Appendix K.4b

Report of the Phase II RCRA Facility Investigation (RFI) Conducted on the Union Carbide Corporation Woodbine, Georgia Facility (Appendices C, D, E)

Apex Environmental, Inc.

September 1996

434 Pages



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REPORT OF THE PHASE II RCRA FACILITY INVESTIGATION (RFI)

Conducted on the

Union Carbide Corporation Woodbine, Georgia Facility

Volume 2 Appendicies C, D, and E

Apex Job No. 097.001

September 30, 1996

Prepared for:

Mr. Ken Ford Thiokol Corporation 2475 Washington Boulevard Ogden, Utah 84401

Apexenvironmental, inc.

APPENDIX C

Geophysics Report



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September 30, 1996

Mr. Ken Grall
Georgia Department of Natural Resources
Environmental Protection Division
205 Butler Street, S.E., Suite 1154
Atlanta, Georgia 30334

Re:

Phase II RCRA Facility Investigation (RFI) Report

Permit No. HW-063D

Woodbine, Georgia Facility

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Dear Mr. Grall:

As you are aware, Apex Environmental, Inc. (Apex) has been performing a Phase II RCRA Facility Investigation (RFI) at the Rhone-Poulenc (RPI) facility in Woodbine, Georgia on behalf of Thiokol Corporation (Thiokol). Apex has completed the investigation as outlined in the Work Plan approved by the Georgia Environmental Protection Division (GAEPD) on September 21, 1995. Apex is pleased to submit four copies of the report of the Phase II RFI to GAEPD for review. The report is being forwarded to your attention at the direction of Mr. Kenneth Ford of Thiokol. Apex will contact your office within two weeks to discuss the report.

If you have any questions or comments regarding this report, please feel free to contact me at (301) 417-0200.

Sincerely

Mark A. Corbin Project Manager

cc: Ken Ford, Thiokol
Mark A. Ferrin, Esq., Thiokol

✓Art McClain, Union Carbide
Paul H. Suhr, Esq., Union Carbide
David Cunningham, Rhone-Poluenc

GEOPHYSICAL SURVEY FORMER THIOKOL CORPORATION SITE WOODBINE, GEORGIA

Prepared for:

Apex Environmental, Inc. 15850 Crabbs Branch Way, Suite 300 Rockville, Maryland 20855

March 4, 1996

Prepared by:

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EXECUTIVE SUMMARY

Geophysical surveys employing ground penetrating radar (GPR) and electromagnetics (EM-31) were conducted over portions of two solid waste management units (SWMUs) at the former Thiokol Corporation site, Woodbine, Georgia. The objective of the surveys was to locate and define previously excavated areas and/or buried materials, such as metallic drums or contaminants. The areas surveyed are as follows:

- 1) SWMU3: Suspected Aldicarb Disposal Area
- 2) SWMU3: Burn Area
- 3) SWMU6: Borrow Pit/Mound-Trench Area
- 4) SWMU6: Test Area

At SWMU3: Suspected Aldicarb Disposal Area, EM-31 and GPR data were collected over a grassy mound suspected to cover a back-filled excavation reportedly containing aldicarb, a pesticide. EM-31 terrain conductivity data defined a subtle, anomalously low conductivity area that corresponds closely to the mound, but also extends southeast of the mound a short distance. GPR data imaged a disturbed subsurface beneath the mound, and extending slightly to the southeast. This correlates well with the EM-31 conductivity data. The limits of the disturbed subsurface, as defined by the GPR data, are interpreted as the boundaries of the excavated area.

The second geophysical survey was conducted at SWMU3: Burn Area, north of the aldicarb disposal area. GPR lines were run over this site to locate any potential burn pits. One potential pit was identified southeast of the bunker.

In SWMU6, EM-31 and GPR surveys were conducted over the site of an old borrow pit, and adjacent to the north, over an area of mounds and associated trenches. The objective was to search for buried drums, and locate covered trenches which may have been used for chemical disposal. Several areas of potential buried drums were identified by the EM survey, with supporting GPR confirmation. GPR and EM conductivity identified the position of the old

borrow pit. In the mound/trench area, the EM-31 conductivity data defined a large east-west trending zone of anomalously high conductivity. Within this zone, and corresponding to a portion of a large mound, an anomalous *highly* conductive area has been identified. Attenuation of the GPR signal over portions of the mound/trench area provides strong correlation with the distribution of the anomalously high subsurface conductivity, as defined by the EM-31. In addition, small low-conductivity EM anomalies are found to correspond to two small surface depressions and two small isolated mounds.

At SWMU6: Test Area, EM-31 and GPR data were collected over two previously and purposely buried drums to document their geophysical signatures for correlation purposes elsewhere. Strong EM responses were produced over the drums indicating that drums elsewhere on the site would have been found with the line and station spacing employed. GPR data showed hyperbolic reflectors over or close to the drums but would not have been diagnostic independent of the EM data.

In summary, the geophysical surveys employed at the site were successful at identifying previously excavated areas, potential areas of buried drums, areas of anomalously high and low subsurface conductivity, and areas of significant GPR signal attenuation.

INTRODUCTION

North American Exploration of Virginia, Inc. (NAEVA) was contracted by Apex Environmental, Inc. (Apex) to conduct geophysical surveys on portions of two solid waste management units (SWMUs) at the former Thiokol Corporation site in Woodbine, Georgia. The property was formerly owned by Union Carbide, and later by the Thiokol Corporation. It was

acquired by the Rhone Poulenc Company during the 1980's. Agricultural chemicals, including pesticides, were produced by Union Carbide at this plant. Thiokol later manufactured and tested ordnance for the military at the plant.

Five tasks were assigned by Apex:

SWMU3

- 1) locate and define the previous excavation of the suspected aldicarb disposal area in SWMU3
- 2) survey an area of SWMU3 for the presence of suspected ordnance burn pits

SWMU6

- 3) locate and define areas containing buried drums (possibly containing aldicarb and UXO chemicals)
- 4) identify the locations of any covered trenches (potentially used for the disposal of contaminants)
- 5) conduct EM-31 and GPR surveys over a test area where two 55-gallon drums were buried to document the geophysical signatures of the known drums for correlation purposes elsewhere

SURVEY METHODOLOGY

The geophysical surveys were conducted using two methods: electromagnetics (EM-31) and ground penetrating radar (GPR).

Electromagnetics

For the electromagnetic method, a Geonics EM-31 terrain conductivity instrument was utilized, providing an output of both the quadrature (terrain conductivity) and in-phase components of the induced electromagnetic field, which are recorded simultaneously. The quadrature component measures electrical conductivity in milliSiemens per meter (mS/m). Terrain conductivity is a function of permeability, conductivity of included soil moisture, degree of saturation, and soil and rock type. Absolute values of terrain conductivity are not usually

diagnostic, but their spatial variations are important. The ability to identify lateral variations in the conductivity of the shallow subsurface makes quadrature EM-31 data extremely useful in mapping changes across the site. The in-phase component is primarily used in searching for buried metal, measuring in relative parts per thousand (ppt) units. A negative response is most commonly expected over areas containing shallow buried metal debris. EM-31 readings were collected in vertical dipole mode at 2.5-foot stations along survey lines. The EM-31 has an intercoil spacing of 12 feet, permitting a maximum depth of exploration of 18 feet when operated in vertical dipole mode.

At this site, anomalous changes in soil conductivity were expected to be related to changes in soil compaction and moisture content (previous excavations), and/or to the presence of foreign materials (contaminants). While the specific electrical properties of the potential contaminants such as buried aldicarb and UXO chemicals are not known, these materials might produce sufficient contrasts in the subsurface conductivity such that their presence could be identified.

Ground Penetrating Radar

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The GPR survey utilized a Sensors and Software Pulse EKKO 100 GPR system equipped with 100 MHz antennas. Initially, 200 MHz antennas were employed for comparison, but were found to provide less definition of deeper reflective events. Readings were collected at 20-centimeter intervals along the lines, using a wheel odometer to trigger the system. The GPR system is based on the propagation and reflection of electromagnetic (EM) fields. Subsurface reflections are caused primarily by contrasts in dielectric properties of different materials. The amplitude of the reflected signal is dependent on contrasts in dielectric properties and depth of

the reflector. Conductive materials and/or fluids can quickly attenuate the radar signal, limiting depth of penetration. In general, undisturbed ground may be distinguished from an excavated area, and metallic objects ordinarily are evident if isolated in uniform materials.

DATA PROCESSING

EM-31

The second secon

Data collected during the EM-31 survey were stored in a palmtop computer, and later downloaded to a laptop personal computer. EM-31 data were then processed through Geonics DAT31 software program, and contoured using Golden's SURFER program. Data were further re-processed in NAEVA's Charlottesville, Virginia office, and contoured and plotted using SURFER and AutoCAD version 12 software. Contour intervals were selected that would best depict the anomalous areas defined by the survey.

GPR

GPR data were collected and stored directly into a laptop computer. Data processing for the GPR data included: 1) conversion from metric to English distance units, 2) interpolation between traces using Pulse EKKO fillgap software, 3) reversal of lines run to the south or west, and 4) the application of topographic corrections for profiles run over various mounds and low areas. In addition, a variety of gains were applied to the wiggle trace plots to determine the best data presentation. Gain is applied to the data set for plotting purposes only, allowing for any type or amplitude of gain to be applied without permanently altering the data set. Two types of gain were used for the plots of GPR files accompanying this report. Most profiles have an Automatic Gain Control (AGC) applied, which gains the data by an amount inversely

proportional to the signal strength. This gain type is very useful for defining continuity of reflective events, and makes deep, low amplitude events discernable in the record. Information about the relative amplitude of the reflectors is lost through this presentation. Another type of gain (used only for SWMU3: Suspected Aldicarb Disposal Area) is termed Spreading and Exponential Compensation (SEC). This gain is a composite of a linear time gain and an exponential time gain, which serves to accentuate the stronger reflectors in a profile. Metallic objects or other strong reflectors are more easily distinguished in an SEC gain plot, while "noise" from stratigraphic changes are reduced.

A common mid-point (CMP) sounding was performed in the southeastern corner of the field in SWMU6 to provide information on the velocity of the GPR signal through the subsurface. CMP data were analyzed in a Sensors & Software program, yielding a velocity of 0.08 meters/ nanosecond (0.262 feet/nanosecond). The velocity obtained from the analysis was applied to the GPR data to provide a measure of depth, shown on the right side of each profile.

SWMU3: SUSPECTED ALDICARB DISPOSAL AREA

Off-specification aldicarb, a pesticide produced by Union Carbide at the Woodbine operation, was reportedly buried in SWMU3, east of the asphalt road leading to the rocket pit test area. A grassy, elliptical-shaped mound is present and is thought to cover the excavation reported to contain the buried aldicarb. This area was the focus of the geophysical survey in this portion of SWMU3, and is shown as the southwest grid on Plate 1.

Grid Control

The survey grid established over the suspected aldicarb disposal area was placed to provide coverage over the grassy mound, and to provide as much background outside the mound as was practically possible. A baseline (100E) was established in the center of the paved road leading to the rocket test pit, with coordinates painted every 20 feet along the line. Using a magnetic declination of 4.5° West, this baseline has a bearing of N. 23° E. A total of 14 lines were then established perpendicular to the baseline, marked by labeled, white PVC pin flags on all 150E, and 200E stations, and at the end of each line. The location of two permanent features, a monitor well and a red-painted utility fixture, were recorded so the grid could be recovered, should the flags be removed. The eastern margin of the grid was restricted somewhat by densely vegetated woods.

Survey Results and Interpretation

EM-31: Quadrature

EM-31 data were collected on east-west lines spaced 10 feet apart, with readings collected at 2.5 foot intervals along lines. The contoured EM-31 quadrature data (Plate 3) shows two high amplitude anomalies, which correspond to known cultural features. The north-south oriented feature immediately east of the asphalt road is reported to be a water pipe, probably constructed of cast iron. The other high amplitude feature consists of a nearly circular high and a low, resulting from the monitor well at coordinates 169N + 236E.

A subtle expression of lower conductivity forms a closed feature, the surface trace of which corresponds very closely to the mound thought to cover the excavation. Two explanations may be considered for this subtle low conductivity feature: 1) the electrical properties of the

and/or moisture content of the previously excavated area are responsible for contrasts in conductivity with undisturbed ground. It is apparent from Plate 3 that while the area of lower conductivity corresponds closely to the margins of the mound, it does extend beyond the mound on the southeastern side. Minor isolated anomalies outside the mound occur at 120N + 215E, 140N + 210E, and 220N + 215E.

EM-31: In-Phase

In contrast to the quadrature data, the in-phase contour map (Plate 4) images only known cultural features, consisting of the water pipe and monitor well. The lack of other in-phase anomalies demonstrates no buried drums are present in the mound. Small, near-surface metallic objects detected by EODT using Schonstedt magnetic locators on the mound are very likely too small to produce a significant response in the EM-31.

GPR

The GPR profiles for the suspected aldicarb disposal area were collected on east-west spaced 20 feet apart, and are presented with two gain types. All of the profiles were potted with a SEC gain, which accentuates strong reflectors while suppressing extraneous aformation. A total of five lines (100N, 140N, 180N, 220N, 280N) were also plotted with an GC gain type to illustrate the deeper, weaker reflectors, and provide information on the agraphic complexity of the subsurface.

GPR profiles were highlighted with two colors: pink for suspected metallic reflectors and for disturbed ground indicative of a previously excavated area. The water pipe is a very reflector, evident on the western side of all the profiles. The diffraction tails extending

beyond the pipe's location are typical of strong metallic reflectors, which are "visible" to the even some distance away. The source of other reflectors highlighted pink are unknown.

The reflectors highlighted yellow are interpreted as disturbed ground caused by the previous excavation. East of the mound, a very pronounced difference in the continuity of the subsurface reflectors can be seen, as a result of undisturbed ground. West of the mound, broken, discontinuous reflectors extend to the water pipe, and are probably the result of excavation in this vicinity. The limits of the disturbed subsurface, as defined by the GPR data are interpreted as the boundaries of the excavated area. The surface trace of the boundaries of the interpreted excavation are plotted on Plate 2.

SWMU3: BURN AREA

North of the suspected aldicarb disposal area, an ordnance "burn" area lies southeast and east of a concrete bunker (see Plate 1). A few ordnance items litter the surface, including 40 mm grenades. Ordnance burn pits are suspected to exist in this area.

Grid Control

To tie the burn area grid to the previously established grid in the suspected aldicarb disposal area, the line in the center of the asphalt road (100E) was extended northward to coordinate 890N. From this point, an east-west baseline (azimuth 113°) was established, and extended another 115 feet east. This baseline was then offset 20 feet south (due to thick vegetation), and extended another 115 feet east. North-south (azimuth 23°) oriented survey lines of varying lengths were established, spaced 20 feet apart. A 10-foot line spacing was utilized on the last-most two lines to avoid 40 mm grenades on the surface. Northern and southern ends

of the lines were placed at the edges of thickly vegetated forest. A small area south of the bunker was also surveyed, with four short lines spaced 10 feet apart over a sparsely vegetated, sandy area littered with small fragments of burned debris.

Survey Results and Interpretation

GPR

GPR data collected over the sandy area south of the bunker show no evidence of a pit.

A point reflector is evident at the south end of Lines 150E, 160E, and 170E, probably resulting from a pipe or cable buried at approximately 876N. Shallow subsurface disturbances, highlighted in yellow, can be seen on each of the four profiles over this sandy area, most notably on Line 180E.

Evidence of a possible covered pit on the GPR records is highlighted in yellow on profiles for Lines 240E and 260E (also shown on Plate 5). Characteristics identified that seem to support the existence of a pit are sloping reflectors and shape offsets in reflective events. No chrious, large point-source reflectors, indicative of buried metallic objects, are evident in this potential pit. The confidence level placed on this interpretation is not high, although these GPR features represent the only suspected pit target in the data set.

In the remaining lines, a multitude of hyperbole evidence disturbed ground. No pits are visible in the GPR records east of 260E. Suspected metallic reflectors are highlighted in pink. Oner conspicuous reflectors, most of unknown origin, are highlighted green on the GPR plots. The that gopher tortoise holes, large trees immediately adjacent to lines, and tree roots are the in the GPR records. Many of the dipping reflectors may be stratigraphic in origin. Line was surveyed between 180E and 240E. The metal culvert is very conspicuous at 210E.

...MU6: Borrow Pit, Mound/Trench Area

The geophysical survey conducted in SWMU6 was carried out in a field, formerly the of a borrow pit, and over a linear, east-west oriented mound, north of this field. The now pit is visible as a nearly circular, water-filled depression on an aerial photograph (Sheet in the USDA Soil Conservation Service Soil Survey of Camden and Glynn Counties, No surface expression of this feature is now visible. The survey objective at SWMU6 to define areas of buried drums, and trenches containing non-metallic materials (contaminants).

Grid Control

NAEVA personnel were directed by Mike Landsman (Apex) to survey an area containing congated east-west oriented mound in a wooded area north of a fence line (mound-trench and also a large open area to the south reported as the former location of the borrow pit.

Southern boundary of the survey grid was defined by a monitor well in the field. The boundary extends slightly west of a grassy road. The eastern boundary of the borrow lies west of a patch of woods. In the vicinity of the mound, the northern boundary of the survey grid cultural features described above are illustrated on Plate 6. After the borrow pit area lies 10 to 20 feet north of an east-west oriented grassy road. The survey grid cultural features described above are illustrated on Plate 6. After the borrow pit area lies lies and briars, a point was established 125 feet due west of the well, and assigned coordinates 1000N, 1000E. Due north-south lines were established, lies through the field, and over the mound, terminating north of the grassy lines through the mound area passed through thick vegetation, requiring extensive

nounds are noted on the grid/culture map and could serve to relocate grid coordinates flags are removed.

Results and Interpretation

EM-31: Quadrature

The EM-31 quadrature contour map (Plate 7) illustrates significant changes in activity across the site within the mound area. An east-west oriented conductivity high is north of the fenceline from approximately 960E to 1420E. An area of highly anomalous control exists within this feature, centered at approximately 1200N. Background crivity values at SWMU6 appear to be approximately 5 to 7 mS/m, on the outer margins surveyed area. Conductivity values of 8 to 14 mS/m define the linear conductive zone centered at 1210E, 1360N is defined by values of the fence. The highly conductive zone centered at 1210E, 1360N is defined by values proximately 14 to 26 mS/m.

Plate 6 illustrates areas of the mound where a white-colored material is visible at the denoted with a red dot. The greatest concentration of symbols representing exposures white material corresponds very well to the most elevated conductivity values. At the title field survey, this white material was reported by Apex to possibly be aldicarb.

Outside the region of highest conductivity, the mounded area shows a less pronounced, and conductivity. Shallow trench-like depressions are present immediately north of the mounds, in the western portion of the grid. A subtle expression of low conductivity is over these features from 970 to 1015E and from 1048 to 1090E. In addition, two conds in the northwestern portion of the grid demonstrate similar signatures. If the EM

observed at SWMU3: Suspected Aldicarb Disposal Area is attributed to the presence contamination, the low conductivity response seen over these features in SWMU6 indicate the presence of aldicarb contamination.

In addition to the linear east-west conductive anomaly, several other quadrature features corthy of note. Strong, negative conductivity anomalies occur in several locations. The fence is responsible for an east-west linear negative anomaly. An area in the northwest me of the field, roughly 25 to 30 feet east of the road shows a cluster of negative responses, plained by any surface features. Other negative features occur north of the fence and one north of the mound. All of these features will be addressed in the discussion of EM indicata. Lastly, a broad, roughly circular feature is defined by the quadrature contours in borrow pit area. This feature is very roughly 150 feet across, and is slightly more contextive at its center compared to the margins. The circular feature appears to define the tion of the former borrow pit, visible in the airphoto (Sheet 66) of the county soil survey

EM-31: In-Phase

The in-phase data for SWMU6 (Plate 8) clearly delineates areas of buried metal in the in the mound, and north of the mound. A group of negative in-phase anomalies is evident 1230N and 1300N from approximately 955E to 1015E. These anomalies vary in inde, the strongest occurring on the western edge of this group. Only the western-most by of this group displays an amplitude consistent with a buried drum or group of drums. Other areas of strong negative in-phase anomalies are visible on Plate 8. One area,

the eastern portion of the mound, consists of three strong negative responses, two on Line 310E, and a third on Line 1330E. All three of these anomalies are of sufficient amplitude to present drums or groups of drums. Another area with a strong negative in-phase response coincides with a mound north of the grassy road, centered at approximately 1410N + 1200E. The northern end of the anomaly is undefined by this survey.

Smaller in-phase anomalies may be the result of buried metallic refuse other than drums.

These anomalies include features at: 1337N + 980E, 1345N +930E, 1040N + 1110E, 1320N +1400E. Note the conductivity anomaly associated with the fence is not portrayed in the include contours. Quadrature measurements are more sensitive than in-phase measurements to long, linear conductors.

GPR

GPR profiles for SWMU6 were run in two blocks, for logistical reasons. The southern block corresponds to the borrow pit area, covering the area south of 1300N. The northern block overs the mound/trench area north of 1300N.

The plots of GPR profiles for the southern block reveal excellent correlation between EM

phase anomalies and radar anomalies. The area of in-phase anomalies in the northwest

cotion of the southern survey block is supported by an abundance of GPR anomalies. Metallic

cotors are highlighted pink on the GPR records. A great abundance of diffractions are

cut in all GPR records in the borrow pit area. The patterns are created by highly disturbed

and, probably resulting from the excavation or reclamation of the old borrow pit. The edges,

in some places, the bottom of the former borrow pit are clearly visible in many of the GPR

and. The bottom and sides of the interpreted borrow pit are highlighted in orange. The pit

been deeper on its western side, where a stronger reflector on the pit bottom may be accumulation of fines (i.e., silt or clay). The limits of the disturbed subsurface, by the GPR data, are interpreted as the boundaries of the former borrow pit, the crow of which is plotted on Plate 9. No evidence of smaller pits or trenches are evident area.

GPR profiles collected over the mound/trench area passed over drastic changes in in the western portion of the survey, where steep, narrow mounds exist. Further amound is lower, with more gentle slopes. Topographic information was collected with level to allow for topographic correction of the GPR profiles.

me most outstanding characteristic of GPR lines run across the mound/trench area is the most of signal in the vicinity of the longer linear mound. This area of significant GPR menuation is shown on Plate 9. The attenuation of the radar signal is attributed to the mound area. The degree of attenuation varies from place to place, menuated zone's position in relation to the mound also varies. On some profiles, the reaches southward to the fence and beyond a short distance. A sharp boundary is apparent between the northern edge of the mound/trench area and road as far east as retween 1170E and 1270E, the zone of attenuation extends below and north of the letter conductive material is buried this far to the north, or the attenuation is a result we fluid migration or a conductive cap is not apparent. A distinct change in the letter conductive can be seen between lines 1280E and 1290E. A drop in conductivity from the letter conductive in the EM quadrature. The change in character may well mark one type of waste burial. The eastern most lines, 1420E and 1430E, possess a

relatively narrow area of attenuation, which corresponds to a very shallow depression. The GPR signature strongly suggests conductive materials are present below the depression, and likely extend east of line 1430E.

A great number of hyperbolic and sloping reflectors attest to the disturbed subsurface within the northern survey block. Few metallic objects are evident in the GPR records in the mound area, with the exception of lines 1310E through 1350E, where GPR confirmation of EM in-phase anomalies can be seen. These features are highlighted pink. The wire fence south of the mound produces a pronounced "ringing" by bouncing the radar signal back and forth very rapidly. The location of the fence is noted in the comments at the bottom of each GPR profile.

SWMU6: Test Area

On December 7, 1995, a small test trench was excavated southeast of the grid in the field at SWMU6. A trench 13½ feet long and almost 4 feet wide was dug to a depth of 58 inches. Two empty steel 55 gallon drums were placed in the trench, one in a vertical position, the other horizonal. The drums laid approximately 6 feet apart. Please refer to Figure 1 for a depiction of the drums, trench, and grid.

Survey Results and Interpretation

EM-31

The EM-31 data was collected as two discrete surveys on lines spaced 10 feet apart, with 2.5-foot stations along lines. This first data set was collected along lines 1200E, 1210E, 1220E, etc. The second data set was collected along lines 1205E, 1215E, 1225E, etc. The objective

of having two survey sets, offset 5 feet from each other, was to provide a comparison of the response amplitude and position, passing at varying distances from the drums.

Figures 2 through 5 show quadrature and in-phase response over the drums. A dramatic quadrature and in-phase response is apparent in both sets of contoured data. The position of the peak amplitude response shifts slightly between the two EM surveys, but both surveys would very easily recognize the drums as significant anomalies. The EM-31 recognizes one anomaly over the two drums, as they are buried too close to each other for the instrument to resolve the two sources, at the 10-foot line spacing. This exercise clearly demonstrated that the presence of buried drums within the SWMUs would not have gone undetected, with EM-31 data collected at the employed 10-foot line spacing.

GPR

GPR data were collected on 10 lines through the test area, illustrated in Figure 1. Hyperbolic reflections from the drums are visible on six of the lines which pass over or very near the buried drums. The drum reflections are highlighted pink on the GPR profiles. The anomalies are most evident on line 980N, 1220E and 1225E. Note that the reflection on line 1225E appears as one anomaly, as the line passes between the two drums. While the GPR anomalies directly over the drums confirm the EM anomalies, it is apparent that using GPR alone, it would be difficult to interpret these features as drums.

CONCLUSIONS

The electromagnetic and ground penetrating radar methods were successful at accomplishing the stated objectives of the geophysical survey. Results are summarized as follows:

SWMU3: Suspected Aldicarb Disposal Area

- * EM-31 quadrature data detected a low conductivity anomaly below and to the southeast of the mound.
- * EM-31 in-phase data showed no evidence of unknown large buried metallic objects such as drums.
- * GPR data imaged disturbed versus undisturbed ground, identifying the boundaries of the previously excavated area below and to the southeast of the mound. This correlates well with the EM-31 quadrature data.

SWMU3: Burn Area

- * The location and extent of one potential burn pit was identified with the GPR data, southeast of the concrete bunker.
- * No evidence of additional burn pits was found in other areas of this survey grid.

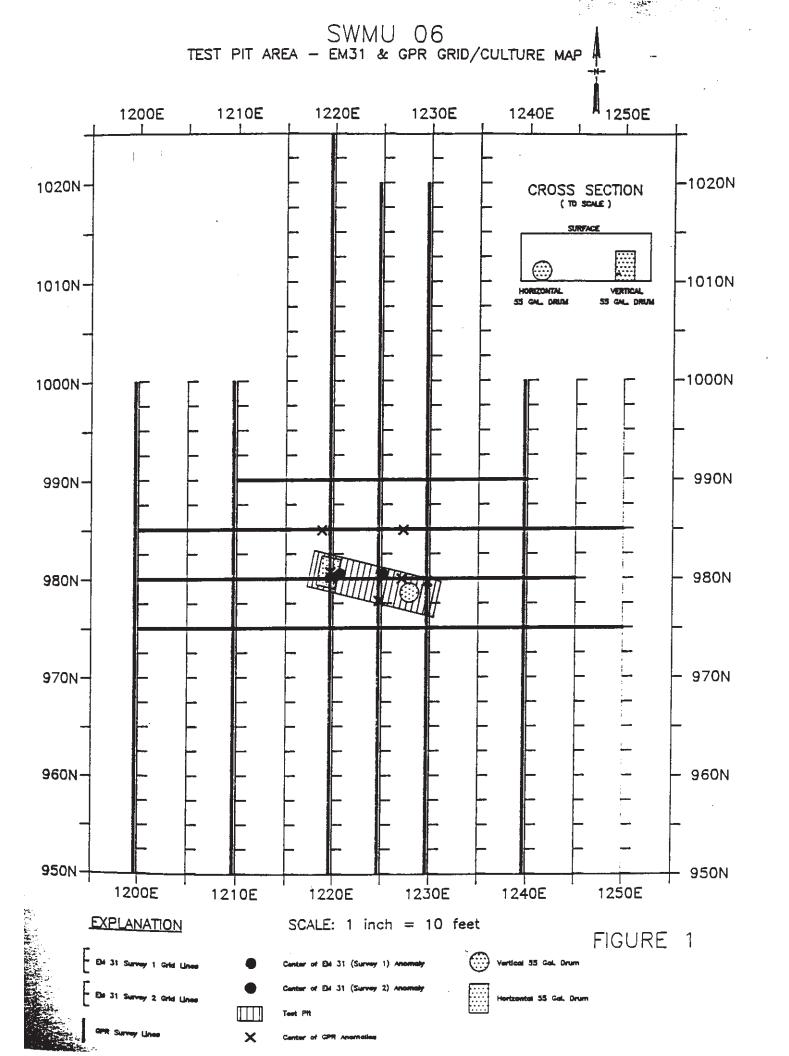
SWMU6: Borrow Pit/Mound-Trench Area

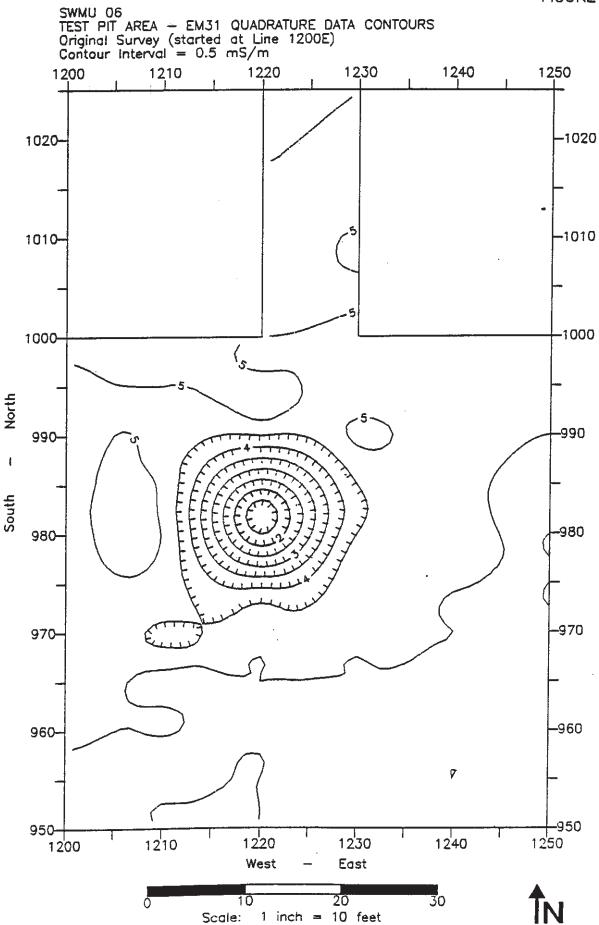
- * EM-31 quadrature data identified a conductive anomaly below the site of the borrow pit.
- * In the mound-trench area, EM-31 quadrature data identified a broad conductive zone in the vicinity of the large mound, containing a smaller, highly conductive zone. Several small low-conductivity zones corresponding to surface features such as small mounds and depressions were also identified.
- * EM-31 in-phase data identified areas of buried metallic objects, potentially drums, in both the borrow pit and mound-trench area.
- * GPR data identified areas of sloping reflectors, thus delineating the boundaries of the borrow pit.
- * GPR data identified disturbed subsurface in the mound-trench area.

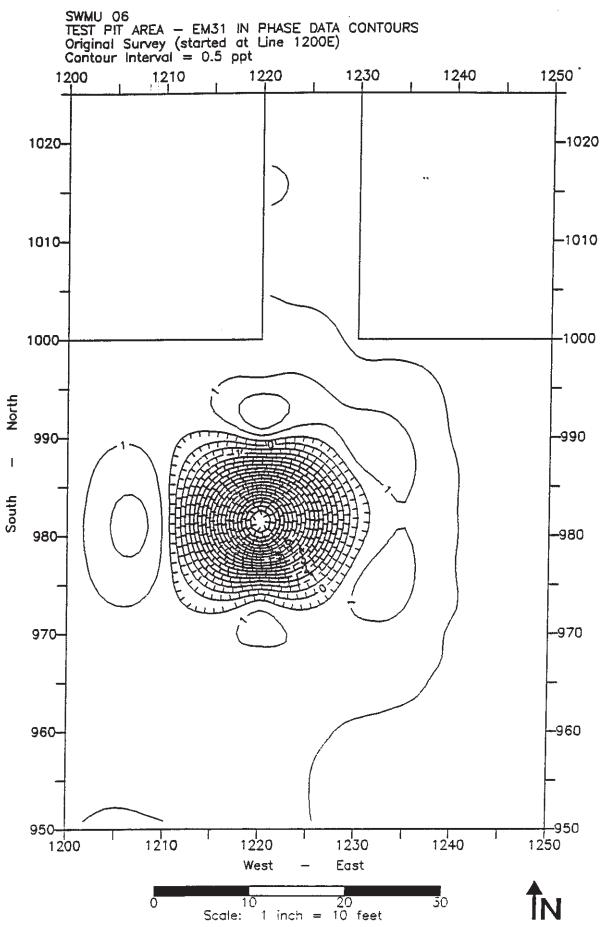
- * GPR data identified point-source reflectors coincident with the EM-31 in-phase anomalies considered as potentially buried drums, thus providing confirmatory evidence.
- * A broad zone of high GPR signal attenuation was identified over the mound-trench area, coincident with the conductive zone identified with the EM-31 quadrature data.

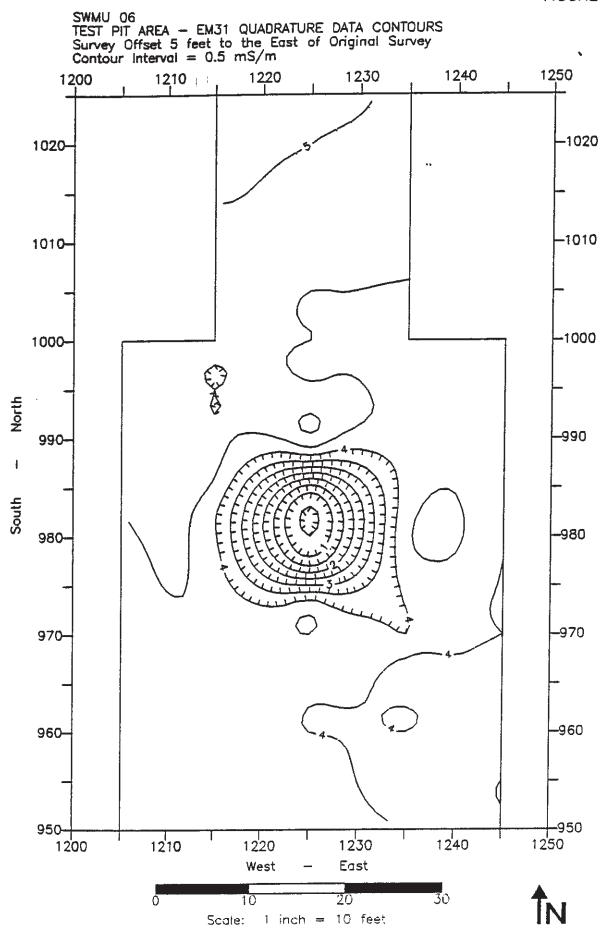
SWMU6: Test Area

- * Both EM-31 quadrature and EM-31 in-phase data exhibited a strong response over the buried drums, indicating that buried drums would have been located elsewhere on the site with the line and station spacing employed.
- * GPR data yielded hyperbolic reflectors over or close to the buried drums, however, recognition of these features as drums based on GPR data alone would have been difficult.

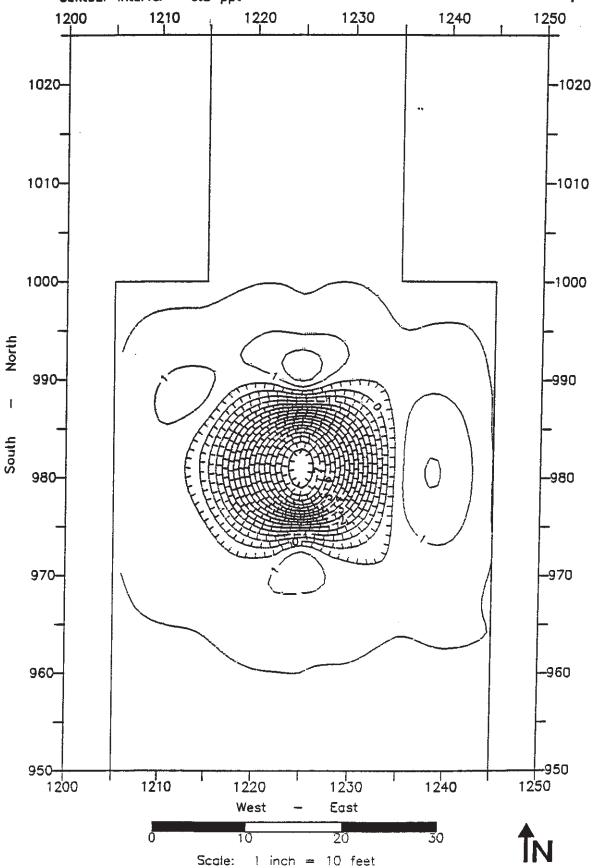


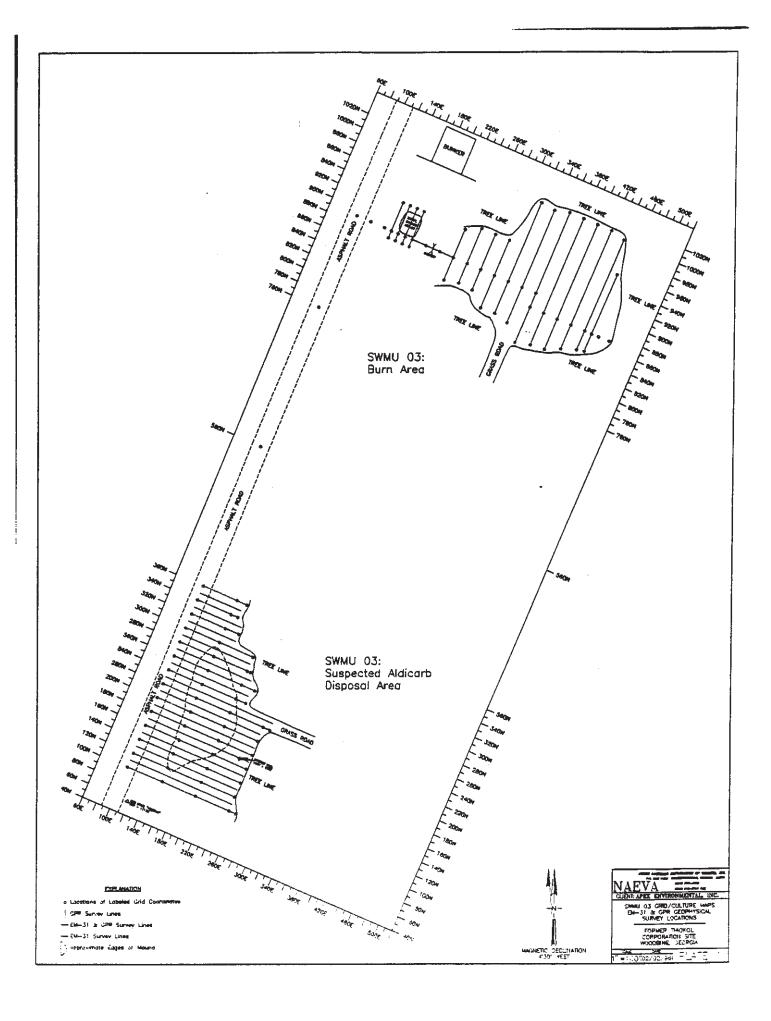






SWMU 06 TEST PIT AREA — EM31 IN PHASE DATA CONTOURS Survey Offset 5 feet to the East of Original Survey Contour Interval = 0.5 ppt



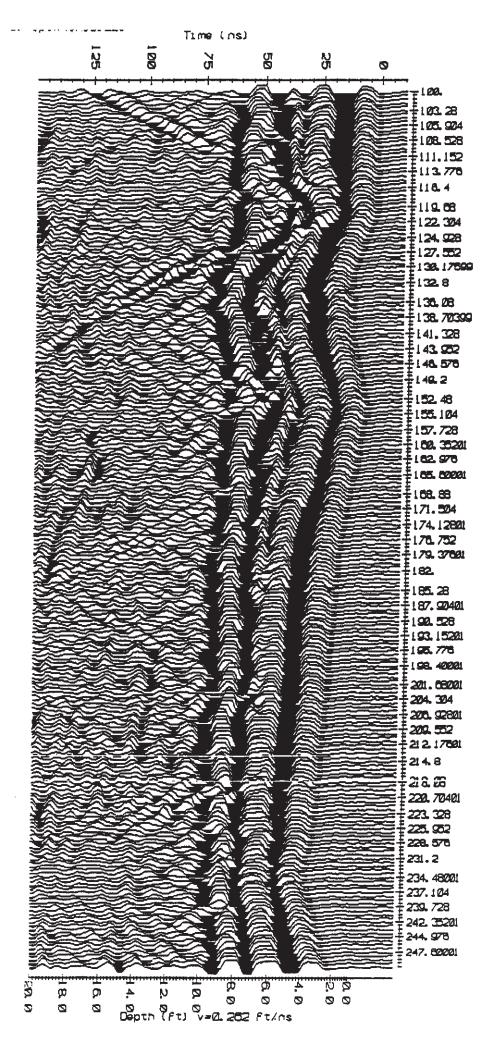


SWMU 03 LINE 1008

SWMU 03

NOOI BNIT

AGC GAIN



Time (ns)

SWMU 03 LINE 140N

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Depth (ft) v=0.262 ft/ns

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LINE

140N

AGC GAIN

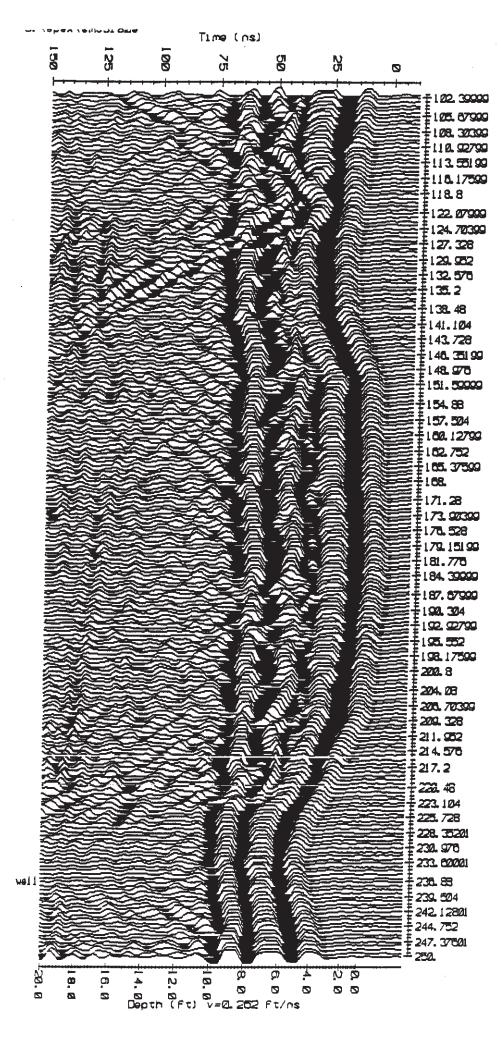
± 250.

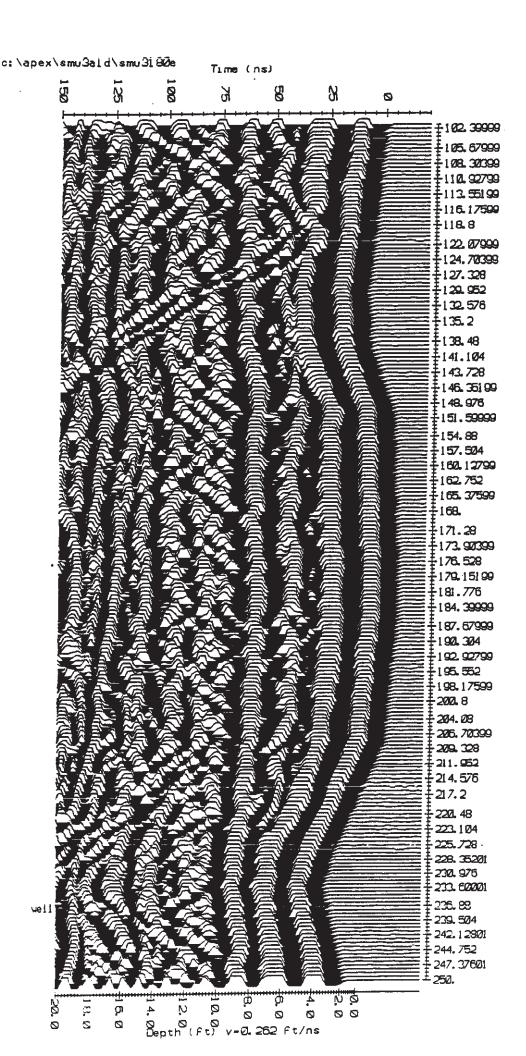
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C: \apex\emu31 62e

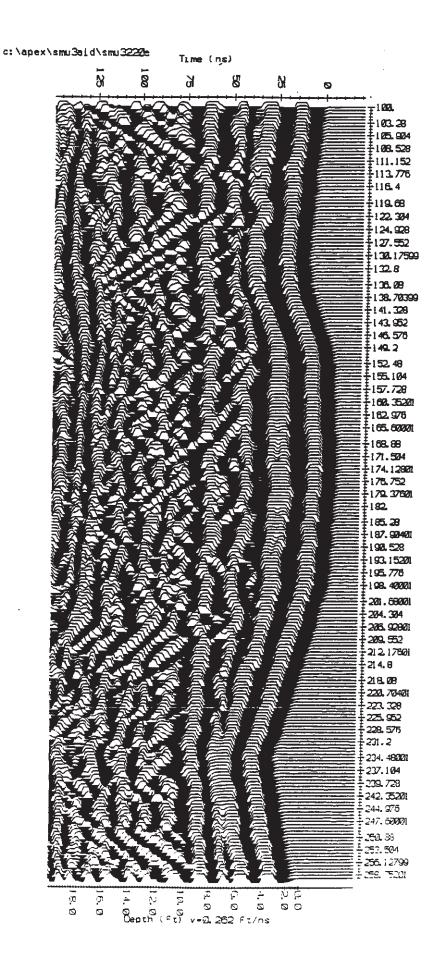
SWMU 03 LINE 160N

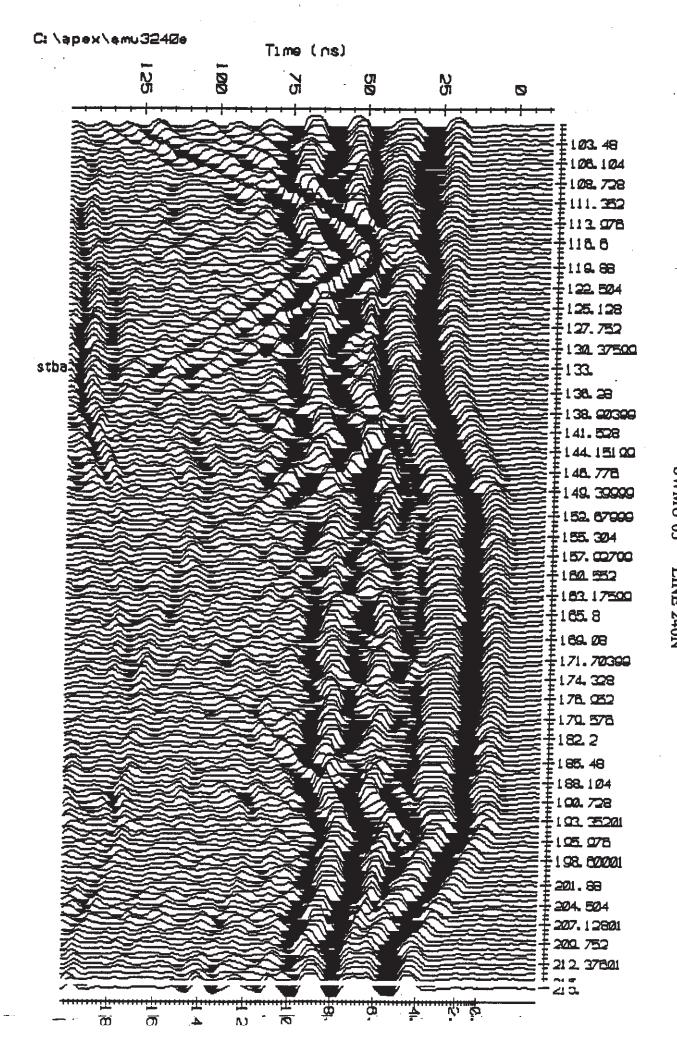




SWMU 03 LINE 200N

SWMU 03 LINE 220N

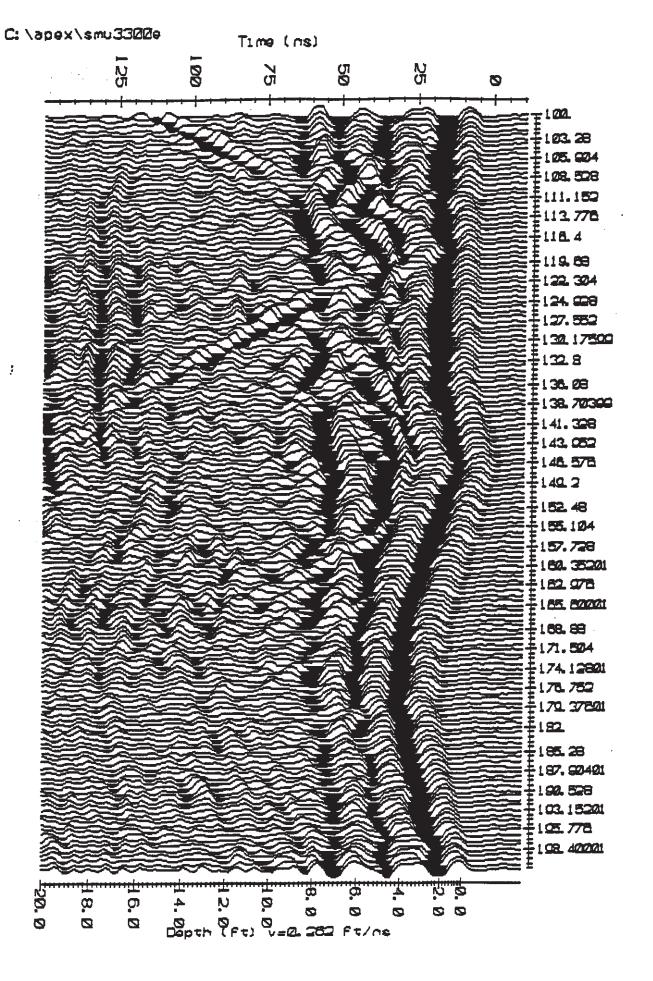


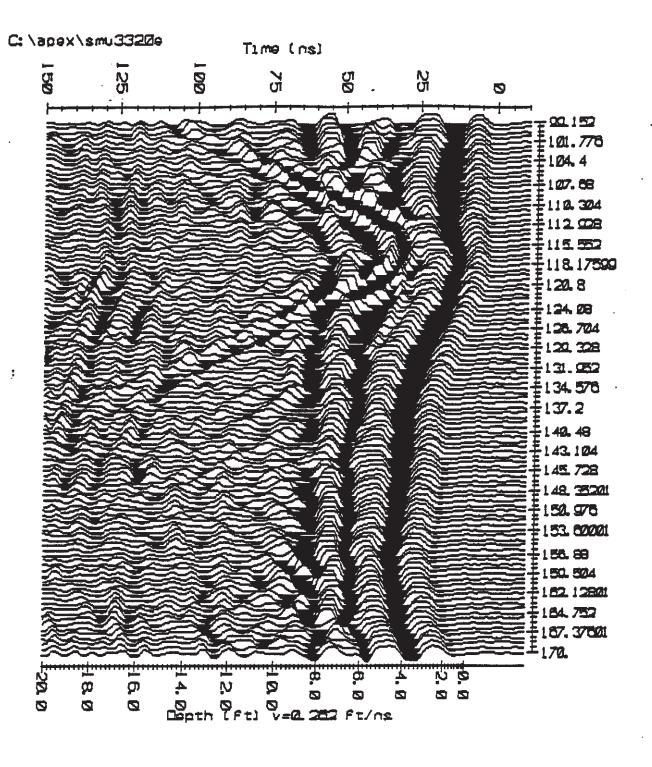


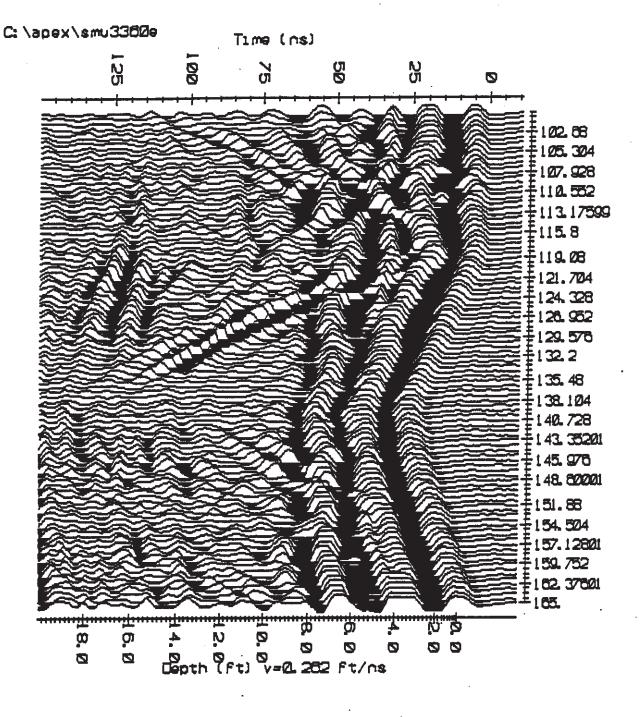
SWMU 03 LINE 260N

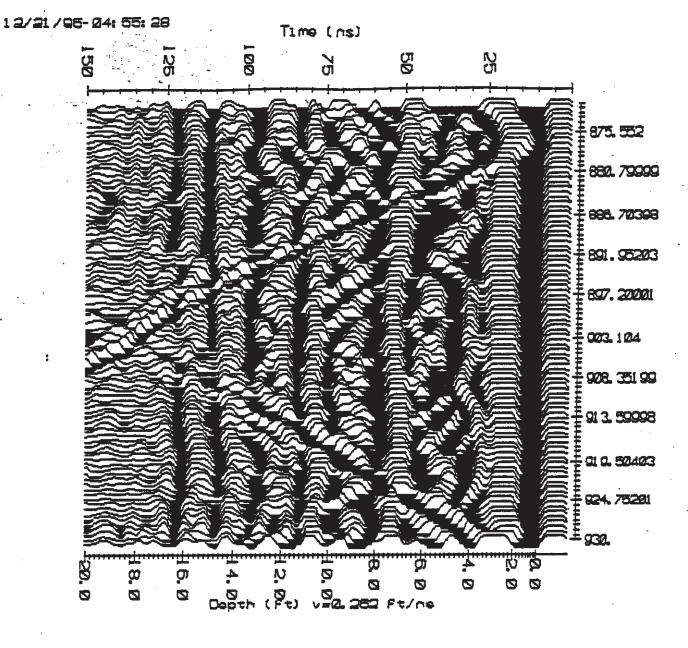
SWMU 03 LINE 280N

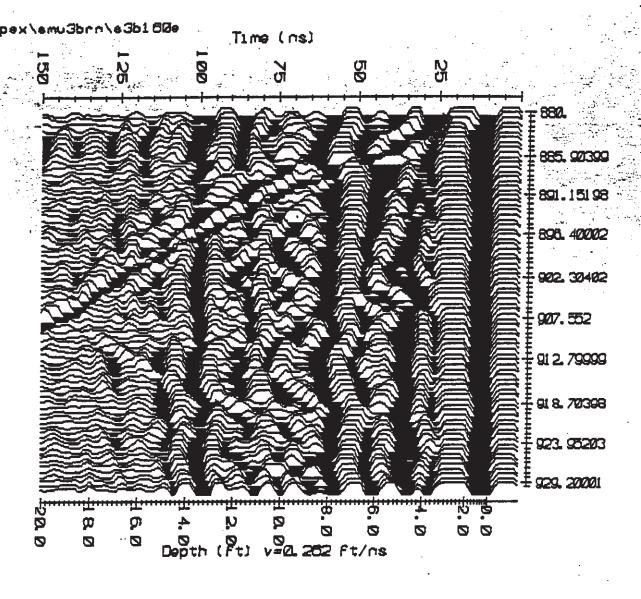
. SWMU 03 LINE 280N AGC GAIN

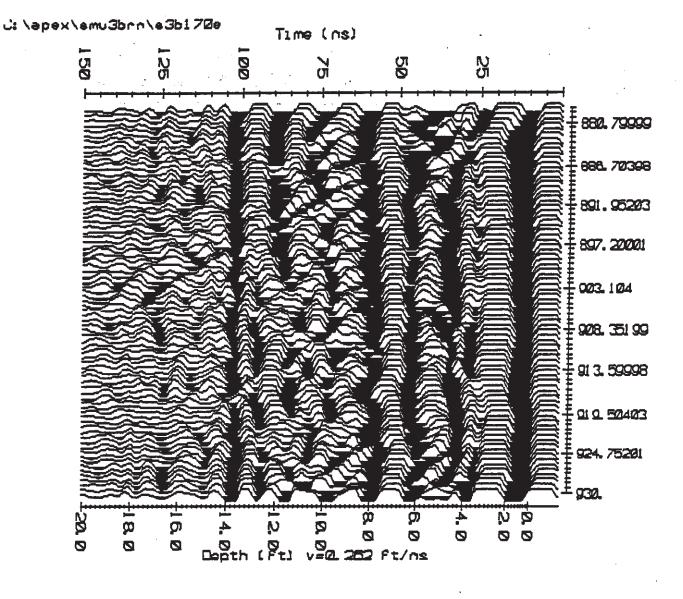












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SWMU 03 BURN AREA LINE 180E

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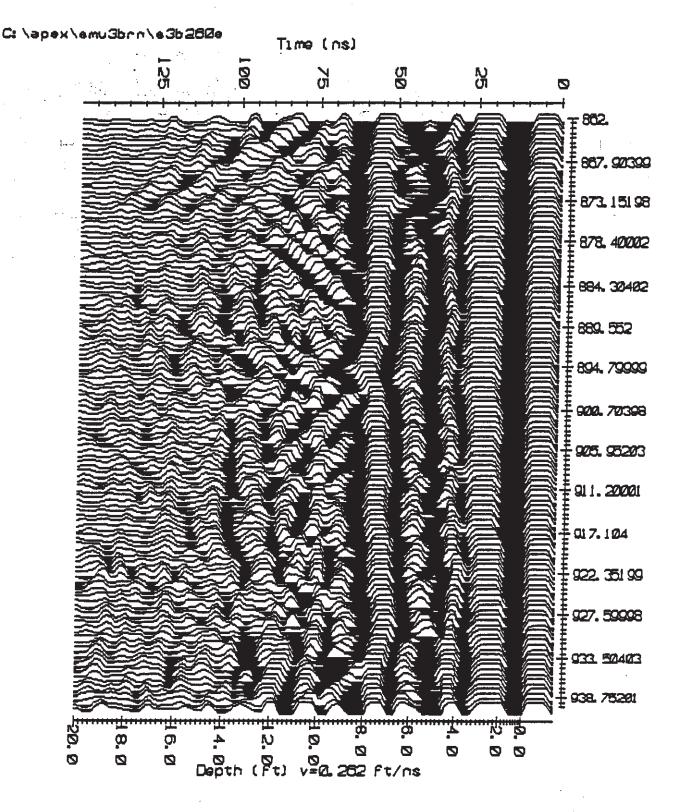
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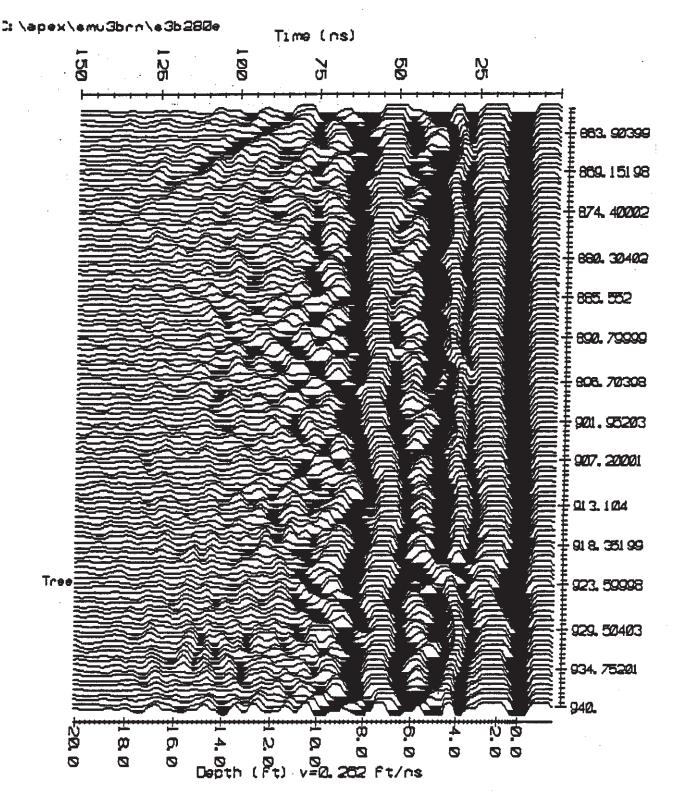
Ø

Time (ns)

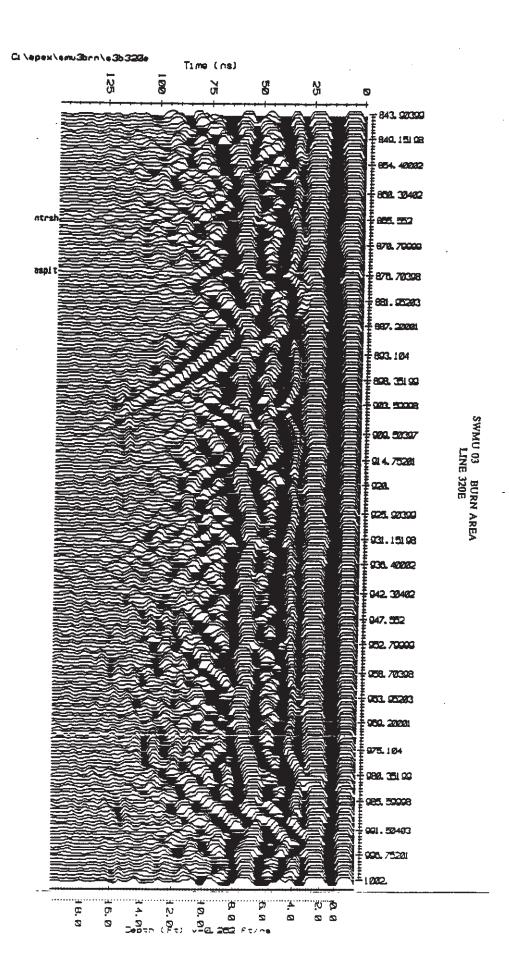
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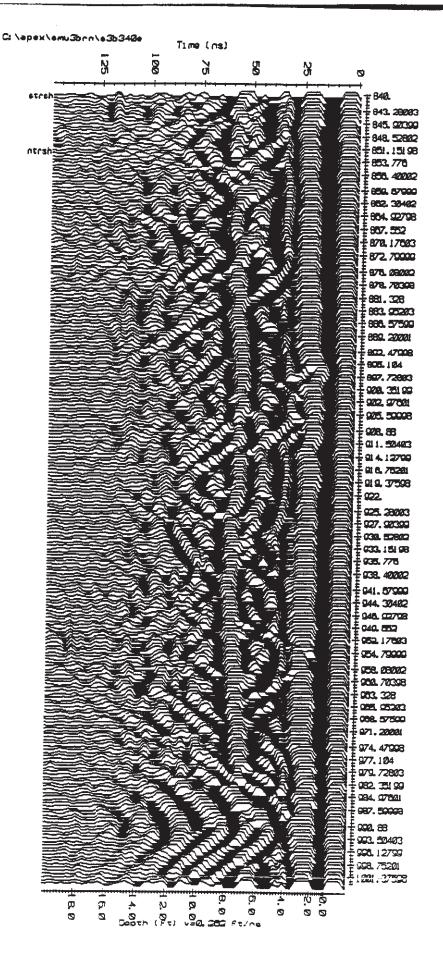
SWMU 03 BURN AREA LINE 240E





