,6-TNT	0.01	0.011	9.5	15.0
4-Amino 2,6-DNT	0.01	0.022	75.0	15.0
2-Amino 4,6-DNT	0.01	0.023	78.8	15.0
2,6-DNT	0.01	0.016	46.2	15.0
2,4-DNT	0.01	0.011	9.5	15.0
2-NT	0.01	0.008	22.2	15.0
4-NT	0.01	0.009	10.5	15.0
3-NT	0.01	0.009	10.5	15.0

AVERAGE %D

26.11

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1C

8330 EXPLOSIVES ANALYSIS DATA SHEET

BLANK MS

Lab Name: Test America Lab Sample ID: 15391 ssb
 SDG #: 212080 Lab File ID: 1017ex4.093
 Matrix: (soil/water) soil Date Analyzed: 10/19/00
 Volume Extracted : 20 ml Date Received: 10/17/00
 HPLC Column: Ultracarb 5 (250x4.6 mm) Date Extracted: 10/18/00
 Injection Volume: 25.0 (uL)

CAS No.	Compound	Concentration Units:		Q
			mg/Kg	
	HMX		9.60	
	RDX		9.20	
	1,3,5-TNB		9.00	
	1,3-DNB		8.30	
	Tetryl		9.50	
	Nitrobenzene		9.40	
	2,4,6-TNT		9.10	
	4-Amino 2,6-DNT		9.80	
	2-Amino 4,6-DNT		9.60	
	2,6-DNT		10.00	
	2,4-DNT		9.10	
	2-NT		9.90	
	4-NT		9.80	
	3-NT		10.00	

FORM I VOA

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1C

8330 EXPLOSIVES ANALYSIS DATA SHEET

BLANK MSD

Lab Name: Test America Lab Sample ID: 15392 ssb
 SDG #: 212080 Lab File ID: 1017ex4.094
 Matrix: (soil/water) soil Date Analyzed: 10/19/00
 Volume Extracted : 20 ml Date Received: 10/17/00
 HPLC Column: Ultracarb 5 (250x4.6 mm) Date Extracted: 10/18/00
 Injection Volume: 25.0 (uL)

CAS No.	Compound	Concentration Units:		Q
		mg/Kg		
	HMX		9.60	
	RDX		9.30	
	1,3,5-TNB		9.00	
	1,3-DNB		8.30	
	Tetryl		9.60	
	Nitrobenzene		9.40	
	2,4,6-TNT		9.10	
	4-Amino 2,6-DNT		9.80	
	2-Amino 4,6-DNT		9.50	
	2,6-DNT		10.00	
	2,4-DNT		9.20	
	2-NT		10.80	
	4-NT		10.20	
	3-NT		10.10	

FORM I VOA

3/90

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1C

8330 EXPLOSIVES ANALYSIS DATA SHEET

CONTROL S

Lab Name: Test America Lab Sample ID: 25354 lcs
 SDG #: 212080 Lab File ID: 1017ex4.096
 Matrix: (soil/water) soil Date Analyzed: 10/19/00
 Extraction Volume: 20 ml Date Received: 10/17/00
 Volume Extracted : 2 g Date Extracted: 10/18/00
 HPLC Column: Ultracarb 5 (250x4.6 mm) Injection Volume: 25.0 (uL)

CAS No.	Compound	Concentration Units:		
		mg/Kg		Q
	HMX		10.00	
	RDX		10.00	
	1,3,5-TNB		8.80	
	1,3-DNB		8.60	
	Tetryl		9.10	
	Nitrobenzene		9.70	
	2,4,6-TNT		9.30	
	4-Amino 2,6-DNT		10.10	
	2-Amino 4,6-DNT		9.70	
	2,6-DNT		10.10	
	2,4-DNT		9.40	
	2-NT		10.10	
	4-NT		9.90	
	3-NT		10.10	

1.0ppm(3-s-jc-179-2	ep41005.met	1017ex4.001
blank	ep41005.met	1017ex4.002
0.01 ppm mdl-1	ep41005.met	1017ex4.003
0.01 ppm mdl-2	ep41005.met	1017ex4.004
0.01 ppm mdl-3	ep41005.met	1017ex4.005
0.01 ppm mdl-4	ep41005.met	1017ex4.006
0.01 ppm mdl-5	ep41005.met	1017ex4.007
0.01 ppm mdl-6	ep41005.met	1017ex4.008
0.01 ppm mdl-7	ep41005.met	1017ex4.009
.005 ppm	ep41005.met	1017ex4.010
.01 ppm	ep41005.met	1017ex4.011
.01 ppm	ep41005.met	1017ex4.012
14615 wbb	ep41005.met	1017ex4.013
144996	ep41005.met	1017ex4.014
144997	ep41005.met	1017ex4.015
144998	ep41005.met	1017ex4.016
144999	ep41005.met	1017ex4.017
145000	ep41005.met	1017ex4.018
14616 wsb	ep41005.met	1017ex4.019
14617 wsb	ep41005.met	1017ex4.020
25125 lcs	ep41005.met	1017ex4.021
.01 ppm	ep41005.met	1017ex4.022
14864 wbb	ep41005.met	1017ex4.023
144382	ep41005.met	1017ex4.024
144383	ep41005.met	1017ex4.025
144384	ep41005.met	1017ex4.026
144385	ep41005.met	1017ex4.027
144386	ep41005.met	1017ex4.028
144387	ep41005.met	1017ex4.029
14865 wsb	ep41005.met	1017ex4.030
14866 wsb	ep41005.met	1017ex4.031
25070 lcs	ep41005.met	1017ex4.032
.01 ppm	ep41005.met	1017ex4.033
14828 wbb	ep41005.met	1017ex4.034
145694	ep41005.met	1017ex4.035
145695	ep41005.met	1017ex4.036
145696	ep41005.met	1017ex4.037
145697	ep41005.met	1017ex4.038
145698	ep41005.met	1017ex4.039
145699 0.5ml surr	ep41005.met	1017ex4.040
145700 0.5ml surr	ep41005.met	1017ex4.041
145701 0.5ml surr	ep41005.met	1017ex4.042
145702 0.5ml surr	ep41005.met	1017ex4.043
.01 ppm	ep41005.met	1017ex4.044
145703 0.5ml surr	ep41005.met	1017ex4.045
145704 0.5ml surr	ep41005.met	1017ex4.046
14829 wsb	ep41005.met	1017ex4.047
14830 wsb	ep41005.met	1017ex4.048
25202 lcs	ep41005.met	1017ex4.049
.01 ppm	ep41005.met	1017ex4.050
15043 wbb	ep41005.met	1017ex4.051
146612	ep41005.met	1017ex4.052
146613	ep41005.met	1017ex4.053
146614	ep41005.met	1017ex4.054

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2960 Foster Creighton Dr.
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146615	ep41005.met	1017ex4.055
15044 wsb	ep41005.met	1017ex4.056
15045 wsb	ep41005.met	1017ex4.057
25274 lcs	ep41005.met	1017ex4.058
.01 ppm	ep41005.met	1017ex4.059
144997	ep41005.met	1017ex4.060
144998	ep41005.met	1017ex4.061
.01 ppm	ep41005.met	1017ex4.062
14409 WBB	ep41005.met	1017ex4.063
144010	ep41005.met	1017ex4.064
144011	ep41005.met	1017ex4.065
144012	ep41005.met	1017ex4.066
144013	ep41005.met	1017ex4.067
144014	ep41005.met	1017ex4.068
144015	ep41005.met	1017ex4.069
144016	ep41005.met	1017ex4.070
144017	ep41005.met	1017ex4.071
144018	ep41005.met	1017ex4.072
.01 ppm	ep41005.met	1017ex4.073
.01 ppm	ep41005.met	1017ex4.074
.01 ppm	ep41005.met	1017ex4.075
144019	ep41005.met	1017ex4.076
144020	ep41005.met	1017ex4.077
144021	ep41005.met	1017ex4.078
144022	ep41005.met	1017ex4.079
144023	ep41005.met	1017ex4.080
144024	ep41005.met	1017ex4.081
144025	ep41005.met	1017ex4.082
144026	ep41005.met	1017ex4.083
144027	ep41005.met	1017ex4.084
14410 wsb	ep41005.met	1017ex4.085
.01 ppm	ep41005.met	1017ex4.086
144011 wsb	ep41005.met	1017ex4.087
25048 lcs	ep41005.met	1017ex4.088
.01 ppm	ep41005.met	1017ex4.089
15390 sbb	ep41005.met	1017ex4.090
144020	ep41005.met	1017ex4.091
.01 ppm	ep41005.met	1017ex4.092
15391 sbb	ep41005.met	1017ex4.093
15392 sbb	ep41005.met	1017ex4.094
148222	ep41005.met	1017ex4.095
25354 lcs	ep41005.met	1017ex4.096
148223	ep41005.met	1017ex4.097
148224	ep41005.met	1017ex4.098
148225	ep41005.met	1017ex4.099
148226	ep41005.met	1017ex4.100
148227	ep41005.met	1017ex4.101
148228	ep41005.met	1017ex4.102
.01 ppm	ep41005.met	1017ex4.103
.01 ppm rdx	c:\ezchromb\methods\lc2\hrt1tns.met	1017ex4c.104
144022	c:\ezchromb\methods\lc2\hrt1tns.met	1017ex4c.105
.01 ppm rdx	c:\ezchromb\methods\lc2\hrt1tns.met	1017ex4c.106
.01 ppm rdx	c:\ezchromb\methods\lc2\hrt1tns.met	1017ex4c.107
1.0 ppm rdx	c:\ezchromb\methods\lc2\hrt1tns.met	1017ex4c.108

Property of Nashville Division
2960 Foster Creighton Dr.
Nashville, TN 37204
(615) 726-0177

Explosive Soil 108

	Log number	Due Date	Due Time	Target Date
1.	00-A148222			10/24/00
2.	00-A148223			10/24/00
3.	00-A148224			10/24/00
4.	00-A148225			10/24/00
5.	00-A148226			10/24/00
6.	00-A148227			10/24/00
7.	00-A148228			10/24/00

15390 SIB

15391 SIB

15392 SIB

* 25354 CCS

PERFORMED BY: _____ *W*

ENTERED BY: _____ *gr*

VERIFIED BY: _____ *gr*

FINAL APPROVAL _____

EXPLOSIVES EXTRACTIONS - SOIL

109

Worklist #: 8747

Date Created: 10/18/00

Analyst: J. Rudden

Date Extracted: 10/18/00

Pos	Sample ID	Extraction	GM's Ext'd	Extract Vol
1	00-A148222 Spike	C	2.00	20.0
2	00-A148223		2.03	
3	00-A148224		2.01	
4	00-A148225		2.01	
5	00-A148226		2.03	
6	00-A148227		2.04	

EXPLOSIVES EXTRACTIONS - SOIL

Worklist #: 8747

Date Created: 10/18/00

Analyst: J. Rudden

Date Extracted:

