

ATTACHMENT WM-44B

STODDARD SOLVENT IMPACTED SOILS INVESTIGATION
REGARDING MONITORED NATURAL ATTENUATION
SURVEY NO. 5: SEPTEMBER 28 - OCTOBER 04, 2005
FORMER ALCOA VERNON FACILITY

Location:

Former Alcoa Inc. Cast Plate Facility
3200 Fruitland Ave.
Vernon, California
90058

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**STODDARD SOLVENT IMPACTED SOILS INVESTIGATION
SURVEY NO. 5: SEPTEMBER 26 - OCTOBER 04, 2005**

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Stoddard Solvent Impacted Soils Investigation
Regarding Monitored Natural Attenuation
Survey No. 5: September 26 – October 04, 2005
Former Alcoa Vernon Facility
Vernon, California

Environmental Protection and Compliance appreciates the opportunity to work with Alcoa Inc. at the former Alcoa facility in Vernon, California. If you have any questions or comments concerning this report, please contact the individual below.

Respectfully submitted,

Environmental Protection and Compliance

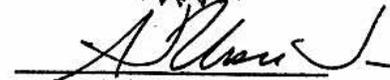


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Project Manager

Stoddard Solvent Impacted Soils Investigation
Regarding Monitored Natural Attenuation
Survey No. 5: September 26 – October 04, 2005
Former Alcoa Vernon Facility
Vernon, California

This report has been prepared by Environmental Protection and Compliance under the professional supervision of A.J. Ursic Jr. The general content, findings, recommendations and/or professional opinions presented in this report have been prepared in accordance with generally accepted professional environmental site assessment practice, and within the scope of the specifications. Other warranties are not expressed or implied.




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EXECUTIVE SUMMARY

During September 26 – October 04, 2005, a soil investigation for Stoddard solvent contamination was performed at the former Alcoa Inc. facility in the city of Vernon, California. Fifty-one soil samples were collected from twelve drilling locations. This survey is one of five surveys performed including the initial investigation in April 1995. The analytical results are reported as Volatile [C6 – C10], and Extractable [C10 – C28] components.

The initial investigation, to determine the extent of the Stoddard contamination, was conducted in April 1995. In May 1997, a limited survey was undertaken to determine whether natural attenuation, particularly biodegradation, is in progress and if conditions exist for continuous biological activity. It has been determined through analysis of collected soil samples and soil gas analyses that biodegradation is in progress and that conditions are suitable for continued biological activity. Subsequent to the May 1997 limited survey there have been three additional surveys: August 1998, September 2000, and September 2005. This report focuses on the comparison of the September 2005 survey, the initial characterization of April 1995, and the previous survey of September 2000. This provides the longest monitoring time period from which to determine more accurately the overall change in subsurface conditions.

The use of Stoddard solvent was initiated at the Vernon facility in the early 1940's and terminated over a decade ago in 1994. Considering the years of use, the opportunity for deep soil contamination or extensive lateral migration would be significant. However, neither case exists at this facility. The contamination field is completely contained at a relatively shallow depth and has been accurately defined.

Historically, the entire ground surface has been continually covered with concrete, both inside and outside of Building 112A. After ten years of monitoring [five surveys], it is clear that the vertical migration has been confined above a dense clay layer that exists at an average depth of 52.5 feet bgs. These surveys have also shown that the lateral extent of the contamination is not significant. However, recent data suggests that the existing lateral extent has experienced an increase in concentration of the contaminant in a few locations. This is supported by an indication of downward migration in the more heavily contaminated areas.

Characterization of the current conditions and the changes that have taken place are determined through two approaches: the development of sampling location profiles and a point-to-point comparison. Both procedures defined change in the contaminated soil. However, developing profiles of sampling locations considers each sampling point as it relates to all the other samples in the location to which it belongs. In addition, the effect of sample anomaly is largely reduced. The point-to-point comparison provides the detail or mechanism of change.

Developing profiles of each sampling location is a unique method of viewing the dynamic of the entire sampling column. Comparing the profiles from the September / October 2005 survey with those of the initial characterization of April 1995, provides the overall changes in these areas over time. When considering all the sampling locations within each study area, a site-wide reduction in Stoddard concentration is evident. Compared to the initial study, the average reduction in concentration in each area is: Area A, 67.6%; Area B, 29.6%; Area C, 58.3%; and Area D, 38.6%.

These reductions are not as significant as those determined in the survey of September 2000. Although the general trend in the entire site is one of decreasing concentration, Area B remains the most variable. When compared to the previous survey the rate of Stoddard destruction appears to be stabilized in Areas A and C. The destruction of Stoddard in Areas B and D appear to have slowed. However, this may be a false representation due to the marked downward migration of the contaminant in the past five years. This migration has elevated the

concentrations of some sampling points that were relatively lower in the previous survey. This would also artificially suppress the 'apparent' rate of Stoddard solvent destruction.

The point-to-point comparison indicates that, considering the separate volatile and extractable components, there has been a reduction in the number of 'non-detect' [<150 mg/Kg]. However, there has been an increase in the occurrence of locations with concentrations between 151 mg/Kg and 1,000 mg/Kg.

The sampling points exhibiting the greatest concentration reductions are the designated initial release points or locations closely associated with them. A downward migration is clear at two of the release locations with the greatest Stoddard concentrations. Also evident is the modest increase in the concentration at the lateral extent in these areas. The data clearly indicates that this is due to the presence of an impervious clay barrier at a relatively shallow depth.

Subjecting the databases to concentration range categories reveals that the uniform distribution of both volatile and extractable components in the initial study [April 1995] is significantly fractionated in the September 2000 monitoring data including the significant elimination of the entire volatile component detection at the greater concentrations. The recent survey indicates a moderate return of these volatile occurrences at the higher concentrations [$> 9,000$ mg/Kg]. This would suggest a continued area-wide shift away from the heavier, long-chain extractable component to that of the lighter, shorter chain volatile.

Additionally, there is a significant increase in volatile component occurrences in the mid-range concentrations [3,000 mg/Kg – 9,000 mg/Kg]. These directly correspond to the decrease or static condition [no increase in occurrence], of the extractable component occurrence of the same concentration ranges. Again, this would suggest a continued area-wide shift away from the heavier, long-chain extractable component to that of the lighter, shorter chain volatile.

Moreover, the majority of extractable occurrences are associated with the higher and lower concentration ranges. In contrast, the majority of volatile occurrences are associated with the mid-range concentrations.

When comparing the results of the September / October 2005 survey with the September 2000 study and the initial characterization of April 1995, the following is evident:

[1] Developing profiles of each sampling location indicates a site-wide average reduction in total Stoddard solvent concentration of 48.5% from the 1995 survey. This is approximately 10% less than that of the September 2000 survey.

[2] Where there was an absence of volatile component concentrations between 9,000 mg/Kg and >70,000 mg/Kg in the September 2000 study, there is a return of occurrence in this range in the recent study.

[3] Corresponding to the return of volatile component concentrations [in number 2 above], the occurrence of extractable component concentrations, in nearly the same ranges, are increased.

[4] There continues to be a site-wide shift away from the heavier molecular weight chains towards the lighter weights.

[5] Downward migration of the contaminant is clearly established.

[6] The downward migration has contributed to a 35% decrease, from the September 2000 survey, in the number of occurrences where total Stoddard concentrations are less than 150 mg/Kg.

[7] The downward migration has contributed to an increase, in the number of occurrence of extractable component concentrations > 12,000 mg/Kg.

[8] The total number of volatile and extractable component concentrations that are less than 1,000 mg/Kg represent 55.9% of the database.

[9] The lateral extent of the contaminant has not been extended.

[10] Although the lateral extent has not advanced, the concentration has increased at two defining locations, possibly a result of the downward migration at the location of initial release.

EPA Directive, OSWER 9200.4-17, outlines the considerations in selecting natural attenuation as a remedial technology. The conditions at the Vernon site exhibit the advantages while relieving the potential disadvantages regarding the selection of natural attenuation. It is recommended that monitored natural attenuation, particularly biodegradation, be selected as the remedial technology at the Vernon site.

1.0 Introduction

This investigation is part of an ongoing effort by Alcoa Inc., to determine the rate of destruction regarding concentrations of Stoddard solvent in the soils at a facility previously owned by Alcoa Inc. The facility is located at 3200 Fruitland Ave., in the city of Vernon, California [Figure 1]. Historically, while under Alcoa ownership, the address was 5151 Alcoa Ave., Vernon, California.

2.0 Background

The use of Stoddard solvent was initiated at the Alcoa site in Vernon in the early 1940's and terminated over a decade ago in 1994. The system consisted of delivery and recover piping, a distillation unit, and storage / emergency underground storage tanks [USTs]. Stoddard solvent was utilized in the tube mill in two areas: at the tube straightening location and the tube dip tanks. Upon Alcoa's departure and change of ownership of the facility, Alcoa Inc. removed the Stoddard system. This included removing the tube straightening machines, the demolition of the dip tanks, the relocation of the distillation building [structure only], the demolition of the distillation building foundation, and the removal of the underground storage and emergency tanks. Upon the removal of the dip tanks and the Stoddard recovery / distillation unit, Stoddard solvent was detected in the soil at each location. Historically, two other releases were previously known: [1] at the southwest corner of Building 112A, and [2] at the tube straightening area. Regarding remediation activities, these four areas were considered a single site.

2.1 Direct Soil Analysis Surveys

In April 1995, the entire site was characterized to determine the vertical and lateral extent of the Stoddard impact on the soils. This characterization included 17 drilling locations for direct soil

sampling, and 34 locations where Cone Penetration Test/Rapid Optical Screening Tests [CPT/ROST] were performed directly in the soil at depth.

During August through November 1995, Alcoa conducted data analyses of the April 1995 characterization and previous hydrological and geological site assessments, and determined that natural attenuation was ongoing. In addition, Alcoa performed extensive analytical testing to characterize the indigenous microbial populations, soil nutrient content, and leachability. Treatability and modeling studies were performed as well.

In May of 1997, a limited survey was conducted to confirm the findings of the research and previous studies. Conditions were found to exist in the soils below the facility that were suitable to support natural attenuation. The results indicated that natural attenuation was in progress.

In August of 1998, a third investigation was conducted which included 12 of the original 17 drilling locations and sampling depths from the 1995 characterization.

In September 2000, another full-field sampling investigation was conducted. The sampling program was identical to the surveys of 1995 and 1998. Data analysis and report review by the city of Vernon resulted in a five-year interval to return to the site for another full-field investigation. The most recent sampling program was conducted during September 26 – October 04, 2005. The activities of this full-field investigation are the focus of this report.

2.2 Soil Gas Studies

Soil gas analysis by Geraghty & Miller, Inc. [1991], measured carbon dioxide levels as high as 12 percent by volume and oxygen levels near 2.5 percent by volume. For atmospheric air, the carbon dioxide level is approximately 0.03 percent and the oxygen level is near 21 percent. Thus, the substantially elevated carbon dioxide levels and the lower oxygen levels serve to support aerobic biodegradation. In addition, methane was also measured in some wells near 0.6

percent indicating that anaerobic biodegradation may also be occurring. Based on these soil gas measurements during a soil vapor extraction test, it was also determined that biodegraded Stoddard solvent [as carbon dioxide] was extracted at a rate approximately ten times above the amount of non biodegraded Stoddard extracted as the volatile parent compound. These field results compared with what was also observed during the Alcoa laboratory column tests. Both the field and laboratory studies focused on aerobic activity only.

Subsequently, additional soil gas sampling [1996] measured appreciably high levels of both methane and carbon dioxide, and low levels of oxygen in the highly impacted areas. These are clear indicators of anaerobic biodegradation. The data suggests that there is substantial aerobic and anaerobic biodegradation activity. In the initial characterization of April 1995, it was determined that the primary contaminant hydrocarbon range is C10-C15 that is amenable to biological degradation.

2.3 Bacterial Counts and Soil Nutrients

During the site characterization of April 1995, total soil bacterial counts were measured as high as 2.0×10^8 colony forming units [cfu]/gm of soil and specific hydrocarbon degraders as high as 2.0×10^5 cfu/gm of soil. For non-contaminated soils, or TPH contaminated soils where biodegradation is not occurring, hydrocarbon degraders generally range between $10 - 10^2$ cfu/gm. Subsequently, significantly high levels of heterotrophic bacteria [$10^8 - 10^9$ cfu/gm soil] and hydrocarbon degraders [$10^5 - 10^6$ cfu/gm soil] were found to exist in the Vernon soils. These indigenous bacteria populations appear to be acclimated to the available organics in the soil with no evident toxicity to the microbial populations. These highly elevated bacterial counts, along with significant carbon dioxide production and oxygen utilization serve to also support that TPH intrinsic biodegradation is presently ongoing.

The following nutrient concentrations were found in the Vernon soils: 2.1 – 7.5 ppm TKN, 5.2 – 14.4 ppm $\text{NH}_3\text{-N}$, 0.11 – 0.90 ppm $\text{NO}_2\text{-N}$, and 0.45 – 0.46 ppm P.

2.4 Leachability

A potential leachate source does not exist. However, toxicity characteristic leaching potential [TCLP] testing of site soils gave TCLP levels [as Stoddard] ranging between 0.2 – 1.4 mg/L. Moreover, if such subsurface TPH leachate migration did occur, the organics would be attenuated through intrinsic biodegradation processes.

3.0 Objective and Technical Approach

3.1 Continued Study / Monitoring

Since the initial characterization in 1995, Alcoa has continued to study these soils for evidence of decreasing concentrations of hydrocarbons associated with Stoddard solvent. The limited survey of May 1997 was designed solely to determine whether natural attenuation, particularly biodegradation, was in progress. In addition, soil gas, nutrients, and bacteriological analyses were performed. These data indicated that natural attenuation is in fact ongoing [see Sections 2.2 and 2.3]. The subsequent sampling of the field in August 1998, September 2000, and September / October 2005 included those locations in each area, that were sampled in the initial study. This provides a representative characterization of the contamination field. These data are compared with the initial and continuing survey data to evaluate the ongoing process of natural attenuation.

3.2 Current Investigation

Although sampling at these depths in an effort to duplicate the previous sampling regimes can not be exact, the intent is to describe the change in the general configuration and concentration of Stoddard solvent in the soils. With an ongoing monitoring program, the development of a historical record will define the overall rate of hydrocarbon degradation, area-wide.

3.3 Analytical Approach

The investigation involves four separate areas, each with its own dynamic. The results are presented by examining each sampling location [i.e.: A-1, A-3 etc.] within the respective sampling area [i.e.: A, B, C, D]. In addition, the volatile [C6 – C10], and extractable [C10 – C28] component data is addressed separately.

Each sampling location is considered as a whole and a profile is established. This profile defines the unique relationship between Stoddard concentration and depth at each sampling location. The profiles from the September / October 2005 survey are compared to those of the initial characterization of April 1995 and the subsequent studies. This provides an overview of the changes in the dynamic of the sampling location.

With few exceptions, the concentration distribution data from the recent characterization is consistent with previous surveys. This report focuses on the comparison of the recent survey [September / October 2005] with the initial full-field characterization of April 1995, and the subsequent full-field surveys of August 1998, and September 2000.

In addition to the 'profile' approach, 'point-to-point' analyses are performed to identify the mechanism by which the changes have occurred in the analytical record of Stoddard concentrations throughout the entire area of study. As in the profile approach, to more accurately determine the changes in the contamination field, volatile and extractable components are considered separately. This aids in clarifying the 'mechanics' of the concentration changes as well.

To optimize the findings, a point-to-point comparison is performed utilizing the database of the April 1995 survey [initial characterization], and that of the recent September / October 2005 survey. The analysis consists of three parts. The first determines and identifies the number of sampling points that have: remained 'non-detect', those that have 'improved' to non-detect, and,

those that exhibit concentrations that have been reduced to less than 1,000 mg/Kg. The second part determines and identifies the number of sampling points that exhibit specific concentration reductions. In the third part, the databases are subjected to specific concentration range categories that are narrower than those criteria used in the second part. This distribution addresses the volatile and extractable components separately.

Samples are identified by a three-part term, for example: [B-2-45], where 'B' indicates the sampling area; '2' identifies the sampling location within the area; and, '45' specifies the sampling depth in feet bgs.

4.0 Field Activities

4.1 Sampling Plan and Analytical Methods

The sampling plan consists of 12 locations [Figure 2] and depths included in the initial characterization of April 1995. All sampling was performed utilizing an eight-inch hollow stem auger and a split sleeve sampler. From the twelve drilling, [or sampling] locations, 51 discrete samples were collected. These are grouped into four areas [A, B, C, and D] that correspond to the location of historical Stoddard releases. The '-1' identifies the location of the release in each respective area [i.e.: A-1, B-1, C-1, and D-1]. Area A consists of three vertical sampling location [A-1, A-3, and A-11] with a total sample number of 12. Area B consists of five locations: B-1, B-2, B-4, B-9, and B-11. The total number of samples in Area B is 22. Areas C and D include two locations each [C-1, C-4 and D-1, D-2] with a total of eight and nine samples in each area respectively. Each sample was analyzed utilizing the procedures found in EPA 8015B [C6-C10], [C10-C28].

4.2 Visual Description of Sampling

As each sample was prepared for transfer to the analytical laboratory, a general description was voice recorded. Characteristics such as soil type, mixture of soils, transition zones, color and

odor were noted. In addition, the sampling impact count was recorded as well. This field record is directly transcribed in Appendix A, and tabulated in Table 1.

5.0 Setting

The September / October 2005 survey was completed in seven days, including eight locations within the southern area of building 112A [Areas A and B], and four locations outside the building, to the west of the southern portion of Building 112A [Areas C and D]. The original April 1995 characterization included 17 drilling sites. Subsequent surveys [except May 1997] included 12 of these that would provide representative characterization of the contamination field.

During Alcoa's ownership of the facility, the southern portion of Building 112A facilitated tube-mill activities. Area A was the location of roll straightening activities. Here, a small Stoddard feeder line was the source of the release. Stoddard solvent dip tanks were located in Area B. The Stoddard recovery / distillation unit was housed in a freestanding structure [Building 124] to the west of Building 112A. Area C resulted from a release from a small feeder line coming from Building 124 to Building 112A. The release occurred near Building 112A. The northwest corner of Building 124 was the location of the release identified as Area D. See Figure 2 for locations of Areas A through D.

Historically, the entire area of investigation has been capped with concrete floors within the building and concrete roadway / storage areas outside the building.

6.0 Results

The investigation involves four separate areas, each with its own dynamic. The results are presented by examining each sampling location [i.e. A-1, A-3, etc.] within the respective sampling area [i.e. A, B, C, and D]. In addition, the volatile [C6-C10], and the extractable [C10-C28] component data are addressed separately. From the initial characterization in April 1995, it was determined that the contamination is primarily in the hydrocarbon range of C10-C15. See Table 2

for the analytical results for survey No. 5: September / October 2005. The analytical laboratory reports are found in Appendix B. Completed Chain of Custody forms are located in Appendix C.

Each sampling location is considered as a whole and a profile is established. This profile defines the unique relationship between Stoddard concentration and depth at each sampling location. The profiles from the September / October 2005 survey are compared to those of the initial characterization of April 1995. This provides an overview of the changes in the dynamic of the sampling location.

With few exceptions, the concentration distribution data from the recent survey is consistent with previous studies. Although this report focuses on the comparison of the September / October 2005 survey with the initial characterization of April 1995, the data from subsequent surveys [August 1998 and September 2000] are considered where appropriate. Table 3 includes specific sample data for all surveys, detailed as volatile [C6-C10] and extractable [C10-C28] components.

Samples are identified by a three-part term, for example: [A-3-40], where 'A' indicates the sampling area; '3' identifies the sampling location within the area; and, '40' specifies the sampling depth in feet bgs.

During the visual examination of each sample the soil characteristic was observed. The soils at the Vernon site are composed of clay, sand, or a mixture of these, and exhibit various shades of brown color. However, occasionally a sample was found to be gray in color. It was observed that, in some cases, Stoddard odor is associated with gray coloration. However, other samples, which were tinted or colored gray, did not exhibit a Stoddard odor. In addition, the analytical data supports the absence of Stoddard in these samples. This suggests that these soils are the locations of historical Stoddard solvent impact where the contaminant has been completely degraded leaving the gray stained sand or clay. See Appendix A for direct transcription of field voice records that are also tabulated in Table 1.

6.1 AREA: A

6.1.1 Location A-1 [point of release]

Volatile Component [C6 – C10]

Although sample A-1-15 indicates a significant increase in concentration when compared to the previous survey [September 2000], the overall profile of the sampling column is consistent with the initial survey [April 1995] and the September 2000 survey. As it is difficult to predict the contaminant pathway, it would appear that in these surveys [April 1995, September 2000, and September 2005], the Stoddard release has been successfully defined. The August 1998 profile appears to be just outside the impacted area. When compared to the initial characterization [April 1995], the current data indicates a dramatic decrease in concentration [-80.8%] of the volatile component throughout the column profile.

Extractable Component [C10 – C28]

The profile is consistent with all previous surveys. When compared to the initial characterization [April 1995], the current data indicates a significant decrease in concentration [-74.9%] of the extractable component throughout the column profile.

Soil Characteristics

The data shows a well-established, clean, brown clay layer at a depth of 57 feet, and continuing beyond the greatest sampling depth of 60 feet [impact sampling count of 88 at 58.5 feet bgs]. The recent survey analytical determinations correspond directly with field observations. The transition from sand to clay is indicated at the 30-foot depth with associated hint of Stoddard odor. Stoddard solvent odor was absent at the greater depths.

6.1.2 Location A-3

Volatile Component [C6 – C10]

The volatile component profile in the recent survey is a departure from the initial investigation. The initial survey indicated significant concentrations at depths of ten feet and 40 feet. The 2005 survey shows a significant concentration only at a depth of 40 feet bgs. However, the data indicates a significant reduction [-32.7%] in the volatile component of the Stoddard concentration.

Extractable Component [C10 – C28]

The profile of the current survey exhibits a departure from that of the initial study. However, although the change in the extractable component appears less dramatic, the profile reduction in Stoddard concentration [extractable component] is significant [-78.0%].

Soil Characteristics

Historically, all surveys have indicated the presence of a clean, brown, clay layer at a depth of 55 feet bgs. The recent survey is consistent with the historical record [impact sampling count of 65]. In addition, Stoddard odor was not present at this depth.

6.1.3 Location A-11

Stoddard solvent from the primary release site is not associated with this location. All volatile component concentrations are less than 0.60 mg/Kg. Historically, an extractable component has never been detected at this location. However, the September 2005 survey indicates an extractable concentration of 10.2 mg/Kg. During the 2005 survey, refusal was experienced twice during the drilling at this location. Upon examining construction drawings, it was determined that Draw Bench foundations were underlying the existing floor. Drilling and sampling was successfully completed by passing between two Draw Bench foundations. Considering the historical use of Stoddard solvent [and other lubricants] at these Draw Bench locations, the

detection of 10.2 mg/Kg of the longer carbon chain is expected to be local contamination and not associated with the primary release. Moreover, the distance from the primary release and the history of 'non-detection' would suggest the impracticality of this minor concentration being associated with the release at A-1.

Soil Characteristics

As expected, Stoddard odor was absent at all sampling depths. At 40 feet bgs, there is a well-defined, good quality clay layer [impact count of 85].

6.2 AREA: B

6.2.1 Location B-1 [point of release]

Volatile Component [C6 – C10]

The volatile component profile is consistent with that of the initial characterization [April 1995]. The data indicates a significant reduction of Stoddard concentrations at all sampling depths. Considering the overall profile, there is a Stoddard concentration reduction of -68.9 percent when compared to the initial study of April 1995.

Extractable Component [C10 – C28]

Sample data from all depths, except 45 feet bgs, show significant reductions in concentration. These alone indicate a reduction in concentration of -56.2 percent. However, with the addition of the sample at 45' bgs, the resultant overall change compared to the initial April 1995 study is +3.3 percent. An analysis of the profiles from the interim surveys [1998 and 2000] indicates a possible downward movement of Stoddard solvent resulting in a significant concentration found at 45' bgs in the recent survey.