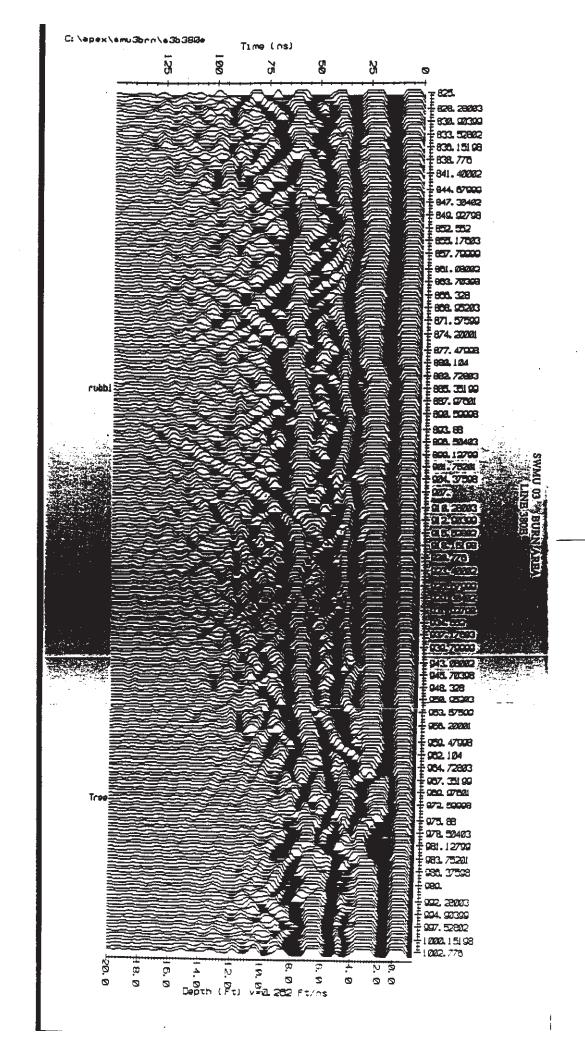
SWMU 03 BURN AREA LINE 300E



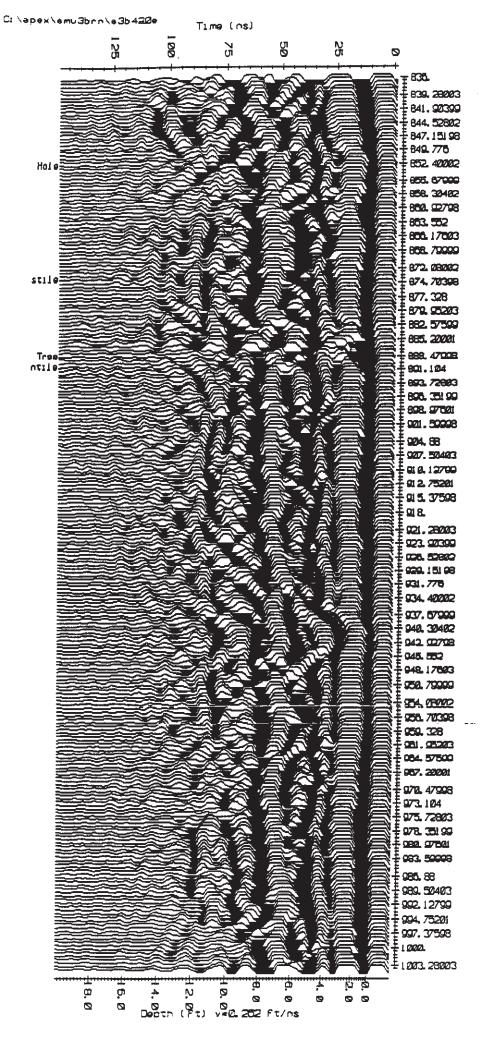


SWMU 03 BURN AREA LINE 340E

SWMU 03 BURN AREA LINE 360E



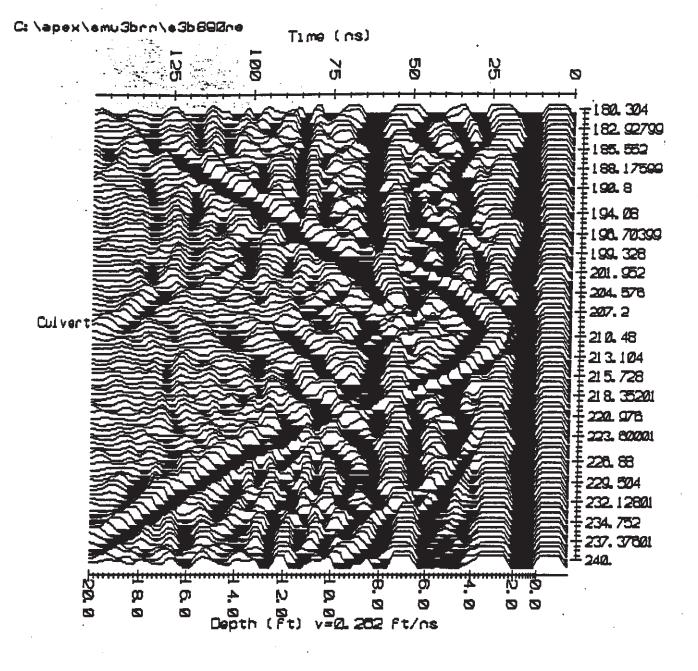
SWMU 03 BURN AREA LINE 400E



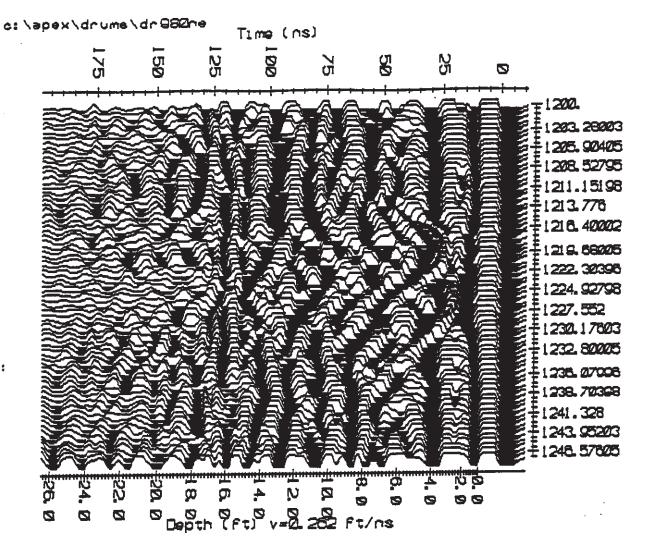
SWMU 03 BURN AREA LINE 420B

SWMU 03 BURN AREA LINE 440E

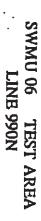
SWMU 03 BURN AREA LINE 450E

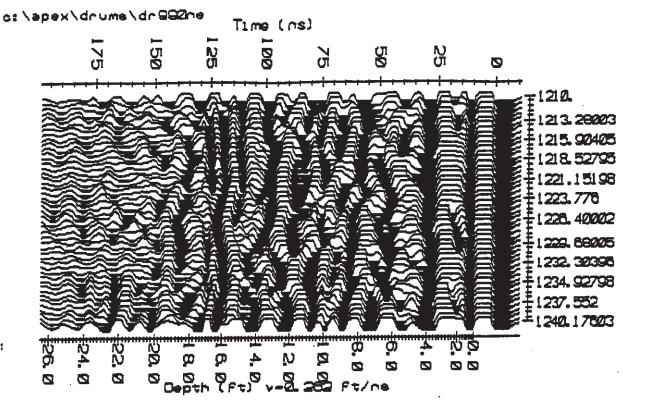


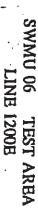
SWMU 06 TEST AREA LINE 975N

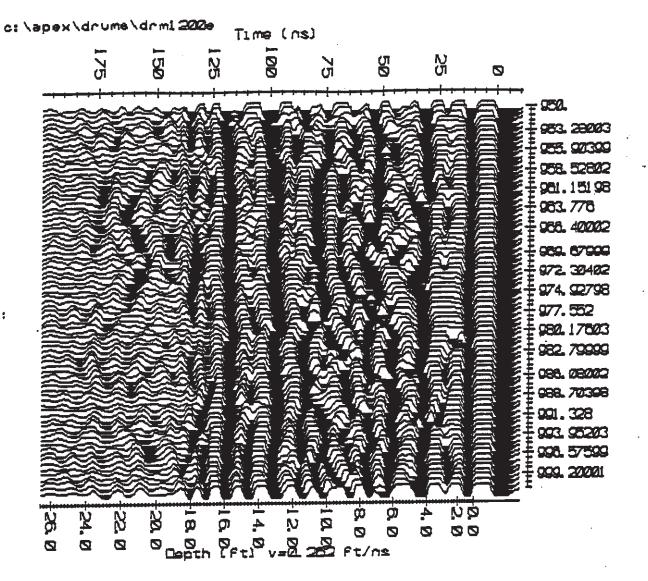


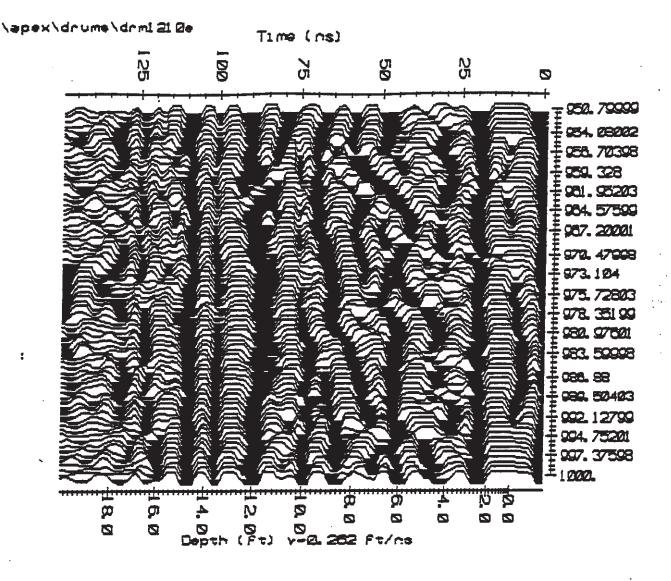
SWMU 06 TEST AREA LINE 985N

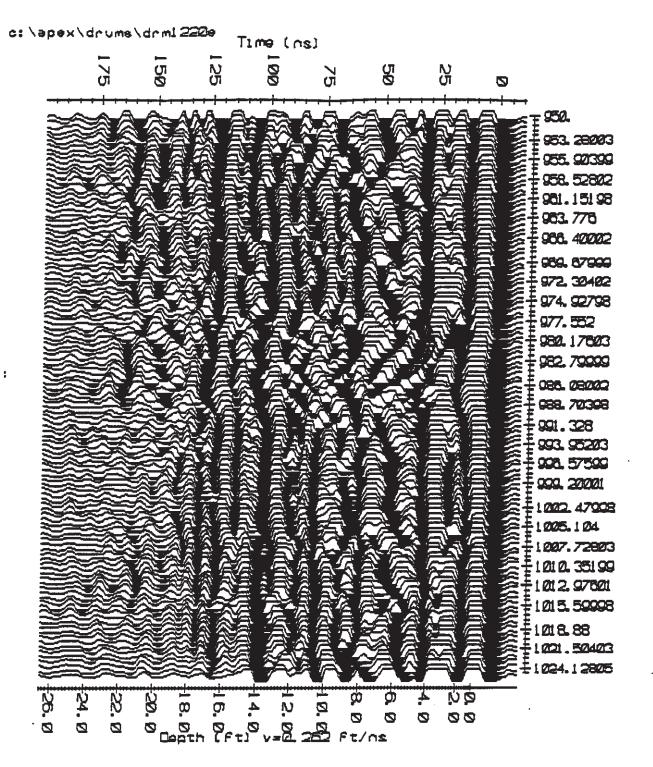












Depth (ft) v=0.202 ft/ns

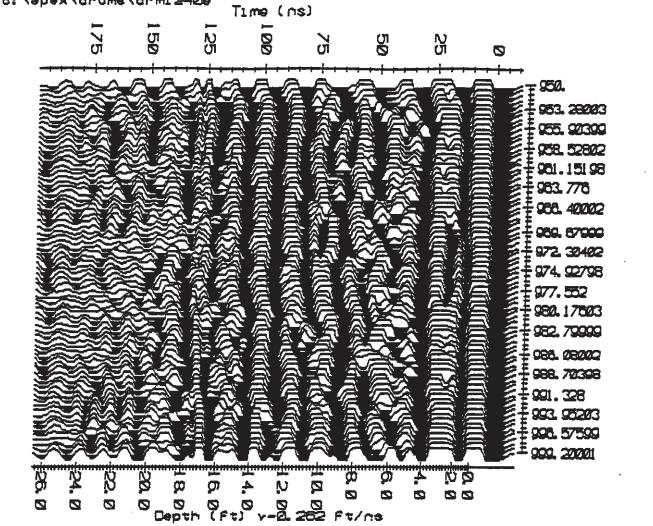
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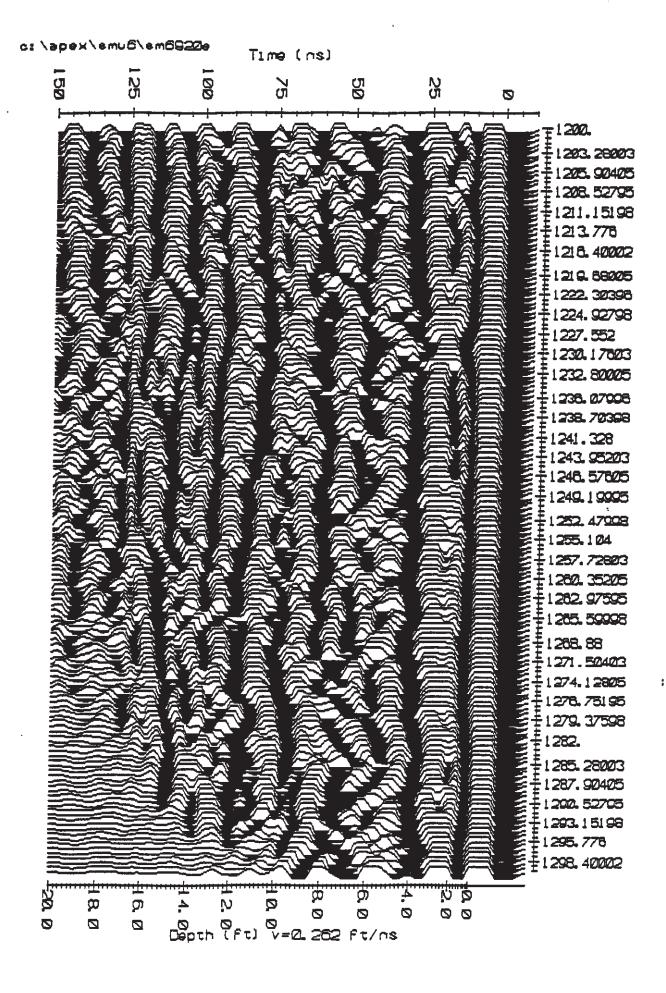
SWMU 06 TEST AREA LINE 1225E

SWMU 06 TEST AREA LINE 1230E



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SWMU 06 TEST AREA



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Depth (Ft) V-2. 262 Ft/cs

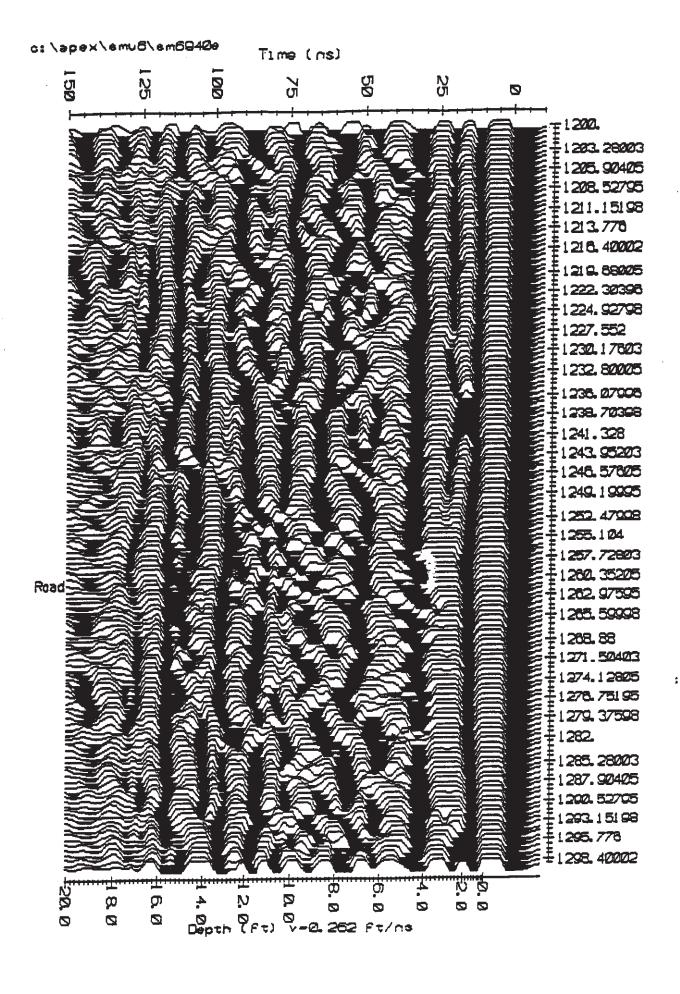
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SWMU 06 LINE 930E



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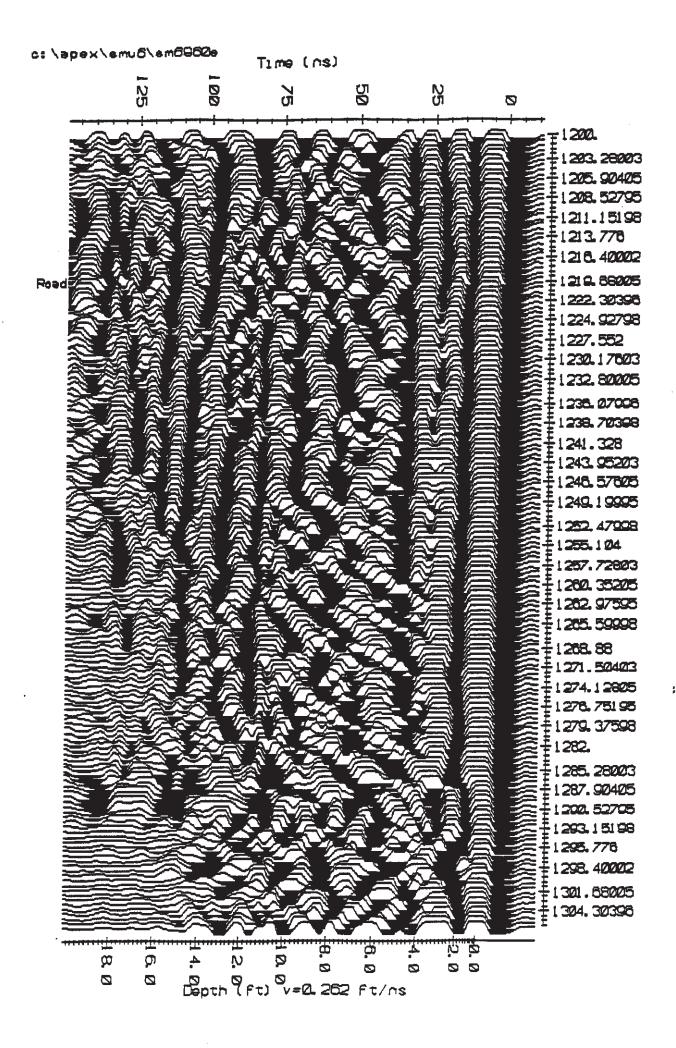
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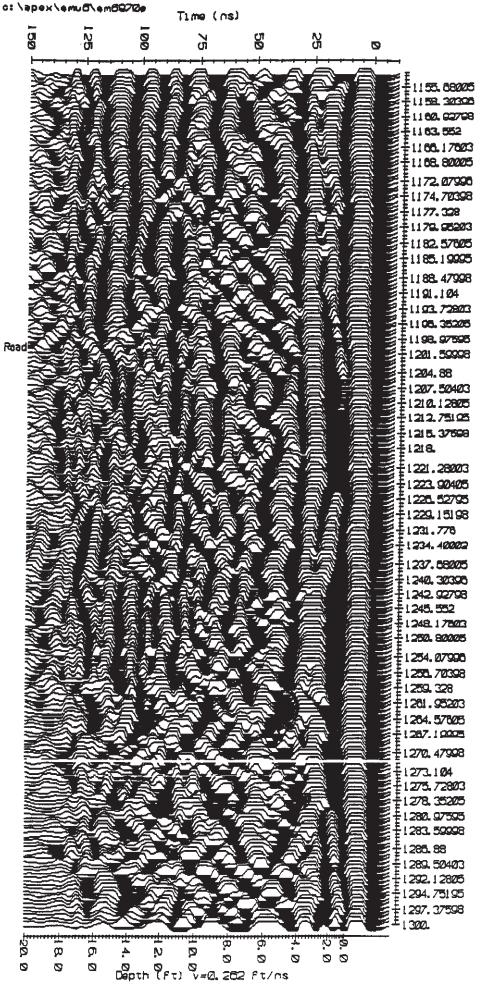
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DWMS

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LINE



SWMU 06 LINE 98

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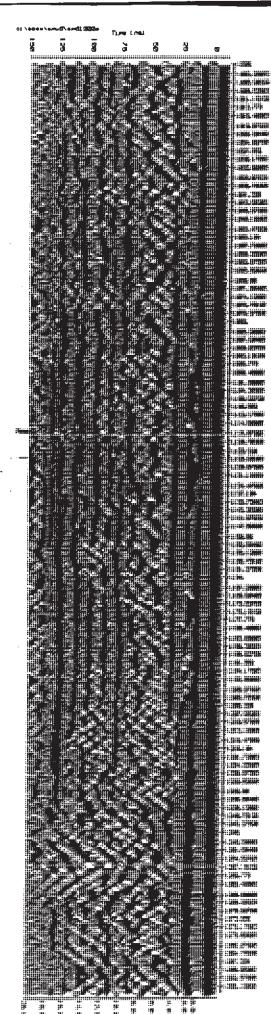
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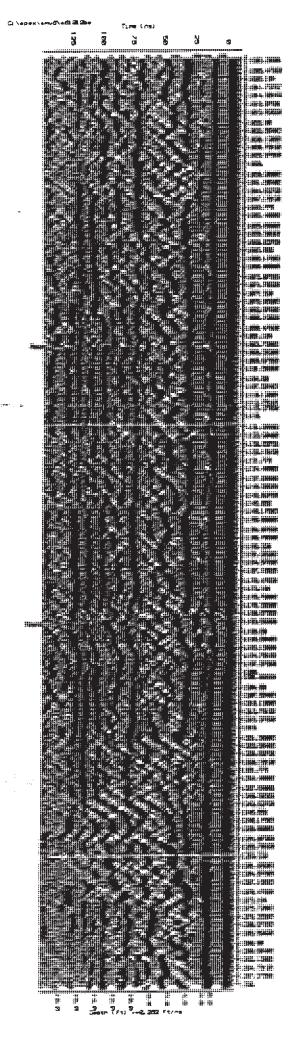
2 2

ಶ್ರಾಧ್ಯ ನಿಕ್ಕಾರ್ ಸ್ಥಾರ್ಡ ವಿಶ್ವ ಕಿಕ್ಸ್ ನಿಕ್ಕಾರ್ಡಿ ದಿಸಿಂಗಾ ನಿಕ್ಕಾರ್ಡ ವಿಶ್ವ ಕಿಕ್ಸ್ ನಿಕ್ಕಾರ್ಡಿ

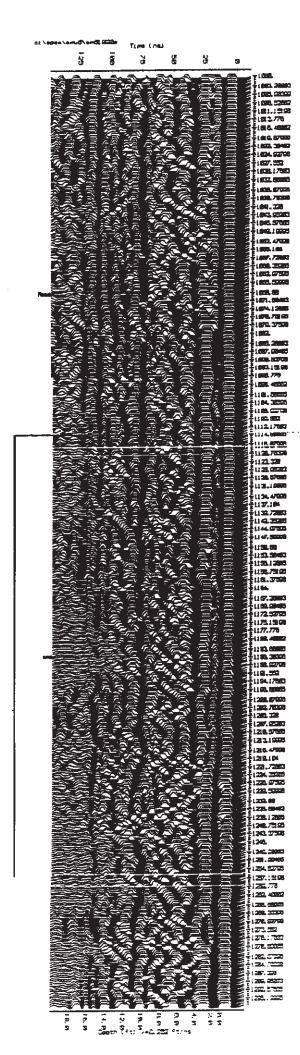
SWMU 06 LINE 990F



BODDI BINITI 90 DMASS

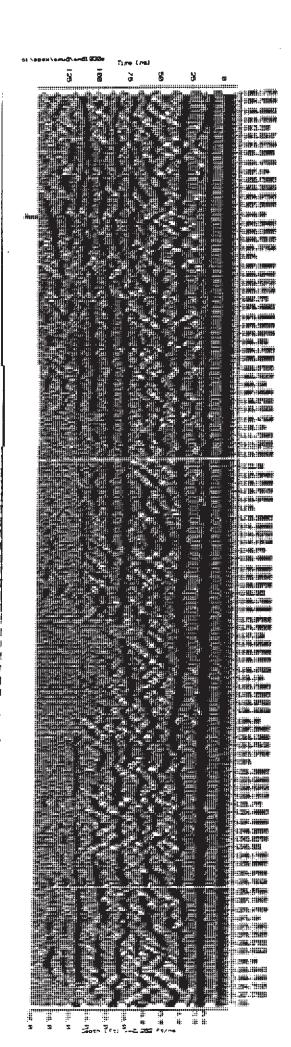


SWMU 06

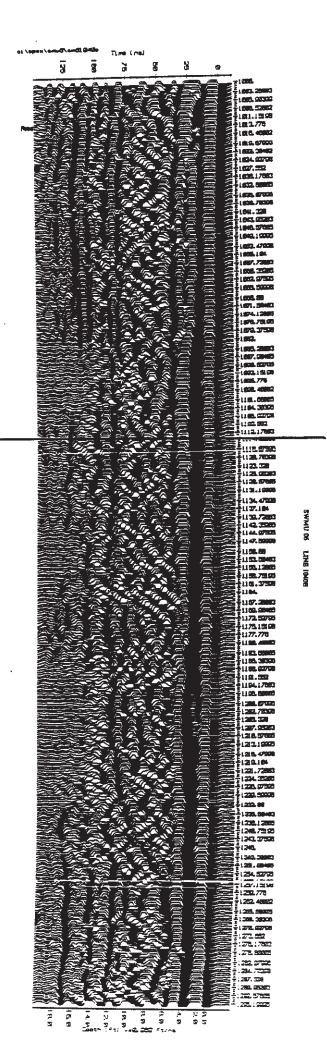


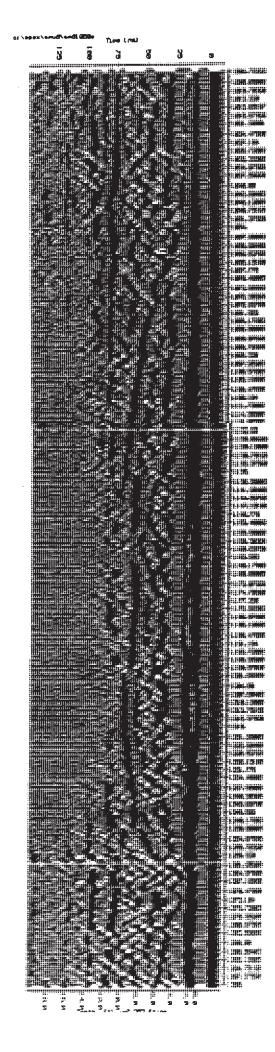
SWMW D6

TIME 1020B



SWHU OK





90 NMAS

BODO I BNIT 90 NWAS

1283, 59909

1283, 59949 1286, 66 1299, 59467 1231, 12935 1234, 15105 1397, 27544

Apexenvironmental, inc.

APPENDIX D

Analytical Data Sheets

LOG NO: S5-56376 Received: 14 NOV 95 Reported: 04 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Project: 097,001 Thiokol

Sampled By: Client

			REPO	RT (OF RESULTS			Page 1
LOG NO SAM	(PLE D	ESCRIPTION	. SOLID	OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	≅D
56376-1 900	00						11-10-95/1	020
56376-2 900)ı						11-10-95/1	023
56376-3 900							11-10-95/1	
56376-4 900)3						11-10-95/1	
56376-5 900)4						11-10-95/1	•
PARAMETER						56376-3	56376-4	56376-5
Arsenic (6010)				•••				
Arsenic (6010)	, mg/	kg dw	<1.	. 1	<1.0	<1.1	<1.1	<1.0
Date Analyzed			11.17.9	95	11.17.95	11.17.95	11.17.95	11.17.95
Barium (6010)								
Barium (6010),	mg/k	g dw	8.	. 1	9.5	7.0	7.3	4.8
Date Analyzed			11.17.9	₹5	11.17.95	11.17.95	11.17.95	11.17.95
Chromium (6010)								
Chromium (6010)), mg	/kg dw					5.1	
Date Analyzed			11.17.9	₹5	11.21.95	11.21.95	11.21.95	11.21.95
Cadmium (6010)								
Cadmium (6010)	, mg/	kg dw					<0.53	
Date Analyzed			11.17.9	₹5	11.17.95	11.17.95	11.17.95	11.17.95
Lead (6010)		•						
Lead (6010), m	ıg/kg	dw					4.9	
Date Analyzed			11.17.9	95	11.17.95	11.17.95	11.17.95	11.17.95
Mercury								
Mercury (7471)	, mg/	kg dw						
Date Analyzed							11.27.95	
Percent Solids	(160.	3), %	9	4	98	93	94	96

LOG NO: S5-56376 Received: 14 NOV 95 Reported: 04 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Project: 097.001 Thiokol Sampled By: Client

		REPORT	OF RESULTS			Page 2
	and a process	PTION , SOLID OR	CEMICOI ID		DATE/ TIME SAMPLE	D
LOG NO	SAMPLE DESCRI	PITON , SOLID OR	PEMISONIA		1110 014440	
56376-6	9005				11-10-95/11	
56376-7					11-10-95/13	
56376-8					11-10-95/13	
56376-9					11-10-95/13	
56376-10	9009				11-10-95/13	
PARAMETER			56376-7	56376-8	56376-9	56376-10
Arsenic (6	010)					
Arsenic (6010), mg/kg dw	<1.1	<1.1	<1.1	<1.1	<1.0
Date Anal	yzed	11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Barium (60	10)					
Barium (6	010), mg/kg dw	1.4	3.7	4.6	3.5	3.5
Date Anal		11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Chromium (6010)					
Chromium	(6010), mg/kg d				2.7	
Date Anal	yzed	11.21.95	11.21.95	11.21.95	11.21.95	11.21.95
Cadmium (6	010)					
Cadmium (6010), mg/kg dw	<0.53	<0.54	<0.53	<0.54	<0.52
Date Anal	yzed	11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Lead (6010)					
Lead (601	0), mg/kg dw	0.89	2.9	2.9	2.4	2.2
Date Anal	yzed	11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Mercury				_		
		<0.011	0.037	<0.011	0.027	<0.010
	yzed		11.27.95	11.27.95	11.27.95	
Percent So	lids (160.3), %	95		_	92	97

SL SAVANNAH LABORATORIES & ENVIRONMENTAL, SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S5-56376 Received: 14 NOV 95 Reported: 04 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Project: 097_001 Thiokol Sampled By: Client

			REPORT	OF RESULTS			Page 3
LOG NO	SAMPLE	DESCRIPTION	, SOLID OF	R SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	ed
56376-11	9010					11-10-95/14	108
56376-12	9011					11-10-95/14	10
56376-13	9012					11-13-95/08	325
56376-14	9013					11-13-95/08	332
56376-15	9014					11-13-95/09	910
PARAMETER			56376-11	56376-12	56376-13	56376-14	56376-15
Arsenic (601							
Arsenic (60)10), mg	r/kg dw	<1,1	<1.0	<1.3	<1.3	<1.2
Date Analyz			11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Barium (6010							
		kg dw	3.4	6.4	1.7	1.8	<1.2
Date Analyz			11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Chromium (60							
Chromium (6		ng/kg dw				2.5	
Date Analyz			11.17.95	11.21.95	11.17.95	11.17.95	11.17.95
Cadmium (601	-						
	_	/kg dw					
Date Analyz	ed ·		11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Lead (6010)							
		dw			2.6		2.3
Date Analyz	:ed		11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Mercury		4-					
_	_	/kg dw					
Date Analyz					11.27.95		11.27.95
Percent Soli	.ds (160	.3), %	90	97	76	76	83

LOG NO: S5-56376 Received: 14 NOV 95 Reported: 04 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Project: 097.001 Thiokol

Sampled By: Client

		REPORT	OF RESULTS			Page 4
					DATE/	
	SAMPLE DESCRIPTION					
56376-16					11-13-95/09	
56376-17	9016				11-13-95/13	128
56376-18					11-13-95/13	L33
56376-19	9018				11-13-95/12	
56376-20	9019				11-13-95/12	
PARAMETER				56376-18	56376-19	56376-20
Arsenic (60)						
Arsenic (6	010), mg/kg dw	<1.3	<1.2	<1.3	<1.4	<1.2
Date Analy		11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Barium (601	0)					
Barium (60	10), mg/kg dw zed	1.5	3.6	1.6	2.1	2.3
Date Analy	zed	11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Chromium (6	010)					
Chromium (6010), mg/kg dw	4.4	1.8	3.3	6.3	3.2
Date Analy	zed	11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Cadmium (60	10)					
Cadmium (6	010), mg/kg dw	<0.63	<0.62	<0.64	<0.68	<0.61
Date Analy	zed	11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Lead (6010)						
Lead (6010), mg/kg dw	1.2	3.1	1.6	5.0	2.2
Date Analy	zed	11.17.95	11.17.95	11.17.95	11.17.95	11.17.95
Mercury						
Mercury (7	471), mg/kg dw zed	<0.013	<0.012	0.016	0.032	<0.012
Date Analy:	zed	11.27.95	11.27.95	11.27.95	11.27.95	11.30.95
Percent Sol:	ids (160.3), %	79	81	78	74	82

LOG NO: S5-56376 Received: 14 NOV 95 Reported: 04 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Project: 097.001 Thiokol

Sampled By: Client

		REPORT (OF RESULTS		DAME /	Page 5
LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
56376-21					11-13-95/12	
56376-22					11-13-95/12	
56376-23					11-13-95/12	
56376-24					11-13-95/13	
56376-25	9024				11-13-95/13	45
PARAMETER					56376-24	
Arsenic (60)						
Arsenic (6	010), mg/kg dw	<1.1	<1.2	*	*	<1.2
Date Analy:	zed	11.22.95	11.22.95			11.22.95
Barium (601	0)					
Barium (60	10), mg/kg dw	2.8	1.7	*	*	<1.2
Date Analy:	zed	11.22.95	11.22.95			11.22.95
Chromium (6	010)					
Chromium (6010), mg/kg dw	1.7	2.3	*	*	1.6
Date Analy:	zed	11.22.95	11.22.95			11.22.95
Cadmium (60	10)					
Cadmium (6	010), mg/kg dw	<0.57	<0.62	*	*	<0.58
Date Analy:	zed	11.22.95	11.22.95			11.22.95
Lead (6010)						
Lead (6010)		2.7	2.1	*	*	2.7
Date Analy:	zed	11.22.95	11.22.95			11.22.95
Mercury						
_	471), mg/kg dw		<0.012	*	*	0.015
Date Analy:		11.30.95	11.30.95			11.30.95
Percent Sol:	ids (160.3), %	87	80	*	*	86

LOG NO: S5-56376 Received: 14 NOV 95 Reported: 04 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Project: 097.001 Thiokol Sampled By: Client

DATE				REPORT	OF RESULTS			Page 6
56376-27 9026	LOG NO	SAMPLE	DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
56376-27 9026								
11-13-95/1427 11-13-95/1425 11-13-95/1425 11-13-95/1455 11-13-95/1455 11-13-95/1455 11-13-95/1459 11-13-95/1459	56376-26	9025					11-13-95/13	49
11-13-95/1455 156376-29 9028 11-13-95/1455 11-13-95/1459 11-13-95/	56376-27	9026					11-13-95/14	22
PARAMETER 56376-26 56376-27 56376-28 56376-29 56376-30 Arsenic (6010) Arsenic (6010), mg/kg dw <1.2 <1.2 <1.2 <1.2 <1.1 <1.2 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Barium (6010) Barium (6010), mg/kg dw 1.5 1.3 1.2 3.6 2.0 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Chromium (6010) Chromium (6010) Chromium (6010), mg/kg dw 3.6 3.8 3.1 2.1 2.9 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Cadmium (6010) Cadmium (6010) Cadmium (6010) Cadmium (6010) Cadmium (6010) Lead (6010) Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6	56376-28	9027					•	
PARAMETER 56376-26 56376-27 56376-28 56376-29 56376-30 Arsenic (6010) Arsenic (6010), mg/kg dw <1.2 <1.2 <1.2 <1.1 <1.2 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Barium (6010) Barium (6010), mg/kg dw 1.5 1.3 1.2 3.6 2.0 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Chromium (6010) Chromium (6010) Chromium (6010), mg/kg dw 3.6 3.8 3.1 2.1 2.9 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Cadmium (6010) Cadmium (6010) Cadmium (6010), mg/kg dw <0.62 <0.59 <0.60 <0.56 <0.60 Date Analyzed 11.22.95 11.22.95 11.22.95 Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6	56376-29	9028					•	
Arsenic (6010) Arsenic (6010), mg/kg dw	56376-30	9029					11-13-95/14	59
Arsenic (6010) Arsenic (6010), mg/kg dw								
Arsenic (6010) Arsenic (6010), mg/kg dw <1.2 <1.2 <1.2 <1.2 <1.1 <1.2 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Barium (6010) Barium (6010), mg/kg dw 1.5 1.3 1.2 3.6 2.0 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Chromium (6010) Chromium (6010), mg/kg dw 3.6 3.8 3.1 2.1 2.9 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Cadmium (6010) Cadmium (6010) Cadmium (6010), mg/kg dw <0.62 <0.59 <0.60 <0.56 <0.60 Date Analyzed 11.22.95 11.22.95 11.22.95 Lead (6010) Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6								
Arsenic (6010), mg/kg dw <1.2 <1.2 <1.2 <1.1 <1.2 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Barium (6010) Barium (6010), mg/kg dw 1.5 1.3 1.2 3.6 2.0 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Chromium (6010) Chromium (6010), mg/kg dw 3.6 3.8 3.1 2.1 2.9 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Cadmium (6010) Cadmium (6010) Cadmium (6010), mg/kg dw <0.62 <0.59 <0.60 <0.56 <0.60 Date Analyzed 11.22.95 11.22.95 11.22.95 Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6								
Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 12.95 Barium (6010) Barium (6010), mg/kg dw 1.5 1.3 1.2 3.6 2.0 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Chromium (6010) Chromium (6010), mg/kg dw 3.6 3.8 3.1 2.1 2.9 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 12.295 12.295 11.22.95			/kg dw	<1.2	<1.2	<1.2	<1.1	<1.2
Barium (6010) Barium (6010), mg/kg dw 1.5 1.3 1.2 3.6 2.0 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Chromium (6010) Chromium (6010), mg/kg dw 3.6 3.8 3.1 2.1 2.9 Date Analyzed 11.22.95 11.22.95 11.22.95 Cadmium (6010) Cadmium (6010) Cadmium (6010), mg/kg dw <0.62 <0.59 <0.60 <0.56 <0.60 Date Analyzed 11.22.95 11.22.95 11.22.95 Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6		-	.,					
Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Chromium (6010) Chromium (6010), mg/kg dw 3.6 3.8 3.1 2.1 2.9 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Cadmium (6010) Cadmium (6010), mg/kg dw <0.62 <0.59 <0.60 <0.56 <0.60 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6	_							
Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Chromium (6010) Chromium (6010), mg/kg dw 3.6 3.8 3.1 2.1 2.9 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Cadmium (6010) Cadmium (6010), mg/kg dw <0.62 <0.59 <0.60 <0.56 <0.60 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6	Barium (601	10), mg/	kg dw	1.5	1.3	1.2	3.6	2.0
Chromium (6010), mg/kg dw 3.6 3.8 3.1 2.1 2.9 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Cadmium (6010) Cadmium (6010), mg/kg dw <0.62 <0.59 <0.60 <0.56 <0.60 Date Analyzed 11.22.95 11.22.95 11.22.95 Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6		_	_			11.22.95	11.22.95	11.22.95
Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Cadmium (6010) Cadmium (6010), mg/kg dw <0.62 <0.59 <0.60 <0.56 <0.60 Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 11.22.95 Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6	Chromium (60	010)						
Cadmium (6010) Cadmium (6010), mg/kg dw	Chromium (6	5010), m	g/kg dw	3.6	3.8	3.1	2.1	2.9
Cadmium (6010), mg/kg dw <0.62	Date Analyz	zed		11.22.95	11.22.95	11.22.95	11.22.95	11.22.95
Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95 Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6	Cadmium (601	10)						
Lead (6010) Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6	Cadmium (60	010), mg	/kg dw	<0.62	<0.59	<0.60	<0.56	<0.60
Lead (6010), mg/kg dw 1.9 3.6 1.8 2.9 1.6	Date Analyz	zed		11.22.95	11.22.95	11.22.95	11.22.95	11.22.95
· -	Lead (6010)							
Date Analyzed 11.22.95 11.22.95 11.22.95 11.22.95	Lead (6010)	, mg/kg	dw	1.9	3.6	1.8	2.9	1.6
, •	Date Analyz	zed		11.22.95	11.22.95	11.22.95	11.22.95	11.22.95
•	Mercury							
Mercury (7471), mg/kg dw <0.012 0.019 <0.012 <0.011 <0.012	-	_	· -					
Date Analyzed 11.30.95 11.30.95 11.30.95 11.30.95	_							
Percent Solids (160.3), % 81 85 83 90 83	Percent Soli	ids (160	.3), %	81	85	83	90	83

LOG NO: S5-56376 Received: 14 NOV 95 Reported: 04 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Project: 097.001 Thiokol

Sampled By: Client

			REPORT	OF RESULTS		/	Page 7
LOG NO	SAMPLE	DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
56376-31						11-13-95/15	
56376-32						11-13-95/15	
56376-33						11-13-95/16	
56376-34						11-13-95/16	
56376-35	9034					11-13-95/16	49
PARAMETER						56376-34	
Arsenic (60:							
		/kg dw	<1.2	<1.3	<1.3	<1.3	<1.2
Date Analy:	-	,3				11.22.95	
Barium (601							
•	-	ka dw	<1.2	1.3	<1.3	2.6	<1.2
Date Analy:	-					11.22.95	
Chromium (6							
		a/ka dw	<1.2	1.9	<1.3	2.3	2.4
Date Analy:	-	3,3		.11.22.95			
Cadmium (60:							
Cadmium (60	010), mg	/kg dw	<0.60	<0.63	<0.65	<0.64	<0.62
Date Analy:	_			11.22.95			
Lead (6010)							
Lead (6010)), mg/kg	dw	1.7	1.6	1.7	3.2	2.7
Date Analy:				11.22.95	11.22.95	11.22.95	11.22.95
Mercury							
-	471), mg	/kg dw	<0.012	<0.013	<0.013	0.018	0.025
Date Analy:	_	_				11.30.95	
Percent Sol:			83	79	77	78	80

LOG NO: S5-56376 Received: 14 NOV 95 Reported: 04 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Project: 097.001 Thiokol Sampled By: Client

		REPORT OF RESULTS			Page 8
	SAMPLE DESCRIPTION ,				
56376-36				11-13-95/1652	
PARAMETER			56376-36		
Arsenic (603 Arsenic (603 Arsenic (603 Date Analys Barium (601) Barium (603 Date Analys Chromium (603 Chromium (603 Cadmium (603 Cadmium (603 Date Analys Lead (6010) Lead (6010) Date Analys Mercury Mercury (74 Date Analys	10) 010), mg/kg dw 2ed 0) 10), mg/kg dw 2ed 010) 5010), mg/kg dw 2ed 10) 010), mg/kg dw 2ed 10) 010), mg/kg dw 2ed 1, mg/kg dw 2ed 1, mg/kg dw 2ed		<1.2 11.22.95 <1.2 11.22.95 2.4 11.22.95 <0.62 11.22.95 1.7 11.22.95 <0.012 11.30.95 80		
Percent Sol	ids (160.3), %		80		



LOG NO: S5-56376 Received: 14 NOV 95 Reported: 04 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Project: 097.001 Thiokol

Sampled By: Client

REPORT OF RESULTS

Page 9

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLI	D/SEMISOLID		
	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD			
PARAMETER	•		56376-38	56376-39
Arsenic (60	10)			
Arsenic (6	010), mg/kg dw	<1.0	103/98 %	5.0 %
Date Analy	zed	11.22:95		
Barium (601	0)			
Barium (60	10), mg/kg dw	<1.0	98/95 %	3.1 %
Date Analy	zed	11.22.95		
Chromium (6	010)			
Chromium (6010), mg/kg dw	<1.0	96/94 %	2.1 %
Date Analy	zed	11.22.95		
Cadmium (60	10)			
Cadmium (6	010), mg/kg dw	<0.50	104/101 %	2.9 %
Date Analy	zed	11.22.95		
Lead (6010)				
Lead (6010), mg/kg dw	<0.50	97/100 %	3.0 %
Date Analy	zed	11.22.95		
Mercury				
Mercury (7	471), mg/kg dw	<0.010	93/93 %	0 %
Date Analy	zed	11.30.95		

Methods: EPA SW-846

Susan H. Norwood, Project Manager

^{*}Samples 9022 and 9023 cancelled per Mark Corbin 11/17/95

Дрех	
environmental,	inc.

15850 CRABBS BRANCH WAY SUITE 300 ROCKVILLE, MARYLAND 20855 TELEPHONE: (301) 417-0200

CHAIN OF CUSTODY RECORD

JOB NO.	JOB NAMI	-			<u>.</u>		ONE: (301) 417-0200												
l /							PROJECT MANAGER			/	′ ,	_			PARA	METE	RS		TURN-AROUND TIME
097.001	MIC	KUL				, .	(Printed)			/ \$	* K	7	/	/		1	\mathcal{T}	77	
SAMPLER(S): (Signal)							(Printed), Mke lynosym		/ ,	Service of the servic		//	//	/	//	//	//	//	REMARKS
SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION	/	کار		Y /	//	//	/	//	//	//		
9000	14/ohs	1020		/	àL	100	5WMU 3 BKG 3+2	1	/										
9001		1023					SUNU 3 BKG 3-1 4'	1						_	_				
9002		1112					SWMU3 BK63-22'	1											
9003		1115			ļ		SWMU 3 BKG 324'	1			\perp					L	<u> </u>		· · · · · · · · · · · · · · · · · · ·
9004		1143	L				SWMU 3 BKG 3-3 21	1	Ц		\perp	\perp					<u> </u>		
7005		143	_	_			SWMU 3 BKG 3-34'	1	\prod	_	_		_		_				
9006		1305		_			SWMUZ BKG 2-12	1	Ц	<u> </u>	_								
9007		1305					SWAU 2 BKG 2-1 4	t											
9008		1339					SWMU2 BKG 2-2 2'	1										ŀ	
2009		134.3					SWMUZ BKG 2-2 4'	ı	Ш										
9010		1408					SWAN 2 BKG 2-3 2'	1											
9011		1410				<u> </u>	SWAUZ BKG 2-3 4'	1											
9012	11/13/14	৩४२১			ļ		SWMU4 BICG 4-1 2'	1	2	1									
							TOTALS	13	C	3									
Relinquished by: (Sign	rature)	_	-	2	Oate,	/Time	Pecelved by: (Signature) TEDBY ALABIN	Relin	quisi	hed b	y: (Si	gnatu	re)		T	Do	le/Tir	ne	Received by: (Signature) (4)
(Printeg)	1	Mu)	#	list	95	(Printed) 7992432125	(Prin	·										(Printed)
Relinquished by: (Signature) Date/Time Received by: (Signature) B						Received by: (Agnature)	0	_ []	Time {{	2	Rema .#	rks /	61	NC >		A	2500	c, BARIUM, CHROMUM, 1 - EPA MethoOS	
(Printed)							(Printed) Bunds 56376	q;	٦'n	Į '		CAR G	010	m,	L0	AD 41	, Mi	shour	1 - EPA Methods
Distribution: WHITE =>	eriginal (a	iccompanie	sam	ples;	return	ed with res	ults) : YELLOW => laboratory copy : PINK =	som	pler	's cop	y								of 3 page

		_				15850	CRABBS BRANCH WAY													
)e)	X menta	d, i	nc.	Œ.	SHITE 3		СН	ΑI	N	C)F	C	:U	S1	О	DY	R	EC	ORD
JOB NO.	10B NAM	-					PROJECT MANAGER				7	7		PARAL	4ETERS	;	ı	URN-ARC	OUND TIME	
097.001	This	KOL					K CAMPB	OLL		_/	*** /	7	77	7	77	7	77			
SAMPLER(S): (Signal Control of the C		_	-				(Printed) / Le light	Smay	/	8	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	//,	//	//,	//	//			REMARKS	
SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATI	юн			5 } 	<u>//</u>		\angle						
9013	ulishs	0832		/	غر	166	SWMU4 BKG	4-1 4	1	4										
9014		0910					SWMU 4 BKG	4-2 2'	1	Ш										
9015		0915					SWMJ4 BKG4	1-2 4'	1											
9016		1128					SWMU4 BKG4	1-3 2'	1											
9017		1133					SWMU 4 BRG 4	4-3 4"	1											
9018		1200					SWMJKIBK43	F5+ 2'	1	П										
9019		205					SWINUS BKG		1											
9020		1225						J-22'	1											
9021		1230					SWAUS BKG		1											
9022		1255					SWHUS BKGS		1		Ì									
9023		1305					SWMU5 BKG		1											
9024		1345					SUMU 6 BKG	6-1 21	1			1								
9025		1349					SWMU 6 BKGG		1	И										
						•		TOTALS	13/1	13/6									***	
Relinquished by: (Sig	nature)					/Time	Received by: (Signature)			uished	by: (S	gnature)		Date	/Time		ed by: (Si	gnature)	
o me	_0					0 1/3		<u>rBiii</u>	(3)							-	•			
(Printed) Mike	ha	DSMA	J	1	Feds And	The	(Printed) 29924.321	125	(Print	ed)							(Printe	d)		
Relinquished by: (Sig	gnature)					/Time	Received by: (Signature)		Da	te/Tim	ارہ	Remark	· * -	- p	AG.	5 l	- M	ethou		
(Printed)							@ K, DOY 10)	11	-14,	45				,,~,,	٠ (,,,	104 54	•	
(enniag)				t			(Printed)		1 -	~11	- 1									

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environmental,	inc.®

15850 CRABBS BRANCH WAY SUITE 300 ROCKVILLE, MARYLAND 20855 TELEPHONE: (301) 417-0200

CHAIN OF CUSTODY RECORD

J08 NO.	JOB NAM			-			PROJECT MANAGER			7	7	,		P	ARAM	ETER	s		TURN-AROUND TIME
SAMPLER(S): (Signa	Tin	KIL					K CAMPBOLL			/\$		7	7	7	7	7	7	//	/
SAMPLER(S): (Signa	fure(s))		-				(Printed) / Ke LAWSMAN	/	\{ \{ \}	S. S	*/		/,	/,	/,	/,	/,		REMARKS
SAMPLE ID	DATE	TIME	COMP.	GRAB	MATRIX	PRES.	STATION / LOCATION		§. \		_	_	_	_	_	_	_	_	
9026	11 h3/hs	1422		/	کار	165	SWAUG 6-2 21	1	4				_						
9027		1427					SWMU 6 BKG6-2 4"	1						_					
9028		1455		_	_		SWMU 6 BKG6-3 21	1							_	_			
9029		1459					SWMU6 BKG 6-3 4'	1	Ц				_						
9030		1540					SWMU7 BKG7-12'	(
9031		1543					SWAW 7BKG 7-141		Ц										
9032		1628					SWAU + BXG7-2 2'	1											
9033		1631					SWMU7 BKG7-2 41	1											
9034		1649					SWAU 7 BK47-3 2'	1											
9035		1652					SWMU7 BK6723 4"	ł	1										
			-	-	-				_	-					_				And the second s
							The state of the s		T-										
				-		 			-										The state of the s
							TOTALS	10/36	12/3	Ý.									
Relinguished by: (Sign)	nature)	?	_			/Time 3/25	Received by: (Signature) (2) Fed Byo AlaBia	Relin	quish	ed by:	(Sigr	nature)			Dal	e/Tim	10	Received by: (Signature) (4)
(Printed) Hike hugges 2000				(Printed) 291 243 21 25	(Printed)											(Printed)			
Relinquished by: (Signature) Date/Time					Received by: (Sistenture)	Pare Remarks AS Perpage 11-14-95 & AS Perpage						2 /							
(Printed)							(Printed) Bands 56376	9:	24	مسدكم							•	U	9
Distribution: WHITE =:	> original (accompanie	s son	nples;	return	sed with re	sults) : YELLOW => laboratory copy : PINK =	> sam	pler'	сору					•				3 of page

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

Project: 097,001 Thiokol

Sampled By: Client

		REPORT (OF RESULTS			Page 1
			-	•	DATE/	
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
56492-1	9036				11-14-95/113	L
56492-2	9037				11-14-95/122	3
56492-3	9038				11-14-95/1259	•
56492-4	9039	_			11-14-95/133	
56492-5	9040	903%):37	350	11-14-95/1428	3 :::::::::::::::::::::::::::::::::
PARAMETER		56492-1	56492-2		56492-4	56492-5
Volatiles by	r GC/MS (8260)					
Chlorometha	ne, ug/kg dw	· <13	<13	<67	<13	<12
Bromomethar	ne, ug/kg dw	<13	<13	<67	<13	<12
Vinyl chlor	ride, ug/kg dw	<13	<13	<67	<13	<12
Chloroethan	ne, ug/kg dw	<13	<13	<67	<13	<12
Methylene o	chloride	<6.3	<6.3	<33	<6.4	<6.2
	methane), ug/kg dw					
Acetone, ug		610			120	720
	ılfide, ug/kg dw		<6.3		<6. 4	
	coethene, ug/kg dw	<6.3	<6.3	<33		<6.2
	coethane, ug/kg dw		<6.3			
trans-1,2-D ug/kg dw	Dichloroethylene,	<6.3	<6.3	<33	<6.4	<6.2
Chloroform,	ug/kg dw	<6.3	<6.3	<33	<6.4	<6.2
1,2-Dichlor	oethane, ug/kg dw	<6.3	<6.3	<33	<6.4	<6.2
2-Butanone	(MEK), ug/kg dw	<32	<32	<170	<32	<31
1,1,1-Trich	loroethane, ug/kg dw	<6.3	<6.3	<33	<6.4	<6.2
	achloride, ug/kg dw	<6.3	<6.3	<33	<6.4	<6.2
	ite, ug/kg dw	<13	<13	<67	<13	<12
Bromodichlo	romethane, ug/kg dw	<6.3	<6.3	<33	<6.4	<6.2

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin

Apex Environmental, Inc.

15250 Crabbs Branch Way #300

Roczwille, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol

		REPORT	OF RESULTS			Page 2
					DATE/	•
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
56492-1	9036				11-14-95/1131	
	9037				11-14-95/1131	
40 -	9038				11-14-95/1259	
	9039				11-14-95/1239	
	9040	_		0 0 7 %	11-14-95/1331	
J04J2-J		-9036.	<u> მეკ ⊥</u>	9058	11-14-95/1428	9040
PARAMETER		56492-1			56492-4	

	arrachloroethane,	<6.3	<6.3	<33	<6.4	<6.2
ug/kg dw						_
•	===propane, ug/kg dw			<33		<6.2
•	Dichloropropene,	<6.3	<6.3	<33	<6.4	<6.2
ug/kg dw						
	mhene, ug/kg dw			<33		<6.2
	cromethane, ug/kg dw			<33		<6.2
	mloroethane, ug/kg dw		<6.3	<33	<6.4	<6.2
Benzene, w		<6.3	<6.3	<33	<6.4	<6.2
·	mbloropropene, ug/kg o		<6.3	<33	<6.4	<6.2
	mylvinyl ether, ug/kg		<63	<330		<62
Bromoform,			<6.3	<33		<6.2
2-Hexanone	— · · —	<32	<32	<170		<31
4-Methyl-I	_	<32	<32	<170	<32	<31
(MIBK), w					•	
	⊃ethene, ug/kg dw		<6.3	<33	<6.4	<6.3
Toluene, w	- · · ·	<6.3	<6.3	34	23	<6.3
	æne, ug/kg dw	<6.3	<6.3	<33		<6.3
-	me, ug/kg dw	<6.3	<6 <i>.</i> 3	<33	<6.4	<6.3
Styrene, w		<6.3	<6.3	<33	<6.4	<6.3
Xylenes, 😅	≝/kg dw	<6.3	<6.3	<33	<6.4	<6.3
	- Toluene-d8	93 %	90 🕏	95 %	96 %	93 %
Surrogate	 4-Bromofluorobenzene 	110 %	124 %	113 %	114 %	114 %
Surrogate	-	111 %	115 %	95 %	99 %	114 %
1,2-Dich_:	eroethane-d4					
Date Analy:	med 1	1.24.95	11.24.95	11.27.95	11.27.95 1	1.24.95

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

		REPORT (OF RESULTS		DATE/	Page 3
LOG NO	SAMPLE DESCRIPTION				TIME SAMPLED	
56492-1	9036				11-14-95/113	1
56492-2	9037				11-14-95/122	3
56492-3	9038				11-14-95/125	€
56492-4	9039				11-14-95/133:	L
56492-5	9040				11-14-95/1428	3
PARAMETER					56492-4	
	Organics (8270)					
•	obenzene, ug/kg dw				· - 	<440
•	obenzene, ug/kg dw		<420			
	thane, ug/kg dw		<420			<440
	oethyl) ether, ug/k		<420	<420		<440
•	obenzene, ug/kg dw		<420			
	coisopropyl)ether	<470	<420	<420	<430	<440
, ug/kg dw		450		100	420	440
n-Nitrosodi ug/kg dw	-n-propylamine,	<470	<420	<420	<430	<440
	e, ug/kg dw	<470	<420	<420	<430	<440
	utadiene, ug/kg dw	<470	<420	<420	<430	<440
1,2,4-Trich	lorobenzene, ug/kg	đw <470	<420	<420	<430	<440
Isophorone,		<470	<420	<420	<430	<440
Naphthalene	, ug/kg dw	<470	<420	<420	<430	<440
bis (2-Chlore ug/kg dw	oethoxy) methane,	<470	<420	<420	<430	<440
	yclopentadiene,	<470	<420	<420	<430	<440
. .	nthalene, ug/kg dw	<470	<420	<420	<430	<440

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS Page 4 DATE/ SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED LOG NO 9036 11-14-95/1131 56492-1 56492-2 9037 11-14-95/1223 9038 11-14-95/1259 56492-3 56492-4 9039 11-14-95/1331 9040 56492-5 11-14-95/1428 PARAMETER 56492-1 56492-2 56492-3 56492-4 <420 Acenaphthylene, ug/kg dw <470 <420 <430 <440 Acenaphthene, ug/kg dw <470 <420 <420 <430 <440 <420 Dimethylphthalate, ug/kg dw <470 <420 <430 <440 <420 <430 2,6-Dinitrotoluene, ug/kg dw <470 <420 <440 Fluorene, ug/kg dw <470 <420 <420 <430 <440 4-Chlorophenylphenyl <470 <420 <420 <430 <440 ether, ug/kg dw 2,4-Dinitrotoluene, ug/kg dw <470 <420 <420 <430 <440 Diethylphthalate, ug/kg dw <470 <420 <420 <430 <440 N-Nitrosodiphenylamine/Diph <470 <420 <420 <430 <440 enylamine, ug/kg dw Hexachlorobenzene, ug/kg dw <470 <420 <420 <430 <440 4-Bromophenyl phenyl <470 <420 <420 <430 <440 ether, ug/kg dw Phenanthrene, ug/kg dw <470 <420 <420 <430 <440 Anthracene, ug/kg dw <470 <420 <420 <430 <440 Di-n-butylphthalate, ug/kg dw <470 <420 <420 <430 <440 Fluoranthene, ug/kg dw <470 <420 <420 <430 <440 Pyrene, ug/kg dw <470 <420 <420 <430 <440 Benzidine, ug/kg dw <3800 <3500 <3500 <3500

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol

		REPORT (OF RESULTS			Page 5
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	******
56492-1	9036				11-14-95/1131	
56492-2	9037				11-14-95/1223	
56492-3	9038				11-14-95/1259	
56492-4	9039				11-14-95/1331	
56492-5	9040				11-14-95/1428	
PARAMETER	*******	56492-1	56492-2	56492-3	56492-4	56492-5
Butylbenzyl	lphthalate, ug/kg dw	<470	<420	<420	<430	<440
	Lhexyl) phthalate,	670	<420	1600	<430	<440
ug/kg dw						
Chrysene, u	ıg/kg dw	<470	<420	<420	<430	<440
Benzo (a) ant	hracene, ug/kg dw	<470	<420	<420	<430	<440
3,3'-Dichlo	probenzidine, ug/kg dw	<940	<850	1700	<860	1500
Di-n-octylp	hthalate, ug/kg dw	<470	<420	<420	<430	<440
Benzo(b)flu	oranthene, ug/kg dw	<470	<420	<420	<430	<440
Benzo(k) flu	oranthene, ug/kg dw	<470	<420	<420	<430	<440
Benzo (a) pyr	cene, ug/kg dw	<470	<420	<420	<430	<440
Indeno(1,2,	3-cd) pyrene, ug/kg dw	<470	<420	<420	<430	<440
Dibenzo(a,h	n)anthracene, ug/kg dw	<470	<420	<420	<430	<440
Benzo(g,h,i	.)perylene, ug/kg dw	<470	<420	<420	<430	<440
N-Nitrosodi	methylamine, ug/kg dw	<470	<420	<420	<430	<440
2-Chlorophe	nol, ug/kg dw	<470	<420	<420	<430	<440
2-Nitrophen	ol, ug/kg dw	<470	<420	<420	<430	<440
Phenol, ug/	kg dw	<470	<420	<420	<430	<440
2,4-Dimethy	lphenol, ug/kg dw	<470	<420	<420	<430	<440
2,4-Dichlor	ophenol, ug/kg dw	<470	<420	<420	<430	<440
2,4,6-Trich	lorophenol, ug/kg dw	<470	<420	<420	<430	<440

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol

		REPORT (OF RESULTS			Page 6
LOG NO	SAMPLE DESCRIPTION	SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	
56492-1	9036				11-14-95/1131	
56492-2	9037				11-14-95/1223	
56492-3	9038				11-14-95/1259	
56492-4	9039				11-14-95/1331	
56492-5	9040				11-14-95/1428	
PARAMETER	***	56492-1	56492-2	56492-3	56492-4	56492-5
4-Chloro-3-	methylphenol, ug/kg	dw <470	<420	<420	<430	<440
2,4-Dinitro	phenol, ug/kg dw	<2400	<2200	<2200	<2200	<2300
2-Methyl-4,	6-dinitrophenol,	<2400	<2200	<2200	<2200	<2300
ug/kg dw						
Pentachloro	phenol, ug/kg dw	<2400	<2200	<2200	<2200	<2300
4-Nitrophen	iol, ug/kg dw	<2400	<2200	<2200	<2200	<2300
-	hol, ug/kg dw	<470	<420	<420	<430	<440
2-Methylphe ug/kg dw	enol (o-cresol),	<470	<420	<420	<430	<440
3&4-Methylp	henol	<470	<420	<420	<430	<440
(m&p-creso	l), ug/kg dw					
Benzoic aci	d, ug/kg dw	<2400	<2200	<2200	<2200	<2300
4-Chloroani	line, ug/kg dw	<940	<850	<850	<860	<880
2-Methylnap	hthalene, ug/kg dw	<470	<420	<420	<430	<440
	lorophenol, ug/kg dw	<470	<420	<420	<430	<440
2-Nitroanil	ine, ug/kg dw	<2400	<2200	<2200	<2200	<2300
	ine, ug/kg dw	<2400	<2200	<2200	<2200	<2300
Dibenzofura		<470	<420	<420	<430	<440
	ine, ug/kg dw	<2400	<2200	<2200	<2200	<2300
Surrogate-2	FP	56 %	60 %	65 %	65 %	57 %

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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Project: 097.001 Thickol Sampled By: Client

			REPO	RT (OF RESULTS		DATE/	Page 7
LOG NO	SAMPLE	DESCRIPTION	, SOLID	OR	SEMISOLID	SAMPLES	•	D
56492-1	9036						11-14-95/11	.31
56492-2	9037						11-14-95/12	23
56492-3	9038						11-14-95/12	59
56492-4	9039						11-14-95/13	31
56492-5	9040						11-14-95/14	28
PARAMETER			56492	-1	56492-2	56492-3	56492-4	56492-5
Surrogate-1	PHL		67	*			77 %	64 %
Surrogate-1	BZ		54	*	57 %	62 %	64 %	54 %
Surrogate-2	2FBP		58	ક	67 %	71 %	68 %	64 %
Surrogate-1	TBP		69	*	70 %	72 %	77 %	68 %
Surrogate-1	CPH		75	*	86 🕏	90 %	91 %	109 🐐
Date Extra	cted		11.21.9	5	11.21.95	11.21.95	11.21.95	11.21.95
Date Analy:	ed		12.06.9	5	12.06.95	12.06.95	12.06.95	12.06.95
Arsenic (601	LO)							
Arsenic (60)10), mg	/kg dw	<1.	4	<1.3	<1.3	<1.3	<1.3
Date Analyz			12.07.9	15	12.07.95	12.07.95	12.07.95	12.07.95
Barium (6010))							
Barium (601		kg dw	2.	.7	6.5	4.3	8.7	2.6
Date Analyz			12.07.9	5	12.07.95	12.07.95	12.07.95	12.07.95
Cadmium (601	-							
Cadmium (60		/kg dw	<0.7	1	<0.64	<0.64	<0.65	<0.67
Date Analyz			12.07.9	5	12.07.95	12.07.95	12.07.95	12.07.95
Chromium (60	-							
Chromium (6	-	g/kg dw			4.8		•	2.5
Date Analyz	ed		12.07.9	5	12.07.95	12.07.95	12.07.95	12.07.95
Lead (6010)								
Lead (6010)		dw	2.		1.9	3.5		
Date Analyz	ed		12.07.9	5	12.07.95	12.07.95	12.07.95	12.07.95

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Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

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REPORT OF RESULTS							Page 8	
LOG NO	SAMPLE	DESCRIPTION	, SOLID	OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLEI	>
56492-1 56492-2 56492-3 56492-4 56492-5	9036 9037 9038 9039 9040						11-14-95/113 11-14-95/122 11-14-95/125 11-14-95/133 11-14-95/142	3 9 1
PARAMETER			56492	-1	56492-2	56492-3	56492-4	56492-5
Mercury Mercury (74 Date Analyz Percent Soli	ed		0.0:		0.024 12.01.95 78	0.015 12.01.95 78	0.022 12.01.95 77	0.017 12.01.95 75

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

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		REPORT (OF RESULTS		D2007 /	Page 9
LOG NO	SAMPLE DESCRIPT	ION , SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	ם
56492-6	9041				11-14-95/15	03
56492-7	9042				11-14-95/15	46
56492-8	9043				11-14-95/16	10
56492-9	9044				11-15-95/09	28
56492-10	9045	904i	9042	. १८५३	11-15-95/100	9045
PARAMETER		56492-6				
Volatiles by	GC/MS (8260)					
Chlorometha	ne, ug/kg dw	<13	<62	<13	<13	<64
Bromomethan	ie, ug/kg dw	<13	<62	<13	<13	<64
Vinyl chlor	ride, ug/kg dw	<13	<62	<13	<13	<64
Chloroethan	e, ug/kg dw	<13	<62	<13	<13	<64
Methylene c	hloride ethane), ug/kg (<31	<6.4	<6.6	<32
Acetone, ug	/kg dw	710	<130	1100	<150	270
Carbon disu	lfide, ug/kg dw	<6.4	<31	<6.4	<6.6	<32
1,1-Dichlor	oethene, ug/kg d	lw <6.4	<31	<6.4	<6.6	<32
1,1-Dichlor	oethane, ug/kg d	iw <6.4	<31	<6.4	<6.6	<32
trans-1,2-D ug/kg dw	ichloroethylene,	<6.4	<31	<6.4	<6.6	<32
Chloroform,	ug/kg dw	<6.4	<31	<6.4	<6.6	<32
1,2-Dichlor	oethane, ug/kg d	w <6.4	<31	<6. 4	<6.6	<32
2-Butanone	(MEK), ug/kg dw	<32	<160	<32	<33	<160
1,1,1-Trich	loroethane, ug/k	g dw <6.4	<31	<6.4	<6.6	<32
Carbon tetr	achloride, ug/kg	dw <6.4	<31	<6.4	<6.6	<32
Vinyl aceta	te, ug/kg dw	<13	<62	<13	<13	<64
Bromodichlo	romethane, ug/kg	dw <6.4	<31	<6.4	<6.6	<32

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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Project: 097.001 Thickol Sampled By: Client

		REPORT	OF RESULTS		DATE/	Page 10
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
56492-6	9041				11-14-95/150	3
	9042				11-14-95/154	
	9043				11-14-95/161	
	9044	_			11-15-95/0928	
56492-10	9045	9041	daris	्रागुन् इ	11-15-95/1005	۶ میرج
PARAMETER		56492-6	56492-7			56492-10
1,1,2,2-Tei ug/kg dw	trachloroethane,	<6.4	<31	<6.4	<6.6	<32
	ropropane, ug/kg dw	<6.4	<31	<6.4	<6.6	<32
	Dichloropropene,	<6.4	<31	<6.4	<6.6	<32
-· -	thene, ug/kg dw	<6.4	<31	<6.4	<6.6	<32
Dibromochlo	promethane, ug/kg dw	<6.4	<31	<6.4	<6.6	<32
	loroethane, ug/kg dw		<31	<6.4	<6.6	<32
Benzene, ug	g/kg dw	<6.4	<31	<6.4	<6.6	<32
cis-1,3-Dic	chloropropene, ug/kg	dw <6.4	<31	<6.4	<6.6	<32
2-Chloroeth	ylvinyl ether, ug/kg	dw <64	<310	<64	<66	<320
Bromoform,	ug/kg dw	<6.4	<31	<6.4	<6.6	<32
2-Hexanone,	ug/kg dw	<32	<160	<32	<33	<160
4-Methyl-2- (MIBK), ug	-	<32	<160	<32	<33	<160
Tetrachloro	ethene, ug/kg dw	<6.4	<31	<6.4	<6.6	<32
Toluene, ug	r/kg dw	<6.4	57	<6.4	<6.6	<32
Chlorobenze	ne, ug/kg dw	<6. 4	<31	<6.4	<6.6	<32
Ethylbenzen	e, ug/kg dw	<6.4	<31	<6.4	<6.6	<32
Styrene, ug	/kg dw	<6.4	<31	<6.4	<6.6	<32
Xylenes, ug	/kg dw	<6.4	<31	<6.4	<6.6	<32
Surrogate -	Toluene-d8	96 %	96 %	96 %	91 %	95 %
_	4-Bromofluorobenzene				120 %	130 %
Surrogate -	1,2-Dichloroethane-d	i4 94 %	96 %	119 %	116 %	111 %
Date Analyz	ed 1	1.27.95	11.27.95	11.24.95	11.24.95	11.24.95

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol

		REPORT (OF RESULTS			Page 11
					DATE/	
LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLE	D
56492-6	9041				11-14-95/15	
	9042				11-14-95/15	
	9043				11-14-95/16	
56492-9	9044				11-15-95/09	28
56492-10	9045				11-15-95/10	05
PARAMETER		56492-6	56492-7	56492-8	56492-9	56492-10
Semivolatile	Organics (8270)					
	obenzene, ug/kg dw	-A20	<420	<450	<500	<420
•	obenzene, ug/kg dw		<420	•		<420
•	thane, ug/kg dw	<420	<420	<450	<500	<420
	oethyl)ether, ug/kg		<420	<450	<500	<420
	obenzene, ug/kg dw	<420		<450		<420
	oisopropyl) ether	<420	<420	<450	<500	<420
, ug/kg dw	-	\140	1420	(430	7300	1420
	-n-propylamine,	<420	<420	<450	<500	<420
ug/kg dw		_				
Nitrobenzen	e, ug/kg dw	<420	<420	<450	<500	<420
Hexachlorob	utadiene, ug/kg dw	<420	<420	<450	<500	<420
1,2,4-Trich	lorobenzene, ug/kg d	w <420	<420	<450	<500	<420
Isophorone,		<420	<420	<450	<500	<420
Naphthalene	, ug/kg dw	<420	<420	<450	<500	<420
_	oethoxy) methane,	<420	<420	<450	<500	<420
ug/kg dw	•		_			-
	clopentadiene,	<420	<420	<450	<500	<420
ug/kg dw			_		-	. =
	ithalene, ug/kg dw	<420	<420	<450	<500	<420



LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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Project: 097.001 Thickol

		REPORT C	F RESULTS		DATE/	Page 12
LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
56492-6	9041				11-14-95/150	3
56492-7	9042				11-14-95/154	6
56492-8	9043				11-14-95/161	
56492-9	9044				11-15-95/092	
56492-10	9045				11-15-95/100	5
PARAMETER		56492-6	56492-7	56492-8	56492-9	56492-10
Acenaphthy	lene, ug/kg dw	<420	<420	<450	<500	<420
Acenaphthene, ug/kg dw		<420	<420	<450	<500	<420
Dimethylphthalate, ug/kg dw		<420	<420	<450	<500	<420
2,6-Dinitrotoluene, ug/kg dw		<420	<420	<450	<500	<420
Fluorene, u	ıg/kg dw	<420	<420	<450	<500	<420
4-Chlorophe ether, ug,		<420	<420	<450	<500	<420
2,4-Dinitro	otoluene, ug/kg dw	<420	<420	<450	<500	<420
Diethylphth	malate, ug/kg dw	<420	<420	<450	<500	<420
	iphenylamine/Diph , ug/kg dw	<420	<420	<450	<500	<420
Hexachlorob	enzene, ug/kg dw	<420	<420	<450	<500	<420
4-Bromopher ether, ug/		<420	<420	<450	<500	<420
Phenanthrer	ie, ug/kg dw	<420	<420	<450	<500	<420
Anthracene,	ug/kg dw	<420	<420	<450	<500	<420
Di-n-butylp	hthalate, ug/kg dw	<420	<420	<450	<500	<420
Fluoranther	ue, ug/kg dw	<420	<420	<450	<500	<420
Pyrene, ug/	kg dw	<420	<420	<450	<500	<420
Benzidine,	ug/kg dw	<3500	<3400	<3700	<4100	<3500



LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

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		REPURI	OF KESOTIS			rage 13
					DATE/	
LOG NO	SAMPLE DESCRIPTION ,	SOLID OF	SEMISOLID	SAMPLES	TIME SAMPLE	ED
56492-6	9041				11-14-95/15	03
56492-7	9042		•		11-14-95/15	
56492-8	9043				11-14-95/16	10
56492-9	9044				11-15-95/09	28
56492-10	9045				11-15-95/10	05
PARAMETER		56492-6	56492-7	56492-8	56492-9	56492-10
Butylbenzy	lphthalate, ug/kg dw	<420	<420	<450	<500	<420
_	lhexyl)phthalate,	490	450	<450	. <500	<420
ug/kg dw						
Chrysene,		<420	<420	<450	<500	<420
	thracene, ug/kg dw	<420	<420	<450	<500	<420
•	orobenzidine, ug/kg dw		<840	<900	<1000	<850
- '	phthalate, ug/kg dw	<420	<420	<450	<500	<420
	uoranthene, ug/kg dw	<420	<420	<450	<500	<420
	uoranthene, ug/kg dw	<420	<420	<450	<500	<420
	rene, ug/kg dw	<420	<420	<450	<500	<420
	,3-cd)pyrene, ug/kg dw		<420	<450	<500	<420
	n)anthracene, ug/kg dw		<420	<450	<500	<420
	i)perylene, ug/kg dw	<420	<420	<450	<500	<420
	imethylamine, ug/kg dw		<420	<450	<500	<420
-	enol, ug/kg dw	<420	<420	<450	<500	<420
_	ol, ug/kg dw	<420	<420	<450	<500	<420
Phenol, ug,	-	<420	<420	<450	<500	<420
_	/lphenol, ug/kg dw	<420	<420	<450	<500	<420
	rophenol, ug/kg dw	<420	<420	<450	<500	<420
2,4,6-Trich	lorophenol, ug/kg dw	<420	<420	<450	<500	<420

LOG NO: S5-56492
Received: 17 NOV 95
Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol

		REPORT (OF RESULTS			Page 14
					DATE/	
LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLE	0
56492-6	9041				11-14-95/150)3
56492-7	9042				11-14-95/15	46
56492-8	9043				11-14-95/163	LO
56492-9	9044				11-15-95/092	28
56492-10	9045				11-15-95/100)5
PARAMETER		56492-6	56492-7	56492-8	56492-9	
4-Chloro-3	-methylphenol, ug/kg	dw <420	<420	<450	<500	<420
		<2200			<2600	
2-Methyl-4	,6-dinitrophenol,	<2200	<2200	<2300	<2600	<2200
ug/kg dw	_					
Pentachlor	ophenol, ug/kg dw	<2200	<2200	<2300	<2600	<2200
4-Nitropher	nol, ug/kg dw	<2200	<2200	<2300	<2600	<2200
Benzyl alco	ohol, ug/kg dw	<420	<420	<450	<500	<420
2-Methylphe ug/kg dw	enol (o-cresol),	<420	<420	<450	<500	<420
3&4-Methylp	phenol	<420	<420	<450	<500	<420
_	ol), ug/kg dw					
	id, ug/kg dw	<2200	<2200	<2300	<2600	<2200
	lline, ug/kg dw	<850	<840	<900	<1000	<850
	ohthalene, ug/kg dw	<420	<420	<450	<500	<420
	llorophenol, ug/kg dw		<420	<450	<500	<420
	line, ug/kg dw	<2200	<2200		<2600	<2200
	ine, ug/kg dw	<2200	<2200		· - -	<2200
	n, ug/kg dw	<420	<420	<450		<420
	ine, ug/kg dw	<2200	<2200			<2200
Surrogate-2	FP	60 %	71 %	72 %	70 ዩ	77 %

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol Sampled By: Client

							•	
		·	REPO	RT (OF RESULTS		DATE/	Page 15
rog no	SAMPLE	DESCRIPTION	, SOLID	OR	SEMISOLID		TIME SAMPLE	D
56492-6							11-14-95/15	
56492-7							11-14-95/15	
56492-8							11-14-95/16	
56492-9							11-15-95/09	
56492-10	9045						11-15-95/10	
PARAMETER						56492-8		56492-10
Surrogate-P			70	*	86 %	76 %	76 %	79 %
Surrogate-N	BZ		62	*	67 %	70 %	68 % 88 %	76 %
Surrogate-2	FBP		71	*	81 %	87 🕏	88 🕏	95 %
Surrogate-T	BP		70	*	86 %	87 🕏	88 🕏	91 🕏
Surrogate-T	PH		105	*	114 %	78 🕏	72 %	86 🕏
Date Extrac	ted		11.21.9	95	11.21.95	11.21.95	11.21.95	11.21.95
Date Analyz	ed		12.06.9	95	12.06.95	12.06.95	12.06.95	12.06.95
Arsenic (601	0)							
Arsenic (60	10), mg	/kg dw						
Date Analyz			12.07.9	95	12.07.95	12.07.95	12.07.95	12.07.95
Barium (6010								
Barium (601			1				8.4	
Date Analyz			12.07.9	5	12.07.95	12.07.95	12.07.95	12.07.95
Cadmium (601	-							
		/kg dw						
Date Analyz			12.07.9	5	12.07.95	12.07.95	12.07.95	12.07.95
Chromium (60	-							
Chromium (6		g/kg dw					<1.5	
Date Analyz	ed		12.07.9	5	12.07.95	12.07.95	12.07.95	12.07.95
Lead (6010)								
Lead (6010)		dw	_	.0		3.6		
Date Analyza	be		12.07.9	5	12.07.95	12.07.95	12.07.95	12.07.95

LOG NO: S5-56492 Received: 17 NOV 95

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Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol

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LOG NO	SAMPLE DESCRIPTION	N , SOLID O	R SEMISOLID	SAMPLES	DATE/ TIME SAMPL	ಮ
56492-8 56492-9	9041 9042 9043 9044 9045				11-14-95/1 11-14-95/1 11-14-95/0 11-15-95/0	546 610 928
PARAMETER	*****	56492-6	56492-7	56492-8	56492-9	56492-10
Date Analyz Percent Soli	.71), mg/kg đw ed .ds (160.3), %	78	79	<0.014 11.27.95 73	11.27.95 66	78



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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol

REPORT OF RE	SULTS		Page 17
		DATE/	-
LOG NO SAMPLE DESCRIPTION , SOLID OR SEMI			
56492-11 9046		11-15-95/1040	
56492-12 9047		11-15-95/1100	
56492-12 9047			
PARAMETER	56492-11	56492-12	
Volatiles by GC/MS (8260)			
Chloromethane, ug/kg dw	<11	- 	
Bromomethane, ug/kg dw	<11		
Vinyl chloride, ug/kg dw	<11	•	
Chloroethane, ug/kg dw	<11	= =	
Mathylene chloride (Dichloromethane), ug/kg de			
Acetone, ug/kg dw	760		
Carbon disulfide, ug/kg dw	<5.5		
1,1-Dichloroethene, ug/kg dw	<5.5		
1,1-Dichloroethane, ug/kg dw	<5.5		
trans-1,2-Dichloroethylene, ug/kg dw	<5.5	<32	
Chloroform, ug/kg dw	<5.5	- - -	
1,2-Dichloroethane, ug/kg dw	<5.5	<32	
2-Butanone (MEK), ug/kg dw	<28	<160	
1,1,1-Trichloroethane, ug/kg dw	<5.5	<32	
Carbon tetrachloride, ug/kg dw	<5.5	<32	
Vinyl acetate, ug/kg dw	<11	<63	
Bromodichloromethane, ug/kg dw	<5.5	<32	
1,1,2,2-Tetrachloroethane, ug/kg dw	<5.5	<32	
1,2-Dichloropropane, ug/kg dw	<5.5	<32	
trans-1,3-Dichloropropene, ug/kg dw	<5.5	<32	
Trichloroethene, ug/kg dw	<5.5	<32	
Dibromochloromethane, ug/kg dw	<5.5	<32	

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol

	REP	ORT OF RESULTS			Page	18
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	SAMPLE DESCRIPTION , SOLI	O OR SEMISOLID	SAMPLES	TIME SAMPLED		
56492-11				11-15-95/1040		
56492-12			0.0	11-15-95/1100		
PARAMETER	***************************************			56492-12		
						-
1,1,2-Trich	loroethane, ug/kg dw		<5.5	<32		
Benzene, ug	/kg dw		<5.5	<32		
cis-1,3-Did	hloropropene, ug/kg dw		<5.5	<32		
2-Chloroeth	ylvinyl ether, ug/kg dw		<55	<320		
Bromoform,	ug/kg dw		<5.5	<32		
2-Hexanone,	ug/kg dw		<28	<160		
4-Methyl-2-	pentanone (MIBK), ug/kg dv	r	<28	<160		
Tetrachloro	ethene, ug/kg dw		<5.5	<32		
Toluene, ug	/kg dw		<5.5	<32		
Chlorobenze	ne, ug/kg dw		<5.5	<32		
Ethylbenzen	e, ug/kg dw		<5.5	<32		
Styrene, ug	/kg dw		<5.5	<32		
Xylenes, ug	/kg dw		<5.5	<32		
Surrogate -	Toluene-d8		97 %	92 %		
Surrogate -	4-Bromofluorobenzene		114 %	92 %		
Surrogate -	1,2-Dichloroethane-d4		96 %	93 %		
Date Analyz	ed		11.27.95	11.27.95		

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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	REPORT OF RESULTS			Page 19
			DATE/	
LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID	SAMPLES	TIME SAMPLED	
56492-11	9046		11-15-95/1040	
56492-12	9047		11-15-95/1100	
			56492-12	
PARAMETER			56494-14	
Semivolatile	Organics (8270)		***********	
1,3-Dichlor	cobenzene, ug/kg dw	<380	<420	
1,4-Dichlor	robenzene, ug/kg dw	<380	<420	
Hexachloroe	ethane, ug/kg dw	<380	<420	
bis(2-Chlor	roethyl)ether, ug/kg dw	<380	<420	
1,2-Dichlor	robenzene, ug/kg dw	<380	<420	
bis(2-Chlor	roisopropyl)ether, ug/kg dw	<380	<420	
n-Nitrosodi	-n-propylamine, ug/kg dw	<380	<420	
Nitrobenzer	ne, ug/kg dw	<380	<420	
Hexachlorob	rutadiene, ug/kg dw	<380	<420	
1,2,4-Trich	llorobenzene, ug/kg dw	<380	<420	
Isophorone,	ug/kg dw	<380	<420	
Naphthalene	, ug/kg dw	<380	<420	
bis(2-Chlor	coethoxy)methane, ug/kg dw	<380	<420	
Hexachloroc	yclopentadiene, ug/kg dw	<380	<420	
2-Chloronap	hthalene, ug/kg dw	<380	<420	
Acenaphthyl	ene, ug/kg dw	<380	<420	
Acenaphthen	e, ug/kg dw	<380	<420	
Dimethylpht	halate, ug/kg dw	<380	<420	
2,6-Dinitro	toluene, ug/kg dw	<380	<420	
Fluorene, u	g/kg dw	<380	<420	
4-Chlorophe	nylphenyl ether, ug/kg dw	<380	<420	
2,4-Dinitro	toluene, ug/kg dw	<380	<420	

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Mr. Mark Corbin

Apex Environmental, Inc.