Pos	Sample ID	Extraction	GM's Ext'd	Extract Vol
	7.00-A148228	C	205	20.0

111

METHYLENE CHLORIDE:
ACETONE:
HEXANE:
DIETHYL ETHER:
1,1,2-TRICHLOROTRIFLUOROETHANE (freon):
METHANOL:
ACETONITRILE:
SILICA GEL:
TOLUENE:
SODIUM CHLORIDE:
PENTANE:
FLORISIL:
SODIUM HYDROXIDE:
SULFURIC ACID:
SODIUM SULFATE(anhydrous):
HYDROCHLORIC ACID:
EDTA:
BORON TRIFLUORIDE/METHANOL(BF-3):
SODIUM SULFATE (aqueous):
POTASSIUM HYDROXIDE(37%):
SULFURIC ACID(25%):
HEXANE/ACETONE MIX (70:30):

SURROGATE:

SPIKE:

LCS:

Oil and Grease Water Bath Temperature:

Soxhlet Extraction Start Time:_____ Finish Time:_____

pH adjustment: NaOH addition:_____ Sulfuric Acid addition:_____

Secondary verification of Samples, Spike, Surrogate, LCS and extraction date by:

EXPLOSIVES EXTRACTIONS - SOIL

112

Worklist #: 8747

Date Created: 10/18/00

Analyst: J. Rudden

Date Extracted: 10/18/00

<u>Pos</u>	<u>Sample ID</u>	<u>Extraction</u>	<u>GM's Ext'd</u>	<u>Extract Vol</u>
1.00	A148222	Completed	2.00	20.0
2.00	A148223	Completed	2.03	20.0
3.00	A148224	Completed	2.01	20.0
4.00	A148225	Completed	2.01	20.0
5.00	A148226	Completed	2.03	20.0
6.00	A148227	Completed	2.04	20.0

113

EXPLOSIVES EXTRACTIONS - SOIL

Worklist #: 8747

Date Created: 10/18/00

Analyst: J. Rudden

Date Extracted: 10/18/00

<u>Pos</u>	<u>Sample ID</u>	<u>Extraction</u>	<u>GM's Ext'd</u>	<u>Extract Vol</u>
7.00	A148228	Completed	2.05	20.0

METALS SW846 6010B/747X

SUMMARY DATA

SPECIALIZED ASSAYS, INC
2960 FOSTER CREIGHTON DRIVE
NASHVILLE, TN 37204
1-800-765-0980

115

Sample Identification

W-1

Matrix: Water
pH:
Units: ug/l
Dilution Factor: 1.
Analysis Method: SW6010B
Delivery Group: 212080
Instrument:
Mercury DilFact: 1.
Mercury Method: SW7470

Lab Sample ID: 00-A148220
Date Sampled:: 10/15/00
Date Received: 10/17/00
Analysis Date: 10/24/00
Analysis Time: 7:09
Sample QC Group: 9070

Mercury Date: 10/20/00
Mercury Time: 10:20
Mercury QC Group: 9047

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	.....Arsenic, Total	5	.... U
7440-39-3	.....Barium, Total	10	.... U
7440-43-9	.....Cadmium, total	1	.... U
7440-47-3	.....Chromium, total	5	.... U
7439-92-1	.....Lead.....	3	.... U
7439-97-6	.....Mercury	0.2	.... U
7782-49-2	.....Selenium, Total	5	.... U
7440-22-4	.....Silver, Total	5	.... U

Sample Identification

W-2

Matrix: Water
 pH:
 Units: ug/l
 Dilution Factor: 1.
 Analysis Method: SW6010B
 Delivery Group: 212080
 Instrument:
 Mercury DilFact: 1.
 Mercury Method: SW7470

Lab Sample ID: 00-A148221
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/24/00
 Analysis Time: 7:09
 Sample QC Group: 9070

 Mercury Date: 10/20/00
 Mercury Time: 10:20
 Mercury QC Group: 9047

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	Arsenic, Total	5	.... U
7440-39-3	Barium, Total	10	.... U
7440-43-9	Cadmium, total	1	.... U
7440-47-3	Chromium, total	5	.... U
7439-92-1	Lead	3	.... U
7439-97-6	Mercury	0.2	.... U
7782-49-2	Selenium, Total	5	.... U
7440-22-4	Silver, Total	5	.... U

TestAmerica

INCORPORATED

117

Sample Identification

BLANK

Matrix: Water
pH:
Units: MG/L
Dilution Factor: 1
Analysis Method: SW6010B
Delivery Group: 212080
Instrument:
Mercury DilFact: 1
Mercury Method: SW7470
Instrument:

Lab Sample ID: BLANK
Date Sampled:
Date Received:
Analysis Date: 10/24/00
Analysis Time: 7:09
Sample QC Group: 9070

Mercury Date: 10/20/00
Mercury Time: 10:20
Mercury QC Group: 9047

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	.....Arsenic, Total	0.0050.....	U
7440-39-3	.....Barium, Total	0.0100.....	U
7440-43-9	.....Cadmium, total	0.0010.....	U
7440-47-3	.....Chromium, total	0.0050.....	U
7439-92-1	.....Lead.....	0.0030.....	U
7439-97-6	.....Mercury	0.0002.....	U
7782-49-2	.....Selenium, Total	0.0050.....	U
7440-22-4	.....Silver, Total	0.0050.....	U

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: TEST_AMERICA _____ Contract: _____
 Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080
 Initial Calibration Source: PERKIN-ELMER
 Continuing Calibration Source: PERKIN-ELMER

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									NR
Antimony									NR
Arsenic	1000.0	987.30	98.7	1000.0	960.36	96.0	1026.80	102.7	P
Barium	5000.0	4811.00	96.2	5000.0	5021.00	100.4	5358.00	107.2	P
Beryllium									NR
Cadmium	1000.0	994.50	99.4	1000.0	956.10	95.6	1016.00	101.6	P
Calcium									NR
Chromium	1000.0	992.90	99.3	1000.0	984.10	98.4	1054.00	105.4	P
Cobalt									NR
Copper									NR
Iron									NR
Lead	1000.0	1021.00	102.1	1000.0	939.06	93.9	1002.00	100.2	P
Magnesium									NR
Manganese									NR
Mercury	2.5	2.54	101.6	2.0	2.02	101.0	2.04	102.0	CV
Nickel									NR
Potassium									NR
Selenium	1000.0	1003.00	100.3	1000.0	976.20	97.6	1032.90	103.3	P
Silver	500.0	519.50	103.9	500.0	479.20	95.8	515.70	103.1	P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

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

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: TEST_AMERICA _____ Contract: _____
 Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080
 Initial Calibration Source: PERKIN-ELMER
 Continuing Calibration Source: PERKIN-ELMER

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									NR
Antimony									NR
Arsenic				1000.0	991.10	99.1	1030.70	103.1	P
Barium				5000.0	5129.00	102.6	5170.00	103.4	P
Beryllium									NR
Cadmium				1000.0	979.80	98.0	1020.00	102.0	P
Calcium									NR
Chromium				1000.0	1017.00	101.7	1073.00	107.3	P
Cobalt									NR
Copper									NR
Iron									NR
Lead				1000.0	969.50	97.0	1018.00	101.8	P
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium				1000.0	1011.70	101.2	1048.00	104.8	P
Silver				500.0	494.80	99.0	515.00	103.0	P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

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

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: TEST_AMERICA_____

Contract: _____

Lab Code: NASHVI Case No.: _____

SAS No.: _____ SDG No.: 212080

AA CRDL Standard Source: SPEX_____

ICP CRDL Standard Source: SPEX_____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony								
Arsenic				20.0	21.17	105.8	41.87	209.4
Barium								
Beryllium								
Cadmium				10.0	10.10	101.0	18.70	187.0
Calcium								
Chromium				20.0	20.90	104.5	41.40	207.0
Cobalt								
Copper								
Iron								
Lead				6.0	3.91	65.2	10.67	177.8
Magnesium								
Manganese								
Mercury	0.2	0.17	85.0					
Nickel								
Potassium								
Selenium				10.0	8.16	81.6	15.11	151.1
Silver				20.0	20.40	102.0	34.90	174.5
Sodium								
Thallium								
Vanadium								
Zinc								

3
BLANKS

Lab Name: TEST_AMERICA _____

Contract: _____

Lab Code: NASHVI

Case No.: _____

SAS No.: _____

SDG No.: 212080

Preparation Blank Matrix (soil/water): WATER

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

Analyte	Initial Calib. Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	1	C	2	C	3	C		C	
Aluminum		-		-		-		-		-	NR
Antimony		-		-		-		-		-	NR
Arsenic	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Barium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Beryllium		-		-		-		-		-	NR
Cadmium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Calcium		-		-		-		-		-	NR
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Cobalt		-		-		-		-		-	NR
Copper		-		-		-		-		-	NR
Iron		-		-		-		-		-	NR
Lead	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Magnesium		-		-		-		-		-	NR
Manganese		-		-		-		-		-	NR
Mercury	0.2	U	0.2	U	0.2	U			0.200	U	CV
Nickel		-		-		-		-		-	NR
Potassium		-		-		-		-		-	NR
Selenium	4.0	U	4.0	U	4.0	U	4.0	U	4.000	U	P
Silver	1.0	U	1.0	U	1.0	U	1.0	U	1.000	U	P
Sodium		-		-		-		-		-	NR
Thallium		-		-		-		-		-	NR
Vanadium		-		-		-		-		-	NR
Zinc		-		-		-		-		-	NR
Cyanide		-		-		-		-		-	NR

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: TEST_AMERICA _____ Contract: _____
 Lab Code: NASHVI Case No.: _____ SAS No: _____ SDG No.: 212080
 ICP ID Number: TJA (TRACE) _____ ICS Source: SPEX _____

Concentration Units: ug/L

Analyte	True		Initial Found			Final Found		
	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum	500000	500000	597300	599100.0	119.8	537700		
Antimony								
Arsenic		1000		1019.8	102.0			
Barium		500		505.2	101.0			
Beryllium								
Cadmium		1000		962.1	96.2			
Calcium	500000	500000	518900	529600.0	105.9	480500		
Chromium		500		503.0	100.6			
Cobalt								
Copper								
Iron	200000	200000	216700	223200.0	111.6	183800		
Lead		1000		956.1	95.6			
Magnesium	500000	500000	548300	567300.0	113.5	493500		
Manganese								
Mercury								
Nickel								
Potassium								
Selenium		1000		1062.2	106.2			
Silver		1000		997.3	99.7			
Sodium								
Thallium								
Vanadium								
Zinc								

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

148115S

Lab Name: TEST_AMERICA

Contract:

Lab Code: NASHVI

Case No.:

SAS No.:

SDG No.: 212080

Matrix (soil/water): WATER

Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Aluminum							NR
Antimony							NR
Arsenic	75-125	55.1300	4.0000 U	50.00	110.3		P
Barium	75-125	2210.0000	22.9000	2000.00	109.4		P
Beryllium							NR
Cadmium	75-125	53.1000	1.0000 U	50.00	106.2		P
Calcium							NR
Chromium	75-125	212.1000	1.0000 U	200.00	106.0		P
Cobalt							NR
Copper							NR
Iron							NR
Lead	75-125	59.1000	6.0800	50.00	106.0		P
Magnesium							NR
Manganese							NR
Mercury							NR
Nickel							NR
Potassium							NR
Selenium	75-125	55.7000	4.0000 U	50.00	111.4		P
Silver	75-125	46.2000	1.0000 U	50.00	92.4		P
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR
Cyanide							NR

Comments:

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

148233S

Lab Name: TEST_AMERICA_____

Contract: _____

Lab Code: NASHVI

Case No.: _____

SAS No.: _____

SDG No.: 212080

Matrix (soil/water): WATER_

Level (low/med): LOW__

% Solids for Sample: __0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Aluminum							NR
Antimony							NR
Arsenic							NR
Barium							NR
Beryllium							NR
Cadmium							NR
Calcium							NR
Chromium							NR
Cobalt							NR
Copper							NR
Iron							NR
Lead							NR
Magnesium							NR
Manganese							NR
Mercury	75-125	0.9930	0.2000	1.00	99.3		CV
Nickel							NR
Potassium							NR
Selenium							NR
Silver							NR
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR
Cyanide							NR

Comments:

6
DUPLICATES

EPA SAMPLE NO.