Soil Characteristics

Field observations indicate that a transition from sand to clay occurs at a depth of 45 feet bgs. Although highly compacted sand was found at 40' bgs [impact count 125], total clay is found at 46 feet [impact count 45], and continues [with some sand] to a depth of 48 feet bgs. This corresponds to the analytical data. Additionally, corresponding to the analytical data, Stoddard odor is strong at the sampling depths of 25' and 45' bgs.

6.2.2 Location B-2 [possible point of release]

Volatile Component [C6 – C10]

At this location, the volatile component of the profile exhibits a departure from that of the initial survey and the subsequent studies. The data indicates a significant increase of Stoddard concentration at the depth of 45 feet bgs. Although the concentrations at 50 feet to 52.5 feet bgs show an increase from the survey of September 2000, they exhibit a marked decrease from the initial study [April 1995].

Extractable Component [C10 – C28]

At this location, the extractable component of the profile exhibits a departure from that of the initial survey and the subsequent studies. The data indicates a significant increase of Stoddard concentration at the depth of 45 feet bgs. Although the concentrations at 50 feet to 52.5 feet bgs show an increase from the survey of September 2000, they exhibit a marked decrease from the initial study [April 1995].

Soil Characteristics

Laboratory analytical data supports the field observation of a clay layer at a depth of 51 feet [impact count of 73]. An indication of a transition from sand to clay is evident at a depth of 51 feet bgs. Unlike location B-1, the Stoddard odor at B-2 is only 'slight' and is evident at sampling

depths of 10', 45', and 51' bgs. There was a 'hint' of Stoddard at the 50-foot depth. Stoddard odor was not evident at the 35' sampling depth.

6.2.3 Location B-4

Volatile Component [C6 – C10]

The volatile component profile of the recent sampling is not consistent with the historical record. Moreover, the three surveys [April 1995, August 1998, and September 2000] show little consistency with each other. However, when considering total concentration throughout the sampling profile, the current survey indicates a concentration reduction in the volatile component [-90.6%] when compared to the initial study of April 1995.

Extractable Component [C10 – C28]

The extractable component profile at this location is consistent with the volatile component profile for the recent survey. However, when considering the historical record, the relationship between volatile and extractable components is inconsistent. A comparison of the total concentration of the extractable component in the recent sampling survey, to the historical record of extractable component data, indicates a significant decrease in Stoddard concentration. When compared to the initial study [April 1995], the concentration reduction is noteworthy [-85.0%].

Soil Characteristics

Clay is encountered at the first sampling depth of ten feet. The clay exhibits a gray tint and does not have an odor of Stoddard solvent. Brown sand is found at 25 feet bgs. Again, there is an absence of Stoddard odor. The sand is tightly paced with an impact count of 71. Clay is again encountered at the 45-foot depth bgs. At an approximate depth of 40 feet bgs, the tailings have a noticeably 'machinery' odor.

6.2.4 Location B-9

Volatile Component [C6 – C10]

Except for one occurrence, the concentrations of Stoddard [volatile component] from all historical surveys are low [less than 250 mg/Kg]. The only sample with a Stoddard concentration greater than these is from a depth of 45 feet [B-9-45], from the recent survey. The Stoddard concentration in this sample is 6,600 mg/Kg. Stoddard solvent was not detected at the other sampling depths [10' and 20' bgs]. Considering the entire historical record, out of 12 samplings at this location, only one [recent survey at 45' bgs] is significantly high and inconsistent with the established record.

Extractable Component [C10 – C28]

As with the volatile component data, the current survey, except for the sample at 45' bgs, is consistent with the historical record. All other Stoddard concentrations are extremely low [less than 150 mg/Kg in all surveys]. However, in the recent survey, one sample at a depth of 45' bgs is inconsistent with the historical trend [11,900 mg/Kg].

Soil Characteristics

This location is somewhat similar to the conditions found at B-4. However, at B-9 less clay is found at the uppermost sampling depth [10' bgs]. Sand is found at the mid-depth of 20 feet bgs and indicates a transition to clay. The odor of Stoddard is absent in the samples obtained at the depths of 10' and 20' bgs. However, there is a slight Stoddard odor at the sampling depth of 45' bgs. The clay at 45 feet is of good quality and density [impact count of 38].

6.2.5 Location B-11

Volatile Component [C6 – C10]

At a depth of 50 feet, B-11-50 exhibits a concentration of 7,310 mg/Kg. This is consistent with the survey of September 2000 [5,800 mg/Kg]. However, in the 1995 study a concentration of 32,000 mg/Kg was detected just three feet higher in the profile [47 feet]. The corresponding sample in the recent survey contains 1,180 mg/Kg of Stoddard. This may suggest a continuing downward migration to the clay layer. The volatile component is essentially absent down to 40' bgs with concentrations of 1.01 mg/Kg and 'non-detect' at depths of 25' and 40' bgs respectively. However, when considering the initial study, there has been a reduction in Stoddard concentration [-73.5%] in the location profile.

Extractable Component [C10 – C28]

The Stoddard solvent extractable component distribution dynamic is very similar to that of the volatile component in the current study and the historical record as well. In the extractable component, a high concentration [37,000 mg/Kg] was detected at 47' bgs in the April 1995 study, with no Stoddard detected at 50' bgs. In the current study, the concentration at 47' bgs [19,650 gm/Kg] is significantly reduced. Moreover, the concentration now detected at 50' bgs [10,800 mg/Kg] not only indicates a downward migration to the clay layer, but also indicates a significant reduction in concentration [-44.7%].

Soil Characteristics

Sand is found at the upper three sampling depths. A mixture of sand and clay is found at 50 feet bgs. The only sample that exhibited a 'slight' odor of Stoddard solvent was from the depth of 50 feet bgs. Stoddard odor was absent at all other sampling depths. However, a 'machine' odor was evident in these samples. The clay / sand at 50 feet bgs is dense [impact count of 74].

6.3 AREA: C

6.3.1 Location C-1 [point of release]

Volatile Component [C6 – C10]

The profile of the volatile component in the recent survey is consistent with those of previous investigations. The only exception is the moderate concentration of Stoddard solvent [1,130 mg/Kg] found at the sampling depth of 45' bgs. Other than this single event, the profile is identical to all other sampling surveys. The overall trend is a significant reduction in Stoddard concentrations. The laboratory data indicates the contamination is limited to a depth less than 45 feet below ground surface. Compared to the initial study, there is a significant reduction [-63.2%] in Stoddard volatile component at this location.

Extractable Component [C10 – C28]

The recent survey results correspond directly with the volatile component profile at this location. Moreover, Stoddard is not detected at the depths of 60 – 65 feet bgs. Compared to the initial study, a trend of decreasing Stoddard concentration is observed [-49.8%]. The analytical data shows an unusual relationship between volatile and extractable concentrations. That is, usually the two components are similar in concentration with the volatile value always lower. However, in the recent survey at C-1, the reverse is evident with a notably higher concentration of the volatile component.

Soil Characteristics

Direct field observations indicate that sand is encountered at a depth of 15 feet bgs. This sample exhibits a 'slight' Stoddard odor. Hard clay is found at a depth of 40 feet and 65 feet bgs [impact counts of 32 and 58 respectively]. A transition from clay to sand is found at 45' bgs. Very hard-packed sand / clay is found at a depth of 60 feet bgs [impact count 104], and total clay is found at 65 feet bgs, with an impact count of 58. Stoddard odor is not detected below 15 feet in depth.

6.3.2 Location C-4

Volatile Component [C6 – C10]

Essentially, the volatile component of Stoddard solvent has not been detected at this location. Historically, and including the recent survey, Stoddard concentrations have ranged from 'non-detection' to 1.47 mg/Kg.

Extractable Component [C10 – C28]

Stoddard solvent [extractable component] is not detected at any depth in the recent survey. This is consistent with the historical record. Stoddard has not been detected at any depth in all surveys.

Soil Characteristics

'Construction' sand is encountered at a depth of 15 feet bgs. Good quality brown clay is seen at 40 feet bgs [impact count of 25]. At 45 feet bgs, a transition from clay to sand is evident. This area is dense with an impact count of 55. Stoddard odor was absent in all samples.

6.4 AREA: D

6.4.1 Location D-1 [point of release]

Volatile Component [C6 – C10]

The profile of the volatile component data is consistent with the initial study [April 1995], however, not with the surveys of August 1998 or September 2000. Notwithstanding, the overall trend is a significant reduction [-42.6%] in Stoddard concentration from the initial survey.

Extractable Component [C10 – C28]

The extractable component profile at this location is inconsistent with the historical record. However, a slight reduction in concentration [-9.1%] is indicated when comparing the total concentration of Stoddard solvent [extractable component] in the recent survey profile data to the initial characterization of April 1995.

Soil Characteristics

A transition from clay to course sand is found at the 15-foot depth. This sample exhibited a 'slight' Stoddard odor. The sample from 35 feet bgs is completely course sand and highly compacted [impact count 127]. This sample contained a 'hint' of Stoddard odor. Clay is found again in all remaining samples – depths of 41.5', 43', and 44.5' bgs. Stoddard solvent odor is absent at all these sampling depths. The clay at depths of 43' and 44.5' bgs is dense with an impact count of 70 each.

6.4.2 Location D-2

Volatile Component [C6 – C10]

The volatile component profile is not consistent with the historical record. However, the overall trend is a reduction [-68.7%] in Stoddard concentration [volatile component] when compared to the initial survey of April 1995. When considering each of the surveys [April 1995, August 1998, and September 2000], the current study indicates a continued downward migration and reduction of Stoddard solvent.

Extractable Component [C10 – C28]

Similar to the volatile component data, the profile of the extractable component for the recent study is not consistent with the previous surveys. A very slight reduction [-0.5%] is evident when comparing the total extractable component concentration to the initial survey of April 1995.

However, when considering each of the surveys [April 1995, August 1998, and September 2000], the current study indicates a continued downward migration and reduction of Stoddard solvent.

Soil Characteristics

A transition condition [sand to clay] is found at a depth of ten feet bgs. The odor of Stoddard is absent. A construction-like sand is found at the 25-foot and 35-foot sampling depths. There is no Stoddard odor at 25' bgs. The sample at 35' bgs had a 'hint' of Stoddard. The deepest sample [45 feet bgs] is composed of medium to fine sand; brown in color, and the odor of Stoddard is absent. The sand at the 35-foot depth is well packed with an impact count of 103.

7.0 Discussion

Since the initial sampling locations can not be re-sampled exactly in subsequent surveys, it is not possible to predetermine whether a subsequent sampling shaft is positioned in an area of higher / lower concentration, at the lateral limit of the contamination field, in an area of contaminant channeling, or accurately represents the true characterization of the contamination field. Each of the historical survey profiles provides an accurate representation of the field of investigation at the time of sampling – a 'snap shot.' For this reason, relying solely on a direct point-to-point comparison of historical sampling data to determine the current status and potential trend of natural attenuation activity can result in a misleading conclusion. Therefore, to minimize the possibility of this effect, and to provide a more accurate determination of the subsurface conditions, the primary approach of this report is two-fold: [1] examine the dynamics of each sampling location [drilling shaft] as a whole and compare to the historical record; and, [2] determine the impact of this comparison on the entire investigative activity to date. The secondary approach is a point-to-point comparison of the September / October 2005 survey data with that of the initial characterization of April 1995 to determine the mechanics of the changes indicated by the profile approach.

Each drilling shaft, or sampling location includes between three and six sampling points. Instead of comparing the historical record point-to-point as the sole analysis, the sampling location data is examined as a whole and a 'profile' of the sampling location is developed. This profile is then compared to profiles of corresponding sampling locations in the historical record. The profile of a sampling location is defined by the unique relationship between Stoddard concentration and depth. The initial sampling plan [survey April 1995] was designed with sampling locations positioned on concentric circles around the designated source of the Stoddard release. In an effort to maintain a constant radius from the source location, subsequent sampling locations have been positioned along the original circle where possible, and as close as practical to the original drilling site, usually within approximately three to five feet.

Five surveys have been completed. The initial characterization was performed in April of 1995, and was designed to locate and determine the extent of soil contamination from Stoddard solvent. This characterization consisted of 46 locations and involved multiple subsurface samplings. These included direct soil recovery for analytical determinations and the use of Cone Penetration Test/Rapid Optical Screening Tests [CPT/ROST]. The second study was completed in May 1997. This survey consisted of limited sampling [Area A only] to determine whether natural attenuation, particularly biodegradation, is taking place and if the conditions are suitable for long term effectiveness of biodegradation as a selected remedial technology.

The third investigation was conducted in August 1998. Twelve of the initial sampling locations were selected that would best describe any cross-field changes in the Stoddard impacted soils [Areas A, B, C, and D]. Fifty-one soil samples were collected for analytical determinations. The following survey [September 2000] was conducted to determine changes in the contamination field and to monitor the progress of natural attenuation. As in August 1998, the September 2000 study included the same full-field survey [12 sampling locations and 51 samples]. Since the May 1997 survey included only a small portion of the entire area of investigation, it will not be considered significantly in this report. This discussion includes the complete historical study

record as represented by the data from the full-field surveys of April 1995, August 1998, September 2000, and September / October 2005. However, the emphasis is on the comparison of the initial study [April 1995] and the current study [September / October 2005]. See Table 3 and Figures 3 and 4.

As indicated earlier, the primary approach of this report will not be solely the direct point-to-point comparison of the historic record, but to consider the entire sampling location as a whole, creating a 'profile' of the soil conditions at each location. These profile comparisons will, in turn, define the changes and trends in each of the separate release areas. Finally, the changes and trends of these areas will characterize the entire study area and define the progress of natural attenuation. In addition, to support the findings of the profile comparisons, a secondary [point-to-point], comparison is performed. This provides detail into the mechanics of the changes identified through the profile comparison approach.

7.1 Sampling Location Profile Analyses

7.1.1 AREA: A

Area A is the location where the roll straightening units were located in the tube mill [Building 112A]. Stoddard solvent was delivered to this area through small diameter over-head piping. After descending to the floor along a building column, the piping continued directly below the floor to each unit. The source of the release was one of these sub-floor connections. See Figure 2.

7.1.1.1 Sampling Location: A-1 [point of release]

The profile of this location is consistent with all previous surveys [including May 1997]. All surveys indicate the greatest concentration of Stoddard is at the 30-foot depth [sample A-1-30]. In fact, in the September 2000 survey, the highest concentration of all surveys [51,000 mg/Kg] is

an extractable component, at this depth. Although the volatile component at this depth in the recent survey shows little change from the previous survey [September 2000], the extractable component exhibits a remarkable decrease in concentration when compared to the survey of September 2000.

When compared to the initial survey [April 1995], the profile of total volatile component concentration indicates a significant reduction of 80.8%. The extractable component profile indicates a decrease of 75.0% for the same comparison. Historically, this location has shown some variation that indicated an increase in concentration [September 2000]. Because this area is the initial point of release, the concentrations are the greatest in the area and therefore can be more variable. In addition, the field observations indicate that the soil profile is sand at the surface continuing downward with clay appearing at the depth of 30 feet bgs. This corresponds to the analytical data as well. Stoddard solvent is not detected below the 30' depth bgs. Sand would facilitate a downward migration as opposed to clay. Therefore, the 'plume' in the sandy portion of the sampling column could be quite narrow. This contributes to the possibility of variation since the exact location of the release can not be known and the precise sampling points can not be duplicated. In addition, the significant decrease in extractable component concentration may be attributed to biodegradation of the longer carbon chains into shorter chains. This may also, explain the slight increase in the volatile component. It would appear that the rate of biodegradation of the shorter chain is nearly equal to the rate of long chain destruction.

When considering the total Stoddard concentration profile of the initial survey [April 1995], and that of the recent survey, there has been a reduction of 78.2% at this location. See Table 4.

7.1.1.2 Sampling Location: A-3

This location is approximately 43 feet from the initial release point. Because this area is laterally removed from the higher concentrations of the initial release point, the progression of Stoddard

reduction is more evident. The historical record clearly indicates two characteristics. The first is a vertical migration of the Stoddard contamination down to and terminating at the clay layer at a depth of 40 feet bgs. This is clearly evident in all four surveys. The second is a progressive reduction of Stoddard concentration [to nearly non-detect] through September 2000. However, the recent study indicates a significant increase in Stoddard presence at the clay layer. This may be attributed to [1] collecting at the clay layer over the past five years, or [2] the recent drilling location more accurately intercepted the Stoddard release field. Notwithstanding, the overall change in this location is a decrease in Stoddard total concentration of 57%. See Table 4.

7.1.1.3 Sampling Location: A-11

Location A-11 is approximately 97 feet from the initial release point. Since April 1995 the concentration of the volatile component of Stoddard solvent has been no greater than 0.60 mg/Kg. In fact, 50% of the analyses indicate 'non-detection.' Until the recent study the extractable component has never been detected. See Table 3. Non-detection at A-11 is consistent with the finding at location A-9 of the initial characterization in April 1995. A-9 is the same distance as is A-11 from the point of release, however, located approximately 90 degrees to the east on the constant radius circle. See Figure 2.

During the 2005 survey, refusal was experienced twice during the drilling at this location. Upon examining construction drawings, it was determined that Draw Bench foundations were underlying the existing floor. Sampling was completed successfully by drilling between two Draw Bench foundations. Considering the historical use of Stoddard solvent [and other lubricants] at these Draw Bench locations, the detection of 10.2 mg/Kg of the longer carbon chain is expected to be local contamination and not associated with the primary release. Moreover, the distance from the primary release and the history of 'non-detection' would suggest the impracticality of this minor concentration being associated with the release at A-1.

7.1.2 AREA: B

This area is the location of the open dip tanks previously associated with tube production. These large tanks were maintained with Stoddard solvent in which racks of aluminum tubes were dipped and drained in preparation for shipping. The tanks were constructed of concrete with multiple connections of large diameter [10" and 12"] steel pipes from the Stoddard recovery and distillation building. Due to the size and configuration of these concrete tanks, Area B may have been the site of multiple Stoddard releases. See Figure 2.

7.1.2.1 Sampling Location: B-1 [point of release]

During demolition of the Stoddard dip tanks, location B-1 was identified as the initial source of release based on direct soil observations. This would have been the southwest corner of the structure. The greatest concentrations in the entire investigation to date were found here during the initial characterization. Because this is a probable site of release and the concentrations are high, a variation in historical sampling profiles is evident for both volatile and extractable components. In the first five-year period of monitoring, there was an overall reduction of profile concentrations of volatile and extractable components of 90.3% and 62.3% respectively. The current survey shows a continuing reduction [-68.9%] in the volatile component. However, the extractable component has increased slightly [+3.3%]. An analysis of the profiles from the interim surveys [1998 and 2000] indicates a possible downward movement of Stoddard solvent resulting in a significant concentration found at 45' bgs in the recent survey. This would contribute significantly to the 'apparent' increase in the presence of Stoddard solvent.

Considering the profile of total Stoddard constituents in the recent survey, since April 1995 there has been an overall reduction of 48.5%. See Table 4. Soil observations confirm the analytical data indicating a dense clay layer at a depth of 45 feet bgs and continuing to at least 48 feet bgs.

7.1.2.2 Sampling Location: B-2

This location is approximately 30 feet from the designated site of Stoddard release [B-1]. There are notable considerations at location B-2. Although there is variation between historical survey profiles, there is a general consistency in the relationship between sampling depths. Usually, the higher concentrations are found at the greater depths, which may be associated with a lateral influence from location B-1. However, B-2 is located at what was the southeast corner of the Stoddard dip tank. The east end of the tank was the point where the large diameter steel lines from the recovery and distillation building entered the tank by way of various valving. The initial high concentrations [April 1995] of volatile and extractable components [55,000 mg/Kg and 53,000 mg/Kg respectively] at a depth of 50 feet bgs could indicate that location B-2 was a separate source. The field observations identify sand to a depth of 45 feet bgs, which supports a relatively rapid downward migration to a clay / sand layer where the high concentrations are found. Moreover, there is analytical support indicating a vertical migration at B-2. See Table 3.

In April 1995, volatile component concentrations at the depths of 50', 51', and 52.5' bgs are 55,000 mg/Kg, 14,000 mg/Kg, and 'non-detect' respectively. The concentrations at these depths in the September 2000 investigation are 2,000 mg/Kg, 1,800 mg/Kg, and 5,200 mg/Kg respectively. The corresponding concentrations at these sampling depths in the recent study are 8,010 mg/Kg, 12,700 mg/Kg, and 15,100 mg/Kg respectively.

The extractable component data indicates a similar occurrence. In April 1995, at the same depths, the concentrations are 53,000 mg/Kg, 11,000 mg/Kg, and 9.8 mg/Kg. Correspondingly, in the September 2000 study the concentrations are 6,000 mg/Kg, 6,400 mg/Kg, and 50,000 mg/Kg. From the recent study, the concentrations of the extractable component at these depths are 8,380 mg/Kg, 8,780 mg/Kg, and 23,900 mg/Kg respectively.

All these data profiles indicate a continued downward migration of the Stoddard in the soil to the clay barrier. A closer examination shows that in the recent study there has been a significant increase in volatile component concentration [$>100\%$]. However, the expected corresponding increase in the extractable component concentration does not occur. In fact, there is a substantial decrease in concentration [-52.2%].

This characteristic is found in other sampling location profiles. The significant decrease in extractable component concentration may be attributed to biodegradation of the longer carbon chains into shorter chains. This may also, explain the significant increase in the volatile component. It would appear that the rate of biodegradation of the longer chain is more readily accomplished when compared to short chain destruction.

Another observation from the September / October 2005 survey is the remarkable increase in Stoddard concentration at the 45' sampling depth. Just ten feet above this sampling depth there is an absence of Stoddard solvent. Two possibilities are evident from the data. First, there can be downward migration of higher concentrations at the ten-foot level. This would require complete degradation of Stoddard solvent at the more shallow depths. There is evidence of this. Second, there is a corresponding increase in Stoddard concentration at B-1 at the 45' bgs sampling point. The downward migration at B-1 may have influenced the conditions at B-2. It's possible that a lateral migration has taken place at the 45-foot depth, along the clay layer.

Over the first five-year period since the initial characterization there was an 82.8% reduction in volatile and an 8.4% increase in extractable components. This may be associated with shorter carbon chains being more readily available for biodegradation, and a possible influence from location B-1. This condition appears to be transitioning, possibly due to location B-1 influence. Comparing the recent survey with the initial study indicates a rather stable condition or equilibrium of the volatile component [$+1.0\%$] and a modest increase in the extractable component of 24.4 percent. Considering the total Stoddard concentration in the sampling

location profile, since April 1995 there has been an increase of 12.3% in Stoddard concentration. See Table 4.

7.1.2.3 Sampling Location: B-4

This sampling location is positioned a few feet in front [north], near the center of where the Stoddard dip tank was located, and approximately 42 feet from the designated site of the release in this area [B-1]. This location is one of variation that may indicate its position at the lateral limit of the contamination field. Considering the concentration of the volatile component, there is little consistency throughout the historical record. In survey September 2000, the profiles for volatile and extractable components are consistent. However, the relationship between volatile and extractable components in the historical record is varied. Usually, this relationship exhibits a high degree of correlation. In the initial characterization of April 1995, this is true at this location. Over the first five-year monitoring period, this relationship at B-4 had become varied. However, the September / October 2005 survey shows a return to stability regarding the relationship between volatile and extractable components.

There are several factors that singularly or in concert may influence the analytical profile of this sampling location. Primary of these is the location of the drilling site itself. As indicated earlier, an attempt is made in each survey to maintain the original radius from the designated point of release. However, if B-4 is located at the lateral extent of the contamination field in Area B, relocating the drilling site, by only a few feet, in subsequent surveys could result in a significant variation of the sampling column profile. Additionally, B-4 is located very near the underground Stoddard transfer lines and is under the path of the overhead crane that transported tubing to and from the dip tank. Influence from surface contamination is more likely in this area.