15850 Crabbs Branch Way #300

Rockville, MD 20855

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Sampled By: Client

REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISO		DATE/ TIME SAMPLED	
56492-11 9046 56492-12 9047		11-15-95/1040 11-15-95/1100	
PARAMETER	56492-11	56492-12	
Diethylphthalate, ug/kg dw N-Nitrosodiphenylamine/Diphenylamine, ug/kg dw Hexachlorobenzene, ug/kg dw 4-Bromophenyl phenyl ether, ug/kg dw Phenanthrene, ug/kg dw Anthracene, ug/kg dw Di-n-butylphthalate, ug/kg dw Fluoranthene, ug/kg dw Pyrene, ug/kg dw Benzidine, ug/kg dw Butylbenzylphthalate, ug/kg dw bis(2-Ethylhexyl)phthalate, ug/kg dw Chrysene, ug/kg dw Benzo(a)anthracene, ug/kg dw Ji-n-octylphthalate, ug/kg dw Benzo(b)fluoranthene, ug/kg dw Benzo(k)fluoranthene, ug/kg dw Benzo(a)pyrene, ug/kg dw Indeno(1,2,3-cd)pyrene, ug/kg dw Dibenzo(a,h)anthracene, ug/kg dw	<380 <380 <380 <380 <380 <380 <380 <380	<420 <420 <420 <420 <420 <420 <420 <420	• ••
Benzo(g,h,i)perylene, ug/kg dw N-Nitrosodimethylamine, ug/kg dw	<380 <380 <380	<420 <420 <420	

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

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REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , SO				
56492-11	9046				• • • • • • • • • • • • • • • • • • • •
				11-15-95/1040	
56492-12	304/			11-15-95/1100	
PARAMETER			56492-11	56492-12	
2-Chlorophe	enol, ug/kg dw			<420	
_	ol, ug/kg dw		<380	· - - -	
Phenol, ug/			<380	•	
2,4-Dimethy	lphenol, ug/kg dw		<380	<420	
2,4-Dichlor	ophenol, ug/kg dw		<380	<420	
2,4,6-Trich	lorophenol, ug/kg dw		<380	<420	
4-Chloro-3-	methylphenol, ug/kg dw		<380	<420	
2,4-Dinitro	phenol, ug/kg dw		<2000	<2200	
2-Methyl-4,	6-dimitrophenol, ug/kg	фw	<2000	<2200	
Pentachloro	phenol, ug/kg dw		<2000	<2200	
4-Nitrophen	ol, ug/kg dw		<2000	<2200	
Benzyl alco	hol, ug/kg dw		<380	<420	
2-Methylphe	nol (o-cresol), ug/kg d	W	<380	<420	
3&4-Methylp	henol (m&p-cresol), ug/	kg dw	<380	<420	
Benzoic aci	d, ug/kg dw		<2000	<2200	
	line, ug/kg dw		<760	<840	
2-Methylnap	hthalene, ug/kg dw		<380	<420	
2,4,5-Trich	lorophenol, ug/kg dw		<380	<420	
2-Nitroanil	ine, ug/kg dw		<2000	<2200	
	ine, ug/kg dw		<2000	<2200	
Dibenzofura			<380	<420	
	ine, ug/kg dw		<2000	<2200	
Surrogate-2	FP		68 %	62 %	

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Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

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REPORT OF RESULTS

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	SAMPLE DESCRIPTION			SAMPLES		
56492-11	9046		,		11-15-95/1040	
56492-12	9047				11-15-95/1100	
PARAMETER				56492-11	56492-12	
Surrogate-					67 %	
Surrogate-	NBZ			74 %	62 %	
Surrogate-	2FBP				81 %	
Surrogate-	TBP				71 %	
Surrogate-	TPH			79 %	81 %	
Date Extra	cted			11.21.95	11.21.95	
Date Analy	zed			12.06.95	12.06.95	
Arsenic (60	·					
	010), mg/kg dw			<1.1		
Date Analy				12.07.95	12.07.95	
Barium (601						
	10), mg/kg dw				4.6	
Date Analy				12.07.95	12.07.95	
Cadmium (60						
	010), mg/kg dw				<0.63	
Date Analy				12.07.95	12.07.95	
Chromium (6	_					
	6010), mg/kg dw				8.3	
Date Analy				12.07.95	12.07.95	
Lead (6010)						
), mg/kg dw				3.2	
Date Analy	zed			12.07.95	12.07.95	
Mercury						
	471), mg/kg dw				0.026	
Date Analy:	zed			11.27.95	11.27.95	

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Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300

Rockville, MD 20855

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REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION	ON , SOLID OR :	SEMISOLID SAMPLES	DATE/ TIME SAMPLED
56492-11 56492-12	9046 9047			11-15-95/1040 11-15-95/1100
PARAMETER			56492-11	56492-12
Percent Sol	ids (160.3), %		87	79

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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			REPORT	OF RESULTS		/	Page 24
LOG NO	SAMPLE	DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
56492-13 56492-14 56492-15	9050 9052				a u sec	11-15-95/16 11-15-95/17 11-16-95/90	30 52
PARAMETER					56492-13	56492-14	56492-15
Volatiles by	GC/MS	(8260)		******			• • • • • • • •
Chlorometha		•			<12	· - -	<15
Bromomethan		-			<12	<12	<15
Vinyl chlor		· -			<12	<12	<15
Chloroethar	. •	-			<12		<15
		(Dichlorometh	ane), ug,	/kg dw j	<6.1	<6.2	<7.6
Acetone, ug	-				85	32	<38
Carbon disu	•	U : U				<6.2	<7.6
1,1-Dichlor						<6.2	<7.6
1,1-Dichlor					<6.1		<7.6
		ethylene, ug/k	g dw		<6.1		<7.6
Chloroform,					<6.1		
1,2-Dichlor					<6.1		<7.6
2-Butanone	•				<30		<38
		ane, ug/kg dw			<6.1	<6.2	
		de, ug/kg dw			<6.1	<6.2	<7.6
Vinyl aceta		_			<12	<12	<15
		ne, ug/kg dw			<6.1		,
		oethane, ug/kg	dw		<6.1		
1,2-Dichlor			_		<6.1		*****
		propene, ug/kg	dw		<6.1		<7.6
Trichloroet	hene, u	g/kg dw			<6.1	<6.2	<7.6

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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	REPORT OF RESULTS			Page 25
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LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID	SAMPLES	TIME SAMPLE	D
56492-13	9048		11 15 05 /16	20
.	9050		11-15-95/16	
56492-14	T T T		11-15-95/17	
56492-15		0-116	11-16-95/90!	
		,	9050	
PARAMETER		56492-13	56492-14	56492-15
	promethane, ug/kg dw		<6.2	
	lloroethane, ug/kg dw		<6.2	
Benzene, ug			<6.2	
	chloropropene, ug/kg dw		<6.2	
	ylvinyl ether, ug/kg dw	<61		<76
Bromoform,	<u> </u>	<6.1	<6.2	<7.6
2-Hexanone,	ug/kg dw	<30	<31	<38
4-Methyl-2-	pentanone (MIBK), ug/kg dw	<30	<31	<38
Tetrachloro	ethene, ug/kg dw	<6.1	<6.2	<7.6
Toluene, ug	y/kg dw	<6.1	<6.2	<7.6
Chlorobenze	me, ug/kg dw	<6.1	<6.2	<7.6
Ethylbenzer	ne, ug/kg dw	<6.1	<6.2	<7.6
Styrene, ug	y/kg dw	<6.1	<6.2	<7.6
Xylenes, ug	/kg dw	<6.1	<6.2	<7.6
Surrogate -	Toluene-d8	88 %	90 %	92 %
Surrogate -	4-Bromofluorobenzene	119 %	112 %	117 %
Surrogate -	1,2-Dichloroethane-d4	116 %	115 %	122 %
Date Analyz	ed	11.24.95	11.24.95	11.24.95

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISO	LID SAMPLES	TIME SAMPLE)
56492-13	9048		11-15-95/163	10
56492-14	9050		11-15-95/173	10
56492~15	9052		11-16-95/905	12
PARAMETER			56492-14	56492-15
Semivolatile	Organics (8270)			
1,3-Dichlor	robenzene, ug/kg dw	<400	<410	<500
1,4-Dichlor	robenzene, ug/kg dw	<400	<410	<500
Hexachloroe	thane, ug/kg dw	<400	<410	<500
	coethyl)ether, ug/kg dw	<400	<410	<500
•	obenzene, ug/kg dw	<400	<410	<500
	oisopropyl)ether, ug/kg dw	<400	<410	<500
	-n-propylamine, ug/kg dw	<400	<410	<500
	e, ug/kg dw	<400	<410	<500
	utadiene, ug/kg dw	<400	<410	<500
	lorobenzene, ug/kg dw	<400	<410	<500
Isophorone,	—· •	<400	<410	<500
Naphthalene		<400	<410	<500
	oethoxy)methane, ug/kg dw	<400	<410	<500
	yclopentadiene, ug/kg dw	<400	<410	<500
-	hthalene, ug/kg dw	<400	<410	<500
	ene, ug/kg dw	<400	<410	<500
-	e, ug/kg dw	<400	<410	<500
	halate, ug/kg dw	<400	<410	<500
2,6-Dinitro	toluene, ug/kg dw	<400	<410	<500
Fluorene, u		<400	<410	<500
4-Chlorophe	nylphenyl ether, ug/kg dw	<400	<410	<500

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Dibenzo(a,h)anthracene, ug/kg dw

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

		•		•	-3. 00-0
	I	REPORT OF RESULTS			Page 27
	·			DATE/	
LOG NO	SAMPLE DESCRIPTION , SO	LID OR SEMISOLID	Samples	TIME SAMPLE)
56492-13	9048			11-15-95/163	
	9050			11-15-95/173	
56492-15	9052			11-16-95/905	52
Parameter			56492-13	56492-14	56492-15
2 4-Dinier	otoluene, ug/kg dw		<400	<410	<500
•	nalate, ug/kg dw		<400		
	iphenylamine/Diphenylami	no valka du	<400		<500
	rphenytamina/orphenytami cenzene, ug/kg dw	me, ug/kg dw	<400		<500
	yl phenyl ether, ug/kg	do.	<400		<500 <500
_	ie, ug/kg dw	C.W	<400	<410	<500
Anthracene			<400	<410	<500
	ohthalate, ug/kg dw		<400	<410	<500
	ne, ug/kg dw		<400	<410	<500
Pyrene, ug/			<400	<410	<500
Benzidine,	•		<3300	<3300	<4100
•	phthalate, ug/kg dw		<400	<410	<500
-	hexyl)phthalate, ug/kg	du	<400	<410	550
Chrysene, u			<400	<410	<500
_	hracene, ug/kg dw		<400	<410	<500
	probenzidine, ug/kg dw		<800	<800	<1000
•	hthalate, ug/kg dw		<400	<410	<500
	oranthene, ug/kg dw		<400	<410	<500
	oranthene, ug/kg dw	-	<400	<410	<500
	ene, ug/kg dw		<400	<410	<500
	3-cd) pyrene, ug/kg dw		<400	<410	<500
	a actilities adiva an		/=00	/=10	<300

<400

<410

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol

	REPO	ORT OF RESULTS		DATE/	Page 28
LOG NO	SAMPLE DESCRIPTION , SOLII	O OR SEMISOLID	SAMPLES	TIME SAMPLED	
56492-13 56492-14 56492-15	9048 9050 9052			11-15-95/163 11-15-95/173 11-16-95/905	0 2
PARAMETER				56492-14	
-	.)perylene, ug/kg dw .methylamine, ug/kg dw		<400 <400		
2-Chlorophe	mol, ug/kg dw wol, ug/kg dw		<400 <400	<410	<500 <500
Phenol, ug/			<400 <400		<500 <500
	cophenol, ug/kg dw lorophenol, ug/kg dw		< 400 < 4 00	<410 <410	<500 <500
2,4-Dinitro	methylphenol, ug/kg dw phenol, ug/kg dw		<400 <2100	<410 <2100	<500 <2600
Pentachloro	6-dinitrophenol, ug/kg dw phenol, ug/kg dw		<2100 <2100	<2100	<2600 <2600
Benzyl alco	ol, ug/kg dw hol, ug/kg dw		<2100 <400	<2100 <410	<2600 <500
3&4-Methylp	nol (o-cresol), ug/kg dw henol (m&p-cresol), ug/kg	dw	<400 <400	<410 <410	<500 <500
	line, ug/kg dw		<2100 <800	<2100 <810	<2600 <1000
2,4,5-Trich	hthalene, ug/kg dw lorophenol, ug/kg dw		<400 <400	<410 <410	<500 <500
	ine, ug/kg dw ine, ug/kg dw		<2100 <2100	<2100 <2100	<2600 <2600

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol Sampled By: Client

			REPOR	T O	RESULTS			Page 29
							DATE/	
LOG NO	SAMPLE	DESCRIPTION ,	SOLID	OR S	SEMISOLID	SAMPLES		SD.

56492-13							11-15-95/16	
56492-14							11-15-95/17	
56492-15							11-16-95/90	
PARAMÈTER							56492-14	
Dibenzofura	ın, ug/k	g dw				<400	<410	<500
4-Nitroanil	line, ug	/kg dw				<2100	<2100	<2600
Surrogate-2	2FP					71 %	66 🕏	76 %
Surrogate-P	HL					73 %	66 %	78 🕏
Surrogate-N	NBZ					70 %	65 %	76 %
Surrogate-2	PBP					90 %	80 %	96 %
Surrogate-T	BP					80 %	63 %	94 %
Surrogate-I	PH					85 %	75 %	88 %
Date Extrac	ted					11.21.95	11.21.95	11.21.95
Date Analyz	ed					12.06.95	12.06.95	12.06.95
Arsenic (601	.0)							
Arsenic (60	10), mg	/kg dw				<1.2	<1.2	<1.5
Date Analyz	ed					12.07.95	12.07.95	12.07.95
Barium (6010	1)							
Barium (601	.0), mg/1	kg dw				1.7	<1.2	11
Date Analyz		-				12.07.95	12.07.95	12.07.95
Cadmium (601	0)							
Cadmium (60	10), mg	/kg dw				<0.61	<0.62	<0.76
Date Analyz	ed					12.07.95		
Chromium (60	10)						_	
Chromium (6	010), mg	g/kg dw				3.5	1.9	1.6
Date Analyz	ed					12.07.95	12.07.95	12.07.95

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol

	RE	PORT OF RESULTS		D. 1977 /	Page 30
LOG NO	SAMPLE DESCRIPTION , SOL	ID OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLEI	
56492-13 56492-14 56492-15	9048 9050 9052			11-15-95/163 11-15-95/173 11-16-95/905	30
PARAMETER			56492-13	56492-14	56492-15
Lead (6010) Lead (6010) Date Analy: Mercury	, mg/kg dw			1.1 12.07.95	
-	171), mg/kg dw zed		0.015 11.27.95	<0.012 11.27.95	
Aldicarb, no Date Extraction Date Analys	cted zed		<37 11.21.95 11.28.95	11.21.95 11.28.95	11.21.95 11.28.95
Percent Sol:	ids (160.3), %		82	81	66

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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Project: 097.001 Thiokol

		REPORT (OF RESULTS			Page 31
					DATE/	
LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
56492-16	9081				11-17-95/1133	
56492-17	9082				11-17-95/1135	
PARAMETER				56492-16	56492-17	
Arsenic (60						
Arsenic (6	010), mg/kg dw			<1.2	<1.2	
Date Analy	zed			12.07.95	12.07.95	
Barium (601	0)					
Barium (60	10), mg/kg dw			1.2	1.8	
Date Analy	zed			12.07.95	12.07.95	
Cadmium (60	10)					
Cadmium (6	010), mg/kg dw			<0.58	<0.62	
Date Analy	zed			12.07.95	12.07.95	
Chromium (6	010)					
Chromium (6010), mg/kg dw			1.4	2.6	
Date Analy	zed			12.07.95	12.07.95	
Lead (6010)						
Lead (6010), mg/kg dw			3.0	2.8	
Date Analy	zed			12.07.95	12.07.95	
Mercury						
Mercury (7	471), mg/kg dw			0.012	<0.012	
Date Analy	zed			11.27.95	11.27.95	
Percent Sol	ids (160.3), %			. 86	80	

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

		REPORT	OF RESULTS			Page 32
LOG NO	SAMPLE DESCRIPTION	, LIQUID S	SAMPLES		DATE/ TIME SAMPLE	-
56492-18	9060				11-16-95/13	05
56492-19	9063		•		11-16-95/13:	19
56492-20	9064				11-16-95/13	45
56492-21	9066				11-16-95/14:	27
56492-22	9068	9060	୍ରଧ୍ୟ	2009	11-16-95/15	25
PARAMETER		56492-18	56492-19			
Volatiles by	/ GC/MS (8260)					
Chlorometha	ane, ug/l	<10	<10	<10	<10	<10
Bromomethar	ne, ug/l	<10	<10	<10	<10	<10
Vinyl chlor	ride, ug/l	<10	<10	<10	<10	<10
Chloroethar	ne, ug/l	<10	<10	<10	<10	<10
Methylene o	chloride	<5.0	<5.0	<5.0	<5.0	<5.0
(Dichloron	methane), ug/l					
Acetone, ug	g/l	<25	<25	<25	<25	<25
Carbon dist	ılfide, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichlor	roethene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
1,1-Dichlor	roethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,2-	Dichloroethylene, ug,	/1 <5.0	<5.0	<5.0	<5.0	<5.0
Chloroform,	, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichlor	roethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
	(MEK), ug/l	<25	<25	<25	<25	<25
1,1,1-Trick	nloroethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
	rachloride, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl aceta	ate, ug/l	<10	<10	<10	<10	<10
Bromodichlo	oromethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tet	trachloroethane, ug/	l <5.0	<5.0	<5.0	<5.0	<5.0

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS Page 33 DATE/ SAMPLE DESCRIPTION , LIQUID SAMPLES TIME SAMPLED LOG NO 56492-18 9060 11-16-95/1305 56492-19 9063 11-16-95/1319 56492-20 9064 11-16-95/1345 9066 11-16-95/1427 56492-21 56492-22 9068 11-16-95/1525 56492-18 56492-19 56492-20 56492-21 56492-22 ______ <5.0 <5.0 <5.0 1,2-Dichloropropane, ug/l <5.0 <5.0 trans-1,3-Dichloropropene, ug/l <5.0 <5.0 <5.0 <5.0 <5.0 Trichloroethene, ug/l <5.0 <5.0 <5.0 <5.0 <5.0 Dibromochloromethane, ug/l <5.0 < 5.0 <5.0 <5.0 <5.0 1,1,2-Trichloroethane, ug/l <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 Benzene, ug/l <5.0 <5.0 cis-1,3-Dichloropropene, ug/l <5.0 <5.0 <5.0 <5.0 2-Chloroethylvinyl ether, ug/l <50 <50 <50 <50 <50 Bromoform, ug/l <5.0 <5.0 <5.0 < 5.0 <5.0 <25 2-Hexanone, ug/l <25 <25 <25 <25 <25 4-Methyl-2-pentanone (MIBK), ug/l <25 <25 <25 <25 Tetrachloroethene, ug/l <5.0 <5.0 <5.0 <5.0 < 5.0 Toluene, ug/l <5.0 <5.0 <5.0 <5.0 < 5.0 Chlorobenzene, ug/l <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 Ethylbenzene, ug/l <5.0 < 5.0 Styrene, ug/l <5.0 <5.0 <5.0 <5.0 <5.0 Xylenes, ug/l <5.0 < 5.0 <5.0 <5.0 <5.0 108 % Surrogate - Toluene-d8 106 % 109 % 110 % 108 % Surrogate - 4-Bromofluorobenzene 97 % 101 % 102 % 102 % Surrogate - 1,2-Dichloroethane-d4 83 % 93 % 92 % 92 % 92 % Date Analyzed 11.30.95 11.30.95 11.30.95 11.30.95

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

		REPORT (OF RESULTS		DATE/	Page 34
LOG NO	SAMPLE DESCRIPTION ,				TIME SAMPLE	D
56492-18 56492-19 56492-20 56492-21 56492-22	9060 9063 9064 9066				11-16-95/13 11-16-95/13 11-16-95/13 11-16-95/14 11-16-95/15	19 45 27
PARAMETER	5	6492-18			56492-21	
1,3-Dichlor 1,4-Dichlor Hexachloroe bis (2-Chlor 1,2-Dichlor bis (2-Chlor n-Nitrosod: Nitrobenzer	- · · · - · · · · · · · · · · · · · · ·	<10 <10	<10 <10 <10 <10 <10 <10 <10 <10	<10 <10 <10 <10 <10 <10 <10 <10 <10	<10 <10 <10 <10 <10 <10	<10 <10 <10 <10 <10 <10 <10 <10 <10
		<10 <10 <10 <10	<10 <10 <10 <10	<10 <10 <10 <10	<10 <10 <10 <10	<10 <10 <10 <10
Hexachloro 2-Chlorona Acenaphthyl	_	<10 <10 <10	<10 <10 <10 <10	<10 <10 <10	<10	<10 <10 <10 <10
	ne, ug/l chalate, ug/l otoluene, ug/l	<10 <10 <10	<10 <10 <10	<10 <10 <10	<10 <10 <10	<10 <10 <10

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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		REPORT	OF RESULTS			Page 35
	411017 2000				DATE/	_
LOG NO	SAMPLE DESCRIPTION ,	LIQUID S.	AMPLES		TIME SAMPLE	D
56492-18	9060		,		11-16-95/13	05
56492-19	9063				11-16-95/13	
56492-20	9064				11-16-95/13	45
56492-21	9066				11-16-95/14	27
56492-22	9068				11-16-95/15	25
PARAMETER		56492-18	56492-19	56492-20	56492-21	56492-22
Fluorene,	ug/l	<10	<10	<10	<10	<10
4-Chloroph	enylphenyl ether, ug/	1 <10	<10	<10	<10	<10
	otoluene, ug/l	<10	<10	<10	<10	<10
Diethylpht	halate, ug/l	<10	<10	<10	<10	<10
N-Nitrosod enylamine	iphenylamine/Diph , ug/l	<10	<10	<10	<10	<10
Hexachloro	benzene, ug/l	<10	<10	<10	<10	<10
4-Bromophe	nyl phenyl ether, ug/	1 <10	<10	<10	<10	<10
Phenanthre	ne, ug/l	<10	<10	<10	<10	<10
Anthracene	· · · · · · · · · · · · · · · · · · ·	<10	<10	<10	<10	<10
Di-n-butyl	phthalate, ug/l	<10	<10	<10	<10	<10
Fluoranthe		<10	<10	<10	<10	<10
Pyrene, ug		<10	<10	<10	<10	<10
Benzidine,		<80	<80	<80	<80	<80
	lphthalate, ug/l	<10	<10	<10	<10	<10
_	lhexyl)phthalate, ug/	l <10	<10	<10	<10	<10
Chrysene, 1		<10	<10	<10	<10	<10
	thracene, ug/l	<10	<10	<10	<10	<10
	orobenzidine, ug/l	<20	<20	<20	<20	<20
Di-n-octyl	phthalate, ug/l	<10	<10	<10	<10	<10

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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						•
		REPORT C	F RESULTS		DATE/	Page 36
LOG NO	SAMPLE DESCRIPTION ,	LIQUID SA	MPLES	· · · · · · · · · · · · · · · · · · ·	rime sample	D
56492-18	9060				11-16-95/13	
56492-19	9063			•	11-16-95/13	
56492-20	9064				11-16-95/13	
56492-21	9066				11-16-95/14	
56492-22	9068				11-16-95/15	25
PARAMETER		56492-18	56492-19		56492-21	
Benzo(b)fl	uoranthene, ug/l	<10	<10	<10		<10
	uoranthene, ug/l	<10	<10	<10	<10	<10
Benzo(a) py		<10	<10	<10	<10	<10
	,3-cd)pyrene, ug/l	<10	<10	<10	<10	<10
	h) anthracene, ug/l	<10	<10	<10	<10	<10
	i)perylene, ug/l	<10	<10	<10	<10	<10
	imethylamine, ug/l	<10	<10	<10	<10	<10
	enol, ug/l	<10	<10	<10	<10	<10
2-Nitrophe		<10	<10	<10	<10	<10
Phenol, ug		<10	<10	<10	<10	<10
2,4-Dimeth	ylphenol, ug/l	<10	<10	<10	<10	<10
2,4-Dichlo	rophenol, ug/l	<10	<10	<10	<10	<10
2,4,6-Tric	hlorophenol, ug/l	<10	<10	<10	<10	<10
4-Chloro-3	-methylphenol, ug/l	<10	<10	<10	<10	<10
2,4-Dinitr	ophenol, ug/l	<50	<50	<50	<50	<50
2-Methyl-4	,6-dinitrophenol, ug,	/1 <50	<50	<50	<50	<50
Pentachlor	ophenol, ug/l	<50	<50	<50	<50	<50
4-Nitrophe	nol, ug/l	<10	<10	<10	<10	<10
Benzyl alc	cohol, ug/l	<10	<10	<10	<10	<10
2-Methylph	enol (o-cresol), ug/	L <10	<10	<10	<10	<10

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

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		REPORT	F KESULIS		/	rage 37
					DATE/	
LOG NO	SAMPLE DESCRIPTION	, LIQUID SA	MPLES		TIME SAMPLED	
FC402 10	9060				11-16-95/130	5
56492-18	•				11-16-95/131	
56492-19	9063				11-16-95/134	
56492-20	9064				11-16-95/142	
56492-21	9066	0-10	2012	25/3	11-16-95/152	
56492-22	9068	UDIDU	419/02		11-10-33/132	loX
PARAMETER		56492-18	56492-19	56492-20	56492-21	56492-22
	ohenol (m&p-cresol),	_	<10	<10	<10	<10
Benzoic act		<50	<50	<50	<50	<50
4-Chloroan		<20	<20	<20	<20	<20
	phthalene, ug/l	<10	<10	<10	<10	<10
2,4,5-Trick	nlorophenol, ug/l	<10	<10	<10	<10	<10
2-Nitroanil	line, ug/l	<50	<50	<50	<50	<50
3-Nitroanil	line, ug/l	<50	<50	<50	<50	<50
Dibenzofura	an, ug/l	<10	<10	<10	<10	<10
4-Nitroanil	line, ug/l	<50	<50	<50	<50	<50
Surrogate-2	2FP	80 %	71 %	82 %	80 %	84 %
Surrogate-I	PHL	84 %	91 %	92 %	87 %	97 %
Surrogate-1	NBZ	84 %	86 %	92 %	92 %	94 %
Surrogate-2	2FBP	80 %	84 %	88 %	88 %	84 %
Surrogate-1	TBP	110 %	100 ዩ	100 %	100 %	100 %
Surrogate-1	ГРН	26 %	36 %	36 %	44 %	26 %
Date Extra	cted	11.21.95	11.21.95	11.21.95	11.21.95	11.21.95
Date Analyz	zed	12.02.95	12.02.95	12.02.95	12.02.95	12.02.95
Arsenic (601						
Arsenic (60	010), mg/l	0.015	<0.010	0.086	0.017	0.011
Date Analyz		12.08.95	12.08.95	12.08.95	12.08.95	12.08.95

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

		REPORT (OF RESULTS		DATE/	Page 38
LOG NO	SAMPLE DESCRIPTI	ON , LIQUID S	AMPLES		TIME SAMPLE	D
56492-18	9060				11-16-95/13	
56492-19	9063				11-16-95/13	
56492-20	9064				11-16-95/13	
56492-21	9066				11-16-95/14	
56492-22					11-16-95/15	525
PARAMETER		56492-18	56492-19	56492-20	56492-21	56492-22
Barium (603						
·		0.21	0.091	0.27	0.30	0.20
	yzed	12.08.95				
Cadmium (60	_					
-	6010), mg/l	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Date Analy					12.08.95	
Chromium (='					
-	(6010), mg/l	0.041	0.017	0.059	0.048	0.029
Date Analy					12.08.95	
Lead (6010)	-					
Lead (601)		0.011	0.0060	0.020	0.014	0.010
Date Analy	· -	12.08.95	12.08.95	12.08.95	12.08.95	12.08.95
Mercury	•		•			
_	7470), mg/l	<0.00020	<0.00020	0.00020	<0.00020	<0.00020
Date Analy		12.01.95	12.01.95	12.01.95	12.01.95	12.01.95
_	Group (531.1)					
Aldicarb,	ug/l				<0.50	
Date Analy	yzed	12.02.95	12.02.95	12.02.95	12.02.95	12.02.95
Batch ID	_	•••				

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

		REPORT	OF RESULTS		DATE/	Page 39
LOG NO	SAMPLE DESCRIPTION ,	LIQUID S	SAMPLES		TIME SAMPL	ED
	9069 9070 9071 9074 9075				11-16-95/1 11-16-95/1 11-16-95/1 11-17-95/0	700 735 855
PARAMETER		56492-23	56492-24	56492-25	56492-26	56492-27
Chloromethar Vinyl chlor Chloroethar Methylene of (Dichlorom Acetone, ug Carbon disu 1,1-Dichlor 1,1-Dichlor trans-1,2-E Chloroform, 1,2-Dichlor 2-Butanone 1,1,1-Trich Carbon tetr Vinyl aceta	ne, ug/l ride, ug/l re, ug/l re, ug/l rehloride nethane), ug/l roethene, ug/l roethane, ug/l rachloride, ug/l rachloride, ug/l ree, ug/l	<5.0 <5.0 <25 <5.0 <5.0 <10	<10 <10 <10 <10 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <10 <5.0	<10 <10 <10 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.	<10 <10 <10 <5.0 <25 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <10	<10 <10 <10 <10 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.
	romethane, ug/l rachloroethane, ug/l	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0	<5.0 <5.0

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

		REPORT	OF RESULTS			Page 40
					DATE/	
LOG NO	SAMPLE DESCRIPTION ,	LIQUID S.	AMPLES		TIME SAMPLED	
56492-23	9069				11-16-95/1600	1
56492-24	9070				11-16-95/1700	
56492-25	9071				11-16-95/1735	
56492-26	9074				11-17-95/0855	
56492-27	9075	9009	7570	0.01	11-17-95/0925	2-25
PARAMETER	!	56492-23	56492-24	56492-25		56492-27
1,2-Dichlo	ropropane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
-	Dichloropropene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroe	thene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Dibromochl	oromethane, ug/l	<5.0	<5.0	<5.0	<510	<5.0
1,1,2-Tric	hloroethane, ug/l	<5.0	<5.0	<5.0	5.0	<5.0
Benzene, u	g/l	<5.0	<5.0	<5.0	<5.0	<5.0
cis-1,3-Di	chloropropene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
2-Chloroet	hylvinyl ether, ug/l	<50	<50	<50	<50	<50
Bromoform,	ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
2-Hexanone	, ug/l	<25	<25	<25	<25	<25
4-Methyl-2	-pentanone (MIBK), ug.	/1 <25	<25	<25	<25	. <25
Tetrachlor	oethene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Toluene, u	g/l	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenz	ene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzer	· •	<5.0	<5.0	<5.0	<5.0	<5.0
Styrene, u	g/l	<5.0	<5.0	<5.0	<5.0	<5.0
Xylenes, u	g/l	<5.0	<5.0	<5.0	<5.0	<5.0
Surrogate	- Toluene-d8	110 %	111 %	111 %	108 %	110 %
_	 4-Bromofluorobenzene 		103 %	105 %	102 %	102 %
_	- 1,2-Dichloroethane-		92 %	91 %	92 %	91 %
Date Analy:	zed :	11.30.95	11.30.95	11.30.95	11.30.95	11.30.95

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol

		REPORT C	F RESULTS			Page 41
					DATE/	
LOG NO	SAMPLE DESCRIPTION ,	LIQUID SA	MPLES		TIME SAMPLED	
					11 16 05/1606	
56492-23	9069				11-16-95/1600	
56492-24	9070				11-16-95/1700	
56492-25	9071				11-16-95/1735	
56492-26	9074	•	· ·	_ ~	11-17-95/0855	
56492-27	9075	-10.67	ジュニ) ファン/	11-17-95/0925	2.75
PARAMETER	!	56492-23	56492-24	56492-25	56492-26	56492-27
Semivolatile	e Organics (8270)					
	robenzene, ug/l	<10	<10	<10	<10	<10
-	robenzene, ug/l	<10	<10	<10	<10	<10
	ethane, ug/l	<10	<10	<10	<10	<10
	roethyl)ether, ug/l	<10	<10	<10	<10	<10
	robenzene, ug/l	<10	<10	<10	<10	<10
bis(2-Chlo	roisopropyl)ether, ug	/1 <10	<10	<10	<10	<10
n-Nitrosod	i-n-propylamine, ug/l	<10	<10	<10	<10	<10
Nitrobenze	ne, ug/l	<10	<10	<10	<10	<10
Hexachlorol	butadiene, ug/l	<10	<10	<10	<10	<10
1,2,4-Trick	hlorobenzene, ug/l	<10	<10	<10	<10	<10
Isophorone	, ug/l	<10	<10	<10	<10	<10
Naphthalen	e, ug/l	<10	<10	<10	<10	<10
bis(2-Chlo	roethoxy) methane, ug/	1 <10	<10	<10	<10	<10
Hexachloro	cyclopentadiene, ug/l	<10	<10	<10	<10	<10
2-Chlorona	phthalene, ug/l	<10	<10	<10	<10	<10
Acenaphthy:	lene, ug/l	<10	<10	<10	<10	<10
Acenaphther	ne, ug/l	<10	<10	<10	<10	<10
Dimethylph	thalate, ug/l	<10	<10	<10	<10	<10
2,6-Dinitro	otoluene, ug/l	<10	<10	<10	<10	<10

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

		REPORT	OF RESULTS			Page 42
					DATE/	
LOG NO	SAMPLE DESCRIPTION ,	LIQUID S	AMPLES		TIME SAMPLE	D
56492-23	9069				11-16-95/16	
56492-24	9070				11-16-95/17	
56492-25	9071				11-16-95/17	
56492-26	9074				11-17-95/08	
56492-27	9075				11-17-95/09	25
PARAMETER		56492-23	56492-24	56492-25	56492-26	56492-27
Fluorene,		<10	<10	<10	<10	<10
•	enylphenyl ether, ug/		<10	<10	<10	<10
_	otoluene, ug/l	<10	<10	<10	<10	<10
	halate, ug/l	<10	<10	<10		<10
	iphenylamine/Diph	<10	<10	<10	<10	<10
enylamine						
-	benzene, ug/l	<10	<10	<10	<10	<10
	nyl phenyl ether, ug/	1 <10	<10	<10	<10	<10
Phenanthre		<10	<10	<10	<10	<10
Anthracene	· · · · · · · · · · · · · · · · · · ·	<10	<10	<10	<10	<10
Di-n-butyl	phthalate, ug/l	<10	<10	<10	<10	<10
Fluoranther	ne, ug/l	<10	<10	<10	<10	<10
Pyrene, ug,	/1	<10	<10	<10	<10	<10
Benzidine,	ug/l	<80	<80	<80	<80	<80
Butylbenzyl	lphthalate, ug/l	<10	<10	<10	<10	<10
bis(2-Ethy	lhexyl)phthalate, ug/	l <10	<10	<10	<10	<10
Chrysene, u	ug/l	<10	<10	<10	<10	<10
Benzo(a) ant	thracene, ug/l	<10	<10	<10	<10	<10
3,3'-Dichlo	probenzidine, ug/l	<20	<20	<20	<20	<20
Di-n-octyl	phthalate, ug/l	<10	<10	<10	<10	<10

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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		REPORT (OF RESULTS		DATE/	Page 43
LOG NO	SAMPLE DESCRIPTION	, LIQUID S	AMPLES		TIME SAMPLED	
56492-23	9069				11-16-95/160	0
56492-24	9070				11-16-95/170	
56492-25	9071				11-16-95/173	
	9074				11-17-95/085	
56492-27	9075				11-17-95/092	5
PARAMETER		56492-23		56492-25	56492-26	56492-27
	uoranthene, ug/l	<10	<10	<10	<10	<10
	uoranthene, ug/l	<10	<10	<10	<10	<10
Benzo(a)py		<10	<10	<10	<10	<10
	,3-cd)pyrene, ug/l	<10	<10	<10	<10	<10
Dibenzo(a,	h) anthracene, ug/l	<10	<10	<10	<10	<10
Benzo(g,h,:	i)perylene, ug/l	<10	<10	<10	<10	<10
N-Nitrosod:	imethylamine, ug/l	<10	<10	<10	<10	<10
2-Chlorophe	enol, ug/l	<10	<10	<10	<10	<10
2-Nitropher	nol, ug/l	<10	<10	<10	<10	<10
Phenol, ug	/1	<10	<10	<10	<10	<10
2,4-Dimethy	ylphenol, ug/l	<10	<10	<10	<10	<10
2,4-Dichlor	rophenol, ug/l	<50	<50	<50	<50	<50
2,4,6-Trick	nlorophenol, ug/l	<10	<10	<10	<10	<10
4-Chloro-3	-methylphenol, ug/l	<10	<10	<10	<10	<10
2,4-Dinitro	ophenol, ug/l	<50	<50	<50	<50	<50
2-Methyl-4	,6-dinitrophenol, ug,	/1 <50	<50	<50	<50	<50
	ophenol, ug/l	<50	<50	<50	<50	<50
4-Nitropher		<50	<50	<50	<50	<50
Benzyl alco		<10	<10	<10	<10	<10
2-Methylphe	enol (o-cresol), ug/l	l <10	<10	<10	<10	<10

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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			report	OF RESULTS		DATE/	Page 44
LOG NO	SAMPLE	DESCRIPTION	, LIQUID	SAMPLES		TIME SAMPLE)
56492-23	9069					11-16-95/160	
56492-24	9070					11-16-95/170	
56492-25	9071					11-16-95/173	
56492-26	9074					11-17-95/085	
56492-27	9075					11-17-95/092	25
PARAMETER			56492-23	56492-24	56492-25	56492-26	56492-27
3&4-Methvlr	henol	(m&p-cresol),	ug/1 <10	<10	<10	<10	<10
Benzoic ac		_	<50		<50	<50	<50
4-Chloroan	iline, u	1g/l	<20	<20	<20	<20	<20
2-Methylnar	hthaler	ne, ug/l	<10	<10	<10	<10	<10
2,4,5-Trich	lorophe	enol, ug/l	<10	<10	<10	<10	<10
2-Nitroanil	Line, ug	g/l	<50	<50	<50		<50
3-Nitroanil	line, ug	₃ /1	<50	<50	<50	<50	
Dibenzofura	n, ug/1	L	<10	<10	<10	<10	<10
4-Nitroanil	line, ug	g/l	<50			<50	
Surrogate-2	2FP		82 %	82 %	72 %	76 %	•
Surrogate-1	PHL		85 %	94 %		85 %	
Surrogate-1	NBZ		96 %				
Surrogate-2	2FBP		86 %	86 %	76 %	78 %	
Surrogate-1	rbp		100 %			110 %	
Surrogate-1	rph -		22 %				
Date Extra	cted		11.21.95	11.21.95	11.21.95		
Date Analy:	zed		12.02.95	12.02.95	12.02.95	12.02.95	12.02.95
Arsenic (601							
Arsenic (60	010), mg	g/l	0.020		· ·		
Date Analy:	zed		12.08.95	12.08.95	12.08.95	12.08.95	12.08.95

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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		REPORT	OF RESULTS	,		Page 45
LOG NO	SAMPLE DESCRIPTION	, LIQUID S	AMPLES		DATE/ TIME SAMPLE	D
56492-23 56492-24 56492-25 56492-26 56492-27	9070 9071 9074				11-16-95/16 11-16-95/17 11-16-95/17 11-17-95/08 11-17-95/09	00 35 55
PARAMETER		56492-23	56492-24	56492-25	56492-26	
Barium (6010 Barium (6010 Date Analyz Cadmium (6010 Cadmium (6010 Date Analyz Chromium (6010) Lead (6010)	0) 10), mg/l 2ed 10) 010), mg/l 2ed 5010), mg/l 2ed	0.24 12.08.95 <0.0050 12.08.95 0.058 12.08.95	0.36 12.08.95 <0.0050 12.08.95 0.077 12.08.95	2.3 12.08.95 0.0090 12.08.95 0.11 12.08.95	1.7 12.08.95 0.015 12.08.95 0.32 12.08.95	0.29 12.08.95 <0.0050 12.08.95 0.15 12.08.95
Date Analyz Mercury					12.08.95	
Date Analyz					0.0013 12.01.95	
Carbamate Gr Aldicarb, u Date Analyz	ıg/l	12.04.95	12.04.95	12.04.95	<0.50 12.04.95	12.04.95

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		REPORT	OF RESULTS		DATE/	Page 46
LOG NO	SAMPLE DESCRIPTION ,	LIQUID S	AMPLES		TIME SAMPLED	
56492-28	9077				11-17-28/102	 5
56492-29	9079				11-17-95/105	8
56492-30	9083				11-17-95/123	0
56492-31	9085				11-17-95/125	
56492-32	9087	9077	9079	9083	11-17-95/130) (5	5 9087
PARAMETER		56492-28	56492-29	56492-30	56492-31	56492-32
Volatiles by	y GC/MS (8260)					
Chlorometha	ane, ug/l	<10	<10	<10	<10	<10
Bromomethau		<10	<10	<10	<10	<10
Vinyl chlor		<10	<10	<10	<10	<10
Chloroethar	· ·	<10	<10	<10	<10	<10
Methylene (chloride methane), ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone, us		<25	<25	<25	<25	<25
	ılfide, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
	roethene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
-	roethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
trans-1,2-I	Dichloroethylene, ug/	1 <5.0	<5.0	<5.0	<5.0	<5.0
Chloroform,	, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
1,2-Dichlor	roethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
2-Butanone	(MEK), ug/l	<25	<25	<25	<25	<25
1,1,1-Trich	loroethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon tetr	rachloride, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl aceta	ite, ug/l	<10	<10	<10	<10	<10
Bromodichlo	promethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
1,1,2,2-Tet	rachloroethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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					_ •	-
		REPORT C	F RESULTS		DATE/	Page 47
LOG NO	SAMPLE DESCRIPTION ,	LIQUID SA	MPLES		TIME SAMPLED	
56492-28	9077				11-17-28/1029	
56492-29	9079				11-17-95/1058	3
56492-30	9083				11-17-95/1230	
56492-31	9085				11-17-95/1250)
56492-32	9087	000	2259	იეგ3	11-17-95/2309	9087
PARAMETER		56492-28	56492-29	56492-30	56492-31	56492-32
1,2-Dichlo	ropropane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
•	Dichloropropene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Trichloroet		<5.0	<5.0	<5.0	<5.0	<5.0
	promethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
	nloroethane, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene, u		<5.0	<5.0	<5.0	<5.0	<5.0
	chloropropene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
•	nylvinyl ether, ug/l	<50	<50	<50	<50	<50
Bromoform,		<5.0	<5.0	<5.0	<5.0	<5.0
2-Hexanone	, ug/l	<25	<25	<25	<25	<25
4-Methyl-2	-pentanone (MIBK), ug	/1 <25	<25	<25	<25	<25
Tetrachlor	oethene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Toluene, ug	g/l	<5.0	<5.0	<5.0	<5.0	<5.0
Chlorobenze	ene, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Ethylbenzer	ne, ug/l	<5.0	<5.0	<5.0	<5.0	<5.0
Styrene, ug	g/l	<5.0	<5.0	<5.0	<5.0	<5.0
Xylenes, ug	g/l	<5.0	<5.0	40	<5.0	<5.0
Surrogate -	- Toluene-d8	109 %	108 %	108 %	108 %	109 %
Surrogate -	- 4-Bromofluorobenzene	e 100 %	102 %	102 %	103 %	105 %
Surrogate -	- 1,2-Dichloroethane-	d4 92 %	91 %	92 %	92 %	92 %
Date Analy:	zed	11.30.95	11.30.95	11.30.95	11.30.95	12.01.95

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS Page 48 DATE/ TIME SAMPLED SAMPLE DESCRIPTION , LIQUID SAMPLES . TOG NO 11-17-28/1025 56492-28 9077 11-17-95/1058 56492-29 9079 11-17-95/1230 9083 56492-30 11-17-95/1250 56492-31 9085 11-17-95/1305 56492-32 9087 56492-31 56492-32 56492-29 56492-30 56492-28 _____ Semivolatile Organics (8270) 1,3-Dichlorobenzene, ug/l <10 <10 <10 <10 <10 <10 <10 <10 1,4-Dichlorobenzene, ug/l <10 <10 <10 <10 <10 Hexachloroethane, uq/l <10 <10 <10 <10 <10 <10 bis(2-Chloroethyl)ether, ug/l <10 <10 1,2-Dichlorobenzene, ug/l <10 <10 <10 <10 <10 <10 <10 <10 bis(2-Chloroisopropyl)ether, ug/l <10 <10 <10 <10 <10 n-Nitrosodi-n-propylamine, ug/l <10 <10 <10 <10 Nitrobenzene, ug/l <10 <10 <10 <10 <10 Hexachlorobutadiene, ug/l <10 <10 <10 <10 <10 1,2,4-Trichlorobenzene, ug/l <10 <10 <10 <10 <10 <10 <10 Isophorone, ug/l <10 <10 <10 <10 Naphthalene, ug/l <10 <10 <10 <10 bis (2-Chloroethoxy) methane, ug/l <10 <10 <10 <10 <10 <10 Hexachlorocyclopentadiene, ug/l <10 2-Chloronaphthalene, ug/l <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 Acenaphthylene, ug/l <10 <10 <10 Acenaphthene, ug/l <10 <10 <10 <10 <10 Dimethylphthalate, ug/l <10 <10 <10 <10 <10 2,6-Dinitrotoluene, ug/l <10

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS Page 49 DATE/ TIME SAMPLED SAMPLE DESCRIPTION , LIQUID SAMPLES LOG NO ______ 11-17-28/1025 56492-28 9077 9079 11-17-95/1058 56492-29 9083 11-17-95/1230 56492-30 11-17-95/1250 9085 56492-31 56492-32 11-17-95/1305 9087 56492-28 56492-29 56492-30 56492-31 56492-32 PARAMETER <10 Fluorene, uq/l <10 <10 <10 <10 <10 <10 4-Chlorophenylphenyl ether, ug/l <10 <10 <10 2,4-Dinitrotoluene, ug/l <10 <10 <10 <10 <10 <10 <10 <10 Diethylphthalate, ug/l <10 <10 N-Nitrosodiphenylamine/Diph <10 <10 <10 <10 <10 enylamine, ug/l Hexachlorobenzene, ug/l <10 <10 <10 <10 <10 <10 4-Bromophenyl phenyl ether, ug/l <10 <10 <10 <10 <10 <10 <10 Phenanthrene, ug/1 <10 <10 Anthracene, ug/l <10 <10 <10 <10 <10 <10 Di-n-butylphthalate, ug/l <10 <10 <10 <10 Fluoranthene, ug/l <10 <10 <10 <10 <10 <10 Pyrene, ug/l <10 <10 <10 <80 <80 <80 <80 <80 Benzidine, ug/l Butylbenzylphthalate, ug/l <10 <10 <10 <10 <10 <10 bis(2-Ethylhexyl)phthalate, ug/l <10 30 <10 <10 Chrysene, ug/l <10 <10 <10 <10 <10 <10 <10 <10 Benzo(a) anthracene, ug/l <10 <10 3,3'-Dichlorobenzidine, ug/l <20 <20 <20 <20 <20 Di-n-octylphthalate, ug/l <10 <10 <10 <10 <10

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

					•	
		REPORT (OF RESULTS			Page 50
			•		DATE/	
LOG NO	SAMPLE DESCRIPTION	, LIQUID S	AMPLES	·	TIME SAMPLE)
56492-28	9077				11-17-28/102	25
56492-29	9079				11-17-95/109	58
56492-30	9083				11-17-95/123	30
56492-31	9085				11-17-95/129	50
56492-32	9087				11-17-95/130)5
PARAMETER		56492-28			56492-31	
Benzo(b) f]	luoranthene, ug/l	<10	<10	<10	<10	
	luoranthene, ug/l	<10	<10	<10	<10	<10
	rene, ug/l	<10	<10	<10	<10	<10
	2,3-cd)pyrene, ug/1	<10	<10	· <10	<10	<10
	h) anthracene, ug/l	<10	<10	<10	<10	<10
	i)perylene, ug/l	<10	<10	<10	<10	<10
	limethylamine, ug/l	<10	<10	<10	<10	<10
	nenol, ug/l	<10	<10	<10	<10	<10
2-Nitrophe		<10	<10	<10	<10	<10
Phenol, ug	g/1	<10	<10	<10	<10	<10
2,4-Dimeth	ylphenol, ug/l	<10	<10	<10	<10	<10
2,4-Dichlo	prophenol, ug/l	<50	<50	<50	<50	<50
2,4,6-Tric	chlorophenol, ug/l	<10	<10	<10	<10	<10
4-Chloro-3	3-methylphenol, ug/l	<10	<10	<10	<10	<10
2,4-Dinitr	cophenol, ug/l	<50	<50	<50	<50	<50
2-Methyl-4	4,6-dinitrophenol, ug,	/1 <50	<50	<50	<50	<50
Pentachlor	cophenol, ug/l	<50	<50	<50	<50	<50
4-Nitrophe	enol, ug/l	<50	<50	<50	<50	<50
Benzyl alo	cohol, ug/l	<10	<10	<10	<10	· <10
2-Methylph	nenol (o-cresol), ug/l	L <10	<10	<10	<10	<10

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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					•	-
		REPORT (OF RESULTS		DATE/	Page 51
LOG NO	SAMPLE DESCRIPTION	, LIQUID S	AMPLES		TIME SAMPLE	
	0077				11-17-28/10	25
56492-28 56492-29	9077 9079				11-17-95/105	
	9083				11-17-95/123	
56492-31					11-17-95/125	
56492-32					11-17-95/130	
PARAMETER					56492-31	56492-32
3&4-Methyl	phenol (m&p-cresol),		<10			<10
Benzoic ac		<50	<50	<50	<50	<50
	iline, ug/l	<20	<20	<20	<20	<20
	phthalene, ug/l	<10	<10	<10	<10	<10
	hlorophenol, ug/l	<10	<10	<10	<10	<10
2-Nitroani		<50	<50	<50	<50	<50
3-Nitroani	line, ug/l	<50	<50	<50	<50	<50
Dibenzofura		<10	<10	<10	<10	<10
4-Nitroani	line, ug/l	<50	<50	<50	<50	<50
Surrogate-	2FP	78 %	63 %		55 %	55 %
Surrogate-	PHL	88 %	91 %	92 %	72 %	84 %
Surrogate-1	NBZ	94 %	92 %	102 %	86 %	96 %
Surrogate-	2FBP	78 %	76 %			80 %
Surrogate-	rep	76 %	79 %	110 %	90 ક	85 %
Surrogate-	TPH	19 %	19 %	32 %	32 %	18 %
Date Extra	cted	11.21.95	11.21.95	11.21.95	11.21.95	11.21.95
Date Analy:	zed	12.02.95	12.03.95	12.03.95	12.03.95	12.03.95
Arsenic (60	10)					
Arsenic (6	010), mg/l	0.010	0.031	<0.010	0.011	0.011
Date Analy	zed	12.08.95	12.08.95	12.08.95	12.08.95	12.08.95

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Mr. Mark Corbin
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		REPORT	OF RESULTS			Page 52
LOG NO	SAMPLE DESCRIPTION	, LIQUID S	AMPLES		DATE/ TIME SAMPLE	D
56492-28					11-17-28/10	
56492-29					11-17-95/10	
56492-30					11-17-95/12	
56492-31					11-17-95/12	
56492-32	9087				11-17-95/13	05
PARAMETER					56492-31	
Barium (601)						
	10), mg/l	0.53	0.41	0.071	0.15	0.11
Date Analy:	zed	12.08.95	12.08.95	12.08.95	12.08.95	12.08.95
Cadmium (60:						
Cadmium (60	010), mg/l	<0.0050	0.0090	<0.0050	<0.0050	<0.0050
Date Analy:	zed	12.08.95	12.08.95	12.08.95	12.08.95	12.08.95
Chromium (60						
Chromium (6010), mg/l				0.052	
Date Analy:	zed	12.08.95	12.08.95	12.08.95	12.08.95	12.08.95
Lead (6010)						
), mg/l				0.023	
Date Analy:	zed	12.08.95	12.08.95	12.08.95	12.08.95	12.08.95
Mercury						
Mercury (74					0.00024	
Date Analy:		12.01.95	12.01.95	12.01.95	12.01.95	12.01.95
	roup (531.1)				-	
Aldicarb, w	-				<0.50	
Date Analys	zed	12.04.95	12.04.95	12.04.95	12.04.95	12.04.95

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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	REPORT OF RESULT		Page 53
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		DATE/ TIME SAMPLED
56492-33	9089		11-17-95/1335
PARAMETER		56492-33	
Volatiles by	y GC/MS (8260)		
Chlorometha		<10	
Bromomethan	·	<10	
Vinyl chlor		<10	
Chloroethau	ne, ug/l	<10	
Methylene o	chloride (Dichloromethane), ug/l	<5.0	
Acetone, u	g/l	<25	
Carbon dist	ulfide, ug/l	<5.0	
1,1-Dichlo	roethene, ug/l	<5.0	
1,1-Dichlor	roethane, ug/l	<5.0	
trans-1,2-	Dichloroethylene, ug/l	<5.0	
Chloroform	, ug/l	<5.0	
1,2-Dichlor	roethane, ug/l	<5.0	
2-Butanone	(MEK), ug/l	<25	
1,1,1-Trick	nloroethane, ug/l	<5.0	
Carbon teti	rachloride, ug/l	<5.0	
Vinyl aceta	ate, ug/l	<10	
Bromodichlo	promethane, ug/l	<5.0	
1,1,2,2-Tet	trachloroethane, ug/l	<5.0	
1,2-Dichlor	ropropane, ug/l	<5.0	
trans-1,3-	Dichloropropene, ug/l	<5.0	
Trichloroet	thene, ug/l	<5.0	
Dibromochlo	promethane, ug/l	<5.0	
1,1,2-Trich	nloroethane, ug/l	<5.0	

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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	I	REPORT OF RESULTS	D	Page	54
LOG NO	SAMPLE DESCRIPTION , L:	QUID SAMPLES	DATE/ TIME SAMPLED		
56492-33			11-17-95/1335		
PARAMETER		56492-33			
Benzene, u		<5.0			_
-	chloropropene, ug/l	<5.0			
•	hylvinyl ether, ug/l	<50			
Bromoform,	ug/l	<5.0			
2-Hexanone	, ug/l	<25			
4-Methyl-2	-pentanone (MIBK), ug/l	<25			
Tetrachlor	oethene, ug/l	<5.0			
Toluene, u	g/l	<5.0			
Chlorobenze	ene, ug/l	<5.0			
Ethylbenze	ne, ug/l	<5.0			
Styrene, u	g/l	<5.0			
Xylenes, u	g/l	<5.0			
Surrogate	- Toluene-d8	109 %			
Surrogate	- 4-Bromofluorobenzene	103 %			
Surrogate	- 1,2-Dichloroethane-d4	93 %			
Date Analy	zed	12.01.95			

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
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15850 Crabbs Branch Way #300
Rockville, MD 20855

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		REPORT OF RESULTS	Page 55
LOG NO	SAMPLE DESCRIPTION , I	IQUID SAMPLES	•
56492-33	9089		11-17-95/1335
PARAMETER		56492-33	
Semivolatile	e Organics (8270)		
1,3-Dichlor	robenzene, ug/l	<10	
1,4-Dichlor	robenzene, ug/l	<10	
Hexachloro	ethane, ug/l	<10	
bis(2-Chlor	roethyl)ether, ug/l	<10	
1,2-Dichlor	robenzene, ug/l	<10	
bis(2-Chlor	roisopropyl)ether, ug/l	<10	
n-Nitrosod	i-n-propylamine, ug/l	<10	
Nitrobenzer	ne, ug/l	<10	
Hexachlorob	outadiene, ug/l	<10	
1,2,4-Trick	nlorobenzene, ug/l	<10	
Isophorone	, ug/1	<10	
Naphthalene	e, ug/l	<10	
bis(2-Chlor	roethoxy) methane, ug/l	<10	
Hexachloro	cyclopentadiene, ug/l	<10	
2-Chloronag	phthalene, ug/l	<10	
Acenaphthy	lene, ug/l	<10	
Acenaphther	ie, ug/l	<10	
Dimethylpht	chalate, ug/l	<10	
2,6-Dinitro	otoluene, ug/l	<10	
Fluorene, u	ıg/l	<10	
4-Chlorophe	enylphenyl ether, ug/l	<10	
2,4-Dinitro	otoluene, ug/l	<10	
Diethylphth	nalate, ug/l	<10	

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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	REPORT OF I	RESULTS	DATE/	Page 56
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPI	LES	TIME SAMPLED	
56492-33	9089		11-17-95/1335	
PARAMETER		56492-33		
N-Nitrosodi	iphenylamine/Diphenylamine, ug/l	<10		
Hexachloro	penzene, ug/l	<10		
4-Bromopher	nyl phenyl ether, ug/l	<10		
Phenanthrer	ne, ug/l	<10		
Anthracene,	, ug/l	<10		
Di-n-butylp	phthalate, ug/l	<10		
Fluoranther	ne, ug/l	<10		
Pyrene, ug/	/1	<10		
Benzidine,	ug/l	<80		
Butylbenzyl	lphthalate, ug/l	<10		
bis(2-Ethy)	lhexyl)phthalate, ug/l	<10		
Chrysene, u	ıg/l	<10		
Benzo (a) ant	chracene, ug/l	<10		
3,3'-Dichlo	probenzidine, ug/l	<20		
Di-n-octylp	ohthalate, ug/l	<10		
Benzo(b)flu	oranthene, ug/l	<10		
Benzo(k)flu	oranthene, ug/l	<10		
Benzo (a) pyr	rene, ug/l	<10		
	3-cd)pyrene, ug/l	<10		
	n) anthracene, ug/l	<10		
Benzo(g,h,i	i)perylene, ug/l	<10		
	methylamine, ug/l	<10		
2-Chlorophe	<u>-</u>	<10		
2-Nitropher		<10		

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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	REPORT O	F RESULTS	Page 57
			DATE/
LOG NO	SAMPLE DESCRIPTION , LIQUID SAM	MPLES	TIME SAMPLED
56492-33	9089		11-17-95/1335
PARAMETER		56492-33	
Phenol, ug		<10	
-	ylphenol, ug/l	<10	
	rophenol, ug/l	<50 <10	
	nlorophenol, ug/l		
	-methylphenol, ug/l	<10	
	ophenol, ug/l	<50	
•	6-dinitrophenol, ug/l	<50	
	ophenol, ug/l	<50	
4-Nitropher		<50	
Benzyl alco		<10	
	enol (o-cresol), ug/l	<10	
	phenol (m&p-cresol), ug/l	<10	•
Benzoic act	· · · · · ·	<50	
4-Chloroan		. <20	
	ohthalene, ug/l	<10	
	nlorophenol, ug/l	<10	
2-Nitroanil		<50	
3-Nitroanil		<50	
Dibenzofura		<10	
4-Nitroanil		<50	
Surrogate-2	PP P	48 %	
Surrogate-E	PHL	76 %	
Surrogate-N	TBZ	94 %	
Surrogate-2	FBP	76 %	
Surrogate-1	TBP	86 %	
Surrogate-1	ישר	20 %	
Date Extra	cted	11.21.95	
Date Analyz	ed	12.03.95	

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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REPORT OF RESULTS Page 58 DATE/ LOG NO TIME SAMPLED SAMPLE DESCRIPTION , LIQUID SAMPLES 11-17-95/1335 PARAMETER 56492-33 Arsenic (6010) Arsenic (6010), mg/l 0.11 Date Analyzed 12.08.95 Barium (6010) Barium (6010), mg/l 0.71 12.08.95 Date Analyzed Cadmium (6010) 0.0069 Cadmium (6010), mg/l Date Analyzed 12.08.95 Chromium (6010) 0.25 Chromium (6010), mg/l Date Analyzed 12.08.95 Lead (6010) Lead (6010), mg/l 0.075 12.08.95 Date Analyzed Mercury Mercury (7470), mg/l 0.00065 Date Analyzed 12.01.95 Carbamate Group (531.1) Aldicarb, ug/l <0.50 Date Analyzed 12.04.95

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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	R	EPORT OF RESULTS		DATE/	Page 59
LOG NO	SAMPLE DESCRIPTION , LI	QUID SAMPLES		TIME SAMPLED	
56492-34 56492-35			9572	11-16-95/0800 11-17-95/0800	
PARAMETER			56492-34	56492-35	
Volatiles by	y GC/MS (8260)				
Chlorometha	ane, ug/l		<10		
Bromomethau			<10		
Vinyl chlo	· •		<10		
Chloroetha			<10		
_	chloride (Dichloromethan	e), ug/l	<5.0		
Acetone, u			<25		
	ulfide, ug/l		<5.0		
•	roethene, ug/l		<5.0		
•	roethane, ug/l		<5.0		
•	Dichloroethylene, ug/l		<5.0		
Chloroform				<5.0	
•	roethane, ug/l	•	<5.0		
	(MEK), ug/l		. <25		
	nloroethane, ug/l		<5.0		
	rachloride, ug/l		<5.0		
Vinyl aceta			<10		
Bromodichle	oromethane, ug/l		<5.0		
1,1,2,2-Te	trachloroethane, ug/l		<5.0		
1,2-Dichlo	ropropane, ug/l			<5.0	
trans-1,3-1	Dichloropropene, ug/l		<5.0		
Trichloroe	thene, ug/l		<3.0		
Dibromochle	oromethane, ug/l		<5.0	<5.0	

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
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REPORT OF RESULTS		Page 60
-		
	11-16-95/0800	
	11-17-95/0800	
56492-34		
<5.0	<5.0	
<5.0	<5.0	
<5.0	<5.0	
<50	<50	
<5.0	<5.0	
<25	<25	
/1 <25	<25	•
<5.0	<5.0	
<5.0	<5.0	
<5.0	<5.0	
<5.0	<5.0	
<5.0	<5.0	
<5.0	<5.0	
107 %	109 %	
e 105 %	103 %	
d4 90 %	91 %	
11.30.95	11.30.95	
	LIQUID SAMPLES	DATE/ TIME SAMPLED 11-16-95/0800 11-17-95/0800 56492-34 56492-35 <pre></pre>

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPORT F	OR LIQUID SAMPLES		
56492-36 Method Blank 56492-37 LCS/LCS Duplicate % Recovery 56492-38 LCS % RPD			
PARAMETER	56492-36	56492-37	56492-38
Volatiles by GC/MS (8260)			
Chloromethane, ug/l	<10		
Bromomethane, ug/l	<10		
Vinyl chloride, ug/l	<10		
Chloroethane, ug/l	<10		
Methylene chloride (Dichloromethane), ug/l	<5.0		
Acetone, ug/l	<25		
Carbon disulfide, ug/l	<5.0		
1,1-Dichloroethene, ug/l	<5.0	95 %	1.4 %
1,1-Dichloroethane, ug/l	<5.0		
trans-1,2-Dichloroethylene, ug/l	<5.0		
Chloroform, ug/l	<5.0		
1,2-Dichloroethane, ug/l	<5.0		
2-Butanone (MEK), ug/l	<25		
1,1,1-Trichloroethane, ug/l	<5.0		
Carbon tetrachloride, ug/l	<5.0		
Vinyl acetate, ug/l	<10		
Bromodichloromethane, ug/l	<5.0		
1,1,2,2-Tetrachloroethane, ug/l	<5.0		
1,2-Dichloropropane, ug/l	<5.0		
trans-1,3-Dichloropropene, ug/l	<5.0		
Trichloroethene, ug/l	<5.0	106 %	2.8 %