148115D

Lab Name: TEST_AMERICA

Contract: _____

Lab Code: NASHVI

Case No.: _____

SAS No.: _____

SDG No.: 212080

Matrix (soil/water): WATER

Level (low/med): LOW

% Solids for Sample: 100.0

% Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S) C	Duplicate (D) C	RPD	Q	M
Aluminum						NR
Antimony						NR
Arsenic		55.1300	52.8900	4.1		P
Barium		2210.0000	2064.0000	6.8		P
Beryllium						NR
Cadmium		53.1000	48.9000	8.2		P
Calcium						NR
Chromium		212.1000	195.6000	8.1		P
Cobalt						NR
Copper						NR
Iron						NR
Lead		59.1000	54.7000	7.7		P
Magnesium						NR
Manganese						NR
Mercury						NR
Nickel						NR
Potassium						NR
Selenium		55.7000	52.8000	5.3		P
Silver		46.2000	41.2000	11.4		P
Sodium						NR
Thallium						NR
Vanadium						NR
Zinc						NR
Cyanide						NR

6
DUPLICATES

EPA SAMPLE NO.

148233D

Lab Name: TEST_AMERICA

Contract: _____

Lab Code: NASHVI

Case No.: _____

SAS No.: _____

SDG No.: 212080

Matrix (soil/water): WATER

Level (low/med): LOW

% Solids for Sample: 100.0

% Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L_

Analyte	Control Limit	Sample (S) C	Duplicate (D) C	RPD	Q	M
Aluminum						NR
Antimony						NR
Arsenic						NR
Barium						NR
Beryllium						NR
Cadmium						NR
Calcium						NR
Chromium						NR
Cobalt						NR
Copper						NR
Iron						NR
Lead						NR
Magnesium						NR
Manganese						NR
Mercury	0.2	0.9930	0.9670	2.7		CV
Nickel						NR
Potassium						NR
Selenium						NR
Silver						NR
Sodium						NR
Thallium						NR
Vanadium						NR
Zinc						NR
Cyanide						NR

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7

LABORATORY CONTROL SAMPLE

Lab Name: TEST_AMERICA_____

Contract: _____

Lab Code: NASHVI Case No.: _____

SAS No.: _____

SDG No.: 212080

Solid LCS Source: _____

Aqueous LCS Source: ERA_____

Analyte	Aqueous (ug/L)			Solid (mg/kg)				%R
	True	Found	%R	True	Found	C	Limits	
Aluminum								
Antimony								
Arsenic	50.0	52.63	105.3					
Barium	2000.0	2128.00	106.4					
Beryllium								
Cadmium	50.0	48.20	96.4					
Calcium								
Chromium	200.0	190.60	95.3					
Cobalt								
Copper								
Iron								
Lead	50.0	47.74	95.5					
Magnesium								
Manganese								
Mercury	1.0	1.03	103.0					
Nickel								
Potassium								
Selenium	50.0	57.96	115.9					
Silver	50.0	40.00	80.0					
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

9
ICP SERIAL DILUTION

EPA SAMPLE NO.

148758L

Lab Name: TEST_AMERICA Contract: _____

Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum							
Antimony							
Arsenic	4.00	U	20.00	U			P
Barium	57.10		58.00		1.6		P
Beryllium							
Cadmium	1.40		5.00	U	100.0		P
Calcium							
Chromium	19.10		20.00	B	4.7		P
Cobalt							
Copper							
Iron							
Lead	10.98		15.00	U	100.0		P
Magnesium							
Manganese							
Mercury							
Nickel							
Potassium							
Selenium	4.00	U	20.00	U			P
Silver	1.00	U	5.00	U			P
Sodium							
Thallium							
Vanadium							
Zinc							

10
Instrument Detection Limits (Quarterly)

Name: TEST_AMERICA _____ Contract: _____

Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080

ICP ID Number: TJA_(TRACE)_ Date: 10/11/00

Flame AA ID Number : PS_200_____

Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20		50	7.0	P
Antimony			5		NR
Arsenic	189.00		5	4.0	P
Barium	493.40		10	5.0	P
Beryllium			4		NR
Cadmium	226.50		1	1.0	P
Calcium	317.90		1000	50.0	P
Chromium	267.70		5	1.0	P
Cobalt			10		NR
Copper			10		NR
Iron	259.90		50	9.0	P
Lead	220.30		3	3.0	P
Magnesium	279.00		1000	50.0	P
Manganese			15		NR
Mercury	253.70		0.2	9.22	CV
Nickel			10		NR
Potassium			1000		NR
Selenium	196.00		5	4.0	P
Silver	328.00		5	1.0	P
Sodium			1000		NR
Thallium			2		NR
Vanadium			20		NR
Zinc			20		NR

Comments:

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11A
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: TEST_AMERICA _____ Contract: _____
 Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080
 ICP ID Number: TJA (TRACE)_ Date: 10/12/00

Analyte	Wave-length (nm)	Interelement Correction Factors for :				
		Al	Ca	Fe	Mg	_____
Aluminum	308.20	0.0000000	0.0000000	0.0000000	0.0000000	
Antimony	206.80	0.0000000	0.0000000	0.0002980	0.0000000	
Arsenic	189.00	0.0000090	0.0000000	-0.0000030	0.0000040	
Barium	493.40	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.00	0.0000000	0.0000000	0.0000000	0.0000000	
Cadmium	226.50	0.0000500	0.0000000	0.0000700	0.0000030	
Calcium	317.90	0.0000000	0.0000000	0.0000000	0.0000000	
Chromium	267.70	0.0000000	0.0000000	0.0000590	0.0000220	
Cobalt	228.60	0.0000000	0.0000000	0.0001200	0.0000000	
Copper	324.70	0.0000000	0.0000070	0.0000800	0.0000090	
Iron	259.90	0.0000000	0.0000000	0.0000000	0.0019920	
Lead	220.30	0.0000800	0.0000000	0.0000830	0.0000030	
Magnesium	279.00	0.0000000	0.0000000	0.0000000	0.0000000	
Manganese	257.60	0.0000000	0.0000000	0.0000550	0.0000049	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000600	0.0000130	
Potassium	766.40	0.0000000	0.0000000	0.0000000	0.0000000	
Selenium	196.00	0.0000000	0.0000000	0.0000400	0.0000000	
Silver	328.00	0.0000000	0.0000000	0.0000000	0.0000000	
Sodium	588.90	0.0000000	0.0000000	0.0000000	0.0000000	
Thallium	190.80	0.0000000	0.0000000	-0.0003420	0.0000000	
Vanadium	292.40	0.0000000	0.0000000	0.0000640	0.0000370	
Zinc	213.80	0.0000110	0.0000000	0.0001430	0.0000250	

Comments:

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12
ICP LINEAR RANGES (QUARTERLY)

Lab Name: TEST_AMERICA _____ Contract: _____

Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080

ICP ID Number: TJA (TRACE) _____ Date: 07/12/00

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum		100000.0	P
Antimony		50000.0	P
Arsenic		25000.0	P
Barium		50000.0	P
Beryllium		25000.0	P
Cadmium		25000.0	P
Calcium		400000.0	P
Chromium		50000.0	P
Cobalt		50000.0	P
Copper		75000.0	P
Iron		400000.0	P
Lead		75000.0	P
Magnesium		300000.0	P
Manganese		25000.0	P
Mercury			NR
Nickel		25000.0	P
Potassium		100000.0	P
Selenium		50000.0	P
Silver		50000.0	P
Sodium		500000.0	P
Thallium		75000.0	P
Vanadium		75000.0	P
Zinc		25000.0	P

Comments:

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICSAI	M101900	AUTOROU3	10/19/00	07:08	S	CONC	
2	ICSABI	M101900	AUTOROU3	10/19/00	07:11	Q	CONC	
3	LOW	M101900	AUTOROU3	10/19/00	07:24	S	CONC	
4	MID	M101900	AUTOROU3	10/19/00	07:32	S	CONC	
5	HIGH	M101900	AUTOROU3	10/19/00	07:40	S	CONC	
6	ICV	M101900	AUTOROU3	10/19/00	07:42	Q	CONC	
7	ICB	M101900	AUTOROU3	10/19/00	07:52	Q	CONC	
8	CR11	M101900	AUTOROU3	10/19/00	08:02	Q	CONC	
9	50	M101900	AUTOROU3	10/19/00	08:06	S	CONC	
10	BA NA	M101900	AUTOROU3	10/19/00	08:08	S	CONC	
11	ICS	M101900	AUTOROU3	10/19/00	08:11	S	CONC	
12	LCS-3103	M101900	AUTOROU3	10/19/00	08:25	S	CONC	
13	LCS-3097	M101900	AUTOROU3	10/19/00	08:47	S	CONC	
14	147817	M101900	AUTOROU3	10/19/00	08:50	S	CONC	
15	147817x10	M101900	AUTOROU3	10/19/00	08:54	S	CONC	
16	LCS-3097	M101900	AUTOROU3	10/19/00	08:57	S	CONC	
17	PBS-3108	M101900	AUTOROU3	10/19/00	09:10	S	CONC	
18	LCS-3108	M101900	AUTOROU3	10/19/00	09:14	S	CONC	
19	147761	M101900	AUTOROU3	10/19/00	09:18	S	CONC	
20	147953	M101900	AUTOROU3	10/19/00	09:22	S	CONC	
21	147953S	M101900	AUTOROU3	10/19/00	09:27	S	CONC	
22	CCV1	M101900	AUTOROU3	10/19/00	09:32	Q	CONC	
23	CCB1	M101900	AUTOROU3	10/19/00	09:39	Q	CONC	
24	147953SD	M101900	AUTOROU3	10/19/00	09:43	S	CONC	
25	47152	M101900	AUTOROU3	10/19/00	09:48	S	CONC	
26	148078	M101900	AUTOROU3	10/19/00	09:52	S	CONC	
27	148126	M101900	AUTOROU3	10/19/00	09:56	S	CONC	
28	146490	M101900	AUTOROU3	10/19/00	10:00	S	CONC	
29	146491	M101900	AUTOROU3	10/19/00	10:04	S	CONC	
30	146492	M101900	AUTOROU3	10/19/00	10:08	S	CONC	
31	146493	M101900	AUTOROU3	10/19/00	10:18	S	CONC	
32	146146	M101900	AUTOROU3	10/19/00	10:22	S	CONC	
33	146588	M101900	AUTOROU3	10/19/00	10:35	S	CONC	
34	CCV1	M101900	AUTOROU3	10/19/00	10:41	Q	CONC	
35	CCB1	M101900	AUTOROU3	10/19/00	10:53	Q	CONC	
36	146591	M101900	AUTOROU3	10/19/00	10:57	S	CONC	
37	146592	M101900	AUTOROU3	10/19/00	11:01	S	CONC	
38	146601	M101900	AUTOROU3	10/19/00	11:05	S	CONC	
39	146602	M101900	AUTOROU3	10/19/00	11:09	S	CONC	
40	PEW-3112	M101900	AUTOROU3	10/19/00	11:20	S	CONC	
41	LCS-3112	M101900	AUTOROU3	10/19/00	11:24	S	CONC	
42	148705	M101900	AUTOROU3	10/19/00	11:29	S	CONC	
43	148638	M101900	AUTOROU3	10/19/00	11:53	S	CONC	
44	148638S	M101900	AUTOROU3	10/19/00	11:57	S	CONC	
45	148638SD	M101900	AUTOROU3	10/19/00	12:01	S	CONC	
46	CCV1	M101900	AUTOROU3	10/19/00	12:07	Q	CONC	
47	CCB1	M101900	AUTOROU3	10/19/00	12:13	Q	CONC	
48	145770x10	M101900	AUTOROU3	10/19/00	12:17	S	CONC	
49	145770Dx10	M101900	AUTOROU3	10/19/00	12:26	S	CONC	
50	46180	M101900	AUTOROU3	10/19/00	12:31	S	CONC	
51	147360	M101900	AUTOROU3	10/19/00	12:35	S	CONC	
52	147361	M101900	AUTOROU3	10/19/00	12:39	S	CONC	
53	147362	M101900	AUTOROU3	10/19/00	12:43	S	CONC	

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
54	47363	M101900	AUTOROU3	10/19/00	12:47		S	CONC
55	147364	M101900	AUTOROU3	10/19/00	12:51		S	CONC
56	147365	M101900	AUTOROU3	10/19/00	12:55		S	CONC
57	147366	M101900	AUTOROU3	10/19/00	12:59		S	CONC
58	CCV1	M101900	AUTOROU3	10/19/00	13:08		Q	CONC
59	CCV1	M101900	AUTOROU3	10/19/00	14:19		Q	CONC
60	CCB1	M101900	AUTOROU3	10/19/00	14:38		Q	CONC
61	146824S	M101900	AUTOROU3	10/19/00	14:42		S	CONC
62	146824SD	M101900	AUTOROU3	10/19/00	14:46		S	CONC
63	146033x10	M101900	AUTOROU3	10/19/00	14:51		S	CONC
64	146033	M101900	AUTOROU3	10/19/00	14:55		S	CONC
65	147568	M101900	AUTOROU3	10/19/00	14:59		S	CONC
66	PBS-3109	M101900	AUTOROU3	10/19/00	15:05		S	CONC
67	LCS-3109	M101900	AUTOROU3	10/19/00	15:09		S	CONC
68	148772	M101900	AUTOROU3	10/19/00	15:14		S	CONC
69	148773	M101900	AUTOROU3	10/19/00	15:18		S	CONC
70	148774	M101900	AUTOROU3	10/19/00	15:22		S	CONC
71	CCV1	M101900	AUTOROU3	10/19/00	15:28		Q	CONC
72	CCB1	M101900	AUTOROU3	10/19/00	15:34		Q	CONC
73	148775	M101900	AUTOROU3	10/19/00	15:38		S	CONC
74	148787	M101900	AUTOROU3	10/19/00	15:42		S	CONC
75	148788	M101900	AUTOROU3	10/19/00	15:46		S	CONC
76	148789	M101900	AUTOROU3	10/19/00	15:50		S	CONC
77	148790	M101900	AUTOROU3	10/19/00	15:54		S	CONC
78	148776	M101900	AUTOROU3	10/19/00	15:58		S	CONC
79	48777	M101900	AUTOROU3	10/19/00	16:03		S	CONC
80	148778	M101900	AUTOROU3	10/19/00	16:07		S	CONC
81	148778S	M101900	AUTOROU3	10/19/00	16:11		S	CONC
82	148778SD	M101900	AUTOROU3	10/19/00	16:15		S	CONC
83	CCV1	M101900	AUTOROU3	10/19/00	16:20		Q	CONC
84	CCB1	M101900	AUTOROU3	10/19/00	16:32		Q	CONC
85	148778L	M101900	AUTOROU3	10/19/00	16:36		S	CONC
86	PBS-3110	M101900	AUTOROU3	10/19/00	16:41		S	CONC
87	LCS-3110	M101900	AUTOROU3	10/19/00	16:45		S	CONC
88	147791	M101900	AUTOROU3	10/19/00	16:50		S	CONC
89	147791S	M101900	AUTOROU3	10/19/00	16:54		S	CONC
90	147791SD	M101900	AUTOROU3	10/19/00	16:58		S	CONC
91	148176	M101900	AUTOROU3	10/19/00	17:03		S	CONC
92	148265	M101900	AUTOROU3	10/19/00	17:07		S	CONC
93	148266	M101900	AUTOROU3	10/19/00	17:11		S	CONC
94	148267	M101900	AUTOROU3	10/19/00	17:15		S	CONC
95	CCV1	M101900	AUTOROU3	10/19/00	17:21		Q	CONC
96	CCB1	M101900	AUTOROU3	10/19/00	17:28		Q	CONC
97	148268	M101900	AUTOROU3	10/19/00	17:32		S	CONC
98	148269	M101900	AUTOROU3	10/19/00	17:36		S	CONC
99	148270	M101900	AUTOROU3	10/19/00	17:40		S	CONC
100	148279	M101900	AUTOROU3	10/19/00	17:44		S	CONC
101	147393	M101900	AUTOROU3	10/19/00	17:48		S	CONC
102	147394	M101900	AUTOROU3	10/19/00	17:52		S	CONC
103	148057	M101900	AUTOROU3	10/19/00	17:56		S	CONC
104	48058	M101900	AUTOROU3	10/19/00	18:00		S	CONC
105	48222	M101900	AUTOROU3	10/19/00	18:04		S	CONC
106	148223	M101900	AUTOROU3	10/19/00	18:08		S	CONC
107	CCV1	M101900	AUTOROU3	10/19/00	18:13		Q	CONC

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
9	CCB1	M101900	AUTOROU3	10/19/00	18:20	Q	CONC	
09	148224	M101900	AUTOROU3	10/19/00	18:24	S	CONC	
10	148225	M101900	AUTOROU3	10/19/00	18:28	S	CONC	
11	148226	M101900	AUTOROU3	10/19/00	18:32	S	CONC	
12	148227	M101900	AUTOROU3	10/19/00	18:36	S	CONC	
13	148228	M101900	AUTOROU3	10/19/00	18:40	S	CONC	
14	148228L	M101900	AUTOROU3	10/19/00	18:44	S	CONC	
15	FBAIR-3113	M101900	AUTOROU3	10/19/00	18:55	S	CONC	
16	148750	M101900	AUTOROU3	10/19/00	18:59	S	CONC	
17	148751	M101900	AUTOROU3	10/19/00	19:03	S	CONC	
18	148752	M101900	AUTOROU3	10/19/00	19:07	S	CONC	
19	CCV2	M101900	AUTOROU3	10/19/00	19:12	Q	CONC	
20	CCB2	M101900	AUTOROU3	10/19/00	19:19	Q	CONC	
21	148753	M101900	AUTOROU3	10/19/00	19:23	S	CONC	
22	148754	M101900	AUTOROU3	10/19/00	19:27	S	CONC	
23	148755	M101900	AUTOROU3	10/19/00	19:31	S	CONC	
24	148756	M101900	AUTOROU3	10/19/00	19:35	S	CONC	
25	148757	M101900	AUTOROU3	10/19/00	19:39	S	CONC	
26	SPIKE	M101900	AUTOROU3	10/19/00	19:43	S	CONC	
27	SPIKEDUP	M101900	AUTOROU3	10/19/00	19:47	S	CONC	
28	FEW-3111	M101900	AUTOROU3	10/19/00	19:59	S	CONC	
29	LCS-3111	M101900	AUTOROU3	10/19/00	20:03	S	CONC	
30	148487	M101900	AUTOROU3	10/19/00	20:08	S	CONC	
31	CCV2	M101900	AUTOROU3	10/19/00	20:13	Q	CONC	
32	CCB2	M101900	AUTOROU3	10/19/00	20:20	Q	CONC	
33	148488	M101900	AUTOROU3	10/19/00	20:24	S	CONC	
34	148489	M101900	AUTOROU3	10/19/00	20:28	S	CONC	
35	148490	M101900	AUTOROU3	10/19/00	20:32	S	CONC	
36	148554	M101900	AUTOROU3	10/19/00	20:36	S	CONC	
37	148555	M101900	AUTOROU3	10/19/00	20:40	S	CONC	
38	148556	M101900	AUTOROU3	10/19/00	20:44	S	CONC	
39	148557	M101900	AUTOROU3	10/19/00	20:48	S	CONC	
40	148558	M101900	AUTOROU3	10/19/00	20:52	S	CONC	
41	148825	M101900	AUTOROU3	10/19/00	20:56	S	CONC	
42	148112	M101900	AUTOROU3	10/19/00	21:00	S	CONC	
43	CCV2	M101900	AUTOROU3	10/19/00	21:06	Q	CONC	
44	CCB2	M101900	AUTOROU3	10/19/00	21:17	Q	CONC	
45	148113	M101900	AUTOROU3	10/19/00	21:21	S	CONC	
46	148114	M101900	AUTOROU3	10/19/00	21:25	S	CONC	
47	148115	M101900	AUTOROU3	10/19/00	21:29	S	CONC	
48	148115S	M101900	AUTOROU3	10/19/00	21:33	S	CONC	
49	148115SD	M101900	AUTOROU3	10/19/00	21:37	S	CONC	
50	148220	M101900	AUTOROU3	10/19/00	21:42	S	CONC	
51	148221	M101900	AUTOROU3	10/19/00	21:46	S	CONC	
52	148758	M101900	AUTOROU3	10/19/00	21:50	S	CONC	
53	CCV2	M101900	AUTOROU3	10/19/00	21:55	Q	CONC	
54	CCB2	M101900	AUTOROU3	10/19/00	22:02	Q	CONC	
55	ERIF 148758L	M101900	AUTOROU3	10/19/00	22:06	S	CONC	
56	ICSAF c11f	M101900	AUTOROU3	10/19/00	22:10	S	CONC	
57	ICSAF c031f	M101900	AUTOROU3	10/19/00	22:14	S	CONC	