Moreover, clay is encountered at the relatively shallow depth of 10 feet. As the historical record has shown, clay does not permit the downward migration of Stoddard solvent. In the September

2000 study the sample from 10 feet bgs exhibited a Stoddard odor. This observation is supported by the analytical data [37,000 mg/Kg, Table 3]. However, a concentration similar to this is not seen in previous surveys at this depth. This could suggest a thin clay lens is located in this area, which has collected, over time, small amounts of surface contamination, preventing a downward migration. It may be possible that the drilling at location B-4, during the September 2000 survey, may have penetrated such an area of collected surface contamination, where drilling during previous surveys had missed.

However, the Stoddard concentration in the September / October 2005 survey shows a significant reduction in both the volatile [-90.6%] and extractable [-85.0%] components. This could be addressed by the continued biodegradation of Stoddard solvent at this location. When considering the entire sampling column profile, there is an 88.1% decrease indicated for total Stoddard concentration in the September 2005 survey data. See Table 4.

7.1.2.4 Sampling Location: B-9

The sampling location of B-9 is some 78 feet from the initial release point [B-1]. Historically, the concentrations are extremely low, the profiles are similar, and indicate very little Stoddard impact over the first five-years of monitoring. This area is clearly beyond the influence of location B-1. Moreover, the results of the recent sampling survey indicate, for the most part, that conditions have not changed. However, for the first time a significant concentration of Stoddard has been detected at a single sampling point. In the recent survey, the sample from the 45-foot depth shows a volatile and extractable component of 6,600 mg/Kg and 11,900 mg/Kg respectively.

It's interesting to note that, at B-9 [which is not near the Stoddard dip tanks or under the crane path], the historical record does not indicate a notable Stoddard concentration at any depth. Direct field observation of the sampling indicates that a good quality clay layer exists at the depth of 45 feet bgs, and for the first time a significant Stoddard presence has been detected. This may

be the case of an anomaly or cross contamination. However, after ten years of migration it is possible that the Stoddard from the B-1 release has reached B-9 along the clay layer.

If the volatile and extractable Stoddard components at the 45-foot depth in the current survey are considered an anomaly, omitting these values result in an overall reduction of 77.8% in the profile when compared to the initial study in 1995. This is more consistent with the historical record and practical possibilities. However, after ten years of migration along a clay barrier, there is a possibility that B-9 may be the current lateral extent of the contamination. A future survey may be able to confirm this.

Considering no anomalies, the entire profile as a whole exhibits an increase in total Stoddard concentration of 34.5 percent. See Table 4.

7.1.2.5 Sampling Location: B-11

This location is approximately 75 feet from B-1, the designated site of the release in Area B. Historically, this location has been and continues to be virtually Stoddard-free down to the depth of 40' bgs. However, vertical migration from the 47-foot depth to the clay layer at 50 feet bgs has clearly occurred in both the volatile and extractable component profiles in the historical record. This ten-year progression has occurred at B-2 as well. The analytical data from the current survey [September / October 2005] indicates that this trend continues to occur.

At location B-11, the volatile component concentration at 47 feet bgs in April 1995, and September 2005 are 32,000 mg/Kg, and 1,180 mg/Kg respectively. However, at the depth of 50 feet bgs for the same surveys and constituent, the concentrations are 4.8 mg/Kg and 7,310 mg/Kg respectively. A corresponding downward migration is also evident in the extractable component profile: at 47 feet bgs, the concentration is 37,000 mg/Kg [April 1995], and 9,650 mg/Kg in September 2005; and, at 50 feet bgs 'non-detect' [April 1995], and 10,800 mg/Kg in the

September 2005 survey. Moreover, at the 50-foot sampling depth, Stoddard solvent was practically not detected until the September 2000 survey.

In addition to the apparent vertical migration to the clay layer, there has been a significant reduction in the volatile component concentration profile [-73.5%], and the extractable component concentration profile [-44.7%]. Considering the sampling location as a whole, the profile indicates a total Stoddard concentration reduction of 58.1% from the initial characterization of April 1995. See Table 4.

7.1.3 AREA: C

Stoddard solvent was reclaimed from the dip tanks [Area B] in a distillation unit [Building 124]. This building was a freestanding structure and was located approximately 60 feet west of the southwest corner of Building 112A [see Figure 2]. The dip tanks were serviced by, 10" and 12" diameter lines. Area A received Stoddard through a 2-inch line. These lines ran under the roadway between Buildings 112A and 124. The release in Area C occurred in the 2-inch line, which was just below the roadway. The larger pipes are at a depth of more than ten feet at this location. Just inside Building 112A, the 2-inch line became vertical along a building column for delivery to Area A by way of the overhead system. The release in Area C was located just a few feet outside of Building 112A. See Figure 2.

7.1.3.1 Sampling Location: C-1 [point of release]

The Stoddard release at this location is relatively minor. The concentration profiles for volatile and extractable components are consistent with each other in the recent survey and in the historical records well. Apparently, the release was confined to a shallow depth with the greater concentrations being found at a depth of 15 feet bgs [2,220 mg/Kg volatile component, and 2,500 mg/Kg extractable component, from the recent survey]. Sand is found at this depth that exhibits a

'slight' Stoddard odor. A good quality, brown clay is found at the 40-foot bgs sampling depth. Stoddard odor is 'slight' at this depth. However, all four sampling depths continuing down to the final depth of 65 feet do not exhibit any Stoddard odor.

Historically, the volatile component concentration at all sampling depths between 40' and 65' bgs, in all surveys, range from 18 mg/Kg to 'non-detection.' However, the September 2005 study found a volatile concentration of 1,130 mg/Kg at a depth of 45' bgs. The corresponding result in the September 2000 study is 0.16 mg/Kg. The results in the current study [September 2005] at the sampling points immediately above and below this 45' sample are 0.8 mg/Kg and 'non-detect' respectively.

Similarly, the historical extractable component concentration range is 14 mg/Kg to 'non-detection.' However, corresponding to the volatile concentration in the recent study, an extractable component concentration was detected. The previous survey data, and the current survey data above and below this sample are 'non-detect.' Additionally, the extractable component does not exhibit the usual relationship to the volatile counterpart. Considering this sample to be an anomaly, it's clear that the contamination continues to remain above the 40-foot depth. This may be due to the relatively minor release, and biodegradation as well.

The volatile component concentration profile indicates a reduction of 63.2%, and, the corresponding extractable component concentration reduction is 49.8%. Considering the entire sampling profile for the September / October 2005 monitoring study, there is a total Stoddard concentration reduction of 58.3% from the initial characterization of April 1995. See Table 4.

7.1.3.2 Sampling Location: C-4

This location is approximately 40 feet from the designated initial release point [C-1]. Since the April 1995 survey, and including the recent study, the concentration of volatile hydrocarbons have

either been equal to or less than 1.47 mg/Kg or not detected at all. In fact, Stoddard solvent has not been detected in 50% of the samples over the past ten years. The extractable component has never been detected and continues to be 'non-detect' at this location. This is consistent with the findings at the C-5 location during the initial characterization in April 1995. Sampling location C-5 is one of the original sampling sites that is approximately 37 feet from C-1 and 90 degrees to the east of C-4. See Figure 2.

The lack of Stoddard solvent detection at this location is most probably due to the relatively small release at C-1. It is interesting, however, that when Stoddard is detected, it's at the 40' depth or greater. Also, only the volatile component is detected.

7.1.4 AREA: D

Building 124 was a small building [40 feet long], approximately 60 feet off the southwest corner of Building 112A. This is Area D. See Figure 2. Building 124 housed the distillation unit for the recovery, distillation, and return of Stoddard solvent from the dip tank in the tube mill [Area B]. The distillation unit was located in the northwest corner of the building. In January 1995, the four 10,000 gallon Stoddard underground storage tanks, adjacent to Building 124, were removed. At that time, evidence of a small Stoddard leak was found on the building concrete foundation at the corner near the distillation unit. The tank field was not involved. Subsequently, the building and foundation were removed. A sheet of biomat was installed at the approximate depth of six feet. Clean fill was used above the biomat. The biomat covered the area of the building foundation.

7.1.4.1 Sampling Location: D-1 [point of release]

Location D-1 corresponds to the northwest corner of Building 124, the location of the Stoddard distillation unit. Profiles of the volatile and extractable components from the recent monitoring study [September / October 2005] are consistent with each other, but, not with the previous three

surveys. However, the range of concentrations from the studies of August 1998 and September 2000 are similar: both are significantly reduced from the initial characterization of April 1995. See Table 3.

The tank excavation was adjacent to the foundation where the distillation unit was located. Soil evidence indicated the leak was localized and not involving the tank field.

Sampling field observations support the analytical data in that clean fill is found to be above the biomat with odorous soil just a few feet below the mat. At 41.5 feet bgs, the transition to nearly solid clay is found. In the previous survey [September 2000], a 'slight' Stoddard odor was detected at this depth. However, Stoddard odor is absent in the current survey sample. Good quality clay and sand is encountered at the depths of 43' and 44.5' bgs. Stoddard odor is absent in these samples. However, there was a 'machine' odor present. This may be due to residual components of degraded solvent. However, there was no gray color that is usually found in conjunction with previously degraded Stoddard contamination.

The ten-year reduction in volatile and extractable component profile concentrations is 42.6% and 9.1% respectively. The overall sampling location profile total Stoddard concentration reduction is 32.2%. See Table 4.

7.1.4.2 Sample Location: D-2

When the foundation of Building 124 was lifted in large sections, a narrow band of soil discoloration was observed leading from the corner where the distillation unit was located [D-1], to the opposite southern corner. D-2 is located at this southwest corner of Building 124, approximately 40 feet from D-1.

As with D-1, clean fill is found above the biomat. Only at the depth of 35' bgs was a 'hint' of Stoddard odor detected. In all other samples, Stoddard odor was absent.

The evidence of possible downward migration continues at this location. See Table 3. At the depth of 25 feet bgs, the volatile component concentration in surveys April 1995, September 2000, and September 2005 are 8,200 mg/Kg, 5,200 mg/Kg, and 37 mg/Kg respectively. At the depth of 35 feet bgs, the concentrations are 4,500 mg/Kg, 6,300 mg/Kg, and 3,240 mg/Kg respectively. The same conditions are found regarding the concentrations of the extractable component. At the depth of 25 feet bgs, the extractable component concentrations are 6,600 mg/Kg [survey April 1995], 3,300 mg/Kg [survey September 2000], and 124 mg/Kg [September 2005]. The corresponding concentrations at 35 feet bgs are in turn 3,100 mg/Kg, 4,400 mg/Kg, and 4,790 mg/Kg. Although the concentration change is not a major significance in past surveys, the data does suggest a slow migration over the first five-year period. However, considering the data from the recent survey, a downward migration is most evident. Additionally, more compelling is that in all past surveys, Stoddard solvent had not been detected at the clay layer that is at a depth of 45 feet bgs. Only in the current survey [September / October 2005] has Stoddard been detected at this depth in concentrations that support downward migration to the clay layer [volatile component = 6,020 mg/Kg, extractable component = 10,800 mg/Kg].

The profiles of the volatile and extractable component concentrations for the September / October 2005 survey are consistent with each other, but, not with the historical record [Table 3]. This can be explained by the characteristic of continual downward migration and degradation of the Stoddard solvent.

When compared to the April 1995 characterization, the volatile component concentration profile indicates a reduction of Stoddard by 68.7%. The profile of the extractable component concentration indicates a 0.5% reduction. Considering the profile of the entire sampling location,

compared to the initial characterization [April 1995], there is a 45.0% reduction in total Stoddard solvent. See Table 4.

7.1.5 Summary of Sampling Location Profile Approach

Developing profiles of each sampling location is a unique method of viewing the dynamic of the entire sampling column. Comparing the profiles from the September / October 2005 survey with those of the initial characterization of April 1995, provides the overall changes in these areas over time. When considering all the sampling locations within each study area, a site-wide reduction in Stoddard concentration is evident. Compared to the initial study, the average reduction in concentration in each area is: Area A, 67.6%; Area B, 29.6%; Area C, 58.3%; and Area D, 38.6%. See Table 4.

These reductions are not as significant as those of September 2000. Although the general trend in the entire site is one of decreasing concentration, Area B remains the most variable. Areas A and C appear to be stabilized when compared to the previous survey. The destruction of Stoddard in Areas B and D appear to have slowed. However, this may be a false representation due to the marked downward migration of the contaminant in the past five years. This migration has elevated the concentrations of some sampling points that were relatively lower in the previous survey. This would also artificially suppress the apparent rate of destruction of Stoddard solvent.

7.2 Point-to-Point Analyses

In addition to the 'profile' approach, analyses are performed to identify the mechanism by which the changes have occurred in the analytical record of Stoddard concentrations throughout the entire area of study. As in the profile approach, to more accurately determine the changes in the contamination field, volatile and extractable components are considered separately. This aids in clarifying the 'mechanics' of the concentration changes as well. To optimize the finding, a point-to-point comparison is performed utilizing the database of the April 1995 survey [initial

characterization], and that of the September / October 2005 survey [most recent]. The analysis consists of three parts. The first determines and identifies the number of sampling points that have: remained 'non-detect', those that have 'improved' to non-detect, and, those that exhibit concentrations that have been reduced to less than 1,000 mg/Kg. The second part determines and identifies the number of sampling points that exhibit specific concentration reductions. Part three involves the distribution of each database over a range of concentration categories.

To simplify these analyses, a specific definition of 'non-detect' is established. Considering the wide range of concentrations in the data record including all surveys, the significant number of very low concentrations, and, the regulatory accepted concentration of 1,000 mg/Kg, 150 mg/Kg is considered essentially 'non-detect.'

Additionally, to further characterize the subsurface conditions and identify more accurately the mechanism of the changes and trends in concentrations, the database is examined considering the volatile component [C6 – C10], and the extractable component [C10 – C28], data separately. Thus, 51 sampling points in each survey results in 102 comparison pairs.

The following are lists of sampling points grouped with each category as a result of the comparison between the April 1995 [initial study], and the September / October 2005 surveys.

Volatile and extractable component concentration ranges are considered separately and indicated as 'V' [volatile, C6 – C10], and 'E' [extractable, C10 – C28]. An example is: A-3-15[E], where 'A' indicates the investigative area, '3' indicates the sampling location within the area, '15' identifies the actual sampling depth in feet bgs, and '[E]' indicates the extractable component of the database. The [] may also include both volatile and extractable components: [V,E].

7.2.1 Part 1 – Locations Remaining at and 'Improved' to Non-Detect, and Those Reduced to Less Than 1,000 mg/Kg

7.2.1.1 Sampling Points That Have Remained at 'Non-Detect' [<150 mg/Kg]

In comparing the September / October 2005 study with the April 1995 characterization, the following sampling points are found to have remained unchanged where Stoddard solvent was not detected. See Table 5.

| | | |
|--------------|--------------|-------------|
| A-1-58.5[E] | B-2-10[V] | C-1-40[V,E] |
| A-1-60[V,E] | B-2-35[V,E] | C-1-60[V,E] |
| A-3-55[V,E] | B-4-25[V,E] | C-1-65[V,E] |
| A-11-15[V,E] | B-9-10[V,E] | C-4-15[V,E] |
| A-11-40[V,E] | B-9-20[V,E] | C-4-40[V,E] |
| A-11-45[V,E] | B-11-25[V,E] | C-4-45[V,E] |
| | B-11-40[V,E] | |

As indicated above, 36 analytical comparison pairs, or 81.8% of the 'non-detect' locations in the April 1995 survey, have remained at 'non-detect.' This represents 35.3% of the entire sampling. With the exception of two locations, virtually all sampling points include both volatile and extractable components.

7.2.1.2 Sampling Points With Concentrations That Have Decreased to 'Non-Detect' [<150 mg/Kg]

In comparing the September / October 2005 survey with the April 1995 characterization, the following sampling points are found to have Stoddard concentrations that have been reduced to 'non-detect' [<150 mg/Kg]. See Table 5.

A-1-57[V,E] B-4-45[V,E] D-1-41.5[V,E]
A-1-58.5[V] D-2-10[V,E]
 D-2-25[V,E]

This listing indicates that 11 analytical comparison pairs exhibit a concentration reduction to 'non-detect' [<150 mg/Kg], which is 10.8% of the entire sampling. Other than one location, virtually all sampling points include both volatile and extractable components. It's interesting to note that sampling point A-1-58.5 appears on both this and the previous listing. This could indicate that the soil conditions at this location have improved more slowly than at the other sites, especially in view of the extractable component being reduced prior to the volatile component. This may be due, in part, to a possible influence from the location of the initial source of release, vertical migration, or, position of the sample drilling.

7.2.1.3 Sampling Points With Concentrations That Have Decreased to $<1,000$ mg/Kg
[>150 mg/Kg]

Considering the regulatory acceptable concentration of 1,000 mg/Kg, the following sampling points are found to have Stoddard concentrations that have been reduced to less than 1,000 mg/Kg, however, greater than 150 mg/Kg. See Table 5.

A-3-10[V,E] B-1-46.5[E] D-1-35[V]

Four analytical comparison pairs indicate that Stoddard concentrations at these sampling points have declined to less than 1,000 mg/Kg. Although this represents only 3.9% of the samplings, it is significant in that these are located in either initial release location [i.e. B-1, D-1], or closely associated to these locations [A-3], with significant concentrations in the initial study of 1995.

7.2.2 Summary: Part 1 – Locations Remaining at and 'Improved' to Non-Detect, and Those Reduced to Less Than 1,000 mg/Kg

Considering the volatile and extractable components of each sampling point, over the ten-year monitoring period, 35.3% of the sampling points have remained 'non-detect' for Stoddard solvent. Concentrations at 10.8% of the locations have been reduced to 'non-detect' [<150 mg/Kg], and, 3.9% have decreased to less than 1,000 mg/Kg. In the majority of cases, the volatile and extractable components have undergone concentration reductions in concert. However, a few locations exhibit reductions of one component following the other with time. Considering the accepted regulatory limit of 1,000 mg/Kg, 14.7% of the sampling points are reduced below this concentration. Combining this reduction with the historical non-detect determinations indicates 50% of the sampling field concentrations are less than 1,000 mg/Kg.

The same analysis applied to the results of survey September 2000 indicates 69.6% of the sampling field concentrations were less than 1,000 mg/Kg.

7.2.3 Part 2 – Identification of Sampling Points With Specific Concentration Reductions

This analysis of the point-to-point comparison indicates and identifies the number of sampling points that have experienced specific concentration reductions. Again, to take advantage of the longest monitoring period, the entire database is considered. Survey September / October 2005 is compared with the characterization of April 1995. See Table 5.

7.2.3.1 Reduction Range of 300 mg/Kg – 2,000 mg/Kg [5.9%]

A-1-15[V] A-3-40[E] D-2-35[V]

A-1-57[E] B-2-51[V]

A-1-58.5[V]

7.2.3.2 Reduction Range of 2,000 mg/Kg – 5,000 mg/Kg [6.9%]

A-1-57[V] B-1-25[E] C-1-15[E] D-1-35[V,E]
 B-1-46.5[E]
 B-2-51[E]

7.2.3.3 Reduction Range of 5,000 mg/Kg – 10,000 mg/Kg [12.7%]

A-3-10[V,E] B-1-15[E] C-1-15[V] D-1-41.5[V,E]
 B-1-40[E] D-1-44.5[V]
 B-4-45[V,E] D-2-10[E]
 D-2-25[V,E]

7.2.3.4 Reduction Range of 10,000 mg/Kg – 20,000 mg/Kg [12.7%]

B-1-15[V] D-2-10[V]
B-1-40[V]
B-1-45[V]
B-1-48[E]

7.2.3.5 Reduction Range of 20,000 mg/Kg – 40,000 mg/Kg [4.9%]

A-1-30[V,E] B-1-25[V]
 B-11-47[V,E]

7.2.3.6 Reduction Range > 40,000 mg/Kg [2.9%]

B-1-46.5[V] B-2-50[V,E]

7.2.4 Summary: Part 2 – Identification of Sampling Points With Specific Concentration

Reductions

As expected, the sampling points exhibiting the greatest reductions in Stoddard concentrations are found at, or associated with, a designated initial point of release. Moreover, included in these 31 'sites' of reduction, are 13 that exhibit only volatile component reductions and ten that show only extractable component reductions. Additionally, there are eight separate occasions where both volatile and extractable components are included in the same reduction range. It appears that the shorter molecular chain volatile component continues to be more readily accessible to biodegradation. See Table 5. However, the prior survey included 42 occasions of concentration reduction [volatile and extractable]. In the recent survey [September 2005], there were 38.

7.2.5 Part 3 – Distribution of Data Bases Over Specific Concentration Ranges

The profile analysis approach indicates an area-wide stabilization in the decline of Stoddard solvent concentrations. Also, the point-to-point analyses exhibit a reduction in the number of sampling locations that have shifted to a determination of 'non-detectable.' However, the reduction rate of Stoddard solvent in the higher concentrations remains mixed as in the previous survey. A third approach has revealed several notable characteristics. The entire database for surveys April 1995, September 2000, and the recent study [September / October 2005] are analyzed. The databases are subjected to specific concentration range categories that are narrower than those criteria used in the previous point-to-point comparison. Also, as with the previous analysis, each data point is separated into the volatile and extractable components.

The distribution of the databases of each survey over the concentration range categories is shown in Table 6. The concentration range categories are identified by three groups: [A] 'non-detect' to 1,000 mg/Kg; [B] 1,001 mg/Kg to 9,000 mg/Kg; and, [C] 9,001 mg/Kg to >70,000 mg/Kg. Group A includes two concentration range categories. Group B contains eight categories, and Group C contains six concentration ranges. Several interesting observations are seen in Table 6.

7.2.6 Summary: Part 3 – Distribution of Data Bases Over Specific Concentration Ranges

[1] The most remarkable observation is found considering the volatile component data. In 1995, the distribution of volatile data is quite uniform throughout groups B and C. However, in the survey of September 2000, the volatile component data in Group B is significantly fractioned. However, most notable is that the data in Group C is entirely absent. While there is a slight increase in the number of occurrences in Group B, the reduction in Group C is 100%. A similar observation is evident regarding the data for the extractable components. Again, there is a slight increase in the number of occurrences in Group B [survey September 2000]; however, there is nearly a 78% reduction in occurrences in Group C.

What is most notable from the recent survey [September 2005] is the moderate return of volatile component occurrences at the higher concentrations [Group C]. This directly corresponds to the increase in the occurrences of the extractable component [C10 – C28] also in Group C.

[2] There is a significant increase in volatile component occurrences in the higher concentrations ranges [3,000 mg/Kg – 9,000 mg/Kg], in Group B. These directly correspond to the decrease or static condition [no increase in occurrence], of the extractable occurrence of the same concentration ranges.

[3] The majority of extractable occurrences are associated with the higher and lower concentration ranges. In contrast, the majority of volatile occurrences are associated with the mid-range concentration ranges.

[4] Although there is a 27.7% decrease in the number of 'non-detect' occurrences between the 2000 and 2005 surveys, there appears to be an area-wide shift from the heavier molecular weights [longer carbon chain extractable component] to the lighter, short chain volatile component. One explanation may be that the shorter chains are more readily accessible for biodegradation and are destroyed in less time than the longer chain counter parts. However, as

the longer chains are broken down into smaller components, they may analytically 'appear' as volatiles and be falsely interpreted as an increase in Stoddard concentrations.

7.3 Discussion Summary

Through the above investigation and analytical procedures, the following is observed regarding the comparison of the September / October 2005 survey with the previous survey [September 2000] and the initial characterization of April 1995.

The sampling location profile approach has demonstrated reductions in Stoddard concentrations associated with each vertical sampling column, as a unit, in study areas: A, C, and D. Area B includes the greatest number of sampling locations. All but two exhibit reductions in Stoddard concentrations. Although there is an over all reduction in Stoddard concentration, site-wide, the rate of reduction appears to have slowed. However, this can be attributed to the downward migration of the contaminant resulting in elevated concentrations at sampling points that were reported previously as having low impacts from Stoddard solvent.