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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Sampled By: Client

REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPORT			
56492-36 Method Blank 56492-37 LCS/LCS Duplicate % Recovery 56492-38 LCS % RPD			
PARAMETER		56492-37	56492-38
Dibromochloromethane, ug/l			
1,1,2-Trichloroethane, ug/l			
Benzene, ug/l		88 %	
cis-1,3-Dichloropropene, ug/l			
2-Chloroethylvinyl ether, ug/l	<50		
Bromoform, ug/l	<5.0		
2-Hexanone, ug/l	<25		
4-Methyl-2-pentanone (MIBK), ug/l			
Tetrachloroethene, ug/l	<5.0		
Toluene, ug/l	<5.0	90 %	5.8 %
Chlorobenzene, ug/l	<5.0	104 %	1.9 %
Ethylbenzene, ug/l	<5.0		
Styrene, ug/l	<5.0		
Xylenes, ug/l	<5.0		
Surrogate - Toluene-d8		108/108 %	
Surrogate - 4-Bromofluorobenzene	97 %	98/103 %	
Surrogate - 1,2-Dichloroethane-d4	87 %	91/91 %	
Date Analyzed	11.30.95	11.30.95	

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FO	R LIQUID SAMPLES		
	Market Minnle			
=	Method Blank			
	LCS/LCS Duplicate % Recovery	•		
56492-38	LCS & RPD			
PARAMETER			56492-37	56492-38
	e Organics (8270)	_		
•	robenzene, ug/l	<10		
•	robenzene, ug/l	<10	· - • ·	3 %
	ethane, ug/l	<10		
	roethyl)ether, ug/l	<10		
=	robenzene, ug/l			
	roisopropyl)ether, ug/l	<10		
	i-n-propylamine, ug/l	<10	100/98 %	2 %
Nitrobenze:	· · · · · · · · · · · · · · · · · · ·	<10		
	butadiene, ug/l	. <10		
	hlorobenzene, ug/l	<10	74/72 %	3 %
Isophorone	•	<10		
Naphthalen	• •	<10		
	roethoxy)methane, ug/l	<10		
	cyclopentadiene, ug/l	<10		
	phthalene, ug/l	<10		
Acenaphthy		<10		
Acenaphthe		. <10	82/80 %	2 %
	thalate, ug/l	<10		
	otoluene, ug/l	<10		
Fluorene,	- -	<10		
4-Chloroph	enylphenyl ether, ug/l	<10	~ ~ ~	

LOG NO: S5-56492
Received: 17 NOV 95
Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR	R LIQUID SAMPLES		
	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD			
PARAMETER		56492-36	56492-37	56492-38
2,4-Dinitro	otoluene, ug/l	<10	80/78 %	2 %
Diethylpht	halate, ug/l	<10		
N-Nitrosod	iphenylamine/Diphenylamine, ug/l	<10		
Hexachloro	benzene, ug/l	<10		
4-Bromopher	nyl phenyl ether, ug/l	<10		
Phenanthre		<10		
Anthracene	, ug/l	<10		
Di-n-butyl	phthalate, ug/l	<10		
Fluoranthe	ne, ug/l	<10		
Pyrene, ug	/1	<10	92/86 %	7 %
Benzidine,	ug/l	<80		
Butylbenzy	lphthalate, ug/l	<10		
bis(2-Ethy	lhexyl)phthalate, ug/l	<10		
Chrysene, w	ug/l	<10		
Benzo (a) ani	thracene, ug/l	<10		
3,3'-Dichlo	orobenzidine, ug/l	<20		
Di-n-octyl	phthalate, ug/l	<10		
Benzo(b)flu	uoranthene, ug/l	<10		
Benzo(k)flu	uoranthene, ug/l	<10		
Benzo (a) pyr	rene, ug/l	<10		
Indeno(1,2	,3-cd)pyrene, ug/l	. <10		
Dibenzo(a,	n)anthracene, ug/l	<10		

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPO			
	Method Blank LCS/LCS Duplicate % Recovery			
PARAMETER			56492-37	56492-38
N-Nitrosod 2-Chloroph 2-Nitrophe Phenol, ug 2,4-Dimeth 2,4-Dichlo 2,4,6-Tric 4-Chloro-3 2,4-Dinitr 2-Methyl-4 Pentachlor 4-Nitrophe Benzyl alc 2-Methylph 3&4-Methyl Benzoic ac 4-Chloroan	nol, ug/l /l ylphenol, ug/l rophenol, ug/l hlorophenol, ug/l -methylphenol, ug/l ophenol, ug/l ophenol, ug/l ophenol, ug/l hol, ug/l enol, ug/l enol (o-cresol), ug/l phenol (m&p-cresol), ug/l id, ug/l iline, ug/l	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	85/82 % 92/76 % 88/85 % 59/62 % 76/76 %	19 % 3 % 5 %
•	phthalene, ug/l hlorophenol, ug/l	<10 <10		
2-Nitroani 3-Nitroani	line, ug/l	<50 <50		

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS

	·			
	AMPLE DESCRIPTION , QC REPORT			
56492-36 M				
	CS/LCS Duplicate % Recovery			
56492-38 L	CS % RPD			
PARAMETER			56492-37	
Dibenzofuran	, ug/l	<10		
4-Nitroanili	ne, ug/l			
Surrogate-2F	P		79/77 %	
Surrogate-PH	L.		97/95 %	
Surrogate-NB	Z		82/82 %	
Surrogate-2F	BP		80/78 %	
Surrogate-TB	P	•	82/84 %	
Surrogate-TP	Ħ	74 %	86/82 🕏	
Date Extract	ed	11.21.95	11.21.95	
Date Analyze	đ	12.02.95	11.28.95	
Arsenic (6010)			
Arsenic (601	0), mg/l		89/85 %	4.6 %
Date Analyze	đ	12.08.95		
Barium (6010)		•		
Barium (6010), mg/l	<0.010	96/92 %	4.3 %
Date Analyze	đ	12.08.95		
Cadmium (6010)			
Cadmium (601	0), mg/l	<0.0050	92/88 %	4.4 %
Date Analyze	i.	12.08.95		
Chromium (601	0)			
Chromium (60:	10), mg/l	<0.010	95/92 😵	3.2 %
Date Analyze	i	12.08.95		

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
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Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQU	ID SAMPLES		
56492-36 56492-37 56492-38	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD			
PARAMETER		56492-36	56492-37	56492-38
Lead (6010)				
Lead (6010)), mg/l	<0.0050	92/88 %	4.4 %
Date Analy:		12.08.95	12.08.95	
Mercury				
Mercury (74	170), mg/l	<0.00020	91/95 %	4.3 %
Date Analy:		12.01.95	12.01.95	
Carbamate G	roup (531.1)			
Aldicarb, 1	ıg/1	<0.50	94/108 %	14 %
Date Analy:	zed	12.04.95	12.04.95	

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS

### DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID 10					
56492-39 Method Blank 56492-40 LCS/LCS Duplicate % Recovery 56492-41 LCS % RPD FARAMETER 56492-39 56492-40 56492-41 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <10	** *	· · · · · · · · · · · · · · · · · · ·			
PARAMETER 56492-39 56492-40 56492-41 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <10 Bromomethane, ug/kg dw <10 Bromomethane, ug/kg dw <10 Chloroethane, ug/kg dw <10 Chloroethane, ug/kg dw <5.0 Acetone, ug/kg dw <5.0 Carbon disulfide, ug/kg dw <5.0 Carbon disulfide, ug/kg dw <5.0 1,1-Dichloroethene, ug/kg dw <5.0 90/84 % 6.9 % 6.9 % 1,1-Dichloroethane, ug/kg dw <5.0 trans-1,2-Dichloroethane, ug/kg dw <5.0 2-Butanone (MEK), ug/kg dw <5.0 2-Butanone (MEK), ug/kg dw <5.0 2-Butanone (MEK), ug/kg dw <5.0 Carbon tetrachloride, ug/kg dw <5.0	56492-39 56492-40 56492-41	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD			
Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <10	PARAMETER		56492-39	56492-40	56492-41
	Volatiles be Chlorometh Bromometha Vinyl chloroetha Methylene Acetone, u Carbon dis 1,1-Dichlo trans-1,2-Chloroform 1,2-Dichlo 2-Butanone 1,1,1-Tric Carbon tet Vinyl acet Bromodichl 1,1,2,2-Te 1,2-Dichlo trans-1,3-	by GC/MS (8260) hane, ug/kg dw he, ug/kg dw helide, ug/kg dw heroethene, ug/kg dw heroethane, ug/kg dw	<10 <10 <10 <10 <5.0 <25 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.	90/84 %	6.9 %

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol

Sampled By: Client

REPORT OF RESULTS

LOG NO S	SAMPLE DESCRIPTION , QC REPOR	T FOR SOLID/SEMISOLID		
56492-39 M 56492-40 I 56492-41 I	CCS/LCS Duplicate % Recovery			
PARAMETER		56492-39	56492-40	56492-41
1,1,2-Trichl Benzene, ug/ cis-1,3-Dich 2-Chloroethy Bromoform, u 2-Hexanone, 4-Methyl-2-p	nloropropene, ug/kg dw rlvinyl ether, ug/kg dw ng/kg dw ug/kg dw nentanone (MIBK), ug/kg dw nethene, ug/kg dw rkg dw nethene, ug/kg dw nethene, ug/kg dw nethene, ug/kg dw		92/89 %	
Styrene, ug/ Xylenes, ug/ Surrogate - Surrogate -	kg dw kg dw Toluene-d8 4-Bromofluorobenzene 1,2-Dichloroethane-d4	<5.0 <5.0 91 % 115 % 93 %	109/103	

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

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Apex Environmental, Inc.
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Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPOR	T FOR SOLID/SEMISOLID		
56492-39 Method Blank 56492-40 LCS/LCS Duplicate % Recovery 56492-41 LCS % RPD			
PARAMETER	56492-39	56492-40	56492-41
Semivolatile Organics (8270)			
1,3-Dichlorobenzene, ug/kg dw	<330		
1,4-Dichlorobenzene, ug/kg dw	<330	70/65 %	7 ቄ
Hexachloroethane, ug/kg dw	<330		
bis(2-Chloroethyl)ether, ug/kg dw	<330		
1,2-Dichlorobenzene, ug/kg dw	<330		
bis(2-Chloroisopropyl)ether, ug/kg dw	<330		
n-Nitrosodi-n-propylamine, ug/kg dw	<330	82/76 %	8 %
Nitrobenzene, ug/kg dw	<330		
Hexachlorobutadiene, ug/kg dw	<330		
1,2,4-Trichlorobenzene, ug/kg dw	<330	76/70 ቄ	8 %
Isophorone, ug/kg dw	<330		
Naphthalene, ug/kg dw	<330		
bis(2-Chloroethoxy)methane, ug/kg dw	<330		
Hexachlorocyclopentadiene, ug/kg dw	<330		
2-Chloronaphthalene, ug/kg dw	<330		
Acenaphthylene, ug/kg dw	<330		
Acenaphthene, ug/kg dw	<330	76/76 %	0 %
Dimethylphthalate, ug/kg dw	<330		
2,6-Dinitrotoluene, ug/kg dw	<330		
Fluorene, ug/kg dw	<330		
4-Chlorophenylphenyl ether, ug/kg dw	<330		

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

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Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SO	OLID/SEMISOLID		
56492-39 56492-40 56492-41	LCS/LCS Duplicate % Recovery LCS % RPD			
PARAMETER			56492-40	56492-41
2,4-Dinitro Diethylphto N-Nitrosod Hexachlorol 4-Bromopher Phenanthren Anthracene Di-n-butyl Fluoranther Pyrene, ug Benzidine, Butylbenzy bis (2-Ethyl Chrysene, u	phthalate, ug/kg dw ne, ug/kg dw /kg dw ug/kg dw lphthalate, ug/kg dw lhexyl)phthalate, ug/kg dw	<330 <330 <330 <330 <330 <330 <330 <330	76/70 %	
3,3'-Dichlo	chracene, ug/kg dw probenzidine, ug/kg dw	<330 <660		
Benzo(b)flu	phthalate, ug/kg dw uoranthene, ug/kg dw uoranthene, ug/kg dw	<330 <330 <330		
Indeno(1,2,	rene, ug/kg dw ,3-cd)pyrene, ug/kg dw n)anthracene, ug/kg dw	<330 <330 <330	•••	

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

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Project: 097.001 Thiokol

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT	FOR SOLID/SEMISOLID		
	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD			
PARAMETER		56492-39	56492-40	56492-41
PAROMETER				
Benzo(g,h,	i)perylene, ug/kg dw	<330		
	imethylamine, ug/kg dw	<330		
2-Chloroph	enol, ug/kg dw	<330	76/73 %	4 %
2-Nitrophe	nol, ug/kg dw	<330		
Phenol, ug	/kg dw	<330	79/73 %	8 %
2,4-Dimeth	ylphenol, ug/kg dw	<330		
2,4-Dichlo	rophenol, ug/kg dw	<330		
2,4,6-Tric	hlorophenol, ug/kg dw	<330		
	-methylphenol, ug/kg dw	<330	88/82 %	7 %
•	ophenol, ug/kg dw	<1700		
2-Methyl-4	,6-dinitrophenol, ug/kg dw	<1700		
	ophenol, ug/kg dw	<1700	- ,	4 %
4-Nitrophe	nol, ug/kg dw	<1700	54/52 %	4 %
Benzyl alc	ohol, ug/kg dw	<330		
2-Methylph	enol (o-cresol), ug/kg dw	<330		
3&4-Methyl	phenol (m&p-cresol), ug/kg dw	<330		
Benzoic ac	id, ug/kg dw	<1700		
4-Chloroan	iline, ug/kg dw	<660		
2-Methylna	ohthalene, ug/kg dw	<330		
	nlorophenol, ug/kg dw	<330		
	line, ug/kg dw	<1700		
3-Nitroani	line, ug/kg dw	<1700		

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

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Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol Sampled By: Client

REPORT OF RESULTS

LOG NO SAMPLE DESC	RIPTION , QC REPORT FOR SOLID/SEMISOLID		
56492-39 Method Blan 56492-40 LCS/LCS Dup 56492-41 LCS % RPD	•		
PARAMETER		56492-40	56492-41
Dibenzofuran, ug/kg dw 4-Nitroaniline, ug/kg Surrogate-2FP Surrogate-PHL Surrogate-NBZ Surrogate-TBP Surrogate-TBP Surrogate-TPH Date Extracted Date Analyzed Arsenic (6010) Arsenic (6010), mg/kg	dw <1700 79 % 82 % 76 % 88 % 88 % 88 % 11.21.95 12.06.95	76/71 % 89/84 % 71/68 % 77/75 % 88/85 % 99/92 % 11.21.95	
Date Analyzed		12.07.95	
Barium (6010) Barium (6010), mg/kg d Date Analyzed Cadmium (6010)		83/94 % 12.07.95	12 %
Cadmium (6010), mg/kg Date Analyzed Chromium (6010) Chromium (6010), mg/kg	12.07.95 cdw <1.0	95/108 % 12.07.95 88/100 %	
Date Analyzed	12.07.95	12.07.95	

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin

Apex Environmental, Inc.

15850 Crabbs Branch Way #300

Rockville, MD 20855

Project: 097.001 Thiokol

Purchase Order: 097.001

Sampled By: Client

REPORT OF RESULTS

Page 74

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOL	ID/SEMISOLID		
56492-39 56492-40 56492-41	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD			
PARAMETER		56492-39	56492-40	56492-41
Lead (6010)				
Lead (6010), mg/kg dw	<0.50	86/99 %	14 %
Date Analy	zed	12.07.95	12.07.95	
Mercury				
Mercury (7	471), mg/kg dw	<0.010	105/125 %	17 %
Date Analy	zed	11.27.95	11.27.95	
N-Methylcar	bamates (EPA 8318)			
Aldicarb,	ug/kg dw	<30	95/108 %	13 %
Date Extra	cted	11.21.95	11.21.95	
Date Analy	zed	11.28.95	11.28.95	

Methods: EPA SW-846 and 40 CFR Part 136.

Susan H. Norwood, Project Manager

LOG NO: S5-56492 Received: 17 NOV 95 Reported: 11 DEC 95

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol

		REPORT OF RESULTS			Page 31
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	
56492-16 56492-17				11-17-95/1133 11-17-95/1135	
PARAMETER			56492-16	56492-17	
Date Analyz Barium (6010 Barium (601 Date Analyz Cadmium (601 Cadmium (601 Date Analyz Chromium (601 Chromium (601	10) 110), mg/kg dw 2ed 10), mg/kg dw 2ed 10), mg/kg dw 2ed 10) 110), mg/kg dw 2ed 110) 110), mg/kg dw 2ed		<1.2 12.07.95 1.2 12.07.95 <0.58 12.07.95	<1.2 12.07.95 1.8 12.07.95 <0.62 12.07.95	
Date Analyz Lead (6010) Lead (6010) Date Analyz Mercury	, mg/kg dw		3.0	12.07.95 2.8 12.07.95	
Mercury (74 Date Analyz	71), mg/kg dw eed ds (160.3), %	•	11.27.95	<0.012 11.27.95 80	

SAVANNAH LABORATORIES 25102 LaRoche Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax: (912) 352-0165 & ENVIRONMENTAL SERVICES, INC. 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (904) 878-3994 Fax: (904) 878-9504 1414 SW 12th Avenue, Deerfield Beach, FL 33442 Phone: (305) 421-7400 Fax: (305) 421-2584 ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD 900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6696 C 6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049 110 Alpha Drive, Destrehan, LA 70047 Phone: (504) 764-1100 Fax: (504) 725-1163 PROJECT REFERENCE PROJECT NO. P.O. NUMBER MATRIX MICKOL 097.001 097.001 REQUIRED ANALYSES PAGE / OF2 TYPE PROJECT LOC. SAMPLER(s) NAME 301-417 0200 (State) A MicHAU FAX UDSMA 301-475 0169 STANDARD REPORT DELIVERY CLIENT NAME CLIENT PROJECT MANAGER CLIENT ADDRESS (CITY, STATE, ZIP) EXPEDITED REPORT DELIVERY(surcharge) Date Due: SAMPLE SL DATE TIME SAMPLE IDENTIFICATION NUMBER OF CONTAINERS SUBMITTED REMARKS 11/14/45 9036 1131 1223 9037 1259 9038 1331 9037 9040 1428 9041 1503 1 9042 1546 9043 1410 O928 9044 1 90 45 1005 ١ 1040 9046 1047 1100 RELINQUISHED BY: (SIGNATURE) RELINQUISHED BY: (SIGNATURE) DATE TIME DATE TIME RELINQUISHED BY: (SIGNATURE) TIME 11/16/1 120) RECEIVED BY: (SIGNATURE) RECEIVED BY: (SIGNATURE) = 749 24321 3 DATE DATE TIME TIME RECEIVED BY: (SIGNATURE) DATE TIME 11/20/05 1700 MUS MICH LABORATORY USE ONLY RECEIVED FOR LABORATORY BY: (STGNATURE) SL LOG NO. TIME CUSTODY INTACT | CUSTODY SEAL NO. LABORATORY REMARKS: The same of a property of the same of the YES NO

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SAVANNAH LABORATORIES 5102 La Roche Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax: (912) 352-01€" & ENVIRONMENTAL SERVICES, INC. 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (904) 878-3994 Fax: (904) 878-950-414 SW 12th Avenue, Deerfield Beach, FL 33442 Phone: (305) 421-7400 Fax: (305) 421-2584 900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6696 · ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD 5712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049 110 Alpha Drive, Destrehan, LA 70047 Phone: (504) 764-1100 Fax: (504) 725-1163 PROJECT REFERENCE PROJECT NO. P.O. NUMBER THOKOL PROJECT LOC SAMPLER(S) NAME 097.001 MATRIX TYPE 097.001 PAGE (OF) **REQUIRED ANALYSES** PHONE 301-417-0201 (State) GA FAX 975-0169 CLIENT NAME CLIENT PROJECT MANAGER STANDARD The CLIENT ADDRESS (CITY, STATE, ZIP) EXPEDITED REPORT DELIVERY(surcharge) Date Due: SAMPLE SL NO DATE TIME SAMPLE IDENTIFICATION NUMBER OF CONTAINERS SUBMITTED REMARKS 9060 1305 1319 9063 2 3 9064 1345 B 2 1427 9066 2 3 1525 33 2 9068 1600 9069 2 1700 2 9070 1735 2 9071 0800 9072 11/2/11/000 0073 3 3 0855 2 1506 3076 JO75 925 3 3 2 90 77 1025 RELINQUISHED BY: (SIGNATURE) RELINQUISHED BY: (SIGNATURE) DATE TIME REL AQUISHED BY: (SIGNATURE) TIME 11/17/AST 1820 <u>u/.</u> 1500 11/1/15 RECEIVED Y: (SIGNATURE) RECEIVED BY: (SIGNATURE) RECEIVED BY: (SIGNATURE) DATE TIME TIME TIME in 113/15/1500 LABORATORY USE ONLY RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE LABORATORY REMARKS: 45 SIME 20 CUSTODY INTACT | CUSTODY SEAL NO. SL LOG NO. PLAT YES NO

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PROJECT F	REFERENCI	<u> </u>		PROJECT NO	D .	P.O. NUMBER				\neg _		·											
PROJECT	OKOL			097.		097				M	ATRIX YPE				REQU	IRED A	NALYS	SES			P/	IGE]	of2
PROJECT L (State)	OC. SAM	PLER(S	NAME / /		PHONE	301 4120	رمدح	۷		1/		J1/	M/	P.V.	, /	$\overline{}$	$\overline{}$	7	7	7	7		
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SEIZITI III				OLILINI PHO	SECT MAN	AGEN			[1 5	N.A	93	Ĭ 😽	/	/ ,	/ ,	/ /	/ /		/ □ii	EPORT ELIVE	I RY
CLIENT AD	DRESS (CIT	Y, STA	TE, ZIP)		·		****				\\$/	3	'_\$\)	No.							,		1
			***************************************							§ -	\rightarrow	-/-	->-		-/-	-/-	$-\!\!\!/-$	/	-/		LIDELIVE te Due:	:RY(su	REPORT (rcharge)
SAM DATE	TIME	SL NO.	SA	MPLE IDEN	TIFICATION	ON	å		1 \$/5	<i>}</i>	THE STATE OF THE S	MI IME			_/ AINERS	SUBL	UTTER			1	REMA	DK6	_
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	1230			908			7		\prod	3	3	1	2										
	1250			9085			П		П	3	3	1	2										
	1305			9087					П	3	3	1	2										
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RECEIVE	DBY: (SIGN	TURE	-	DATE	TIME	RECEIVED	Y: (SI	GNA	JUR	E)		D		TIME	RECE	VED BY	:(SIGN/	WORE)		· · ·	DAT		TIME
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TO VEI	DEGHLABO	HAIP	RY BY: (SIGNATU	RE) DATE		TO CUSTO	DYIN	TAC'	T 6	USTO	YSEAL	NO.	SL LOG	NO.	LA	BORAT	ORY RE	MARKS					
16,	[)OY	1)	11-17		ON THE		NO				ŀ	Joh	192									

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

Project: 097.001 Sampled By: Client

			REPO	RT C	OF RESULTS				Page 1	
							DATE/		_	
LOG NO	SAMPLE	DESCRIPTION	, SOLID	OR	SEMISOLID	SAMPLES	TIME	SAMPLED		
C2101 1	9091						12.10	-95/1220		
57121-1								-		
57121-2	9093							-95/1235		
57121-3	9095							-95/1250		
57121-4	9097						12-19	-95/1310)	
PARAMETER					57121-1	57121-2	57	121-3	57121-4	
Percent Sol	ids (16)).3), %			86	75		86	88	

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS Page 2

				DATE/	•
LOG NO	SAMPLE DESCRIPTION , SO			TIME SAMPLE)
	9091			12-19-95/122	20
57121-2	9093			12-19-95/123	15
57121-3	9095			12-19-95/125	50
57121-4				12-19-95/131	.0
PARAMETER		57121-1		57121-3	
Volatiles h	GC/MS (8260)				
	une, ug/kg dw	<12	<13	<12	<11
	ne, ug/kg dw	<12	<13	<12	<11
	ride, ug/kg dw	<12	<13	<12	<11
-	ne, ug/kg dw	<12	<13	<12	<11
	chloride (Dichloromethan	ne), <5.8	<6.7	<5.8	<5.7
ug/kg dw					
Acetone, ug	g/kg dw	<29	<33	<29	<28
Carbon dist	ılfide, ug/kg dw	<5.8	<6.7	<5.8	<5.7
1,1-Dichlor	coethene, ug/kg dw	<5.8	<6.7	<5.8	<5.7
1,1-Dichlor	roethane, ug/kg dw	<5.8	<6.7	<5.8	<5.7
trans-1,2-D	oichloroethylene, ug/kg	dw <5.8	<6.7	<5.8	<5.7
Chloroform,	ug/kg dw	<5.8	<6.7	<5.8	<5.7
1,2-Dichlor	roethane, ug/kg dw	<5.8	<6.7	<5.8	<5.7
2-Butanone	(MEK), ug/kg dw	<29	<33	<29	<28
1,1,1-Trich	loroethane, ug/kg dw	<5.8	<6.7	<5.8	<5.7
Carbon tetr	rachloride, ug/kg dw	<5.8	<6.7	<5.8	<5.7
Vinyl aceta	ite, ug/kg dw	<12	<13		<11
	promethane, ug/kg dw	<5.8			
	rachloroethane, ug/kg o			<5.8	
1,2-Dichlor	copropane, ug/kg dw	<5.8	<6.7	<5.8	<5.7

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

Page 3 REPORT OF RESULTS DATE/ SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED LOG NO 12-19-95/1220 9091 57121-1 12-19-95/1235 57121-2 9093 12-19-95/1250 9095 57121-3 12-19-95/1310 9097 57121-4 57121-2 57121-3 57121-1 PARAMETER <5.8 <6.7 <5.8 <5.7 trans-1,3-Dichloropropene, ug/kg dw <5.8 <5.7 <6.7 Trichloroethene, ug/kg dw <5.8 <5.8 <6.7 <5.8 Dibromochloromethane, ug/kg dw <6.7 <5.8 <5.7 1,1,2-Trichloroethane, ug/kg dw <5.8 <5.8 <5.7 <6.7 <5.8 Benzene, ug/kg dw <5.8 <5.7 cis-1,3-Dichloropropene, ug/kg dw <5.8 <6.7 <67 <58 <57 2-Chloroethylvinyl ether, ug/kg dw <58 <5.8 <6.7 <5.7 Bromoform, ug/kg dw < 5.8 <33 <29 <28 2-Hexanone, ug/kg dw <29 <33 <29 <28 <29 4-Methyl-2-pentanone (MIBK), ug/kg dw <6.7 <5.8 <5.7 Tetrachloroethene, ug/kg dw <5.8 <5.8 14 <5.8 31 Toluene, ug/kg dw <6.7 <5.8 <5.7 Chlorobenzene, ug/kg dw <5.8 7.9 <5.8 <5.7 <5.8 Ethylbenzene, ug/kg dw <5.8 <5.7 <6.7 <5.8 Styrene, ug/kg dw 39 <5.8 21 Xylenes, ug/kg dw 27 90 % 88 % 90 % Surrogate - Toluene-d8 88 % Surrogate - 4-Bromofluorobenzene 110 % 107 % 112 % 110 % 114 % 100 % 100 % 102 % Surrogate - Dibromofluoromethane 01.02.96 01.02.96 01.02.96 01.02.96 Date Analyzed

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

	RE	PORT OF RESULTS		DATE/	Page 4
LOG NO	SAMPLE DESCRIPTION , SOL	ID OR SEMISOLID	SAMPLES	TIME SAMPLED	
57121-2	9091 9093		• • • • • • • • • • • • • • • • • • • •	12-19-95/1220	
57121-3 57121-4	9095 9097			12-19-95/1250 12-19-95/1310	
parameter		57121-1	57121-2	57121-3	
Semivolatile	Organics (8270)				
1,3-Dichlor	obenzene, ug/kg dw	<380	<440	<380	<380
1,4-Dichlor	obenzene, ug/kg dw	<380	<440	<380	<380
Hexachloroe	thane, ug/kg dw	<380	<440	<380	<380
bis(2-Chlor	coethyl)ether, ug/kg dw	<380	<440	<380	<380
1,2-Dichlor	obenzene, ug/kg dw	<380	<440	<380	<380
bis(2-Chlor	coisopropyl)ether, ug/kg	dw <380	<440	<380	<380
n-Nitrosodi	n-propylamine, ug/kg dw	<380	<440		<380
Nitrobenzen	le, ug/kg dw	<380	<440	<380	<380
Hexachlorob	utadiene, ug/kg dw	<380	<440	<380	<380
1,2,4-Trich	lorobenzene, ug/kg dw	<380	<440	<380	<380
Isophorone,	ug/kg dw	<380	<440	<380	<380
Naphthalene	, ug/kg dw	<380	<440	<380	<380
bis(2-Chlor	oethoxy)methane, ug/kg d	w <380	<440	<380	<380
Hexachloroc	yclopentadiene, ug/kg dw	<380	<440	<380	<380
2-Chloronap	hthalene, ug/kg dw	<380	<440	<380	<380
Acenaphthyl	ene, ug/kg dw	<380	<440	<380	<380
Acenaphthen	e, ug/kg dw	<380	<440	<380	<380
Dimethylpht	halate, ug/kg dw	<380	<440	<380	<380
2,6-Dinitro	toluene, ug/kg dw	<380	<440	<380	<380
Fluorene, u	g/kg dw	<380	<440	<380	<380

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

	R	EPORT OF RESULTS		DATE/	Page 5
LOG NO	SAMPLE DESCRIPTION , SO	LID OR SEMISOLID	SAMPLES	TIME SAMPLE	SD
57121-1 57121-2 57121-3 57121-4	9091 9093 9095 9097			12-19-95/12 12-19-95/12 12-19-95/12	235 250
PARAMETER		57121-1	57121-2	57121-3	57121-4
2,4-Dinitro Diethylphth N-Nitrosodi ug/kg dw Hexachlorok 4-Bromopher Phenanthrer Anthracene, Di-n-butylp Fluoranther Pyrene, ug/ Benzidine, Butylbenzyl bis(2-Ethyl Chrysene, ug/ Benzo(a) ant 3,3'-Dichlor	ohthalate, ug/kg dw ne, ug/kg dw /kg dw ug/kg dw .phthalate, ug/kg dw .hexyl)phthalate, ug/kg	<pre></pre>	<440	<380 <380 <380 <380 <380 <380 <380 <380	<380 <380 <380 <380 <380 <380 <380 <380
Benzo(b)flu	oranthene, ug/kg dw oranthene, ug/kg dw	<380 <380	840 740	<380 <380	<380 <380

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

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	1432	ONL OF IGHOUSE			
LOG NO	SAMPLE DESCRIPTION , SOLI	D OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	
57121-1	9091			12-19-95/1220	 D
57121-1	9093			12-19-95/123	
	9095			12-19-95/1250	
57121-4	9097			12-19-95/1310	
3/121-4					
PARAMETER		57121-1	57121-2	57121-3	57121-4
Benzo (a) pyr	rene, ug/kg dw	<380	1400	<380	<380
	,3-cd)pyrene, ug/kg dw	<380	850	<380	<380
	h) anthracene, ug/kg dw	<380	<440	<380	<380
	i)perylene, ug/kg dw	<380	710	<380	<380
	imethylamine, ug/kg dw	<380	<440	<380	<380
	enol, ug/kg dw	<380	<440	<380	<380
_	nol, ug/kg dw	<380	<440	<380	<380
Phenol, ug,	/kg dw	<380	<440	<380	<380
2,4-Dimethy	ylphenol, ug/kg dw	<380	<440	<380	<380
2,4-Dichlo	rophenol, ug/kg dw	<380	<440	<380	<380
2,4,6-Trick	hlorophenol, ug/kg dw	<380	<440	<380	<380
4-Chloro-3	-methylphenol, ug/kg dw	<380	<440	<380	<380
2,4-Dinitro	ophenol, ug/kg dw	<2000	<2300	<2000	<1900
2-Methyl-4	,6-dinitrophenol, ug/kg dw	<2000	<2300	<2000	<1900
Pentachlor	ophenol, ug/kg dw	<2000	<2300	<2000	<1900
4-Nitropher	nol, ug/kg dw	<2000	<2300	<2000	<1900
Benzyl alco	ohol, ug/kg dw	<380	<440		<380
2-Methylphe	enol (o-cresol), ug/kg dw	<380	<440	<380	<380
3&4-Methyl	phenol (m&p-cresol), ug/kg				<380
	id, ug/kg dw	<2000			<1900
4-Chloroan:	iline, ug/kg dw	<770	<880	<770	<750

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Date Extracted

Date Analyzed Batch ID

Arsenic (6010)

Date Analyzed

Arsenic (6010), mg/kg dw

Purchase Order: 097.001

12.26.95 12.26.95 12.26.95 12.26.95

12.27.95 12.27.95 12.27.95

1226C

<1.2

1226C

<1.1

1226C

<1.3

Project: 097.001 Sampled By: Client

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DATE/ SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED 12-19-95/1220 9091 57121-1 9093 12-19-95/1235 57121-2 12-19-95/1250 57121-3 9095 9097 12-19-95/1310 57121-4 57121-1 57121-3 57121-2 PARAMETER ______ 2-Methylnaphthalene, ug/kg dw <440 <380 <380 <380 <440 <380 <380 <380 2,4,5-Trichlorophenol, ug/kg dw <2300 <2000 <2300 <2000 <2000 <1900 2-Nitroaniline, ug/kg dw <2000 <1900 3-Nitroaniline, ug/kg dw <440 Dibenzofuran, ug/kg dw <380 <380 <380 <2300 <380 <2000 4-Nitroaniline, ug/kg dw <2000 <1900 82 % 70 % 74 % 82 % Surrogate-2FP 73 % 77 % 84 % Surrogate-PHL 85 % 79 % 64 % 68 % 74 % Surrogate-NBZ -74 % 79 % 64 % 68 % Surrogate-2FBP 82 % 56 **%** 82 % 62 % Surrogate-TBP 104 % 100 % 110 % 105 % Surrogate-TPH Date Extracted 12.21.95 12.21.95 12.21.95 12.21.95 01.02.96 01.02.96 01.02.96 01.02.96 Date Analyzed N-Methylcarbamates (EPA 8318) Aldicarb, ug/kg dw <35 <36 <35 <34

REPORT OF RESULTS

1226C

<1.2

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

		REPORT OF RESULTS		DATE/	Page 8
	SAMPLE DESCRIPTION ,			-	מ
57121-1 57121-2 57121-3 57121-4	9091 9093 9095			12-19-95/12 12-19-95/12 12-19-95/12 12-19-95/13	35 50 10
PARAMETER		57121-1	57121-2	57121-3	57121-4
Barium (6010 Barium (6010 Date Analy: Cadmium (6010 Cadmium (6010 Date Analy: Chromium (6010 Chromium (6010) Chromium (6010) Chromium (6010) Chromium (6010)	10), mg/kg dw 2ed 10) 110), mg/kg dw 2ed 110) 5010), mg/kg dw 2ed 171), mg/kg dw	13 12.27.95 <0.58 12.27.95 1.7 12.27.95 0.017	34 12.27.95 <0.67 12.27.95 7.0 12.27.95	94 12.27.95	47 12.27.95 <0.57 12.27.95 240 12.27.95 <0.011
Lead (6010) Lead (6010) Date Analyz Antimony (60	, mg/kg dw zed 010) 5010), mg/kg dw zed (9045) units	1.8 12.27.95 <5.8 12.27.95	28 12.27.95 <6.7 12.27.95	5.2 12.27.95	3.4 12.27.95 <5.7 12.27.95

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPORT	FOR SOLID/SEMISOLID		
57121-5 Method Blank 57121-6 LCS/LCS Duplicate % Recovery 57121-7 LCS % RPD			
PARAMETER		57121-6	
W-1			
Volatiles by GC/MS (8260) Chloromethane, ug/kg dw	<10		
Bromomethane, ug/kg dw	<10		
Vinyl chloride, ug/kg dw	<10		
Chloroethane, ug/kg dw	<10		
Methylene chloride (Dichloromethane), ug/k	g dw <5.0		
Acetone, ug/kg dw	<25		
Carbon disulfide, ug/kg dw	<5.0		
1,1-Dichloroethene, ug/kg dw	<5.0	86/82 %	5 %
1,1-Dichloroethane, ug/kg dw	<5.0		
trans-1,2-Dichloroethylene, ug/kg dw	<5.0		
Chloroform, ug/kg dw	<5.0		
1,2-Dichloroethane, ug/kg dw	<5.0		
2-Butanone (MEK), ug/kg dw	<25		
1,1,1-Trichloroethane, ug/kg dw	<5.0		
Carbon tetrachloride, ug/kg dw			
Vinyl acetate, ug/kg dw	<10		
Bromodichloromethane, ug/kg dw	<5.0		
1,1,2,2-Tetrachloroethane, ug/kg dw	· -		
1,2-Dichloropropane, ug/kg dw	<5.0		
trans-1,3-Dichloropropene, ug/kg dw	<5.0		
Trichloroethene, ug/kg dw	<5.0	96/80 %	18 %

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

	,			
LOG NO	SAMPLE DESCRIPTION , QC RE	PORT FOR SOLID/SEMISOLID		
57121-6 57121-7	Method Blank LCS/LCS Duplicate % Recove	ry		
PARAMETER		57121-5	57121-6	
	oromethane, ug/kg dw	<5.0		
1,1,2-Tric	nloroethane, ug/kg dw	<5.0		
Benzene, u	g/kg dw	<5.0	98/96 🕏	2 %
cis-1,3-Di	chloropropene, ug/kg dw	<5.0		
2-Chloroeth	nylvinyl ether, ug/kg dw	<50	+	
Bromoform,	ug/kg dw	<5.0		
2-Hexanone	, ug/kg dw	<25		
4-Methyl-2	-pentanone (MIBK), ug/kg dw	<25		
Tetrachlor	oethene, ug/kg dw	<5.0		
Toluene, ug	g/kg dw	<5.0	98/98 %	0 %
Chlorobenze	ene, ug/kg dw	<5.0	100/98 %	2 %
Ethylbenzer	ne, ug/kg dw	<5.0		
Styrene, ug	g/kg dw	<5.0		
Xylenes, ug	g/kg dw	<5.0		
Surrogate	- Toluene-d8	92 %	92/94 %	
Surrogate	- 4-Bromofluorobenzene	96 %	92/98 %	
Surrogate	- Dibromofluoromethane	100 %	100/100 %	
Date Analy:	zed	01.02.96	01.02.96	

LOG NO: S5-57121 Received: 20 DEC 95

Reported: 12 JAN 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT E	FOR SOLID/SEMISOLID		
LOG NO				
-	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD			
			57121-6	E7121.7
PARAMETER		-		
	e Organics (8270) robenzene, ug/kg dw	<330		
,	robenzene, ug/kg dw	<330		2 %
•	ethane, ug/kg dw	<330	•	
	roethyl)ether, ug/kg dw	<330		
- •	robenzene, ug/kg dw	<330		
7	roisopropyl)ether, ug/kg dw	<330		
n-Nitrosod	i-n-propylamine, ug/kg dw	<330	94/88 %	6 %
Nitrobenze	ne, ug/kg dw	<330		
Hexachloro	butadiene, ug/kg dw	<330		
1,2,4-Tric	hlorobenzene, ug/kg dw	<330	58/57 %	2 %
Isophorone	, ug/kg dw	<330		
Naphthalen	e, ug/kg dw	<330		
bis (2-Chlo	roethoxy)methane, ug/kg dw	<330		
Hexachloro	cyclopentadiene, ug/kg dw	<330		
2-Chlorona	phthalene, ug/kg dw	<330		
Acenaphthy	lene, ug/kg dw	<330		
Acenaphthe	ne, ug/kg dw	<330	70/70 %	0 %
Dimethylph	thalate, ug/kg dw	<330		
2,6-Dinitr	otoluene, ug/kg dw	<330		
Fluorene,	ug/kg dw	<330		
4-Chloroph	enylphenyl ether, ug/kg dw	<330		

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR S	OLID/SEMISOLID		
•	Method Blank			
	LCS/LCS Duplicate % Recovery			
57121-7	LCS * RPD			
PARAMETER		_	57121-6	57121-7
2 4 Dinier	otoluene, ug/kg dw		65/59 %	10 %
•	halate, ug/kg dw	<330	•	
	iphenylamine/Diphenylamine, ug/kg dw	<330		
	benzene, ug/kg dw	<330		
	nyl phenyl ether, ug/kg dw	<330		
_	ne, ug/kg dw			
Anthracene		<330		
	phthalate, ug/kg dw	<330		
	ne, ug/kg dw	<330		
Pyrene, ug			112/106 %	6 %
Benzidine,	•	<2700	,	
	lphthalate, ug/kg dw	<330		
	lhexyl)phthalate, ug/kg dw	<330		
Chrysene,		<330		
•	thracene, ug/kg dw	<330		
	orobenzidine, ug/kg dw	<660		
-	phthalate, ug/kg dw	<330		
Benzo(b)fl	uoranthene, ug/kg dw	<330		
Benzo(k)fl	uoranthene, ug/kg dw	<330		
	rene, ug/kg dw	<330		
Indeno(1,2	,3-cd)pyrene, ug/kg dw	<330		
	h)anthracene, ug/kg dw	<330		

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT F	OR SOLID/SEMISOLID		
	Denne management / go imagement			
	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD			
PARAMETER			57121-6	57121-7
	i)perylene, ug/kg dw	<330		
	imethylamine, ug/kg dw	<330		
_	enol, ug/kg dw	<330		0 %
_	nol, ug/kg dw	<330		
Phenol, ug		<330		4 %
	ylphenol, ug/kg dw	<330		
	rophenol, ug/kg dw	<330		
	hlorophenol, ug/kg dw	<330		
	-methylphenol, ug/kg dw	<330	73/73 %	0 %
	ophenol, ug/kg dw	<1700		
-	,6-dinitrophenol, ug/kg dw	<1700 <1700	42/26 %	15 %
	ophenol, ug/kg dw	<1700	42/36 % 61/58 %	15 % 5 %
-	nol, ug/kg dw	<330	01/30 4	5 4
_	ohol, ug/kg dw	<330		
	enol (o-cresol), ug/kg dw phenol (m&p-cresol), ug/kg dw	<330		
	id, ug/kg dw	<1700		
	iline, ug/kg dw	<660		
	phthalene, ug/kg dw	<330		
	phthaiene, ug/kg dw hlorophenol, ug/kg dw	<330		
	line, ug/kg dw	<1700		
	line, ug/kg dw line, ug/kg dw	<1700		
3-MICTORNI.	IIIE, 49/A9 UW	1700		

LOG NO: S5-57121 Received: 20 DEC 95 Reported: 12 JAN 96

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPOR	T FOR SOLID/SEMISOLID		
57121-6	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD			
PARAMETER		57121-5	57121-6	57121-7
Dibenzofu	ran, ug/kg dw	<330		
4-Nitroan	iline, ug/kg dw	<1700		
Surrogate	-2FP	1 %	76/73 😵	
Surrogate	-PHL		76/76 %	
Surrogate	-NBZ	1 %		
Surrogate	-2FBP	19 %		
Surrogate	-TBP		12/15 %	
Surrogate	-TPH		88/82 🕏	
Date Extra	acted	12.21.95	12.21.95	
Date Analy	yzed	01.03.96	01.02.96	
N-Methylca:	rbamates (EPA 8318)			
Aldicarb,	ug/kg dw		65/66 %	
Date Extra	acted	12.26.95	12.26.95	
Date Analy	yzed	01.04.96	01.04.96	
Batch ID		1226C	1226C	
Arsenic (60	010)			
Arsenic (6010), mg/kg dw		105/102 %	
Date Analy	yzed	12.27.95	12.27.95	
Barium (60	10)			
Barium (6)	010), mg/kg dw	<1.0	106/102 %	3.8 %
Date Analy	yzed	12.27.95	12.27.95	
Cadmium (60	010)			
Cadmium (6010), mg/kg dw		107/104 %	
Date Analy	yzed	12.27.95	12.27.95	



LOG NO: S5-57121 Received: 20 DEC 95

Reported: 12 JAN 96

Mr. Mark Corbin

Apex Environmental, Inc.

15850 Crabbs Branch Way #300

Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001

Sampled By: Client

REPORT OF RESULTS

Page 15

LOG NO	SAMPLE DESCRIPTION , QC REPO	ORT FOR SOLID/SEMISOLID		
	Method Blank LCS/LCS Duplicate % Recovery LCS % RPD	,		
PARAMETER		57121-5	57121-6	
Chromium (60				
	5010), mg/kg dw	<1.0	98/96 %	2.1 %
Date Analy:		12.27.95	12.27.95	
Mercury				
Mercury (74	171), mg/kg dw	<0.010	113/94 %	18 %
Date Analy:	ed.	12.28.95	12.28.95	
Lead (6010)				
Lead (6010)	, mg/kg dw	<0.50	104/101 %	2.9 %
Date Analy:	ed	12.27.95	12.27.95	
Antimony (60	10)	•		
Antimony (6	(010), mg/kg dw	<5.0	105/104 %	0.96 %
Date Analys	ed	12.27.95	12.27.95	
pH in Soil	(9045)			
pH (9045),	units		97/96 %	1.0 %

Methods: EPA SW-846

Susan H. Norwood, Project Manager

Final Page Of Report



15850 Crabbs Branch Way Suite 300 Rockville, MD 20855 Telephone (301) 417-0200 Facsimile (301) 976-0169

December 21, 1995

Ms. Susan Norwood Savannah Laboratories 5102 LaRoche Avenue

mSavannahi Georgiam31404

Re:

Sample Analysis for pH

Phase II RCRA Facility Investigation (RFI)

Woodbine, Georgia Facility

Dear Susan:

In accordance with our phone conversation please add pH to the analytical requirements for the four samples submitted to Savannah Laboratories on December 20, 1995.

If you have any questions or comments regarding this project, please feel free to contact me at (301) 417-0200.

~ XV \ 1. Y

Sincerely

Malk Corbin Project Manager

Environmental Services

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S ANALY	8	ENV	ANNAH LABORATORIES IRONMENTAL SERVICES, INC. EST AND CHAIN OF CUSTODY RECO	RD			5102 LaR 12846 Indu 1414 SW 1: 1900 Lakes 16712 Benj 1110 Alpha	strial Pla 2th Aver side Driv jamin Ro	aza Dri nue, De /e, Mob oad, Su	ve, Tallah erfield B ile, AL 36 ite 100,	iassee, F each, FL 6693 Tampa, F	L 3230 33442	Pho Pho Pho Pho	one: (90 one: (30 one: (33 one: (81	2) 354-7 4) 878-3 15) 421-7 14) 666-6 13) 885-7 14) 764-1	994 Fa 400 Fa 6633 Fa 7427 Fa	x: (912) 35; x: (904) 87; x: (305) 42; x: (334) 66; x: (813) 88; x: (504) 72	8-9504 1-2584 6-6696 5-7049
ROJECTI State G F CLIENT NA A P CLIENT AC 15 856	ME IEX E IDRESS (CI C) C/L	IPLER(PROJECT NO. PO. NUMBER OP 7.00 (09 7) NAME PHONE 301-41 FAX 301-913 CLIENT PROJECT MANAGER HARK CORBIN TE, ZIPLANCH WAY 55.76 300 CLIENT WAY 55.76 300 CLIENT WAY 55.76 300 CLIENT WAY 55.76 300	7-07 6-01	69			25/2 2/2	3/	132/2011	To Land	IRED A	MALYS	SES		Date D	STANI REPODELIVERY	DARD PRT YERY
DATE	TIME	SL NO.	SAMPLE IDENTIFICATION	<u>155 </u>	79 38/	I	16/10		/ :-	CONT	/ AINERS	SUBM	/ AITTED		/		REMARKS	3
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receiver	BY: (SIGN	ATURE)		Y: (SIGI	UTAP	RE)		DA	TE	TIME	RECEI	VED BY	: (SIGN/	ATURE)			DATE	TIME
\ A				LA	BOI	RATO	RY USE								190, 54.3	· Ann	14 MAN	SPARIE W.
RECEIVE	FOR LAB	PATO	1 La 20/19/10/19/ /	NTAI YO		CUST	ODY SEAL	NO.	SLLPG	1/2	(BORAT	ORYRE	MARKS		Macag		Was.

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

Project: 097.001/Thickol

		REPORT OF RESULTS			Page 1
				DATE/	_
LOG NO	SAMPLE DESCRIPTION , S	OLID OR SEMISOLID	SAMPLES	TIME SAMPLED	
81166-1	9099			02-27-96/1630	
81166-2	9100			02-28-96/0915	
81166-3	9101			02-28-96/1100	,
81166-4	9102			02-28-96/1400	
PARAMETER			81166-2	81166-3	81166-4
Volatiles by	y GC/MS (8260)				
Chlorometha	ane, ug/kg dw	<10	<13	<12	<13
Bromomethau	ne, ug/kg dw	<10	<13	<12	<13
Vinyl chlor	ride, ug/kg dw	<10	<13	<12	<13
Chloroetha	ne, ug/kg dw	<10	<13	<12	<13
Methylene o	chloride (Dichlorometha	ne), <5.2	<6.5	<6.2	<6.5
Acetone, ug	g/kg dw	<26	<34	<31	<34
Carbon dist	ılfide, ug/kg dw	<5.2	<6.5	<6.2	<6.5
1,1-Dichlor	roethene, ug/kg dw	<5.2	<6.5	<6.2	<6.5
1,1-Dichlor	roethane, ug/kg dw	. <5.2	<6.5	<6.2	<6.5
trans-1,2-I	Dichloroethylene, ug/kg	dw <5.2	<6.5	<6.2	<6.5
Chloroform,	ug/kg dw	<5.2	<6.5	<6.2	<6.5
	roethane, ug/kg dw	<5.2	<6.5	<6.2	<6.5
2-Butanone	(MEK), ug/kg dw	<26	<34	<31	<34
	lloroethane, ug/kg dw	<5.2	<6.5	<6.2	<65
	rachloride, ug/kg dw	<5.2	<6.5	<6.2	<65
-	ate, ug/kg dw	<10	<13	<12	<13
	promethane, ug/kg dw	<5.2		<6.2	<6.5
	rachloroethane, ug/kg	dw <5.2	<6.5	<6.2	<6.5
1,2-Dichlor	copropane, ug/kg dw	<5.2	<6.5	<6.2	<6.5

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol

	RE.	PORT OF RESULTS			Page 2
7.00 NO	SAMPLE DESCRIPTION , SOL	TO OR COMICOLIN	CAMDLEC	DATE/ TIME SAMPLED	
LOG NO	SAMPLE DESCRIPTION , SOL	ID OK SEMISOLID	SAMEDES	TIME SAMPLED	
81166-1	9099			02-27-96/163	0
81166-2	9100			02-28-96/091	5
81166-3	9101			02-28-96/110	0
81166-4	9102			02-28-96/140	0
PARAMETER		81166-1	81166-2	81166-3	81166-4
trans-1.3-	Dichloropropene, ug/kg dw	<5.2	<6.5	<6.2	<6.5
-	hene, ug/kg dw	<5.2	<6.5	<6.2	<6.5
	oromethane, ug/kg dw	<5.2	<6.5	<6.2	<6.5
1,1,2-Trich	nloroethane, ug/kg dw	<5.2	<6.5	<6.2	<6.5
Benzene, ug	g/kg dw	<5.2	<6.5	<6.2	<6.5
cis-1,3-Did	chloropropene, ug/kg dw	<5.2	<6.5	<6.2	<6.5
2-Chloroeth	nylvinyl ether, ug/kg dw	<52	<65	<62	<65
Bromoform,	ug/kg dw	<5.2	<6.5	<6.2	<6.5
2-Hexanone,	ug/kg dw	<26	<34	<31	<34
4-Methyl-2-	-pentanone (MIBK), ug/kg		<34		<34
Tetrachloro	ethene, ug/kg dw	<5.2		<6.2	<6.5
Toluene, ug	-	<5.2			<6.5
Chlorobenze	ene, ug/kg dw	<5.2			<6.5
Ethylbenzer	ie, ug/kg dw			<6.2	
Styrene, ug	-	<5.2			<6.5
Xylenes, ug				<6.2	
_	Toluene-d8			103 %	
_	4-Bromofluorobenzene	121 %			
_	Dibromofluoromethane	112 %			
Date Analyz	ed	03.12.96	03.12.96	03.12.96	03.12.96

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol

				•	
	REPORT	r of results			Page 3
				DATE/	
LOG NO	SAMPLE DESCRIPTION , SOLID (OR SEMISOLID	SAMPLES	TIME SAMPLED	
81166-1	9099			02-27-96/1630	
81166-2	9100			02-28-96/0915	
81166-3	9101			02-28-96/1100	
81166-4	9102			02-28-96/1400	
PARAMETER		81166-1	81166-2	81166-3	81166-4
Semivolatile	e Organics (8270)	• • • • • • • • • • • • • • • • • • • •			• • • • • • •
1,3-Dichlo	robenzene, ug/kg/dw	<340	<430	<410	<430
1,4-Dichlo	robenzene, ug/kg/dw	<340	<430	<410	<430
Hexachloro	ethane, ug/kg/dw	<340	<430	<410	<430
bis(2-Chlor	roethyl)ether, ug/kg/dw	<340	<430	<410	<430
1,2-Dichlor	robenzene, ug/kg/dw	<340	<430	<410	<430
bis(2-Chlor	roisopropyl)ether, ug/kg/dw	<340	<430	<410	<430
	i-n-propylamine, ug/kg/dw	<340	<430	<410	<430
Nitrobenzer	ne, ug/kg/dw	<340	<430	<410	<430
	outadiene, ug/kg/dw	<340		<410	<430
	nlorobenzene, ug/kg/dw	<340	<430	<410	<430
Isophorone	= · · · · · · · · · · · · · · · · · · ·	<340	<430	<410	<430
_	e, ug/kg/dw	<340	<430	<410	<430
	roethoxy) methane, ug/kg/dw	<340	<430	<410	<430
	cyclopentadiene, ug/kg/dw	<340	<430	<410	<430
_	phthalene, ug/kg/dw	<340	<430	<410	<430
	lene, ug/kg/dw	<340	<430	<410	<430
_	ne, ug/kg/dw	<340	<430	<410	<430
	chalate, ug/kg/dw	<340		=	<430
	otoluene, ug/kg/dw	<340		<410	<430
Fluorene, u	ıg/kg/dw	<340	<430	<410	<430

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way:

Purchase Order: 097.001

15850 Crabbs Branch Way #300 Rockville, MD 20855

> Project: 097.001/Thiokol Sampled By: Client

REPORT OF RESULTS Page 4 DATE/ OG NO SAMPLE DESCRIPTION . SOLID OR SEMISOLID SAMPLES TIME SAMPLED

LOG NO	SAMPLE DESCRIPTION , SOLID	OR SEMISOLID	SAMPLES	TIME SAMPLED)
81166-1	9099			02-27-96/163	0
81166-2	9100			02-28-96/091	
81166-3	9101			02-28-96/110	
81166-4	9102			02-28-96/140	
PARAMETER				81166-3	
4-Chlorophe	enylphenyl ether, ug/kg/dw	<340		<410	
2,4-Dinitro	otoluene, ug/kg/dw	<340	<430	<410	<430
Diethylphth	nalate, ug/kg/dw	<340	<430	<410	<430
N-Nitrosod: ug/kg/dw	iphenylamine/Diphenylamine,	<340	<430	<410	<430
	penzene, ug/kg/dw	<340	<430	<410	<430
4-Bromophenyl phenyl ether, ug/kg/dw		<340	<430	<410	<430
Phenanthre	ne, ug/kg/dw	<340	<430	<410	<430
Anthracene,	ug/kg/dw	<340	<430	<410	<430
Di-n-butyl	ohthalate, ug/kg/dw	<340	<430	<410	<430
Fluoranther	ne, ug/kg/dw	<340	<430	<410	<430
Pyrene, ug,	/kg/dw	<340	<430	<410	<430
Benzidine,	ug/kg/dw	<2800	<3500	<3400	<3500
Butylbenzyl	.phthalate, ug/kg/dw	<340	<430	<410	<430
bis(2-Ethy)	hexyl)phthalate, ug/kg/dw	<340	<430	<410	<430
Chrysene, u	ıg/kg/dw	<340	<430	<410	<430
	hracene, ug/kg/dw	<340	<430	<410	<430
3,3'-Dichlo	probenzidine, ug/kg/dw	<680	<860	<820	<860
Di-n-octylp	hthalate, ug/kg/dw	<340	<430	<10	<430
	oranthene, ug/kg/dw	<340	<430	<10	<430
Benzo(k)flu	oranthene, ug/kg/dw	<340	<430	<10	<430

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol

Sampled By: Client

REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , SOLI	D OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	
81166-1	9099			02-27-96/1630)
81166-2	9100			02-28-96/0915	5
81166-3	9101			02-28-96/1100)
81166-4	9102			02-28-96/1400)
PARAMETER		81166-1	81166-2	81166-3	81166-4
Benzo(a)py	rene, ug/kg/dw	<340	<430	<10	<430
	2,3-cd)pyrene, ug/kg/dw	<340	<430	<10	<430
-	h)anthracene, ug/kg/dw	<340	<430	<10	<430
Benzo(g,h,	i)perylene, ug/kg/dw	<340	<430	<10	<430
N-Nitroso	dimethylamine, ug/kg/dw	<340	<430	<10	<430
2-Chloroph	nenol, ug/kg/dw	<340	<430	<10	<430
2-Nitrophe	enol, ug/kg/dw	<340	<430	<10	<430
Phenol, ug	g/kg/dw	<340	<430	<10	<430
2,4-Dimeth	nylphenol, ug/kg/dw	<340	<430	<10	<430
2,4-Dichlo	prophenol, ug/kg/dw	<340	<430	<10	<430
2,4,6-Tric	chlorophenol, ug/kg/dw	<340	<430	<10	<430
4-Chloro-3	3-methylphenol, ug/kg/dw	<340	<430	<10	<430
2,4-Dinita	cophenol, ug/kg/dw	<1800	<2200	<2100	<2200
2-Methyl-4	k,6-dinitrophenol, ug/kg/dw	<1800	<2200	<2100	<2200
	cophenol, ug/kg/dw	<1800	<2200	<2100	<2200
-	enol, ug/kg/dw	<1800	<2200	<2100	<2200
	cohol, ug/kg/dw	<340	<430	<410	<430
	menol (o-cresol), ug/kg/dw	<340	<430	<410	<430
-	phenol (m&p-cresol), ug/kg		<430	<410	<430
	eid, ug/kg/dw	<1800	<2200	<2100	<2200
4-Chloroan	niline, ug/kg/dw	<680	<860	<820	<860

LOG NO: \$6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Date Extracted

Preparation Date

Arsenic (6010), mg/kg dw

Date Analyzed Arsenic (6010)

Date Analyzed

Barium (6010)

Purchase Order: 097.001

Project: 097.001/Thiokol Sampled By: Client

REPORT OF RESULTS Page 6 DATE/ LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED ------9099 81166-1 02-27-96/1630 81166-2 9100 02-28-96/0915 81166-3 9101 02-28-96/1100 81166-4 9102 02-28-96/1400 PARAMETER 81166-1 81166-2 81166-3 81166-4 2-Methylnaphthalene, ug/kg/dw <340 <430 <410 <430 2,4,5-Trichlorophenol, ug/kg/dw <340 <430 <410 <430 2-Nitroaniline, ug/kg/dw <1800 <2200 <2100 <2200 3-Nitroaniline, ug/kg/dw <1800 <2200 <2100 <2200 Dibenzofuran, ug/kg/dw <340 <430 <410 <430 4-Nitroaniline, ug/kg/dw <1800 <2200 <2100 <2200 Surrogate-2FP 70 % 70 % 64 % 67 % 70 % Surrogate-PHL 70 % 64 % 70 % Surrogate-NBZ 65 % 65 % 55 % 59 % Surrogate-2FBP 82 % 82 🕏 76 % 76 % Surrogate-TBP 64 % 64 % 45 % 42 % Surrogate-TPH 82 %

76 %

<1.3

03.01.96 03.01.96 03.01.96 03.01.96 03.02.96 03.02.96 03.02.96 03.02.96

03.01.96 03.01.96 03.01.96 03.01.96

03.04.96 03.04.96 03.04.96 03.04.96

76 %

<1.2

82 %

<1.3

<1.0

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol Sampled By: Client

		REPORT OF RESULTS		DATE/	Page 7
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR SEMISOLID		TIME SAMPLE	D
81166-1				02-27-96/16	30
81166-2	9100			02-28-96/09	15
81166-3	9101			02-28-96/11	00
81166-4				02-28-96/14	00
PARAMETER		81166-1		81166-3	
Chromium (6					
Chromium (6010), mg/kg dw	4.1	3.0	18	4.4
Preparation		03.01.96		03.01.96	03.01.96
Date Analy		03.04.96	03.04.96	03.04.96	03.04.96
Cadmium (60	-				
	010), mg/kg dw			<0.62	
Preparation				03.01.96	
Date Analy	zed	03.04.96	03.04.96	03.04.96	03.04.96
Lead (6010)					
), mg/kg dw			2.0	
Preparation				03.01.96	
Date Analy:		03.04.96	03.04.96	03.04.96	03.04.96
Mercury (74	/1) 471), mg/kg dw	2 213	<0.013	.0.010	0.010
Preparation					
Date Analy:			03.01.96		
Antimony (6)		03.01.96	03.01.96	03.01.96	03.01.96
_	6010), mg/kg dw	-5 2	-6 E	<6.2	<6.5
Preparation			03.01.96		
Date Analy:				03.01.96	
====	- 	05.04.70	33.04.70	33.02.20	03.02.20

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300

Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol Sampled By: Client

			REPORT	OF RESULTS		/	Page 8
LOG NO	SAMPLE	DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	ED
81166-1	9099					02-27-96/1	630
	9100 9101					02-28-96/09	
81166-4						02-28-96/14	100
PARAMETER				81166-1		81166-3	
pH in Soil							
pH (9045)), units			7.18	5.96	5.15	4.79
Preparation	on Date			03.01.96	03.01.96	03.01.96	03.01.96
Date Analy	yzed			03.01.96	03.01.96	03.01.96	03.01.96
Percent So	lids (160	.3), %		97	77	80	77
N-Methylca:	rbamates	(EPA 8318)					
Aldicarb,	ug/kg dw			<40	<40	38	<39
Date Extracted			03.05.96	03.05.96	03.05.96	03.05.96	
Date Analy	yzed			03.08.96	03.08.96	03.08.96	03.08.96

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SO	OLID/SEMISOLID		
•	Method Blank Lab Control Standard (LCS) Result/Dup LCS % RPD	olicate		
PARAMETER		-	81166-6	
•	y GC/MS (8260) ane, ug/kg dw	<10		
	ne, ug/kg dw	<10		
	ride, ug/kg dw	<10		
_	ne, ug/kg dw	<10		
	chloride (Dichloromethane), ug/kg dw	<5.0		
Acetone, u	g/kg dw	<25		
Carbon disulfide, ug/kg dw <5.0				
1,1-Dichloroethene, ug/kg dw <5.0 74/71				
1,1-Dichlo	roethane, ug/kg dw	<5.0		
trans-1,2-	Dichloroethylene, ug/kg dw	<5.0		
Chloroform	, ug/kg dw	<5.0		
	roethane, ug/kg dw	<5.0		
2-Butanone	(MEK), ug/kg dw	<25		
1,1,1-Trick	loroethane, ug/kg dw	<5.0		
Carbon teti	cachloride, ug/kg dw	<5.0		
Vinyl aceta	ite, ug/kg dw	<10		
Bromodichlo	promethane, ug/kg dw	<5.0		
1,1,2,2-Tet	rachloroethane, ug/kg dw	<5.0		
1,2-Dichlor	copropane, ug/kg dw	<5.0		
trans-1,3-I	ichloropropene, ug/kg dw	<5.0		
Trichloroet	hene, ug/kg dw	<5.0	55/34	47 %

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

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Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol

Sampled By: Client

REPORT OF RESULTS

			3
LOG NO SAMPLE DESCRIPTION , QC REP	ORT FOR SOLID/SEMISOLID		
81166-5 Method Blank 81166-6 Lab Control Standard (LCS) 81166-7 LCS % RPD	Result/Duplicate		
PARAMETER	81166-5	81166-6	
Dibromochloromethane, ug/kg dw			
1,1,2-Trichloroethane, ug/kg dw		•••	
Benzene, ug/kg dw		55/58	
cis-1,3-Dichloropropene, ug/kg dw			
2-Chloroethylvinyl ether, ug/kg dw	<50.		
Bromoform, ug/kg dw	<5.0		
2-Hexanone, ug/kg dw	<25		
4-Methyl-2-pentanone (MIBK), ug/kg dw	<25		
Tetrachloroethene, ug/kg dw	<5.0		
Toluene, ug/kg dw	<5.0	54/57	5 %
Chlorobenzene, ug/kg dw	<5.0	53/56	6 %
Ethylbenzene, ug/kg dw	<5.0		
Styrene, ug/kg dw	<5.0		
Xylenes, ug/kg dw	<5.0		
Surrogate - Toluene-d8	104 %	104/104 %	
Surrogate - 4-Bromofluorobenzene	110 %	106/112 %	
Surrogate - Dibromofluoromethane	108 %	120/106 %	***
Date Analyzed	03.12.96	03.11.96	

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol

Sampled By: Client

REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REP	PORT FOR SOLID/SEMISOLID		
81166-5 Method Blank			
81166-6 Lab Control Standard (LCS)	Result/Duplicate		
81166-7 LCS % RPD			
PARAMETER	01166 6	81166-6	01166 7
	C-00110		01100-/
Semivolatile Organics (8270)			
1,3-Dichlorobenzene, ug/kg dw	<330		
1,4-Dichlorobenzene, ug/kg dw	<330	1400/1400	0 %
Hexachloroethane, ug/kg dw	<330		
bis(2-Chloroethyl)ether, ug/kg dw	<330		
1,2-Dichlorobenzene, ug/kg dw	<330		
bis(2-Chloroisopropyl)ether, ug/kg dw	<330		
n-Nitrosodi-n-propylamine, ug/kg dw	<330	1300/1300	0 ቴ
Nitrobenzene, ug/kg dw	<330		
Hexachlorobutadiene, ug/kg dw	<330		
1,2,4-Trichlorobenzene, ug/kg dw	<330	1500/1500	0 %
Isophorone, ug/kg dw	<330		
Naphthalene, ug/kg dw	<330		
bis(2-Chloroethoxy)methane, ug/kg dw	<330		
Hexachlorocyclopentadiene, ug/kg dw	<330		
2-Chloronaphthalene, ug/kg dw	<330		
Acenaphthylene, ug/kg dw	<330		
Acenaphthene, ug/kg dw	<330	1500/1500	0 %
Dimethylphthalate, ug/kg dw	<330		
2,6-Dinitrotoluene, ug/kg dw	<330		
Fluorene, ug/kg dw	<330		
4-Chlorophenylphenyl ether, ug/kg dw	<330		

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

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Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT F	OR SOLID/SEMISOLID		
81166-5	Method Blank			
81166-6	Lab Control Standard (LCS) Resul	t/Duplicate		
81166-7	LCS % RPD			
PARAMETER		81166-5	81166-6	81166-7
2,4-Dinitro	otoluene, ug/kg dw	<330	1700/1700	0 %
Diethylphth	lalate, ug/kg dw	<330		
N-Nitrosodi	iphenylamine/Diphenylamine, ug/kg	dw <330		
Hexachloro	penzene, ug/kg dw	<330		
4-Bromopher	nyl phenyl ether, ug/kg dw	<330		
Phenanthrer	ne, ug/kg dw	<330		
Anthracene,		<330		
Di-n-butylp	hthalate, ug/kg dw	<330		
	ie, ug/kg dw	<330		
Pyrene, ug/	-	<330	1400/1500	7 %
Benzidine,		<2700		
	phthalate, ug/kg dw	<330		
-	hexyl)phthalate, ug/kg dw	<330		
Chrysene, u	- ·	<330		***
	hracene, ug/kg dw	<330		
	probenzidine, ug/kg dw	<660		
Di-n-octylp	hthalate, ug/kg dw	<330		
	oranthene, ug/kg dw	<330		
	oranthene, ug/kg dw	<330		
	rene, ug/kg dw	<330		
	3-cd)pyrene, ug/kg dw	<330		
Dibenzo(a,h	n) anthracene, ug/kg dw	<330	•••	

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC RI	SPORT FOR SOLID/SEMISOLID		
	Method Blank			
	Lab Control Standard (LCS)	Result/Duplicate		
81166-7	LCS % RPD			
PARAMETER		81166-5	81166-6	81166-7
	i)perylene, ug/kg dw	<330		
	imethylamine, ug/kg dw			
-	enol, ug/kg dw		2500/2400	4 %
-	nol, ug/kg dw	== -		
Phenol, ug,	_		2500/2500	0 %
	ylphenol, ug/kg dw			
	nlorophenol, ug/kg dw	<330		
	-methylphenol, ug/kg dw		2900/2800	3 %
	ophenol, ug/kg dw	<1700		
-	,6-dinitrophenol, ug/kg dw			
	ophenol, ug/kg dw		2000/1500	28 %
-	nol, ug/kg dw	<1700	2600/2400	8 %
-	ohol, ug/kg dw	<330		
2-Methylphe	enol (o-cresol), ug/kg dw	<330		
	phenol (m&p-cresol), ug/kg			
	iđ, ug/kg dw	<1700		***
	iline, ug/kg dw	<660		
	hthalene, ug/kg dw	<330		
	nlorophenol, ug/kg dw	<330		
	line, ug/kg dw	<1700		
3-Nitroanil	line, ug/kg dw	<1700		

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol Sampled By: Client

REPORT OF RESULTS

				-
LOG NO	SAMPLE DESCRIPTION	N , QC REPORT FOR SOLID/SEMISOLID		
	Method Blank			
		ard (LCS) Result/Duplicate		
81166-7				
PARAMETER	-		81166-6	
	an, ug/kg dw			
	line, ug/kg dw			
Surrogate-			73/73 %	
Surrogate-			73/73 %	
Surrogate-		56 %		
Surrogate-		65 %	,	
Surrogate-		64 %	•	
Surrogate-		70 %	76/82 %	
Date Extra	cted	03.01.96	03.01.96	
Date Analy	zed	03.02.96	03.02.96	
Arsenic (60	10)			
Arsenic (6	010), mg/kg dw		100/97 %	
Preparatio	n Date	03.01.96		
Date Analy	zed	03.04.96		
Barium (601	0)			
Barium (60	10), mg/kg dw	<1.0	100/100 %	0 %
Preparatio	n Date	03.01.96		
Date Analy	zed	03.04.96		
Chromium (6	010)			
Chromium (6010), mg/kg dw	<1.0	108/109 %	0.92
Preparatio		03.01.96		***
Date Analy		03.04.96		

LOG NO: S6-81166 Received: 29 FEB 96 Reported: 14 MAR 96

Mr. Mark Corbin
Apex Environmental, Inc.