DATE: 10-19-00

BATCH NO: 00-311

WORKLIST NO. 9070

METHOD: 3005A 3010A 200.7
 3015 3020A
 3030C 3051

NASHVILLE DIVISION

METALS DIGESTION LOG

PAGE NO: 3111

MATRIX: H₂O

ANALYST: MS HH

TEMPERATURE: 95°

SAMPLE ID	AMT. DIGESTED (ml) g L	FINAL VOLUME (ml)	VESSEL WT BEFORE	VESSEL WT AFTER	REMARKS
Prep Blank # 6w00311	50	50			
1	148658				
2	148497				
3	148488				
4	148489				
5	148490				
6	148554				
7	148555				
8	148556				
9	148557				
10	148558				
11	148825				
12	148112				
13	148113				
14	148114				
15	148115				
16	148220				
17	148221				
18	148758				
19					
20					
LCS	spike				
SPIKE	148115				
SPIKE Dupl.	148115SD				

SPIKING SOLUTIONS:
 mws-ms-3-1
 mws-ms-3-2
 mws-ms-3-5

} Intech

REAGENTS:
 m-ss-37-1 1.5 ml
 m-ss-34-2 2.0 ml

TestAmerica

NASHVILLE DIVISION

DATE: 10-19-00

MERCURY DIGESTION LOG

BATCH NO: 00-1449

MATRIX: water

WORKLIST NO.: 9047

ANALYST: Alvan (PK)

METHOD: 245.1 7470A 7471A

	SAMPLE ID	Vol - [ml]/wt - [g] digested	FINAL VOLUME [ml]	REMARKS
s1	0.2	3.0ml	30	mcs-6m-77-1 (2.05H)
s2	0.5	50ml	30	mcs-6m-77-1 (1:1 dil)
s3	1.0	50ml	30	mcs-6m-77-1
s4	2.0	100ml	30	mcs-6m-77-1
s5	2.5	15.0ml	30	mcs-6m-77-1 (5.05H)
s6	5.0	2.50 ml	30	mcs-6m-77-1
Prep Blank#	PBW-00-1449	30	30	
1	148356-1	↓	↓	
2	148357-1			
3	148230-5			
4	148231-5			
5	148232-5			
6	* 148233-5			
7	148220-1			
8	148221-1			
9	148779-2			
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
LCS	mcs-6m-77-1	30	30	
SPIKE	1482335	30	30	
SPIKE Dupl.	1482335D	30	30	

- Mercury Spike mcs-6m-77-1
- Nitric Acid m-55-37-1
- Sulfuric Acid m-55-34-6
- 5% KMNO₄ mcs-6m-77-3
- 5% K₂S₂O₈ mcs-6m-77-4
- Aqua Regia

METALS SW846 6010B/747X**SUMMARY DATA**

SPECIALIZED ASSAYS, INC
2960 FOSTER CREIGHTON DRIVE
NASHVILLE, TN 37204
1-800-765-0980

139

TestAmerica

INCORPORATED

Sample Identification

S-1

Matrix: Soil
 % Dry Weight:
 Units: mg/kg
 Dilution Factor: 1.
 Analysis Method: SW6010B
 Delivery Group: 212080
 Instrument:
 Mercury DilFact: 1.
 Mercury Method: SW7471
 Mercury Instrument:

Lab Sample ID: 00-A148222
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/24/00
 Analysis Time: 7:15
 Sample QC Group: 8172
 Mercury Date: 10/24/00
 Mercury Time: 7:15
 Mercury QC Group: 8172

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	Arsenic	8.66	....
7440-39-3	Barium	193	....
7440-43-9	Cadmium	4.92	....
7440-47-3	Chromium	17.1	....
7439-92-1	Lead	53.7	....
7439-97-6	Mercury	0.101	.... U
7782-49-2	Selenium	1.38	....
7440-22-4	Silver	0.984	.... U

TestAmerica

INCORPORATED

Sample Identification

S-2

Matrix: Soil
 % Dry Weight:
 Units: mg/kg
 Dilution Factor: 1.
 Analysis Method: SW6010B
 Delivery Group: 212080
 Instrument:
 Mercury DilFact: 1.
 Mercury Method: SW7471
 Mercury Instrument:

Lab Sample ID: 00-A148223
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/24/00
 Analysis Time: 7:15
 Sample QC Group: 8172
 Mercury Date: 10/24/00
 Mercury Time: 7:15
 Mercury QC Group: 8172

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	Arsenic	8.74	....
7440-39-3	Barium	98.8	....
7440-43-9	Cadmium	7.38	....
7440-47-3	Chromium	12.4	....
7439-92-1	Lead	26.6	....
7439-97-6	Mercury	0.1	.... U
7782-49-2	Selenium	0.971	.... U
7440-22-4	Silver	0.971	.... U

TestAmerica

INCORPORATED

Sample Identification

S-3

Matrix: Soil
% Dry Weight:
Units: mg/kg
Dilution Factor: 1.
Analysis Method: SW6010B
Delivery Group: 212080
Instrument:
Mercury DilFact: 1.
Mercury Method: SW7471
Mercury Instrument:

Lab Sample ID: 00-A148224
Date Sampled: 10/15/00
Date Received: 10/17/00
Analysis Date: 10/24/00
Analysis Time: 7:15
Sample QC Group: 8172

Mercury Date: 10/24/00
Mercury Time: 7:15
Mercury QC Group: 8172

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	Arsenic	4.25	....
7440-39-3	Barium	204	....
7440-43-9	Cadmium	1.01	.... U
7440-47-3	Chromium	14.2	....
7439-92-1	Lead	1.01	.... U
7439-97-6	Mercury	0.1	.... U
7782-49-2	Selenium	1.01	.... U
7440-22-4	Silver	1.01	.... U

TestAmerica

INCORPORATED

Sample Identification

S-4

Matrix: Soil
 % Dry Weight:
 Units: mg/kg
 Dilution Factor: 1.
 Analysis Method: SW6010B
 Delivery Group: 212080
 Instrument:
 Mercury DilFact: 1.
 Mercury Method: SW7471
 Mercury Instrument:

Lab Sample ID: 00-A148225
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/24/00
 Analysis Time: 7:15
 Sample QC Group: 8172
 Mercury Date: 10/24/00
 Mercury Time: 7:15
 Mercury QC Group: 8172

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	Arsenic	3.76	....
7440-39-3	Barium	184	....
7440-43-9	Cadmium	0.99	.... U
7440-47-3	Chromium	11.9	....
7439-92-1	Lead	15.6	....
7439-97-6	Mercury	0.101	.... U
7782-49-2	Selenium	0.99	.... U
7440-22-4	Silver	0.99	.... U

Sample Identification

S-5

Matrix: Soil
 % Dry Weight:
 Units: mg/kg
 Dilution Factor: 1.
 Analysis Method: SW6010B
 Delivery Group: 212080
 Instrument:
 Mercury DilFact: 1.
 Mercury Method: SW7471
 Mercury Instrument:

Lab Sample ID: 00-A148226
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/24/00
 Analysis Time: 7:15
 Sample QC Group: 8172
 Mercury Date: 10/24/00
 Mercury Time: 7:15
 Mercury QC Group: 8172

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	.....Arsenic	4.8	.....
7440-39-3	.....Barium	192	.....
7440-43-9	.....Cadmium	0.96	..... U
7440-47-3	.....Chromium	11.7	.....
7439-92-1	.....Lead.....	15.9	.....
7439-97-6	.....Mercury	0.1	..... U
7782-49-2	.....Selenium	0.96	.....
7440-22-4	.....Silver	0.96	..... U

Sample Identification

S-6

Matrix: Soil	Lab Sample ID: 00-A148227
% Dry Weight:	Date Sampled: 10/15/00
Units: mg/kg	Date Received: 10/17/00
Dilution Factor: 1.	Analysis Date: 10/24/00
Analysis Method: SW6010B	Analysis Time: 7:15
Delivery Group: 212080	Sample QC Group: 8172
Instrument:	
Mercury DilFact: 1.	Mercury Date: 10/24/00
Mercury Method: SW7471	Mercury Time: 7:15
Mercury Instrument:	Mercury QC Group: 8172

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	.....Arsenic	5.84	.....
7440-39-3	.....Barium	224	.....
7440-43-9	.....Cadmium	0.973	..... U
7440-47-3	.....Chromium	15.4	.....
7439-92-1	.....Lead.....	18.1	.....
7439-97-6	.....Mercury	0.1	..... U
7782-49-2	.....Selenium	1.36	.....
7440-22-4	.....Silver	0.973	..... U

Sample Identification

S-7

Matrix: Soil
 % Dry Weight:
 Units: mg/kg
 Dilution Factor: 1.
 Analysis Method: SW6010B
 Delivery Group: 212080
 Instrument:
 Mercury DilFact: 1.
 Mercury Method: SW7471
 Mercury Instrument:

Lab Sample ID: 00-A148228
 Date Sampled: 10/15/00
 Date Received: 10/17/00
 Analysis Date: 10/24/00
 Analysis Time: 7:15
 Sample QC Group: 8172

 Mercury Date: 10/24/00
 Mercury Time: 7:15
 Mercury QC Group: 8172

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	.....Arsenic	5.05	.....
7440-39-3	.....Barium	201	.....
7440-43-9	.....Cadmium	1.01	..... U
7440-47-3	.....Chromium	15.2	.....
7439-92-1	.....Lead.....	14.3	.....
7439-97-6	.....Mercury	0.1	..... U
7782-49-2	.....Selenium	1.01	..... U
7440-22-4	.....Silver	1.01	..... U

Sample Identification

BLANK

Matrix: Soil
 pH:
 Units: MG/KG
 Dilution Factor: 1
 Analysis Method: SW6010B
 Delivery Group: 212080
 Instrument:
 Mercury DilFact: 1
 Mercury Method: SW7471
 Instrument:

Lab Sample ID: BLANK
 Date Sampled:
 Date Received:
 Analysis Date: 10/24/00
 Analysis Time: 7:15
 Sample QC Group: 8172
 Mercury Date: 10/23/00
 Mercury Time: 9:23
 Mercury QC Group: 8103

FORM I

CAS NUMBER	ANALYTE	CONCENTRATION	FLAG
7440-38-2	Arsenic	1.000	U
7440-39-3	Barium	1.000	U
7440-43-9	Cadmium	1.000	U
7440-47-3	Chromium	1.000	U
7439-92-1	Lead	1.000	U
7439-97-6	Mercury	0.100	U
7782-49-2	Selenium	1.000	U
7440-22-4	Silver	1.000	U

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: TEST AMERICA _____ Contract: _____
 Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080
 Initial Calibration Source: PERKIN-ELMER
 Continuing Calibration Source: PERKIN-ELMER

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Aluminum									NR
Antimony									NR
Arsenic	1000.0	987.30	98.7	1000.0	1007.90	100.8	960.36	96.0	P
Barium	5000.0	4811.00	96.2	5000.0	5227.00	104.5	5021.00	100.4	P
Beryllium									NR
Cadmium	1000.0	994.50	99.4	1000.0	996.80	99.7	956.10	95.6	P
Cadmium									NR
Chromium	1000.0	992.90	99.3	1000.0	1032.00	103.2	984.10	98.4	P
Cobalt									NR
Copper									NR
Iron									NR
Lead	1000.0	1021.00	102.1	1000.0	981.45	98.1	939.06	93.9	P
Magnesium									NR
Manganese									NR
Mercury	2.5	2.66	106.4	2.0	2.02	101.0			CV
Nickel									NR
Potassium									NR
Selenium	1000.0	1003.00	100.3	1000.0	1022.50	102.2	976.20	97.6	P
Silver	500.0	519.50	103.9	500.0	500.40	100.1	479.20	95.8	P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

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

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: TEST_AMERICA _____ Contract: _____

Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080

Initial Calibration Source: PERKIN-ELMER

Continuing Calibration Source: PERKIN-ELMER

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration				M	
	True	Found	%R(1)	True	Found	%R(1)	Found		%R(1)
Aluminum									NR
Antimony									NR
Arsenic				1000.0	1026.80	102.7			P
Barium				5000.0	5358.00	107.2			P
Beryllium									NR
Cadmium				1000.0	1016.00	101.6			P
Calcium									NR
Chromium				1000.0	1054.00	105.4			P
Cobalt									NR
Copper									NR
Iron									NR
Lead				1000.0	1002.00	100.2			P
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium									NR
Selenium				1000.0	1032.90	103.3			P
Silver				500.0	515.70	103.1			P
Sodium									NR
Thallium									NR
Vanadium									NR
Zinc									NR
Cyanide									NR

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

2B
CRDL STANDARD FOR AA AND ICP

Lab Name: TEST_AMERICA _____

Contract: _____

Lab Code: NASHVI Case No.: _____

SAS No.: _____

SDG No.: 212080

AA CRDL Standard Source: SPEX _____

ICP CRDL Standard Source: SPEX _____

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Aluminum								
Antimony								
Arsenic				20.0	21.17	105.8	41.87	209.4
Barium								
Beryllium								
Cadmium				10.0	10.10	101.0	18.70	187.0
Calcium								
Chromium				20.0	20.90	104.5	41.40	207.0
Cobalt								
Copper								
Iron								
Lead				6.0	3.91	65.2	10.67	177.8
Magnesium								
Manganese								
Mercury	0.2	0.22	110.0					
Nickel								
Potassium								
Selenium				10.0	8.16	81.6	15.11	151.1
Silver				20.0	20.40	102.0	34.90	174.5
Sodium								
Thallium								
Vanadium								
Zinc								

3
BLANKS

Lab Name: TEST_AMERICA _____ Contract: _____

Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080

Preparation Blank Matrix (soil/water): SOIL_

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

Analyte	Initial Calib. Blank (ug/L)		Continuing Calibration Blank (ug/L)						Preparation Blank		M
		C	1	C	2	C	3	C		C	
Aluminum											NR
Antimony											NR
Arsenic	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Barium	5.0	U	5.0	U	5.0	U	5.0	U	1.000	U	P
Beryllium											NR
Cadmium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Calcium											NR
Chromium	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Cobalt											NR
Copper											NR
Iron											NR
Lead	3.0	U	3.0	U	3.0	U	3.0	U	0.600	U	P
Magnesium											NR
Manganese											NR
Mercury	0.2	U	0.2	U					0.033	U	CV
Nickel											NR
Potassium											NR
Selenium	4.0	U	4.0	U	4.0	U	4.0	U	0.800	U	P
Silver	1.0	U	1.0	U	1.0	U	1.0	U	0.200	U	P
Sodium											NR
Thallium											NR
Vanadium											NR
Zinc											NR
Cyanide											NR

4
ICP INTERFERENCE CHECK SAMPLE

Lab Name: TEST_AMERICA _____ Contract: _____
 Lab Code: NASHVI Case No.: _____ SAS No: _____ SDG No.: 212080
 ICP ID Number: TJA (TRACE) _____ ICS Source: SPEX _____

Concentration Units: ug/L

Analyte	True		Initial Found			Final Found		
	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Aluminum	500000	500000	597300	599100.0	119.8	537700		
Antimony								
Arsenic		1000		1019.8	102.0			
Barium		500		505.2	101.0			
Beryllium								
Cadmium		1000		962.1	96.2			
Calcium	500000	500000	518900	529600.0	105.9	480500		
Chromium		500		503.0	100.6			
Cobalt								
Copper								
Iron	200000	200000	216700	223200.0	111.6	183800		
Lead		1000		956.1	95.6			
Magnesium	500000	500000	548300	567300.0	113.5	493500		
Manganese								
Mercury								
Nickel								
Potassium								
Selenium		1000		1062.2	106.2			
Silver		1000		997.3	99.7			
Sodium								
Thallium								
Vanadium								
Zinc								

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

147791S

Lab Name: TEST_AMERICA

Contract: _____

Lab Code: NASHVI

Case No.: _____

SAS No.: _____

SDG No.: 212080

Matrix (soil/water): SOIL

Level (low/med): LOW

% Solids for Sample: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR) C	Sample Result (SR) C	Spike Added (SA)	%R	Q	M
Aluminum							NR
Antimony							NR
Arsenic	75-125	20.8692	2.0686	19.27	97.6		P
Barium	75-125	411.3462	52.6667	385.36	93.1		P
Beryllium							NR
Cadmium	75-125	18.1346	0.4510	19.27	91.8		P
Calcium							NR
Chromium	75-125	41.5385	5.3922	38.54	93.8		P
Cobalt							NR
Copper							NR
Iron							NR
Lead	75-125	85.5019	2.3431	96.34	86.3		P
Magnesium							NR
Manganese							NR
Mercury	75-125	0.1750	0.0333	0.17	102.9		CV
Nickel							NR
Potassium							NR
Selenium	75-125	18.4423	0.7843	19.27	95.7		P
Silver	75-125	8.7115	0.1961	9.63	90.5		P
Sodium							NR
Thallium							NR
Vanadium							NR
Zinc							NR
Cyanide							NR

Comments:

6
DUPLICATES

EPA SAMPLE NO.

147791D

Lab Name: TEST_AMERICA _____ Contract: _____

Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080

Matrix (soil/water): SOIL_ Level (low/med): LOW_

% Solids for Sample: 100.0 % Solids for Duplicate: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S) C	Duplicate (D) C	RPD	Q	M
Aluminum						NR
Antimony						NR
Arsenic		20.8692	20.9500	0.4		P
Barium		411.3462	424.2000	3.1		P
Beryllium						NR
Cadmium		18.1346	18.9400	4.3		P
Calcium						NR
Chromium		41.5385	41.3000	0.6		P
Cobalt						NR
Copper						NR
Iron						NR
Lead		85.5019	90.9020	6.1		P
Magnesium						NR
Manganese						NR
Mercury		0.1750	0.1523	13.8		CV
Nickel						NR
Potassium						NR
Selenium		18.4423	18.6820	1.3		P
Silver		8.7115	8.2600	5.3		P
Sodium						NR
Thallium						NR
Vanadium						NR
Zinc						NR
Cyanide						NR

7
LABORATORY CONTROL SAMPLE

Lab Name: TEST_AMERICA_____

Contract: _____

Lab Code: NASHVI Case No.: _____

SAS No.: _____ SDG No.: 212080

Solid LCS Source: ERA_____

Aqueous LCS Source: _____

Analyte	Aqueous (ug/L)			Solid (mg/kg)				
	True	Found	%R	True	Found	C	Limits	%R
Aluminum								
Antimony								
Arsenic				20.0	18.8		16.0 24.0	94.0
Barium				400.0	403.6		320.0 480.0	100.9
Beryllium								
Cadmium				20.0	18.7		16.0 24.0	93.5
Calcium								
Chromium				40.0	38.3		32.0 48.0	95.8
Cobalt								
Copper								
Iron								
Lead				100.0	88.3		80.0 120.0	88.3
Magnesium								
Manganese								
Mercury				1.7	1.7		1.4 2.0	100.0
Nickel								
Potassium								
Selenium				20.0	18.0		16.0 24.0	90.0
Silver				10.0	9.7		8.0 10.0	97.0
Sodium								
Thallium								
Vanadium								
Zinc								
Cyanide								

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9
ICP SERIAL DILUTION

EPA SAMPLE NO.