The point-to-point comparison indicates that, considering the separate volatile and extractable components, there has been a reduction in the number of 'non-detect' [<150 mg/Kg]. However, there has been an increase in the occurrence of locations with concentrations between 151 mg/Kg and 1,000 gm/Kg.

The sampling points exhibiting the greatest concentration reductions are the designated initial release points or locations closely associated with them. A downward migration is clear at two of the release locations with the greatest Stoddard concentrations. Also evident is the modest increase in the concentration at the lateral extent in these areas. The data clearly indicates that this is due to the impervious clay barrier that is located at an average depth of 52.5 feet bgs.

Subjecting the databases to concentration range categories reveals that the uniform distribution of both volatile and extractable components in the initial study [April 1995] is significantly fractionated in the September 2000 monitoring data including the significant elimination of the entire volatile component detection at the greater concentrations. The recent survey indicates a moderate return of these volatile occurrences at the higher concentrations [$> 9,000$ mg/Kg]. This would suggest a continued area-wide shift away from the heavier, long-chain extractable component to that of the lighter, shorter chain volatile.

Additionally, there is a significant increase in volatile component occurrences in the mid-range concentrations [3,000 mg/Kg – 9,000 mg/Kg]. These directly correspond to the decrease or static condition [no increase in occurrence], of the extractable component occurrence of the same concentration ranges. Again, this would suggest a continued area-wide shift away from the heavier, long-chain extractable component to that of the lighter, shorter chain volatile.

Moreover, the majority of extractable occurrences are associated with the higher and lower concentration ranges. In contrast, the majority of volatile occurrences are associated with the mid-range concentration ranges.

8.0 Conclusions

The use of Stoddard solvent at the Vernon facility was initiated in the early 1940's. Its use was terminated more than a decade ago. Considering the years of use, the opportunity for deep soil contamination or extensive lateral migration would be significant. However, neither case exists at this facility. The contamination field is completely contained at a relatively shallow depth and has been accurately defined.

8.1 General Condition

Historically, the entire ground surface has been continually covered with concrete, both inside and outside of Building 112A. After ten years of monitoring [five surveys], it is clear that the

vertical migration has been confined above a dense clay layer that exists at an average depth of 52.5 feet bgs. These surveys have also shown that the lateral extent of the contamination is not significant. However, recent data suggests that the existing lateral extent has experienced an increase in concentration of the contaminant in a few locations. This is supported by an indication of downward migration in the more heavily contaminated areas.

8.2 Sampling Location Profile Approach

The recent survey data from individual drilling locations were used to develop a survey profile of the concentrations at each specific location. These profiles were then compared to profiles of corresponding locations in the April 1995 characterization, and the previous survey [September 2000].

8.2.1 Area: A

The source of contamination was a focused point of release: a small diameter Stoddard delivery pipe just below the floor. The lateral extent has remained constant with slightly higher concentrations. Of the three sampling location profiles in Area A, two exhibit reductions in Stoddard concentration: 78.2% [location of release], and 57.0% [lateral extent]. Essentially, Stoddard solvent has never been detected at the third location.

8.2.2 Area: B

The release in this area is less focused because Stoddard solvent was utilized in a large concrete dip and draining tank. Historically, the surveys indicate the possibility of multiple source points within or near the dimensions of the tank. One sampling location in Area B has continually exhibited variable concentrations throughout the sampling profile. These data have indicated concentration reductions as well as increases over time. In the September 2000 study, the data from this location indicates an increase in concentration of approximately 57% since 1995. In the most recent survey, the data from this same location indicates a decrease of 88.1% over the same period of time.

The designated initial release point in Area B clearly indicates a downward migration that supports the variation in concentration at individual sampling points. Also, the evidence of downward migration supports the indication of increased concentration at the lateral extent of the contaminant.

The average reduction in Stoddard concentration in Area B is 29.6% from the 1995 initial characterization.

8.2.3 Area: C

As in Area A, the release in Area C is a focused point. Again, it involved the same diameter Stoddard delivery pipe that was directly below the concrete floor. The release was minor and the soil impact is significantly less than any of the other areas. There are two sampling locations in Area C. From the September 2000 study, at the designated location of the release, there is a Stoddard concentration reduction of 57.7%. Historically, Stoddard has never been detected at the second sampling location. In the September / October 2005 survey, this rate of reduction remains constant at 58.3% indicating little change. This may be due to the shallow depth of the contaminant and the very low release concentrations.

8.2.4 Area: D

The release in this area was a single source that possibly made contact with the soil in two locations. The source was above ground, through a building foundation. There are two sampling locations in this area. One is located at the designated point of release and the other at a possible secondary point of soil contact. The September 2000 monitoring profiles indicate a reduction in Stoddard concentrations of 48.9% [source of release] and 89.3% [second location]. The recent survey suggests a slowing of the destruction rate to 32.2% and 45.0%, respectively. Area D exhibits a downward migration that may explain the data representation of what appears to be a reduction in the Stoddard destruction rate.

8.2.5 Overall Area Concentration Reductions

The following are the average reduction in total Stoddard solvent concentration in each of the areas of study from the initial survey of April 1995 – Area A, 67.6%; Area B, 29.6%; Area C, 58.3%; and, Area D, 38.6%

8.3 Point-To-Point Approach

Although the sampling location profile approach clearly indicates a site-wide condition of transition in the soil concentration of Stoddard solvent, a point-to-point analysis of the database was performed to identify the components of these variations. Volatile and extractable data are considered separately. A comparison of the recent survey data with that of the April 1995 initial characterization and the previous survey [September 2000] is performed. This provides the longest monitoring time period.

These analyses indicate that 35.3% of the entire sampling field has remained essentially 'non-detect' [<150 mg/Kg] for Stoddard solvent. This represents 81.8% of the 'non-detects' found in the initial study of 1995. Of these, 10.8% of the sampling points exhibit concentrations that have declined to less than 150 mg/Kg. Additionally, 3.9% of the sampling points showed concentration reduction to less than 1,000 mg/Kg. The site-wide result is the indication of a decline in the rate of destruction of Stoddard solvent. However, the data indicates further that significant concentrations have migrated downward at some sampling locations. This would cause sampling sites that previously had low concentrations of contaminant to indicate higher concentrations in the recent survey. Thus, the rate of destruction would appear to be reduced.

Regarding the ranges of specific concentration reduction, the largest group is in the range of 5,000 mg/Kg – 10,000 mg/Kg. This represents 12.7% of the sampling field. This is an increase of 4.9% over the same range in the September 2000 study.

In the April 1995 characterization, there are 13 sampling points where volatile component concentrations range from 9,000 mg/Kg to greater than 70,000 mg/Kg. Significantly, in the September 2000 study, this entire group is absent. Additionally, in the September 2000 survey, the occurrence of extractable components in the same concentration range, have declined by nearly 78%. The recent survey shows the return of volatile component concentrations in these ranges. Although only four samples, it is the direct result of an increase in the number of extractable component occurrences in these same ranges.

Other than the number of 'non-detects,' a significant characteristic is the notable increase in volatile component occurrences in the 3,000 mg/Kg – 9,000 mg/Kg range. This is in direct contrast with the increase in extractable component occurrences in the 151 mg/Kg – 3,000 mg/Kg and the 9,000 mg/Kg – 80,000 mg/Kg range. That is, other than 'non-detects,' the majority of volatile component occurrences occurred at concentrations where the extractable component concentration was reduced or unchanged.

8.4 Conclusion Summary

When comparing the results of the September / October 2005 survey with the September 2000 study and the initial characterization of April 1995, the following is evident:

[1] Developing profiles of each sampling location indicates a site-wide average reduction in total Stoddard solvent concentration of 48.5% from the 1995 survey. This is approximately 10% less than that of the September 2000 survey.

[2] Where there was an absence of volatile component concentrations between 9,000 mg/Kg and >70,000 mg/Kg in the September 2000 study, there is a return of occurrence in this range in the recent study.

[3] Corresponding to the return of volatile component concentrations [in number 2 above], the occurrence of extractable component concentrations, in nearly the same ranges, are increased.

[4] There continues to be a site-wide shift away from the heavier molecular weight chains towards the lighter weights.

[5] Downward migration of the contaminant is clearly established.

[6] The downward migration has contributed to a 35% decrease, from the September 2000 survey, in the number of occurrences where total Stoddard concentrations are less than 150 mg/Kg.

[7] The downward migration has contributed to an increase, in the number of occurrences of extractable component concentrations > 12,000 mg/Kg.

[8] The total number of volatile and extractable component concentrations that are less than 1,000 mg/Kg represent 55.9% of the database.

[9] The lateral extent of the contaminant has not been extended.

[10] Although the lateral extent has not advanced, the concentration has increased at two defining locations, possibly a result of the downward migration at the location of initial release.

9.0 Recommendation

It is clear that in the decade since the initial characterization, the impact of Stoddard solvent upon the soils at the Vernon facility continues to be reduced by natural attenuation, particularly biological degradation. See Figures 3 and 4.

The selection of natural attenuation is addressed by the EPA in document OSWER Directive 9200.4-17 [the Directive]. This document lists various potential advantages, disadvantages, and conditions that should be considered, in the selection of monitored natural attenuation as a remedial technology.

The contaminated area at the Vernon site is relatively small, and, because of this and other considerations, is appropriately suited for the selection of monitored natural attenuation. Notwithstanding the foregoing report, the following site conditions serve to support natural attenuation:

[1] The sandy type soil is highly conductive to air flow, thus insuring an adequate oxygen supply to support aerobic biodegradation.

[2] The soil has a pH range between 6 – 8.

[3] There are available nutrients [nitrogen and phosphorus] present to support bacterial growth.

[4] The soil is not completely dry, with moisture content near five percent by weight.

The conditions at this site fulfill the potential advantage as well as relieve the potential disadvantages. The following is a checklist provided in the Directive [*italicized and underlined*] regarding the advantages and disadvantages of monitored natural attenuation. Each element is addressed in view of the conditions existing at the Vernon site.

9.1 Potential Disadvantages

[1] "Longer time frames may be required to achieve remediation objectives, compared to active remediation." The historical record indicates that the conditions are appropriate for continuous destruction of Stoddard solvent at appreciable rates. Time frame concerns may be relieved considering, the total confinement of the impacted soil, the discontinued use and removal of Stoddard solvent from the facility, [more than a decade ago], and no risk of human exposure. However, the potential demand for property development may be a factor to consider.

[2] "Site characterization may be more complex and costly." Site characterization has been completed.

[3] "Toxicity of transformation products may exceed that of the parent compound." Carbon dioxide, methane, and water are produced in low quantities. In addition, these compounds are then available for biological absorption or respiration.

[4] "Long term monitoring will generally be necessary." This is offset by the low cost of monitoring, apparent rate of contaminant transformation, and the relatively small size of the impacted area. However, economical motivation for property development may be a factor to consider.

[5] "Institutional controls may be necessary to ensure long term protectiveness." The impacted soil is totally confined beneath the facility, with little possibility of environmental changes.

[6] "Potential exists for continued contamination migration, and / or cross-media transfer of contaminants." This potential does not exist. The impacted area is completely subsurface and totally confined. Vertical migration is prevented by a dense, high quality, clay layer, which is approximately 110 feet above the nearest ground water. Moreover, subsequent site monitoring has demonstrated that both vertical and lateral impact distances have been stabilized. In addition, due to a complete concrete surface covering, storm water percolation is negligible.

[7] "Hydrologic and geochemical conditions amenable to natural attenuation are likely to change over time and could result in renewed mobility of previously stabilized contaminants, adversely impacting remedial effectiveness." Considering the previous hydrogeological assessments of the site, this is not an issue. The absence of perched water, the confinement by a concrete covered surface, and the high quality clay layer below, provides conditions that are unlikely to change over an extended period of time.

[8] "More extensive education and outreach efforts may be required in order to gain public acceptance of monitored natural attenuation." This may be appropriate for large undeveloped parcels [open surfaces], or smaller highly toxic areas, in close proximity to residential developments. However, the remediation zone at the Vernon site is below a developed facility in a heavily industrialized area.

9.2 Potential Advantages

[1] "As with any in situ process, generation of lesser volume of remediation wastes, reduced potential for cross-media transfer of contaminants commonly associated with ex situ treatment, and reduced risk of human exposure to contaminated media." The Vernon site does not generate wastes, exhibits no potential for cross-media transfer of contaminants, and, the risk of human exposure is non-existent.

[2] "Less intrusion as few surface structures are required." Surface, or floor structures are not required. This is a benefit considering the contaminated soil is located in soil that is completely covered by concrete.

[3] "Potential for application to all or part of a given site, depending on site conditions and cleanup objectives." Since the contaminated area is relatively small and the subsurface conditions are homogeneous throughout the area, natural attenuation can easily and efficiently be applied site-wide.

[4] "Use in conjunction with, or as a follow-up, to other [active] remedial measures." The conclusions of this report indicate that monitored natural attenuation can be effectively applied as the sole technology.

[5] "Lower overall remediation costs than those associated with active remediation." The only costs associated with this in situ process are those relating to periodic monitoring and report preparation.

As suggested in the Directive, monitored natural attenuation should be selected only where it will be fully protective of human health and the environment. Such is the case at the Vernon site. Of course, natural attenuation is not viewed as the 'no action' remedy, but rather a means of addressing the Stoddard issue within a limited set of site circumstances.

In addition, the selection of monitored natural attenuation is consistent with the Directive in that: a comprehensive site characterization has been completed, risk has been addressed, and the source of Stoddard solvent has been removed for over a decade. Moreover, the selection of monitored natural attenuation will not result in significant contaminant migration or unacceptable impacts to receptors and other environmental resources. In fact, monitoring has shown that the contaminant field has been stabilized or reduced both vertically and laterally.

9.3 Recommendation Statement

Based on the foregoing information and data, epc submits that the historical monitoring, data analysis and regulatory supportive references have shown to be appropriate, indicating natural attenuation to be an effective method of remediation. Notwithstanding the establishment of remediation objectives, sampling frequency, and a time frame for continued careful monitoring of the process to measure the progress towards remediation objectives, it is recommended that the process of natural attenuation, particularly biodegradation be continued and selected to address the limited Stoddard solvent soil contamination at the Vernon site.

References

Environmental Protection and Compliance Inc., March 27, 2001, Stoddard Solvent Impacted Soils Investigation In Support Of Monitored Natural Attenuation, Survey No. 4, September 5 – 8, 2000, Former Alcoa Facility, Vernon, California, Prepared By EPCI, City of Upland, California.

Table 1
 Observations of Samples During Preparation for Laboratory Transfer (In
 Stoddard System Survey No. 5: September 26 - October 04, 2005, Previ

| SAMPLE | SAND | | | | | | STODDARD ODOR | | | | | OTHER ODOR | | |
|----------|-------------|--------|------------|--------|----------|------|---------------|--------|------|--------|--------|------------|---------|--|
| | very coarse | coarse | coarse/med | medium | med/fine | fine | hint | slight | mild | strong | septic | musty | machine | |
| A-1-15 | | | | | | | X | | | | | | | |
| A-1-30 | | | | | | | X | | | | | | | |
| A-1-57.5 | | | | | | | | | | | | | | |
| A-1-58.5 | | | | | | | | | | | | | | |
| A-1-60 | | L | | | | | | | | | | | | |
| A-3-10 | X | | | | | | | | | | | X | | |
| A-3-25 | | | | | | | | | | | | X | | |
| A-3-40 | | | | | | | | | | | | | | |
| A-3-55 | | | | | | | | | | | | | | |
| A-11-15 | | | | | | | | | | | | | | |
| A-11-40 | | | | | | | | | | | | | | |
| A-11-45 | | | | | | | | | | | | X | | |
| B-1-15 | | | | | | | | | X | | | | | |
| B-1-25 | | | X | | | | | | | X | | | | |
| B-1-40 | | | | | X | | | | X | | | | | |
| B-1-45 | | | | | U | | | | | X | | | | |
| B-1-46 | | | | | | | | | X | | | | | |
| B-1-48 | | | | | | | | | X | | | | | |
| B-2-10 | | L | | | | | | X | | | | | | |
| B-2-35 | | | X | | | | | | | | | | X | |
| B-2-45 | | | | | | | | X | | | | | | |
| B-2-50 | | | | X | | | X | | | | | | | |
| B-2-51 | | | | | | | | X | | | | | | |
| B-2-52.5 | | | | U | | | | | | | | | X | |
| B-4-10 | | | | | | | | | | | | | X | |
| B-4-25 | | | | | | | | | | | | | X | |
| B-4-45 | | | | | | | | | | | | | X | |
| B-9-10 | | | | | | | | | | | | X | | |
| B-9-20 | | | U | | | | | | | | | | | |
| B-9-45 | | | | | | | | X | | | | | | |
| B-11-25 | X | | | | | | | | | | | | X | |
| B-11-40 | X | | | | | | | | | | | | X | |
| B-11-47 | | | | | | | | | | | | | X | |
| B-11-50 | | | | | | | | X | | | | | | |
| C-1-15 | | | | | X | | | X | | | | | | |
| C-1-40 | | | | | | | | | | | | | | |
| C-1-45 | | | | | L | | | | | | | | | |
| C-1-60 | | | | | L | | | | | | | | | |
| C-1-65 | | | | | | | | | | | | | | |
| C-4-15 | | | X | | | | | | | | | | | |
| C-4-40 | | | | | | | | | | | | | | |
| C-4-45 | | | | L | | | | | | | | | | |
| D-1-15 | | | L | | | | | X | | | | | | |
| D-1-35 | X | | | | | | X | | | | | | | |
| D-1-41.5 | | | | | | | | | | | | | | |
| D-1-43 | | | | | | | | | | | | | | |
| D-1-44.5 | | | | | | | | | | | | | X | |
| D-2-10 | | | | | | U | | | | | | | | |
| D-2-25 | | | X | | | | | | | | | | | |
| D-2-35 | | X | | | | | X | | | | | | | |
| D-2-45 | | | | | X | | | | | | | | | |

C - Clay, L - Lower portion of sample, S - Sand, U - Upper portion of sample, X -

Table 2
 Petroleum Hydrocarbons Analytical Results
 Stoddard Solvent System Field Investigation
 Survey No. 5: September 26 - October 04, 2005
 Former Alcoa Vernon Facility, Vernon, California
 (mg/Kg)

| <u>Sample Identification</u> | <u>C6 - C10</u> | <u>C10 - C28</u> | <u>Total</u> |
|------------------------------|-----------------|------------------|--------------|
| A - 1 - 15 | 4,620 | 4,450 | 9,070 |
| A - 1 - 30 | 5,320 | 6,200 | 11,520 |
| A - 1 - 57.5 | ND | ND | ND |
| A - 1 - 58.5 | ND | ND | ND |
| A - 1 - 60 | ND | ND | ND |
| A - 3 - 10 | 371 | 486 | 857 |
| A - 3 - 25 | 483 | 440 | 923 |
| A - 3 - 40 | 6,080 | 1,680 | 7,760 |
| A - 3 - 55 | ND | ND | ND |
| A - 11 - 15 | ND | ND | ND |
| A - 11 - 40 | 0.6 | ND | 0.6 |
| A - 11 - 45 | ND | 10.2 | 10.2 |
| B - 1 - 15 | 6,610 | 6,540 | 13,150 |
| B - 1 - 25 | 5,080 | 5,110 | 10,190 |
| B - 1 - 40 | 5,310 | 7,190 | 12,500 |
| B - 1 - 45 | 41,600 | 60,600 | 102,200 |
| B - 1 - 46.5 | 1,250 | 233 | 1,483 |
| B - 1 - 48 | 7,120 | 7,980 | 15,100 |
| B - 2 - 10 | 19 | 289 | 308 |
| B - 2 - 35 | ND | ND | ND |
| B - 2 - 45 | 33,900 | 38,400 | 72,300 |
| B - 2 - 50 | 8,010 | 8,380 | 16,390 |
| B - 2 - 51 | 12,700 | 8,780 | 21,480 |
| B - 2 - 52.5 | 15,100 | 23,900 | 39,000 |
| B - 4 - 10 | 588 | 863 | 1,451 |
| B - 4 - 25 | 136 | 88.8 | 224.5 |
| B - 4 - 45 | 140 | 127 | 267 |
| B - 9 - 10 | ND | 85.1 | 85.1 |
| B - 9 - 20 | ND | 106 | 106 |
| B - 9 - 45 | 6,600 | 11,900 | 18,500 |

Sample Identification Example: B-11-25

B = Area of release

11 = Sampling location within area

25 = Sample depth in feet bgs

Table 2 (cont'd)
 Petroleum Hydrocarbons Analytical Results
 Stoddard Solvent System Field Investigation
 Survey No. 5: September 26 - October 04, 2005
 Former Alcoa Vernon Facility, Vernon, California
 (mg/Kg)

| <u>Sample Identification</u> | <u>C6 -- C10</u> | <u>C10 -- C28</u> | <u>Total</u> |
|------------------------------|------------------|-------------------|--------------|
| B - 11 - 25 | 1.01 | ND | 1.01 |
| B - 11 - 40 | ND | ND | ND |
| B - 11 - 47 | 1,180 | 9,650 | 10,830 |
| B - 11 - 50 | 7,310 | 10,800 | 18,110 |
| C - 1 - 15 | 2,220 | 2,500 | 4,720 |
| C - 1 - 40 | 0.8 | ND | 0.8 |
| C - 1 - 45 | 1,130 | 162 | 1,292 |
| C - 1 - 60 | ND | ND | ND |
| C - 1 - 65 | ND | ND | ND |
| C - 4 - 15 | ND | ND | ND |
| C - 4 - 40 | 1.47 | ND | 1.47 |
| C - 4 - 45 | ND | ND | ND |
| D - 1 - 15 | 4,210 | 2,720 | 6,930 |
| D - 1 - 35 | 845 | 1,360 | 2,205 |
| D - 1 - 41.5 | ND | ND | ND |
| D - 1 - 43 | 5,030 | 2,240 | 7,270 |
| D - 1 - 44.5 | 3,640 | 3,450 | 7,090 |
| D - 2 - 10 | ND | ND | ND |
| D - 2 - 25 | 37 | 124 | 161 |
| D - 2 - 35 | 3,240 | 4,790 | 8,030 |
| D - 2 - 45 | 6,020 | 10,800 | 16,820 |