15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Thiokol Sampled By: Client

REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , QC	REPORT FOR SOLID/SEMISOLID		
81166-6 81166-7		CS) Result/Duplicate		
PARAMETER		81166-5	81166-6	81166-7
Cadmium (60				
Cadmium (6	010), mg/kg dw	<0.50	110/112 %	1.8 %
Preparation	n Date	03.01.96		
Date Analy:	zed	03.04.96		
Lead (6010)				
Lead (6010), mg/kg dw	<0.50	99/101 %	2.0 %
Preparation	n Date	03.01.96		
Date Analy:	zed	03.04.96		
Mercury (74	71)	,		
Mercury (74	471), mg/l	<0.010	96/97 %	1.0 %
Preparation	n Date	03.01.96		
Date Analy:	zed	03.01.96		
Antimony (6)				
	5010), mg/kg dw	<5.0	101/89 %	13 %
Preparation		03.01.96		
Date Analy:		03.04.96		
pH in Soil				
pH (9045)			100/100 %	0 %
Preparation		03.01.96		
Date Analy:		03.01.96		
	camates (EPA 8318)			
Aldicarb, u			48/62 %	25 ዩ
Date Extra		03.05.96		
Date Analy:	ed	03.08.96		

Methods: EPA SW-846

Susan H. Norwood, Project Manager

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THIOK	REFERENC	_	E	OJECTNO	31	PO. NUMBER	۱ د			1 7	NTRIX YPE				REQU	IRED A	NALY	SES			PAGE	· l of
CLIENTNA	6		CL	IENT PRO	PHONE FAX JECT MAN CORBIN		-0	69				25	1/4g/	4.5. A.		/-		,			STAN REPO DELI EXPEDITE DELIVERY	D REPORT
SAM		SL						\$\\ \$\\\\$\\\\$\\\\$\\\\$\\\\$\\\\$\\\\$\\\\$\\	SA SA SA SA SA SA SA SA SA SA SA SA SA S	<u></u>					/	1/				Date Di		
DATE	TIME د3/6	NO.			TIFICATIO	DN	3	9\\ 1	%	1 1		NUME	ERO	FCONTA	MNERS	SSUBA	AITTE) 		F	REMARK	5
2/27/8 2/28/94				00			+	\mathbb{H}	╁	-		-	-					-				
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	BY: (SIGN			DATE 2/29/1	TIME O 600	RELINQUISHED RECEIVED BY:	BY (SIG	(SIG	IRE)	URE)	700	2	1E 29 TE	M20 TIME		IVED BY		ATURE)	IRE)	1	DATE	TIME
ECEIVED	FORLABO	RATOR	Y BY: (SIGNATURE)			CUSTODY	INT	ACT	RAT CU	STOD	/ USE Y SEAL	ONLY NO.	st ro	3 NO.								Sec. 1

LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

Mr. Mark Corbin

Apex Environmental, Inc.

15850 Crabbs Branch Way #300

Rockville, MD 20855

Purchase Order: 097.001

		REPORT (OF RESULTS		/	Page 1
LOG NO	SAMPLE DESCRIPTION ,				DATE/ TIME SAMPLED	
81339-1	9107		-		03-05-96/1100	
81339-2	9108				03-05-96/1130	
81339-3	9109				03-05-96/1300	
81339-4	9110				03-05-96/1330	
81339-5	9111				03-05-96/1400	
PARAMETER	****	81339-1	81339-2	81339-3	81339-4	
Volatiles by	GC/MS (8260)					
_	•	<13	<11	<10	<13	<11
Bromomethan	ne, ug/kg dw	<13	<11	<10	<13	<11
Vinyl chlor	ride, ug/kg dw	<13	<11	<10	<13	<11
Chloroethar	ne, ug/kg dw	<13	<11	<10	<13	<11
Methylene o	chloride	<6.7	<5.4	<5.3	<6.5	<5.4
(Dichloron	methane), ug/kg dw					
Acetone, ug	g/kg dw	<33	<27	<26	<34	<27
Carbon disu	ılfide, ug/kg dw	<6.7	<5.4	<5.3	<6.5	<5.4
1,1-Dichlor	coethene, ug/kg dw	<6.7	<5.4	<5.3	<6.5	<5.4
1,1-Dichlor	coethane, ug/kg dw	<6.7	<5.4	<5.3	<6.5	<5.4
trans-1,2-D ug/kg dw	ichloroethylene,	<6.7	<5.4	<5.3	<6.5	<5.4
Chloroform,	ug/kg dw	<6.7	<5.4	<5.3	<6.5	<5.4
1,2-Dichlor	coethane, ug/kg dw	<6.7	<5.4	<5.3	<6.5	<5.4
2-Butanone	(MEK), ug/kg dw	<33	<27	<26	<34	<27
1,1,1-Trich	loroethane, ug/kg dw	<6.7	<5.4	<5.3	<6.5	<5.4
	achloride, ug/kg dw		<5.4	<5.3	<6.5	<5.4
Vinyl aceta	te, ug/kg dw	<13	<11	<10	<13	<11
	romethane, ug/kg dw		<5.4			<5.4

LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

					•	
		REPORT	OF RESULTS			Page 2
					DATE/	
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR		SAMPLES	TIME SAMPLED	
81339-1	9107				03-05-96/1100)
	9108				03-05-96/1130	
81339-3	9109				03-05-96/1300)
81339-4	9110				03-05-96/1330)
81339-5	9111				03-05-96/1400)
PARAMETER			81339-2			
	trachloroethane,					
ug/kg dw	•					
1,2-Dichlo	ropropane, ug/kg dw	<6.7	<5.4	<5.3	<6.5	<5.4
trans-1,3-	Dichloropropene,	<6.7	<5.4	<5.3	<6.5	<5.4
ug/kg dw						
Trichloroe	thene, ug/kg dw	<6.7	<5.4	<5.3	<6.5	<5.4
	oromethane, ug/kg dw					<5.4
1,1,2-Tric	hloroethane, ug/kg dw	<6.7			<6.5	<5.4
Benzene, u		<6.7	<5.4	<5.3	<6.5	<5.4
	chloropropene, ug/kg d		<5.4	<5.3	<6.5	<5.4
	hylvinyl ether, ug/kg		<54	<53		<54
Bromoform,		<6.7	<5.4	<5.3		<5.4
	, ug/kg dw	<33	<27	<26	<34	<27
4-Methyl-2 (MIBK), u	_	<33	<27	<26	<34	<27
	oethene, ug/kg dw	<6.7	<5.4	<5.3	<6.5	<5.4
Toluene, u		<6.7	<5.4			<5.4
•	ene, ug/kg dw	<6.7	<5.4	_		<5.4
	ne, ug/kg dw	<6.7	<5.4			<5.4
Styrene, u		<6.7	<5.4			<5.4
Xylenes, u		<6.7	<5.4	<5.3	<6.5	<5.4
-	- Toluene-d8	100 %	104 %	102 %	103 %	100 %
_	- 4-Bromofluorobenzene	142 %			103 %	154 %
Surrogate	- Dibromofluoromethane	109 %		113 %		107 %
Date Analy:	zed 0.	3.12.96	03.12.96	03.11.96	03.13.96	03.12.96



LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

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Rockville, MD 20855

Purchase Order: 097.001

			REPORT (OF RESULTS		•	Page 3
LOG NO	SAMPLE	DESCRIPTION		-	SAMPLES	DATE/ TIME SAMPLED	_
81339-1	9107					03-05-96/110	n
	9108					03-05-96/113	
	9109					03-05-96/130	
	9110					03-05-96/133	
81339-5						03-05-96/140	
PARAMETER						81339-4	
Semivolatile	_						_
		ie, ug/kg dw					
•		ie, ug/kg dw		<360			<360
Hexachloroe	-		<440	<360			<360
	_	ether, ug/kg		<360			<360
-		ie, ug/kg dw	<440			<360	<360
bis(2-Chlor , ug/kg dw	_	ppyl)ether	<440	<360	<350	<360	<360
n-Nitrosodi ug/kg dw	-n-prop	ylamine,	<440	<360	<35,0	<360	<360
Nitrobenzen	ie, ug/k	g dw	<440	<360	<350	<360	<360
	_	ie, ug/kg dw	<440	<360	<350	<360	<360
1,2,4-Trich	loroben	zene, ug/kg	dw <440	<360	<350	<360	<360
Isophorone,	ug/kg	dw	<440	<360	<350	<360	<360
Naphthalene	, ug/kg	r dw	<440	<360	<350	<360	<360
bis(2-Chlorug/kg dw	coethoxy) methane,	<440	<360	<350	<360	<360
Hexachloroo	yclopen	tadiene,	<440	<360	<350	<360	<360
2-Chloronap	hthalen	e, ug/kg dw	<440	<360	<350	<360	<360

LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS Page 4 DATE/ SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED LOG NO 81339-1 03-05-96/1100 9107 03-05-96/1130 81339-2 9108 03-05-96/1300 81339-3 9109 81339-4 9110 03-05-96/1330 03-05-96/1400 81339-5 9111 81339-3 81339-4 81339-5 81339-1 81339-2 Acenaphthylene, ug/kg dw <440 <360 <350 <360 <360 <350 <360 <360 Acenaphthene, ug/kg dw <440 <360 <350 <360 <360 Dimethylphthalate, ug/kg dw <440 <360 <350 <360 <360 2,6-Dinitrotoluene, ug/kg dw <440 <360 Fluorene, ug/kg dw <440 <360 <350 <360 <360 4-Chlorophenylphenyl <440 <360 <350 <360 <360 ether, ug/kg dw <350 <360 <360 2,4-Dinitrotoluene, ug/kg dw <440 <360 Diethylphthalate, ug/kg dw <440 <360 <350 <360 < 360 N-Nitrosodiphenylamine/Diph <350 <360 <360 <440 <360 enylamine, ug/kg dw <360 <360 Hexachlorobenzene, ug/kg dw <440 <360 <350 4-Bromophenyl phenyl <440 <360 <350 <360 <360 ether, ug/kg dw <440 <360 <350 <360 <360 Phenanthrene, ug/kg dw Anthracene, ug/kg dw <440 <360 <350 <360 <360 Di-n-butylphthalate, ug/kg dw <440 <360 <350 <360 <360 <360 <360 Fluoranthene, ug/kg dw <440 <360 <350 <360 Pyrene, ug/kg dw <440 <360 <350 <360 Benzidine, ug/kg dw <3600 <2900 <2800 <3000

LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

		REPORT C	F RESULTS			Page 5
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	
81339-1	9107				03-05-96/1100	
81339-2	9108				03-05-96/1130	r i i
81339-3	9109				03-05-96/1300	ı
81339-4	9110				03-05-96/1330	
81339-5	9111				03-05-96/1400	
PARAMETER		81339-1	81339-2	81339-3	81339-4	81339-5
Butylbenzyl	phthalate, ug/kg dw	<440	<360	<350	<360	<360
	hexyl) phthalate,	<440	<360	<350	<360	<360
Chrysene, u	ig/kg dw	<440	<360	<350	<360	<360
_	hracene, ug/kg dw	<440	<360	<350	<360	<360
3,3'-Dichlo	probenzidine, ug/kg d	w <880	<720	<690	<720	<720
Di-n-octylp	hthalate, ug/kg dw	<440	<360	<350	<360	<360
Benzo(b)flu	oranthene, ug/kg dw	<440	<360	<350	<360	<360
Benzo(k)flu	oranthene, ug/kg dw	<440	<360	<350	<360	<360
Benzo(a)pyr	ene, ug/kg dw	<440	<360	<350	<360	<360
Indeno(1,2,	3-cd) pyrene, ug/kg d	w <440	<360	<350	<360	<360
Dibenzo(a,h	i)anthracene, ug/kg d	iw <440	<360	<350	<360	<360
Benzo (g,h,i)perylene, ug/kg dw	<440	<360	<350	<360	<360
N-Nitrosodi	methylamine, ug/kg d	w <440	<360	<350	<360	<360
2-Chlorophe	nol, ug/kg dw	<440	<360	<350	<360	<360
2-Nitrophen	ol, ug/kg dw	<440	<360	<350	<360	<360
Phenol, ug/	kg dw	<440	<360	<350	<360	<360
2,4-Dimethy	lphenol, ug/kg dw	<440	<360	<350	<360	<360
	cophenol, ug/kg dw	<440	<360	<350	<360	<360
2,4,6-Trich	lorophenol, ug/kg dw	<440	<360	<350	<360	<360

LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

			OF RESULTS		DATE/	Page 6
rog no	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
81339-1	9107				03-05-96/110	0
81339-2	9108				03-05-96/113	0
81339-3	9109				03-05-96/130	
81339-4	9110				03-05-96/133	0
81339-5	9111				03-05-96/140	0
PARAMETER		81339-1	81339-2	81339-3	81339-4	81339-5
4-Chloro-3-	methylphenol, ug/kg	dw <440	<360	<350	<360	<360
	ophenol, ug/kg dw	<2300			<1900	<1800
•	6-dinitrophenol,	<2300	<1800	<1800	<1900	<1800
Pentachloro	ophenol, ug/kg dw	<2300	<1800	<1800	<1900	<1800
4-Nitropher	nol, ug/kg dw	<2300	<1800	<1800	<1900	<1800
-	hol, ug/kg dw	<440	<360	<350	<360	<360
2-Methylphe ug/kg dw	enol (o-cresol),	<440	<360	<350	<360	<360
3&4-Methylr (m&p-creso	ohenol ol), ug/kg dw	<440	<360	<350	<360	<360
Benzoic aci	.d, ug/kg dw	<2300	<1800	<1800		<1800
	.line, ug/kg dw	<880	<720	<690	<720	<720
2-Methylnap	hthalene, ug/kg dw	<440	<360	<350		<360
	llorophenol, ug/kg dw	<440	<360			<360
2-Nitroanil	ine, ug/kg dw	<2300	<1800			<1800
	ine, ug/kg dw	<2300	<1800			<1800
	ın, ug/kg dw	<440	<360			<360
	ine, ug/kg dw	<2300	<1800	<1800		<1800
Surrogate-2	FP	48 %	53 🕏	37 %	70 %	72 %

LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS Page 7 DATE/ SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED LOG NO ______ 03-05-96/1100 81339-1 9107 81339-2 9108 03-05-96/1130 03-05-96/1300 9109 81339-3 81339-4 9110 03-05-96/1330 9108 910903-05-96/1400 9111 81339-5 9111 81339-1 81339-2 81339-3 81339-4 81339-5 64 % 61 % 48 % 70 % 72 % Surrogate-PHL 54 % 55 % 41 % 61 % 61 % Surrogate-NBZ 78 ¥ 59 % 61 % 48 % 78 % Surrogate-2FBP 97 % 74 % 73 % 91 % 78 % Surrogate-TBP 68 % 72 % 61 % 89 % 89 % Surrogate-TPH 03.08.96 03.08.96 03.08.96 03.08.96 03.08.96 Date Extracted 03.13.96 03.13.96 03.13.96 03.13.96 03.13.96 Date Analyzed Arsenic (6010) <1.3 Arsenic (6010), mg/kg dw <1.1 <1.1 <1.1 <1.1 Preparation Date Date Analyzed Barium (6010) Barium (6010), mg/kg dw 6.1 5.2 7.3 7.0 6.2 03.08.96 03.08.96 03.08.96 03.08.96 03.08.96 Preparation Date Date Analyzed Chromium (6010) Chromium (6010), mg/kg dw 7.7 3.0 6.3 2.6 2.8 03.08.96 03.08.96 03.08.96 03.08.96 03.08.96 Preparation Date Date Analyzed

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Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS Page 8 DATE/ SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED LOG NO ______ 03-05-96/1100 81339-1 9107 9108 03-05-96/1130 81339-2 9109 03-05-96/1300 81339-3 81339-4 9110 03-05-96/1330 3 3 03-05-96/1400 81339-5 9111 PARAMETER 81339-4 81339-5 81339-1 81339-3 Cadmium (6010) <0.67 <0.54 <0.53 Cadmium (6010), mg/kg dw <0.55 <0.54 Preparation Date Date Analyzed Lead (6010) Lead (6010), mg/kg dw 2.9 3.8 4.8 4.3 3.7 03.08.96 03.08.96 03.08.96 03.08.96 03.08.96 Preparation Date 03.12.96 03.12.96 03.12.96 03.12.96 03.12.96 Date Analyzed Mercury (7471) Mercury (7471), mg/kg dw 0.031 0.018 <0.011 <0.011 0.033 Preparation Date Date Analyzed 95 Percent Solids (160.3), % 75 92 91 92 N-Methylcarbamates (EPA 8318) Aldicarb, ug/kg dw <34 <33 <32 <34 < 34 Date Extracted 03.13.96 03.13.96 03.13.96 03.13.96 03.13.96 03.25.96 03.25.96 03.25.96 03.25.96 Date Analyzed Antimony (6010) Antimony (6010), mg/kg dw <6.7 <5.4 <5.3 <5.5 < 5.4 Preparation Date 03.12.96 03.12.96 Date Analyzed 03.12.96 03.12.96 03.12.96

LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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Project: 097.001 Sampled By: Client

REPORT OF RESULTS Page 9 DATE/ SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED LOG NO 81339-6 03-05-96/1430 9112 9113 03-06-96/0950 81339-7 81339-8 9114 03-06-96/1010 03-06-96/1045 9115 81339-9 911/103-06-96/1115 91/2 81339-10 9116 ______ 81339-8 81339-9 81339-10 PARAMETER 81339-6 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <11 <11 <11 <11 <13 Bromomethane, ug/kg dw <11 <11 <11 <11 <13 Vinyl chloride, ug/kg dw <11 <11 <11 <11 <13 Chloroethane, ug/kg dw <11 <11 <11 <11 <13 Methylene chloride <5.4 <5.6 <5.3 <6.4 <5.3 (Dichloromethane), ug/kg dw Acetone, ug/kg dw <26 <27 <28 <26 < 32 Carbon disulfide, ug/kg dw <5.6 <5.3 <6.4 <5.3 <5.4 <5.3 <5.4 <5.6 <5.3 <6.4 1,1-Dichloroethene, ug/kg dw 1,1-Dichloroethane, ug/kg dw <5.3 <5.4 <5.6 <5.3 <6.4 trans-1,2-Dichloroethylene, <5.3 <5.4 <5.6 <5.3 <6.4 ug/kg dw Chloroform, ug/kg dw <5.3 <5.4 <5.6 <5.3 <6.4 1,2-Dichloroethane, ug/kg dw <5.3 <5.4 <5.6 <5.3 <6.4 2-Butanone (MEK), ug/kg dw <26 <27 <28 <26 <32 1,1,1-Trichloroethane, ug/kg dw <5.3 <5.4 <5.6 <5.3 <6.4 Carbon tetrachloride, ug/kg dw <5.3 <5.4 <5.6 <5.3 <6.4 Vinyl acetate, ug/kg dw <11 <11 <11 <11 <13 Bromodichloromethane, ug/kg dw <5.3 <5.4 <5.6 <5.3 <6.4



LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

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REPORT OF RESULTS Page 10 DATE/ CAMBLE DESCRIPTION SOLID OF SEMISOLID SAMPLES TIME SAMPLED

LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLE	o
81339-6					03-05-96/143	30
81339-7					03-06-96/095	50
81339-8					03-06-96/103	LO
81339-9	9115				03-06-96/104	15
81339-10	9116				03-06-96/113	
PARAMETER			81339-7	81339-8		81339-10
1,1,2,2-Te	trachloroethane,					
	ropropane, ug/kg dw	<5.3	<5.4	<5.6	<5.3	<6.4
	Dichloropropene,					<6.4
ug/kg dw	• •					
	thene, ug/kg dw	<5.3	<5.4	<5.6	<5.3	<6.4
Dibromochl	oromethane, ug/kg dw	<5.3	<5.4	<5.6	<5.3	<6.4
1,1,2-Tric	hloroethane, ug/kg dw	<5.3				
Benzene, u	g/kg dw	<5.3	<5.4	<5.6		
cis-1,3-Di	chloropropene, ug/kg d	lw <5.3	<5.4	<5.6	<5.3	<6.4
2-Chloroet	hylvinyl ether, ug/kg	dw <53				
Bromoform,	ug/kg dw	<5.3	<5.4	<5.6	<5.3	<6.4
2-Hexanone	, ug/kg dw	<26	<27	<28	<26	
4-Methyl-2 (MIBK), u	-pentanone g/kg dw	<26	<27	<28	<26	<32
Tetrachlor	oethene, ug/kg dw	<5.3	<5.4	<5.6	<5.3	<6. 4
Toluene, u	g/kg dw	<5.3	<5.4	<5.6	<5.3	
Chlorobenz	ene, ug/kg dw	<5.3	<5.4			
	ne, ug/kg dw	<5.3	<5.4	<5.6	<5.3	<6.4
Styrene, u	g/kg dw	<5.3	<5.4			<6. <u>4</u>
	g/kg dw	<5.3	<5.4		<5.3	
_	- Toluene-d8		102 %	104 %	104 %	
	- 4-Bromofluorobenzene					
_	- Dibromofluoromethane					
Date Analy	zed 0	3.12.96	03.12.96	03.12.96	03.12.96	03.12.96

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

			REPORT (OF RESULTS			Page 11
7.00 NO	SAMPLE DESC	'n Trantar	COL TO OB	CEMTSOT ID	CAMDICS	DATE/ TIME SAMPLE	n
LOG NO	SAMPLE DESC	RIPIION ,	SOULD OR	SEMISOUID	JAMPUS	TIME SAMPLE	
81339-6	9112					03-05-96/14	30
81339-7	9113					03-06-96/09	50
81339-8	9114					03-06-96/10	10
81339-9	9115					03-06-96/10	45
81339-10	9116					03-06-96/11	15
PARAMETER			81339-6	81339-7	81339-8	81339-9	81339-10
Semivolatil	e Organics (8270)			•		
1,3-Dichlo	robenzene, u	g/kg dw	<350	<360	<370	<350	<420
1,4-Dichlo	robenzene, u	g/kg dw	<350	<360	<370	<350	<420
Hexachloro	ethane, ug/k	g dw	<350	<360	<370	<350	<420
bis(2-Chlo	roethyl) ethe	r, ug/kg (iw <350	<360	<370	<350	<420
1,2-Dichlo	robenzene, u	g/kg dw	<350	<360	<370	<350	<420
bis(2-Chlo: , ug/kg d	roisopropyl)	ether	<350	<360	<370	<350	<420
	i-n-propylam	ine,	<350	<360	<370	<350	<420
Nitrobenze	ne, ug/kg dw	•	<350	<360	<370	<350	<420
Hexachloro	outadiene, u	g/kg dw	<350	<360	<370	<350	<420
1,2,4-Tric	nlorobenzene	, ug/kg di	√ <350	<360	<370	<350	<420
Isophorone	, ug/kg dw		<350	<360	<370	<350	<420
Naphthalen	e, ug/kg dw		<350	<360	<370	<350	<420
bis(2-Chlorug/kg dw	roethoxy) met	hane,	<350	<360	<370	<350	<420
Hexachloro	cyclopentadi	en e ,	<350	<360	<370	<350	<420
2-Chlorona	hthalene, u	g/kg dw	<350	<360	<370	<350	<420

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Mr. Mark Corbin
Apex Environmental, Inc.

15850 Crabbs Branch Way #300

Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

					•	1490 14
LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLEI)
81339-6	9112				03-05-96/143	
81339-7	9113				03-06-96/095	
81339-8	9114				03-06-96/101	
	9115				03-06-96/104	
81339-10	9116				03-06-96/111	.5
PARAMETER		81339-6	81339-7	81339-8	81339-9	81339-10
Acenaphthy	lene, ug/kg dw	<350	<360	<370	<350	<420
	ne, ug/kg dw	<350	<360	<370		<420
-	thalate, ug/kg dw	<350	<360	<370		<420
	otoluene, ug/kg dw	<350	<360	<370		<420
Fluorene, 1		<350	<360	<370		<420
4-Chlorophe		<350	<360	<370		<420
ether, ug,	/kg dw					
2,4-Dinitro	otoluene, ug/kg dw	<350	<360	<370	<350	<420
Diethylphtl	halate, ug/kg dw	<350	<360	<370	<350	<420
N-Nitrosod	iphenylamine/Diph	<350	<360	<370	<350	<420
enylamine,	, ug/kg dw					
Hexachlorol	oenzene, ug/kg dw	<350	<360	<370	<350	<420
4-Bromopher	nyl phenyl	<350	<360	<370	<350	<420
ether, ug/	/kg dw					
	ne, ug/kg dw	<350	<360	<370	<350	<420
Anthracene,		<350	<360	<370	<350	<420
	phthalate, ug/kg dw	<350	<360	<370	<350	<420
Fluoranther	ne, ug/kg dw	<350	<360	<370	<350	<420
Pyrene, ug/	_	<350	<360	<370	<350	<420
Benzidine,	ug/kg dw	<2900	<2900	<3000	<2900	<3500



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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION ,		SEMISOLID :	SAMPLES	DATE/ TIME SAMPLED	raye 13
81339-6	9112				03-05-96/143	
81339-7	9113				03-06-96/095	
81339-8	9114				03-06-96/101	
81339-9	9115				03-06-96/104	
81339-10	9116				03-06-96/111	5
PARAMETER		81339-6	81339-7	81339-8	81339-9	81339-10
Butylbenzy	lphthalate, ug/kg dw	<350	<360	<370	<350	<420
_	lhexyl)phthalate,	<350	<360	<370	<350	<420
ug/kg dw						
Chrysene, t	<u> </u>	<350	<360	<370	<350	<420
	thracene, ug/kg dw	<350	<360	<370	<350	<420
	orobenzidine, ug/kg dw		<720	<730	<700	<850
	ohthalate, ug/kg dw	<350	<360	<370	<350	<420
	oranthene, ug/kg dw	<350	<360	<370	<350	<420
	ioranthene, ug/kg dw	<350	<360	<370	<350	<420
	rene, ug/kg dw	<350	<360	<370	<350	<420
	,3-cd)pyrene, ug/kg dw		<360	<370	<350	<420
-	n)anthracene, ug/kg dw		<360	<370	<350	<420
	i)perylene, ug/kg dw	<350	<360	<370	<350	<420
	imethylamine, ug/kg dw	<350	<360	<370	<350	<420
2-Chlorophe	enol, ug/kg dw	<350	<360	<370	<350	<420
2-Nitropher	iol, ug/kg dw	<350	<360	<370	<350	<420
Phenol, ug/	kg dw	<350	<360	<370	<350	<420
2,4-Dimethy	lphenol, ug/kg dw	<350	<360	<370	<350	<420
2,4-Dichlor	cophenol, ug/kg dw	<350	<360	<370	<350	<420
2,4,6-Trich	lorophenol, ug/kg dw	<350	<360	<370	<350	<420



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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION ,	SOLID OF	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	∑ D
81339-6	9112		. * * * * * * * * * * * * * * * * * * *		03-05-96/14	
81339-7	9113				03-06-96/09	50
81339-8	9114				03-06-96/10	
81339-9	9115	-			03-06-96/10	145
81339-10	9116				03-06-96/11	115
PARAMETER		81339-6	81339-7	81339-8	81339-9	81339-10
4-Chloro-3	-methylphenol, ug/kg	dw <350	<360	<370	<350	<420
2,4-Dinitro	ophenol, ug/kg dw	<1800	<1800	<1900	<1800	<2200
	,6-dinitrophenol,	<1800	<1800	<1900	<1800	<2200
ug/kg dw	- 1 - 1 - 1 - 1	1000	1000	1000	1000	0000
	ophenol, ug/kg dw	<1800	<1800	<1900		<2200
-	nol, ug/kg dw	<1800	<1800			
_	ohol, ug/kg dw	<350	<360			<420
nd/kd qm	enol (o-cresol),	<350	<360	<370	<350	<420
3&4-Methylp		<350	<360	<370	<350	<420
_	ol), ug/kg dw					
	id, ug/kg dw	<1800	<1800	<1900	<1800	<2200
	iline, ug/kg dw	<700	<720	<730	<700	<850
	ohthalene, ug/kg dw	<350	<360	<370	<350	<420
	lorophenol, ug/kg dw	<350	<360	<370	<350	<420
	line, ug/kg dw	<1800	<1800	<1900	<1800	<2200
	line, ug/kg dw	<1800	<1800	<1900	<1800	<2200
	un, ug/kg dw	<350	<360	<370	<350	<420
4-Nitroanil	line, ug/kg dw	<1800	<1800	<1900	<1800	<2200
Surrogate-2	2FP	71 %	58 %	57 %	66 %	60 %

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Reported: 04 APR 96

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300

Rockville, MD 20855

Purchase Order: 097.001

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			REFURI	OF KESOLIS			rage 13
T 0.5 NO	CANDIB	DECORTOR ON	COLTD O		CREATER	DATE/	5
LOG NO	SAMPLE	DESCRIPTION	, SOLITO O	K SEWISOUID	SAMPLES	TIME SAMPLE	
81339-6	9112					03-05-96/14	30
81339-7	9113					03-06-96/09	50
81339-8	9114					03-06-96/10	10
81339-9						03-06-96/10	
81339-10	9116					03-06-96/11	15
PARAMETER			81339-6	81339-7	81339-8	81339-9	81339-10
Surrogate-I	PHL		71 %	56 %	54 %	63 %	58 %
Surrogate-1	NBZ		56 🕏	47 %	48 %	52 %	48 %
Surrogate-2	2FBP		78 😵	61 %	61 %	67 %	62 %
Surrogate-1	IBP		80 %	61 %	57 %	68 %	53 %
Surrogate-1	rph		89 😵	78 😵		83 %	81 %
Date Extra				03.08.96		03.08.96	03.08.96
Date Analyz			03.13.96	03.13.96	03.13.96	03.13.96	03.13.96
Arsenic (601							
Arsenic (60		/kg dw	<1.1			<1.1	
Preparation				03.08.96			03.08.96
Date Analyz			03.12.96	03.12.96	03.12.96	03.12.96	03.12.96
Barium (6010							
Barium (601	_	kg dw	4.6	8.2			10
Preparation			03.08.96	= =		03.08.96	03.08.96
Date Analyz			03.12.96	03.12.96	03.12.96	03.12.96	03.12.96
Chromium (60	•						
Chromium (6		g/kg dw	5.6				-
Preparation			03.08.96				03.08.96
Date Analyz	red		03.12.96	03.12.96	03.12.96	03.12.96	03.12.96

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		REPORT	OF KESULTS		/	rage 16
LOG NO	SAMPLE DESCRIPTION				DATE/ TIME SAMPLE	
81339-6	9112	,			03-05-96/14	
81339-7	9113				03-06-96/09	50
81339-8	9114				03-06-96/10	10
81339-9	9115				03-06-96/10	45
81339-10	9116				03-06-96/11	
PARAMETER					81339-9	
Cadmium (601						
)10), mg/kg dw	<0.53	<0.54	<0.56	<0.53	<0.64
Preparation					03.08.96	
Date Analyz		03.12.96	03.12.96	03.12.96	03.12.96	03.12.96
Lead (6010)						
Lead (6010)	, mg/kg dw	7.6	3.5	4.7	2.7	3.8
Preparation	n Date	03.08.96	03.08.96	03.08.96	03.08.96	03.08.96
Date Analyz	zed	03.12.96	03.12.96	03.12.96	03.12.96	03.12.96
Mercury (747	71)					
Mercury (74	171), mg/kg dw	<0.011	0.029	0.042	0.011	
Preparation	n Date	03.08.96	03.08.96	03.08.96	03.08.96	03.08.96
Date Analyz	ed:	03.11.96	03.11.96	03.11.96	03.11.96	03.11.96
Percent Soli	ds (160.3), %	94	92	90	94	78
N-Methylcark	namates (EPA 8318)					
Aldicarb, u	ıg/kg dw	<32	<32	<32	<32	<32
Date Extrac	ted	03.13.96	03.13.96	03.13.96	03.13.96	03.13.96
Date Analyz	:ed	03.25.96	03.25.96	03.25.96	03.25.96	03.25.96
Antimony (60)10)					
Antimony (6	5010), mg/kg dw			<5.6		
Preparation	Date	03.08.96	03.08.96	03.08.96	03.08.96	03.08.96
Date Analyz	ed:	03.12.96	03.12.96	03.12.96	03.12.96	03.12.96

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REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID			
81339-11 9117 81339-12 9118		03-06-96/1215 03-06-96/1245	
PARAMETER		81339-12	
Volatiles by GC/MS (8260) Chloromethane, ug/kg dw Bromomethane, ug/kg dw Vinyl chloride, ug/kg dw Chloroethane, ug/kg dw Methylene chloride (Dichloromethane), ug/kg dw Acetone, ug/kg dw Carbon disulfide, ug/kg dw 1,1-Dichloroethene, ug/kg dw 1,1-Dichloroethane, ug/kg dw trans-1,2-Dichloroethylene, ug/kg dw Chloroform, ug/kg dw 1,2-Dichloroethane, ug/kg dw 1,2-Dichloroethane, ug/kg dw 2-Butanone (MEK), ug/kg dw 1,1,1-Trichloroethane, ug/kg dw Vinyl acetate, ug/kg dw Bromodichloromethane, ug/kg dw	<10 <10 <10 <10 <5.3 <26 <5.3 <5.3 <5.3 <5.3 <5.3 <5.3 <5.3 <5.3	<10 <10 <10 <10 <5.2 <26 <5.2 <5.2 <5.2 <5.2 <5.2 <5.2 <5.2 <5.2	
1,1,2,2-Tetrachloroethane, ug/kg dw 1,2-Dichloropropane, ug/kg dw trans-1,3-Dichloropropene, ug/kg dw Trichloroethene, ug/kg dw Dibromochloromethane, ug/kg dw	<5.3 <5.3 <5.3 <5.3	<5.2 <5.2	

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REPORT OF RESULTS

	SAMPLE DESCRIPTION , SOLID OR SEMISOLIC			
81339-11			03-06-96/1215	
81339-12	9118		03-06-96/1245	
PARAMETER		81339-11	81339-12	
	nloroethane, ug/kg dw		<5.2	
Benzene, ug	g/kg dw	<5.3	<5.2	
	chloropropene, ug/kg dw	<5.3	<5.2	
	ylvinyl ether, ug/kg dw	<53	<52	
Bromoform,		<5.3	<5.2	
2-Hexanone	• •		<26	
-	pentanone (MIBK), ug/kg dw		<26	
Tetrachloro	pethene, ug/kg dw		<5.2	
Toluene, ug	·· · -	<5.3	<5.2	
	ene, ug/kg dw	<5.3	<5.2	
	ie, ug/kg dw	<5.3	<5.2	
Styrene, ug	·· =	<5.3	<5.2	
Xylenes, ug	y/kg dw	<5.3	<5.2	
Surrogate -	Toluene-d8	102 %	104 %	
Surrogate -	4-Bromofluorobenzene	117 %	119 %	
_	Dibromofluoromethane	113 %	110 %	
Date Analyz	ed	03.12.96	03.12.96	

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	REPORT OF RESUL	TS.		Page 19
			DATE/	
LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOL	ID SAMPLES	TIME SAMPLED	
81339-11	9117		03-06-96/1215	
81339-12	9118		03-06-96/1245	
PARAMETER		81339-11	81339-12	
Semivolatile	o Organics (8270)			
1,3-Dichlo	robenzene, ug/kg dw	<350	<340	
1,4-Dichlor	robenzene, ug/kg dw	<350	<340	
Hexachloro	ethane, ug/kg dw	<350	<340	
bis(2-Chlor	roethyl)ether, ug/kg dw	<350	<340	
1,2-Dichlor	robenzene, ug/kg dw	<350	<340	
bis(2-Chlor	roisopropyl)ether, ug/kg dw	<350	<340	
n-Nitrosodi	i-n-propylamine, ug/kg dw	<350	<340	
Nitrobenzer	ne, ug/kg dw	<350	<340	
Hexachlorob	outadiene, ug/kg dw	<350	<340	
1,2,4-Trich	nlorobenzene, ug/kg dw	<350	<340	
Isophorone,	ug/kg dw	<350	<340	
Naphthalene	e, ug/kg dw	<350	<340	
bis(2-Chlor	roethoxy) methane, ug/kg dw	<350	<340	
Hexachloro	ryclopentadiene, ug/kg dw	<350	<340	
2-Chloronar	ohthalene, ug/kg dw	<350	<340	
Acenaphthyl	lene, ug/kg dw	<350	<340	
Acenaphther	ne, ug/kg dw	<350	<340	
Dimethylpht	halate, ug/kg dw	<350	<340	
2,6-Dinitro	otoluene, ug/kg dw	<350	<340	
Fluorene, u	ig/kg dw	<350	<340	
4-Chlorophe	enylphenyl ether, ug/kg dw	<350	<340	
2,4-Dinitro	otoluene, ug/kg dw	<350	<340	

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LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID	SAMDI.ES	DATE/
	SAMPLE DESCRIPTION , SOULD ON SERISORIE		
81339-11			03-06-96/1215
81339-12	9118		03-06-96/1245
PARAMETER			81339-12
	nalate, ug/kg dw		<340
	iphenylamine/Diphenylamine, ug/kg dw		<340
	penzene, ug/kg dw	-	<340
_	nyl phenyl ether, ug/kg dw		<340
	ne, ug/kg dw	_	<340
Anthracene	· · · · ·		<340
	ohthalate, ug/kg dw	<350	
	ne, ug/kg dw		<340
Pyrene, ug,	-		<340
Benzidine,		<2800	
	lphthalate, ug/kg dw	<350	= :
_	lhexyl)phthalate, ug/kg dw	<350	
Chrysene, u	4 -	<350	
	thracene, ug/kg dw		<340
•	orobenzidine, ug/kg dw	<690	
	ohthalate, ug/kg dw	<350	
	loranthene, ug/kg dw	<350	
	oranthene, ug/kg dw	<350	
	rene, ug/kg dw		<340
	,3-cd)pyrene, ug/kg dw	=	<340
•	n) anthracene, ug/kg dw	<350	
	i)perylene, ug/kg dw		<340
N-Nitrosod:	imethylamine, ug/kg dw	<350	<340

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LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLED		
81339-11 81339-12	- :		03-06-96/1215 03-06-96/1245		
PARAMETER		81339-11	81339-12		
2-Nitropher Phenol, ug, 2,4-Dimethy 2,4-Dichlor 2,4,6-Trich 4-Chloro-3- 2,4-Dinitro 2-Methyl-4, Pentachloro 4-Nitropher Benzyl alco 2-Methylpho 3&4-Methylpho 3&4-Methylphologic acc	enol, ug/kg dw nol, ug/kg dw	<350 <350 <350 <350 <350 <350 <1800 <1800 <1800 <1800 <350 <350 <350 <350 <350	<340 <340 <340 <340 <340 <340 <1800 <1800 <1800 <1800 <340		
2-Methylnar 2,4,5-Trich 2-Nitroanil 3-Nitroanil Dibenzofura	ohthalene, ug/kg dw clorophenol, ug/kg dw line, ug/kg dw	<350 <350 <1800 <1800 <350	<340 <340		
Surrogate-2			51 %		

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		REPORT OF RESULTS		DATE/	Page 22
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR SEMISOLID	SAMPLES	TIME SAMPLED	
81339-11 81339-12	9118			03-06-96/1215 03-06-96/1245	
PARAMETER			81339-11	81339-12	
Surrogate-I Surrogate-I Surrogate-I Surrogate-I Date Extrac Date Analyz Arsenic (601	PHL NBZ PFBP TBP TPH cted sed 10) 010), mg/kg dw		54 % 43 % 56 % 68 % 78 % 03.08.96 03.13.96 <1.1 03.08.96	51 % 42 % 55 % 63 % 70 % 03.08.96 03.13.96 <1.0 03.08.96 03.12.96	
Barium (6010 Barium (6010 Preparation Date Analyz Chromium (60)) .0), mg/kg dw 1 Date :ed		9.6 03.08.96 03.12.96	6.9 03.08.96 03.12.96	
Preparation Date Analyz Cadmium (601	n Date sed .0) .0), mg/kg dw n Date		03.12.96 <0.53 03.08.96	03.08.96 03.12.96 <0.52 03.08.96 03.12.96	

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LOG NO	SAMPLE DESCRIPTION	, SOLID OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	
81339-11 81339-12	9118			03-06-96/1215 03-06-96/1245	
PARAMETER			81339-11	81339-12	
Lead (6010) Lead (6010) Preparation Date Analyz Mercury (747	, mg/kg dw 1 Date zed		3.5 03.08.96	5.0 03.08.96 03.12.96	
Mercury (74 Preparation Date Analys			03.08.96	<0.010 03.08.96 03.11.96	
	ids (160.3), % pamates (EPA 8318)			96 <32	
Date Extrac	cted ced		03.13.96	03.13.96 03.25.96	
Antimony (60 Antimony (6 Preparation Date Analyz	5010), mg/kg dw 1 Date		03.08.96	<5.3 03.08.96 03.12.96	

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REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPORT FOR	R SOLID/SEMISOLID		
81339-13 Method Blank 81339-14 Lab Control Standard (LCS) % Recov 81339-15 Precision (% RPD)	very/Duplicate		
PARAMETER	81339-13	81339-14	81339-15
Volatiles by GC/MS (8260)			
Chloromethane, ug/kg dw	<10		
Bromomethane, ug/kg dw	<10		
Vinyl chloride, ug/kg dw	<10		
Chloroethane, ug/kg dw	<10		
Methylene chloride (Dichloromethane), ug/kg o	iw <5.0		
Acetone, ug/kg dw	<25		
Carbon disulfide, ug/kg dw	<5.0		
1,1-Dichloroethene, ug/kg dw	<5.0	148/142 %	4 %
1,1-Dichloroethane, ug/kg dw	<5.0		
trans-1,2-Dichloroethylene, ug/kg dw	<5.0		
Chloroform, ug/kg dw	<5.0		
1,2-Dichloroethane, ug/kg dw	<5.0		
2-Butanone (MEK), ug/kg dw	<25		
1,1,1-Trichloroethane, ug/kg dw	<5.0		
Carbon tetrachloride, ug/kg dw	<5.0		
Vinyl acetate, ug/kg dw	<10		
Bromodichloromethane, ug/kg dw	<5.0		
1,1,2,2-Tetrachloroethane, ug/kg dw	<5.0		
1,2-Dichloropropane, ug/kg dw	<5.0		
trans-1,3-Dichloropropene, ug/kg dw	<5.0		
Trichloroethene, ug/kg dw	<5.0	110/68 %	

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LOG NO	SAMPLE DESCRIPTION , QC REP	ORT FOR SOLID/SEMISOLID		
81339-14 81339-15	Method Blank Lab Control Standard (LCS) Precision (% RPD)	Recovery/Duplicate		
PARAMETER		81339-13	81339-14	
Dibromochl	oromethane, ug/kg dw			
	hloroethane, ug/kg dw			
Benzene, u			110/116 %	
	chloropropene, ug/kg dw		110/110 %	
•	hylvinyl ether, ug/kg dw	<50		
Bromoform,				
2-Hexanone				
	-pentanone (MIBK), ug/kg dw			
_	oethene, ug/kg dw			
Toluene, u			108/114 %	5 %
	ene, ug/kg dw		106/112 %	-
	ne, ug/kg dw		100/112	
Styrene, u		· · · · · ·		
Xylenes, u				
	- Toluene-d8		104/104 %	
_	- 4-Bromofluorobenzene		106/112 %	
-	- Dibromofluoromethane		120/106 %	
Date Analy:			03.11.96	
pace mary		03.44.90	55.22.50	



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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REP	ORT FOR SOLID/SEMISOLID		
81339-14	Method Blank Lab Control Standard (LCS) Precision (% RPD)	% Recovery/Duplicate		
PARAMETER		81339-13	81339-14	81339-15
Semivolatile	e Organics (8270)			
1,3-Dichlo	robenzene, ug/kg dw	<330		
1,4-Dichlo	robenzene, ug/kg dw	<330	51/53 %	4 %
Hexachloro	ethane, ug/kg dw	<330		
bis(2-Chlo	roethyl)ether, ug/kg dw	<330		
1,2-Dichlo	robenzene, ug/kg dw	<330		
bis(2-Chlo	roisopropyl)ether, ug/kg dw	<330		
n-Nitrosod:	i-n-propylamine, ug/kg dw	<330	42/44 %	5 %
Nitrobenze	ne, ug/kg dw	<330		
Hexachlorol	butadiene, ug/kg dw	<330		
1,2,4-Tric	hlorobenzene, ug/kg dw	<330	54/55 %	2 %
Isophorone	, ug/kg dw	<330		
-	e, ug/kg dw	<330		
	roethoxy)methane, ug/kg dw	<330		
Hexachloro	cyclopentadiene, ug/kg dw	<330		
	phthalene, ug/kg dw	<330		
	lene, ug/kg dw	<330		
-	ne, ug/kg dw	<330	,	0 %
	thalate, ug/kg dw	<330		
· ·	otoluene, ug/kg dw	<330		
Fluorene, u	<u> </u>	<330		
4-Chlorophe	enylphenyl ether, ug/kg dw	<330		

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOL	TD/SEMTSOLTD		
100 10	DANFIEL DESCRIPTION , QC INFORT FOR BOX			
81339-13	Method Blank			
·	Lab Control Standard (LCS) * Recovery/	Duplicate		
	Precision (% RPD)	•		
PARAMETER		81339-13	81339-14	81339-15
2,4-Dinitr	otoluene, ug/kg dw	<330	65/70 %	7 %
	halate, ug/kg dw	<330		
N-Nitrosod	iphenylamine/Diphenylamine, ug/kg dw	<330		
Hexachloro	benzene, ug/kg dw	<330		
4-Bromophe	nyl phenyl ether, ug/kg dw	<330		
Phenanthre	ne, ug/kg dw	<330		
Anthracene	, ug/kg dw	<330		
Di-n-butyl	phthalate, ug/kg dw	<330		
Fluoranthe	ne, ug/kg dw	<330		
Pyrene, ug	/kg dw	<330	76/76 %	0 %
Benzidine,	ug/kg dw	<2700		
Butylbenzy	lphthalate, ug/kg dw	<330		
bis(2-Ethy	lhexyl)phthalate, ug/kg dw	<330		
Chrysene,	ug/kg dw	<330		
Benzo (a) an	thracene, ug/kg dw	<330		
3,3'-Dichl	orobenzidine, ug/kg dw	<660		
Di-n-octyl	phthalate, ug/kg dw	<330		
Benzo(b)fl	uoranthene, ug/kg dw	<330		
Benzo(k)fl	uoranthene, ug/kg dw	<330	*	
Benzo(a)py	rene, ug/kg dw	<330		
Indeno(1,2	,3-cd)pyrene, ug/kg dw	<330		
Dibenzo(a,	h)anthracene, ug/kg dw	<330		

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REPORT OF RESULTS

		•			
	LOG NO	SAMPLE DESCRIPTION , QC REP	ORT FOR SOLID/SEMISOLID		
		Method Blank			
		Lab Control Standard (LCS)	Recovery/Duplicate		
	81339-15	Precision (% RPD)			
	PARAMETER		81339-13	81339-14	81333-15
	7/- h	• • • • • • • • • • • • • • • • • • • •	<330		
		i)perylene, ug/kg dw	<330		
•		imethylamine, ug/kg dw enol, ug/kg dw	<330		0 %
	_	enoi, ug/kg dw nol, ug/kg dw	<330	•	
	Phenol, ug		<330		0 %
		ylphenol, ug/kg dw	<330	•	
		rophenol, ug/kg dw	<330		
	-	nlorophenol, ug/kg dw	<330		
		-methylphenol, ug/kg dw	<330		0 %
		ophenol, ug/kg dw	<1700	•	
	-	,6-dinitrophenol, ug/kg dw	<1700		
	_	ophenol, ug/kg dw	<1700	27/26 %	4 %
		nol, ug/kg dw	<1700	52/52 %	0 %
	-	ohol, ug/kg dw	<330		
	2-Methylphe	enol (o-cresol), ug/kg dw	<330		
		phenol (m&p-cresol), ug/kg dv	<330		
	Benzoic act	id, ug/kg dw	<1700		
	4-Chloroani	iline, ug/kg dw	<660		
	2-Methylnar	phthalene, ug/kg dw	<330		
	2,4,5-Trich	nlorophenol, ug/kg dw	<330		
	2-Nitroanil	line, ug/kg dw	. <1700		
	3-Nitroanil	line, ug/kg dw	<1700		



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		·		
		REPORT FOR SOLID/SEMISOLID		
	Method Blank			
		LCS) % Recovery/Duplicate		
81339-15	Precision (% RPD)			
PARAMETER			81339-14	
	an, ug/kg dw			
	line, ug/kg dw	<1700		
Surrogate-			48/48 %	
Surrogate-			48/48 %	
Surrogate-		50 %	,	
Surrogate-		62 %		
Surrogate-			58/58 %	
Surrogate-			65/65 %	
Date Extra			03.08.96	
Date Analy		03.13.96	03.13.96	
Arsenic (60:				
	010), mg/kg dw		110/108 %	
Preparation			03.08.96	
Date Analy:		03.12.96	03.12.96	
Barium (601	-		105/105	0.0
	10), mg/kg dw		105/105 %	
Preparation			03.08.96	
Date Analy		03.12.96	03.12.96	
Chromium (6	-			
	6010), mg/kg dw		102/101 %	
Preparation			03.08.96	
Date Analy:	zed	03.12.96	03.12.96	



LOG NO: S6-81339 Received: 07 MAR 96 Reported: 04 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

Page 30

LOG NO	SAMPLE DESCRIPTION ,	QC REPORT FOR SOLID/SEMISOLID		
81339-14 81339-15	Precision (% RPD)	(LCS) % Recovery/Duplicate		
PARAMETER			81339-14	81339-15
Cadmium (60				
Cadmium (6	010), mg/kg dw	<0.50	110/110 %	0 %
Preparation	n Date	03.08.96	03.08.96	
Date Analy	zed	03.12.96	03.12.96	
Lead (6010)				
Lead (6010), mg/kg dw	-	98/97 🕏	
Preparation	n Date		03.08.96	
Date Analy	zed	03.12.96	03.12.96	
Mercury (74				
	471), mg/kg dw			5.8 %
Preparation			03.08.96	
Date Analy		03.11.96	03.11.96	
N-Methylcar	bamates (EPA 8318)			
Aldicarb,	ug/kg dw		222/280 %	
Date Extra	cted	55.55	03.13.96	
Date Analy		03.25.96	03.25.96	
Antimony (6				
_	6010), mg/kg dw		•	1.8 %
Preparation			03.08.96	
Date Analy	zed	03.12.96	03.12.96	

Methods: EPA SW-846

Susan H. Norwood, Project Manager

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S	SA & E	VA. NVIR	NNAH LABORATORIES ONMENTAL SERVICES, INC.			846 Indu: 14 SW 12	2th Avenue	Drive, Ta , Deerfiel	llahasse d Beach	31404 99, FL 32301 1, FL 33442	l Pho Pho	one: (904 one: (305	2) 354-78 1) 878-39 5) 421-74	194 Fax 100 Fax	:: (912) 35 :: (904) 87 :: (305) 42	8-9504 1-2584
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DATE	TIME	NO.	SAMPLE IDENTIFICATION	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Š		NUMBER	OFCO	NTAIN	ERS SUBN	AITTED)		F	EMARK	S
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LOG NO: S6-81445 Received: 13 MAR 96

Reported: 08 APR 96

Purchase Order: 097.001

Mr. Mark Corbin Apex Environmental, Inc.

15850 Crabbs Branch Way \$300

Rockville, MD 20855

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

		REPORT	OF RESULTS			Page 1
					DATE/	
LOG NO	SAMPLE DESCRIPTION	N , SOLID O	R SEMISOLID	SAMPLES	TIME SAMPLI	SD
81445-1	9131				03-11-96/0	315
81445-2	9132				03-11-96/0	345
81445-3	9133				03-11-96/08	345
81445-4	9134				03-11-96/08	345
81445-5	9135				03-11-96/09	915
PARAMETER		81445-1	81445-2	81445-3	81445-4	81445-5
N-Methylcar	bamates (EPA 8318)					
Aldicarb,	ug/kg dw	<48	<33	<160	<50	<37
Date Extra	- -	0 3.18.96	03.18.96	03.18.96	03.18.96	03.18.96
Date Analy	zed	03.26.96	03.26.96	03.26.96	03.26.96	03.26.96

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED 81445-1 9131 03-11-96/0815 81445-2 9132 03-11-96/0845 81445-3 9133 03-11-96/0845 81445-4 9134 03-11-96/0845 81445-5 9135 03-11-96/0915 PARAMETER 81445-1 81445-2 81445-3 81445-4 81445-5 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <12 <54 <45 <18 <1500 Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
81445-1 9131 03-11-96/0815 81445-2 9132 03-11-96/0845 81445-3 9133 03-11-96/0845 81445-4 9134 03-11-96/0845 81445-5 9135 03-11-96/0915 PARAMETER 81445-1 81445-2 81445-3 81445-4 81445-5 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <12 <54 <45 <18 <1500 Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
81445-1 9131 03-11-96/0815 81445-2 9132 03-11-96/0845 81445-3 9133 03-11-96/0845 81445-5 9135 03-11-96/0845 81445-5 9135 03-11-96/0915 PARAMETER 81445-1 81445-2 81445-3 81445-4 81445-5 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <12 <54 <45 <18 <1500 Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
81445-3 9133 03-11-96/0845 81445-4 9134 03-11-96/0845 81445-5 9135 03-11-96/0915 PARAMETER 81445-1 81445-2 81445-3 81445-4 81445-5 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <12 <54 <45 <18 <1500 Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
81445-4 9134 03-11-96/0845 81445-5 9135 03-11-96/0915 PARAMETER 81445-1 81445-2 81445-3 81445-4 81445-5 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <12 <54 <45 <18 <1500 Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
81445-5 9135 03-11-96/0915 PARAMETER 81445-1 81445-2 81445-3 81445-4 81445-5 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <12 <54 <45 <18 <1500 Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
PARAMETER 81445-1 81445-2 81445-3 81445-4 81445-5 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <12 <54 <45 <18 <1500 Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
PARAMETER 81445-1 81445-2 81445-3 81445-4 81445-5 Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <12
Volatiles by GC/MS (8260) Chloromethane, ug/kg dw <12 <54 <45 <18 <1500 Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
Chloromethane, ug/kg dw <12 <54 <45 <18 <1500 Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
Bromomethane, ug/kg dw <12 <54 <45 <18 <1500
Vinyl chloride, ug/kg dw <12 <54 <45 <18 <1500
Chloroethane, ug/kg dw <12 <54 <45 <18 <1500
Methylene chloride <6.1 <27 <23 <8.9 <740
(Dichloromethane), ug/kg dw
Acetone, ug/kg dw 59 580 <110 34J <3700
Carbon disulfide, ug/kg dw <6.1 <27 <23 300 <740
1,1-Dichloroethene, ug/kg dw <6.1 <27 <23 <8.9 <740
1,1-Dichloroethane, ug/kg dw <6.1 <27 <23 <8.9 <740
trans-1,2-Dichloroethylene, <6.1 <27 <23 <8.9 <740 ug/kg dw
Chloroform, ug/kg dw <6.1 <27 <23 <8.9 <740
1,2-Dichloroethane, ug/kg dw <6.1 <27 <23 <8.9 <740
2-Butanone (MEK), ug/kg dw <30 <130 <110 <45 <3700
1,1,1-Trichloroethane, ug/kg dw <6.1 <27 <23 <8.9 <740
Carbon tetrachloride, ug/kg dw <6.1 <27 <23 <8.9 <740
Vinyl acetate, ug/kg dw <12 <54 <45 <18 <1500
Bromodichloromethane, ug/kg dw <6.1 <27 <23 <8.9 <740

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine Sampled By: Client

		REPORT	OF RESULTS			Page 3
					DATE/	-
LOG NO	SAMPLE DESCRIPTION	, SOLID OF	R SEMISOLID		TIME SAMPLED	l
81445-1	9131				03-11-96/081	
	9132				03-11-96/084	
	9133				03-11-96/084	
	9134				03-11-96/084	
81445-5	9135				03-11-96/091	5
PARAMETER		81445-1	81445-2	81445-3	81445-4	81445-5
1,1,2,2-Tet	rachloroethane,	<6.1	<27	<23	<8.9	<740
ug/kg dw	•					
1,2-Dichlor	copropane, ug/kg dw	<6.1	<27	<23	<8.9	<740
	Dichloropropene,	<6.1	<27	<23	<8.9	<740
ug/kg dw						
Trichloroet	hene, ug/kg dw	<6.1	<27	<23	<8.9	<740
Dibromochlo	promethane, ug/kg dw	<6.1	<27	<23	<8.9	<740
	loroethane, ug/kg dw		<27	<23	<8.9	<740
Benzene, ug	g/kg dw	<6.1	78	<23	<8.9	<740
cis-1,3-Did	chloropropene, ug/kg	dw <6.1	<27	<23	<8.9	<740
	ylvinyl ether, ug/kg		<270	<230	<89	<7400
Bromoform,	ug/kg dw	<6.1	<27	<23	<8.9	<740
2-Hexanone,	ug/kg dw	<30	<130	<110	<45	<3700
4-Methyl-2-	pentanone	<30	<130	<110	<45	<3700
(MIBK), ug	/kg dw					
Tetrachloro	ethene, ug/kg dw	<6.1	<27	<23	<8.9	<740
Toluene, ug	/kg dw	<6.1	440	<23	<8.9	<740
Chlorobenze	ne, ug/kg dw	<6.1	<27	<23	<8.9	<740
Ethylbenzer	ie, ug/kg dw	<6.1	150	<23	<8.9	<740
Styrene, ug	/kg dw	<6.1	<27	<23	<8.9	<740
Xylenes, ug	/kg dw	<6.1	820	<23	<8.9	3700
Surrogate -	Toluene-d8	97 %	100 %	100 %	100 %	103 %
Surrogate -	1	49 % *F36	133 % *F36	122 %	124 %	103 %
4-Bromoflu	orobenzene					
Surrogate -	Dibromofluoromethan	e 110 %	111 %	109 %	112 %	119 %
Date Analyz	ed	03.15.96	03.14.96	03.14.96	03.15.96	03.22.96

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine Sampled By: Client

	REPORT	OF RESULTS			Page 4
LOG NO SAMPLE DESCRIPTION	, SOLID OF	SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	
81445-1 9131 81445-2 9132	• • • • • • • • •			03-11-96/081	
81445-3 9133 81445-4 9134				03-11-96/084 03-11-96/084	5
81445-5 9135				03-11-96/091	5
PARAMETER	81445-1	81445-2	81445-3	81445-4	81445-5
Semivolatile Organics (8270)					
1,3-Dichlorobenzene, ug/kg dw	<2000*F65	<9600*F65	<1500	<29000*F65	<390
1,4-Dichlorobenzene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Hexachloroethane, ug/kg dw	<2000	<9600	<1500	<29000	<390
bis(2-Chloroethyl)ether, ug/kg	dw <2000	<9600	<1500	<29000	<390
1,2-Dichlorobenzene, ug/kg dw	<2000	<9600	<1500	<29000	<390
<pre>bis(2-Chloroisopropyl)ether , ug/kg dw</pre>	<2000	<9600	<1500	<29000	<390
<pre>n-Nitrosodi-n-propylamine, ug/kg dw</pre>	<2000	<9600	<1500	<29000	<390
Nitrobenzene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Hexachlorobutadiene, ug/kg dw	<2000	<9600	<1500	<29000	<390
1,2,4-Trichlorobenzene, ug/kg	dw <2000	<9600	<1500	<29000	<390
Isophorone, ug/kg dw	<2000	<9600	<1500	<29000	<390
Naphthalene, ug/kg dw	<2000	<9600	<1500	<29000	<390
<pre>bis(2-Chloroethoxy)methane, ug/kg dw</pre>	<2000	<9600	<1500	<29000	<390
Hexachlorocyclopentadiene, ug/kg dw	<2000	<9600	<1500	<29000	<390
2-Chloronaphthalene, ug/kg dw	<2000	<9600	<1500	<29000	<390

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

	REPORT	OF RESULTS		DATE/	Page 5
LOG NO SAMPLE DESCRIPTION ,	SOLID OF	SEMISOLID	Samples	TIME SAMPLED	
81445-1 9131				03-11-96/0819	
81445-2 9132				03-11-96/0849	
81445-3 9133				03-11-96/0845	
81445-4 9134				03-11-96/0845	
81445-5 9135				03-11-96/0919	5
PARAMETER	81445-1	81445-2	81445-3	81445-4	81445-5
Acenaphthylene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Acenaphthene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Dimethylphthalate, ug/kg dw	<2000	<9600	<1500	<29000	<390
2,6-Dinitrotoluene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Fluorene, ug/kg dw	<2000	<9600	<1500	<29000	<390
4-Chlorophenylphenyl	<2000	<9600	<1500	<29000	<390
ether, ug/kg dw					
2,4-Dinitrotoluene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Diethylphthalate, ug/kg dw	<2000	<9600	<1500	<29000	<390
N-Nitrosodiphenylamine/Diph	<2000	<9600	<1500	<29000	<390
enylamine, ug/kg dw					
Hexachlorobenzene, ug/kg dw	<2000	<9600	<1500	<29000	<390
4-Bromophenyl phenyl	<2000	<9600	<1500	<29000	<390
ether, ug/kg dw					
Phenanthrene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Anthracene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Di-n-butylphthalate, ug/kg dw	<2000	<9600	<1500	<29000	<390
Fluoranthene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Pyrene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Benzidine, ug/kg dw	<16000	<78000	<12000	<240000	<3200

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

	REPORT	OF RESULTS		DATE/	Page 6
LOG NO SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
81445-1 9131				03-11-96/081	5
81445-2 9132				03-11-96/084	5
81445-3 9133				03-11-96/084	5
81445-4 9134				03-11-96/084	5
81445-5 9135				03-11-96/091	5
PARAMETER	81445-1	81445-2	81445-3	81445-4	81445-5
Butylbenzylphthalate, ug/kg dw	<2000	<9600	<1500	<29000	<390
bis(2-Ethylhexyl)phthalate, ug/kg dw	<2000	<9600	<1500	<29000	<390
Chrysene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Benzo(a)anthracene, ug/kg dw	<2000	<9600	<1500	<29000	<390
3,3'-Dichlorobenzidine, ug/kg dw	<4000	<19000	<3000	<59000	<780
Di-n-octylphthalate, ug/kg dw	<2000	<9600	<1500	<29000	<390
Benzo(b)fluoranthene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Benzo(k)fluoranthene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Benzo(a)pyrene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Indeno(1,2,3-cd)pyrene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Dibenzo(a,h)anthracene, ug/kg dw	<2000	<9600	<1500	<29000	<390
Benzo(g,h,i)perylene, ug/kg dw	<2000	<9600	<1500	<29000	<390
N-Nitrosodimethylamine, ug/kg dw	<2000	<9600	<1500	<29000	<390
2-Chlorophenol, ug/kg dw	<2000	<9600	<1500	<29000	<390
2-Nitrophenol, ug/kg dw	<2000	<9600	<1500	<29000	<390
Phenol, ug/kg dw	<2000	<9600	<1500	<29000	<390
2,4-Dimethylphenol, ug/kg dw	<2000	<9600	<1500	<29000	<390
2,4-Dichlorophenol, ug/kg dw	<2000	<9600	<1500	<29000	<390
2,4,6-Trichlorophenol, ug/kg dw	<2000	<9600	<1500	<29000	<390

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine Sampled By: Client

		REPORT C	OF RESULTS		•	Page 7
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	
81445-1	9131				03-11-96/0819	5
81445-2	9132				03-11-96/0845	
81445-3	9133				03-11-96/0845	5
81445-4	9134				03-11-96/0845	
81445-5	9135				03-11-96/0915	5
PARAMETER		81445-1	81445-2	81445-3	81445-4	81445-5
4-Chloro-3	-methylphenol, ug/kg	dw <2000	<9600	<1500	<29000	<390
	ophenol, ug/kg dw		<49000		-	<2000
2-Methyl-4, ug/kg dw	,6-dinitrophenol,	<10000	<49000	<7700		<2000
Pentachloro	ophenol, ug/kg dw	<10000	<49000	<7700	<150000	<2000
	nol, ug/kg dw	<10000	<49000	<7700	<150000	<2000
Benzyl alco	ohol, ug/kg dw	<2000	<9600	<1500	<29000	<390
2-Methylphe ug/kg dw	enol (o-cresol),	<2000	<9600	<1500	<29000	<390
3&4-Methylr	phenol ol), ug/kg dw	<2000	<9600	<1500	<29000	<390
-	iđ, ug/kg đw	<10000	<49000	<7700	<150000	<2000
	line, ug/kg dw	<4000	<19000	<3000	<59000	<780
2-Methylnap	hthalene, ug/kg dw	<2000	<9600	<1500	<29000	<390
	lorophenol, ug/kg dw	<2000	<9600	<1500	<29000	<390
2-Nitroanil	ine, ug/kg dw	<10000	<49000	<7700	<150000	<2000
3-Nitroanil	ine, ug/kg dw	<10000	<49000	<7700	<150000	<2000
Dibenzofura	ın, ug/kg dw	<2000	<9600	<1500	<29000	<390
4-Nitroanil	ine, ug/kg dw	<10000	<49000	<7700	<150000	<2000
Surrogate-2	FP	34 %	53 %	59 %	42 %	40 %

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol-Woodbine

		REPO!	RT (OF RESULT	'S		Page 8
LOG NO SAMPLE I		, SOLID			D SAMPLES	DATE/ TIME SAMPL	SD _
81445-1 9131						03-11-96/0	 315
81445-2 9132			•			03-11-96/0	
81445-3 9133						03-11-96/08	
81445-4 9134						03-11-96/08	
81445-5 9135						03-11-96/09	
PARAMETER		81445	1	81445-2	2 81445-3	81445-4	81445-5
Surrogate-PHL					67 %	57 %	55 %
Surrogate-NBZ		120	*	61 8	58 %	80 %	48 %
Surrogate-2FBP		50	ક	83 9	86 %	143 %	80 %
Surrogate-TBP		51	*	97 %	127 %	33 %	<390
Surrogate-TPH		47	ક	83 %	83 %	120 %	75 %
Date Extracted		03.14.9	6	03.14.96	03.14.96	03.14.96	03.14.96
Date Analyzed		03.18.9	6	03.18.96	03.18.96	03.19.96	
Arsenic (6010)							
Arsenic (6010), mg/1	cg dw	<1.	2	<1.1	<4.5	<1.8	<1.2
Preparation Date		03.14.9	6	03.14.96	03.14.96	03.14.96	
Date Analyzed		03.15.9	6	03.15.96	03.15.96	03.15.96	
Barium (6010)							
Barium (6010), mg/kg	dw dw	1.	3	<1.1	<4.5	15	4.1
Preparation Date		03.14.9	6	03.14.96	03.14.96	03.14.96	
Date Analyzed		03.15.9	6	03.15.96	03.15.96	03.15.96	
Cadmium (6010)							
Cadmium (6010), mg/k	g dw	<0.6	1	<0.54	<2.3	<0.89	<0.60
Preparation Date	į	03.14.9	5	03.14.96	03.14.96	03.14.96	
Date Analyzed		03.15.9			03.15.96		

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

		REPORT	OF RESULTS			Page 9
					DATE/	
LOG NO	SAMPLE DESCRIPTION	-			TIME SAMPLE	D
81445-1					03-11-96/08	
-	9132				03-11-96/08	
	9133				03-11-96/08	
81445-4	9134				03-11-96/08	
81445-5	9135				03-11-96/09	15
PARAMETER		81445-1	81445-2	81445-3	81445-4	
Chromium (6						
· ·	6010), mg/kg dw	3.7	<1.1	7.5	4.5	7.9
Preparation					03.14.96	•
Date Analy		03.15.96	03.15.96	03.15.96	03.15.96	03.15.96
Lead (6010)						
		4.0	0.64	59	44	5.7
	n Date	03.14.96	03.14.96	03.14.96	03.14.96	03.14.96
Date Analy		03.15.96	03.15.96	03.15.96	03.15.96	03.15.96
Mercury (74						
_	471), mg/kg dw	0.73	<0.011	<0.045	0.023	0.012
Preparation	- -				03.14.96	
Date Analy		03.20.96	03.15.96	03.15.96	03.15.96	03.15.96
_	ids (160.3), %	82	93	22	56	84
Antimony (6						
_	6010), mg/kg dw	1.1	1.2	<2.7	1.9	0.98
Preparation					03.14.96	
Date Analy			03.15.96			
-						

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol-Woodbine

REPORT OF RESULTS						
					DATE/	
LOG NO	SAMPLE DESCRIPTIO	N , SOLID O	R SEMISOLID	SAMPLES	TIME SAMPL	ED
81445-6	9136				03-11-96/1	130
81445-7	9137				03-11-96/1	200
81445-8	9138				03-11-96/14	445
81445-9	9156				03-12-96/10	025
81445-10	9157				03-12-96/10	055
PARAMETER	***************************************	81445-6	81445-7	81445-8	81445-9	81445-10
N-Methylcari	camates (EPA 8318)		*****			
Aldicarb, u	ıg/kg dw	<140	<9400	<40	<32	<33
Date Extra	ted	03.18.96	03.18.96	03.18.96	03.18.96	03.18.96
Date Analyz	sed	03.26.96	03.28.96	03.29.96	03.27.96	03.27.96

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

			P			
·					DATE/	_
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLE	D
81445-6	9136				03-11-96/11	30
81445-7	9137				03-11-96/12	00
81445-8	9138				03-11-96/14	45
81445-9	9156				03-12-96/10	
81445-10	9157				03-12-96/10	55
PARAMETER		81445-6	81445-7	81445-8	81445-9	81445-10
Volatiles b	y GC/MS (8260)					
	ane, ug/kg dw	<250	<31000	<14	<11	<11
Bromomethau	ne, ug/kg dw	<250	<31000	<14	<11	<11
Vinyl chlo	ride, ug/kg dw	<250	<31000	<14	<11	<11
Chloroethau	ne, ug/kg dw	<250	<31000	<14	<11	<11
Methylene	chloride	<120	<16000	<7.0	<5.4	<5.6
(Dichloro	methane), ug/kg dw					
Acetone, ug	g/kg dw	830	460000	<35	<27	<28
Carbon dis	ulfide, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
•	roethene, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
•	roethane, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
trans-1,2-I ug/kg dw	Dichloroethylene,	<120	<16000	<7.0	<5.4	<5.6
Chloroform	, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
1,2-Dichlor	roethane, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
2-Butanone	(MEK), ug/kg dw	<620	79000	<35	<27	<28
1,1,1-Trich	nloroethane, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
Carbon teti	rachloride, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
Vinyl aceta	ate, ug/kg dw	<250	<31000	<14	<11	<11
Bromodichlo	oromethane, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION ,		SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	Page 12
81445-6	9136				03-11-96/11	30
81445-7	9137				03-11-96/120	00
81445-8	9138				03-11-96/144	15
81445-9	9156				03-12-96/10:	25
81445-10	9157				03-12-96/105	55
PARAMETER		81445-6	81445-7	81445-8	81445-9	81445-10
1,1,2,2-T ug/kg dw	- · · · · · · · · · · · · · · · · · · ·	<120	<16000	<7.0	<5.4	<5.6
1,2-Dichl	oropropane, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
trans-1,3-Dichloropropene, ug/kg dw		<120	<16000	<7.0	<5.4	<5.6
Trichloroethene, ug/kg dw		<120	<16000	<7.0	<5.4	<5.6
Dibromoch	loromethane, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
1,1,2-Tri	chloroethane, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
Benzene,	T - T	<120	<16000	<7.0	<5.4	<5.6
cis-1,3-D:	ichloropropene, ug/kg d	w <120	<16000	<7.0	<5.4	<5.6
2-Chloroe ug/kg dw	thylvinyl ether,	<1200	<160000	<70	<54	<56
Bromoform	, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
2-Hexanone	e, ug/kg dw	<620	<78000	<35	<27	<28
4-Methyl-: (MIBK),	2-pentanone ug/kg dw	<620	<78000	<35	<27	<28
Tetrachlo	roethene, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
Toluene, u	ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
Chloroben:	zene, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6
Ethylbenze	ene, ug/kg dw	<120	<16000	<7.0	<5.4	<5.6

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Purchase Order: 097.001

Mr. Mark Corbin

Apex Environmental, Inc.