148228L

Lab Name: TEST AMERICA _____ Contract: _____

Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080

Matrix (soil/water): WATER Level (low/med): LOW__

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum							
Antimony							
Arsenic	24.59		26.10		6.1		P
Barium	995.00		1073.00		7.8		P
Beryllium							
Cadmium	2.20		5.00	U	100.0		P
Calcium							
Chromium	74.80		86.50		15.6	E	P
Cobalt							
Copper							
Iron							
Lead	70.66		77.80		10.1		P
Magnesium							
Manganese							
Mercury							
Nickel							
Potassium							
Selenium	4.00	U	20.00	U			P
Silver	1.00	U	5.00	U			P
Sodium							
Thallium							
Vanadium							
Zinc							

10

Instrument Detection Limits (Quarterly)

Name: TEST_AMERICA _____ Contract: _____
 Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080
 ICP ID Number: TJA_(TRACE)_ Date: 10/11/00
 Flame AA ID Number : PS_200_____
 Furnace AA ID Number : _____

Analyte	Wave-length (nm)	Back-ground	CRDL (ug/L)	IDL (ug/L)	M
Aluminum	308.20		50	7.0	P
Antimony			5		NR
Arsenic	189.00		5	4.0	P
Barium	493.40		10	5.0	P
Beryllium			4		NR
Cadmium	226.50		1	1.0	P
Calcium	317.90		1000	50.0	P
Chromium	267.70		5	1.0	P
Cobalt			10		NR
Copper			10		NR
Iron	259.90		50	9.0	P
Lead	220.30		3	3.0	P
Magnesium	279.00		1000	50.0	P
Manganese			15		NR
Mercury	253.70		0.2	0.20 ^M	CV
Nickel			10		NR
Potassium			1000		NR
Selenium	196.00		5	4.0	P
Silver	328.00		5	1.0	P
Sodium			1000		NR
Thallium			2		NR
Vanadium			20		NR
Zinc			20		NR

Comments:

U.S. EPA - CLP

11A
ICP INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: TEST_AMERICA _____ Contract: _____

Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080

ICP ID Number: TJA (TRACE)_ Date: 10/12/00

Analyte	Wave-length (nm)	Interelement Correction Factors for :				
		Al	Ca	Fe	Mg	_____
Aluminum	308.20	0.0000000	0.0000000	0.0000000	0.0000000	
Antimony	206.80	0.0000000	0.0000000	0.0002980	0.0000000	
Arsenic	189.00	0.0000090	0.0000000	-0.0000030	0.0000040	
Barium	493.40	0.0000000	0.0000000	0.0000000	0.0000000	
Beryllium	313.00	0.0000000	0.0000000	0.0000000	0.0000000	
Cadmium	226.50	0.0000500	0.0000000	0.0000700	0.0000030	
Calcium	317.90	0.0000000	0.0000000	0.0000000	0.0000000	
Chromium	267.70	0.0000000	0.0000000	0.0000590	0.0000220	
Cobalt	228.60	0.0000000	0.0000000	0.0001200	0.0000000	
Copper	324.70	0.0000000	0.0000070	0.0000800	0.0000090	
Iron	259.90	0.0000000	0.0000000	0.0000000	0.0019920	
Lead	220.30	0.0000800	0.0000000	0.0000830	0.0000030	
Magnesium	279.00	0.0000000	0.0000000	0.0000000	0.0000000	
Manganese	257.60	0.0000000	0.0000000	0.0000550	0.0000049	
Mercury						
Nickel	231.60	0.0000000	0.0000000	0.0000600	0.0000130	
Potassium	766.40	0.0000000	0.0000000	0.0000000	0.0000000	
Selenium	196.00	0.0000000	0.0000000	0.0000400	0.0000000	
Silver	328.00	0.0000000	0.0000000	0.0000000	0.0000000	
Sodium	588.90	0.0000000	0.0000000	0.0000000	0.0000000	
Thallium	190.80	0.0000000	0.0000000	-0.0003420	0.0000000	
Vanadium	292.40	0.0000000	0.0000000	0.0000640	0.0000370	
Zinc	213.80	0.0000110	0.0000000	0.0001430	0.0000250	

Comments:

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U.S. EPA - CLP

12
ICP LINEAR RANGES (QUARTERLY)

Lab Name: TEST_AMERICA _____ Contract: _____
 Lab Code: NASHVI Case No.: _____ SAS No.: _____ SDG No.: 212080
 ICP ID Number: TJA (TRACE) _____ Date: 07/12/00

Analyte	Integ. Time (sec.)	Concentration (ug/L)	M
Aluminum		100000.0	P
Antimony		50000.0	P
Arsenic		25000.0	P
Barium		50000.0	P
Beryllium		25000.0	P
Cadmium		25000.0	P
Calcium		400000.0	P
Chromium		50000.0	P
Cobalt		50000.0	P
Copper		75000.0	P
Iron		400000.0	P
Lead		75000.0	P
Magnesium		300000.0	P
Manganese		25000.0	P
Mercury			NR
Nickel		25000.0	P
Potassium		100000.0	P
Selenium		50000.0	P
Silver		50000.0	P
Sodium		500000.0	P
Thallium		75000.0	P
Vanadium		75000.0	P
Zinc		25000.0	P

Comments:

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
1	ICSAI	M101900	AUTOROU3	10/19/00	07:08	S	CONC	
2	ICSABI	M101900	AUTOROU3	10/19/00	07:11	Q	CONC	
3	LOW	M101900	AUTOROU3	10/19/00	07:24	S	CONC	
4	MID	M101900	AUTOROU3	10/19/00	07:32	S	CONC	
5	HIGH	M101900	AUTOROU3	10/19/00	07:40	S	CONC	
6	ICV	M101900	AUTOROU3	10/19/00	07:42	Q	CONC	
7	ICB	M101900	AUTOROU3	10/19/00	07:52	Q	CONC	
8	CR11	M101900	AUTOROU3	10/19/00	08:02	Q	CONC	
9	50	M101900	AUTOROU3	10/19/00	08:06	S	CONC	
10	BA NA	M101900	AUTOROU3	10/19/00	08:08	S	CONC	
11	ICS	M101900	AUTOROU3	10/19/00	08:11	S	CONC	
12	LCS-3103	M101900	AUTOROU3	10/19/00	08:25	S	CONC	
13	LCS-3097	M101900	AUTOROU3	10/19/00	08:47	S	CONC	
14	147817	M101900	AUTOROU3	10/19/00	08:50	S	CONC	
15	147817x10	M101900	AUTOROU3	10/19/00	08:54	S	CONC	
16	LCS-3097	M101900	AUTOROU3	10/19/00	08:57	S	CONC	
17	PBS-3108	M101900	AUTOROU3	10/19/00	09:10	S	CONC	
18	LCS-3108	M101900	AUTOROU3	10/19/00	09:14	S	CONC	
19	147761	M101900	AUTOROU3	10/19/00	09:18	S	CONC	
20	147953	M101900	AUTOROU3	10/19/00	09:22	S	CONC	
21	147953S	M101900	AUTOROU3	10/19/00	09:27	S	CONC	
22	CCV1	M101900	AUTOROU3	10/19/00	09:32	Q	CONC	
23	CCB1	M101900	AUTOROU3	10/19/00	09:39	Q	CONC	
24	147953SD	M101900	AUTOROU3	10/19/00	09:43	S	CONC	
25	47152	M101900	AUTOROU3	10/19/00	09:48	S	CONC	
26	148078	M101900	AUTOROU3	10/19/00	09:52	S	CONC	
27	148126	M101900	AUTOROU3	10/19/00	09:56	S	CONC	
28	146490	M101900	AUTOROU3	10/19/00	10:00	S	CONC	
29	146491	M101900	AUTOROU3	10/19/00	10:04	S	CONC	
30	146492	M101900	AUTOROU3	10/19/00	10:08	S	CONC	
31	146493	M101900	AUTOROU3	10/19/00	10:18	S	CONC	
32	146146	M101900	AUTOROU3	10/19/00	10:22	S	CONC	
33	146588	M101900	AUTOROU3	10/19/00	10:35	S	CONC	
34	CCV1	M101900	AUTOROU3	10/19/00	10:41	Q	CONC	
35	CCB1	M101900	AUTOROU3	10/19/00	10:53	Q	CONC	
36	146591	M101900	AUTOROU3	10/19/00	10:57	S	CONC	
37	146592	M101900	AUTOROU3	10/19/00	11:01	S	CONC	
38	146601	M101900	AUTOROU3	10/19/00	11:05	S	CONC	
39	146602	M101900	AUTOROU3	10/19/00	11:09	S	CONC	
40	PBW-3112	M101900	AUTOROU3	10/19/00	11:20	S	CONC	
41	LCS-3112	M101900	AUTOROU3	10/19/00	11:24	S	CONC	
42	148705	M101900	AUTOROU3	10/19/00	11:29	S	CONC	
43	148638	M101900	AUTOROU3	10/19/00	11:53	S	CONC	
44	148638S	M101900	AUTOROU3	10/19/00	11:57	S	CONC	
45	148638SD	M101900	AUTOROU3	10/19/00	12:01	S	CONC	
46	CCV1	M101900	AUTOROU3	10/19/00	12:07	Q	CONC	
47	CCB1	M101900	AUTOROU3	10/19/00	12:13	Q	CONC	
48	145770x10	M101900	AUTOROU3	10/19/00	12:17	S	CONC	
49	145770Dx10	M101900	AUTOROU3	10/19/00	12:26	S	CONC	
50	46180	M101900	AUTOROU3	10/19/00	12:31	S	CONC	
51	147360	M101900	AUTOROU3	10/19/00	12:35	S	CONC	
52	147361	M101900	AUTOROU3	10/19/00	12:39	S	CONC	
53	147362	M101900	AUTOROU3	10/19/00	12:43	S	CONC	

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
54	147363	M101900	AUTOROU3	10/19/00	12:47		S	CONC
55	147364	M101900	AUTOROU3	10/19/00	12:51		S	CONC
56	147365	M101900	AUTOROU3	10/19/00	12:55		S	CONC
57	147366	M101900	AUTOROU3	10/19/00	12:59		S	CONC
58	CCV1	M101900	AUTOROU3	10/19/00	13:08		Q	CONC
59	CCV1	M101900	AUTOROU3	10/19/00	14:19		Q	CONC
60	CCB1	M101900	AUTOROU3	10/19/00	14:38		Q	CONC
61	146824S	M101900	AUTOROU3	10/19/00	14:42		S	CONC
62	146824SD	M101900	AUTOROU3	10/19/00	14:46		S	CONC
63	146033x10	M101900	AUTOROU3	10/19/00	14:51		S	CONC
64	146033	M101900	AUTOROU3	10/19/00	14:55		S	CONC
65	147568	M101900	AUTOROU3	10/19/00	14:59		S	CONC
66	FBS-3109	M101900	AUTOROU3	10/19/00	15:05		S	CONC
67	LCS-3109	M101900	AUTOROU3	10/19/00	15:09		S	CONC
68	148772	M101900	AUTOROU3	10/19/00	15:14		S	CONC
69	148773	M101900	AUTOROU3	10/19/00	15:18		S	CONC
70	148774	M101900	AUTOROU3	10/19/00	15:22		S	CONC
71	CCV1	M101900	AUTOROU3	10/19/00	15:28		Q	CONC
72	CCB1	M101900	AUTOROU3	10/19/00	15:34		Q	CONC
73	148775	M101900	AUTOROU3	10/19/00	15:38		S	CONC
74	148787	M101900	AUTOROU3	10/19/00	15:42		S	CONC
75	148788	M101900	AUTOROU3	10/19/00	15:46		S	CONC
76	148789	M101900	AUTOROU3	10/19/00	15:50		S	CONC
77	148790	M101900	AUTOROU3	10/19/00	15:54		S	CONC
78	148776	M101900	AUTOROU3	10/19/00	15:58		S	CONC
79	148777	M101900	AUTOROU3	10/19/00	16:03		S	CONC
80	148778	M101900	AUTOROU3	10/19/00	16:07		S	CONC
81	148778S	M101900	AUTOROU3	10/19/00	16:11		S	CONC
82	148778SD	M101900	AUTOROU3	10/19/00	16:15		S	CONC
83	CCV1	M101900	AUTOROU3	10/19/00	16:20		Q	CONC
84	CCB1	M101900	AUTOROU3	10/19/00	16:32		Q	CONC
85	148778L	M101900	AUTOROU3	10/19/00	16:36		S	CONC
86	FBS-3110	M101900	AUTOROU3	10/19/00	16:41		S	CONC
87	LCS-3110	M101900	AUTOROU3	10/19/00	16:45		S	CONC
88	147791	M101900	AUTOROU3	10/19/00	16:50		S	CONC
89	147791S	M101900	AUTOROU3	10/19/00	16:54		S	CONC
90	147791SD	M101900	AUTOROU3	10/19/00	16:58		S	CONC
91	148176	M101900	AUTOROU3	10/19/00	17:03		S	CONC
92	148265	M101900	AUTOROU3	10/19/00	17:07		S	CONC
93	148266	M101900	AUTOROU3	10/19/00	17:11		S	CONC
94	148267	M101900	AUTOROU3	10/19/00	17:15		S	CONC
95	CCV1	M101900	AUTOROU3	10/19/00	17:21		Q	CONC
96	CCB1	M101900	AUTOROU3	10/19/00	17:28		Q	CONC
97	148268	M101900	AUTOROU3	10/19/00	17:32		S	CONC
98	148269	M101900	AUTOROU3	10/19/00	17:36		S	CONC
99	148270	M101900	AUTOROU3	10/19/00	17:40		S	CONC
00	148279	M101900	AUTOROU3	10/19/00	17:44		S	CONC
01	147393	M101900	AUTOROU3	10/19/00	17:48		S	CONC
02	147394	M101900	AUTOROU3	10/19/00	17:52		S	CONC
03	148057	M101900	AUTOROU3	10/19/00	17:56		S	CONC
04	148058	M101900	AUTOROU3	10/19/00	18:00		S	CONC
05	148222	M101900	AUTOROU3	10/19/00	18:04		S	CONC
06	148223	M101900	AUTOROU3	10/19/00	18:08		S	CONC
07	CCV1	M101900	AUTOROU3	10/19/00	18:13		Q	CONC