Sample Identification Example: B-11-25

B = Area of release

11 = Sampling location within area

25 = Sample depth in feet bgs

Table 3
 Petroleum Hydrocarbons Historical Analytical Results
 Stoddard Solvent System Field Investigation
 Surveys: April 1995, August 1998, September 2000, September / October 2005
 Former Alcoa Vernon Facility, Vernon, California
 (mg/Kg)

| Sample Identification | -----Volatile Hydrocarbons C6 -- C10----- | | | | -----Extractable Hydrocarbons C10 -- C28----- | | | |
|-----------------------|---|------------|--------|--------|---|--------------|--------|--------|
| | Apr-95 | Aug-98 | Sep-00 | Sep-05 | Apr-95 | Aug-98 | Sep-00 | Sep-05 |
| A-1-15 | 5,500 | 790 | 770 | 4,620 | 3,200 | 4,700 | 3,500 | 4,450 |
| A-1-30 | 43,000 | 360 | 5,200 | 5,320 | 39,000 | 33,000 | 51,000 | 6,200 |
| A-1-57 | 2,600 | 140(57.5') | 0.16 | ND | 380 | 1,100(57.5') | ND | ND |
| A-1-58.5 | 740 | 2 | 1.7 | ND | ND | ND | ND | ND |
| A-1-60 | ND | 63 | 0.13 | ND | ND | 23 | ND | ND |
| A-3-10 | 7,400 | 0.53 | 0.52 | 371 | 9,100 | ND | ND | 486 |
| A-3-25 | ND | 0.18 | 0.3 | 483 | 380 | ND | ND | 440 |
| A-3-40 | 2,900 | 120 | 61 | 6,080 | 2,400 | 950 | ND | 1,680 |
| A-3-55 | ND | ND | 0.14 | ND | ND | ND | ND | ND |
| A-11-15 | ND | 0.17 | 0.29 | ND | ND | ND | ND | ND |
| A-11-40 | ND | 0.18 | 0.19 | 0.6 | ND | ND | ND | ND |
| A-11-45 | ND | ND | 0.11 | ND | ND | ND | ND | 10.2 |
| B-1-15 | 26,000 | 7,600 | 7,300 | 6,610 | 14,000 | 24,000 | 14,000 | 6,540 |
| B-1-25 | 30,000 | 0.51 | 5,000 | 5,080 | 10,000 | ND | 6,700 | 5,110 |
| B-1-40 | 19,000 | 120 | 2,200 | 5,310 | 16,000 | 3,400 | 2,300 | 7,190 |
| B-1-45 | 61,000 | 390 | 6,400 | 41,600 | 23,000 | 6,400 | 9,000 | 60,600 |
| B-1-46.5 | 76,000 | 430(46') | 0.38 | 1,250 | 2,800 | 2,800(46') | ND | 233 |
| B-1-48 | 3,700 | 350 | 0.28 | 7,120 | 19,000 | 1,900 | ND | 7,980 |
| B-2-10 | 11 | 560 | 2,900 | 19 | 11 | 3,400 | 7,600 | 289 |
| B-2-35 | 2.4 | 1.5 | 0.16 | ND | ND | ND | ND | ND |
| B-2-45 | 1.6 | 51 | 0.37 | 33,900 | 82 | 110 | ND | 38,400 |
| B-2-50 | 55,000 | 840 | 2,000 | 8,010 | 53,000 | 4,200 | 6,000 | 8,380 |
| B-2-51 | 14,000 | 510 | 1,800 | 12,700 | 11,000 | 3,400 | 6,400 | 8,780 |
| B-2-52.5 | ND | 130(52.6') | 5,200 | 15,100 | 9.8 | 330(52.6') | 50,000 | 23,900 |
| B-4-10 | 14 | 4.8 | 1,500 | 588 | 8.3 | 535 | 37,000 | 863 |
| B-4-25 | 3.5 | 160 | 2.1 | 136 | 68 | 3,500 | ND | 88.8 |
| B-4-45 | 9,200 | 570 | 44 | 140 | 7,100 | 1,700 | 62 | 127 |
| B-9-10 | 8.6 | 13 | 2 | ND | 18 | 150 | 14 | 85.1 |
| B-9-20 | ND | 0.14 | 0.2 | ND | 26 | ND | ND | 106 |
| B-9-45 | 1.6 | 0.24 | 250 | 6,600 | ND | 32 | ND | 11,900 |

Sample Identification Example: B-2-10

B = Area of release

2 = Sampling location within the Area

10 = Sample depth in feet bgs

Table 3 (Cont'd)
 Petroleum Hydrocarbons Historical Analytical Results
 Stoddard Solvent System Field Investigation
 Surveys: April 1995, August 1998, September 2000, September / October 2005
 Former Alcoa Vernon Facility, Vernon, California
 (mg/Kg)

| Sample Identification | -----Volatile Hydrocarbons C6 -- C10----- | | | | -----Extractable Hydrocarbons C10 -- C28----- | | | |
|-----------------------|---|--------|--------|--------|---|--------|--------|--------|
| | Apr-95 | Aug-98 | Sep-00 | Sep-05 | Apr-95 | Aug-98 | Sep-00 | Sep-05 |
| B-11-25 | 1.4 | 0.12 | 0.41 | 1.01 | ND | ND | ND | ND |
| B-11-40 | ND | 0.17 | 0.16 | ND | ND | ND | ND | ND |
| B-11-47 | 32,000 | 0.31 | 0.29 | 1,180 | 37,000 | ND | ND | 9,650 |
| B-11-50 | 4.8 | 0.29 | 5,800 | 7,310 | ND | ND | 8,900 | 10,800 |
| C-1-15 | 9,100 | 310 | 1,400 | 2,220 | 5,300 | 3,000 | 4,700 | 2,500 |
| C-1-40 | 18 | 0.2 | ND | 0.8 | 5.4 | ND | ND | ND |
| C-1-45 | ND | 0.23 | 0.16 | 1,130 | ND | 14 | ND | 162 |
| C-1-60 | ND | 0.11 | 0.44 | ND | ND | ND | ND | ND |
| C-1-65 | ND | ND | 0.28 | ND | ND | ND | ND | ND |
| C-4-15 | ND | ND | ND | ND | ND | ND | ND | ND |
| C-4-40 | 1.1 | 0.3 | 0.74 | 1.47 | ND | ND | ND | ND |
| C-4-45 | ND | 0.12 | 0.31 | ND | ND | ND | ND | ND |
| D-1-15 | 1,200 | 640 | 480 | 4,210 | 610 | 13,000 | 1,500 | 2,720 |
| D-1-35 | 3,000 | 260 | 640 | 845 | 3,500 | 1,100 | 880 | 1,360 |
| D-1-41.5 | 6,900 | 0.28 | 68 | ND | 5,500 | ND | 150 | ND |
| D-1-43 | 2,800 | 1.1 | 0.72 | 5,030 | 740 | ND | ND | 2,240 |
| D-1-44.5 | 10,000 | 3.1 | 0.77 | 3,640 | 400 | ND | ND | 3,450 |
| D-2-10 | 17,000 | 600 | 540 | ND | 6,100 | 7,800 | 2,500 | ND |
| D-2-25 | 8,200 | 500 | 5,200 | 37 | 6,600 | 1,700 | 3,300 | 124 |
| D-2-35 | 4,500 | 350 | 6,300 | 3,240 | 3,100 | 1,800 | 4,400 | 4,790 |
| D-2-45 | 2.9 | 0.2 | 0.7 | 6,020 | ND | ND | ND | 10,800 |

Sample Identification Example: C-4-15

C = Area of release

4 = Sampling location within the Area

15 = Sample depth in feet bgs

Table 4
Total Petroleum Hydrocarbons Per Sampling Location
And Percent Change
Stoddard Solvent System Field Investigation
Surveys: April 1995 and September -- October 2005
Former Alcoa Vernon Facility, Vernon, California
(mg/Kg)

| <u>Sample Location</u> | <u>1995</u> | <u>2005</u> | <u>% Change</u> | <u>% Change Per Area</u> |
|------------------------|-------------|-------------|-----------------|--------------------------|
| A - 1 | 94,420 | 20,590 | -78.2 | |
| A - 3 | 22,180 | 9,540 | -57.0 | |
| A - 11 | ND | 10.8 | * | -67.6 |
| B - 1 | 300,500 | 154,623 | -48.5 | |
| B - 2 | 133,118 | 149,478 | 12.3** | |
| B - 4 | 16,394 | 1,943 | -88.1 | |
| B - 9 | 54 | 18,691 | 34.5** | |
| B - 11 | 69,006 | 28,941 | -58.1 | -29.6 |
| C - 1 | 14,423 | 6,012 | -58.3 | |
| C - 4 | ND | 1.47 | * | -58.3 |
| D - 1 | 34,650 | 23,495 | -32.2 | |
| D - 2 | 45,503 | 25,010 | -45.0 | -38.6 |

ND = Not Detected

* Location remains essentially 'Non-Detect'

** Indicated increase influenced by a single data point

Table 5

Distribution of Sample Location Concentrations Remaining at ND, Decreasing to ND and <1,000 mg/Kg, and Specific Range Reductions Stoddard System Survey No. 5: September 26 - October 04, 2005, Former Alcoa Vernon Facility, Vernon, California

| SAMPLE | Locations Remained ND | Decreased to ND | Decreased to > 150 < 1,000 | Sampling Locations Exhibiting These Ranges of Concentration Reductions [mg/Kg] | | | | | |
|----------|-----------------------|-----------------|----------------------------|--|---------------|----------------|-----------------|-----------------|---------|
| | | | | 300 - 2,000 | 2,000 - 5,000 | 5,000 - 10,000 | 10,000 - 20,000 | 20,000 - 40,000 | >40,000 |
| A-1-15 | | | | V | | | | | |
| A-1-30 | | | | | | | | | |
| A-1-57.5 | | V,E | | E | V | | | V,E | |
| A-1-58.5 | E | V | | V | | | | | |
| A-1-60 | V,E | | | | | | | | |
| A-3-10 | | | V,E | | | V,E | | | |
| A-3-25 | | | | | | | | | |
| A-3-40 | | | | E | | | | | |
| A-3-65 | V,E | | | | | | | | |
| A-11-15 | V,E | | | | | | | | |
| A-11-40 | V,E | | | | | | | | |
| A-11-45 | V,E | | | | | | | | |
| B-1-15 | | | | | | E | V | | |
| B-1-25 | | | | | E | | | V | |
| B-1-40 | | | | | | E | V | | |
| B-1-45 | | | | | | | V | | |
| B-1-46 | | | E | | E | | V | | |
| B-1-48 | | | | | | | E | | V |
| B-2-10 | V | | | | | | | | |
| B-2-35 | V,E | | | | | | | | |
| B-2-45 | | | | | | | | | |
| B-2-50 | | | | | | | | | |
| B-2-61 | | | | | | | | | V,E |
| B-2-52.5 | | | | | E | | | | |
| B-4-10 | | | | | | | | | |
| B-4-25 | V,E | | | | | | | | |
| B-4-45 | | V,E | | | | V,E | | | |
| B-9-10 | V,E | | | | | | | | |
| B-9-20 | V,E | | | | | | | | |
| B-9-45 | | | | | | | | | |
| B-11-25 | V,E | | | | | | | | |
| B-11-40 | V,E | | | | | | | | |
| B-11-47 | | | | | | | | | |
| B-11-50 | | | | | | | | V,E | |
| C-1-15 | | | | | E | V | | | |
| C-1-40 | V,E | | | | | | | | |
| C-1-45 | | | | | | | | | |
| C-1-60 | V,E | | | | | | | | |
| C-1-65 | V,E | | | | | | | | |
| C-4-15 | V,E | | | | | | | | |
| C-4-40 | V,E | | | | | | | | |
| C-4-45 | V,E | | | | | | | | |
| D-1-15 | | | | | | | | | |
| D-1-35 | | | V | | V,E | | | | |
| D-1-41.5 | | V,E | | | | V,E | | | |
| D-1-43 | | | | | | | | | |
| D-1-44.5 | | | | | | V | | | |
| D-2-10 | | V,E | | | | E | V | | |
| D-2-25 | | V,E | | | | V,E | | | |
| D-2-35 | | | | | | | | | |
| D-2-45 | | | | | | | | | |

ND - Not Detected V - Volatile Component E - Extractable Component

Table 6
Distribution of Volatile and Extractable Components
Based on Specific Concentration Ranges
Surveys: April 1995, September 2000, and September 2005
Former Alcoa Facility, Vernon, California

| Concentration Range [mg/Kg] | 1995 | | 2000 | | 2005 | |
|--------------------------------|------|-----|------|-----|------|-----|
| | Vol | Ext | Vol | Ext | Vol | Ext |
| A | | | | | | |
| ND (<150 mg/Kg) | 26 | 26 | 32 | 33 | 24 | 23 |
| 151 - 1,000 | 1 | 5 | 5 | 1 | 4 | 6 |
| B | | | | | | |
| 1,001 - 2,000 | 1 | | 4 | 1 | 3 | 2 |
| 2,001 - 3,000 | 4 | 2 | 2 | 2 | 1 | 3 |
| 3,001 - 4,000 | 1 | 3 | | 2 | 2 | 1 |
| 4,001 - 5,000 | 1 | | | 2 | 2 | 2 |
| 5,001 - 6,000 | 1 | 2 | 5 | 1 | 4 | 1 |
| 6,001 - 7,000 | 1 | 2 | 2 | 2 | 4 | 2 |
| 7,001 - 8,000 | 1 | 1 | 1 | 1 | 2 | 2 |
| 8,001 - 9,000 | 1 | | | 2 | 1 | 2 |
| C | | | | | | |
| 9,001 - 12,000 | 3 | 3 | | | | 4 |
| 12,001 - 15,000 | 1 | 1 | | 1 | 1 | |
| 15,001 - 20,000 | 2 | 2 | | | 1 | |
| 20,001 - 40,000 | 3 | 3 | | 1 | 1 | 2 |
| 40,001 - 60,000 | 2 | 1 | | 2 | 1 | |
| 60,001 - 80,000 | 2 | | | | | 1 |

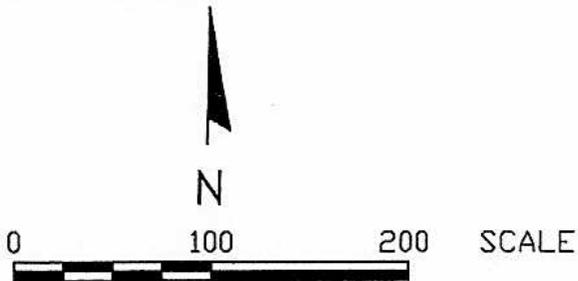
Number of occurrences per concentration range

Vol - Volatile Component Ext - Extractable Component



NOTES:

- 1) BASE MAP FROM USGS SOUTHGATE, CALIFORNIA (1964)
7.5 MINUTE TOPOGRAPHIC QUADRANGLE, PHOTOREVISED 1981
AND LOS ANGELES, CALIFORNIA (1966), PHOTOREVISED 1981.



**SITE LOCATION MAP
ALCOA CAST PLATE FACILITY
VERNON, CALIFORNIA**

| | | |
|---|-------------------|-------------|
| Project No. 5531 | By: S. M. KULESZA | Figure 1 |
| Date: 8/5/98 | Checked: | |
| McCulley, Frick & Gilman, Inc. environmental consulting and engineering services | | |

NOTES

1. PROPOSED BORING D-5 IS NOT SHOWN SINCE IT WAS NOT COMPLETED DURING FIELD ACTIVITIES.
2. BORINGS & WELLS INSTALLED BY PREVIOUS CONSULTANTS HAVE NOT BEEN INCLUDED. LOCATIONS ARE SHOWN ON DRAWING NO. D-039025-VC.

EXPLANATION

- CHAIN LINK FENCE (PROPERTY LINE)
- RAILROAD TRACK
- A-5 CONE PENETRATION TEST / RAPID OPTICAL SCREENING TEST (CPT/ROST)
- △ A-3 VAPOR WELL
- ▽ D-1 VAPOR WELL & CPT/ROST
- ▲ A-1 CONTINUOUS SLOT VAPOR WELL
- ▼ D-1 CONTINUOUS SLOT VAPOR WELL AND CPT/ROST
- △ MC-2 OXYGEN SENSOR SITE
- ⊕ A-9B BORINGS
- ⊕ 665668 STODDARD SOLVENT VAULT SAMPLE
- Sampling Location

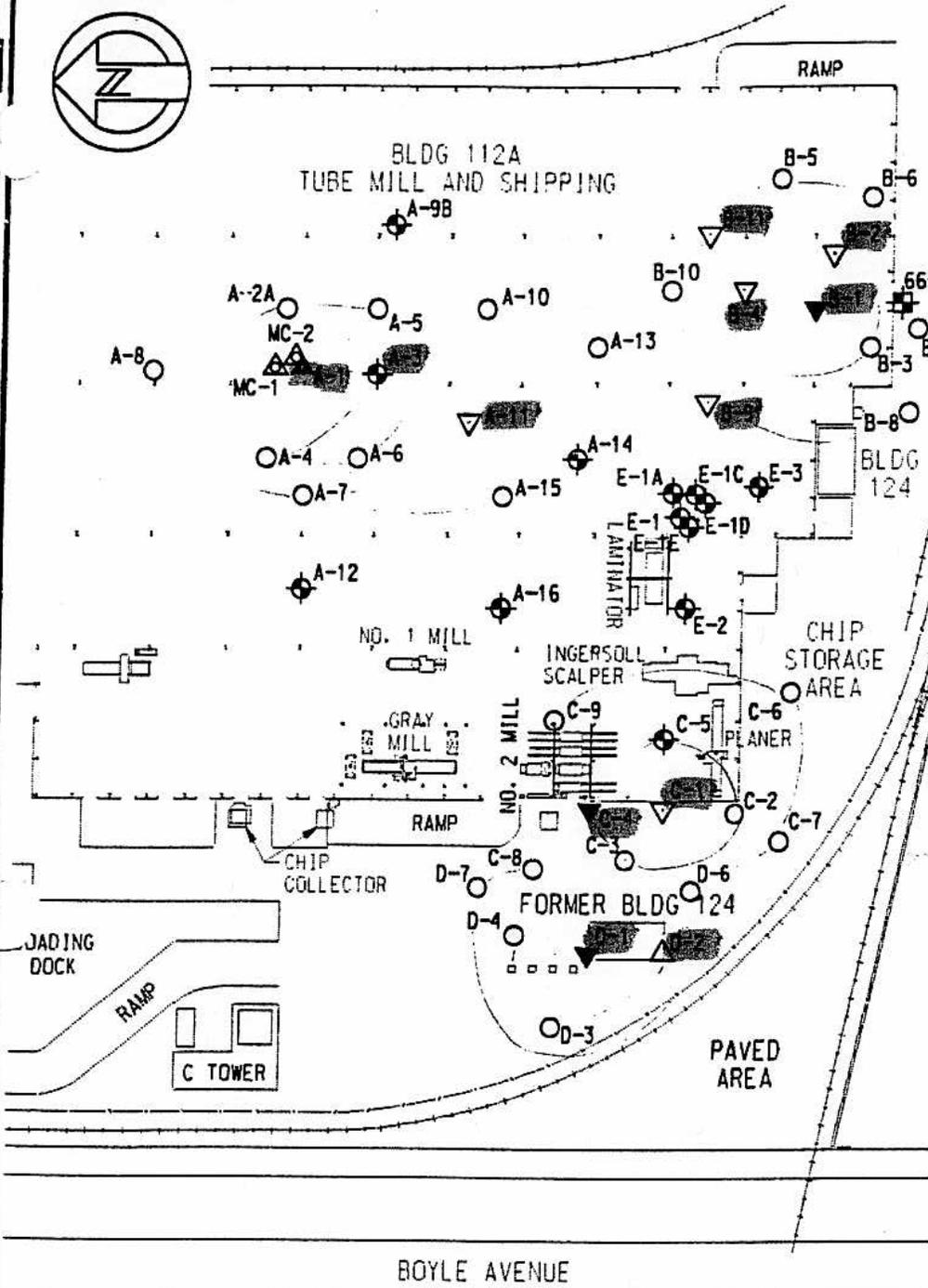


Figure 2

0ft 50 100 200 300

SCALE: 1" = 100' - 0"



MORRISON KNUDSEN CORPORATION
ENGINEERING, CONSTRUCTION & ENVIRONMENTAL GROUP
180 HOWARD STREET SAN FRANCISCO, CA 94103

WORK ORDER NO.
4484-01

MKS DRAWING NO.
08-72-6-024

REV.
B

ALUMINUM COMPANY OF AMERICA
VERNON WORKS

BLDG. NO. **112A**

STODDARD SOLV. INVEST. SAMPLE & WELL LOCATIONS

ENGINEER **G. MORRISON**

PLANT CODE **VC**

DESIGN **B. WONG**

SCALE **1" = 100'**

ORIGIN **VC**

DWG. CLASS

DRAWN **A M A**

L-039024-VC

CHECK **R.T. 27 OCTOBER 95**

APPR **M.G. 27 OCTOBER 95**

| MONTH | DAY | NO. | REVISION RECORD | DR. | CK. |
|-------|-----|-----|-------------------------|-----|-----|
| OCT | 27 | B | ISSUED FOR FINAL REPORT | AMA | RT |
| JUL | 05 | A | ISSUED FOR DRAFT REVIEW | AMA | GMM |

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Figure 3
Volatile vs. Extractable Hydrocarbons in Full-field Stoddard System Soil Surveys
[1] 1995, [4] 1998, [6] 2000, [11] 2005
Former Alcoa Facility, Vernon, California

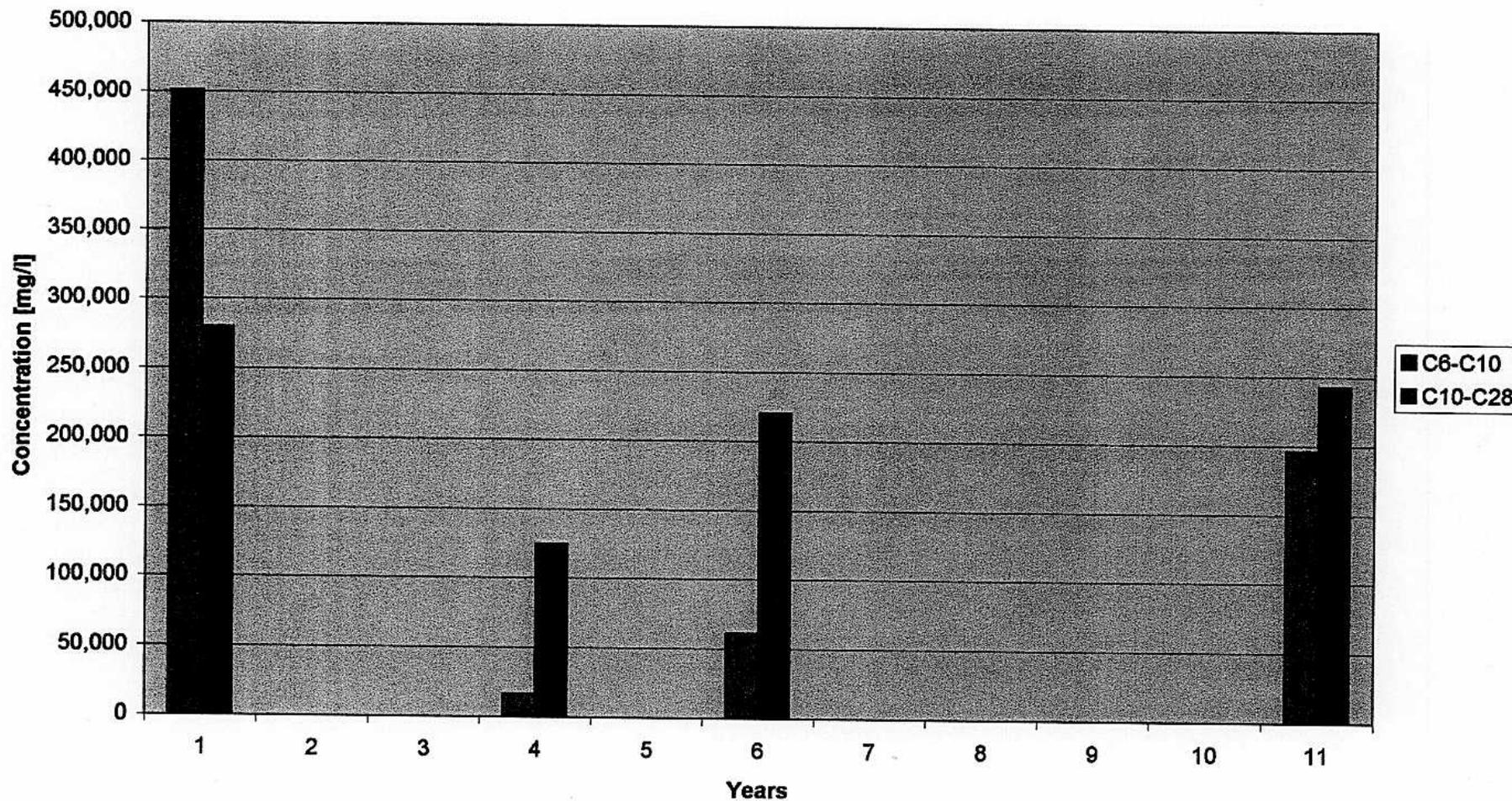
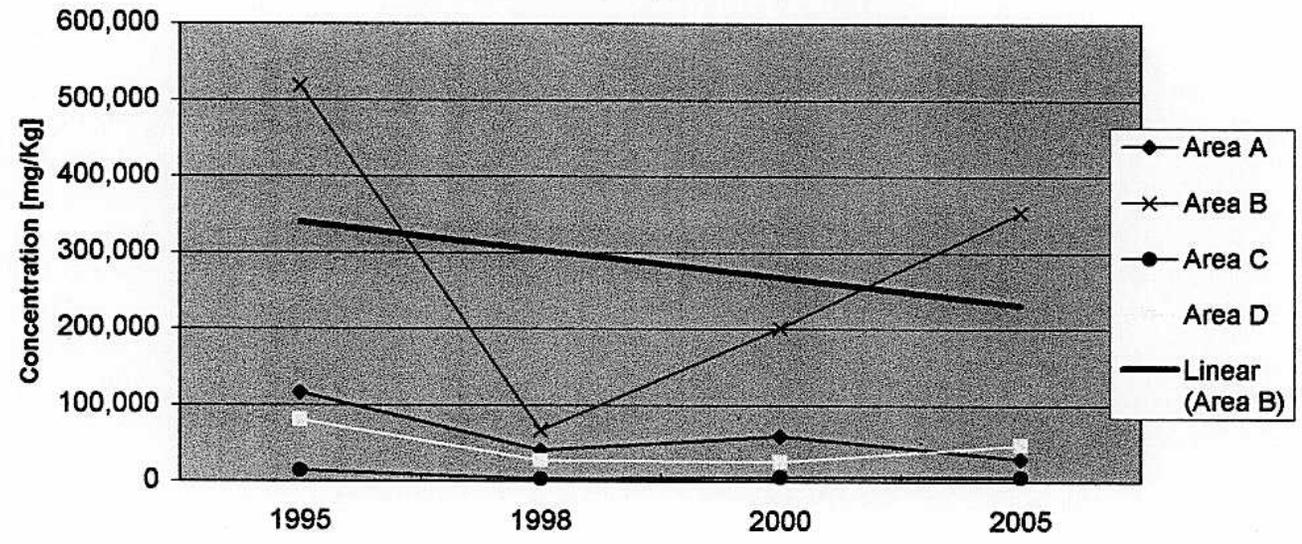