15850 Crabbs Branch Way #300

Rockville, MD 20855

Project: 097.001 Thiokol-Woodbine

REPORT OF RESULTS						
LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLED)
81445-6	9136				03-11-96/113	30
81445-7					03-11-96/120	
81445-8					03-11-96/144	5
81445-9	9156				03-12-96/102	25
81445-10	9157				03-12-96/105	55
PARAMETER					81445-9	81445-10
Styrene, ug					<5.4	
Xylenes, u		<120	<16000	<7.0	<5.4	<5.6
	· Toluene - d8	100 %	100 %	100 %	102 %	102 %
Surrogate ·		158 %*F 36	100 %	114 %	139 %* F36	118 %
	iorobenzene					
Surrogate -	- Dibromofluorometha					
Date Analy	zed.	03.14.96	03.21.96	03.15.96	03.15.96	03.15.96

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

		REPORT (OF RESULTS		DATE/	Page 14
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLE)
81445-6 81445-7 81445-8 81445-9 81445-10	9136 9137 9138 9156 9157				03-11-96/11: 03-11-96/120 03-11-96/144 03-12-96/102	00 45 25 55
PARAMETER		81445-6	81445-7	81445-8		
1,3-Dichlor 1,4-Dichlor Hexachloroe bis(2-Chlor 1,2-Dichlor bis(2-Chlor , ug/kg dw n-Nitrosodi ug/kg dw Nitrobenzer Hexachloroe 1,2,4-Trick Isophorone, Naphthalene bis(2-Chlor ug/kg dw Hexachloroe	i-n-propylamine, ne, ug/kg dw outadiene, ug/kg dw nlorobenzene, ug/kg dw . ug/kg dw	<1600 <1600 <1600 <1600 <1600	<10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000 <10000	<460 <460 <460 <460 <460 <460 <460 <460	<360 <360 <360	<370 <370 <370 <370 <370 <370 <370 <370
ug/kg dw 2-Chloronar	ohthalene, ug/kg dw	<1600	<10000	<460	<360	<370

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

			OF RESULTS		DATE/	Page 15
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLE	D
81445-6	9136				03-11-96/11	30
81445-7	9137				03-11-96/12	
81445-8	9138				03-11-96/14	45
81445-9	9156				03-12-96/10	25
81445-10	9157				03-12-96/10	55
PARAMETER		81445-6	81445-7	81445-8	81445-9	81445-10
Tananahahari	iene, ug/kg dw	<1600	<10000	<460	<360	<370
-	ne, ug/kg dw		<10000		· ·	
•	halate, ug/kg dw	=	<10000	= :		
	otoluene, ug/kg dw	<1600	<10000			<370
Fluorene, u		<1600	<10000	. – -		<370
4-Chlorophe		<1600	<10000	= -		<370
ether, ug/						
2,4-Dinitro	otoluene, ug/kg dw	<1600	<10000	<460	<360	<370
Diethylphth	nalate, ug/kg dw	<1600	<10000	<460	<360	<370
N-Nitrosodi enylamine,	phenylamine/Diph	<1600	<10000	<460	<360	<370
_	enzene, ug/kg dw	<1600	<10000	<460	<360	<370
4-Bromopher ether, ug/	yl phenyl	<1600	<10000	<460	<360	<370
	ne, ug/kg dw	<1600	<10000	<460	<360	<370
Anthracene,		<1600	<10000	<460	<360	<370
•	hthalate, ug/kg dw	<1600	<10000	<460	<360	<370
	ne, ug/kg dw	<1600	<10000		"	
Pyrene, ug/		<1600	<10000			<370
Benzidine,	_	<14000	<84000	<3800	<2900	<3000

LOG NO: S6-81445 Received: 13 MAR 96

Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol-Woodbine

		REPORT (OF RESULTS			Page 16
LOG NO	Cample Description	COT TD OD	CENTROL TO	anorna a	DATE/	
LOG NO	SAMPLE DESCRIPTION ,	SOLID OK	SEMISOLID	SAMPLES	TIME SAMPLE)
81445-6	9136				03-11-96/113	10
81445-7	9137				03-11-96/120	
81445-8	9138				03-11-96/144	
81445-9	9156				03-12-96/102	15
81445-10	9157				03-12-96/105	5
PARAMETER		81445-6	81445-7	81445-8	81445-9	81445-10
Butylbenzy	lphthalate, ug/kg dw	<1600	<10000	<460	<360	<370
bis(2-Ethy	lhexyl) phthalate,	<1600	<10000	<460	<360	<370
ug/kg dw						
Chrysene, ug/kg dw		<1600	<10000	<460	<360	<370
Benzo (a) ant	chracene, ug/kg dw	<1600	<10000	<460	<360	<370
	orobenzidine, ug/kg dw		<21000	<930	<720	<730
	ohthalate, ug/kg dw	<1600	<10000	<460	<360	<370
	loranthene, ug/kg dw	<1600	<10000	<460	<360	<370
	loranthene, ug/kg dw	<1600	<10000	<460	<360	<370
	rene, ug/kg dw	<1600	<10000	<460	<360	<370
	3-cd)pyrene, ug/kg dw		<10000	<460	<360	<370
	ı)anthracene, ug/kg dw	<1600	<10000	<460	<360	<370
	l)perylene, ug/kg dw	<1600	<10000	<460	<360	<370
	methylamine, ug/kg dw		<10000	<460	<360	<370
-	enol, ug/kg dw	<1600	<10000	<460	<360	<370
-	iol, ug/kg dw	<1600	<10000	<460	<360	<370
Phenol, ug/	•	<1600	<10000	<460	<360	<370
_	lphenol, ug/kg dw	<1600	13000	<460	<360	<370
	ophenol, ug/kg dw	<1600	<10000	<460	<360	<370
2,4,6-Trich	llorophenol, ug/kg dw	<1600	<10000	<460	<360	<370

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

		REPORT (OF RESULTS		nam /	Page 17
LOG NO	SAMPLE DESCRIPTION ,	, SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
81445-6	9136				03-11-96/11	30
81445-7	9137	٠			03-11-96/120	00
81445-8	9138				03-11-96/14	45
81445-9	9156				03-12-96/10	25
81445-10	9157				03-12-96/10	
PARAMETER		81445-6	81445-7	81445-8	81445-9	
4-Chloro-	3-methylphenol, ug/kg	dw <1600	<10000	<460	<360	<370
2,4-Dinit	rophenol, ug/kg dw	<8500	<53000	<2400	<1800	<1900
2-Methyl- ug/kg d	4,6-dinitrophenol,	<8500	<53000	<2400	<1800	<1900
Pentachlo	rophenol, ug/kg dw	<8500	<53000	<2400	<1800	<1900
4-Nitroph	enol, ug/kg dw	<8500	<53000	<2400	<1800	<1900
Benzyl al	cohol, ug/kg dw	<1600	<10000	<460	<360	<370
2-Methylp ug/kg dw	henol (o-cresol),	<1600	<10000	<460	<360	<370
3&4-Methy (m&p-cre	lphenol sol), ug/kg dw	<1600	12000	<460	<360	<370
Benzoic a	cid, ug/kg dw	<8500	<53000	<2400	<1800	<1900
4-Chloroa	niline, ug/kg dw	<3300	<21000	<930	<720	<730
2-Methyln	aphthalene, ug/kg dw	<1600	<10000	<460	<360	<370
2,4,5-Tri	chlorophenol, ug/kg dw	<1600	<10000	<460	<360	<370
	iline, ug/kg dw	<8500	<53000	<2400	<1800	<1900
3-Nitroan	iline, ug/kg dw	<8500	<53000	<2400	<1800	<1900
Dibenzofu	ran, ug/kg dw	<1600	<10000	<460	<360	<370
4-Nitroan	iline, ug/kg dw	<8500	<53000	<2400	<1800	<1900
Surrogate	-2FP	65 %	58 %	72 %	67 %	59 %

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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Project: 097.001 Thiokol-Woodbine

			REPOR	TOF	RESULTS			Page 18
							DATE/	
LOG NO	SAMPLE I	DESCRIPTION	, SOLID	OR SI	MISOLID	SAMPLES	TIME SAMPLE	ED.
81445-6	9136						03-11-96/11	
	9137						03-11-96/12	
	9138						03-11-96/14	
81445-9	9156						03-12-96/10	
81445-10	9157						03-12-96/10	55
PARAMETER			01445		01445 7	01445 0	81445-9	01445 10
PARAMETER			91443-		01443-/	91443-8	01443-3	81445-10
Surrogate-I	PHL		70	ક	61 %	68 %	75 %	62 %
Surrogate-N			59	ક	42 %	65 %	67 %	56 ¥
Surrogate-2			92	¥	67 %	104 %	100 %	89 %
Surrogate-1	MBP .		124				144 %	
Surrogate-1	rph		84	ક	44 %	87 %	89 %	78 %
Date Extrac	cted		03.14.9	6 0	3.14.96	03.14.96	03.14.96	03.14.96
Date Analyz	zed		03.18.9	6 0	3.20.96	03.18.96	03.18.96	03.18.96
Arsenic (601	LO)				•			
Arsenic (60)10), mg/	kg dw	<5.	0	<3.1	<1.4	<1.1	<1.1
Preparation	1 Date		03.14.9	6 0	3.14.96	03.14.96	03.14.96	03.14.96
Date Analyz	zed		03.15.9	6 0	3.15.96	03.15.96	03.15.96	03.15.96
Barium (6010))							
Barium (601	LO), mg/k	cg dw	<5.0	0	<3.1	2.9	3.6	8.3
Preparation	Date		03.14.9	6 0	3.14.96	03.14.96	03.14.96	03.14.96
Date Analyz	ed		03.15.9	6 0	3.15.96	03.15.96	03.15.96	03.15.96
Cadmium (601	LO)							
Cadmium (60)10), mg/	kg dw	<2.5	5	<1.6	<0.70	<0.54	<0.56
Preparation	Date		03.14.9	5 0	3.14.96	03.14.96	03.14.96	03.14.96
Date Analyz	ed		03.15.96	5 0	3.15.96	03.15.96	03.15.96	03.15.96

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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			REPO	RT (OF RESULTS			Page 19
LOG NO	SAMPLE	DESCRIPTION	, SOLID	OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
81445-6	9136						03-11-96/11	30
81445-7	9137						03-11-96/12	00
81445-8	9138						03-11-96/14	45
81445-9	9156			•			03-12-96/10	25
81445-10	9157						03-12-96/10	55
PARAMETER							81445-9	81445-10
Chromium (60								
Chromium (6	010), m	g/kg dw	<5.	. 0	<3.1	<1.4	2.6	2.4
Preparation	Date		03.14.9	96	03.14.96	03.14.96	03.14.96	03.14.96
Date Analyz	ed		03.15.9	96	03.15.96	03.15.96	03.15.96	03.15.96
Lead (6010)								
Lead (6010)	, mg/kg	dw	4.	.1	<1.6	1.0	2.4	3.2
Preparation	Date		03.14.9	96	03.14.96	03.14.96	03.14.96	03.14.96
Date Analyz	ed		03.15.9	6	03.15.96	03.15.96	03.15.96	03.15.96
Mercury (747	1)							
Mercury (74	71), mg	/kg dw	<0.05	0	<0.031	<0.014	0.022	0.028
Preparation	Date		03.14.9	6	03.14.96	03.14.96	03.14.96	03.14.96
Date Analyz	ed		03.15.9	6	03.15.96	03.15.96	03.15.96	03.15.96
Percent Soli Antimony (60		.3), %	2	0	32	71	92	90
Antimony (60 Antimony (6		/l 	3.	1	2 2	40 OF	-0.65	0.74
_		g/kg aw					<0.65	
Preparation Date Analyz							03.14.96 03.15.96	
_								

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Purchase Order: 097.001

Mr. Mark Corbin

Date Analyzed

Apex Environmental, Inc.

15850 Crabbs Branch Way #300

Rockville, MD 20855

Project: 097.001 Thiokol-Woodbine

03.27.96

Sampled By: Client

REPORT OF RESULTS
DATE/
LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED

81445-11 9158 03-12-96/1330

PARAMETER 81445-11

N-Methylcarbamates (EPA 8318)
Aldicarb, ug/kg dw < 39
Date Extracted 03.18.96

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

	ABFORT OF A	220112		raye 21
	SAMPLE DESCRIPTION , SOLID OR SEM			
81445-11			03-12-96/1330	
PARAMETER		81445-11		
	y GC/MS (8260)		******	
Chlorometh	ane, ug/kg dw	<1600*F39		
Bromometha	ne, ug/kg dw	<1600		
Vinyl chlo	ride, ug/kg dw	<1600		
Chloroetha	ne, ug/kg dw	<1600		
_	chloride (Dichloromethane), ug/kg d	iw <790		
Acetone, u		<4000		
	ulfide, ug/kg dw	<790		
	roethene, ug/kg dw	<790		
	roethane, ug/kg dw	<790		
	Dichloroethylene, ug/kg dw	<790		
Chloroform	: -	<790		
	roethane, ug/kg dw	<790		
	(MEK), ug/kg dw	<4000		
	hloroethane, ug/kg dw	<790		
	rachloride, ug/kg dw	<790		
_	ate, ug/kg dw	<1600		
	oromethane, ug/kg dw	<790		
	trachloroethane, ug/kg dw	<790		
	ropropane, ug/kg dw	<790		
	Dichloropropene, ug/kg dw	<790		
	thene, ug/kg dw	<790		
	promethane, ug/kg dw	<790		
1,1,2-Trick	nloroethane, ug/kg dw	<790		

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300

Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

	SAMPLE DESCRIPTION , SOLID OF	SEMISOLID SAMPLES	DATE/ TIME SAMPLED
81445-11			03-12-96/1330
PARAMETER		81445-11	
Benzene, u		<790	
cis-1,3-Di	chloropropene, ug/kg dw	<790	
2-Chloroet	hylvinyl ether, ug/kg dw	<7900	
Bromoform,	ug/kg dw	<790	
2-Hexanone	, ug/kg dw	<4000	
4-Methyl-2	-pentanone (MIBK), ug/kg dw	<4000	
Tetrachlor	oethene, ug/kg dw	<790	
Toluene, u	g/kg dw	<790	
Chlorobenz	ene, ug/kg dw	<790	
Ethylbenze	ne, ug/kg dw	<790	
Styrene, u	g/kg dw	<790	
Xylenes, u	g/kg dw	<790	
Surrogate	- Toluene-d8	99 %	
Surrogate	- 4-Bromofluorobenzene	94 %	
Surrogate	- Dibromofluoromethane	113 %	
Date Analy:		03.22.96	

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID	OR SEMISOLID SAMPLES	DATE/ TIME SAMPLED
81445-11			03-12-96/1330 .
PARAMETER		81445-11	
Semivolatile	Organics (8270)		
	robenzene, ug/kg dw	<420	
1,4-Dichlor	cobenzene, ug/kg dw	<420	
Hexachloroe	thane, ug/kg dw	<420	
bis(2-Chlor	roethyl)ether, ug/kg dw	<420	
1,2-Dichlor	robenzene, ug/kg dw	<420	
bis(2-Chlor	coisopropyl)ether, ug/kg dw	<420	
n-Nitrosodi	-n-propylamine, ug/kg dw	<420	
Nitrobenzen	ue, ug/kg dw	<420	
Hexachlorob	outadiene, ug/kg dw	<420	
	lorobenzene, ug/kg dw	<420	
Isophorone,	ug/kg dw	<420	
Naphthalene	, ug/kg dw	<420	
bis(2-Chlor	roethoxy)methane, ug/kg dw	<420	
Hexachloroc	yclopentadiene, ug/kg dw	<420	
2-Chloronap	hthalene, ug/kg dw	<420	
Acenaphthyl	ene, ug/kg dw	<420	
Acenaphthen	e, ug/kg dw	<420	
	halate, ug/kg dw	<420	
	toluene, ug/kg dw	<420	
Fluorene, u	g/kg dw	<420	
_	nylphenyl ether, ug/kg dw	<420	
2,4-Dinitro	toluene, ug/kg dw	<420	
Diethylphth	alate, ug/kg dw	<420	

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine Sampled By: Client

REPORT OF RESULTS

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	SAMPLE DESCRIPTION , SOLID					SAMPLED	
81445-11					03-12	2-96/1330	
PARAMETER				81445-11			
N-Nitrosod:	iphenylamine/Diphenylamine,			<420			
Hexachlorol	oenzene, ug/kg dw			<420			
4-Bromopher	nyl phenyl ether, ug/kg dw			<420			
Phenanthre	ne, ug/kg dw			<420			
Anthracene,	ug/kg dw			<420			
Di-n-butylp	hthalate, ug/kg dw			<420			
Fluoranther	ne, ug/kg dw			<420			
Pyrene, ug/	/kg dw			<420			
Benzidine,	ug/kg dw			<3400			
Butylbenzyl	phthalate, ug/kg dw			<420			
bis(2-Ethyl	hexyl)phthalate, ug/kg dw			520			
Chrysene, u	ıg/kg dw			<420			
Benzo(a) ant	chracene, ug/kg dw			<420			
	probenzidine, ug/kg dw			<840			
	hthalate, ug/kg dw			<420			
	oranthene, ug/kg dw			<420			
	oranthene, ug/kg dw			<420			
	ene, ug/kg dw			<420			
	3-cd)pyrene, ug/kg dw			<420			
	ı)anthracene, ug/kg dw			<420			
)perylene, ug/kg dw			<420			
N-Nitrosodi	methylamine, ug/kg dw			<420			
_	nol, ug/kg dw			<420			
2-Nitrophen	ol, ug/kg dw			<420			



LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine Sampled By: Client

REPORT OF RESULTS

	SAMPLE DESCRIPTION , SOLID OR		
81445-11			03-12-96/1330
PARAMETER		81445-11	
Phenol, ug,		<420	
	ylphenol, ug/kg dw	<420	
	rophenol, ug/kg dw	<420	
	lorophenol, ug/kg dw	<420	
4-Chloro-3	-methylphenol, ug/kg dw	<420	
2,4-Dinitro	ophenol, ug/kg dw	<2200	
2-Methyl-4	6-dinitrophenol, ug/kg dw	<2200	
Pentachlor	ophenol, ug/kg dw	<2200	
•	nol, ug/kg dw	<2200	
	phol, ug/kg dw	<420	
	enol (o-cresol), ug/kg dw	<420	
	phenol (m&p-cresol), ug/kg dw	<420	
	id, ug/kg dw	<2200	
	lline, ug/kg dw	<840	
	hthalene, ug/kg dw	<420	
	llorophenol, ug/kg dw	<420	
	line, ug/kg dw	<2200	
	ine, ug/kg dw	<2200	
	ın, ug/kg dw	<420	
	ine, ug/kg dw.	<2200	
Surrogate-2		52 %	
Surrogate-E		57 %	
Surrogate-N		48 %	
Surrogate-2		81 %	
Surrogate-T		117 %	
Surrogate-I		71 %	
Date Extrac		03.14.96	
Date Analyz	ed	03.18.96	



LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol-Woodbine

Sampled By: Client

REPORT OF RESULTS

						DATE/
LOG NO	SAMPLE I	ESCRIPTION	, SOLID O	R SEMISOLID	SAMPLES	TIME SAMPLED
81445-11	9158					03-12-96/1330
PARAMETER					81445-11	
Arsenic (60:	10)					
Arsenic (60	010), mg/	kg dw			<1.3	
Preparation	n Date				03.14.96	
Date Analy:	zed				03.15.96	
Barium (6010	0)					
Barium (60:	10), mg/ k	g dw			6.3	
Preparation	n Date				03.14.96	
Date Analy:	zed			·	03.15.96	
Cadmium (60:	10)					
Cadmium (60	010), mg/	kg dw			<0.63	
Preparation					03.14.96	
Date Analy:					03.15.96	
Chromium (60)10)					
Chromium (6	_	/kg dw			5.4	
Preparation	n Date				03.14.96	
Date Analy	zed				03.15.96	
Lead (6010)						
Lead (6010)	, mg/kg	dw			7.5	
Preparation	ı Date				03.14.96	
Date Analyz	zed				03.15.96	
Mercury (747	71)					
Mercury (74	171), mg/	kg dw			0.028	
Preparation	1 Date				03.14.96	
Date Analyz	sed				03.15.96	
Percent Soli	ds (160.	3), %			79	

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

	REPORT O	F RESULTS		Page	27
LOG NO	SAMPLE DESCRIPTION , SOLID OR		DATE/ TIME SAMPLED		
81445-11	9158		03-12-96/1330		
PARAMETER		81445-11			_
Antimony (60 Antimony (60 Preparation Date Analyz	010), mg/kg dw Date	0.95 03.14.96 03.15.96			

LOG NO: S6-81445 Received: 13 MAR 96

Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

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REPORT OF RESULTS

445-14
18 %
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LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPORT FOR	SOLID/SEMISOLID		
81445-12 Method Blank 81445-13 Lab Control Standard (LCS)/Duplicat 81445-14 LCS % RPD			
PARAMETER		81445-13	=
Volatiles by GC/MS (8260)	<10	***	
Chloromethane, ug/kg dw	<10		
Bromomethane, ug/kg dw Vinyl chloride, ug/kg dw	<10		
Chloroethane, ug/kg dw	<10		
Methylene chloride (Dichloromethane), ug/kg dw			
Acetone, ug/kg dw	<25		
Carbon disulfide, ug/kg dw	<5.0		
1,1-Dichloroethene, ug/kg dw		124/130 %	5 %
1,1-Dichloroethane, ug/kg dw	<5.0		
trans-1,2-Dichloroethylene, ug/kg dw	<5.0		
Chloroform, ug/kg dw	<5.0		
1,2-Dichloroethane, ug/kg dw	<5.0		
2-Butanone (MEK), ug/kg dw	<25		
1,1,1-Trichloroethane, ug/kg dw	<5.0		
Carbon tetrachloride, ug/kg dw	<5.0		
Vinyl acetate, ug/kg dw	<10		
Bromodichloromethane, ug/kg dw	<5.0		
1,1,2,2-Tetrachloroethane, ug/kg dw	. <5.0		
1,2-Dichloropropane, ug/kg dw	<5.0		
trans-1,3-Dichloropropene, ug/kg dw	<5.0		
Trichloroethene, ug/kg dw	<5.0	60/62 %	3 %

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR	SOLID/SEMISOLID		
	Method Blank Lab Control Standard (LCS)/Duplicate LCS % RPD	e % Recovery		
PARAMETER			81445-13	81445-14
Dibromochl	oromethane, ug/kg dw			
1,1,2-Tric	hloroethane, ug/kg dw	<5.0		- + -
Benzene, u	g/kg dw	<5.0	106/104 %	2 %
cis-1,3-Di	chloropropene, ug/kg dw	<5.0		
2-Chloroet	hylvinyl ether, ug/kg dw	<50		
Bromoform,	ug/kg dw	<5.0		
2-Hexanone	, ug/kg dw	<25		
4-Methyl-2	-pentanone (MIBK), ug/kg dw	<25		
Tetrachlor	pethene, ug/kg dw	<5.0		
Toluene, u	g/kg dw	<5.0	102/102 %	0 %
	ene, ug/kg dw	<5.0	102/104 %	2 %
Ethylbenzer	ne, ug/kg dw	<5.0		
Styrene, ug	g/kg dw	<5.0		
Xylenes, ug	g/kg dw	<5.0		
Surrogate -	Toluene-d8	102 %	102/102 %	
Surrogate -	4-Bromofluorobenzene	112 %	114/112 %	
Surrogate -	Dibromofluoromethane	110 %	108/112 %	
Date Analyz	ed	03.14.96	3.14/15.96	

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thickol-Woodbine Sampled By: Client

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REPORT OF RES	ULTS		Page 31
LOG NO SAMPLE DESCRIPTION , QC REPORT FOR	SOLID/SEMISOLID		
81445-12 Method Blank 81445-13 Lab Control Standard (LCS)/Duplicate 81445-14 LCS % RPD	e % Recovery		
PARAMETER	81445-12	81445-13	81445-14
Semivolatile Organics (8270)			
1,3-Dichlorobenzene, ug/kg dw	<330		
1,4-Dichlorobenzene, ug/kg dw	<330	70/65 😵	7 %
Hexachloroethane, ug/kg dw	<330		
bis(2-Chloroethyl)ether, ug/kg dw	<330		
1,2-Dichlorobenzene, ug/kg dw	<330		
bis(2-Chloroisopropyl)ether, ug/kg dw	<330		
n-Nitrosodi-n-propylamine, ug/kg dw	<330	88/82 %	7 %
Nitrobenzene, ug/kg dw	<330		
Hexachlorobutadiene, ug/kg dw	<330		
1,2,4-Trichlorobenzene, ug/kg dw	<330	76/70 🕏	8 🕏
Isophorone, ug/kg dw	<330		
Naphthalene, ug/kg dw	<330		
bis(2-Chloroethoxy)methane, ug/kg dw	<330		
Hexachlorocyclopentadiene, ug/kg dw	<330		
2-Chloronaphthalene, ug/kg dw	<330		
Acenaphthylene, ug/kg dw	<330		
Acenaphthene, ug/kg dw	<330	76/70 %	8 %
Dimethylphthalate, ug/kg dw	<330		
2,6-Dinitrotoluene, ug/kg dw	<330		
Fluorene, ug/kg dw	<330		
4-Chlorophenylphenyl ether, ug/kg dw	<330		

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPORT FOR SOL	ID/SEMISOLID		
81445-12 Method Blank			
81445-13 Lab Control Standard (LCS)/Duplicate %	Kecovery		
81445-14 LCS % RPD			
PARAMETER	81445-12	81445-13	81445-14
2,4-Dinitrotoluene, ug/kg dw	<330	- •	8 %
Diethylphthalate, ug/kg dw	<330		
N-Nitrosodiphenylamine/Diphenylamine, ug/kg dw	<330		
Hexachlorobenzene, ug/kg dw	<330		
4-Bromophenyl phenyl ether, ug/kg dw	<330	~ ~ ~	
Phenanthrene, ug/kg dw	<330		
Anthracene, ug/kg dw	<330		
Di-n-butylphthalate, ug/kg dw	<330		
Fluoranthene, ug/kg dw	<330		
Pyrene, ug/kg dw	<330	54/50 %	8 %
Benzidine, ug/kg dw	<2700		
Butylbenzylphthalate, ug/kg dw	<330		
bis(2-Ethylhexyl)phthalate, ug/kg dw	<330		
Chrysene, ug/kg dw	<330		
Benzo(a)anthracene, ug/kg dw	<330		
3,3'-Dichlorobenzidine, ug/kg dw	<660		
Di-n-octylphthalate, ug/kg dw	<330		
Benzo(b) fluoranthene, ug/kg dw	<330		
Benzo(k)fluoranthene, ug/kg dw	<330		
Benzo(a)pyrene, ug/kg dw	<330		
Indeno(1,2,3-cd)pyrene, ug/kg dw	<330		
Dibenzo(a,h)anthracene, ug/kg dw	<330		

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPO	ORT FOR SOLID/SEMISOLID		
	Method Blank Lab Control Standard (LCS)/I LCS % RPD	Ouplicate % Recovery		
PARAMETER		81445-12	81445-13	81445-14
N-Nitrosodi	i)perylene, ug/kg dw imethylamine, ug/kg dw enol, ug/kg dw	<330 <330 <330		10 %
2-Nitropher Phenol, ug	nol, ug/kg dw	<330 <330 <330		4 %
2,4-Dichlor 2,4,6-Trich	cophenol, ug/kg dw lorophenol, ug/kg dw methylphenol, ug/kg dw	<330 <330 <330		 0 %
2,4-Dinitro 2-Methyl-4,	ophenol, ug/kg dw 6-dinitrophenol, ug/kg dw ophenol, ug/kg dw	<1700 <1700 <1700		 7 %
4-Nitropher Benzyl alco	ol, ug/kg dw ohol, ug/kg dw ohol (o-cresol), ug/kg dw	<1700 <1700 <330 <330	•	9 %
3&4-Methylp Benzoic aci	phenol (m&p-cresol), ug/kg dw .d, ug/kg dw	<330 <1700		
2-Methylnap 2,4,5-Trich	line, ug/kg dw hthalene, ug/kg dw lorophenol, ug/kg dw	<660 <330 <330		
3-Nitroanil	ine, ug/kg dw ine, ug/kg dw	<1700 <1700		

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

	•					3
LOG NO	SAMPLE DESCRIPTION	, QC REPOR	r for soli	D/SEMISOLID		
81445-13 81445-14	Method Blank Lab Control Standau LCS % RPD					
PARAMETER				81445-12	81445-13	81445-14
Dibenzofur	an, ug/kg dw			<330		
	line, ug/kg dw					
Surrogate-						
Surrogate-				67 %		
Surrogate-						
Surrogate-				. •		
Surrogate-				106 %		
Surrogate-				57 %		
Date Extra					03.14.96	
Date Analy				03.16.96	03.16.96	
Arsenic (60					105/100 8	
	010), mg/kg dw				105/102 %	
Preparatio					03.14.96	
Date Analy				03.15.96	03.15.96	
Barium (601	•			.1 0	06/05 %	1.0 %
	10), mg/kg dw				•	
Preparatio					03.14.96	
Date Analy				03.15.96	03.15.96	
Cadmium (60	•			.0.50	106/105	0.05 %
	010), mg/kg dw				•	0.95 %
Preparatio					03.14.96	
Date Analy	zea				03.15.96	

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO S	SAMPLE DESCRIPTION	, QC REPORT FOR SOLID/SEMISOLID	·	
81445-12 M 81445-13 I 81445-14 I	ab Control Standar	d (LCS)/Duplicate % Recovery		
PARAMETER		81445-12	81445-13	81445-14
Chromium (601	•			
Chromium (60	10), mg/kg dw	<1.0	98/98 🕏	0 %
Preparation	Date	03.14.96	03.14.96	
Date Analyze	e d .	03.15.96	03.15.96	
Lead (6010)				
Lead (6010),	mg/kg dw	<0.50	102/101 %	0.99 %
Preparation	Date	03.14.96	03.14.96	
Date Analyze	đ	03.15.96	03.15.96	
Mercury (7471	.)			
Mercury (747	1), mg/kg dw	<0.010	98/96 🕏	2.1 %
Preparation	Date	03.14.96	03.14.96	
Date Analyze	đ	03.15.96	03.15.96	~ ~ ~
Antimony (601	0)			
Antimony (60	10), mg/kg dw		104/98 %	
Preparation	Date	03.14.96	03.14.96	
Date Analyze	đ	03.15.96	03.15.96	+

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc.

15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

	REPORT OF RESULTS			Page	36
			DATE/		
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		TIME SAMPLED		
81445-15	9148 .		03-12-96/0914		
81445-16	9149		03-12-96/0940		
PARAMETER		81445-15	81445-16		
Carbamate Gr	roup (531.1)				
Aldicarb, u	g/1	<0.50	<0.50		
Date Extrac	- -	03.20.96	03.20.96		
Date Analyz	ed	03.20.96	03.21.96		

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

	REPORT OF RESULTS			Page 37
LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES		DATE/ TIME SAMPLED	
81445-15 81445-16	9148		03-12-96/0914 03-12-96/0940	
PARAMETER		81445-15	81445-16	
Volatiles b	y GC/MS (8260)			
Chlorometh	ane, ug/l	<10	<10	
Bromometha	ne, ug/l	<10	<10	
Vinyl chlo	ride, ug/l		<10	
Chloroetha	ne, ug/l	<10		
Methylene	chloride (Dichloromethane), ug/l		<5.0	
Acetone, u			<25	
	ulfide, ug/l		<5.0	
•	roethene, ug/l	<5.0	=	
•	roethane, ug/l		<5.0	
trans-1,2-	Dichloroethylene, ug/l		<5.0	
Chloroform	• •	<5.0		
•	roethane, ug/l	<5.0		
	(MEK), ug/l	<25	— -	
, ,	nloroethane, ug/l		<5.0	
	rachloride, ug/l	<5.0		
Vinyl aceta		<10		
	oromethane, ug/l		<5.0	
	trachloroethane, ug/l	<5.0		
-	ropropane, ug/l	<5.0		
-	Dichloropropene, ug/l		<5.0	
Trichloroet	_		<5.0	
Dibromochlo	promethane, ug/l	<5.0	<5.0	

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine Sampled By: Client

		REPORT OF RESULTS		Dagge /	Page 38
LOG NO	SAMPLE DESCRIPTION , I	IQUID SAMPLES		DATE/ TIME SAMPLED	
81445-15 81445-16				03-12-96/0914 03-12-96/0940	
PARAMETER			81445-15	81445-16	
	nloroethane, ug/l	***		<5.0	
Benzene, ug	₃ /1		<5.0	<5.0	
cis-1,3-Dio	chloropropene, ug/l		<5.0	<5.0	
2-Chloroeth	nylvinyl ether, ug/l	-	<50	<50	
Bromoform,	ug/l		<5.0	<5.0	
2-Hexanone,	. ug/l		<25	<25	
4-Methyl-2	-pentanone (MIBK), ug/l		<25	<25	
Tetrachloro	ethene, ug/l		<5.0	<5.0	
Toluene, ug	j/l		<5.0	<5.0	
Chlorobenze	ne, ug/l		<5.0	<5.0	
Ethylbenzer	ne, ug/l		<5.0	<5.0	
Styrene, ug	y/l		<5.0	<5.0	
Xylenes, ug	7/1		<5.0	<5.0	
Surrogate -	Toluene-d8		96 %	96 %	
Surrogate -	4-Bromofluorobenzene		98 %	86 ¥	
Surrogate -	Dibromofluoromethane		118 %	114 %	
Date Analyz	ed		03.20.96	03.20.96	

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

		REPORT OF RESULTS			Page 39
				DATE/	
LOG NO	SAMPLE DESCRIPTION , :	LIQUID SAMPLES		TIME SAMPLED	
81445-15				03-12-96/0914	
81445-16				03-12-96/0940	
PARAMETER			81445-15	81445-16	
Semivolatile	Organics (8270)				
1,3-Dichlor	robenzene, ug/l		<10	<10	
1,4-Dichlor	cobenzene, ug/l		<10	<10	
Hexachloro	ethane, ug/l		<10	<10	
bis(2-Chlor	coethyl)ether, ug/l		<10	<10	
1,2-Dichlor	robenzene, ug/l		<10	<10	
bis(2-Chlor	coisopropyl)ether, ug/l	L	<10	<10	
n-Nitrosodi	-n-propylamine, ug/l		<10	<10	
Nitrobenzer	ne, ug/l		<10	<10	
Hexachlorob	outadiene, ug/l		<10	<10	
1,2,4-Trich	lorobenzene, ug/l		<10	<10	
Isophorone,	ug/l		<10	<10	
Naphthalene	a, ug/l		<10	<10	
bis(2-Chlor	coethoxy) methane, ug/1		<10	<10	
Hexachlorod	yclopentadiene, ug/l		<10	<10	
2-Chloronar	hthalene, ug/l		<10	<10	
Acenaphthyl	ene, ug/l		<10	<10	
Acenaphther	e, ug/l		<10	<10	
Dimethylpht	halate, ug/l		<10	<10	
2,6-Dinitro	toluene, ug/l		<10	<10	
Fluorene, u	g/1		<10	<10	
4-Chlorophe	nylphenyl ether, ug/l		<10	<10	
2,4-Dinitro	toluene, ug/l		<10	<10	

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Mr. Mark Corbin
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15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

	REPORT OF RESULTS		D2000 /	Page 40
LOG NO			DATE/ TIME SAMPLED	
81445-15 81445-16	9148		03-12-96/0914 03-12-96/0940	
PARAMETER		81445-15	81445-16	
N-Nitrosod Hexachloro 4-Bromophe Phenanthre Anthracene Di-n-butyl Fluoranthe Pyrene, ug Benzidine, Butylbenzy bis (2-Ethy Chrysene, ug Benzo (a) and 3,3'-Dichloroctyl	halate, ug/l iphenylamine/Diphenylamine, ug/l benzene, ug/l nyl phenyl ether, ug/l ne, ug/l phthalate, ug/l ne, ug/l liphthalate, ug/l	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10	
Benzo(k)flu Benzo(a)pyr Indeno(1,2 Dibenzo(a,1 Benzo(g,h,	uoranthene, ug/l uoranthene, ug/l rene, ug/l ,3-cd)pyrene, ug/l n)anthracene, ug/l i)perylene, ug/l imethylamine, ug/l	<10 <10 <10 <10 <10 <10	<10 <10 <10 <10 <10	

LOG NO: S6-81445 Received: 13 MAR 96 Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

	REPORT OF RESULTS			Page 41
	SAMPLE DESCRIPTION , LIQUID SAMPLES		DATE/ TIME SAMPLED	
81445-15			03-12-96/0914	
81445-16	9149		03-12-96/0940	
PARAMETER		81445-15	81445-16	
2-Chloroph			<10	
2-Nitrophe	nol, ug/l	<10	<10	
Phenol, ug	/1	<10	<10	
2,4-Dimethy	ylphenol, ug/l	<10	<10	
2,4-Dichlo	rophenol, ug/l	<10	<10	
2,4,6-Tric	nlorophenol, ug/l	<10	<10	
4-Chloro-3	-methylphenol, ug/l	<10	<10	
2,4-Dinitro	ophenol, ug/l	<50	<50	
2-Methyl-4	,6-dinitrophenol, ug/l	<50	<50	
	ophenol, ug/l	<50	<50	
4-Nitropher	nol, ug/l	<50	<50	
Benzyl alco	ohol, ug/l	<10	<10	
2-Methylphe	enol (o-cresol), ug/l	<10	<10	
3&4-Methyl	phenol (m&p-cresol), ug/l	<10	<10	
Benzoic ac	id, ug/l	<50	<50	
4-Chloroan:	iline, ug/l	<20	<20	
2-Methylnar	phthalene, ug/l	<10	<10	
2,4,5-Trich	nlorophenol, ug/l	<10	<10	
2-Nitroanil	line, ug/l	<50	<50	
3-Nitroanil	line, ug/l	<50	<50	
Dibenzofura	ın, ug/l	<10	<10	
4-Nitroanil	line, ug/l	<50	<50	
Surrogate-2	2FP	51 %	52 %	

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

		REPORT OF	RESULTS		Page 42
		•		DATE/	
	SAMPLE DESCRIPTION		PLES	TIME SAMPLED	
81445-15				03-12-96/0914	
81445-16	9149			03-12-96/0940	
PARAMETER			81445-15	81445-16	
Surrogate-1				57 %	
Surrogate-1	NBZ		52 %	52 %	
Surrogate-2	2FBP			68 %	
Surrogate-	rbp			110 %	
Surrogate-1	rph			28 %	
Date Extra	cted			03.14.96	
Date Analy:	zed		03.16.96	03.16.96	
Arsenic (601	LO)				
Arsenic (60	010), mg/l		<0.010	<0.010	
Preparation	1 Date		03.14.96	03.14.96	
Date Analyz	zed		03.15.96	03.15.96	
Barium (6010	D)				
Barium (601	LO), mg/l			0.25	
Preparation	1 Date			03.14.96	
Date Analyz	zed	•	03.15.96	03.15.96	
Cadmium (601	LO)				
Cadmium (60)10), mg/l		<0.0050	<0.0050	
Preparation	n Date		03.14.96	03.14.96	
Date Analyz	ed		03.15.96	03.15.96	
Chromium (60)10)				
Chromium (6	010), mg/l		0.088	0.12	
Preparation	1 Date		03.14.96	03.14.96	
Date Analyz	:ed		03.15.96	03.15.96	

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

		REPORT OF RESULTS		D2007 /	Page	43
LOG NO	SAMPLE DESCRIPTION ,	LIQUID SAMPLES		DATE/ TIME SAMPLED		
81445-15 81445-16	:			03-12-96/0914 03-12-96/0940		
PARAMETER				81445-16		
Lead (6010) Lead (6010) Preparation Date Analyz Mercury (74) Mercury (74) Preparation Date Analyz Antimony (60	, mg/l l Date sed 70) 170), mg/l l Date sed 010)		0.021 03.14.96 03.15.96 0.00042 03.14.96 03.15.96	0.034 03.14.96 03.15.96 0.00034 03.14.96 03.15.96		•
Antimony (6 Preparation Date Analys	Date		0.0061 03.14.96 03.15.96			

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Reported: 08 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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REPORT OF RESULTS		DATE/	Page 44
LOG NO SAMPLE DESCRIPTION , LIQUID SAMPLES		TIME SAMPLED	
81445-17 9147		03-12-98/0700	
PARAMETER	81445-17		
Volatiles by GC/MS (8260)			
Chloromethane, ug/l	<10		
Bromomethane, ug/l	<10		
Vinyl chloride, ug/l	<10		
Chloroethane, ug/l	<10		
Methylene chloride (Dichloromethane), ug/l	<5.0		
Acetone, ug/l	<25		
Carbon disulfide, ug/l	<5.0		
1,1-Dichloroethene, ug/l	<5.0		
1,1-Dichloroethane, ug/l	<5.0		
trans-1,2-Dichloroethylene, ug/l	<5.0		
Chloroform, ug/l	<5.0		
1,2-Dichloroethane, ug/l	<5.0		
2-Butanone (MEK), ug/l	<25		
1,1,1-Trichloroethane, ug/l	<5.0		
Carbon tetrachloride, ug/l	<5.0		
Vinyl acetate, ug/l	<10		
Bromodichloromethane, ug/l	<5.0		
1,1,2,2-Tetrachloroethane, ug/l	<5.0		
1,2-Dichloropropane, ug/l	<5.0		
trans-1,3-Dichloropropene, ug/l	<5.0		
Trichloroethene, ug/l	<5.0		
Dibromochloromethane, ug/l	<5.0		
1,1,2-Trichloroethane, ug/l	<5.0		

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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	R	EPORT OF RESULTS	Page 45
			DATE/
LOG NO	SAMPLE DESCRIPTION , LI	QUID SAMPLES	TIME SAMPLED
81445-17			03-12-98/0700
PARAMETER		81445-17	
Benzene, ug		<5.0	
cis-1,3-Did	chloropropene, ug/l	<5.0	
2-Chloroeth	nylvinyl ether, ug/l	<50	
Bromoform,	ug/l	<5.0	
2-Hexanone,	, ug/l	<25	
4-Methyl-2-	pentanone (MIBK), ug/l	<25	
Tetrachloro	ethene, ug/l	<5.0	
Toluene, ug	;/l	<5.0	
Chlorobenze	ne, ug/l	<5.0	
Ethylbenzer	ne, ug/l	<5.0	
Styrene, ug	, /1	<5.0	
Xylenes, ug	;/l	<5.0	
Surrogate -	Toluene-d8	96 %	
Surrogate -	4-Bromofluorobenzene	90 %	
_	Dibromofluoromethane	112 %	
Date Analyz	ed	03.20.96	

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES		
81445-19	Method Blank Lab Control Standard (LCS)/Duplicate % Recovery LCS % RPD		
PARAMETER	81445-18	81445-19	81445-20
Carbamate Gro Aldicarb, us Date Extract Date Analyze	g/l <0.50 ted 03.20.96	87/93 % 03.20.96 03.20.96	6.7 %

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Mr. Mark Corbin Apex Environmental, Inc.

Purchase Order: 097.001

15850 Crabbs Branch Way #300 Rockville, MD 20855

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR	R LIQUID SAMPLES		
	Method Blank Lab Control Standard (LCS)/Duplica LCS % RPD	ate % Recovery		
PARAMETER		-	81445-19	81445-20
	y GC/MS (8260)			
Chlorometh	-	<10		
Bromometha	ne, ug/l	<10		
Vinyl chlo	ride, ug/l	<10		
Chloroetha	ne, ug/l	<10		
Methylene	chloride (Dichloromethane), ug/l	<5.0		
Acetone, u	g/l	<25		
Carbon dis	ulfide, ug/l	<5.0		
•	roethene, ug/l	<5.0	120/114 %	5 %
	roethane, ug/l	<5.0		
•	Dichloroethylene, ug/l	<5.0		
Chloroform	. —	<5.0		
•	roethane, ug/l	<5.0		
	(MEK), ug/l	<25		
	hloroethane, ug/l	<5.0		
	rachloride, ug/l	<5.0		
Vinyl acet		<10		
	oromethane, ug/l	<5.0		
	trachloroethane, ug/l	<5.0		
	ropropane, ug/l	<5.0		
•	Dichloropropene, ug/l	<5.0		4 0.
Trichloroe	thene, ug/l	<5.0	102/106 %	4 %

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15850 Crabbs Branch Way #300

Purchase Order: 097.001

15850 Crabbs Branch Way #300 Rockville, MD 20855

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , (ÇC REPORT FOR LIQUII	SAMPLES		
81445-18	Method Blank Lab Control Standard	(LCS)/Duplicate % Re	-		
PARAMETER				81445-19	81445-20
Dibromochl	oromethane, ug/l		<5.0		
1,1,2-Tric	hloroethane, ug/l		<5.0		
Benzene, u	g/1		<5.0	98/98 %	0 %
cis-1,3-Di	chloropropene, ug/l		<5.0		
2-Chloroet	hylvinyl ether, ug/l		<50		
Bromoform,	ug/l		<5.0		
2-Hexanone	, ug/l		<25		
4-Methyl-2	-pentanone (MIBK), ug/l	•	<25		
Tetrachlor	oethene, ug/l		<5.0		
Toluene, u	- '		<5.0	98/100 %	2 %
Chlorobenze			<5.0	92/88 😵	4 %
Ethylbenze	ne, ug/l		<5.0		
Styrene, u	• · ·		<5.0		
Xylenes, u	3 1				
Surrogate	- Toluene-d8		96 %	96/96 %	
_	- 4-Bromofluorobenzene		94 %	92/96 %	
-	- Dibromofluoromethane		114 %	110/92 %	
Date Analy:	zeđ		03.20.96	3.19/20.96	

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , Q	C REPORT FOR LIQUID SAMPLES		
		LCS)/Duplicate % Recovery		
PARAMETER		81445-18	81445-19	
Semivolatile	e Organics (8270)			
	robenzene, ug/l	<10		
1,4-Dichlo	robenzene, ug/l	<10	70/82 %	16 %
Hexachloro	ethane, ug/l	<10		
bis(2-Chlo	roethyl)ether, ug/l	<10		
1,2-Dichlor	robenzene, ug/l	<10		
	roisopropyl)ether, ug/l	<10		
n-Nitrosod:	i-n-propylamine, ug/l	<10	98/112 %	13 %
Nitrobenzer	* * **	<10		
	outadiene, ug/l	<10		
	llorobenzene, ug/l	<10	80/90 %	12 %
Isophorone	-	<10		
Naphthalene	· -	<10		
	coethoxy) methane, ug/l	<10		
	cyclopentadiene, ug/l	<10		
_	ohthalene, ug/l	<10		
Acenaphthy]		<10		
Acenaphther		<10	88/98 %	11 %
	chalate, ug/l	<10		
-	otoluene, ug/l	<10		
Fluorene, u	- -	<10		
4-Chlorophe	enylphenyl ether, ug/l	<10		

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Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPORT FOR I	LIQUID SAMPLES		
81445-18 Method Blank 81445-19 Lab Control Standard (LCS)/Duplicate 81445-20 LCS % RPD	e % Recovery		
PARAMETER		81445-19	81445-20
2,4-Dinitrotoluene, ug/l Diethylphthalate, ug/l N-Nitrosodiphenylamine/Diphenylamine, ug/l	<10 <10 <10	90/100 %	10 %
Hexachlorobenzene, ug/l 4-Bromophenyl phenyl ether, ug/l Phenanthrene, ug/l	<10 <10 <10		
Anthracene, ug/l Di-n-butylphthalate, ug/l Fluoranthene, ug/l	<10 <10 <10		
Pyrene, ug/l Benzidine, ug/l Butylbenzylphthalate, ug/l	<10 <80 <10	64/62 %	3 %
bis(2-Ethylhexyl)phthalate, ug/l Chrysene, ug/l Benzo(a)anthracene, ug/l	<10 <10 <10		
3,3'-Dichlorobenzidine, ug/l Di-n-octylphthalate, ug/l Benzo(b)fluoranthene, ug/l	<20 <10 <10		
Benzo(k)fluoranthene, ug/l Benzo(a)pyrene, ug/l	<10 <10		
<pre>Indeno(1,2,3-cd)pyrene, ug/l Dibenzo(a,h)anthracene, ug/l</pre>	<10 <10		

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Rockville, MD 20855

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Project: 097.001 Thiokol-Woodbine

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , Q	C REPORT FOR LIQUID SAMPLES		
81445-19	Method Blank Lab Control Standard (LCS % RPD	LCS)/Duplicate % Recovery		
PARAMETER		81445-18	81445-19	81445-20
N-Nitrosodi 2-Chlorophe 2-Nitropher Phenol, ug/ 2,4-Dimethy 2,4-Dichlor 2,4,6-Trich 4-Chloro-3- 2,4-Dinitro 2-Methyl-4, Pentachloro 4-Nitrophen Benzyl alco 2-Methylphe	perylene, ug/l methylamine, ug/l nol, ug/l ol, ug/l olphenol, ug/l lorophenol, ug/l methylphenol, ug/l phenol, ug/l phenol, ug/l ol, ug/l ol, ug/l hol, ug/l hol, ug/l hol (o-cresol), ug/l henol (m&p-cresol), ug/l	<10 <10 <10 <10 <10 <10 <10 <10 <50 <50 <50 <50 <10 <10 <10 <10 <50 <50 <50 <50 <50 <50 <50 <50 <50 <5	66/78 %	17 % 14 % 8 %
4-Chloroani	· — ·	<20		
	hthalene, ug/l	<10		
	lorophenol, ug/l	<10		
2-Nitroanil		<50		
3-Nitroanil	ine, ug/l	<50		

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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Project: 097.001 Thiokol-Woodbine Sampled By: Client

REPORT OF RESULTS

LOG NO		N , QC REPORT FOR LIQUID SAMPLES		
81445-18	Method Blank Lab Control Stand	ard (LCS)/Duplicate % Recovery		
PARAMETER		81445-18	81445-19	81445-20
Dibenzofur				
4-Nitroani	line, ug/l	<50		
Surrogate-	2FP	62 %	61/72 %	
Surrogate-	PHL		66/77 %	
Surrogate-	NBZ	64 %	66/76 %	
Surrogate-	2FBP		86/92 %	
Surrogate-	TBP	120 %	130/130 %	
Surrogate-	TPH	72 %	68/64 %	
Date Extra	cted	03.14.96	03.14.96	
Date Analy	zed	03.16.96	03.16.96	
Arsenic (60	10)			
Arsenic (6	010), mg/l	<0.010	97/93 %	4.2 %
Preparation	n Date	03.14.96	03.14.96	
Date Analy	zed	03.15.96	03.15.96	
Barium (601	0)			
Barium (60)	10), mg/l	<0.010	103/103 %	0 %
Preparation	n Date	03.14.96	03.14.96	
Date Analy:	zed	03.15.96	03.15.96	
Cadmium (60:	10)			
Cadmium (60	010), mg/l	<0.0050	105/104 %	0.96 %
Preparation	n Date	03.14.96	03.14.96	
Date Analy:	zed	03.15.96	03.15.96	



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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , QC RE	PORT FOR LIQUID SAMPLES		
81445-19 81445-20	Method Blank Lab Control Standard (LCS) LCS % RPD	-		
PARAMETER		81445-18	81445-19	81445-20
Chromium (6				
	6010), mg/l	<0.010	102/101 %	0.99 %
Preparation		03.14.96	03.14.96	
Date Analy	zed	03.15.96	03.15.96	
Lead (6010)				
Lead (6010), mg/1	<0.0050	100/99 %	1.0 %
Preparation	n Date	03.14.96	03.14.96	
Date Analy:	zed	03.15.96	03.15.96	
Mercury (74	70)			
Mercury (7	170), mg/l	<0.00020	92/100 %	8.3 %
Preparation	n Date	03.14.96	03.14.96	
Date Analy:	zed	03.15.96	03.15.96	
Antimony (6	010)			
Antimony (5010), mg/l	<0.0060	100/99 %	1.0 %
Preparation	n Date	03.14.96	03.14.96	
Date Analy:	zed	03.15.96	03.15.96	

Methods: EPA SW-846 and 40 CFR Part 136.

*F36 = Surrogate recovery was outside established limits due to coeluting matrix interference in the sample.

*F39 = Due to the abundance of organics present in the sample, a high level extraction was employed which increased reported quantitation limits.

*F65 = Elevated detection limits were reported due to sample matrix interference which required sample or extract dilution.

Dusan H. Mary ood

Susan H. Norwood, Project Manager

S	SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC. ALYSIS REQUEST AND CHAIN OF CUSTODY RECORD ECT REFERENCE PROJECT NO. P.O. NUMBER				•	0000	5102 Laf 2846 Ind 414 SW 900 Lake 6712 Bei 100 Alph	ustrial Pla 12th Aver side Driv njamin Pla	aza Driv nue, De re, Mobi oad, Sui	re, Tallah erfield B ile, AL 36 ite 100, 1	iassee, f each, FL 6693 Tampa, F	EL 32301 .33442 EL 33634	Pho Pho Pho Pho	ne: (90 ne: (30 ne: (20 ne: (81	2) 354-78 4) 878-39 5) 421-74 5) 666-66 3) 885-74 4) 764-1	994 Fa 400 Fa 633 Fa 427 Fa	ax: (912) 35: ax: (904) 87: ax: (305) 42 ax: (205) 66 ax: (813) 88 ax: (504) 72	8-9504 1-2584 6-6696 5-7049				
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	0845			913					1	1	1	_ /						ļ				-
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BECHIVE	D FO/ LABO	RATOR	Y BY: (SIGNATURE)	DATE	TIME :	CUSTODY				RY USE DY SEAL		SL LOG	NO		BODATO	RY REM	IADIZO		····			
M.	IL.	nd	3	13-94	TIME	YES [200,0	D. OLAL		1.			Samp	le 91	47 i:	s the	trip	blank	per	

S ANAL	SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC. NALYSIS REQUEST AND CHAIN OF CUSTODY RECORD JECT REFERENCE PROJECT NO. PO. NUMBER 10KS 400000000000000000000000000000000000				☐ 2846 ☐ 414 ☐ 900 ☐ 6712	i Indust SW 121 Lakesid Benja	irial Plaz In Avenu Ile Drive min Ros	a Drive, e, Deer , Mobile d, Suits	Tallah field Be AL 36	assee, FL 334 each, FL 334 693 fampa, FL 33 han, LA 700	2301 PI 142 PI 1634 PI	none: (90- none: (30: none: (20: none: (81:	2) 354-785 4) 878-396 5) 421-740 5) 666-663 3) 885-74 4) 764-110	PA Fax: (904) 87 PAX: (305) 42 PAX: (205) 60 PAX: (813) 80	78-9504 21-2584 56-6696 35-7049	3**
PROJECT	REFERENC	E	PROJECT NO. P.O. NUMBER		٦				٠							1
THIOM	OC W.	ددر	BINS 1097.011 097001		MATE	F				REQUIRE	D ANALY	SES		PAGI	OF	1.
(State)	1 4		PHONE 201-417-020 FAX. 450-311-916-01	150 /			7	7.	1				<u> </u>	//	- Jor	
CLIENT NA	AME .		CLIENT PROJECT MANAGER			7	/	(کھ /	/ ,	/ /		>/	/ /	STA	IDARD	·
1/5E	Y FNI	1.	LUC MARK (BZBIN /		3] .	3/0	3/	2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 /	0	27/3			· /	/ LI REPO	ORT VERY	ı
15,850	S SULL)	IY, STA	TE, ZIP) SENSON WAY SUITSROD IS			2/1	1) (J/ 1		2/2	/ = /	S	<u> </u>	EXPEDITE	D REPORT	
الا تارير	J.C.B MPLE	-11	S 3080		9/10	155	lics	/	Tries	/ 	1 JIC	1/11/10	1	Date Due:	(surcharge)	L
DATE	TIME	SL NO.	SAMPLE IDENTIFICATION					BOEC	ONT	VINERS SU			- 			┨
3/1/96	0815		9131	V 3/	1	$\frac{1}{1}$	1	7	T	MINE NO SC	DIVITTE	, 		REMARK	5	- }
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<u> </u>	14 45		9138		7	1	i	1	7	1/4,0						1
Trife	0100		9147	\top			•	-	7		1/3					1
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80	事		4.82	\Box	,			`			_					-
RELINQUI	SHED BY: (S	IGNAT	JRE) DATE TIME RELINQUISHED BY (SI	IGNATU	IRE)	Ind	DATE	1		RELINQUIS		SIGNATUI	RE)	DATE	TIME	1
RECEIVED	BY: (SIGNA	TURE)	DATE, TIME RECEIVED BY: (SIGNAT	TURE)	187		DATE			RECEIVED		ATURE)		DATE	TIME	1
DECENTED	SOR! ADD		LABO	ORAT	ORY U	SEO				. Jhan	fla.war i	344350	Camp. C	and the State of	i. Edit Seden	1
UECEIAET.	ECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME 1 CUSTODY INTACT CUSTODY SEAL NO. SLLOG NO. LABORATORY REMARKS: (1) (1) (2) (2) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4															

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

		REPORT (OF RESULTS			Page 1
					DATE/	
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
01661 1	0.50					
81661-1	9159				03-20-96/0730	
81661-2					03-20-96/0845	
81661-3					03-20-96/1030	
81661-4					03-20-96/1130	
81661-5	9163				03-20-96/1300	
PARAMETER		81661-1	81661-2	81661-3	81661-4	81661-5
Volatiles by	GC/MS (8260)					
_	me, ug/kg dw	<33	<77	c13	<12	<13
	ue, ug/kg dw	<33	<77			<13
	ride, ug/kg dw	<33	<77			<13
	e, ug/kg dw	<33		<13		<13
Methylene c		<17	-		<5.9	=
	ethane), ug/kg dw		100	10.0	13.3	٧٥.٥
Acetone, ug		290	1400	200	<29	<33
Carbon disu	lfide, ug/kg dw	<17	<38	<6.6	<5.9	
1,1-Dichlor	oethene, ug/kg dw	<17	<38		<5.9	<6.6
1,1-Dichlor	oethane, ug/kg dw	<17	<38	<6.6		<6.6
trans-1,2-D	ichloroethylene,	<17	<38	<6.6		<6.6
ug/kg dw						
Chloroform,	ug/kg dw	<17	<38	<6.6	<5.9	<6.6
1,2-Dichlor	oethane, ug/kg dw	<17	<38	<6.6	<5.9	<6.6
2-Butanone	(MEK), ug/kg dw	<83	<190	<33	<29	<33
1,1,1-Trich	loroethane, ug/kg dw	<17	<38	<6.6	<5.9	<6.6
Carbon tetra	achloride, ug/kg dw	<17	<38	<6.6	<5.9	<6.6
Vinyl acetat	te, ug/kg dw	<33	<77	<13	<12	<13
	romethane, ug/kg dw		<38		<5.9	

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Purchase Order: 097.001

Project: 097.001/Woodbine, GA

			REPORT	OF RESULTS		DATE/	Page 2
LOG NO	SAMPLE	DESCRIPTION	, SOLID O	R SEMISOLID	SAMPLES	TIME SAMPLE	D
81661-1	9159					03-20-96/07	30
81661-2	9160					03-20-96/08	
81661-3	9161					03-20-96/10:	
81661-4	9162					03-20-96/11	
81661-5	9163					03-20-96/130	
PARAMETER						81661-4	
1,1,2,2-Tet	rachlor	coethane, ug	/kg dw <17	<38	<6.6	<5.9	<6.6
1,2-Dichlor	copropan	ie, ug/kg dw	<17	<38	<6.6	<5.9	<6.6
trans-1,3-D	Dichloro	propene, ug	/kg dw <17	<38	<6.6	<5.9	<6.6
Trichloroet	hene, u	ıg/kg dw	<17	<38	<6.6	<5.9	<6.6
Dibromochlo	prometha	ne, ug/kg d			<6.6	<5.9	<6.6
1,1,2-Trich	loroeth	ane, ug/kg	dw <17	<38	<6.6	<5.9	<6.6
Benzene, ug	g/kg dw		<17	<38	<6.6	<5.9	<6.6
		opene, ug/k				<5.9	<6.6
2-Chloroeth	rylvinyl	ether, ug/	kg dw <170	<380	<66	<59	<66
Bromoform,	ug/kg d	tw	<17	<38	<6.6	<5.9	<6.6
2-Hexanone,	ug/kg	dw	<83	<190	<33	<29	<33
4-Methyl-2-	pentano	ne	<83	<190	<33	<29	<33
(MIBK), ug	g/kg dw						
Tetrachloro	ethene,	ug/kg dw	<17	<38	<6.6	<5.9	<6.6
Toluene, ug	y/kg dw		<17	<38	<6.6	<5.9	<6.6
Chlorobenze	ene, ug/	kg dw	<17	<38	<6.6		<6.6
Ethylbenzen	ie, ug/k	g dw	<17	56	<6.6		20
Styrene, ug	/kg dw		<17	<38			
Xylenes, ug	/kg đw		<17	250			27
Surrogate -						95 %	
		ofluorobenze				120 %	
Surrogate -	Dibrom	ofluorometha					
Date Analyz	ed		03.29.96	04.01.96	03.29.96	03.29.96	04.01.96

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

		REPORT	OF RESULTS			Page 3
LOG NO	SAMPLE DESCRIPTION	SOLTD OF	CEMTCOLTD	CAMPTEC	DATE/ TIME SAMPLED	
LOG NO	GAMPIN DESCRIPTION	, SOLLD OF	COMMISSION	SAMPLES	TIME SAMPLED	
81661-1	9159				03-20-96/0730	l
81661-2	9160				03-20-96/0845	i
81661-3 .	9161				03-20-96/1030	
81661-4	9162				03-20-96/1130	
81661-5	9163				03-20-96/1300	
PARAMETER		81661-1	81661-2	81661-3	81661-4	81661-5
	Organics (8270)					
•	robenzene, ug/kg <	11000 *F6 5	<5100 * F65	<430	<380	<430
dw				4.7.5		
•	robenzene, ug/kg dw	<11000	<5100			<430
	ethane, ug/kg dw	<11000	<5100			<430
ug/kg dw	roethyl)ether,	<11000	<5100	<430	<380	<430
1,2-Dichlor	robenzene, ug/kg dw	<11000	<5100	<430	<380	<430
bis(2-Chlor , ug/kg dv	coisopropyl)ether	<11000	<5100	<430	<380	<430
	-n-propylamine,	<11000	<5100	<430	<380	<430
<u> </u>	ie, ug/kg dw	<11000	<5100	<430	<380	<430
	outadiene, ug/kg dw	<11000	<5100	<430	<380	<430
1,2,4-Trich	lorobenzene, ug/kg d	iw <11000	<5100	<430	<380	<430
Isophorone,	ug/kg dw	<11000	<5100	<430	<380	<430
	, ug/kg dw	<11000	<5100	<430	<380	<430
bis (2-Chlor		<11000	<5100	<430	<380	<430
ug/kg dw						
Hexachloroc ug/kg dw	yclopentadiene,	<11000	<5100	<430	<380	<430

LOG NO: S6-81661 Received: 23 MAR 96

Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

		REPORT (F RESULTS			Page 4
LOG NO	SAMPLE DESCRIPTION	מת.דה מפ	SEMTSOLID	SAMPTES	DATE/ TIME SAMPLED	
LOG NO	SAMPLE DESCRIPTION	, DOLLD OK				
81661-1	9159				03-20-96/0730	
81661-2	9160				03-20-96/0845	
81661-3	9161				03-20-96/1030	
81661-4	9162				03-20-96/1130	
81661-5	9163				03-20-96/1300	
PARAMETER		81661-1	81661-2	81661-3	81661-4	81661-5
2-Chloronat	ohthalene, ug/kg dw	<11000	<5100	<430	<380	<430
-	lene, ug/kg dw	<11000	<5100	<430	<380	<430
	ne, ug/kg dw	<11000	<5100	<430	<380	<430
_	thalate, ug/kg dw	<11000	<5100	<430	<380	<430
	otoluene, ug/kg dw	<11000	<5100	<430	<380	<430
Fluorene, u	ıg/kg dw	<11000	<5100	<430	<380	<430
4-Chlorophe	enylphenyl	<11000	<5100	<430	<380	<430
ether, ug/	kg đw					
2,4-Dinitro	otoluene, ug/kg dw	<11000	<5100	<430	<380	<430
Diethylphth	nalate, ug/kg dw	<11000	<5100	<430	<380	<430
N-Nitrosodi	iphenylamine/Diph	<11000	<5100	<430	<380	<430
enylamine,	ug/kg dw					
Hexachlorob	oenzene, ug/kg dw	<11000	<5100	<430	<380	<430
4-Bromopher	yl phenyl	<11000	<5100	<430	<380	<430
ether, ug/	kg dw					
Phenanthren	ne, ug/kg dw	<11000	<5100	<430	<380	<430
Anthracene,	ug/kg dw	<11000	<5100	<430	<380	<430
Di-n-butylp	hthalate, ug/kg dw	<11000	<5100	<430	<380	<430
Fluoranther	ie, ug/kg dw	<11000	<5100	<430	<380	<430
Pyrene, ug/	kg dw	<11000	<5100	<430	<380	<430

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA Sampled By: Client

		REPORT	OF RESULTS		DATE/	Page 5
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
81661-1 81661-2 81661-3 81661-4 81661-5	9159 9160 9161 9162 9163				03-20-96/0730 03-20-96/0845 03-20-96/1030 03-20-96/1130	
PARAMETER		81661-1	81661-2	81661-3	81661-4	81661-5
bis (2-Ethylug/kg dw Chrysene, u Benzo (a) ant 3,3'-Dichlo Di-n-octylp	Lphthalate, ug/kg dw Lhexyl)phthalate, ng/kg dw chracene, ug/kg dw orobenzidine, ug/kg dw ohthalate, ug/kg dw	<11000 <11000 <11000 <22000 <11000	<42000 <5100 <5100 <5100 <5100 <10000 <5100	<3500 <430 <430 <430 <430 <860 <430	<380 <380 <380 <380 <770 <380	<430 <430 <430 <430 <870 <430
Benzo(k) flu Benzo(a) pyr Indeno(1,2, Dibenzo(a,h Benzo(g,h,i N-Nitrosodi 2-Chlorophe	noranthene, ug/kg dw noranthene, ug/kg dw noranthene, ug/kg dw noranthene, ug/kg dw noranthracene, ug/kg dw norylene, ug/kg dw noranthracene, ug/kg dw noranthramine, ug/kg dw	<11000 <11000	<5100 <5100 <5100 <5100 <5100 <5100 <5100 <5100 <5100	<430 <430 <430 <430 <430 <430 <430 <430	<380 <380 <380 <380 <380 <380 <380 <380	<430 <430 <430 <430 <430 <430 <430 <430
	lphenol, ug/kg dw cophenol, ug/kg dw	<11000 <11000	<5100 <5100	<430 <430	<380 <380	<430 <430

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

		REPORT	OF RESULTS		DATE/	Page 6
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
_	9159 9160 9161 9162 9163				03-20-96/0730 03-20-96/0845 03-20-96/1030 03-20-96/1130 03-20-96/1300	
PARAMETER		81661-1	81661-2	81661-3	81661-4	81661-5
4-Chloro-3- ug/kg dw 2,4-Dinitro 2-Methyl-4, ug/kg dw Pentachloro 4-Nitropher	nlorophenol, ug/kg dw -methylphenol, ophenol, ug/kg dw ,6-dinitrophenol, ophenol, ug/kg dw nol, ug/kg dw		<5100 <5100 <26000 <26000 <26000 <26000 <5100	<430 <2200 <2200 <2200 <2200	<380 <2000 <2000 <2000 <2000	<430 <430 <2200 <2200 <2200 <2200 <430
2-Methylphe ug/kg dw 3&4-Methylp (m&p-creso	enol (o-cresol), phenol pl), ug/kg dw	<11000 <11000	<5100 <5100	<430 <430	<380 <380	< 43 0
4-Chloroani 2-Methylnap	d, ug/kg dw line, ug/kg dw hthalene, ug/kg dw lorophenol, ug/kg dw	<57000 <22000 <11000 <11000	<26000 <10000 <5100 <5100	<2200 <860 <430 <430	<2000 <770 <380 <380	<2200 <870 <430 <430
3-Nitroanil	ine, ug/kg dw ine, ug/kg dw n, ug/kg dw		<26000 <26000 <5100			

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA Sampled By: Client

Page 7 REPORT OF RESULTS DATE/ LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED 03-20-96/0730 9159 81661-1 03-20-96/0845 9160 81661-2 03-20-96/1030 9161 81661-3 03-20-96/1130 81661-4 9162 03-20-96/1300 81661-5 9163 81661-1 81661-2 81661-3 81661-4 81661-5 PARAMETER <57000 <26000 <2200 <2000 4-Nitroaniline, ug/kg dw 51 % 48 % 58 % *F33 *F33 Surrogate-2FP *F33 Surrogate-PHL Surrogate-NBZ Surrogate-2FBP 41 % Surrogate-TBP 82 % Surrogate-TPH 03.26.96 03.26.96 03.26.96 03.26.96 Date Extracted 03.27.96 03.27.96 03.28.96 03.27.96 03.27.96 Date Analyzed N-Methylcarbamates (EPA 8318) <35 <39 <1950 <5000 <2300 Aldicarb, ug/kg dw Date Extracted 04.13.96 04.13.96 04.13.96 04.12.96 04.12.96 Date Analyzed Mercury (7471) 0.27 1.5 0.024 0.020 0.015 Mercury (7471), mg/kg dw 0.27 1.5 0.024 0.020 0.015
Preparation Date 03.28.96 03.29.96 03.28.96 03.28.96 03.28.96 03.29.96 03.29.96 03.29.96 03.29.96 Date Analyzed 0328R 0329S 0328R 0328R 0328R

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

		REPORT (OF RESULTS			Page 8
LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID		DATE/ TIME SAMPLED	
81661-1	9159				03-20-96/073	
81661-2	9160				03-20-96/084	5
81661-3	9161				03-20-96/103	0
81661-4	9162				03-20-96/113	
81661-5	9163				03-20-96/130	0
PARAMETER		81661-1				81661-5
Arsenic (601						
)10), mg/kg dw	4.3	1.9	<1.3	<1.2	<1.3
Preparation		03.26.96	03.26.96	03.26.96	03.26.96	03.26.96
Date Analy					03.27.96	
Batch ID		0326A	0326A	0326A	0326A	0326A
Barium (6010						
Barium (601	lo), mg/kg dw				<1.2	
Preparation	n Date			03.26.96		
Date Analyz	ed	03.27.96		03.27.96		
Batch ID		0326A	0326A	0326A	0326A	0326A
Chromium (60)10)					
Chromium (6	5010), mg/kg dw				1.2	
Preparation	1 Date				03.26.96	
Date Analyz	ed			03.27.96		
Batch ID		0326A	0326A	0326A	0326A	0326A
Cadmium (601			_			
	10), mg/kg dw				<0.59	
					03.26.96	
Date Analyz	ed				03.27.96	
Batch ID		0326A	0326A		0326A	