#	Sample Name	File	Method	Date	Time	OpID	Type	Mode
09	CCB1	M101900	AUTOROU3	10/19/00	18:20	Q	CONC	
10	148224	M101900	AUTOROU3	10/19/00	18:24	S	CONC	
11	148225	M101900	AUTOROU3	10/19/00	18:28	S	CONC	
12	148226	M101900	AUTOROU3	10/19/00	18:32	S	CONC	
13	148227	M101900	AUTOROU3	10/19/00	18:36	S	CONC	
14	148228	M101900	AUTOROU3	10/19/00	18:40	S	CONC	
15	148228L	M101900	AUTOROU3	10/19/00	18:44	S	CONC	
16	FBAIR-3113	M101900	AUTOROU3	10/19/00	18:55	S	CONC	
17	148750	M101900	AUTOROU3	10/19/00	18:59	S	CONC	
18	148751	M101900	AUTOROU3	10/19/00	19:03	S	CONC	
19	148752	M101900	AUTOROU3	10/19/00	19:07	S	CONC	
20	CCV2	M101900	AUTOROU3	10/19/00	19:12	Q	CONC	
21	CCB2	M101900	AUTOROU3	10/19/00	19:19	Q	CONC	
22	148753	M101900	AUTOROU3	10/19/00	19:23	S	CONC	
23	148754	M101900	AUTOROU3	10/19/00	19:27	S	CONC	
24	148755	M101900	AUTOROU3	10/19/00	19:31	S	CONC	
25	148756	M101900	AUTOROU3	10/19/00	19:35	S	CONC	
26	148757	M101900	AUTOROU3	10/19/00	19:39	S	CONC	
27	SPIKE	M101900	AUTOROU3	10/19/00	19:43	S	CONC	
28	SPIKEDUP	M101900	AUTOROU3	10/19/00	19:47	S	CONC	
29	FBW-3111	M101900	AUTOROU3	10/19/00	19:59	S	CONC	
30	LCS-3111	M101900	AUTOROU3	10/19/00	20:03	S	CONC	
31	148487	M101900	AUTOROU3	10/19/00	20:08	S	CONC	
32	CCV2	M101900	AUTOROU3	10/19/00	20:13	Q	CONC	
33	CCB2	M101900	AUTOROU3	10/19/00	20:20	Q	CONC	
34	148488	M101900	AUTOROU3	10/19/00	20:24	S	CONC	
35	148489	M101900	AUTOROU3	10/19/00	20:28	S	CONC	
36	148490	M101900	AUTOROU3	10/19/00	20:32	S	CONC	
37	148554	M101900	AUTOROU3	10/19/00	20:36	S	CONC	
38	148555	M101900	AUTOROU3	10/19/00	20:40	S	CONC	
39	148556	M101900	AUTOROU3	10/19/00	20:44	S	CONC	
40	148557	M101900	AUTOROU3	10/19/00	20:48	S	CONC	
41	148558	M101900	AUTOROU3	10/19/00	20:52	S	CONC	
42	148825	M101900	AUTOROU3	10/19/00	20:56	S	CONC	
43	148112	M101900	AUTOROU3	10/19/00	21:00	S	CONC	
44	CCV2	M101900	AUTOROU3	10/19/00	21:06	Q	CONC	
45	CCB2	M101900	AUTOROU3	10/19/00	21:17	Q	CONC	
46	148113	M101900	AUTOROU3	10/19/00	21:21	S	CONC	
47	148114	M101900	AUTOROU3	10/19/00	21:25	S	CONC	
48	148115	M101900	AUTOROU3	10/19/00	21:29	S	CONC	
49	148115S	M101900	AUTOROU3	10/19/00	21:33	S	CONC	
50	148115SD	M101900	AUTOROU3	10/19/00	21:37	S	CONC	
51	148220	M101900	AUTOROU3	10/19/00	21:42	S	CONC	
52	148221	M101900	AUTOROU3	10/19/00	21:46	S	CONC	
53	148758	M101900	AUTOROU3	10/19/00	21:50	S	CONC	
54	CCV2	M101900	AUTOROU3	10/19/00	21:55	Q	CONC	
55	CCB2	M101900	AUTOROU3	10/19/00	22:02	Q	CONC	
56	CRIF 148751	M101900	AUTOROU3	10/19/00	22:06	S	CONC	
57	IESAF CRIF	M101900	AUTOROU3	10/19/00	22:10	S	CONC	
58	IESAF ICSAF	M101900	AUTOROU3	10/19/00	22:14	S	CONC	

DATE: 10-19-00

NASHVILLE DIVISION

PAGE NO: 3110

BATCH NO: 00-3110

METALS DIGESTION LOG

MATRIX: Soil

WORKLIST NO. 8172

ANALYST: MS HH

METHOD: 3006A 3010A 200.7
 3016 3020A
 3030C 3052

TEMPERATURE: 175°

SAMPLE ID	AMT. DIGESTED ml g L	FINAL VOLUME (ml)	VESSEL WT BEFORE	VESSEL WT AFTER	REMARKS
Prep Blank # phw003110	0.500	100	108	108	
1 147791	0.508	|	109	109	
2 148176	0.525		109	109	
3 148265	0.520		109	109	
4 148266	0.524		109	109	
5 148267	0.520		109	109	
6 148268	0.516		109	109	
7 148269	0.524		109	109	
8 148270	0.490		109	109	
9 148279	0.523		109	109	
10 147393	0.511		109	109	
11 147394	0.510		109	109	
12 148057	0.505		109	109	
13 148058	0.506		109	109	
14 148222	0.508		109	109	
15 148223	0.515		109	109	
16 148224	0.494		109	109	
17 148225	0.505		109	109	
18 148226	0.521		109	109	
19 148227	0.514		109	109	
20 148228	0.495		109	109	
LCS Spike 1477915	0.519	111	111		
SPIKE Dup 1477915D	0.495	112	112		
LCS SPIKE Dup. Spike	0.500	112	112		
SPIKING SOLUTIONS: mws-ms-3-3 mws-ms-3-5 } 2ml each			REAGENTS: m-75-34-2 3ml m-55-37-1 9ml		

TestAmerica

NASHVILLE DIVISION

MERCURY DIGESTION LOG

DATE: 10-18-00

BATCH NO: 00-1448

MATRIX: Soil

WORKLIST NO.: 8103

ANALYST: BMM (S.F.)

METHOD: 245.1 7470A 7471A

	SAMPLE ID	Vol - [ml]/wt - [g] digested	FINAL VOLUME [ml]	REMARKS
s1	0.2	200ul	100	MWS-6M-77-1 (1:10dil)
s2	0.5	50ul	100	MWS-6M-77-1
s3	1.0	100ul	100	MWS-6M-77-1
s4	2.0	200ul	100	MWS-6M-77-1
s5	2.5	250ul	100	MWS-6M-77-1
s6	5.0	500ul	100	MWS-6M-77-1
Prep Blank#	PBS-00-1448	0.600	100	
1	147791-3	0.602		
2	148176-1	0.595		
3	148265-2	0.615		
4	148266-2	0.600		
5	148267-2	0.600		
6	148268-2	0.595		
7	148269-2	0.593		
8	148270-2	0.606		
9	148279-2	0.597		
10	147152-3	0.594		
11	148222-2	0.594		
12	148223-2	0.598		
13	148224-2	0.600		
14	148225-2	0.594		
15	148226-2	0.598		
16	148227-2	0.600		
17	148228-2	0.598	↓	
18				
19				
20				
LCS	MWS-6M-77-1	0.600	100	
SPIKE	147791 S	0.600	↓	
SPIKE Dupl.	147791 SO	0.600	↓	

Mercury Spike MWS-6M-77-1
 Nitric Acid
 Sulfuric Acid
 5% KMNO₄ MWS-6M-77-3
 5% K₂S₂O₈
 Aqua Regia MWS-6M-77-7



165
American Ordnance LLC
Iowa Army Ammunition Plant
17575 State Highway 79
Middletown, IA 52638-9701

(800) 488-9719
(319) 753-7774 fax
info@teamiowa.com

6 February 2001

LLH 01-0009

Contracting Officer's Representative
Contract No. DAAA09-98-E-0003
Iowa Army Ammunition Plant
Middletown, IA 52638

Dear Sir:

Contract: Advanced Environmental Technology Subcontract AOFC-99-0001

Subject: Field Sampling Report for Building 600-84 at the IAAAP

Reference: Request from the COR Staff to AO's Environmental Dept. on 23 January 2001

In response to reference request, American Ordnance hereby transmits a copy of subject baseline soil sampling report for your records.

If there are any technical questions, please contact Bob Hansen at (319) 753-7404. Point of contact for contractual issues is the undersigned at (319) 753-7925.

Sincerely,

Linda L. Hicks
AMERICAN ORDNANCE LLC
Contract Administrator II

LLH/llh

Att: As Stated