Figure 4
Historical Trend by Sampling Area
Full-field Stoddard System Surveys: 1995, 1998, 2000, and 2005
Former Alcoa Facility, Vernon, California



Direct Transcription of Field Observations [Voice Recording] During Sample Preparation
 Stoddard Soil Survey No. 5: September 26 - October 04, 2005
 Former Alcoa Facility, Vernon, California

| STATION BLOW SAMPLE COUNT | DESCRIPTION |
|------------------------------|---|
| B-9-10 9 | Smells like dirt. Dirt with fine sand. Normal dark/light brown color. No Stoddard odor. |
| B-9-20 36 | Medium coarse sand. Transition to partial clay. No Stoddard odor. |
| B-9-45 38 | Tight small grain sand. Some Stoddard odor. Bottom sleeve contained clay. [at the clay layer] |
| B-11-25 54 | Large grain sand. Some 1/4" chunks, light tan in color, machine odor or extremely slight Stoddard odor. |
| B-11-40 167 | Large grain sand, some 1/4" chunks, light tan, no Stoddard odor. Light tan to light gray. |
| B-11-47 75 | Fine gray sand, gray/brown in color, machine smell, or extremely light slight Stoddard odor. |
| B-11-50 74 | Darker clay/sand, slight smell of Stoddard, more sand then clay, slight gray. |
| B-2-10 13 | Brown/gray in color, fine sand, transition of fine to courser sand, slight Stoddard odor. |
| B-2-35 115 | Course sand, no Stoddard odor, maybe machine smell, tan in color, medium course sand. |
| B-2-45 27 | Transition to clay, slight Stoddard odor, gray in color, fine sand. |
| B-2-50 73 | Transition to light sand, tan in color, very slight Stoddard odor. |
| B-2-51 73 | Slight Stoddard odor, back into sandy/clay, light tan in color, small grain. |
| B-2-52.5 40 | Nice brown clay, no Stoddard odor, machine smell, no gray, sandy on upper sleeve, mostly clay/sandy. Lower sleeve is full clay, upper is fine sand, middle is transition. |

- B-1-15 30 Gray, there is moderate Stoddard odor, medium/fine grain sand, gray, just entering into clay/silt.
- B-1-25 61 Medium course sand, gray with black and white grains, strong odor of Stoddard.
- B-1-40 125 Tan, medium/fine grain sand, mild Stoddard odor.
- B-1-45 32 Moderate sand, gray/brown, fine dirt-like sand, fairly strong Stoddard. Lower grayish, upper is tan. Pushed through clay.
- B-1-46 45 Grayish in color, mild Stoddard odor, top [sleeve] is sand, bottom [sleeve] is clay.
- B-1-48 32 Clay, gray, mild Stoddard odor. Same color in all three sleeves.
- B-4-10 14 Half full, rocks, no Stoddard odor, slight machine odor present, grayish, fine sandy clay like typical dirt.
- B-4-25 71 Medium sand, tan, no Stoddard odor, nice sand.
- B-4-45 35 Machine smell, no Stoddard odor, clay/fine sand, mostly clay, brown. Sand in top sleeve, clay in bottom, transition. Very odd odor. [see Survey September, 2000.]
- A-11-15 23 Nice brown dirt, normal consistency, not sandy or clay, no Stoddard odor, nice dirt smell.
- A-11-40 85 Regular dirt brown, some gray, no Stoddard odor, fine sandy gravel.
- A-11-45 100 Clay/fine sandy, mostly clay, musty smell, no Stoddard odor, grayish.
- A-3-10 6 Light gray granular, dry, musty odor, no Stoddard odor, small rocks.
- A-3-25 28 Brown, no Stoddard odor, musty soil odor, regular dirt appearance.
- A-3-40 58 Nice tan construction sand at bottom [sleeve], no Stoddard odor, transition sample to dirt on top [sleeve].
- A-3-55 65 No Stoddard odor, dark brown, sandy/clay.

- A-1-15 8 Sandy/clay, very slight Stoddard odor or that musty canvas odor, but very very weak. Dark brown color.
- A-1-30 53 Nice tan, very slight Stoddard odor only on the upper [sleeve], fine sandy/clay, brown in color.
- A-1-57.5 50 Brown in color, transition from clay, no Stoddard odor, first [lower] sleeve is clay/silt, top is total clay.
- A-1-58.5 88 More sandy, no Stoddard odor, musty canvas odor, clay/sandy.
- A-1-60 55 No Stoddard odor, nice brown, clay transition to clay/sand, very homogenous. Upper and lower sleeves had gray stain but no Stoddard odor.
- NOTE: majority of samples that exhibited gray stain did not have Stoddard odor.
- NOTE: A vapor well [depth 60'] is located near C-1. This well was dry.
- C-1-15 35 Gray, medium to fine sand, slight Stoddard odor.
- NOTE: At C-1, darkly stained soil was encountered immediately below concrete roadway.
- C-1-40 32 Gray, clay, no fines, very slight if any Stoddard odor.
- C-1-45 47 Transition from clay to sand, brown sand, no Stoddard odor.
- C-1-60 104 Brown clay with some sand. Large grain sand/clay, transition from clay to brown sand. No Stoddard odor.
- C-1-65 58 Total clay, brown, no odor, beautiful, dense brown clay.
- NOTE: A vapor well [depth 45'] is located near C-4. Approximately one inch of water was found at depth.
- C-4-15 45 Medium/course sand, light brown, normal sand smell, no Stoddard odor.
- NOTE: C-4-15, drill bit was fairly wet. Dark brown, no Stoddard odor, sand with little clay. [normal sample taken 18" below bit level]

- C-4-40 25 Nice gray/brown clay, mostly brown, high quality, no Stoddard odor, but musty canvas odor. Transition from brown sand to light gray clay.
- C-4-45 55 Nice brown medium grade sand, transition from brown clay, no Stoddard odor.
- D-1-15 9 Nice brown dirt, lower sleeve clay, small portion of what appears to be black, oily asphalt. Transition from clay to dirt. Slight Stoddard odor. [See Survey September 2000].
- D-1-35 127 Course light gray sand, very slight Stoddard, some gravel.
- D-1-41.5 58 No Stoddard odor, nice brown fine clay with little gray stain, transition to sand.
- D-1-43 70 Fine sand, upper [portion of sample sleeve] is clayish, brown, transition, brown sand on bottom [portion of sample sleeve]. Lower sleeve is all sand, upper sleeve is brown clay.
- D-1-44.5 70 Lower end [of sample sleeve] nice medium to moderate grain sand, brown, top [of sample sleeve] is clay, transition to clay/sand, very slight mechanical odor.
- D-2-10 18 Nice brown sand, some clay, dirt odor, transition sample, more clay in lower sleeve, upper sleeve is sandy, no Stoddard odor.
- D-2-25 55 Course grain sand, nice light brown/tan, no Stoddard odor, normal dirt odor.
- D-2-35 103 Much like previous, tan course construction sand, very slight Stoddard, lower sleeve slight amount of dirt/clay type.
- D-2-45 90 Brown sand, extremely slight odor of Stoddard, if any, a little gray sand as well, sand on both sides [upper and lower sleeves from sample sleeve]. Bottom sleeve grayish so transition from brown to gray sand.

Certificate of Analysis

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 E.P.C.
 P.O. Box 1814
 Upland, CA 91785

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/03/05 19:02

Submitted: 09/26/05

PLS Report No.: 5090224
Project: Stoddard Solvent

| Sample ID: B-9-10 Soil (5090224-01) Sampled:09/26/05 10:30 Received:09/26/05 14:20 | | | | | | | | | | | |
|---|--------------|------|------------|--------|-------|------------------|-----------|----------|----------|----|---------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 85.1 | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Surrogate: n-Tetracosane | 91.0 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 09/28/05 | 09/28/05 | mb | BJ50316 |
| Surrogate: a,a,a-Trifluorotoluene | 94.7 % | | | 38-140 | | EPA 5030B | EPA 8015 | 09/28/05 | 09/28/05 | mb | BJ50316 |
| Sample ID: B-9-20 Soil (5090224-02) Sampled:09/26/05 10:30 Received:09/26/05 14:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 106 | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Surrogate: n-Tetracosane | 95.5 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 09/28/05 | 09/28/05 | mb | BJ50316 |
| Surrogate: a,a,a-Trifluorotoluene | 84.3 % | | | 38-140 | | EPA 5030B | EPA 8015 | 09/28/05 | 09/28/05 | mb | BJ50316 |
| Sample ID: B-9-45 Soil (5090224-03) Sampled:09/26/05 10:30 Received:09/26/05 14:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 11900 | | 10 | mg/kg | 100 | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Surrogate: n-Tetracosane | 84.0 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 6600 | | 500 | mg/kg | 250 | EPA 5030B | EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 |
| Surrogate: a,a,a-Trifluorotoluene | 85.3 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 |
| Sample ID: B-11-25 Soil (5090224-04) Sampled:09/26/05 10:30 Received:09/26/05 14:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Surrogate: n-Tetracosane | 91.7 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 1.01 | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 09/28/05 | 09/28/05 | mb | BJ50316 |
| Surrogate: a,a,a-Trifluorotoluene | 103 % | | | 38-140 | | EPA 5030B | EPA 8015 | 09/28/05 | 09/28/05 | mb | BJ50316 |
| Sample ID: B-11-40 Soil (5090224-05) Sampled:09/26/05 10:30 Received:09/26/05 14:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Surrogate: n-Tetracosane | 81.4 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 09/28/05 | 09/28/05 | mb | BJ50316 |
| Surrogate: a,a,a-Trifluorotoluene | 91.0 % | | | 38-140 | | EPA 5030B | EPA 8015 | 09/28/05 | 09/28/05 | mb | BJ50316 |
| Sample ID: B-11-47 Soil (5090224-06) Sampled:09/26/05 10:30 Received:09/26/05 14:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 9650 | | 10 | mg/kg | 100 | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Surrogate: n-Tetracosane | 79.5 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 1180 | | 50 | mg/kg | 25.0 | EPA 5030B | EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 |
| Surrogate: a,a,a-Trifluorotoluene | 87.3 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 |

Certificate of Analysis

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 E.P.C.
 P.O. Box 1814
 Upland, CA 91785

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/03/05 19:02

Submitted: 09/26/05

PLS Report No.: 5090224
Project: Stoddard Solvent

| Sample ID: B-11-50 Soil (5090224-07) Sampled:09/26/05 10:30 Received:09/26/05 14:20 | | | | | | | | | | |
|---|--------------|------|------|--------|-----|---------------------|----------|----------|----|---------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | 10800 | | 10 | mg/kg | 100 | EPA 3550B EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Surrogate: n-Tetracosane | 84.6 % | | | 51-150 | | EPA 3550B EPA 8015B | 09/28/05 | 09/29/05 | lk | BI52924 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | 7310 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 |
| Surrogate: a,a,a-Trifluorotoluene | 87.7 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 |

Quality Control Data

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|---|--------|-------|-------|-------------|---------------|------|-------------|------|-----------|-----------|
| Batch BI52924 - EPA 3550B | | | | | | | | | | |
| Blank Prepared & Analyzed: 09/28/05 | | | | | | | | | | |
| C10 - C28 | ND | 2.50 | mg/kg | | | | | | | |
| Surrogate: n-Tetracosane | 13.4 | | mg/kg | 15.6 | | 85.9 | 51-150 | | | |
| LCS Prepared & Analyzed: 09/28/05 | | | | | | | | | | |
| C10 - C28 | 389 | 2.50 | mg/kg | 416 | | 93.5 | 72-136 | | | |
| Surrogate: n-Tetracosane | 14.5 | | mg/kg | 15.6 | | 92.9 | 54-138 | | | |
| Matrix Spike Source: 5090183-01 Prepared & Analyzed: 09/28/05 | | | | | | | | | | |
| C10 - C28 | 69.5 | 2.50 | mg/kg | 83.2 | ND | 83.5 | 58-159 | | | |
| Surrogate: n-Tetracosane | 14.9 | | mg/kg | 15.6 | | 95.5 | 51-150 | | | |
| Matrix Spike Dup Source: 5090183-01 Prepared & Analyzed: 09/28/05 | | | | | | | | | | |
| C10 - C28 | 63.0 | 2.50 | mg/kg | 83.2 | ND | 75.7 | 58-159 | 9.80 | 30 | |
| Surrogate: n-Tetracosane | 14.3 | | mg/kg | 15.6 | | 91.7 | 51-150 | | | |
| Batch BJ50316 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 09/28/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0297 | | mg/kg | 0.0300 | | 99.0 | 38-140 | | | |
| LCS Prepared & Analyzed: 09/28/05 | | | | | | | | | | |
| C6 - C10 | 0.857 | 0.500 | mg/kg | 0.910 | | 94.2 | 75-120 | | | |
| Matrix Spike Source: 5090224-01 Prepared & Analyzed: 09/28/05 | | | | | | | | | | |
| C6 - C10 | 0.695 | 0.500 | mg/kg | 0.910 | ND | 76.4 | 49-135 | | | |
| Matrix Spike Dup Source: 5090224-01 Prepared & Analyzed: 09/28/05 | | | | | | | | | | |
| C6 - C10 | 0.684 | 0.500 | mg/kg | 0.910 | ND | 75.2 | 49-135 | 1.58 | 30 | |
| Batch BJ50317 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/03/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0240 | | mg/kg | 0.0300 | | 80.0 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/03/05 | | | | | | | | | | |
| C6 - C10 | 0.711 | 0.500 | mg/kg | 0.910 | | 78.1 | 75-120 | | | |

Certificate of Analysis

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E.P.C.
P.O. Box 1814
Upland, CA 91785

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/03/05 19:02

Submitted: 09/26/05

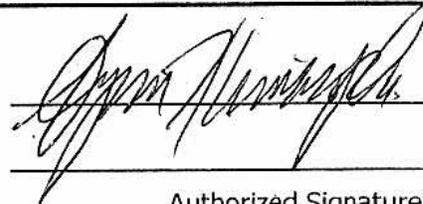
PLS Report No.: 5090224

Project: Stoddard Solvent

Notes and Definitions

NA Not Applicable
ND Analyte NOT DETECTED at or above the detection limit
NR Not Reported
MDL Method Detection Limit
PQL (RL) Practical Quantitation Limit (RL)

Environmental Laboratory Accreditation Program Certificate No. 1131, Mobile Lab No. 2534, LACSD No. 10138



Authorized Signature(s)

Certificate of Analysis

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 E.P.C.
 P.O. Box 1814
 Upland, CA 91785

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/04/05 17:29

Submitted: 09/27/05

PLS Report No.: 5090225
Project: Stoddard Solvent

| Sample ID: B-2-10 Soil (5090225-01) Sampled:09/27/05 09:01 Received:09/27/05 14:47 | | | | | | | | | | | |
|--|--------------|------|------|--------|-------|------------------|-----------|----------|----------|----|----------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 289 | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Surrogate: n-Tetracosane | 110 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 19.0 | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 09/30/05 | 09/30/05 | mb | BI53006 |
| Surrogate: a,a,a-Trifluorotoluene | 87.7 % | | | 38-140 | | EPA 5030B | EPA 8015 | 09/30/05 | 09/30/05 | mb | BI53006 |
| Sample ID: B-2-35 Soil (5090225-02) Sampled:09/27/05 09:32 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Surrogate: n-Tetracosane | 140 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 09/30/05 | 09/30/05 | mb | BI53006 |
| Surrogate: a,a,a-Trifluorotoluene | 102 % | | | 38-140 | | EPA 5030B | EPA 8015 | 09/30/05 | 09/30/05 | mb | BI53006 |
| Sample ID: B-2-45 Soil (5090225-03) Sampled:09/27/05 09:55 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 38400 | | 50 | mg/kg | 500 | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Surrogate: n-Tetracosane | 94.2 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 33900 | | 2500 | mg/kg | 1250 | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ504-11 |
| Surrogate: a,a,a-Trifluorotoluene | 90.3 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ504-11 |
| Sample ID: B-2-50 Soil (5090225-04) Sampled:09/27/05 10:20 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 8380 | | 10 | mg/kg | 100 | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Surrogate: n-Tetracosane | 135 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 8010 | | 500 | mg/kg | 250 | EPA 5030B | EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 |
| Surrogate: a,a,a-Trifluorotoluene | 87.3 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 |
| Sample ID: B-2-51 Soil (5090225-05) Sampled:09/27/05 10:45 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 8780 | | 10 | mg/kg | 100 | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Surrogate: n-Tetracosane | 158 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 12700 | | 1000 | mg/kg | 500 | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |
| Surrogate: a,a,a-Trifluorotoluene | 91.0 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |
| Sample ID: B-2-52.5 Soil (5090225-06) Sampled:09/27/05 11:12 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 23900 | | 40 | mg/kg | 400 | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Surrogate: n-Tetracosane | 157 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 15100 | | 1000 | mg/kg | 500 | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |
| Surrogate: a,a,a-Trifluorotoluene | 89.0 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |

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 E.P.C.
 P.O. Box 1814
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Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

File #: 73627

Reported: 10/04/05 16:57

Submitted: 09/27/05

PLS Report No.: 5090225
Project: Stoddard Solvent

| Sample ID: B-1-15 Soil (5090225-07) Sampled:09/27/05 13:05 Received:09/27/05 14:47 | | | | | | | | | | | |
|--|--------------|------|------|--------|------|---------------------|----------|----------|----|---------|--|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | 6610 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 | |
| Surrogate: a,a,a-Trifluorotoluene | 92.0 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | 6540 | | 10 | mg/kg | 100 | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Surrogate: n-Tetracosane | 119 % | | | 51-150 | | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Sample ID: B-1-25 Soil (5090225-08) Sampled:09/27/05 13:20 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | 5080 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 | |
| Surrogate: a,a,a-Trifluorotoluene | 91.0 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | 5110 | | 10 | mg/kg | 100 | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Surrogate: n-Tetracosane | 119 % | | | 51-150 | | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Sample ID: B-1-40 Soil (5090225-09) Sampled:09/27/05 13:47 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | 5310 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 | |
| Surrogate: a,a,a-Trifluorotoluene | 86.7 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50317 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | 7190 | | 10 | mg/kg | 100 | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Surrogate: n-Tetracosane | 127 % | | | 51-150 | | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Sample ID: B-1-45 Soil (5090225-10) Sampled:09/27/05 14:07 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | 41600 | | 2500 | mg/kg | 1250 | EPA 5030B EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50111 | |
| Surrogate: a,a,a-Trifluorotoluene | 90.0 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50111 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | 60600 | | 100 | mg/kg | 1000 | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Surrogate: n-Tetracosane | 135 % | | | 51-150 | | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Sample ID: B-1-46 Soil (5090225-11) Sampled:09/27/05 14:25 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | 1250 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50117 | |
| Surrogate: a,a,a-Trifluorotoluene | 88.0 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50117 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | 233 | | 10 | mg/kg | 100 | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Surrogate: n-Tetracosane | 123 % | | | 51-150 | | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Sample ID: B-1-48 Soil (5090225-12) Sampled:09/27/05 14:45 Received:09/27/05 14:47 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | 7120 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50117 | |
| Surrogate: a,a,a-Trifluorotoluene | 86.7 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/03/05 | 10/03/05 | mb | BJ50117 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | 7980 | | 10 | mg/kg | 100 | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |
| Surrogate: n-Tetracosane | 107 % | | | 51-150 | | EPA 3550B EPA 8015B | 09/29/05 | 09/30/05 | lk | BI53025 | |

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P.O. Box 1814
Upland, CA 91785

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/05/05 08:25

Submitted: 09/27/05

PLS Report No.: 5090225
Project: Stoddard Solvent

Quality Control Data

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|--|--------|-------|-------|-------------|---------------|------|-------------|------|-----------|-----------|
| Batch BI53025 - EPA 3550B | | | | | | | | | | |
| Blank Prepared & Analyzed: 09/29/05 | | | | | | | | | | |
| C10 - C28 | ND | 2.50 | mg/kg | | | | | | | |
| Surrogate: <i>n-Tetracosane</i> | 15.6 | | mg/kg | 15.6 | | 100 | 51-150 | | | |
| LCS Prepared & Analyzed: 09/29/05 | | | | | | | | | | |
| C10 - C28 | 401 | 2.50 | mg/kg | 416 | | 96.4 | 72-136 | | | |
| Surrogate: <i>n-Tetracosane</i> | 18.3 | | mg/kg | 15.6 | | 117 | 54-138 | | | |
| Matrix Spike Source: 5090225-02 Prepared: 09/29/05 Analyzed: 09/30/05 | | | | | | | | | | |
| C10 - C28 | 94.3 | 2.50 | mg/kg | 83.2 | ND | 113 | 58-159 | | | |
| Surrogate: <i>n-Tetracosane</i> | 17.5 | | mg/kg | 15.6 | | 112 | 51-150 | | | |
| Matrix Spike Dup Source: 5090225-02 Prepared: 09/29/05 Analyzed: 09/30/05 | | | | | | | | | | |
| C10 - C28 | 81.4 | 2.50 | mg/kg | 83.2 | ND | 97.8 | 58-159 | 14.4 | 30 | |
| Surrogate: <i>n-Tetracosane</i> | 14.6 | | mg/kg | 15.6 | | 93.6 | 51-150 | | | |
| Batch BI53006 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 09/29/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: <i>a,a,a-Trifluorotoluene</i> | 0.0311 | | mg/kg | 0.0300 | | 104 | 38-140 | | | |
| LCS Prepared & Analyzed: 09/29/05 | | | | | | | | | | |
| C6 - C10 | 0.787 | 0.500 | mg/kg | 0.910 | | 86.5 | 75-120 | | | |
| LCS Dup Prepared & Analyzed: 09/29/05 | | | | | | | | | | |
| C6 - C10 | 0.797 | 0.500 | mg/kg | 0.910 | | 87.6 | 75-120 | 1.26 | 20 | |
| Batch BJ50317 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/03/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: <i>a,a,a-Trifluorotoluene</i> | 0.0240 | | mg/kg | 0.0300 | | 80.0 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/03/05 | | | | | | | | | | |
| C6 - C10 | 0.711 | 0.500 | mg/kg | 0.910 | | 78.1 | 75-120 | | | |
| Batch BJ50411 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/04/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: <i>a,a,a-Trifluorotoluene</i> | 0.0263 | | mg/kg | 0.0300 | | 87.7 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/04/05 | | | | | | | | | | |
| C6 - C10 | 0.770 | 0.500 | mg/kg | 0.910 | | 84.6 | 75-120 | | | |
| LCS Dup Prepared & Analyzed: 10/04/05 | | | | | | | | | | |
| C6 - C10 | 0.931 | 0.500 | mg/kg | 0.910 | | 102 | 75-120 | 18.6 | 20 | |