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

		•	REPORT	OF RESULTS			Page 9
	•					DATE/	
LOG NO	SAMPLE DE	SCRIPTION	, SOLID O	R SEMISOLID	SAMPLES	TIME SAMPLE	D
81661-1	9159					03-20-96/07	
81661-2	9160					03-20-96/08	
81661-3	9161					03-20-96/10	
81661-4	9162					03-20-96/11	
81661-5	9163					03-20-96/13	00
PARAMETER	******		81661-1	81661-2	81661-3	81661-4	81661-5
Lead (6010)							
Lead (6010)), mg/kg d	W	49			3.7	
Preparation			03.26.96	03.26.96	03.26.96	03.26.96	03.26.96
Date Analy:			03.27.96	03.27.96	03.27.96	03.27.96	03.27.96
Batch ID			0326A	0326A	0326A	0326A	0326A
Percent Sol:	ids (160.3), %	30	65	76	85	76
Antimony (60							
Antimony (kg dw	<17	<7.7	<12	<5.9	
Preparation				03.26.96			03.26.96
Date Analy:			03.27.96	03.27.96	03.27.96	03.27.96	03.27.96
Batch ID			0326A	0326A	0326A	0326A	0326A

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Mr. Mark Corbin
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Rockville, MD 20855

Purchase Order: 097.001

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		REPORT	OF RESULTS		DATE/	Page 10
LOG NO	SAMPLE DESCRIPTION ,			SAMPLES	TIME SAMPLE	₹D
81661-6 81661-7 81661-8 81661-9 81661-10	9164 9165 9166 9167				03-20-96/16 03-20-96/16 03-20-96/16 03-20-96/16	530 520 545
PARAMETER		81661-6	81661-7	81661-8	81661-9	81661-10
Chloromethar Bromomethar Vinyl chlor	GC/MS (8260) ane, ug/kg dw ne, ug/kg dw ride, ug/kg dw	<13 <13 <13	<13 <13 <13	<77 <77	<2100	<220 <220
Methylene o	ne, ug/kg dw chloride nethane), ug/kg dw	<13 <6.7	<13 <6.4	<77 <38		<110
1,1-Dichlor	ilfide, ug/kg dw coethene, ug/kg dw	220 <6.7 <6.7	<32 <6.4 <6.4	<38	<1000 <1000	<110 <110
•	coethane, ug/kg dw Dichloroethylene,	<6.7 <6.7	<6.4 <6.4	<38	<1000	<110 <110
•	ug/kg dw coethane, ug/kg dw (MEK), ug/kg dw	<6.7 <6.7 <33	<6.4 <6.4 <32	<38 <38 <190	<1000	<110 <110 <540
1,1,1-Trich Carbon tetr Vinyl aceta	lorcethane, ug/kg dw achloride, ug/kg dw te, ug/kg dw	<6.7 <6.7 <13	<6.4 <6.4 <13	<38 <77	<1000 <2100	<110 <220
Bromodichlo	romethane, ug/kg dw	<6.7	<6.4	<38	<1000	<110

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Rockville, MD 20855

Purchase Order: 097.001

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LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLED	
81661-6	9164				03-20-96/140	0
81661-7	9165				03-20-96/153	
81661-8	9166				03-20-96/162	
81661-9	9167				03-20-96/164	
81661-10	9168				03-21-96/140	0
PARAMETER		81661-6	81661-7	81661-8	81661-9	81661-10
	trachloroethane,	<6.7	<6.4	<38	<1000	<110
ug/kg dw					4000	
-	ropropane, ug/kg dw					<110
•	Dichloropropene,	<6.7	<6.4	<38	<1000	<110
ug/kg dw				-20	-1.000	-110
	hene, ug/kg dw	<6.7 <6.7	<6.4 <6.4	<38 <38		<110 <110
	oromethane, ug/kg dw	<6.7	<6.4 <6.4			<110
• •	nloroethane, ug/kg dw	<6.7	<6.4	<38		<110
Benzene, ug	g/kg dw chloropropene, ug/kg d		<6.4	<38		<110
•	mioropropene, ug/kg u nylvinyl ether, ug/kg		<64	<380		<1100
Bromoform,	-	<6.7	<6.4			<110
2-Hexanone,	<u> </u>	<33	<32			<540
4-Methyl-2-	-: -	<33	<32			<540
(MIBK), uc			-			
	pethene, ug/kg dw	<6.7	<6.4	<38	<1000	<110
Toluene, uc		7.0	<6.4	<38	3100	<110
	ene, ug/kg dw	<6.7	<6.4	<38	<1000	<110
_	ne, ug/kg dw	<6.7	<6.4	43	<1000	120
Styrene, ug		<6.7	<6.4	<38	<1000	<110
Xylenes, ug		17	<6.4	76	<1000	180
	Toluene-d8	75 %	95 %	97 %	89 %	91 %
	4-Bromofluorobenzene	209 %	116 %	116 %	77	127 %
	Dibromofluoromethane	101 %				109 %
Date Analyz			03.30.96	04.01.96	04.02.96	04.01.96

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

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		REPORT C	F RESULTS		DATE/	Page 12
LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED)
81661-6	9164				03-20-96/140	0
81661-7	9165			•	03-20-96/153	0
81661-8	9166				03-20-96/162	0
81661-9	9167				03-20-96/164	:5
81661-10	9168		· 		03-21-96/140	0
PARAMETER		81661-6	81661-7	81661-8	81661-9	81661-10
Semivolatile	e Organics (8270)					
1,3-Dichlo	robenzene, ug/kg dw	<440	<590	<5100*F65	<550	<1400
1,4-Dichlo	robenzene, ug/kg dw	<440	<590	<5100	<550	<1400
Hexachloro	ethane, ug/kg dw	<440	<590	<5100	<550	<1400
bis(2-Chlo	roethyl)ether, ug/kg	dw <440	<590	<5100	<550	<1400
-	robenzene, ug/kg dw	<440	<590	<5100	<550	<1400
bis(2-Chlor , ug/kg d	roisopropyl)ether #	<440	<590	<5100	<550	<1400
n-Nitrosodi ug/kg dw	i-n-propylamine,	<440	<590	<5100	<550	<1400
	ne, ug/kg dw	<440	<590	<5100	<550	<1400
Hexachlorob	outadiene, ug/kg dw	<440	<590	<5100	<550	<1400
1,2,4-Trich	nlorobenzene, ug/kg d	w <440	<590	<5100	<550	<1400
Isophorone,	ug/kg dw	<440	<590	<5100	<550	<1400
Naphthalene	e, ug/kg dw	<440	<590	<5100	<550	<1400
bis(2-Chlorug/kg dw	coethoxy) methane,	<440	<590	<5100	<550	<1400
Hexachloroc ug/kg dw	ryclopentadiene,	<440	<590	<5100	<550	<1400
	hthalene, ug/kg dw	<440	<590	<5100	<550	<1400

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Mr. Mark Corbin
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Rockville, MD 20855

Benzidine, ug/kg dw

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

Sampled By: Client

REPORT OF RESULTS Page 13 DATE/ SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED 81661-6 9164 03-20-96/1400 81661-7 9165 03-20-96/1530 81661-8 9166 03-20-96/1620 81661-9 9167 03-20-96/1645 81661-10 9168 03-21-96/1400 81661-6 81661-7 81661-8 PARAMETER 81661-9 81661-10 Acenaphthylene, ug/kg dw <440 <590 <5100 <550 <1400 Acenaphthene, ug/kg dw <440 <590 <5100 <550 <1400 Dimethylphthalate, ug/kg dw <440 <590 <5100 <550 <1400 2,6-Dinitrotoluene, ug/kg dw <440 <590 <5100 <550 <1400 Fluorene, ug/kg dw <440 <590 <5100 <550 <1400 4-Chlorophenylphenyl <440 <590 <5100 <550 <1400 ether, ug/kg dw 2,4-Dinitrotoluene, ug/kg dw <440 <590 <5100 <550 <1400 Diethylphthalate, ug/kg dw <440 <590 <5100 <550 <1400 N-Nitrosodiphenylamine/Diph <440 <590 <5100 <550 <1400 enylamine, ug/kg dw Hexachlorobenzene, ug/kg dw <440 <590 <5100 <550 <1400 4-Bromophenyl phenyl <440 <590 <5100 <550 <1400 ether, ug/kg dw Phenanthrene, ug/kg dw <440 <590 <5100 <550 <1400 Anthracene, ug/kg dw <440 <590 <5100 <550 <1400 Di-n-butylphthalate, ug/kg dw <440 <590 <5100 <550 <1400 Fluoranthene, ug/kg dw <440 <590 <5100 <550 <1400 Pyrene, ug/kg dw <440 <590 <5100 <550 <1400

<4800

<42000

<4500

<12000

<3600

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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		REPORT (OF RESULTS		DATE/	Page 14
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLE	
81661-6 81661-7 81661-8	9164 9165 9166				03-20-96/140 03-20-96/153 03-20-96/162	30
81661-9 81661-10	9167 9168				03-20-96/164 03-21-96/140	15
PARAMETER		81661-6	81661-7	81661-8	81661-9	81661-10
_	phthalate, ug/kg dw	<440	<590			<1400
bis(2-Ethylug/kg dw	hexyl)phthalate,	<440	<590	<5100	<550	<1400
Chrysene, u	ıg/kg dw	<440	<590	<5100	<550	<1400
Benzo (a) ant	hracene, ug/kg dw	<440	<590	<5100	<550	<1400
3,3'-Dichlo	probenzidine, ug/kg d	√ <880	<1200	<10000	<1100	<2900
Di-n-octylp	hthalate, ug/kg dw	<440	<590	<5100	<550	<1400
Benzo(b)flu	oranthene, ug/kg dw	<440	<590	<5100	<550	<1400
	oranthene, ug/kg dw	<440	<590	<5100	<550	<1400
	rene, ug/kg dw	<440	<590	<5100	<550	<1400
	3-cd)pyrene, ug/kg dv		<590	<5100	<550	<1400
)anthracene, ug/kg d		<590	<5100	<550	<1400
)perylene, ug/kg dw	<440	<590	<5100	<550	<1400
	methylam ine, ug/kg dv		<590	<5100	<550	<1400
-	nol, ug/kg dw	<440	<590	<5100	<550	<1400
-	ol, ug/kg dw	<440	<590	<5100	<550	<1400
Phenol, ug/	-	<440	<590	<5100	<550	<1400
-	lphenol, ug/kg dw	<440	<590	<5100	<550	<1400
•	ophenol, ug/kg dw	<440	<590	<5100	<550	<1400
2,4,6-Trich	lorophenol, ug/kg dw	<440	<590	<5100	<550	<1400

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Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

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		REPORT (OF RESULTS		DATE/	Page 15
LOG NO	SAMPLE DESCRIPTION	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
81661-6 81661-7 81661-8 81661-9 81661-10	9164 9165 9166 9167 9168				03-20-96/140 03-20-96/153 03-20-96/162 03-20-96/164 03-21-96/140	0 0 5
PARAMETER		81661-6	81661-7	81661-8	81661-9	81661-10
2,4-Dinitro 2-Methyl-4, ug/kg dw	-methylphenol, ug/kg ophenol, ug/kg dw ,6-dinitrophenol,	dw <440 <2300 <2300	<590 <3000 <3000	<5100 <26000 <26000		<1400 <7400 <7400
Pentachlorophenol, ug/kg dw 4-Nitrophenol, ug/kg dw Benzyl alcohol, ug/kg dw		<2300 <2300 <440	<3000 <3000 <590 <590	<26000 <26000 <5100	<2800 <2800 <550	<7400 <7400 <1400
ug/kg dw 3&4-Methylr	enol (o-cresol), phenol pl), ug/kg dw	<440 <440	<590	<5100 <5100	<550 2400	<1400 <1400
4-Chloroani 2-Methylnap	id, ug/kg dw Lline, ug/kg dw ohthalene, ug/kg dw	<2300 <880 <440	<3000 <1200 <590	<26000 <10000 <5100	3600 <1100 <550	<7400 <2900 <1400
2-Nitroanil 3-Nitroanil	nlorophenol, ug/kg dw .ine, ug/kg dw .ine, ug/kg dw .n, ug/kg dw	<440 <2300 <2300 <440	<590 <3000 <3000 <590	<5100 <26000 <26000 <5100	<550 <2800 <2800 <550	<1400 <7400 <7400 <1400
	ine, ug/kg dw	<2300 57 %	<3000 72 %	<26000 *F33	<2800 48 %	<7400 51 %

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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							DATE/	_
LOG NO	SAMPLE	DESCRIPTION	, SOLID	OR	SEMISOLID	SAMPLES	TIME SAMPL	ED
81661-6	9164	****					03-20-96/1	400
81661-7	9165						03-20-96/1	530
81661-8							03-20-96/1	620
81661-9	9167						03-20-96/1	645
81661-10							03-21-96/1	400
PARAMETER					81661-7	81661-8	81661-9	81661-10
Surrogate-F					68 %	*F33	61 %	51 %
Surrogate-N			54	*	70 %	*F33	54 %	47 %
Surrogate-2	FBP						54 %	
Surrogate-I	BP		52	왕	58 %	*F33	. 36 %	51 %
Surrogate-T			100	*	90 %	*F33	78 %	67 %
Date Extrac	ted		03.26.9	6	03.26.96	03.26.96	03.26.96	03.26.96
Date Analyz	ed		03.28.9	6	03.28.96	03.28.96	03.28.96	03.28.96
N-Methylcarb	amates	(EPA 8318)						
Aldicarb, u	g/kg dw	•	<200	0	<38	<460	<500	<130
Date Extrac	ted		03.27.9	6	13.27.96	03.27.96	03.27.96	03.27.96
Date Analyz	ed		04.13.9	6	04.12.96	04.12.96	04.12.96	04.12.96
Mercury (747								
Mercury (74	71), mg	/kg dw	0.05	8	<0.013	<0.015	<0.017	<0.043
Preparation	Date		03.28.9	6	03.28.96	03.28.96	03.28.96	03.28.96
Date Analyz	eđ		03.29.9	6	03.29.96	03.29.96	03.29.96	03.29.96
Batch ID			0328	R	0328R	0328R	0328R	0328R
Arsenic (601								
Arsenic (60	10), mg	/kg dw						
Preparation						03.26.96		03.26.96
Date Analyz	ed						03.27.96	03.27.96
Batch ID			0326					0326A

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						DATE/	
LOG NO		DESCRIPTION	, SOLID OR	SEMISOLID		TIME SAMPL	
81661-6				• • • • • • • • • • • • • • • • • • • •		03-20-96/1	
81661-7	9165					03-20-96/1	530
81661-8	9166					03-20-96/1	620
81661-9						03-20-96/1	645
81661-10						03-21-96/1	400
PARAMETER			81661-6	81661-7	81661-8	81661-9	81661-10
Barium (6010							
Barium (601	.0), mg/	kg dw	2.5	<1.3	2.2	<1.7	59
			03.26.96	03.26.96	03.26.96	03.26.96	03.26.96
Date Analyz	ed					03.27.96	
Batch ID			0326A	032 <i>6</i> A	0326A	0326A	0326A
Chromium (60							
		g/kg dw			2.4		10
Preparation						03.26.96	
					03.27.96		03.27.96
Batch ID			0326A	0326A	0326A	0326A	0326A
Cadmium (601							
Cadmium (60	10), mg	/kg dw				<0.83	
Preparation	Date				03.26.96		03.26.96
Date Analyz	ed		03.27.96		03.27.96		03.27.96
Batch ID			0326A	032 <i>6</i> A	0326A	0326A	032 <i>6</i> A
Lead (6010)							
Lead (6010)	, mg/kg				6.5		15
Preparation	Date		03.26.96	03.26.96	03.26.96	03.26.96	03.26.96
Date Analyz	ed		03.27.96	03.27.96	03.27.96	03.27.96	03.27.96
Batch ID			0326A	0326A	0326A	0326A	0326A
Percent Soli	ds (160	*	75		65	60	23

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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LOG NO	SAMPLE	DESCRIPTION	, SOLID	OR SEMISOL	D SAMPLES	DATE/ TIME SAMPLE	SD.
81661-6	9164					03-20-96/14	00
81661-7	9165					03-20-96/15	30
81661-8	9166					03-20-96/16	20
81661-9	9167					03-20-96/16	45
81661-10	9168					03-21-96/14	00
PARAMETER					7 81661-8	81661-9	81661-10
Antimony (60	10)				_		_
Antimony (6	010), m	ig/kg dw	<6.	7 <6.	4 <7.7	<8.3	<22
Preparation	Date		03.26.9	6 03.26.9	6 03.26.96	03.26.96	03.26.96
Date Analyz	ed		03.27.9	6 03.27.9	6 03.27.96	03.27.96	03.27.96
Batch ID			0326	A 0326	A 0326A	0326A	0326A

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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LOG NO	SAMPLE DESCRIPTION , S	OLID OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	ם
81661-11	9169			03-21-96/15	00
81661-12	9170			03-21-96/15	45
81661-13	9171			03-21-96/15	43
81661-14	9172			03-21-96/16	30
PARAMETER				81661-13	
Volatiles by	y GC/MS (8260)				
	ane, ug/kg dw	<12	<8900	<44000	<11
	ne, ug/kg dw	<12	<8900		<11
	ride, ug/kg dw	<12			<11
	ne, ug/kg đw	<12			<11
	chloride (Dichlorometha	ne), <6.2	<4500	<22000	<5.7
ug/kg dw		-			
Acetone, u	g/kg dw	<31	94000	<110000	140
Carbon dist	ulfide, ug/kg dw	<6.2	<4500	<22000	<5.7
1,1-Dichlor	roethene, ug/kg dw	<6.2	<4500	<22000	<5.7
1,1-Dichlor	roethane, ug/kg dw	<6.2	<4500	<22000	<5.7
trans-1,2-	Dichloroethylene, ug/kg	dw <6.2	<4500	<22000	<5.7
Chloroform,	• • • • • • • • • • • • • • • • • • •	<6.2	<4500	<22000	<5.7
1,2-Dichlor	roethane, ug/kg dw	<6.2	<4500	<22000	<5.7
2-Butanone	(MEK), ug/kg dw	<31	39000	<110000	<29
	nloroethane, ug/kg dw	<6.2	<4500	<22000	<5.7
	rachloride, ug/kg dw	<6.2	<4500	<22000	<5.7
-	ate, ug/kg dw	<12	<8900	<44000	<11
	promethane, ug/kg dw	<6.2			<5.7
	rachloroethane, ug/kg o			<22000	<5.7
1,2-Dichlor	copropane, ug/kg dw	<6.2	<4500	<22000	<5.7

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15850 Crabbs Branch Way #300
Rockville, MD 20855

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Sampled By: Client

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LOG NO	SAMPLE DESCRIPTION , SOLID	OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	ס
81661-11	9169			03-21-96/15	00
81661-12	9170			03-21-96/15	45
81661-13	9171			03-21-96/15	43
81661-14	9172			03-21-96/16	30
PARAMETER		81661-11	81661-12	81661-13	81661-14
•	Dichloropropene, ug/kg dw	<6.2	<4500	<22000	<5.7
Trichloroe	thene, ug/kg dw	<6.2	<4500	<22000	<5.7
Dibromochle	oromethane, ug/kg dw	<6.2	<4500	<22000	<5.7
	nloroethane, ug/kg dw	<6.2	<4500	<22000	<5.7
Benzene, u		<6.2	6800	<22000	<5.7
•	chloropropene, ug/kg dw	<6.2	<4500	<22000	<5.7
	nylvinyl ether, ug/kg dw	<62	<45000	<220000	<57
Bromoform,	<u>-</u> -	<6.2	<4500	<22000	<5.7
2-Hexanone		<31	<22000	<110000	<29
4-Methyl-2	-pentanone (MIBK), ug/kg dw	<31	30000	<110000	<29
	oethene, ug/kg dw	<6.2	<4500	<22000	<5.7
Toluene, ug		<6.2	<4500	<22000	<5.7
	ene, ug/kg dw	<6.2	<4500	<22000	<5.7
_	ie, ug/kg dw	11	<4500	130000	16
Styrene, ug	-	<6.2	<4500	<22000	<5.7
Xylenes, ug		. 62	24000	810000	62
_	Toluene-d8	92 %		100 %	96 %
- .	4-Bromofluorobenzene	132 %	78 %	93 %	123 %
-	Dibromofluoromethane	114 %			
Date Analyz	ed	04.01.96	04.02.96	04.02.96	03.29.96

SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

- {

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID O	R SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
81661-11 81661-12 81661-13 81661-14	9169 9170 9171 9172			03-21-96/150 03-21-96/150 03-21-96/160 03-21-96/160	45 43
PARAMETER		81661-11	81661-12	81661-13	81661-14
	e Organics (8270)				
	robenzene, ug/kg dw	<410	<6100 * F65	<730	<1300
•	robenzene, ug/kg dw	<410	<6100	<730	<1300
	ethane, ug/kg dw	<410	<6100	<730	<1300
	roethyl)ether, ug/kg dw	<410	<6100	<730	<1300
	cobenzene, ug/kg dw	<410	<6100	<730	<1300
	roisopropyl)ether, ug/kg dw	<410	<6100	<730	<1300
	i-n-propylamine, ug/kg dw	<410	<6100	<730	<1300
	ie, ug/kg dw	<410	<6100	<730	<1300
	outadiene, ug/kg dw	<410	<6100	<730	<1300
	llorobenzene, ug/kg dw	<410	<6100	<730	<1300
Isophorone,		<410	<6100	<730	<1300
Naphthalene		<410	<6100	<730	<1300
	coethoxy) methane, ug/kg dw	<410	<6100	<730	<1300
	yclopentadiene, ug/kg dw	<410	<6100	<730	<1300
-	hthalene, ug/kg dw	<410	<6100	<730	<1300
	ene, ug/kg dw	<410	<6100	<730	<1300
-	e, ug/kg dw	<410	<6100	<730	<1300
	halate, ug/kg dw	<410	<6100	<730	<1300
	toluene, ug/kg dw	<410	<6100	<730	<1300
Fluorene, u	g/kg dw	<410	<6100	<730	<1300

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LOG NO: S6-81661 Received: 23 MAR 96

Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

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REPORT OF RESULTS

	1410	at of amounts			rage 22
LOG NO	SAMPLE DESCRIPTION , SOLID	OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
81661-11	9169		******	03-21-96/15	00
81661-12	9170			03-21-96/15	
81661-13	9171			03-21-96/15	
81661-14	9172			03-21-96/16	

PARAMETER		81661-11	81661-12	81661-13	81661-14
4-Chloroph	enylphenyl ether, ug/kg dw	<410	<6100	<730	<1300
2,4-Dinitr	otoluene, ug/kg dw	<410	<6100	. <730	<1300
Diethylpht	halate, ug/kg dw	<410	<6100	<730	<1300
	iphenylamine/Diphenylamine,	<410	<6100	<730	<1300
ug/kg dw					
	benzene, ug/kg dw	<410	<6100	<730	<1300
_	nyl phenyl ether, ug/kg dw	<410	<6100	<730	<1300
	ne, ug/kg dw	<410	<6100	<730	<1300
Anthracene		<410	<6100	<730	<1300
	ohthalate, ug/kg dw	<410	<6100	<730	<1300
	ne, ug/kg dw	<410	<6100	<730	<1300
Pyrene, ug,		<410	<6100	1200	<1300
Benzidine,		<3400	<50000	<6000	<11000
	lphthalate, ug/kg dw	<410	<6100	<730	<1300
	lhexyl)phthalate, ug/kg dw	<410	<6100	<730	<1300
Chrysene, u	<u>-</u>	<410	<6100	<730	<1300
	hracene, ug/kg dw	<410	<6100	<730	<1300
•	probenzidine, ug/kg dw	<820	<12000	<1500	<2600
	hthalate, ug/kg dw	<410	<6100	<730	<1300
	oranthene, ug/kg dw	<410	<6100	<730	<1300
Benzo(k)flu	oranthene, ug/kg dw	<410	<6100	<730	<1300

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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Project: 097.001/Woodbine, GA

	REPORT	OF RESULTS		/	Page 23
LOG NO SAMPLE DESCRIP	TION , SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
81661-11 9169 81661-12 9170 81661-13 9171 81661-14 9172				03-21-96/150 03-21-96/150 03-21-96/150 03-21-96/160	15 13
PARAMETER		81661-11	81661-12	81661-13	81661-14
Benzo (a) pyrene, ug/kg dw Indeno (1,2,3-cd) pyrene, u Dibenzo (a,h) anthracene, u Benzo (g,h,i) perylene, ug/N-Nitrosodimethylamine, u 2-Chlorophenol, ug/kg dw 2-Nitrophenol, ug/kg dw 2,4-Dimethylphenol, ug/kg 2,4-Dichlorophenol, ug/kg 2,4-Dichlorophenol, ug/kg 2,4-Chloro-3-methylphenol, ug/kg 2-Methyl-4,6-dinitrophenol, ug/kg 2-Methyl-4,6-dinitrophenol Pentachlorophenol, ug/kg dw Benzyl alcohol, ug/kg dw 2-Methylphenol (o-cresol) 3&4-Methylphenol (m&p-cres Benzoic acid, ug/kg dw	g/kg dw kg dw g/kg dw dw dw /kg dw ig/kg dw iw L, ug/kg dw iw ug/kg dw	<410 <410 <410 <410 <410 <410 <410 <410		<730	
4-Chloroaniline, ug/kg dw		<820 <820	<12000	<1500	<2600

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

	·	REPORT OF RESULTS			Page 24
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR SEMISOLID	SAMPLES	DATE/ TIME SAMPI	ÆD
81661-11	9169			03 21 06/1	
81661-12				03-21-96/1 03-21-96/1	
81661-13				03-21-96/1	
81661-14				03-21-96/1	
PARAMETER		81661-11	81661-12	81661-13	81661-14
2-Methyl	naphthalene, ug/kg dw	<410	<6100	<730	<1300
	ichlorophenol, ug/kg dw	<410			
	niline, ug/kg dw	<2100			
3-Nitroa	niline, ug/kg dw	<2100			
Dibenzofi	uran, ug/kg dw	<410	<6100	<730	<1300
4-Nitroa	niline, ug/kg dw	<2100	<31000	<3800	<6800
Surrogate	e-2FP	55 %	*F33	18 %	76 %
Surrogate	e-PHL	57 %	*F33	58 %	79 %
Surrogate		48 %	*F33	54 %	65 %
Surrogate	e-2FBP	57 %	*F33	59 %	76 %
Surrogate		62 %	*F33	61 %	85 %
Surrogate		76 %	*F33	108 %	76 %
Date Extr		03.26.96	03.26.96	03.26.96	03.26.96
Date Anal	-	03.28.96	03.28.96	03.28.96	03.29.96
_	urbamates (EPA 8318)				
	ug/kg dw	<38	<53	<67	<34
Date Extr		03.27.96	03.27.96	03.27.96	03.27.96
Date Anal	_	04.12.96	04.12.96	04.12.96	04.12.96
Mercury (7					
_	7471), mg/kg dw	0.016	0.72	0.040	0.028
Preparati		03.28.96		03.28.96	03.28.96
Date Anal	yzed	03.29.96	03.29.96	03.29.96	03.29.96
Batch ID		0328R	0329S	0328R	0328R

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LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

			REPORT	OF RESULTS			Page 25
						DATE/	_
LOG NO	SAMPLE D	ESCRIPTION	, SOLID O	R SEMISOLID		TIME SAMPI	
81661-11	9169					03-21-96/1	
81661-12	9170					03-21-96/1	545
81661-13						03-21-96/1	
81661-14						03-21-96/1	630

PARAMETER					81661-12	81661-13	81661-14
Arsenic (601		la en ella a				2.0	
Arsenic (60		kg aw		1.3	5.5	3.2	<1.1 03.26.96
Preparation							
Date Analyz Batch ID	ed.			03.27.96 0326A	03.27.96		
Barium (6010	13			0326A	0326A	0326A	0326A
Barium (601		- du		120	5 6	28	7.4
Preparation		4 CM				03.26.96	
Date Analyz					03.27.96		
Batch ID				0326A		03.27.98 0326A	
Chromium (60	10)			03201	032QA	0320A	0320A
Chromium (6		ka dw		15	7.3	12	3.4
Preparation						03.26.96	
Date Analyz					03.27.96		
Batch ID				0326A			
Cadmium (601	0)						
Cadmium (60	10), mg/k	g dw		1.5	<0.89	<1.1	<0.57
Preparation	Date					03.26.96	
Date Analyz	ed					03.27.96	
Batch ID				0326A			

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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						DATE/	
LOG NO	SAMPLE	DESCRIPTION	, SOLID (OR SEMISOLID	SAMPLES	TIME SAMPL	ED
81661-11	9169		,			03-21-96/1	500
81661-12	9170					03-21-96/1	545
81661-13	9171					03-21-96/1	543
81661-14	9172					03-21-96/1	630
PARAMETER			****	81661-11	81661-12	81661-13	81661-14
Lead (6010)	/1						
Lead (6010)	-	da					3.1
Preparation							03.26.96
Date Analyz	ed						03.27.96
Batch ID				0326A	0326A	0326A	0326A
Percent Soli		1.3), *		80	56	45	87
Antimony (60	10)						
Antimony (6	(010), m	ng/kg dw		<6.2	<8.9	<11	<5.7
Preparation	Date			03.26.96	03.26.96	03.26.96	03.26.96
Date Analyz	ed			03.27.96	03.27.96	03.27.96	03.27.96
Batch ID				032 6A	0326A	0326A	0326A

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

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REPORT OF RESULTS

LOG NO S	AMPLE DESCRIPTION , QC RE	PORT FOR SOLID/SEMISOLID		
	Method Blank ab Control Standard (LCS) Precision (% RPD)	% Recovery/Duplicate		
PARAMETER		81661-15	81661-16	
Volatiles by		** ******** *******		
Chloromethan	-	<10		
Bromomethane	, ug/kg dw	<10		
Vinyl chlori	de, ug/kg dw	<10		
Chloroethane	, ug/kg dw	<10		
Methylene ch	loride (Dichloromethane),	ug/kg dw <5.0		
Acetone, ug/	kg dw	<25		
Carbon disul	fide, ug/kg dw	<5.0		
1,1-Dichloro	ethene, ug/kg dw	. <5.0	120/124 %	3 %
	ethane, ug/kg dw	<5.0		
trans-1,2-Di	chloroethylene, ug/kg dw	<5.0		
Chloroform,		<5.0		
	ethane, ug/kg dw	<5.0		
2-Butanone (MEK), ug/kg dw	<25		
	oroethane, ug/kg dw	<5.0		
	chloride, ug/kg dw	<5.0		
Vinyl acetate		<10		
	omethane, ug/kg dw	<5.0		
1,1,2,2-Tetra	achloroethane, ug/kg dw	<5.0		
•	propane, ug/kg dw	<5.0		
	chloropropene, ug/kg dw	<5.0		
Trichloroethe	ene, ug/kg dw	<5.0	108/104 %	4 %

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

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REPORT OF RESULTS

LOG NO SAMPLE DESCRI				
81661-15 Method Blank				
81661-16 Lab Control S	tandard (LCS) %	Recovery/Duplicate		
81661-17 Precision (%)	RPD)			
PARAMETER			81661-16	81661-17
Dibromochloromethane, ug,				
1,1,2-Trichloroethane, ug				
Benzene, ug/kg dw			106/106 %	
cis-1,3-Dichloropropene,	ug/kg dw			
2-Chloroethylvinyl ether,		<50		
Bromoform, ug/kg dw		<5.0		
2-Hexanone, ug/kg dw		<25		
4-Methyl-2-pentanone (MIE	SK), ug/kg dw	<25		
Tetrachloroethene, ug/kg	dw	<5.0		
Toluene, ug/kg dw		<5.0	114/112 %	2 %
Chlorobenzene, ug/kg dw		<5.0	114/116 %	2 %
Ethylbenzene, ug/kg dw		<5.0		
Styrene, ug/kg dw		<5.0		
Xylenes, ug/kg dw		<5.0		
Surrogate - Toluene-d8		98 %	98/98 %	
Surrogate - 4-Bromofluoro		110 %	116/110 %	
Surrogate - Dibromofluoro	methane	108 %	106/112 %	
Date Analyzed		03.29.96	03.29.96	

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

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REPORT OF RESULTS

	•			3
LOG NO	SAMPLE DESCRIPTION , QC REPORT E			·
81661-15 81661-16 81661-17	Method Blank Lab Control Standard (LCS) % Rec Precision (% RPD)	covery/Duplicate		
PARAMETER		81661-15	81661-16	81661-17
	le Organics (8270)			
1,3-Dichle	orobenzene, ug/kg dw	<330		
1,4-Dichle	orobenzene, ug/kg dw	<330	70/51 %	31 %
Hexachlor	oethane, ug/kg dw	<330		
bis(2-Chl	oroethyl)ether, ug/kg dw	<330		
1,2-Dichle	orobenzene, ug/kg dw	<330		
	oroisopropyl)ether, ug/kg dw	<330		
	di-n-propylamine, ug/kg dw	<330	106/76 %	33 %
	ene, ug/kg dw	<330		
	obutadiene, ug/kg dw	<330		
	chlorobenzene, ug/kg dw	<330	82/59 %	33 %
-	a, ug/kg dw	<330		
-	ne, ug/kg dw	<330		
	oroethoxy)methane, ug/kg dw	<330		
	ocyclopentadiene, ug/kg dw	<330		
	aphthalene, ug/kg dw	<330		
	ylene, ug/kg dw	<330		
_	ene, ug/kg dw	<330	82/65 %	23 %
	nthalate, ug/kg dw	<330		
2,6-Dinit	rotoluene, ug/kg dw	<330		
Fluorene,		<330		
4-Chloroph	nenylphenyl ether, ug/kg dw	<330		

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REPORT OF RESULTS

			30 00
LOG NO SAMPLE DESCRIPTION , QC REPORT FOR SOLI	D/SEMISOLID		
81661-15 Method Blank 81661-16 Lab Control Standard (LCS) % Recovery/Du 81661-17 Precision (% RPD)	uplicate		
PARAMETER		81661-16	
2,4-Dinitrotoluene, ug/kg dw Diethylphthalate, ug/kg dw N-Nitrosodiphenylamine/Diphenylamine, ug/kg dw Hexachlorobenzene, ug/kg dw 4-Bromophenyl phenyl ether, ug/kg dw Phenanthrene, ug/kg dw Anthracene, ug/kg dw Di-n-butylphthalate, ug/kg dw Fluoranthene, ug/kg dw Pyrene, ug/kg dw Benzidine, ug/kg dw Butylbenzylphthalate, ug/kg dw bis(2-Ethylhexyl)phthalate, ug/kg dw Chrysene, ug/kg dw Benzo(a)anthracene, ug/kg dw Ji-n-octylphthalate, ug/kg dw Di-n-octylphthalate, ug/kg dw	<330	76/65 %	16 %
Benzo(b)fluoranthene, ug/kg dw Benzo(k)fluoranthene, ug/kg dw Benzo(a)pyrene, ug/kg dw	<330 <330 <330		
Indeno(1,2,3-cd)pyrene, ug/kg dw Dibenzo(a,h)anthracene, ug/kg dw	<330 <330		

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REE	PORT FOR SOLID/SEMISOLID		
	Method Blank			
	Lab Control Standard (LCS)	* Recovery/Duplicate		
81661-17	Precision (% RPD)			
PARAMETER		01661_16	81661-16	01661-17
PARAMETER		01001-13	91001-10	01001-1/
Benzo(g.h.	i)perylene, ug/kg dw	<330	• • •	
_	imethylamine, ug/kg dw	<330		
	enol, ug/kg dw	<330	76/58 %	27 %
2-Nitrophe	nol, ug/kg dw	<330		
Phenol, ug	/kg dw	<330	76/58 😵	27 %
2,4-Dimethy	ylphenol, ug/kg dw	<330		
2,4-Dichlo	rophenol, ug/kg dw	<330		
2,4,6-Tric	hlorophenol, ug/kg dw	<330		
4-Chloro-3	-methylphenol, ug/kg dw	<330	94/67 😵	34 %
2,4-Dinitro	ophenol, ug/kg dw	<1700		
2-Methyl-4	,6-dinitrophenol, ug/kg dw	<1700		
	ophenol, ug/kg dw	<1700	45/39 %	14 %
4-Nitrophe	nol, ug/kg dw	<1700	82/70 %	16 %
Benzyl alco	ohol, ug/kg dw	<330		
	enol (o-cresol), ug/kg dw	<330		
	phenol (m&p-cresol), ug/kg d	w <330		
	id, ug/kg dw	<1700		
	iline, ug/kg dw	<660		
	phthalene, ug/kg dw	<330		
	nlorophenol, ug/kg dw	<330		
	line, ug/kg dw	<1700		
3-Nitroanil	line, ug/kg dw	<1700		

LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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Project: 097.001/Woodbine, GA

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPO	ORT FOR SOLID/SEMISOLID		
81661-16	Method Blank Lab Control Standard (LCS) % Precision (% RPD)	Recovery/Duplicate		
PARAMETER		81661-15	81661-16	81661-17
	~ * * * * * * * * * * * * * * * * * * *			
Dibenzofur	an, ug/kg dw	<330		
	line, ug/kg dw	<1700		
Surrogate-	2FP	76 %	58/79 %	
Surrogate-	PHL	79 %	64/85 %	
Surrogate-	NBZ	70 %	52/76 %	
Surrogate-	2FBP	70 %	•	
Surrogate-	TBP		58/64 %	
Surrogate-	TPH .	70 %	65/70 %	
Date Extra	cted	03.26.96	03.26.96	
Date Analy:	zed	03.27.96	03.27.96	
-	bamates (EPA 8318)			
Aldicarb,			53/54 %	
Date Extra	· · · · · · · · · · · · · · · · · · ·		03.27.96	
Date Analy:		04.12.96	04.12.96	
Mercury (74)				
_	471), mg/kg dw		86/96 %	
Preparation			03.28.96	
Date Analy:	zed	- -	03.29.96	
Batch ID		0328R	0328R	
Arsenic (60:			_	
	010), mg/kg dw		90/88 %	
Preparation			03.26.96	
Date Analy:	zed		03.27.96	
Batch ID		032 6 A	0326A	

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Rockville, MD 20855

Purchase Order: 097.001

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REPORT OF RESULTS

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LOG NO SAMPLE DE	SCRIPTION , QC REPORT FO			
81661-1/ Precision	ank ol Standard (LCS) % Reco .(% RPD)			
PARAMETER				
Barium (6010)				
Barium (6010), mg/kg Preparation Date	dw	<1.0	100/98 %	2.0 %
Date Analyzed		03.26.96	03.26.96	
Batch ID		03.27.96	03.27.96	
Chromium (6010)		0326A	0326A	
	3			
Chromium (6010), mg/k Preparation Date	a am	<1.0	105/104 %	0.96 %
Date Analyzed		03.26.96	03.26.96	
Batch ID		03.27.96	03.27.96	
Cadmium (6010)		0326A		
	3			
Cadmium (6010), mg/kg Preparation Date	gw .	<0.50	103/102 %	0.98 %
Date Analyzed		03.26.96	03.26.96	
Batch ID		03.27.96	03.27.96	
Lead (6010)		0326A	0326A	
Lead (6010), mg/kg dw Preparation Date		<0.50	106/109 %	2.8 %
		03.26.96	03.26.96	***
Date Analyzed Batch ID			03.27.96	
Baccii ID		0326A		



LOG NO: S6-81661 Received: 23 MAR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001/Woodbine, GA

Sampled By: Client

REPORT OF RESULTS

Page 34

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SET	MISOLID		
	Method Blank Lab Control Standard (LCS) % Recovery/Duplic Precision (% RPD)	cate		
PARAMETER	8:		81661-16	81661-17
Antimony (6	010) 6010), mg/kg dw n Date 03	<5.0 3.26.96	95/95 % 03.26.96 03.27.96 0326A	0 %

Methods: EPA SW-846

*F33 = Control limits are established only for surrogate concentration levels specified by EPA methods. Because the sample was diluted prior to analysis, surrogate recoveries are not reported.

*F65 = Elevated detection limits were reported due to sample matrix interference which required sample or extract dilution.

Susan H. Norwood, Project Manager

Final Page Of Report

	· — — — —				_		<u> </u>	Sagar Mamp	~ ~ ~ .	<u>. </u>	
& ENVIRO	INAH LABORATORIES NMENTAL SERVICES, INC. ST AND CHAIN OF CUSTODY REC	ORD	☐ 414 SW : ☐ 900 Lake ☐ 6712 Ber	ustrial Plaza I 2th Avenue side Drive, N njamin Road	Drive, Talla Deerfield E Nobile, AL 3 Suite 100,	hassee, FL 323 leach, FL 3344:	01 Phone 2 Phone Phone 34 Phone	: (912) 354-78 : (904) 878-39 : (305) 421-74 : (205) 666-66 : (813) 885-74 : (504) 764-11	994 Fax: (904) 87 900 Fax: (305) 42 933 Fax: (205) 66 9427 Fax: (813) 88	8-9504 1-2984 6-6696 5-7049	
PROJECT REFERENCE PROJECT LOC SAMPLER(S) (State) A TIKE CLIENT NAME HOEK ENURON CLIENT ADDRESS (CITY STATE 1585 CARS SS	CLIENT PROJECT MANAGER	001	MATRIX TYPE	Sup.		REQUIRED	ANALYSES	s	REPO	DARD DRT VERY	
SAMPLE OF	20822				y y	-/-/	-/-/	/_/_	EXPEDITE DELIVERY	(surcharge)	
DATE TIME NO.	SAMPLE IDENTIFICATION		3/1cg/10	NIMBER	OF CONT	AINERS SUE	MITTED		Date Due:		
3/2/2 0730	9159	14343	111	NOMBER	1	AINENS SOL	NITTED		Paus Couta		i
0845	9160				<u>' </u>				CE CTORR	GAS)	
1030	9161		1 7	1 1							¥
1130	9162		1 1	1 1							N S
1300	9163		1 1	1 1					·		ORIGINAL
1400	9164		1 1		,						
1530	9165										
1620	9166		1 1				 				
1645	9167		1 1	 							
3/4/91/1400	9168		111	1 1							ĺ
1500	9169		111		_						
1545	0120		1	1							
1345	91+2		/ 1								
RETHODISHED BY (SIGNATUR	DATE TIME RELINQUIS	HED BY: (SIGNA	TURE)	3/23/96	TIME 1/20	RELINQUISH	IED BY: (SIGN	IATURE)	DATE	TIME	
RECEIVED BY: (SIGNATURE)		BY: (SIGNATURE		DATE	TIME	RECEIVEDB	Y: (SIGNATUI	RE)	DATE	TIME	
RECEIVED/FOR LABORATORY	RV-(SIGNATURE) DATE THAT		TORY USE								
	0.00 2896 0.20	DDY INTACT CI	JSTODY SEAL	1	ogno.		TORY REMAR	iks:			

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

		REPORT O	F RESULTS			Page 1
					DATE/	
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID SI	amples	TIME SAMPLED	
81947-1	9189				04-03-96/1310	
81947-2	9190				04-03-96/1325	
81947-3	9191				04-03-96/1420	
81947-4	9192				04-03-96/1450	
81947-5	9193	99 89	alan	~~	04-03-96/1515	0102
PARAMETER		27.047	7777		777	
PARAMETER		81947-1	81947-2	81947-3	81947-4	81947-5
Volatiles by	GC/MS (8260)					
_	ne, ug/kg dw	<12	<12	<12	<12	<12
Bromomethar	ie, ug/kg dw	<12	<12	<12	<12	<12
Vinyl chlor	ride, ug/kg dw	<12	<12	<12	<12	<12
Chloroethan	ne, ug/kg dw	<12	<12	<12	<12	<12
Methylene o	chloride	<6.0	<6.2	<6.1	<6.1	<6.0
(Dichloron	ethane), ug/kg dw					
Acetone, ug	y/kg dw	<30	<31	<30	<30	<30
Carbon disu	ulfide, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
1,1-Dichlor	coethene, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
1,1-Dichlor	oethane, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
trans-1,2-D ug/kg dw	ichloroethylene,	<6.0	<6.2	<6.1	<6.1	<6.0
Chloroform,	ua/ka dw	<6.0	<6.2	<6.1	<6.1	<6.0
	oethane, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
•	(MEK), ug/kg dw	<30	<31	<30	<30	<8.0 <30
	loroethane, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
	achloride, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0 <6.0
	te, ug/kg dw	<12	<12	<12	<6.1 <12	<6.0 <12
	romethane, ug/kg dw	<6.0	<6.2	<6.1	<6.1	
	romeculatie, ug/kg uw	\0. 0	<0.4	<0.1	<0.1	<6.0

SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

		REPORT	OF RESULTS			Page 2
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID		DATE/ TIME SAMPLED	
81947-1					04-03-96/1310	
81947-2	9190				04-03-96/1325	5
81947-3	9191				04-03-96/1420)
81947-4	9192				04-03-96/1450)
81947-5	9193				04-03-96/1515	;
PARAMETER		81947-1	81947-2			
1,1,2,2-Tet ug/kg dw	rachloroethane,	<6.0	<6.2		<6.1	
	copropane, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
	ichloropropene,		<6.2			<6.0
ug/kg dw						
Trichloroet	hene, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
Dibromochlo	romethane, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
1,1,2-Trich	loroethane, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
Benzene, ug	r/kg dw	<6.0	<6.2	<6.1	<6.1	<6.0
•	hloropropene, ug/kg d		<6.2	<6.1	<6.1	<6.0
	ylvinyl ether, ug/kg	dw <60	<62	<61	<61	<60
Bromoform,		<6.0	<6.2	<6.1	<6.1	<6.1
2-Hexanone,		<30	<31	<30	<30	<30
4-Methyl-2- (MIBK), ug	_	<30	<31	<30	<30	<30
Tetrachloro	ethene, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.1
Toluene, ug	/kg dw	<6.0	<6.2	<6.1	<6.1	<6.1
	ne, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.1
Ethylbenzen	e, ug/kg dw	<6.0	<6.2	<6.1	<6.1	<6.1
Styrene, ug	/kg dw	<6.0	<6.2	<6.1	<6.1	<6.1
Xylenes, ug	• •	<6.0			<6.1	<6.1
	Toluene-d8		102 %		97 %	95 %
-	4-Bromofluorobenzene			118 %	110 %	115 %
_	Dibromofluoromethane					117 %
Date Analyza	ed 04	.10.96	04.10.96	04.10.96	04.10.96	4.10.96

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

		REPORT (OF RESULTS			Page 3
					DATE/	
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLED	
81947-1	9189				04-03-96/131	
81947-2	9190				04-03-96/132	
81947-3	9191				04-03-96/142	
81947-4	9192				04-03-96/145	0
81947-5	9193				04-03-96/151	5
PARAMETER		81947-1	81947-2	81947-3	81947-4	81947-5
Semivolatil	e Organics (8270)					
	robenzene, ug/kg dw	<390	<410	<400	<400	<400
•	robenzene, ug/kg dw	<390	<410	<400	<400	<400
•	ethane, ug/kg dw	<390	<410	<400	<400	<400
	roethyl)ether, ug/kg d	tw <390	<410	<400	<400	<400
	robenzene, ug/kg dw	<390	<410	<400	<400	<400
•	roisopropyl) ether	<390	<410	<400	<400	<400
, ug/kg đ						
	i-n-propylamine,	<390	<410	<400	<400	<400
ug/kg dw						
J	ne, ug/kg dw	<390	<410	<400	<400	<400
Hexachloro	butadiene, ug/kg dw	<390	<410	<400	<400	<400
1,2,4-Tric	hlorobenzene, ug/kg dw	<390	<410	<400	<400	<400
Isophorone		<390	<410	<400	<400	<400
_	e, ug/kg dw	<390	<410	<400	<400	<400
-	roethoxy) methane,	<390	<410	<400	<400	<400
ug/kg dw	_		-		-	
	cyclopentadiene,	<390	<410	<400	<400	<400
ug/kg dw			-		·	
	phthalene, ug/kg dw	<390	<410	<400	<400	<400

LOG NO: S6-81947

Received: 05 APR 96

Reported: 26 APR 96

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLED)
81947-1	9189				04-03-96/131	.0
81947-2	9190				04-03-96/132	5
81947-3	9191				04-03-96/142	0
81947-4	9192				04-03-96/145	0
81947-5	9193				04-03-96/151	5
PARAMETER		81947-1	81947-2	81947-3	81947-4	81947-5
Acenaphthyl	ene, ug/kg dw	<390	<410	<400	<400	<400
Acenaphthen	e, ug/kg dw	<390	<410	<400	<400	<400
Dimethylpht	halate, ug/kg dw	<390	<410	<400	<400	<400
2,6-Dinitro	toluene, ug/kg dw	<390	<410	<400	<400	<400
Fluorene, u	g/kg dw	<390	<410	<400	<400	<400
4-Chlorophe	nylphenyl	<390	<410	<400	<400	<400
ether, ug/	kg dw					
2,4-Dinitro	toluene, ug/kg dw	<390	<410	<400	<400	<400
Diethylphth	alate, ug/kg dw	<390	<410	<400	<400	<400
N-Nitrosodi	phenylamine/Diph	<390	<410	<400	<400	<400
enylamine,	ug/kg dw					
Hexachlorob	enzene, ug/kg dw	<390	<410	<400	<400	<400
4-Bromophen		<390	<410	<400	<400	<400
ether, ug/	kg dw					
Phenanthren		<390	<410	<400	<400	<400
Anthracene,		<390	<410	<400	<400	<400
	hthalate, ug/kg dw	<390	<410	<400	<400	<400
Fluoranthen		<390	<410	<400	<400	<400
Pyrene, ug/	kg dw	<390	<410	<400	<400	<400
Benzidine,	ug/kg dw	<3200	<3400	<3300	<3300	<3200

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

		REPORT C	F RESULTS		/	Page 5
- ca 200	CANDLE DECORATEDO	COT TD OR	CENTSOT TO	CAMPLEC	DATE/ TIME SAMPLED	
LOG NO	SAMPLE DESCRIPTION ,	SOLID OR	SEMITSOUTD	SAMPLISS	TIME SAMPLED	,
81947-1	9189				04-03-96/131	0
81947-2	9190				04-03-96/132	
81947-3	9191				04-03-96/142	
81947-4	9192				04-03-96/145	
81947-5	9193				04-03-96/151	
01341-3	3133				04-03-30/131	
PARAMETER		81947-1	81947-2	81947-3	81947-4	81947-5
Butuel honors	lphthalate, ug/kg dw	<390	<410	<400	<400	<400
	lhexyl) phthalate,	<390	<410	<400	<400	<400
ug/kg dw		<2390	(410	<400	< 300	<400
Chrysene,	ug/kg dw	<390	<410	<400	<400	<400
Benzo (a) ani	thracene, ug/kg dw	<390	<410	<400	<400	<400
3,3'-Dichle	orobenzidine, ug/kg dw	<780	<820	<800	<800	<800
Di-n-octyl	phthalate, ug/kg dw	<390	<410	<400	<400	<400
Benzo(b)fl	uoranthene, ug/kg dw	<390	<410	<400	<400	<400
Benzo(k) flu	uoranthene, ug/kg dw	<390	<410	<400	<400	<400
Benzo(a)pyr	rene, ug/kg dw	<390	<410	<400	<400	<400
Indeno(1,2,	,3-cd)pyrene, ug/kg dw	<390	<410	<400	<400	<400
Dibenzo(a,	n)anthracene, ug/kg dw	<390	<410	<400	<400	<400
Benzo (g, h, i	i)perylene, ug/kg dw	<390	<410	<400	<400	<400
N-Nitrosodi	imethylamine, ug/kg dw	<390	<410	<400	<400	<400
2-Chlorophe	enol, ug/kg dw	<390	<410	<400	<400	<400
2-Nitropher	nol, ug/kg dw	<390	<410	<400	<400	<400
Phenol, ug/	kg dw	<390	<410	<400	<400	<400
2,4-Dimethy	lphenol, ug/kg dw	<390	<410	<400	<400	<400
2,4-Dichlor	cophenol, ug/kg dw	<390	<410	<400	<400	<400
2,4,6-Trich	lorophenol, ug/kg dw	<390	<410	<400	<400	<400

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

LOG NO	SAMPLE DESCRIPTION ,		OF RESULTS	SAMDI.RS	DATE/	Page 6
TOG NO	SAMPLE DESCRIPTION ,	SOLID OR		GAMPING	TIME DAME DED	
81947-1	9189				04-03-96/1310	1
81947-1	9190				04-03-96/1325	
81947-2 81947-3	9191				04-03-96/1420	
81947-4	9192				04-03-96/1450	
					04-03-96/1515	
81947-5	9193				04-03-50/1515	
PARAMETER		81947-1	81947-2	81947-3	81947-4	81947-5
4-Chloro-3	-methylphenol, ug/kg	đw <390	<410	<400	<400	<400
	ophenol, ug/kg dw	<2000	<2100	<2100	<2100	<2000
	,6-dinitrophenol,	<2000	<2100	<2100	<2100	<2000
ug/kg dw	•					
	ophenol, ug/kg dw	<2000	<2100	<2100	<2100	<2000
	nol, ug/kg dw	<2000	<2100	<2100	<2100	<2000
Benzyl alco	ohol, ug/kg dw	<390	<410	<400	<400	<400
2-Methylphe ug/kg dw	enol (o-cresol),	<390	<410	<400	<400	<400
3&4-Methyl		<390	<410	<400	<400	<400
•	ol), ug/kg dw	<2000	<2100	<2100	<2100	<2000
	id, ug/kg dw	<780	<820	<800	<800	<800
	iline, ug/kg dw	<390	<410	<400	<400	<400
	ohthalene, ug/kg dw		<410	<400	<400	<400
	nlorophenol, ug/kg dw	<2000	<2100	<2100	<2100	<2000
	line, ug/kg đw	<2000	<2100	<2100	<2100	<2000
	line, ug/kg dw	<390	<410	<400	<400	<400
	un, ug/kg dw	<2000	<2100	<2100	<2100	<2000
	line, ug/kg dw	<2000 60 %	52 %	71 %	71 %	60 %
Surrogate-2	ie e	90 A	34 1	/ 1 7	/= 0	

-

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

			REPORT	OF RESULTS		DATE/	Page 7
LOG NO	SAMPLE	DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	•	ED
81947-1	9189					04-03-96/1	
81947-2	9190					04-03-96/1	
81947-3						04-03-96/1	
81947-4	9192					04-03-96/1	
81947-5	9193		9189	9190) 919	04-03-96/1	515 9.93
PARAMETER			81947-1	81947-2		16.6	
	 nut		62 %	52 %	73 %	76 %	68 %
Surrogate-1 Surrogate-1				40 %			55 %
Surrogate-			_	48 %			55 %
Surrogate-				26 %			55 %
Surrogate-					75 %		65 %
Date Extra							04.08.96
Date Analys							04.09.96
N-Methylcari		(RPA 8318)	01103130	01.05.50			
Aldicarb, u			<37	<37	<38	<37	<37
Date Extra	-	•			04.10.96		04.10.96
Date Analy:				04.18.96			04.19.96
Arsenic (601							
Arsenic (60		/kg dw	<1.2	<1.2	<1.2	<1.2	<1.2
Preparation	_		04.08.96	04.08.96	04.08.96	04.08.96	04.08.96
Date Analys			04.11.96	04.11.96	04.11.96	04.11.96	04.11.96
Batch ID			0408B	0408B	0408B	0408B	0408B
Barium (6010))						
Barium (601		kg dw	1.5			<1.2	
Preparation		_	04.08.96	04.08.96	04.08.96	04.08.96	04.08.96
Date Analyz			04.11.96	04.11.96	04.11.96	04.11.96	04.11.96
Batch ID			0408B	0408B	0408B	0408B	0408B

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

DATE/		
LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED		
81947-1 9189 04-03-96/1310		
81947-2 9190 04-03-96/1325		
81947-3 9191 04-03-96/1420		
81947-4 9192 04-03-96/1450		
81947-5 9193 99 90 91 04-03-96/1515 9	₹.	
PARAMETER 81947-1 81947-2 81947-3 81947-4 819	47-	5
Cadmium (6010)		_
Cadmium (6010), mg/kg dw <0.59 <0.62 <0.61 <0.61 <	0.6	0
Preparation Date 04.08.96 04.08.96 04.08.96 04.08.96 04.0		
Date Analyzed 04.11.96 04.11.96 04.11.96 04.11.96 04.1		
Batch ID 0408B 0408B 0408B 0408B 0	108	В
Chromium (6010)		
Chromium (6010), mg/kg dw 2.8 5.1 6.0 <1.2	65	_
Preparation Date 04.08.96 04.08.96 04.08.96 04.08.96 04.0		
Date Analyzed 04.11.96 04.11.96 04.11.96 04.11.96 04.1		
Batch ID 0408B 0408B 0408B 0	1081	В
Mercury (7471)		_
mateury (/1/2// mg/mg and	.01:	
Preparation Date 04.08.96 04.08.96 04.08.96 04.08.96 04.0		_
Date Analyzed 04.09.96 04.09.96 04.09.96 04.09.96 04.0		
Batch ID 0408S 0408S 0408S 0408S 0	108	3
Lead (6010)		
Lead (6010), mg/kg dw 2.3 9.3 1.7 1.0	2.0	
Preparation Date 04.08.96 04.08.96 04.08.96 04.08.96 04.0		
Date Analyzed 04.11.96 04.11.96 04.11.96 04.11.96 04.1		
Batch ID 0408B 0408B 0408B 0408B 0408B	08E	

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

			REPOR	RT O	F RESULTS			Page	9
							DATE/		
LOG NO	SAMPLE	DESCRIPTION	, SOLID	OR S	SEMISOLID	SAMPLES	TIME SAMPI	ED	
81947-1	9189						04-03-96/1	.310	
81947-2	9190						04-03-96/1	.325	
81947-3	9191						04-03-96/1	420	
81947-4	9192						04-03-96/1	.450	
81947-5	9193						04-03-96/1	.515	
Parameter			81947-	1	81947-2	81947-3	81947-4	81947	-5
Antimony (60	110)								-
Antimony (6		g/kg dw	<6.	0	<6.1	<6.1	<6.1	<6.	.1
Preparation	Date	_	04.08.9	6	04.08.96	04.08.96	04.08.96	04.08.9	96
Date Analyz			04.11.9	6	04.11.96	04.11.96	04.11.96	04.11.9	96
Batch ID			0408	В	0408B	0408B	0408B	0408	B
Percent Soli	ds (160	.3), %	8	4	80	82	82	8	33.

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

Method Blank			
			81947-8
y GC/MS (8260) ane, ug/kg dw ne, ug/kg dw ride, ug/kg dw ne, ug/kg dw ne, ug/kg dw ne, ug/kg dw chloride (Dichloromethane), ug/ g/kg dw noethene, ug/kg dw noethane, ug/kg dw nachloride, ug/kg dw nachloride, ug/kg dw nachloroethane, ug/kg dw nachloroethane, ug/kg dw nopropane, ug/kg dw	<10 <10 <10 <10 <10 <10 <5.0 <25 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.0 <5.	148/150 %	1 %
thene, ug/kg dw		100/102 %	2 %
	Method Blank Lab Control Standard (LCS) % F Precision (% RPD) y GC/MS (8260) ane, ug/kg dw ne, ug/kg dw ne, ug/kg dw chloride (Dichloromethane), ug/ g/kg dw noethene, ug/kg dw coethene, ug/kg dw coethane, ug/kg dw	Lab Control Standard (LCS) % Recovery/Duplicate Precision (% RPD) 81947-6 9 GC/MS (8260) ane, ug/kg dw	Method Blank Lab Control Standard (ICS) % Recovery/Duplicate Precision (% RFD) 81947-6 81947-7 9 GC/MS (8260) Ame, ug/kg dw

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPO	ORT FOR SOLID/SEMISOLID								
81947-7	-6 Method Blank -7 Lab Control Standard (LCS) % Recovery/Duplicate -8 Precision (% RPD)									
PARAMETER			81947-7	81947-8						
Dibromochle	oromethane, ug/kg dw	<5.0								
	hloroethane, ug/kg dw	<5.0								
Benzene, u		<5.0	102/100 %	2 %						
	chloropropene, ug/kg dw	<5.0								
	nylvinyl ether, ug/kg dw	<50								
Bromoform,		<5.0								
2-Hexanone	-	<25								
	-pentanone (MIBK), ug/kg dw	<25								
_	oethene, ug/kg dw	<5.0								
Toluene, ug	g/kg dw	<5.0	98/100 %	2 %						
	ene, ug/kg dw	<5.0	96/98 🕏	2 %						
Ethylbenzer	ne, ug/kg dw	<5.0								
Styrene, u	g/kg dw	<5.0								
Xylenes, u		<5.0								
	- Toluene-d8	94 %	96/96 %							
Surrogate ·	- 4-Bromofluorobenzene	108 %	•							
	- Dibromofluoromethane	•	116/114 %							
Date Analy:		04.10.96	04.10.96							

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

				3
LOG NO	SAMPLE DESCRIPTION , QC REPO	RT FOR SOLID/SEMISOLID		
	• • • • • • • • • • • • • • • • • • • •			
81947-6	Method Blank			
	Lab Control Standard (LCS) %	Recovery/Duplicate	•	
81947-8	Precision (% RPD)			
PARAMETER		81947-6	81947-7	81947-8
Semivolati	le Organics (8270)			
	orobenzene, ug/kg dw	<330		
-	orobenzene, ug/kg dw	<330	70/59 %	17 %
•	oethane, ug/kg dw	<330		
	proethyl)ether, ug/kg dw	<330		
	orobenzene, ug/kg dw	<330		
bis (2-Chlo	proisopropyl)ether, ug/kg dw	<330		
n-Nitrosoc	di-n-propylamine, ug/kg dw	<330	82/70 %	16 %
Nitrobenze	ene, ug/kg dw	<330		
Hexachloro	obutadiene, ug/kg dw	<330		
1,2,4-Tric	chlorobenzene, ug/kg dw	<330	65/56 %	15 %
Isophorone	a, ug/kg dw	<330		
Naphthaler	ne, ug/kg dw	<330		
bis(2-Chlo	proethoxy) methane, ug/kg dw	<330		
Hexachloro	ocyclopentadiene, ug/kg dw	<330		
2-Chlorona	phthalene, ug/kg dw	<330		
Acenaphthy	lene, ug/kg dw	<330		
_	me, ug/kg dw	<330	76/59 %	25 %
Dimethylph	thalate, ug/kg dw	<330		
2,6-Dinitr	otoluene, ug/kg dw	<330		
Fluorene,	ug/kg dw	<330		
4-Chloroph	enylphenyl ether, ug/kg dw	<330		

LOG NO: S6-81947 Received: 05 APR 96

Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

		•	_
LOG NO SAMPLE DESCRIPTION , QC REPORT FOR SOI	LID/SEMISOLID	•	
81947-6 Method Blank			
81947-7 Lab Control Standard (LCS) % Recovery/	Duplicate		
81947-8 Precision (% RPD)			
PARAMETER		81947-7	81947-8
2,4-Dinitrotoluene, ug/kg dw	<330	,	19 %
Diethylphthalate, ug/kg dw	<330		
N-Nitrosodiphenylamine/Diphenylamine, ug/kg dw	<330		
Hexachlorobenzene, ug/kg dw	<330		•
4-Bromophenyl phenyl ether, ug/kg dw	<330		
Phenanthrene, ug/kg dw	<330		
Anthracene, ug/kg dw	<330		
Di-n-butylphthalate, ug/kg dw	<330		
Fluoranthene, ug/kg dw	<330		
Pyrene, ug/kg dw	<330	82/70 %	16 %
Benzidine, ug/kg dw	<2700		
Butylbenzylphthalate, ug/kg dw	<330		
bis(2-Ethylhexyl)phthalate, ug/kg dw	<330		
Chrysene, ug/kg dw	<330		
Benzo(a)anthracene, ug/kg dw	<330		
3,3'-Dichlorobenzidine, ug/kg dw	<660		
Di-n-octylphthalate, ug/kg dw	<330	~ ~ ~	
Benzo(b)fluoranthene, ug/kg dw	<330		
Benzo(k)fluoranthene, ug/kg dw	<330		
Benzo(a)pyrene, ug/kg dw	<330		
Indeno(1,2,3-cd)pyrene, ug/kg dw	<330		
Dibenzo(a,h)anthracene, ug/kg dw	<330		

LOG NO: S6-81947 Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPO	ORT FOR SOLID/SEMISOLID		
81947-6 81947-7 81947-8	Method Blank Lab Control Standard (LCS) % Precision (% RPD)	Recovery/Duplicate		*******
PARAMETER		81947-6	81947-7	81947-8
	i)perylene, ug/kg dw	<330		
	imethylamine, ug/kg dw	<330		
	enol, ug/kg dw	<330	73/64 %	13 %
	nol, ug/kg dw	<330		
Phenol, ug/	_	<330	79/67 %	16 %
2,4-Dimethy	ylphenol, ug/kg dw	<330		
2,4-Dichlor	cophenol, ug/kg dw	<330		
	nlorophenol, ug/kg dw	<330		
4-Chloro-3-	methylphenol, ug/kg dw	<330	82/73 %	12 %
	phenol, ug/kg dw	<1700		
2-Methyl-4,	6-dinitrophenol, ug/kg dw	<1700		
Pentachloro	phenol, ug/kg dw	<1700	42/39 %	7 %
_	ol, ug/kg dw	<1700	79/70 %	9 %
Benzyl alco	hol, ug/kg dw	<330		
2-Methylphe	nol (o-cresol), ug/kg dw	<330		
3&4-Methylp	henol (m&p-cresol), ug/kg dw	<330		
Benzoic aci	d, ug/kg dw	<1700		
4-Chloroani	line, ug/kg dw	<660		
2-Methylnap	hthalene, ug/kg dw	<330		
2,4,5-Trich	lorophenol, ug/kg dw	<330		
2-Nitroanil	ine, ug/kg dw	<1700		
	ine, ug/kg dw	<1700		

LOG NO: S6-81947

Received: 05 APR 96

Purchase Order: 097.001

Reported: 26 APR 96

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300

Rockville, MD 20855

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC RE	BORT FOR SOLID/SEMISOLID		
DOG NO	DATE DESCRIPTION , QC RS			
81947-6	Method Blank			
	Lab Control Standard (LCS)	* Recovery/Duplicate	•	
	Precision (% RPD)	· 110-10-1, -up-1-00-0		

PARAMETER		81947-6	81947-7	81947-8
Dibenzofur	an, ug/kg dw	<330		
4-Nitroani	line, ug/kg dw	<1700		
Surrogate-	2FP	73 %	70/61 %	
Surrogate-	PHL	79 🕏	79/67 😵	
Surrogate-	NBZ	65 %		
Surrogate-	2FBP	65 %	65/53 %	
Surrogate-	TBP	61 %	42/36 %	
Surrogate-	TPH	70 %	65/59 😵	
Date Extra	cted	04.08.96		
Date Analy	zed	04.09.96		
N-Methylcar	bamates (EPA 8318)			
Aldicarb,	ug/kg dw	<30	79/81 😵	2.5 %
Date Extra	cted	04.10.96	04.10.96	
Date Analy	zed	04.18.96	04.18.96	
Arsenic (60	10)			
Arsenic (6	010), mg/kg dw	<1.0	86/82 😵	4.8 🕏
Preparation	1 Date	04.08.96	04.08.96	
Date Analy	zed	04.11.96	04.11.96	
Batch ID		0408B	0408B	
Barium (601	•			
	LO), mg/kg dw	<1.0	/	
Preparation		04.08.96	04.08.96	
Date Analy:	zed	04.11.96	04.11.96	
Batch ID		0408B	0408B	

LOG NO: S6-81947

Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300

Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

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LOG NO SAMPLE DESCRIPTION , QC REPORT FOR SOL	ID/SEMISOLID		
81947-6 Method Blank 81947-7 Lab Control Standard (LCS) % Recovery/1 81947-8 Precision (% RPD)	-		
PARAMETER	81947-6	81947-7	81947-8
Cadmium (6010) Cadmium (6010), mg/kg dw	<0.50	97/98 %	10%
Preparation Date		04.08.96	
Date Analyzed		04.11.96	
Batch ID	0408B		
Chromium (6010)		****	
Chromium (6010), mg/kg dw	<1.0	98/98 %	0 %
Preparation Date	04.08.96	04.08.96	
Date Analyzed	04.11.96	04.11.96	
Batch ID	0408B	0408B	
Mercury (7471)			
Mercury (7471), mg/kg dw	<0.010	87/79 %	9.6 %
Preparation Date	04.08.96	04.08.96	
Date Analyzed	04.09.96	04.09.96	
Batch ID	04085	0408S	
Lead (6010)			
Lead (6010), mg/kg dw	<0.50	103/101 %	2.0 %
Preparation Date	04.08.96	04.08.96	
Date Analyzed		04.11.96	
Batch ID	0408B	0408B	



LOG NO: S6-81947

Received: 05 APR 96 Reported: 26 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 097.001 Sampled By: Client

REPORT OF RESULTS

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LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SE	MISOLID		
81947-6 81947-7 81947-8	Method Blank Lab Control Standard (LCS) % Recovery/Dupli Precision (% RPD)	.cate		
PARAMETER			81947-7	81947-8
Antimony (60 Antimony (60 Preparation Date Analys Batch ID	010) 6010), mg/kg dw n Date 0	<5.0 4.08.96 4.11.96 0408B	90/90 % 04.08.96 04.11.96 0408B	0 %

Methods: EPA SW-846

Susan H. Norwood, Project Manager

S	8	ENV	ANNAH L IRONMENTAL	SERVIC	ES, INC		ORD		□ 2 □ 4 □ 9 □ 6	102 LaRo 846 Indus 14 SW 12 00 Lakes 712 Benj 00 Alpha	strial Pla 2th Aver ide Driv amin Pa	aza Driv nue, De ne, Mob nad, Su	e, Tallah erlield B ile, AL 36 ite 100, 1	assee, F each, FL 6693 Tampa, F	L 32301 33442 L 33634	Pho Pho Pho Pho	one: (90- one: (30- one: (33- one: (81-	2) 354-76 4) 878-36 5) 421-74 4) 668-66 3) 885-74 4) 764-11	994 Fax 400 Fax 633 Fax 427 Fax	: (912) 35 :: (904) 87 :: (305) 42 :: (334) 66 :: (813) 86 :: (504) 72	2-0165 8-9504 1-2584 6-6696 5-7049	•
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LOG NO: S6-82086 Received: 12 APR 96 Reported: 24 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 0.097.001 Sampled By: Client

REPORT OF RESULTS

		Marone or imported			- 450 -
LOG NO	SAMPLE DESCRIPTION , S			DATE/ TIME SAMPLED	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
82086-1	9204			04-10-96/1300	
	9210			04-10-96/1445	
82086-3				04-10-96/1500	
82086-4	9212			04-10-96/9212	
PARAMETER			82086-2	82086-3	82086-4
Volatiles by	GC/MS (8260)				
_	une, ug/kg dw	<11	<12	<11	<10
	ie, ug/kg dw	<11	<12	<11	<10
Vinyl chlor	ride, ug/kg dw	<11	<12	<11	<10
Chloroethan	ne, ug/kg dw	<11	<12	<11	<10
Methylene o	chloride (Dichlorometha	me), <5.6	<6.0	<5.4	<5.2
ug/kg dw					
Acetone, ug	r/kg dw	<28	<30	<27	39
Carbon disu	lfide, ug/kg dw	<5.6	<6.0	<5.4	<5.2
•	coethene, ug/kg dw	<5.6	<6.0	= :	<5.2
•	roethane, ug/kg dw	<5.6		<5.4	<5.2
•	ichloroethylene, ug/kg				
Chloroform,		<5.6			<5.2
-	oethane, ug/kg dw	<5.6			<5.2
	(MEK), ug/kg dw	<28			<26
	loroethane, ug/kg dw	<5.6			<5.2
	achloride, ug/kg dw		<6.0		
-	te, ug/kg dw	<11			<10
	romethane, ug/kg dw	<5.6		= :	<5.2
	rachloroethane, ug/kg			<5.4	
1,2-Dichlor	opropane, ug/kg dw	<5.6	<6.0	<5.4	<5.2