Certificate of Analysis

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Phone: (909) 946-1707 FAX: (909) 946-1707

File #: 73627

Reported: 10/04/05 16:57

Submitted: 09/27/05

PLS Report No.: 5090225

Project: Stoddard Solvent

Notes and Definitions

NA Not Applicable
ND Analyte NOT DETECTED at or above the detection limit
NR Not Reported
MDL Method Detection Limit
PQL (RL) Practical Quantitation Limit (RL)

Environmental Laboratory Accreditation Program Certificate No. 1131, Mobile Lab No. 2534, LACSD No. 10138



Authorized Signature(s)

Certificate of Analysis

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Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/05/05 14:33

Submitted: 09/28/05

PLS Report No.: 5090236
Project: Stoddard Solvent

| Sample ID: B-4-10 Soil (5090236-01) Sampled:09/28/05 08:26 Received:09/28/05 14:50 | | | | | | | | | | | |
|---|-------------|------|------|--------|------|------------------|-----------|----------|----------|----|---------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 863 | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Surrogate: n-Tetracosane | 93.6 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 588 | | 1000 | mg/kg | 500 | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |
| Surrogate: a,a,a-Trifluorotoluene | 91.3 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |
| Sample ID: B-4-25 Soil (5090236-02) Sampled:09/28/05 08:47 Received:09/28/05 14:50 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 88.8 | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Surrogate: n-Tetracosane | 153 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 136 | | 50 | mg/kg | 25.0 | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |
| Surrogate: a,a,a-Trifluorotoluene | 90.7 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |
| Sample ID: B-4-45 Soil (5090236-03) Sampled:09/28/05 09:14 Received:09/28/05 14:50 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 127 | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Surrogate: n-Tetracosane | 97.4 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 140 | | 50 | mg/kg | 25.0 | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |
| Surrogate: a,a,a-Trifluorotoluene | 90.3 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/04/05 | 10/04/05 | mb | BJ50411 |

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Phone: (909) 946-1707 FAX: (909) 946-1707

File #: 73627

Reported: 10/05/05 14:33

Submitted: 09/28/05

PLS Report No.: 5090236
Project: Stoddard Solvent

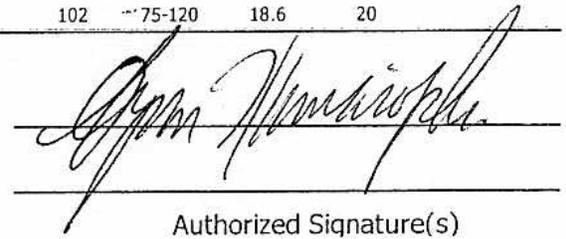
Quality Control Data

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|--|--------|-------|-------|-------------|---------------|------|-------------|------|-----------|-----------|
| Batch BJ50312 - EPA 3550B | | | | | | | | | | |
| Blank Prepared: 09/30/05 Analyzed: 10/01/05 | | | | | | | | | | |
| C10 - C28 | ND | 2.50 | mg/kg | | | | | | | |
| Surrogate: n-Tetracosane | 14.3 | | mg/kg | 15.6 | | 91.7 | 51-150 | | | |
| LCS Prepared: 09/30/05 Analyzed: 10/01/05 | | | | | | | | | | |
| C10 - C28 | 409 | 2.50 | mg/kg | 416 | | 98.3 | 72-136 | | | |
| Surrogate: n-Tetracosane | 18.2 | | mg/kg | 15.6 | | 117 | 54-138 | | | |
| Matrix Spike Source: 5090256-01 Prepared: 09/30/05 Analyzed: 10/01/05 | | | | | | | | | | |
| C10 - C28 | 225 | 2.50 | mg/kg | 166 | ND | 136 | 58-159 | | | |
| Matrix Spike Dup Source: 5090256-01 Prepared: 09/30/05 Analyzed: 10/01/05 | | | | | | | | | | |
| C10 - C28 | 279 | 2.50 | mg/kg | 166 | ND | 168 | 58-159 | 21.1 | 30 | |
| Batch BJ50411 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/04/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0263 | | mg/kg | 0.0300 | | 87.7 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/04/05 | | | | | | | | | | |
| C6 - C10 | 0.770 | 0.500 | mg/kg | 0.910 | | 84.6 | 75-120 | | | |
| LCS Dup Prepared & Analyzed: 10/04/05 | | | | | | | | | | |
| C6 - C10 | 0.931 | 0.500 | mg/kg | 0.910 | | 102 | 75-120 | 18.6 | 20 | |

Notes and Definitions

NA Not Applicable
 ND Analyte NOT DETECTED at or above the detection limit
 NR Not Reported
 MDL Method Detection Limit
 PQL (RL) Practical Quantitation Limit (RL)

Environmental Laboratory Accreditation Program Certificate No. 1131, Mobile Lab No. 2534, LACSD No. 10138



Authorized Signature(s)

Certificate of Analysis

Page 2 of 5

 E.P.C.
 P.O. Box 1814
 Upland, CA 91785

Attn: Mr. A. J. Ursic Jr.

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/10/05 11:17

Submitted: 09/29/05

PLS Report No.: 5090255
Project: Stoddard Solvent

| Sample ID: A-11-15 Soil (5090255-01) Sampled:09/29/05 09:20 Received:09/29/05 15:15 | | | | | | | | | | | |
|--|---------|------|------|--------|-------|------------------|-----------|----------|----------|----|---------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | BJ50609 |
| Surrogate: a,a,a-Trifluorotoluene | 88.7 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | BJ50609 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Surrogate: n-Tetracosane | 92.3 % | | | 51-150 | | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Sample ID: A-11-40 Soil (5090255-02) Sampled:09/29/05 10:10 Received:09/29/05 15:15 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 0.609 | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Surrogate: a,a,a-Trifluorotoluene | 94.3 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Surrogate: n-Tetracosane | 103 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Sample ID: A-11-45 Soil (5090255-03) Sampled:09/29/05 10:31 Received:09/29/05 15:15 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Surrogate: a,a,a-Trifluorotoluene | 97.0 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 10.2 | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Surrogate: n-Tetracosane | 105 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Sample ID: A-3-10 Soil (5090255-04) Sampled:09/29/05 12:18 Received:09/29/05 15:15 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 371 | | 50 | mg/kg | 25.0 | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Surrogate: a,a,a-Trifluorotoluene | 103 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 486 | | 8 | mg/kg | 80.0 | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Surrogate: n-Tetracosane | 109 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Sample ID: A-3-25 Soil (5090255-05) Sampled:09/29/05 12:39 Received:09/29/05 15:15 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 483 | | 500 | mg/kg | 250 | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 |
| Surrogate: a,a,a-Trifluorotoluene | 104 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 440 | | 8 | mg/kg | 80.0 | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Surrogate: n-Tetracosane | 108 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Sample ID: A-3-40 Soil (5090255-06) Sampled:09/29/05 13:03 Received:09/29/05 15:15 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 6080 | | 500 | mg/kg | 250 | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 |
| Surrogate: a,a,a-Trifluorotoluene | 105 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 1680 | | 8 | mg/kg | 80.0 | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |
| Surrogate: n-Tetracosane | 113 % | | | 51-150 | | EPA 3550B | EPA 8015B | 09/30/05 | 10/03/05 | lk | BJ50312 |

Certificate of Analysis

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E.P.C.
P.O. Box 1814
Upland, CA 91785

Attn: Mr. A. J. Ursic Jr.

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/10/05 11:17

Submitted: 09/29/05

PLS Report No.: 5090255
Project: Stoddard Solvent

| Sample ID: A-3-55 Soil (5090255-07) Sampled:09/29/05 13:47 Received:09/29/05 15:15 | | | | | | | | | | | |
|--|---------|------|------|--------|-------|------------------|-----------|----------|----------|----|---------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | B150609 |
| Surrogate: a,a,a-Trifluorotoluene | 88.0 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | B150609 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | B150629 |
| Surrogate: n-Tetracosane | 103 % | | | 51-150 | | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | B150629 |

Certificate of Analysis

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Attn: Mr. A. J. Ursic Jr.

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/10/05 11:17

Submitted: 09/29/05

PLS Report No.: 5090255
Project: Stoddard Solvent

Quality Control Data

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|--|--------|-------|-------|-------------|---------------|------|-------------|------|-----------|-----------|
| Batch BJ50609 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/05/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0249 | | mg/kg | 0.0300 | | 83.0 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/05/05 | | | | | | | | | | |
| C6 - C10 | 0.685 | 0.500 | mg/kg | 0.910 | | 75.3 | 75-120 | | | |
| Batch BJ50709 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/06/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0312 | | mg/kg | 0.0300 | | 104 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/06/05 | | | | | | | | | | |
| C6 - C10 | 0.760 | 0.500 | mg/kg | 0.910 | | 83.5 | 64-134 | | | |
| Batch BJ50716 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0302 | | mg/kg | 0.0300 | | 101 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C6 - C10 | 0.947 | 0.500 | mg/kg | 0.910 | | 104 | 64-134 | | | |
| Batch BJ50312 - EPA 3550B | | | | | | | | | | |
| Blank Prepared: 09/30/05 Analyzed: 10/01/05 | | | | | | | | | | |
| C10 - C28 | ND | 2.50 | mg/kg | | | | | | | |
| Surrogate: n-Tetracosane | 14.3 | | mg/kg | 15.6 | | 91.7 | 51-150 | | | |
| LCS Prepared: 09/30/05 Analyzed: 10/01/05 | | | | | | | | | | |
| C10 - C28 | 409 | 2.50 | mg/kg | 416 | | 98.3 | 72-136 | | | |
| Surrogate: n-Tetracosane | 18.2 | | mg/kg | 15.6 | | 117 | 54-138 | | | |
| Matrix Spike Source: 5090256-01 Prepared: 09/30/05 Analyzed: 10/01/05 | | | | | | | | | | |
| C10 - C28 | 225 | 2.50 | mg/kg | 166 | ND | 136 | 58-159 | | | |
| Matrix Spike Dup Source: 5090256-01 Prepared: 09/30/05 Analyzed: 10/01/05 | | | | | | | | | | |
| C10 - C28 | 279 | 2.50 | mg/kg | 166 | ND | 168 | 58-159 | 21.1 | 30 | |
| Batch BJ50629 - EPA 3550B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/05/05 | | | | | | | | | | |
| C10 - C28 | ND | 2.50 | mg/kg | | | | | | | |
| Surrogate: n-Tetracosane | 16.6 | | mg/kg | 15.6 | | 106 | 51-150 | | | |
| LCS Prepared & Analyzed: 10/05/05 | | | | | | | | | | |
| C10 - C28 | 443 | 2.50 | mg/kg | 416 | | 106 | 72-136 | | | |
| Surrogate: n-Tetracosane | 30.3 | | mg/kg | 31.2 | | 97.1 | 54-138 | | | |
| Matrix Spike Source: 5100024-11 Prepared: 10/05/05 Analyzed: 10/06/05 | | | | | | | | | | |

Certificate of Analysis

Page 5 of 5

E.P.C.
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Attn: Mr. A. J. Ursic Jr.

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/10/05 11:17

Submitted: 09/29/05

PLS Report No.: 5090255
Project: Stoddard Solvent

Quality Control Data

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|--|--------|------|-------|-------------|---------------|------|-------------|-------|-----------|-----------|
| Batch BJ50629 - EPA 3550B | | | | | | | | | | |
| C10 - C28 | 79.8 | 2.50 | mg/kg | 83.2 | ND | 95.9 | 58-159 | | | |
| Surrogate: n-Tetracosane | 14.7 | | mg/kg | 15.6 | | 94.2 | 51-150 | | | |
| Matrix Spike Dup Source: 5100024-11 Prepared: 10/05/05 Analyzed: 10/06/05 | | | | | | | | | | |
| C10 - C28 | 79.7 | 2.50 | mg/kg | 83.2 | ND | 95.8 | 58-159 | 0.104 | 30 | |
| Surrogate: n-Tetracosane | 13.6 | | mg/kg | 15.6 | | 87.2 | 51-150 | | | |

Notes and Definitions

NA Not Applicable
ND Analyte NOT DETECTED at or above the detection limit
NR Not Reported
MDL Method Detection Limit
PQL (RL) Practical Quantitation Limit (RL)

Environmental Laboratory Accreditation Program Certificate No. 1131, Mobile Lab No. 2534, LACSD No. 10138


Authorized Signature(s)

Certificate of Analysis

Page 2 of 3

 E.P.C.
 P.O. Box 1814
 Upland, CA 91785

 File #:73627
 Reported: 10/10/05 11:17
 Submitted: 09/30/05
PLS Report No.: 5100001

Attn: Mr. A. J. Ursic Jr.

Phone: (909) 946-1707 FAX:(909) 946-1707

Project: Stoddard Solvent

| Sample ID: A-1-15 Soil (5100001-01) Sampled:09/30/05 08:31 Received:09/30/05 14:50 | | | | | | | | | | | |
|---|-------------|------|------|--------|-------|------------------|-----------|----------|----------|----|---------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 4620 | | 500 | mg/kg | 250 | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Surrogate: a,a,a-Trifluorotoluene | 103 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 4450 | | 8 | mg/kg | 80.0 | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Surrogate: n-Tetracosane | 112 % | | | 51-150 | | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Sample ID: A-1-30 Soil (5100001-02) Sampled:09/30/05 08:56 Received:09/30/05 14:50 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 5320 | | 500 | mg/kg | 250 | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Surrogate: a,a,a-Trifluorotoluene | 103 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50716 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | 6200 | | 8 | mg/kg | 80.0 | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Surrogate: n-Tetracosane | 104 % | | | 51-150 | | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Sample ID: A-1-57.5 Soil (5100001-03) Sampled:09/30/05 09:40 Received:09/30/05 14:50 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | BJ50609 |
| Surrogate: a,a,a-Trifluorotoluene | 90.7 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | BJ50609 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Surrogate: n-Tetracosane | 93.6 % | | | 51-150 | | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Sample ID: A-1-58.5 Soil (5100001-04) Sampled:09/30/05 10:00 Received:09/30/05 14:50 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | BJ50609 |
| Surrogate: a,a,a-Trifluorotoluene | 99.0 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | BJ50609 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Surrogate: n-Tetracosane | 95.5 % | | | 51-150 | | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Sample ID: A-1-60 Soil (5100001-05) Sampled:09/30/05 10:20 Received:09/30/05 14:50 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | BJ50609 |
| Surrogate: a,a,a-Trifluorotoluene | 102 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/06/05 | 10/06/05 | mb | BJ50609 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |
| Surrogate: n-Tetracosane | 103 % | | | 51-150 | | EPA 3550B | EPA 8015B | 10/05/05 | 10/06/05 | lk | BJ50629 |

Certificate of Analysis

Page 3 of 3

 E.P.C.
 P.O. Box 1814
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Attn: Mr. A. J. Ursic Jr.

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/10/05 11:17

Submitted: 09/30/05

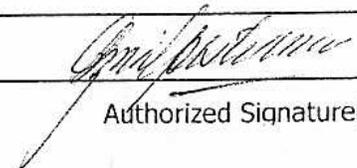
PLS Report No.: 5100001
Project: Stoddard Solvent
Quality Control Data

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|--|--------|-------|-------|-------------|---------------|------|-------------|-------|-----------|-----------|
| Batch BJ50609 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/05/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0249 | | mg/kg | 0.0300 | | 83.0 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/05/05 | | | | | | | | | | |
| C6 - C10 | 0.685 | 0.500 | mg/kg | 0.910 | | 75.3 | 75-120 | | | |
| Batch BJ50716 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0302 | | mg/kg | 0.0300 | | 101 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C6 - C10 | 0.947 | 0.500 | mg/kg | 0.910 | | 104 | 64-134 | | | |
| Batch BJ50629 - EPA 3550B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/05/05 | | | | | | | | | | |
| C10 - C28 | ND | 2.50 | mg/kg | | | | | | | |
| Surrogate: n-Tetracosane | 16.6 | | mg/kg | 15.6 | | 106 | 51-150 | | | |
| LCS Prepared & Analyzed: 10/05/05 | | | | | | | | | | |
| C10 - C28 | 443 | 2.50 | mg/kg | 416 | | 106 | 72-136 | | | |
| Surrogate: n-Tetracosane | 30.3 | | mg/kg | 31.2 | | 97.1 | 54-138 | | | |
| Matrix Spike Source: 5100024-11 Prepared: 10/05/05 Analyzed: 10/06/05 | | | | | | | | | | |
| C10 - C28 | 79.8 | 2.50 | mg/kg | 83.2 | ND | 95.9 | 58-159 | | | |
| Surrogate: n-Tetracosane | 14.7 | | mg/kg | 15.6 | | 94.2 | 51-150 | | | |
| Matrix Spike Dup Source: 5100024-11 Prepared: 10/05/05 Analyzed: 10/06/05 | | | | | | | | | | |
| C10 - C28 | 79.7 | 2.50 | mg/kg | 83.2 | ND | 95.8 | 58-159 | 0.104 | 30 | |
| Surrogate: n-Tetracosane | 13.6 | | mg/kg | 15.6 | | 87.2 | 51-150 | | | |

Notes and Definitions

NA Not Applicable
 ND Analyte NOT DETECTED at or above the detection limit
 NR Not Reported
 MDL Method Detection Limit
 PQL (RL) Practical Quantitation Limit (RL)

Environmental Laboratory Accreditation Program Certificate No. 1131, Mobile Lab No. 2534, LACSD No. 10138



 Authorized Signature(s)

Certificate of Analysis

Page 2 of 5

 E.P.C.
 P.O. Box 1814
 Upland, CA 91785

 File #:73627
 Reported: 10/11/05 15:48
 Submitted: 10/03/05
PLS Report No.: 510006

Attn: Mr. A. J. Ursic Jr.

Phone: (909) 946-1707 FAX:(909) 946-1707

Project: Stoddard Solvent

| Sample ID: C-1-15 Soil (5100006-01) Sampled:10/03/05 07:33 Received:10/03/05 13:20 | | | | | | | | | | | |
|---|---------|------|------|--------|-------|---------------------|----------|----------|----|---------|--|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | 2220 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51L04 | |
| Surrogate: a,a,a-Trifluorotoluene | 97.7 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51L04 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | 2500 | | 8 | mg/kg | 80.0 | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Surrogate: n-Tetracosane | 118 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Sample ID: C-1-40 Soil (5100006-02) Sampled:10/03/05 08:45 Received:10/03/05 13:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | 0.779 | | 1 | mg/kg | 0.500 | EPA 5030B EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 | |
| Surrogate: a,a,a-Trifluorotoluene | 89.3 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Surrogate: n-Tetracosane | 96.8 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Sample ID: C-1-45 Soil (5100006-03) Sampled:10/03/05 09:02 Received:10/03/05 13:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | 1130 | | 100 | mg/kg | 50.0 | EPA 5030B EPA 8015 | 10/11/05 | 10/11/05 | mb | BJ51L20 | |
| Surrogate: a,a,a-Trifluorotoluene | 98.7 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/11/05 | 10/11/05 | mb | BJ51L20 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | 162 | | 8 | mg/kg | 80.0 | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Surrogate: n-Tetracosane | 127 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Sample ID: C-1-60 Soil (5100006-04) Sampled:10/03/05 09:40 Received:10/03/05 13:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 | |
| Surrogate: a,a,a-Trifluorotoluene | 95.0 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Surrogate: n-Tetracosane | 110 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Sample ID: C-1-65 Soil (5100006-05) Sampled:10/03/05 10:06 Received:10/03/05 13:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 | |
| Surrogate: a,a,a-Trifluorotoluene | 100 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Surrogate: n-Tetracosane | 111 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Sample ID: C-4-15 Soil (5100006-06) Sampled:10/03/05 11:56 Received:10/03/05 13:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 | |
| Surrogate: a,a,a-Trifluorotoluene | 103 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch | |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |
| Surrogate: n-Tetracosane | 117 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 | |

Certificate of Analysis

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E.P.C.
P.O. Box 1814
Upland, CA 91785

Attn: Mr. A. J. Ursic Jr.