LOG NO: S6-82086 Received: 12 APR 96 Reported: 24 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

	REPO	RT OF RESULTS		DATE/	Page 2
LOG NO	SAMPLE DESCRIPTION , SOLID	OR SEMISOLID			
82086-1	9204			04-10-96/130	0
82086-2	9210			04-10-96/1449	5
82086-3	9211			04-10-96/150)
82086-4	9212			04-10-96/921	2
PARAMETER	***********	82086-1	82086-2	82086-3	82086-4
trans-1.3-D	ichloropropene, ug/kg dw	<5.6		<5.4	
	thene, ug/kg dw	<5.6		<5.4	
	promethane, ug/kg dw	<5.6		<5.4	
	loroethane, ug/kg dw	<5.6			<5.2
Benzene, ug				<5.4	= -
cis-1,3-Dic	hloropropene, ug/kg dw	<5.6	<6.0	· - • -	
2-Chloroeth	ylvinyl ether, ug/kg dw	<5.6	<6.0	<5.4	
Bromoform,				<5.4	
2-Hexanone,	ug/kg dw	<28			<26
4-Methyl-2-	pentanone (MIBK), ug/kg dw	<28	<30	<27	<26
Tetrachloro	ethene, ug/kg dw	<5.6	<6.0	<5.4	<5.2
Toluene, ug	/kg dw	<5.6	<6.0	<5.4	<5.2
Chlorobenze	ne, ug/kg dw	<5.6	<6.0	<5.4	<5.2
Ethylbenzen	e, ug/kg dw	<5.6	<6.0	<5.4	<5.2
Styrene, ug	/kg dw	<5.6	<6.0	<5.4	<5.2
Xylenes, ug	/kg dw	<5.6	<6.0	<5.4	<5.2
Surrogate -	Toluene-d8	102 %	90 %	100 %	90 %
Surrogate -	4-Bromofluorobenzene	98 %	110 %	113 %	119 %
_	Dibromofluoromethane	112 %	112 %	107 %	110 %
Date Analyze	ed	04.16.96	04.16.96	04.16.96	04.16.96

SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

LOG NO: S6-82086 Received: 12 APR 96 Reported: 24 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 0.097.001 Sampled By: Client

PRPORT OF PROTTERS

LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED 82086-1 9204 04-10-96/1300 82086-2 9210 04-10-96/1445 82086-3 9211 04-10-96/1500 82086-4 9212 04-10-96/9212 PARAMETER 82086-1 82086-2 82086-3 82086-4 Semivolatile Organics (8270) 1,3-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 1,4-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 Hexachloroethane, ug/kg dw <370 <390 <360 <340
82086-1 9204 04-10-96/1300 82086-2 9210 04-10-96/1445 82086-3 9211 04-10-96/1500 82086-4 9212 04-10-96/9212 PARAMETER 82086-1 82086-2 82086-3 82086-4 Semivolatile Organics (8270) 1,3-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 1,4-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 Hexachloroethane, ug/kg dw <370 <390 <360 <340
82086-2 9210 04-10-96/1445 82086-3 9211 04-10-96/1500 82086-4 9212 04-10-96/9212 PARAMETER 82086-1 82086-2 82086-3 82086-4 Semivolatile Organics (8270) 1,3-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 1,4-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 Hexachloroethane, ug/kg dw <370 <390 <360 <340
82086-2 9210 04-10-96/1445 82086-3 9211 04-10-96/1500 82086-4 9212 04-10-96/9212 PARAMETER 82086-1 82086-2 82086-3 82086-4 Semivolatile Organics (8270) 1,3-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 1,4-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 Hexachloroethane, ug/kg dw <370 <390 <360 <340
82086-3 9211 04-10-96/1500 82086-4 9212 04-10-96/9212 PARAMETER 82086-1 82086-2 82086-3 82086-4 Semivolatile Organics (8270) 1,3-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 1,4-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 Hexachloroethane, ug/kg dw <370 <390 <360 <340
82086-4 9212 04-10-96/9212 PARAMETER 82086-1 82086-2 82086-3 82086-4 Semivolatile Organics (8270) 1,3-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 1,4-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 Hexachloroethane, ug/kg dw <370 <390 <360 <340
PARAMETER 82086-1 82086-2 82086-3 82086-4 Semivolatile Organics (8270) 1,3-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 1,4-Dichlorobenzene, ug/kg dw <370 <390 <360 <340 Hexachloroethane, ug/kg dw <370 <390 <360 <340
Semivolatile Organics (8270) 1,3-Dichlorobenzene, ug/kg dw <370
Semivolatile Organics (8270) 370 390 360 340 1,4-Dichlorobenzene, ug/kg dw 370 390 360 340 Hexachloroethane, ug/kg dw 370 390 360 340
1,4-Dichlorobenzene, ug/kg dw
Hexachloroethane, ug/kg dw <370 <390 <360 <340
bis(2-Chloroethyl)ether, ug/kg dw <370 <390 <360 <340
1,2-Dichlorobenzene, ug/kg dw <370 <390 <360 <340
bis(2-Chloroisopropyl)ether, ug/kg dw <370 <390 <360 <340
n-Nitrosodi-n-propylamine, ug/kg dw <370 <390 <360 <340
Nitrobenzene, ug/kg dw <370 <390 <360 <340
Hexachlorobutadiene, ug/kg dw <370 <390 <360 <340
1,2,4-Trichlorobenzene, ug/kg dw <370 <390 <360 <340
Isophorone, ug/kg dw <370 <390 <360 <340
Naphthalene, ug/kg dw <370 <390 <360 <340
bis(2-Chloroethoxy)methane, ug/kg dw <370 <390 <360 <340
Hexachlorocyclopentadiene, ug/kg dw <370 <390 <360 <340
2-Chloronaphthalene, ug/kg dw <370 <390 <360 <340
Acenaphthylene, ug/kg dw <370 <390 <360 <340
Acenaphthene, ug/kg dw <370 <390 <360 <340
Dimethylphthalate, ug/kg dw <370 <390 <360 <340
2,6-Dinitrotoluene, ug/kg dw <370 <390 <360 <340
Fluorene, ug/kg dw <370 <390 <360 <340

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 0.097.001 Sampled By: Client

REPORT OF RESULTS Page 4 DATE/ SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED 9204 04-10-96/1300 82086-1 82086-2 9210 04-10-96/1445 82086-3 9211 04-10-96/1500 82086-4 04-10-96/9212 PARAMETER 82086-1 82086-2 82086-3 82086-4 4-Chlorophenylphenyl ether, ug/kg dw <370 <390 <360 <340 2,4-Dinitrotoluene, ug/kg dw <370 <390 <360 Diethylphthalate, ug/kg dw <370 <390 <360 <340 N-Nitrosodiphenylamine/Diphenylamine, <370 <390 <360 <340 ug/kg dw Hexachlorobenzene, ug/kg dw <370 <390 <360 <340 4-Bromophenyl phenyl ether, ug/kg dw <370 <390 <360 <340 Phenanthrene, ug/kg dw <370 <390 <360 <340 Anthracene, ug/kg dw <370 <390 <360 <340 Di-n-butylphthalate, ug/kg dw <370 <390 <360 <340 <360 Fluoranthene, ug/kg dw <370 <390 <340 Pyrene, ug/kg dw <370 <390 <360 <340 Benzidine, ug/kg dw <3000 <3200 <2900 <2800 Butylbenzylphthalate, ug/kg dw <370 <390 <360 <340 bis(2-Ethylhexyl)phthalate, ug/kg dw <370 <390 <360 <340 Chrysene, ug/kg dw <370 <390 <360 <340 Benzo(a) anthracene, ug/kg dw <340 <370 <390 <360 <720 3,3'-Dichlorobenzidine, ug/kg dw <730 <780 <690 Di-n-octylphthalate, ug/kg dw <370 <390 <360 <340 Benzo(b) fluoranthene, ug/kg dw <370 <390 <360 <340 Benzo(k)fluoranthene, ug/kg dw <370 <390 <360 <340

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 0.097.001 Sampled By: Client

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	REPO	ORT OF RESULTS			Page 5
				DATE/	
LOG NO	SAMPLE DESCRIPTION , SOLI	O OR SEMISOLID	SAMPLES	TIME SAMPLED)

82086-1	9204			04-10-96/130	
82086-2	9210			04-10-96/144	
82086-3	9211			04-10-96/150	
82086-4	9212			04-10-96/921	2
PARAMETER				82086-3	82086-4
Benzo (a) py	rene, ug/kg dw	<370			<340
Indeno(1,2	,3-cd)pyrene, ug/kg dw	<370	<390	<360	<340
Dibenzo(a,	h)anthracene, ug/kg dw	<370	<390	<360	<340
Benzo(g,h,:	i)perylene, ug/kg dw	<370	<390	<360	<340
N-Nitrosodimethylamine, ug/kg dw		<370	<390	<360	<340
2-Chlorophenol, ug/kg dw		<370	<390	<360	<340
2-Nitrophenol, ug/kg dw		<370	<390	<360	<340
Phenol, ug,	/kg dw	<370	<390	<360	<340
2,4-Dimethy	/lphenol, ug/kg dw	<370	<390	<360	<340
2,4-Dichlor	cophenol, ug/kg dw	<370	<390	<360	<340
2,4,6-Trich	lorophenol, ug/kg dw	<370	<390	<360	<340
4-Chloro-3	methylphenol, ug/kg dw	<370	<390	<360	<340
2,4-Dinitro	phenol, ug/kg dw	<1900	<2000	<1800	<1800
2-Methyl-4,	6-dinitrophenol, ug/kg dw	<1900	<2000	<1800	<1800
Pentachloro	phenol, ug/kg dw	<1900	<2000	<1800	<1800
4-Nitrophen	ol, ug/kg dw	<1900	<2000	<1800	<1800
Benzyl alco	shol, ug/kg dw	<370	<390	<360	<340
2-Methylphe	nol (o-cresol), ug/kg dw	<370	<390	<360	<340
3&4-Methylp	henol (m&p-cresol), ug/kg	dw <370	<390	<360	<340
Benzoic aci	d, ug/kg dw	<1900	<2000	<1800	<1800
4-Chloroani	line, ug/kg dw	<730	<780	<720	<690

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Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

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REPORT OF RESULTS Page 6 DATE/ TIME SAMPLED LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES ______ -----9204 82086-1 04-10-96/1300 9210 82086-2 04-10-96/1445 82086-3 9211 04-10-96/1500 82086-4 9212 04-10-96/9212 82086-1 82086-2 82086-3 82086-4 PARAMETER 2-Methylnaphthalene, ug/kg dw <370 <390 <360 2,4,5-Trichlorophenol, ug/kg dw <370 <390 <360 <340 <1900 <1900 <2000 <2000 2-Nitroaniline, ug/kg dw <1800 <1800 3-Nitroaniline, ug/kg dw <1800 <1800 Dibenzofuran, ug/kg dw <370 <390 <360 <1900 <2000 <1800 <1800 4-Nitroaniline, ug/kg dw 68 % Surrogate-2FP 86 % 80 % 83 % 92 % 78 % Surrogate-PHL 86 % 91 % 78 ¥ 65 ¥ 72 % 76 % Surrogate-NBZ 78 % 65 **%** 78 **%** Surrogate-2FBP 76 % 157 % 98 % 158 % 75 % 83 % Surrogate-TBP 134 % Surrogate-TPH 83 % 75 % 83 % 82 % 04.15.96 04.15.96 04.15.96 04.15.96 Date Extracted 04.17.96 04.17.96 04.18.96 04.18.96 Date Analyzed Arsenic (6010) <1.2 Arsenic (6010), mg/kg dw 1.1 <1.1 <1.0 04.15.96 04.15.96 04.15.96 04.15.96 Preparation Date 04.16.96 04.16.96 04.16.96 04.16.96 Date Analyzed 0415A 0415A

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Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

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82086-1 92 82086-2 92 82086-3 92 82086-4 92		ID OR SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	SD.
82086-1 92 82086-2 92 82086-3 92 82086-4 92		_			
				04-10-96/13 04-10-96/14 04-10-96/15 04-10-96/92	45 600 112
PARAMETER		82086-1	82086-2	82086-3	82086-4
Barium (6010) Barium (6010) Preparation D Date Analyzed Batch ID Cadmium (6010) Cadmium (6010) Preparation D Date Analyzed Batch ID Chromium (6010) Chromium (6010) Chromium (6010) Preparation D Date Analyzed Batch ID Mercury (7471) Mercury (7471) Preparation D Date Analyzed Batch ID	, mg/kg dw ate), mg/kg dw ate) 0), mg/kg dw ate	49 04.15.96 04.16.96 04.15A <0.56 04.15.96 04.16.96 04.15A 12 04.15.96 04.16.96 04.15A <0.011 04.15.96	22 04.15.96 04.16.96 0415A <0.60 04.15.96 04.16.96 0415A 6.3 04.15.96 04.16.96 0415A <0.012 04.15.96 04.16.96	17 04.15.96 04.16.96 0415A <0.54 04.15.96 04.16.96 0415A 4.1 04.15.96 04.16.96	2.4 04.15.96 04.16.96 0415A <0.52 04.15.96 04.16.96 0415A 1.5 04.15.96 04.16.96 0415A 0.012 04.15.9 604.16.96

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Mr. Mark Corbin

Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855 Purchase Order: 097.001

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REPORT OF RESULTS Page 8 DATE/ LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED 04-10-96/1300 9204 82086-1 04-10-96/1445 82086-2 9210 04-10-96/1500 9211 82086-3 04-10-96/9212 82086-3 82086-4 82086-1 82086-2 ______ Lead (6010) 2.9 5.1 1.7 Lead (6010), mg/kg dw 04.15.96 04.15.96 04.15.96 04.15.96 Preparation Date 04.16.96 04.16.96 04.16.96 04.16.96 Date Analyzed 0415A 0415A 0415A 0415A Batch ID Antimony (6010) <5.6 <6.0 <5.4 <5.2 Antimony (6010), mg/kg dw 04.15.96 04.15.96 04.15.96 04.15.96 Preparation Date 04.16.96 04.16.96 04.16.96 04.16.96 Date Analyzed 0415A 0415A 0415A 0415A Batch ID 90 84 92 96 Percent Solids (160.3), % N-Methylcarbamates (EPA 8318) <34 <33 <33 <31 Aldicarb, ug/kg dw 04.16.96 04.16.96 04.16.96 04.16.96 Date Extracted 04.18.96 04.19.96 04.19.96 04.19.96 Date Analyzed

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Mr. Mark Corbin Apex Environmental, Inc.

15850 Crabbs Branch Way #300

Rockville, MD 20855

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC RE	PORT FOR SOLI	D/SEMISOLID		
82086-6 82086-7	Method Blank Lab Control Standard (LCS) Accuracy (%RPD)	<pre>% Recovery/D</pre>	uplicate		
PARAMETER	***************************************		82086-5	82086-6	82086-7
PARAMINIAN					
	ry GC/MS (8260)				
	ane, ug/kg dw		<10		
	ne, ug/kg dw		<10		
	ride, ug/kg dw		<10		
•	ne, ug/kg dw		<10		
Methylene	chloride (Dichloromethane),	ug/kg dw	<5.0		
Acetone, u	g/kg dw		<25		
Carbon dis	ulfide, ug/kg dw		<5.0		
1,1-Dichlo	roethene, ug/kg dw		<5.0	92/140 %	41 %
1,1-Dichlo	roethane, ug/kg dw		<5.0		
trans-1,2-	Dichloroethylene, ug/kg dw		<5.0		
Chloroform	, ug/kg dw		<5.0		
	roethane, ug/kg dw		<5.0		
2-Butanone	(MEK), ug/kg dw		<25		
1,1,1-Tric	hloroethane, ug/kg dw		<5.0		=
Carbon tet	rachloride, ug/kg dw		<5.0		
Vinyl acet	ate, ug/kg dw		<10		
Bromodichl	oromethane, ug/kg dw		<5.0		
	trachloroethane, ug/kg dw		<5.0		
,	ropropane, ug/kg dw		<5.0		
trans-1,3-	Dichloropropene, ug/kg dw		<5.0		
Trichloroe	thene, ug/kg dw		<5.0	,	15 %

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Mr. Mark Corbin Apex Environmental, Inc.

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REPORT OF RESULTS

				•
LOG NO	SAMPLE DESCRIPTION , QC R	EPORT FOR SOLID/SEMISOLID		
82086-6 82086-7	Method Blank Lab Control Standard (LCS Accuracy (%RPD)			
PARAMETER		82086-5	82086-6	
Dibromochlo	oromethane, ug/kg dw		*	
	nloroethane, ug/kg dw	<5.0		
Benzene, ug		<5.0	120/108 %	10 %
	chloropropene, ug/kg dw	<5.0		
2-Chloroeth	nylvinyl ether, ug/kg dw	<5.0		
Bromoform,	ug/kg dw	<5.0		
2-Hexanone,	, ug/kg dw	<25		
4-Methyl-2	-pentanone (MIBK), ug/kg d	w <25		
Tetrachloro	oethene, ug/kg dw	<5.0		
Toluene, ug	g/kg dw	<5.0	99/108 %	
Chlorobenze	ne, ug/kg dw	<5.0	100/100 %	0 %
Ethylbenzer	ne, ug/kg dw	<5.0		
Styrene, ug	g/kg dw	<5.0		
Xylenes, ug	j/kg dw	<5.0		
Surrogate -	Toluene-d8		95/100 %	
Surrogate -	4-Bromofluorobenzene	98 %	100/92 %	
Surrogate -	Dibromofluoromethane	112 %	87/112 %	
Date Analyz	ed	04.16.96		

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REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID 82086-5 Method Blank		
82086-5 Method Blank		
82086-5 Method Blank		
82086-6 Lab Control Standard (LCS) % Recovery/Duplicate		
82086-7 Accuracy (%RPD)		

PARAMETER 82086-5	82086-6	12086-7
•		
Semivolatile Organics (8270)		
1,3-Dichlorobenzene, ug/kg dw <330	 	25 %
-,	59/76 %	25 f
Hexachloroethane, ug/kg dw <330		
bis (2-Chloroethyl) ether, ug/kg dw <330		
1,2-Dichlorobenzene, ug/kg dw <330		
bis (2-Chloroisopropyl) ether, ug/kg dw <330	 	22.6
	65/82 %	23 %
Nitrobenzene, ug/kg dw <330		
Hexachlorobutadiene, ug/kg dw <330	C= /00 B	22.0
	65/82 %	23 %
Isophorone, ug/kg dw <330		
Naphthalene, ug/kg dw <330		
bis (2-Chloroethoxy) methane, ug/kg dw <330		
Hexachlorocyclopentadiene, ug/kg dw <330		
2-Chloronaphthalene, ug/kg dw <330		
Acenaphthylene, ug/kg dw <330		
	65/82 %	23 %
Dimethylphthalate, ug/kg dw <330		
2,6-Dinitrotoluene, ug/kg dw <330		
Fluorene, ug/kg dw <330		
4-Chlorophenylphenyl ether, ug/kg dw <330		

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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REPORT OF RESULTS

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LOG NO SAMPLE DESCRIPTION , QC REPORT FO	R SOLID/SEMISOLID		
82086-5 Method Blank 82086-6 Lab Control Standard (LCS) % Reco 82086-7 Accuracy (%RPD)	very/Duplicate		
PARAMETER	82086-5	82086-6	82086-7
2,4-Dinitrotoluene, ug/kg dw Diethylphthalate, ug/kg dw	<330 <330	_	
N-Nitrosodiphenylamine/Diphenylamine, ug/kg	dw <330		
Hexachlorobenzene, ug/kg dw	<330		
4-Bromophenyl phenyl ether, ug/kg dw	<330		
Phenanthrene, ug/kg dw	<330		*
Anthracene, ug/kg dw	<330		
Di-n-butylphthalate, ug/kg dw	<330		
Fluoranthene, ug/kg dw	<330		
Pyrene, ug/kg dw	<330	88/100 %	13 %
Benzidine, ug/kg dw	<2700		
Butylbenzylphthalate, ug/kg dw	<330		
bis(2-Ethylhexyl)phthalate, ug/kg dw	<330		
Chrysene, ug/kg dw	<330		
Benzo(a)anthracene, ug/kg dw	<330		÷ = =
3,3'-Dichlorobenzidine, ug/kg dw	<660		
Di-n-octylphthalate, ug/kg dw	<330		
Benzo(b)fluoranthene, ug/kg dw	<330		
Benzo(k)fluoranthene, ug/kg dw	<330		
Benzo(a)pyrene, ug/kg dw	<330		
Indeno(1,2,3-cd)pyrene, ug/kg dw	<330		
Dibenzo(a,h)anthracene, ug/kg dw	<330		

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Mr. Mark Corbin
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15850 Crabbs Branch Way #300
Rockville, MD 20855

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LOG NO	SAMPLE DESCRIPTION , QC REPORT	FOR SOLID/SEMISOLID		
82086-7	Method Blank Lab Control Standard (LCS) % F Accuracy (%RPD)	-		
PARAMETER		82086-5	82086-6	
Benzo(g,h, N-Nitrosod 2-Chloroph 2-Nitrophe Phenol, ug 2,4-Dimeth 2,4-Dichlo 2,4,6-Tric 4-Chloro-3 2,4-Dinitr 2-Methyl-4 Pentachlor 4-Nitrophe Benzyl alc 2-Methylph	i)perylene, ug/kg dw limethylamine, ug/kg dw lenol, ug/kg dw lenol, ug/kg dw ly/kg dw ly/kg dw ly/kg dw ly/kg dw ly/lenol, ug/kg dw lenol, ug/kg dw lenol (o-cresol), ug/kg dw lenol (o-cresol), ug/kg dw	<330 <330 <330 <330 <330 <330 <330 <330	***	13 %
Benzoic ac 4-Chloroan	phenol (m&p-cresol), ug/kg dw id, ug/kg dw iline, ug/kg dw phthalene, ug/kg dw	<330 <1700 <660 <330		
2,4,5-Tric 2-Nitroani	hlorophenol, ug/kg dw line, ug/kg dw line, ug/kg dw line, ug/kg dw	<330 <1700 <1700		

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Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

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REPORT OF RESULTS

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LOG NO		, QC REPORT FOR SOLID/SEMISOLID		
82086-5 82086-6 82086-7	Method Blank Lab Control Stands Accuracy (%RPD)	ard (LCS) % Recovery/Duplicate		
PARAMETER			82086-6	82086-7
Dibenzof	uran, ug/kg dw	<330		
4-Nitroa	niline, ug/kg dw	<1700		
Surrogat	e-2FP		67/82 %	
Surrogat	e-PHL		67/79 %	
Surrogate	e-NBZ		58/70 %	
Surrogate	e-2FBP		59/70 %	
Surrogate	e-TBP		73/88 😵	
Surrogate	e-TPH		76/88 %	
Date Ext	racted		04.15.96	
Date Ana	lyzed	04.17.96	04.16.96	
-	arbamates (EPA 8318)			
	, ug/kg dw		79/69 😵	
Date Ext	racted		04.16.96	
Date Ana	-	04.18.96	04.18.96	
Arsenic (_
Arsenic	(6010), mg/kg dw		89/88 %	
Preparati			04.15.96	
Date Anal	-		04.16.96	
Batch ID		0415A	0415A	
Barium (60				
Barium (6	5010), mg/kg dw		103/104 %	
Preparati	lon Date		04.15.96	
Date Anal	lyzed		04.16.96	
Batch ID		0415A	0415A	

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Mr. Mark Corbin
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LOG NO	SAMPLE DESCRIPTION , QC REPORT	FOR SOLID/SEMISOLID		
82086-6	Mathod Blank Lab Control Standard (LCS) % R Accuracy (%RPD)	ecovery/Duplicate		
PARAMETER				82086-7
Cadmium (60)				
· · ·	010), mg/kg dw	<0.50	105/106 %	0.95 %
Preparation			04.15.96	
Date Analy		04.16.96	04.16.96	
Batch ID		0415A	0415A	
Chromium (6	010)			
Chromium (5010), mg/kg dw		103/103 %	
Preparation	1 Date		04.15.96	
Date Analy:	zed		04.16.96	
Batch ID		0415A	0415A	
Mercury (74)			/	
Mercury (7			98/89 %	
Preparation			04.15.96	
Date Analy:	zed		04.16.96	
Batch ID		0415R	0415R	
Lead (6010)				2 2 3
Lead (6010)			104/101 %	
Preparation			04.15.96	
Date Analy:	ed		04.16.96 0415A	
Batch ID		0415A	U415A	

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Mr. Mark Corbin

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15850 Crabbs Branch Way #300

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REPORT OF RESULTS

LOG NO SAMPLE DESCRIPTION , QC REPORT FOR SOLI	D/SEMISOLID				
82086-5 Method Blank 82086-6 Lab Control Standard (LCS) % Recovery/Duplicate 82086-7 Accuracy (%RPD)					
PARAMETER	82086-5	82086-6	82086-7		
Antimony (6010) Antimony (6010), mg/kg dw Preparation Date Date Analyzed Batch ID		96/96 % 04.15.96 04.16.96 0415A	0 %		

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LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	DATE/ TIME SAMPLE	D
82086-8 82086-9 82086-10 82086-11 82086-12	9199 9200 9201 9202 9203				04-10-96/073 04-10-96/073 04-10-96/083 04-10-96/093	30 30 30
PARAMETER		82086-8	82086-9	82086-10	82086-11	82086-12
Arsenic (TC Barium (TCI Cadmium (TC Chromium (T Lead (TCLP- Selenium (T Silver (TCI	TLP Extract (6010) TLP-6010), mg/1 TLP-6010), mg/1 TLP-6010), mg/1 TCLP-6010), mg/1 TCLP) (6010), mg/1 TCLP) (6010), mg/1	<0.20 <5.0 0.040 <0.010 <0.20 <0.50 0.025	<0.20 <5.0 0.24 <0.050 <0.20 <0.50 0.023	<0.010 <0.050 <0.20 <0.50 <0.010	11 <0.010 <0.050 <0.20 <0.50 <0.010	7.2 0.39 <0.050 <0.20 <0.50 0.011
Mercury (TCI	P-7470), mg/l	<0.020	<0.020	<0.020	<0.020	<0.020

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Rockville, MD 20855

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LOG NO	SAMPLE DESCRIPTION	, SOLID OR	SEMISOLID	SAMPLES	TIME SAMPLE	D
82086-13	9206				04-10-96/13	
82086-14	9207				04-10-96/13	30
82086-15	9208				04-10-96/13	30
82086-16	9209				04-10-96/13	30
82086-17	9187				04-03-96/07	15
PARAMETER		82086-13	82086-14	82086-15	82086-16	82086-17
Motole in T	LP Extract (6010)					
	CLP-6010), mg/l	<0.20	<0.20	<0.20	<0.20	<0.20
	LP-6010), mg/l	27		<5.0		<5.0
	-			0.028		<0.010
	CLP-6010), mg/l				<0.050	<0.050
	CLP-6010), mg/l	<0.050	<0.050			
Lead (TCLP-	-6010), mg/l	<0.20	0.26		<0.20	<0.20
Selenium (1	CLP) (6010), mg/l	<0.50	<0.50	<0.50	<1.0*F65	
Silver (TCI	LP-6010), mg/l	<0.010	<0.010	<0.050*F65	<0.010	<0.010
	LP-7470), mg/l	<0.020	<0.020	<0.020	<0.020	<0.020

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Lead (TCLP-6010), mg/l

Silver (TCLP-6010), mg/l

Mercury (TCLP-7470), mg/l

Selenium (TCLP) (6010), mg/l

Purchase Order: 097.001

<0.20

<0.50

<0.010

<0.020

<0.20

<0.50

<0.020

<0.010

Project: 0.097.001 Sampled By: Client

Page 19

REPORT OF RESULTS DATE/ LOG NO SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES TIME SAMPLED 04-03-96/0715 82086-18 9188 04-11-96/1500 9216 82086-19 82086-18 PARAMETER Metals in TCLP Extract (6010) <0.20 <0.20 Arsenic (TCLP-6010), mg/l <5.0 <5.0 Barium (TCLP-6010), mg/l <0.010 <0.010 Cadmium (TCLP-6010), mg/l <0.050 <0.050 Chromium (TCLP-6010), mg/l

LOG NO: \$6-82086

Received: 12 APR 96 Reported: 24 APR 96

Mr. Mark Corbin
Apex Environmental, Inc.
15850 Crabbs Branch Way #300
Rockville, MD 20855

Purchase Order: 097.001

Project: 0.097.001 Sampled By: Client

REPORT OF RESULTS

		3
LOG NO SAMPLE DESCRIPTION	, QC REPORT FOR LIQUID SAMPLES	
82086-20 TCLP Extract Fluid	Method Blank	
PARAMETER	82086-20	
Metals in TCLP Extract (6010)		
Arsenic (TCLP-6010), mg/l	<0.20	
Barium (TCLP-6010), mg/l	<5.0	
Cadmium (TCLP-6010), mg/l	<0.010	
Chromium (TCLP-6010), mg/l	<0.050	
Lead (TCLP-6010), mg/l	<0.20	
Selenium (TCLP) (6010), mg/l	<0.50	
Silver (TCLP-6010), mg/l	<0.010	
Mercury (TCLP-7470), mg/l	<0.020	

LOG NO: S6-82086 Received: 12 APR 96 Reported: 24 APR 96

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way #300 Rockville, MD 20855

Purchase Order: 097.001

Project: 0.097.001 Sampled By: Client

REPORT OF RESULTS

Page 21

LOG NO	SAMPLE DESCRIP	TION , QC	REPORT	FOR LIQUIT	SAMPLE	s		
82086-21 82086-22 82086-23	Matrix Spike % Matrix Spike % Matrix Spike %	Recovery	(9199)			••		
PARAMETER					82086-	21	82086-22	82086-23
Metals in To	LP Extract (60:	10)						
Arsenic (To	TLP-6010), mg/l				94	*	92 %	96 %
Barium (TCI	LP-6010), mg/l				87	*	36 %*F61	107 %
Cadmium (To	LP-6010), mg/l				83	*	81 %	85 %
Chromium (7	CLP-6010), mg/	l			81	*	82 %	86 %
Lead (TCLP-	6010), mg/l				80	용	79 🕏	82 %
Selenium (7	CLP) (6010), mg	g/l			97	¥	89 %	91 %
Silver (TCI	P-6010), mg/l				78	왕	73 %F73	73 % *F73
Mercury (TCI	P-7470), mg/l				92	*	85 %	93 %

Methods: EPA SW-846

*F61 = The recoveries of the matrix spikes are outside advisory limits due to the abundance of the target analyte in the sample.

*F65 = Elevated detection limits were reported due to sample matrix interference which required sample or extract dilution.

*F73 = Matrix spike recoveries were outside advisory limits due to matrix interference present in the sample.

Susan H. Norwood, Project Manager

Final Page Of Report

P. 82

TCLP ANALITICAL REQUEST FORM

Section 8.2 of EFA Method 1311 for TGLP Analyses (Pederal Register - Vol. 57, No. 227, Tuesday, Nov. 24, 1992) requires that "a matrix spike shall be performed for each waste type unless the result exceeds the regulatory level and the date is used solely to demonstrate that the waste property exceeds the regulatory level."

Please use a separate line of this form for each vaste type and designate which samples are to be spiked by completing the section below and recurring this form with the samples or by faccinile.

WASTE TYPE FOR ALL SAMPLES LISTED BELOW

Sample I.D.	Expected TCLF Contaminants (If Known)	Check if Matrix Spike Requested for This Sample
9187	Not known	1.7
9199	Not Enoun	14
9201	Not Know	1~

INSTRUCTIONS TO LAB

Analyze the above samples by EPA Method 1311 and perform separate matrix spike analyses on the above designated samples.

I understand that each matrix spike analysis will be billed separately.

OTHER INSTRUCTIONS	
	•
Client	Date

SL SEVENDAN LIBORATORIES

		Serial Number 13508
SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC. ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD	☐ \$102 LaRoche Avenue, Savannah, GA 31404 ☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 ☐ 414 SW 12th Avenue, Deerfield Beach, FL 33442 ☐ 900 Lakeside Drive, Mobile, AL 36693 ☐ 6712 Benjamin Road, Sutte 100, Tampa, FL 33634 ☐ 110 Alpha Drive, Destrehan, LA 70047	Phone: (912) 354-7858 Phone: (904) 878-3994 Phone: (305) 421-7400 Phone: (334) 666-6633 Phone: (813) 885-7427 Phone: (504) 764-1100 Phone: (504) 764-1100 Phone: (504) 764-1100 Phone: (912) 352-0165 Fax: (912) 352-0165 Fax: (904) 878-904 Fax: (305) 421-2584 Fax: (334) 666-6696 Fax: (813) 885-7049 Fax: (504) 725-1163
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Antech Ltd.

One Triangle Drive • Export, Pennsylvania 15632 • Phone: (412) 733-1161 • Fax: (412) 327-7793

December 4, 1995

Mr. Mark Corbin Apex Environmental, Inc 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Water/Soil Characterization 097.001; Woodbine, GA Antech Ltd. Project No. 95-5293

Dear Mr. Corbin:

Enclosed are analytical results for samples submitted by Apex Environmental, Inc. Samples were received on November 18, 1995 and logged in for analysis on November 21, 1995.

Appropriate U.S. Environmental Protection Agency methods were used and are indicated accordingly on the data tables. Appropriate quality assurance/quality control analyses were performed in accordance with Antech Ltd.'s Statement of Qualifications. If you have any questions, please call me.

Sincerely,

Kathryn L. Stoudnour

Project Manager

KLS:aeb

Enclosures

ANTECH LTD. CASE NARRATIVE

I. PROJECT LOGIN INFORMATION:

A: PROJECT NUMBERS:

ANTECH LTD.: 95-5293

CLIENT: 097.001

B: SAMPLE IDENTIFICATIONS:

Antech ID	Client ID	Antech ID	Client ID
9511-1993	9054	9511-1994	9056
9511-1995	9058	9511-1996	9061
9511-1998	9065	9511-1999	9067
9511-2000	9076	9511-2001	9078
9511-2002	9080	9511-2003	9084
9511-2004	9086	9511-2005	9088
9511-2006	9090		

C: SHIPPING/RECEIVING COMMENTS:

None

II. PREPARATION/ANALYSIS COMMENTS:

A: ORGANICS:

1. PESTICIDES/PGBS:

Surrogate recovery for sample 9511-1994 is low. This was confirmed upon analyses of a matrix spike and matrix spike duplicate for sample 9511-1994. Sample 9511-1997 extract was lossed due to glass breakage during the extraction/concentration process, therefore no results are reported for this sample.

III. GENERAL COMMENTS:

Trailing zeroes and decimal places appearing on the data should not be interpreted as precision of the analytical procedure, but rather as a result of reporting format.

Table 1
Pesticide Organic Analysis
EPA Method GS(1)
Apex Environmental, Inc.
Antech Ltd. Project No. 95-5293
Soil Characterization; 097.001
Woodbine, GA

			Sample Identification					
Parameter	CAS(2) Number	Units	9511-1993 90 5 4 (11/15/95)	9511-1994 9056 (11/15/95)	9511-1995 9058 (11/15/95)	9511-2007 Method Blank (11/18/95)		
o-Chlorobenzaldehyde	89-98-5	mg/kg	<33	<33	<33	<33		
O-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	<33	<33	<33	<33		
Malononitrile	109-77-3	mg/kg	<33	<33	<33	<33		

⁽¹⁾ Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Command, DRDAR-TSC-S, Aberdeen Proving Ground, MD 21010). (2) CAS - Chemical Abstracts Services.

Table 2
Pesticide Organic Analysis
EFA Method CS⁽¹⁾
Apex Environmental, Inc.
Antech Ltd. Project No. 95-5283
Water Characterisation; 087.001
Woodbine, GA

				8	ample Identificati	on	Page 1
Parameter	CAB(2) Number	Units	9511-1996 9081 (11/16/95)	9511-1998 9065 (11/16/95)	9511-1999 9087 (11/16/95)	9511-2000 9076 (11/17/95)	9511-2001 9078 (11/17/95)
-Chlorobenzaldehyde	89-98-5	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0
alononitrile	109-77-3	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0

See footnotes at end of table.

Table 2 (Continued)

					Sample Ide	ntification		
Parameter	CAS(2) Number	Units	9511-2002 9080 (11/17/95)	9511-2003 9084 (11/17/95)	9511-2004 9086 (11/17/95)	9511-2005 9088 (11/17/95)	9511-2006 9080 (11/17/95)	9511-2008 Method Blank (11/18/95)
o-Chlorobenzaldehyde	89-98-5	mg/l	<1.0	<1.0	<1,0	<1.0	<1.0	<1.0
D-Chlorobenzylidene malononitrila (CS)	2698-41-1	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Malononitrile	109-77-3	mg/l	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0

⁽¹⁾ Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Commend, DRDAR-TSC-S, Aberdeen Proving Ground, MD 21010).

(2) CAS = Chemical Abstracts Services.



Antech Ltd.

One Triangle Drive • Export, Pennsylvania 15632 • Phone: (412) 733-1161 • Fax: (412) 327-7793

January 3, 1996

RECEIVED JAN 1 2 1996

Mr. Mark Corbin Apex Environmental, Inc 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Soil Characterization 097.001; Woodbine, GA Antech Ltd. Project No. 95-5718

Dear Mr. Corbin:

Enclosed are analytical results for samples submitted by Apex Environmental, Inc. Samples were received on December 20, 1995 and logged in for analysis on December 21, 1995.

Appropriate U.S. Environmental Protection Agency methods were used and are indicated accordingly on the data table. Appropriate quality assurance/quality control analyses were performed in accordance with Antech Ltd.'s Statement of Qualifications. If you have any questions, please call me.

Sincerely,

Kathryn L. Stoudnour

thry Gloudson

Project Manager

KLS:vt

Enclosures

ANTECH LTD. CASE NARRATIVE

ı.	PRO.	JECT LOGIN INFORMATION:	
	A:	PROJECT NUMBERS:	
		ANTECH LTD.: 95-5718 CLIENT: 097.001	
	B:	SAMPLE IDENTIFICATIONS:	
		Antech ID Client ID Antech ID Client ID	
		9512-1688 9092 9512-1689 9094 9512-1690 9096 9512-1691 9098	
	C:	SHIPPING/RECEIVING COMMENTS:	
		None	
II.	PREP	PARATION/ANALYSIS COMMENTS:	
	A:	ORGANICS:	
		1. PESTICIDES/PCBS: None	
III.	GENE	ERAL COMMENTS:	
		Trailing zeroes and decimal places appearing on the data should not be interpreted as precision of the analytical procedure, but rather as a result of reporting format.	

Table 1 General Data Table EPA Method CS(1) Apex Environmental, Inc. Antech Ltd. Project No. 95-5718 Soil Characterization; 097.001 Woodbine, GA

Page 1 of 2 Sample Identification 9512-1688 9512-1689 9512-1690 CAS(2) 9092 9094 9096 (12/19/95)(12/19/95)(12/19/95)Parameter Number Units <33 <33 89-98-5 mg/kg <33 o-Chlorobenzaldehyde O-Chlorobenzylidene malononitrile (CS) 2698-41-1 mg/kg <33 <33 <33 109-77-3 mg/kg <33 <33 Malononitrile <33

See footnotes at end of table.

Table 1 (Continued)

		· · · · · · · · · · · · · · · · · · ·	Page 2 of		
		Sample Identification			
CAS(2) Number	Units	9512-1691 9098 (12/19/95)	9512-1692 Method Blank (12/20/95)		
89-98-5	mo/ko	<33	<33		
2698-41-1	mg/kg	<33	<33		
109-77-3	mg/kg	<33	<33		
	Number 89-98-5 2698-41-1	Number Units 89-98-5 mg/kg 2698-41-1 mg/kg	CAS(2) 9512-1691 9098 Number Units (12/19/95) 89-98-5 mg/kg <33 2698-41-1 mg/kg <33		

⁽¹⁾Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Command, DRDAR-TSC-S, Aberdeen Proving Ground, MD 21010).

(2)CAS - Chemical Abstracts Services.

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Antech Ltd.

One Triangle Drive • Export, Pennsylvania 15632 • Phone: (412) 733-1161 • Fax: (412) 327-7793

March 15, 1996

Mr. Mark Corbin Apex Environmental, Inc 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Soil Characterization 097.001; Woodbine, GA Antach Ltd. Project No. 96-0836

Dear Mr. Corbin:

Enclosed are analytical results for samples submitted by Apex Environmental, Inc. Samples were received and logged in for analysis on March 1, 1996.

Appropriate U.S. Environmental Protection Agency methods were used and are indicated accordingly on the data table. Appropriate quality assurance/quality control analyses were performed in accordance with Antech Ltd.'s Statement of Qualifications. If you have any questions, please call me.

Sincerely,

Kathryn L. Stoudnour

Project Manager

KLS: aeb

Enclosures

ANTECH LTD. CASE NARRATIVE

I.	PROJ	JECT LOGIN INFORMATION:
	A:	PROJECT NUMBERS:
		ANTECH LTD.: 96-0836 CLIENT: 097.001
	B :	SAMPLE IDENTIFICATIONS:
		Antech ID Client ID Antech ID Client ID
		9603-0052 9103 9603-0053 9104
		9603-0054 9105 9603-0055 9106
	C:	SHIPPING/RECEIVING COMMENTS:
		None
II.	PREP	ARATION/ANALYSIS COMMENTS:
	A:	ORGANICS:
		1. PESTICIDES/PCBS:
		None
III.	GENE	RAL COMMENTS:
		Trailing zeroes and decimal places appearing on the data should not
		be interpreted as precision of the analytical procedure, but rather
		as a result of reporting format.

Table 1
Pesticide Organic Analysis
EPA Method GN/GS(1)
Apex Environmental, Inc.
Antech Ltd. Project No. 96-0836
Soil Characterization; 097.001
Woodbine, GA

			Sample Identification								
Parameter	CAS(2) Number	Units	9603-0052 9103 (2/27/96)	9603-0053 9104 (2/28/96)	9603-0054 9105 (2/28/96)	9603-0055 9106 (2/28/96)	9603-0056 Method Blank (3/1/96)				
o-Chlorobenzaldehyde	89-98-5	mg/kg	<30	<30	<30	<30	<30				
O-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	<30	<30	<30	<30	<30				
Malononitrile	109-77-3	mg/kg	<30	<30	<30	<30	<30				

⁽¹⁾ Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Command, DRDAR-TSC-S, Aberdeen Proving Ground, MD 21010).

(2) CAS = Chemical Abstracts Services.

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Pex environmental, inc.*

15850 CRABBS BRANCH WAY SUITE 300 ROCKVILLE, MARYLAND 20855 TELEPHONE: (301) 417-0200

CHAIN OF CUSTODY RECORD

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Antech Ltd.

One Triangle Drive • Export, Peznsylvania 15632 • Phone: (412) 733-1161 • Fax: (412) 327-7793

March 20, 1996

Mr. Mark Corbin
Apex Environmental, Inc
15850 Crabbs Branch Way #300
Rockville, MD 20855

Soil Characterization 097.001; Thiokol; Woodbine, GA Antech Ltd. Project No. 96-0938

Dear Mr. Corbin:

Enclosed are analytical results for samples submitted by Apex Environmental, Inc. Samples were received on March 8, 1996 and logged in for analysis on March 12, 1996.

Appropriate U.S. Environmental Protection Agency methods were used and are indicated accordingly on the data table. Appropriate quality assurance/quality control analyses were performed in accordance with Antech Ltd.'s Statement of Qualifications. If you have any questions, please call me.

Sincerely,

Hathryn L. Howdrown Kathryn L. Stoudnour

Project Manager

KLS: aeb

Enclosures

ANTECH LTD. CASE NARRATIVE

				
A:	PROJECT NUMB	ERS:		
	ANTECH LTD.:			
	CLIENT:	097.001: Thiokol		
В:	SAMPLE IDENT	IFICATIONS:		
	Antech ID	Client ID	Antech ID	Client ID
	9603-0652	9119	9603-0653	9120
	9603-0654		9603-0655	9122
	9603-0656	9123	9603-0657	
	9603-0658	9125	9603-0659	
	9603-0660	9127	9603-0661	
	9603-0662	9129	9603-0663	9130
G:	SHIPPING/RECO	EIVING COMMENTS:		
	None			
. PR	EPARATION/ANALY	SIS COMMENTS:		
A:	ORGANICS:			
	1. PESTICIDES	/PCBS:		
	None			

III. GENERAL COMMENTS:

Trailing zeroes and decimal places appearing on the data should not be interpreted as precision of the analytical procedure, but rather as a result of reporting format.

Table 1
Pesticide Organic Analysis
EPA Method CN/CS(1)
Apex Environmental, Inc.
Antach Ltd. Project No. 96-0938
Soil Characterization; 097.001; Thiokol
Woodbine, GA

				Samp	le Identific	ation	Page 1 of
Parameter	CAS(2) Number	Units	9603-0652 9119 (3/5/96)	9603-0653 9120 (3/5/96)	9603-0654 9121 (3/5/96)	9603-0655 9122 (3/5/96)	9603-0656 9123 (3/5/96)
o-Chlorobenzaldehyde	89-98-5	mg/kg	<33	<33	<33	<33	<33
O-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	<33	<33	<33	<33	<33
Malononitrile	109-77-3	mg/kg	<33	<33	<33	<33	<33

Table 1 (Continued)

				Sample Ide	ntification	Page 2
Parameter	CAS(2) Number	Units	9603-0657 9124 (3/5/96)	9603-0658 9125 (3/6/96)	9603-0659 9126 (3/6/96)	9603-0660 9127 (3/6/96)
-Chlorobenzaldehyde	89-98-5	mg/kg	<33	<33	<33	<33
-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	<33	<33	<33	<33
falononitrile	109-77-3	mg/kg	<33	<33	<33	<33

Table 1 (Continued)

				Sample Ide	Page 3 o	
Parameter	CAS(2) Number	Units	9603-0661 9128 (3/6/96)	9603-0662 9129 (3/6/96)	9603-0663 9130 (3/6/96)	9603-0664 Method Blank (3/8/96)
o-Chlorobenzaldehyde	89-98-5	mg/kg	<33	<33	<33	<33
O-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	<33	<33	<33	<33
Malononitrile	109-77-3	mg/kg	<33	<33	<33	<33

⁽¹⁾Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Command, DRDAR-TSC-S, Aberdeen Proving Ground, MD 21010).

(2)CAS - Chemical Abstracts Services.

91-09-8

15850 CRADDS BRANCH WAY SUITE 300 ROCKVILLE, MARYLAND 20855 TELEPHONE: (301) 417–0200 CHAIN OF CUSTODY RECORD nvironmental, inc. PROJECT MANAGER TURN-AROUND TIME ST AVOATM 097.001 THIOKUL - WONDBINS MARK CORBIN SAMPLER(S): (Signaluce(9)) LANZONA REMARKS DATE PRES. STATION / LOCATION 9119 3/5/96 SWAU 3 ALDICARE TP3. 1100 9120 1130 TP3 9 9121 1300 TP4 4' 9122 1330 TPY 8' 9123 TP5 4" 14w 9124 1430 TP5 8' 36/11 0950 9125 SWMU 3 BURN TP12' 9126 TOI 6' 1010 9127 1045 TPZ 2' 9128 1115 TP2 6' 9129 TP4 2' 145 9130 TP4 6' 1245 Dele/Time Received by: (Signature) Relinquished by: (Signature)

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96-0930

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JOB NO. 097.001	HAH BOL		1.1)			PROJECT MAHAGER			7	1	,	ARAMET	ERS	ñ	RN-AROUND STA	DAM
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Antech Ltd.

One Triangle Drive • Export, Pennsylvania 15632 • Phone: (412) 733-1161 • Fax: (412) 327-7793

March 20, 1996

Mr. Mark Corbin Apex Environmental, Inc 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Water/Soil Characterization 097.001; Thiokol; Woodbine, GA Antach Ltd. Project No. 96-0994

Dear Mr. Corbin:

Enclosed are analytical results for samples submitted by Apex Environmental, Inc. Samples were received and logged in for analysis on March 13, 1996.

Appropriate U.S. Environmental Protection Agency methods were used and are indicated accordingly on the data tables. Appropriate quality assurance/quality control analyses were performed in accordance with Antech Ltd.'s Statement of Qualifications. If you have any questions, please call me.

Sincerely,

Kathryn L. Stoudnour

Project Manager

KLS: aeb

Enclosures

ANTECH LTD. CASE NARRATIVE

I. PROJECT LOGIN INFORMATION:

A: PROJECT NUMBERS:

ANTECH LTD.: 96-0994

CLIENT:

097.001: Thickol

B: SAMPLE IDENTIFICATIONS:

Antech ID	Client ID	Antech ID	Client ID
9603-0961	9139	9603-0962	9140
9603-0963	9141	9603-0964	9142
9603-0965	9143	9603-0966	9144
9603-0967	9145	9603-0968	9146
9603-0969	9153	9603-0970	9154
9603-0971	9155	9603-0972	9150
9603-0973	9151	9603-0974	9152

C: SHIPPING/RECEIVING COMMENTS:

None

II. PREPARATION/ANALYSIS COMMENTS:

A: ORGANICS:

1. PESTICIDES/PCBS:

The extracts for samples 9138, 9140 and 9142 would not concentrate to a 10 ml final volume due to their viscous nature, therefore, these samples have elevated detection limits.

III. GENERAL COMMENTS:

Trailing zeroes and decimal places appearing on the data should not be interpreted as precision of the analytical procedure, but rather as a result of reporting format.

Table 1
Pesticide Organic Analysis
EPA Method CN/CS(1)
Apex Environmental, Inc.
Antech Ltd. Project No. 96-0994
Soil Characterization; 097.001; Thiokol
Woodbine, GA

	.,			Sample Ide	ntification	Page 1 c
Parameter	CAS(2) Number	Units	9603-0961 9139 (3/11/96)	9603-0962 9140 (3/11/96)	9603-0963 9141 (3/11/96)	9603-0964 9142 (3/11/96)
-Chlorobenzaldehyde	89-98-5	<i>Os-</i>	<1000	<2900	-222	
-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg mg/kg	<1000	<2900	<33 <33	<1100 <1100
falononitrile	109-77-3	mg/kg	<1000	<2900	<33	<1100

Table 1 (Continued)

				Sample Ide	ntification	Page 2 o
Parameter	CAS(2) Number	Units	9603-0965 9143 (3/11/96)	9603-0966 9144 (3/11/96)	9603-0967 9145 (3/11/96)	9603-0968 9146 (3/11/96)
-Chlorobenzaldehyde	89-98-5	mg/kg	<33	<33	<33	<33
-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	<33	<33	<33	<33
alononitrile	109-77-3	mg/kg	<33	<33	<33	<33

Table 1 (Continued)

				Sample Ide	ntification	Page 3 of
Parameter	ĆAS(2) Number	Units	9603-0969 9153 (3/12/96)	9603-0970 9154 (3/12/96)	9603-0971 9155 (3/12/96)	9603-0975 Method Blank (3/13/96)
o-Chlorobenzaldehyde	89-98-5	mg/kg	<33	<33	<33	<33
O-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	<33	<33	<33	<33
Malononitrile	109-77-3	mg/kg	<33	<33	<33	<33

⁽¹⁾Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Command, DRDAR-TSG-S, Aberdeen Proving Ground, MD 21010).
(2)CAS - Chemical Abstracts Services.

Table 2
Pesticide Organic Analysis
EPA Method CN/CS(1)
Apex Environmental, Inc.
Antech Ltd. Project No. 96-0994
Water Characterization; 097.001; Thiokol
Woodbine, GA

			Sample Identification							
<u>Parameter</u>	CAS(2) Number	Units	9603-0972 9150 (3/12/96)	9603-0973 9151 (3/12/96)	9603-0974 9152 (3/12/96)	9603-0976 Method Blank (3/13/96)				
o-Chlorobenzaldehyde	89-98-5	mg/l	<1.0	<1.0	<1.0	<1.0				
O-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/l	<1.0	<1.0	<1.0	<1.0				
Malononitrile	109-77-3	mg/l	<1.0	<1.0	<1.0	<1.0				

⁽¹⁾ Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Command, DRDAR-TSC-S, Aberdeen Proving Ground, MD 21010).
(2) CAS - Chemical Abstracts Services.

15850 CRABBS BRANCH WAY
SUITE 300
ROCKVILLE, MARYLAND 20855 CHAIN OF CUSTODY RECORD
TELEPHONE: (301) 417-0200 ironmental, inc. PROJECT MANAGER THIOKIL WOUSENOT MANIC GABIN Mike LANDS MAJ REMARKS COMP. DATE STATION / LOCATION 3/11/4 9139 0815 105 T.P. 1 9140 0845 2-41 T.P. 2 9142 9141 2-41 T. 8. 2 9142 2-41 TIPIL . . . 9143 2190 TIP. 3 2.5-41 4144 2.51 (132 TIG. 6 9145 T. P. 7 3' ١ 1200 1945 9146 T. 9. 10 3/4/0840 9153 MW 305 915 1. 6940 MW 304 " ١ 9152 WHS. MW 604 9153 1025 ALDI CARIS SWWU 3 9154 9155 105 5 SUMU 6 TOTALS 12 MAND Relinquished by: (Signature) Received by (Signature) 0 (1) (100 (frinted) (Printed) ANDSN Date/Time Date/[lime (2) 3.13.86 (Printed) 1000



Antech Ltd.

One Triangle Drive • Export, Pennsylvania 15632 • Phone: (412) 733-1161 • Fax: (412) 327-7793

April 8, 1996

Mr. Mark Corbin Apex Environmental, Inc 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Soil Characterization 097.001; Thiokol; Woodbine, GA Antech Ltd. Project No. 96-1234

Dear Mr. Corbin:

Enclosed are analytical results for samples submitted by Apex Environmental, Inc. Samples were received on March 25, 1996 and logged in for analysis on March 28, 1996.

Appropriate U.S. Environmental Protection Agency methods were used and are indicated accordingly on the data table. Appropriate quality assurance/quality control analyses were performed in accordance with Antech Ltd.'s Statement of Qualifications. If you have any questions, please call me.

Sincerely,

Kathryn L. Stoudnour

Project Manager

KLS: aeb

Enclosures

ANTECH LTD. CASE NARRATIVE

I.	PROJ	ECT LOGIN INFORMATION:	LOGIN INFORMATION:										
	A:	PROJECT NUMBERS:											
		ANTECH LTD.: 96-1234 CLIENT: 097.001:	Thiokol										
	B:	SAMPLE IDENTIFICATIONS:											
		Antech ID Client ID	Antech ID	Client ID									
		9603-2345 9173	9603-2346	9174									
		9603-2347 9175	9603-2348	9176									
		9603-2349 9177	9603-2350	9178									
		9603-2351 9179	9603-2352	9180									
		9603-2353 9181	9603-2354	9182									
		9603-2355 9183	9603-2356	9184									
		9603-2357 9185	9603-2358	9186									
	C:	SHIPPING/RECEIVING COMME	NTS:										
		None											
II.	PREP	ARATION/ANALYSIS COMMENTS	3:										
	A:	ORGANICS:											
		1. PESTICIDES/PCBS:											
		None											
		A1 97 A A 30											
III.	GENE	RAL COMMENTS:											
		Trailing zeroes and de	ecimal places appearing on	the data should not									
		be interpreted as pred	ision of the analytical pr	rocedure, but rather									

as a result of reporting format.

Table 1
Pesticide Organic Analysis
EPA Method CN/CS(1)
Apex Environmental, Inc.
Antech Ltd. Project No. 96-1234
Soil Characterization; 097.001; Thiokol
Woodbine, GA

				Samp	le Identific	ation	Page 1 of
Parameter	CAS(2) Number	Units	9603-2345 9173 (3/20/96)	9603-2346 9174 (3/20/96)	9603-2347 9175 (3/20/96)	9603-2348 9176 (3/20/96)	9603-2349 9177 (3/20/96)
o-Chlorobenzaldehyde O-Chlorobenzylidene malononitrile (CS) Malononitrile	89-98-5 2698-41-1 109-77-3	mg/kg mg/kg mg/kg	<430 <430 <430	660 16000 <330	610 <330 <330	<33 <33 <33	<33 <33 <33

Table 1 (Continued)

		ation	Page 2 of				
Parameter	CAS(2) Number	Units	9603-2350 9178 (3/20/96)	9603-2351 9179 (3/20/96)	9603-2352 9180 (3/20/96)	9603-2353 9181 (3/20/96)	9603-2354 9182 (3/21/96)
o-Chlorobenzaldehyde	89-98-5	mg/kg	<330	<33	<330	<33	<33
-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	180000	<33	150000	<33	<33
Malononitrile	109-77-3	mg/kg	<330	<33	<330	35	<33

Table 1 (Continued)

				Samp	le Identific	ation	Page 3 of 3
Parameter	CAS(2) Number	<u>Units</u>	9603-2355 9183 (3/21/96)	9603-2356 9184 (3/21/96)	9603-2357 9185 (3/21/96)	9603-2358 9186 (3/21/96)	9603-2359 Method Blank (3/25/96)
o-Chlorobenzaldehyde	89-98-5	mg/kg	<33	<33	<33	<33	<33
O-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	<33	<33	<33	<33	<33
Malononitrile	109-77-3	mg/kg	<33	<33	<33	<33	<33

⁽¹⁾ Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Command, DRDAR-TSC-S, Aberdeen Proving Ground, MD 21010).

(2) CAS - Chemical Abstracts Services.

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Antech Ltd.

One Triangle Drive • Export, Pennsylvania 15632 • Phone: (412) 733-1161 • Fax: (412) 327-7793

April 22, 1996

Mr. Mark Corbin
Apex Environmental, Inc
15850 Crabbs Branch Way #300
Rockville, MD 20855

Soil Characterization 097.001; Thiokol; Woodbine, GA Antach Ltd. Project No. 96-1402

Dear Mr. Corbin:

Enclosed are analytical results for samples submitted by Apex Environmental, Inc. Samples were received on April 5, 1996 and logged in for analysis on April 8, 1996.

Appropriate U.S. Environmental Protection Agency methods were used and are indicated accordingly on the data table. Appropriate quality assurance/quality control analyses were performed in accordance with Antech Ltd.'s Statement of Qualifications. If you have any questions, please call me.

Sincerely,

Kathryn L. Stoudnour

Project Manager

KLS:vt

Enclosures

ANTECH LTD. CASE NARRATIVE

I.	PROJ	ECT LOGIN INFO	RMATION:			
	A:	PROJECT NUMBE	RS:			
		ANTECH LTD.:				
		CLIENT:	097.001: Thiokol			
	B:	SAMPLE IDENTI	FICATIONS:			
		Antech ID	Client ID	Antech ID	Client ID	
		9604-0666	9194	9604-0667	9195	
		9604-0668	9196	9604-0669	9197	
		9604-0670	9198			
	C:	SHIPPING/RECE	IVING COMMENTS:			
		None		· · ·		
II.	PREP	ARATION/ANALYS	IS COMMENTS:			
	A:	ORGANICS:				
		1. PESTICIDES/	PCBS:			
		None				
III.	GENE	RAL COMMENTS:				

as a result of reporting format.

Trailing zeroes and decimal places appearing on the data should not be interpreted as precision of the analytical procedure, but rather

Table 1 General Data Table Apex Environmental, Inc.

Antech Ltd. Project No. 96-1402 Soil Characterization; 097.001; Thiokol Woodbine, GA

			Samo	Page 1 of 2	
	Analytica	1	9604-0666 9194	9604-0667 9195	9604-0668 9196
Parameter	Method	Units	(4/3/96)	(4/3/96)	(4/3/96)
o-Chlorobenzaldehyde	CN/CS(1)	mg/kg	<33	<33	<33
O-Chlorobenzylidene malononitrile (CS) CN/CS(1)	mg/kg	<33	<33	<33
Malononitrile	CN/CS(1)	mg/kg	<33	<33	<33
		· · · · · · · · · · · · · · · · · · ·			···

Table 1 (Continued)

					Page 2 of 2
			Samp	le Identifi	cation
					9604-0671
			9604-0669	9604-0670	Method
	Analytica	1	9197	9198	Blank
Parameter	Method	Units	(4/3/96)	(4/3/96)	(4/5/96)
o-Chlorobenzaldehyde	CN/CS(1)	mg/kg	<33	<33	<33
O-Chlorobenzylidene malononitrile (CS)	CN/CS(1)	mg/kg	<33	<33	<33
Malononitrile	CN/CS(1)	mg/kg	<33	<33	<33

⁽¹⁾ Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Command, DRDAR-TSC-S, Aberdeen Proving Ground, MD 21010).

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Antech Ltd.

One Triangle Drive • Export, Pennsylvania 15632 • Phone: (412) 733-1161 • Fax: (412) 327-7793

April 22, 1996

Mr. Mark Corbin Apex Environmental, Inc 15850 Crabbs Branch Way #300 Rockville, MD 20855

> Soil Characterization 097.001; Thiokol; Woodbine, GA Antech Ltd. Project No. 96-1503

Dear Mr. Corbin:

Enclosed are analytical results for samples submitted by Apex Environmental, Inc. Samples were received on April 12, 1996 and logged in for analysis on April 16, 1996.

Appropriate U.S. Environmental Protection Agency methods were used and are indicated accordingly on the data table. Appropriate quality assurance/quality control analyses were performed in accordance with Antech Ltd.'s Statement of Qualifications. If you have any questions, please call me.

Sincerely,

Kathryn L. Stoudnour

Project Manager

KLS: vt

Enclosures

ANTECH LTD. CASE NARRATIVE

I.	PROJ	ECT LOGIN INFO	RMATION:	:		
	A:	PROJECT NUMBER	RS:			
		ANTECH LTD.: CLIENT:	96-1503 097.001: Thiokol			
	B:	SAMPLE IDENTI	FICATIONS:			
		Antech ID	Client ID	Antech ID	Client ID	
		9604-1288 9604-1290		9604-1289 9604-1291		
	c:	SHIPPING/RECE	TVING COMMENTS:			
		None			· · · · · · · · · · · · · · · · · · ·	
II.	PREP.	ARATION/ANALYS:	IS COMMENTS:			
	A:	ORGANICS:				
		1. PESTICIDES/	PCBS:			
III.	GENE	RAL COMMENTS:				

Trailing zeroes and decimal places appearing on the data should not be interpreted as precision of the analytical procedure, but rather

as a result of reporting format.

Table 1 General Data Table EPA Method CN/CS(1) Apex Environmental, Inc.

Antach Ltd. Project No. 96-1503 Soil Characterization; 097.001; Thiokol

Woodbine, GA

	<u> </u>	···	Samp	le Identific	Page 1 of 2
Bewereter	CAS(2) Number	Units	9604-1288 9205 (4/10/96)	9604-1289 9213 (4/10/96)	9604-1290 9214 (4/10/96)
Parameter	Nomber	OHILLS	(4/10/30)	(4/10/30)	(4/10/30)
o-Chlorobenzaldehyde	89-98-5	mg/kg	<33	<33	<33
O-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	<33	<33	<33
Malononitrile	109-77-3	mg/kg	<33	<33	<33

Table 1 (Continued)

				Page 2 of 2
			Sample Ide	ntification
	CAS(2)		9604-1291 9215	9604-1292 Method Blank
Parameter	Number	Units	(4/10/96)	(4/12/96)
o-Chlorobenzaldehyde	89-98-5	mg/kg	<170	<33
O-Chlorobenzylidene malononitrile (CS)	2698-41-1	mg/kg	8600	<33
Malononitrile	109-77-3	mg/kg	<170	<33

⁽¹⁾Method Reference MIL-R51029C (Department of Defense Index of Specifications and Standards, 1968, U.S. Army Armament Research and Development Command, DRDAR-TSC-S, Aberdeen Proving Ground, MD 21010).

(2)CAS = Chemical Abstracts Services.

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Apexenvironmental, inc.

APPENDIX E

UXO Report



September 18, 1996

Mr. Mark Corbin Apex Environmental, Inc. 15850 Crabbs Branch Way, Suite 200 Rockville, MD 20855

Subject:

Submission of After Action Report for UXO Support

Services, Woodbine, Georgia

Dear Mr. Corbin:

Enclosed please find the EOD Technology, Inc. After Action Report for the subject project. Should you have any questions or comments, please contact me at (423) 690-6061 at your earliest convenience.

I would like to express our thanks to the Apex Environmental Team for their professionalism and efficiency. They were a pleasure to work with, and we look forward to future opportunities to work together.

Sincerely,

EOD TECHNOLOGY, INC.

M. E. Short Vice President

Enclosure as noted

AFTER ACTION REPORT

FOR THE

SURFACE UXO/OEW AND ORDNANCE DEBRIS REMOVAL

AT

WOODBINE, GEORGIA

Prepared For:

Apex Environmental, Inc. Rockville, Maryland

Prepared By:

EOD Technology, Inc. Knoxville, Tennessee

September 1996

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1.0 INTRODUCTION

EOD Technology, Inc. (EODT) was contracted by Apex Environmental, Inc. (Apex) to provide Unexploded Ordnance/Ordnance Explosive Waste (UXO/OEW) Services and Surface/Subsurface Remediation of the Former Union Carbide Plant, Woodbine, Georgia, Solid Waste Management Units (SWMUs). These services included survey, grubbing and remediation activities in SWMUs #3 and #7, and ordnance debris monitoring during excavation of trenches in SWMU #7. In addition, EODT personnel were tasked to remove and dispose of surface/subsurface ordnance and debris in SWMUs #3 and #7. EODT supplied all labor, supplies, tools, and equipment required in the performance of described responsibilities.

1.1 General Information

The subject site is located in Camden County, Southeast Georgia. The property is located approximately 12 miles east of Woodbine, Georgia, and approximately 15 miles north of the Florida/Georgia state line. On November 27, 1995, EODT mobilized four (4) personnel in support of the required UXO/OEW Support Services. These four personnel supported the UXO/OEW portion of the project through April 16, 1996.

2.0 OPERATIONS

2.1 Mobilization

Four EODT personnel mobilized to the site on November 27, 1995, in support of UXO/OEW Services. The team consisted of an EODT Sr. UXO Site Supervisor, EODT Site Health and Safety Officer (SSHO)/Team Leader, and a cadre of one EOD Technician and one Equipment Operator. The following EODT personnel were assigned to the site with respect to the November 28, 1995, date listed:

Position	Name	Period Worked
Sr. UXO Site Supervisor	Ed Pinson	11/27/95 - 4/12/96
Health and Safety Officer/ Team Leader	Tom Hall	11/27/95 - 4/16/96
UXO Specialist	Norbert McNally	11/27/95 - 4/12/96
Equipment Operator	Sam McNally	11/27/95 - 4/16/96

2.2 Key Personnel

NAME	POSITION	COMPANY	TELEPHONE #
Ed Pinson	Sr. UXO Supervisor	EODT	423-690-6061
Kent Campbell	Program Manager	Apex	301-417-0200
Mark Corbin	Project Manager	· Apex	301-417-0200
Mike Landsman	Site Supervisor	Apex	301-917-0200
Michael E. Short	Project Manager	EODT	423-690-6061

2.3 Equipment

DESCRIPTION	USE	QUANTITY
Magnetometer	Geophysical Survey	1 each
Site Vehicle (Van)	Personnel & Equipment	1 each
Back Hoe	Excavation	1 each
Pickup Truck	Transport Explosives	1 each
Chain Saws & Weedeaters	Grubbing	3 each

2.4 Work Schedule

The work week was broken down into four/10 hour days, with time off for weekends (Fri-Sun) and holidays. The site was shut down from December 22, 1995, to January 2, 1996, otherwise it was in full operation, except for an occasional day due to inclement weather.

2.5 Grubbing/Vegetation Removal

Trees and vegetation were removed from SWMUs 3 and 7 to enable EODT personnel to access the trenches in SWMU 7 and subsurface UXO in SWMU 3. This was accomplished with the backhoe, chain saws and weedeaters, removing only those items absolutely necessary for site activities.

2.6 Geophysical Survey

At SWMU 3, five-foot lanes were marked using a GA-72 C/V Heliflux magnetometer and the area was surveyed and subsurface magnetic anomalies were marked on the surface with pin flags. A similar procedure was used at SWMU 7 to assist in the characterization of the trenches and to determine the areas to be excavated.

2.7 Excavation

SWMU 7 was the primary area excavated and consisted of two sub-areas. The area located to the east side of the dirt road was approximately .52 acres and the area to the west of the dirt road was approximately .25 acres.

2.7.1 SWMU 7 Drums

This area contained 408-55 gallon drums containing M406-40mm Grenade Ball Assemblies; Flare/OEW Mixtures; Bio Waste; 81 mm Mortars; Riot Control Agents, such as CS and other assorted waste. The majority of the drums were only partially filled with the above with remainder of the drum being filled with cement. This created the necessity to develop a safe, yet rapid, method to open the drums, break-up and remove the cement all without the possible detonation of the contents. This was accomplished using the backhoe with a hammer attachment, which gave the EODT Team sufficient control of the penetration level and force and was safe enough to process approximately 10 drums/day. The majority of this work was accomplished in Level "C" PPE when appropriate. A number of drums contained 'syringes' and soiled bandages, possibly from a hospital. These were set aside and treated as a bio-hazard.

2.8 UXO Recovered/Destroyed

ТҮРЕ	QUANTITY	
81 mm Mortar, Illuminated	38 each	
Flare/OEW Mixture/Riot Control Agent	2,635 gallons	
40 mm Ball Assemblies	3,001 each	

The flare/UXO mixture was burned in the demo area we established on site, and the 40 mm's were detonated in an adjacent area at the site. The 81 mm mortars were detonated/burned by causing the round to function as designed. Two-55 gallon drums were set up open-end to open-end, the round was detonated and the illumination canisters were expelled into the second drum, where they burned out. The entire demolition operation was completed without incident. EODT averaged three burns/shots a week.

3.0 TRAINING

3.1 Initial

Initial site training was conducted by Apex and EODT on November 28, 1995, covering site specific hazards as addressed in the Work Plan & Safety Plan. Additionally, EODT personnel were instructed in the ordnance suspected/known to be on site.

3.2 Daily Tailgate Safety Briefings

Tailgate Safety Briefings were conducted daily, prior to commencement of work. Topics discussed were UXO safety, biological hazards, vehicle safety, emergency response procedures, and explosive safety. Also discussed were, transportation of explosive/UXO/OEW, demolition/burn operations, chemical hazards (CS), and physical hazards/associated with the work areas.

3.3 Visitors Training

All site visitors were trained on associated hazards and safety procedures prior to entering work areas, as well as being escorted by the EODT Site Supervisor or SSHO.

3.4 Special Training

The first day of each week, EODT conducted extended training on a selected topic relating to the site. Prior to demolition operations, the EODT team conducted refresher training to ensure all personnel knew their respective duties.

4.0 QUALITY CONTROL AND ACCOUNTABILITY

4.1 Calibration

The magnetometers were calibrated at the start of each day against a known source to ensure workability and operability. The batteries were changed each week and the magnetometer cleaned prior to being put away for the weekend.

4.2 Maintenance

All equipment, such as vehicles, backhoe, chain saws, etc., was inspected weekly and prior to each use to ensure proper serviceability and safety.

4.3 Accountability

All recovered UXO/OEW was logged into an ordnance accountability log upon recovery and the disposition entered ie: placed in storage awaiting disposal or disposal and date. In addition, a strict inventory of all demolition materials was maintained IAW 27 CFR Part 55.