Phone: (909) 946-1707 FAX: (909) 946-1707

File #: 73627

Reported: 10/11/05 11:48

Submitted: 10/03/05

PLS Report No.: 5100006
Project: Stoddard Solvent

| Sample ID: C-4-40 Soil (5100006-07) Sampled:10/03/05 12:26 Received:10/03/05 13:20 | | | | | | | | | | | |
|--|---------|------|------|--------|-------|------------------|-----------|----------|----------|----|---------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | 1.47 | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 10/11/05 | 10/11/05 | mb | BJ51120 |
| Surrogate: a,a,a-Trifluorotoluene | 96.7 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/11/05 | 10/11/05 | mb | BJ51120 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 |
| Surrogate: n-Tetracosane | 113 % | | | 51-150 | | EPA 3550B | EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 |
| Sample ID: C-4-45 Soil (5100006-08) Sampled:10/03/05 12:45 Received:10/03/05 13:20 | | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 |
| Surrogate: a,a,a-Trifluorotoluene | 101 % | | | 38-140 | | EPA 5030B | EPA 8015 | 10/07/05 | 10/07/05 | mb | BJ50709 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B | EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 |
| Surrogate: n-Tetracosane | 113 % | | | 51-150 | | EPA 3550B | EPA 8015B | 10/06/05 | 10/07/05 | lk | BJ50713 |

Certificate of Analysis

Page 4 of 5

 E.P.C.
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 Upland, CA 91785

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/11/05 15:48

Submitted: 10/03/05

PLS Report No.: 5100006
Project: Stoddard Solvent

Quality Control Data

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|--|--------|-------|-------|-------------|---------------|------|-------------|------|-----------|-----------|
| Batch BJ50709 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/06/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0312 | | mg/kg | 0.0300 | | 104 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/06/05 | | | | | | | | | | |
| C6 - C10 | 0.760 | 0.500 | mg/kg | 0.910 | | 83.5 | 64-134 | | | |
| Batch BJ51104 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/10/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0273 | | mg/kg | 0.0300 | | 91.0 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/10/05 | | | | | | | | | | |
| C6 - C10 | 0.854 | 0.500 | mg/kg | 0.910 | | 93.8 | 75-120 | | | |
| LCS Dup Prepared & Analyzed: 10/10/05 | | | | | | | | | | |
| C6 - C10 | 0.899 | 0.500 | mg/kg | 0.910 | | 98.8 | 75-120 | 5.19 | 20 | |
| Batch BJ51120 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/11/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0300 | | mg/kg | 0.0300 | | 100 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/11/05 | | | | | | | | | | |
| C6 - C10 | 0.904 | 0.500 | mg/kg | 0.910 | | 99.3 | 75-120 | | | |
| Batch BJ50713 - EPA 3550B | | | | | | | | | | |
| Blank Prepared: 10/06/05 Analyzed: 10/07/05 | | | | | | | | | | |
| C10 - C28 | ND | 2.50 | mg/kg | | | | | | | |
| Surrogate: n-Tetracosane | 15.2 | | mg/kg | 15.6 | | 97.4 | 51-150 | | | |
| LCS Prepared: 10/06/05 Analyzed: 10/07/05 | | | | | | | | | | |
| C10 - C28 | 416 | 2.50 | mg/kg | 416 | | 100 | 72-136 | | | |
| Surrogate: n-Tetracosane | 16.1 | | mg/kg | 15.6 | | 103 | 54-138 | | | |
| Matrix Spike Source: 5100009-01 Prepared: 10/06/05 Analyzed: 10/07/05 | | | | | | | | | | |
| C10 - C28 | 100 | 2.50 | mg/kg | 83.2 | ND | 120 | 58-159 | | | |
| Surrogate: n-Tetracosane | 15.2 | | mg/kg | 15.6 | | 97.4 | 51-150 | | | |
| Matrix Spike Dup Source: 5100009-01 Prepared: 10/06/05 Analyzed: 10/07/05 | | | | | | | | | | |
| C10 - C28 | 82.4 | 2.50 | mg/kg | 83.2 | ND | 99.0 | 58-159 | 19.2 | 30 | |
| Surrogate: n-Tetracosane | 14.9 | | mg/kg | 15.6 | | 95.5 | 51-150 | | | |

Certificate of Analysis

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E.P.C.
P.O. Box 1814
Upland, CA 91785

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

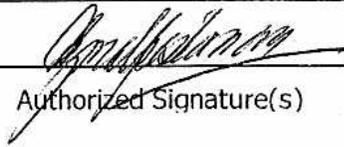
File #:73627
Reported: 10/11/05 15:48
Submitted: 10/03/05
PLS Report No.: 5100006

Project: Stoddard Solvent

Notes and Definitions

NA Not Applicable
ND Analyte NOT DETECTED at or above the detection limit
NR Not Reported
MDL Method Detection Limit
PQL (RL) Practical Quantitation Limit (RL)

Environmental Laboratory Accreditation Program Certificate No. 1131, Mobile Lab No. 2534, LACSD No. 10138



Authorized Signature(s)

Certificate of Analysis

Page 2 of 4

 E.P.C.
 P.O. Box 1814
 Upland, CA 91785

 File #:73627
 Reported: 10/12/05 08:44
 Submitted: 10/04/05
PLS Report No.: 5100015

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

Project: Stoddard Solvent

| Sample ID: D-1-15 Soil (5100015-01) Sampled:10/04/05 07:26 Received:10/04/05 11:55 | | | | | | | | | | |
|--|-------------|------|------|--------|-------|---------------------|----------|----------|----|---------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | 4210 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Surrogate: a,a,a-Trifluorotoluene | 98.0 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | 2720 | | 8 | mg/kg | 80.0 | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Surrogate: n-Tetracosane | 101 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Sample ID: D-1-35 Soil (5100015-02) Sampled:10/04/05 08:00 Received:10/04/05 11:55 | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | 845 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Surrogate: a,a,a-Trifluorotoluene | 98.3 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | 1360 | | 8 | mg/kg | 80.0 | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Surrogate: n-Tetracosane | 99.4 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Sample ID: D-1-41.5 Soil (5100015-03) Sampled:10/04/05 08:26 Received:10/04/05 11:55 | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B EPA 8015 | 10/08/05 | 10/08/05 | mb | BJ51002 |
| Surrogate: a,a,a-Trifluorotoluene | 86.3 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/08/05 | 10/08/05 | mb | BJ51002 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Surrogate: n-Tetracosane | 91.0 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Sample ID: D-1-43 Soil (5100015-04) Sampled:10/04/05 08:43 Received:10/04/05 11:55 | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | 5030 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Surrogate: a,a,a-Trifluorotoluene | 96.3 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | 2240 | | 8 | mg/kg | 80.0 | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Surrogate: n-Tetracosane | 101 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Sample ID: D-1-44.5 Soil (5100015-05) Sampled:10/04/05 09:00 Received:10/04/05 11:55 | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | 3640 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Surrogate: a,a,a-Trifluorotoluene | 103 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | 3450 | | 8 | mg/kg | 80.0 | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Surrogate: n-Tetracosane | 97.4 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Sample ID: D-2-10 Soil (5100015-06) Sampled:10/04/05 10:41 Received:10/04/05 11:55 | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | ND | | 1 | mg/kg | 0.500 | EPA 5030B EPA 8015 | 10/08/05 | 10/08/05 | mb | BJ51002 |
| Surrogate: a,a,a-Trifluorotoluene | 89.3 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/08/05 | 10/08/05 | mb | BJ51002 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | ND | | 1 | mg/kg | 10.0 | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Surrogate: n-Tetracosane | 92.3 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |

Certificate of Analysis

Page 3 of 4

 E.P.C.
 P.O. Box 1814
 Upland, CA 91785

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX:(909) 946-1707

File #:73627

Reported: 10/12/05 08:44

Submitted: 10/04/05

PLS Report No.: 5100015
Project: Stoddard Solvent

| Sample ID: D-2-25 Soil (5100015-07) Sampled:10/04/05 11:02 Received:10/04/05 11:55 | | | | | | | | | | |
|--|--------------|------|------|--------|------|---------------------|----------|----------|----|---------|
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | 36.7 | | 50 | mg/kg | 25.0 | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Surrogate: a,a,a-Trifluorotoluene | 95.3 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/10/05 | 10/10/05 | mb | BJ51104 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | 124 | | 1 | mg/kg | 10.0 | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Surrogate: n-Tetracosane | 96.2 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Sample ID: D-2-35 Soil (5100015-08) Sampled:10/04/05 11:24 Received:10/04/05 11:55 | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | 3240 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/11/05 | 10/11/05 | mb | BJ51104 |
| Surrogate: a,a,a-Trifluorotoluene | 99.3 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/11/05 | 10/11/05 | mb | BJ51104 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | 4790 | | 8 | mg/kg | 80.0 | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Surrogate: n-Tetracosane | 100 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Sample ID: D-2-45 Soil (5100015-09) Sampled:10/04/05 11:49 Received:10/04/05 11:55 | | | | | | | | | | |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C6 - C10 | 6020 | | 500 | mg/kg | 250 | EPA 5030B EPA 8015 | 10/11/05 | 10/11/05 | mb | BJ51104 |
| Surrogate: a,a,a-Trifluorotoluene | 103 % | | | 38-140 | | EPA 5030B EPA 8015 | 10/11/05 | 10/11/05 | mb | BJ51104 |
| Analyte | Results | Flag | D.F. | Units | PQL | Prep/Test Method | Prepared | Analyzed | By | Batch |
| C10 - C28 | 10800 | | 8 | mg/kg | 80.0 | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |
| Surrogate: n-Tetracosane | 101 % | | | 51-150 | | EPA 3550B EPA 8015B | 10/07/05 | 10/08/05 | ai | BJ51017 |

Certificate of Analysis

Page 4 of 4

 E.P.C.
 P.O. Box 1814
 Upland, CA 91785

Attn: Mr. A. J. Ursic

Phone: (909) 946-1707 FAX: (909) 946-1707

File #: 73627

Reported: 10/12/05 08:44

Submitted: 10/04/05

PLS Report No.: 5100015
Project: Stoddard Solvent

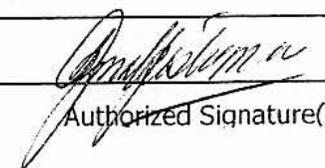
Quality Control Data

| Analyte | Result | RL | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit | Qualifier |
|--|--------|-------|-------|-------------|---------------|------|-------------|-------|-----------|-----------|
| Batch BJ51002 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0302 | | mg/kg | 0.0300 | | 101 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C6 - C10 | 0.947 | 0.500 | mg/kg | 0.910 | | 104 | 75-120 | | | |
| LCS Dup Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C6 - C10 | 0.950 | 0.500 | mg/kg | 0.910 | | 104 | 75-120 | 0.00 | 20 | |
| Batch BJ51104 - EPA 5030B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/10/05 | | | | | | | | | | |
| C6 - C10 | ND | 0.500 | mg/kg | | | | | | | |
| Surrogate: a,a,a-Trifluorotoluene | 0.0273 | | mg/kg | 0.0300 | | 91.0 | 38-140 | | | |
| LCS Prepared & Analyzed: 10/10/05 | | | | | | | | | | |
| C6 - C10 | 0.854 | 0.500 | mg/kg | 0.910 | | 93.8 | 75-120 | | | |
| LCS Dup Prepared & Analyzed: 10/10/05 | | | | | | | | | | |
| C6 - C10 | 0.899 | 0.500 | mg/kg | 0.910 | | 98.8 | 75-120 | 5.19 | 20 | |
| Batch BJ51017 - EPA 3550B | | | | | | | | | | |
| Blank Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C10 - C28 | ND | 10.0 | mg/kg | | | | | | | |
| Surrogate: n-Tetracosane | 14.5 | | mg/kg | 15.6 | | 92.9 | 51-150 | | | |
| LCS Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C10 - C28 | 422 | 10.0 | mg/kg | 416 | | 101 | 72-136 | | | |
| Surrogate: n-Tetracosane | 15.5 | | mg/kg | 15.6 | | 99.4 | 54-138 | | | |
| Matrix Spike Source: 5100054-01 Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C10 - C28 | 74.3 | 10.0 | mg/kg | 83.2 | ND | 89.3 | 58-159 | | | |
| Surrogate: n-Tetracosane | 14.6 | | mg/kg | 15.6 | | 93.6 | 51-150 | | | |
| Matrix Spike Dup Source: 5100054-01 Prepared & Analyzed: 10/07/05 | | | | | | | | | | |
| C10 - C28 | 73.7 | 10.0 | mg/kg | 83.2 | ND | 88.6 | 58-159 | 0.787 | 30 | |
| Surrogate: n-Tetracosane | 14.2 | | mg/kg | 15.6 | | 91.0 | 51-150 | | | |

Notes and Definitions

NA Not Applicable
 ND Analyte NOT DETECTED at or above the detection limit
 NR Not Reported
 MDL Method Detection Limit
 PQL (RL) Practical Quantitation Limit (RL)

Environmental Laboratory Accreditation Program Certificate No. 1131, Mobile Lab No. 2534, LACSD No. 10138


 Authorized Signature(s)


 781 East Washington Blvd., Los Angeles, CA 90021
 (213) 745-5312 FAX (213) 745-6372

QUALITY CONTROL DATA

 CLIENT: E.P.C.
 REPORT NO: 5090225
 MATRIX: Soil
 METHOD: EPA 8015B

 BATCH No: 52768015
 DATE EXTRACTED: 10/03/05
 DATE ANALYZED: 10/03/05
 QC SAMPLE: 5090242-09

| PARAMETER | SAMPLE RESULTS | AMT | AMT | % | SPK REC | RPD |
|-----------|----------------|-------|-------|-------|---------|-----|
| | | mg/kg | mg/kg | | mg/kg | |
| GASOLINE | S | 0 | 0.910 | 0.691 | 76% | 17% |
| | DS | 0 | 0.910 | 0.582 | 64% | |
| | LCS | | 0.910 | 0.711 | 78% | |

S = Spike
 DS = Duplicate Spike
 LCS = Laboratory Control Spike
 LCSD = Laboratory Control Spike Duplicate



781 East Washington Blvd., Los Angeles, CA 90021
 (213) 745-5312 FAX (213) 745-6372

QUALITY CONTROL DATA

CLIENT: E.P.C.
 REPORT NO: 5100001
 MATRIX: Soil
 METHOD: EPA 8015B

BATCH No: 52788015
 DATE EXTRACTED: 10/05/05
 DATE ANALYZED: 10/05/05
 QC SAMPLE: 5100024-06

| PARAMETER | SAMPLE RESULTS | AMT | AMT | % REC | SPK REC | RPD |
|-----------|----------------|--------|-------|-------|-----------|--------|
| | | SPIKED | REC | | ACCEPT | |
| | mg/kg | mg/kg | mg/kg | REC | RANGE (%) | |
| GASOLINE | S | 0 | 0.910 | 0.507 | 56% | |
| | DS | 0 | 0.910 | 0.460 | 51% | 64-134 |
| | LCS | | 0.910 | 0.685 | 75% | 64-134 |

* Spikes reran. Low recovery. Matrix Interference.

S = Spike
 DS = Duplicate Spike
 LCS = Laboratory Control Spike
 LCSD = Laboratory Control Spike Duplicate


 781 East Washington Blvd., Los Angeles, CA 90021
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QUALITY CONTROL DATA

 CLIENT: E.P.C.
 REPORT NO: 5090255
 MATRIX: Soil
 METHOD: EPA 8015B

 BATCH No: 52798015
 DATE EXTRACTED: 10/06/05
 DATE ANALYZED: 10/06/05
 QC SAMPLE: 5100009-01

| PARAMETER | SAMPLE RESULTS | AMT | AMT | % | SPK REC | RPD |
|-----------|----------------|--------|-------|-------|-----------|--------|
| | | SPIKED | REC | | ACCEPT | |
| | | mg/kg | mg/kg | REC | RANGE (%) | |
| GASOLINE | S | 0 | 0.910 | 0.935 | 103% | |
| | DS | 0 | 0.910 | 0.933 | 102% | 64-134 |
| | LCS | | 0.910 | 0.760 | 84% | 64-134 |

S = Spike
 DS = Duplicate Spike
 LCS = Laboratory Control Spike
 LCSD = Laboratory Control Spike Duplicate


 781 East Washington Blvd., Los Angeles, CA 90021
 (213) 745-5312 FAX (213) 745-6372

QUALITY CONTROL DATA

 CLIENT: E.P.C.
 REPORT NO: 5100001
 MATRIX: Soil
 METHOD: EPA 8015B

 BATCH No: 52808015
 DATE EXTRACTED: 10/07/05
 DATE ANALYZED: 10/07/05
 QC SAMPLE: 5100054-01

| PARAMETER | SAMPLE RESULTS | AMT | AMT | % REC | SPK REC | RPD |
|-----------|----------------|-------|-------|-------|------------------|--------|
| | | mg/kg | mg/kg | | ACCEPT RANGE (%) | |
| GASOLINE | S | 0 | 0.910 | 0.788 | 87% | |
| | DS | 0 | 0.910 | 0.760 | 84% | 4% |
| | LCS | | 0.910 | 0.947 | 104% | 64-134 |

S = Spike
 DS = Duplicate Spike
 LCS = Laboratory Control Spike
 LCSD = Laboratory Control Spike Duplicate



CHAIN OF CUSTODY ANALYSIS REQUEST

781 East Washington Blvd., Los Angeles, CA 90021
 (213) 745-5312 FAX (213) 745-6372

DATE: 09.26.05 PAGE 1 OF 1
 FILE NO. 79027 LAB NO. 5090224

CLIENT NAME: epc Project Name/No. STODDARD SOLVENT P.O. NO. AIRBILL NO. COOLER TEMP. PRESERVED: REMARKS: SAMPLE CONDITION/CONTAINER/COMMENTS:

ADDRESS: P.O. Box 1814, UPLAND, CA 91785-1814 ANALYSES REQUESTED:

PROJECT MANAGER: A. J. URSIC JR PHONE NO. 909.946.1707 FAX NO. SAME

SAMPLER NAME: A. J. URSIC JR (Printed) (Signature)

TAT (Analytical Turn Around Time) 0 = Same day; 1 = 24 Hour; 2 = 48 Hour; (Etc.) N = NORMAL

CONTAINER TYPES: B = Brass, E = Encore G = Glass, P = Plastic, V = VOA Vial, O = Other.

UST Project: Y N - Global ID#

| SAMPLE ID | DATE SAMPLED | TIME SAMPLED | SAMPLE DESCRIPTION | MATRIX | | | TAT | CONTAINER | | | |
|-----------|--------------|--------------|--------------------|--------|------|--------|-----|-----------|---|------|---|
| | | | | WATER | SOIL | SLUDGE | | OTHER | # | TYPE | |
| B-9-10 | 9.26.05 | 10:30 | Soil | | X | | | | N | 1 | B |
| B-9-20 | | | | | X | | | | N | | B |
| B-9-45 | | | | | X | | | | N | | B |
| B-11-25 | | | | | X | | | | N | | B |
| B-11-10 | | | | | X | | | | N | | B |
| B-11-17 | | | | | X | | | | N | | B |
| B-11-50 | | | | | X | | | | N | | B |

Relinquished By: (Signature and Printed Name) Received By: (Signature and Printed Name) Date: 9.26.05 Time: 1420
 Relinquished By: (Signature and Printed Name) Received By: (Signature and Printed Name) Date: 9.27.05 Time: 1000
 Relinquished By: (Signature and Printed Name) Received By: (Signature and Printed Name) Date: Time:
 SPECIAL INSTRUCTIONS: Storage time requested: _____ days
 By _____ Date _____



CHAIN OF CUSTODY ANALYSIS REQUEST

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

DATE: 09.27.05 PAGE 1 OF 2
LOG BOOK NO. FILE NO. LAB NO. 5090225

CLIENT NAME: epc Project Name/No. STODDARD SOLVENT P.O. NO.

ADDRESS: PO Box 1814, UPLAND, CA 91705-1814

PROJECT MANAGER: A.J. URSIC JR PHONE NO: 909.946.1707 FAX NO: SAME

SAMPLER NAME: A.J. URSIC JR (Printed) (Signature)

TAT (Analytical Turn Around Time) 0 = Same day; 1 = 24 Hour; 2 = 48 Hour; (Etc.) N = NORMAL

CONTAINER TYPES: B = Brass, E = Encore G = Glass, P = Plastic, V = VOA Vial, O = Other:

UST Project: Y (N) - Global ID#

| SAMPLE ID | DATE SAMPLED | TIME SAMPLED | SAMPLE DESCRIPTION | MATRIX | | | TAT | CONTAINER # | CONTAINER TYPE | ANALYSES REQUESTED: | REMARKS: | AIRBILL NO.: | COOLER TEMP: 45° | PRESERVED: | SAMPLE CONDITION/CONTAINER COMMENTS: |
|-----------|--------------|--------------|--------------------|--------|------|--------|-----|-------------|----------------|---------------------|----------|--------------|------------------|------------|--------------------------------------|
| | | | | WATER | SOIL | SLUDGE | | | | | | | | | |
| 1 | 9.27.05 | 9:01A | B-2-10 | X | | | N | 1 | B | ✓ | | | | | |
| 2 | 9.27.05 | 9:32A | B-2-35 | X | | | N | 1 | B | ✓ | | | | | |
| 3 | 9.27.05 | 9:55A | B-2-45 | X | | | N | 1 | B | ✓ | | | | | |
| 4 | 9.27.05 | 10:20A | B-2-50 | X | | | N | 1 | B | ✓ | | | | | |
| 5 | 9.27.05 | 10:45A | B-2-51 | X | | | N | 1 | B | ✓ | | | | | |
| 6 | 9.27.05 | 11:12A | B-2-52.5 | X | | | N | 1 | B | ✓ | | | | | |
| 7 | 9.27.05 | 1:05P | B-1-15 | X | | | N | 1 | B | ✓ | | | | | |
| 8 | 9.27.05 | 1:20P | B-1-25 | X | | | N | 1 | B | ✓ | | | | | |
| 9 | 9.27.05 | 1:47P | B-1-40 | X | | | N | 1 | B | ✓ | | | | | |
| 10 | 9.27.05 | 2:07P | B-1-45 | X | | | N | 1 | B | ✓ | | | | | |

EPA 8015 MHC RANGE
C6-C10, C10-C28

Relinquished By: (Signature and Printed Name) Received By: (Signature and Printed Name) Date: 9/27/05 Time: 2:30 pm

Relinquished By: (Signature and Printed Name) Received By: (Signature and Printed Name) Date: 9/27/05 Time: 2:30 pm

Relinquished By: (Signature and Printed Name) Received By: (Signature and Printed Name) Date: 9/27/05 Time: 2:30 pm

SPECIAL INSTRUCTIONS:

SAMPLE DISPOSITION:
 1. Samples returned to client? YES NO
 2. Samples will not be stored over 30 days, unless additional storage time is requested.
 3. Storage time requested: _____ days

By _____ Date _____

38145



CHAIN OF CUSTODY ANALYSIS REQUEST

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

DATE: 09, 27, 05 PAGE 2 OF 2
LOG BOOK NO. _____ FILE NO. _____ LAB NO. 5090225

CLIENT NAME: epc Project Name/No. 5000Ae05olred AIRBILL NO.: _____
ADDRESS: _____ P.O. NO. _____
PROJECT MANAGER: ASuric PHONE NO.: _____ FAX NO.: _____
SAMPLER NAME: _____ (Printed) _____ (Signature)

TAT (Analytical Turn Around Time) 0 = Same day, 1 = 24 Hour, 2 = 48 Hour, (Etc.) N = NORMAL
CONTAINER TYPES: B = Brass, E = Encore G = Glass, P = Plastic, V = VOA Vial, O = Other:
UST Project: Y - Global ID# _____

ANALYSES REQUESTED: _____

REMARKS: _____

SAMPLE CONDITION/CONTAINER COMMENTS: _____

COOLER TEMP: 4.50
PRESERVED: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

RECEIVED BY: (Signature and Printed Name) _____ Date: _____

SPECIAL INSTRUCTIONS: _____

SAMPLE DISPOSITION:
1. Samples returned to client? YES NO
2. Samples will not be stored over 30 days, unless additional storage time is requested.
3. Storage time requested: _____ days

LAB COPY



CHAIN OF CUSTODY ANALYSIS REQUEST

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

DATE: 09.28.05 PAGE 1 OF 1
LOG BOOK NO. _____ LAB NO. 500230

CLIENT NAME: epc Project Name/No: STODDARD SOLVENT P.O. NO. _____

ADDRESS: P.O. Box 1814, UPLAND, CA 91785-1814

PROJECT MANAGER: A.J. URSIC JR PHONE NO: 909.946.1707 FAX NO: SAME

SAMPLER NAME: (Printed) A.J. URSIC JR (Signature) *[Signature]*

TAT (Analytical Turn Around Time) 0 = Same day; 1 = 24 Hour; 2 = 48 Hour; (Etc.) N = NORMAL

CONTAINER TYPES: B = Brass, E = Encore G = Glass, P = Plastic, V = VOA Vial, O = Other.

UST Project: Y(N) - Global ID# _____

ANALYSES REQUESTED:

*EPA 8015M HC RANGE
6-C10, C10-C28*

| SAMPLE ID | DATE SAMPLED | TIME SAMPLED | SAMPLE DESCRIPTION | MATRIX | | | TAT | CONTAINER # | CONTAINER TYPE | SAMPLE CONDITION/CONTAINER COMMENTS: |
|-----------|--------------|--------------|--------------------|--------|------|--------------|-----|-------------|----------------|--------------------------------------|
| | | | | WATER | SOIL | SLUDGE OTHER | | | | |
| 1 | 9.28.05 | 8:26A | B-4-10 | | X | | N | 1 | B | V |
| 2 | 9.28.05 | 8:47A | B-4-25 | | X | | N | 1 | B | V |
| 3 | 9.28.05 | 9:14A | B-4-45 | | X | | N | 1 | B | V |
| 4 | 9.28.05 | | A-11-15 | | X | | N | 1 | B | V |
| 5 | 9.28.05 | | A-11-40 | | X | | N | 1 | B | V |
| 6 | 9.28.05 | | A-11-45 | | X | | N | 1 | B | V |

Relinquished By: (Signature and Printed Name) A.J. URSIC JR Date: 9.28.05 Time: 1750

Received By: (Signature and Printed Name) *[Signature]* Date: 9.28.05 Time: 0735

Relinquished By: (Signature and Printed Name) _____ Date: _____

Received By: (Signature and Printed Name) _____ Date: _____

SAMPLE DISPOSITION:
 1. Samples returned to client? YES NO
 2. Samples will not be stored over 30 days, unless additional storage time is requested.
 3. Storage time requested: _____ days

SPECIAL INSTRUCTIONS:

LAB COPY



CHAIN OF CUSTODY ANALYSIS REQUEST

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

DATE: 09, 29, 05 PAGE 1 OF 1
LAB NO. 5096255

LOG BOOK NO. FILE NO. P.O. NO.

CLIENT NAME: epc Project Name/No: STODDARD SOLVENT

ADDRESS: P.O. Box 1814, UPLAND, CA 91785-1814

PROJECT MANAGER: A. J. URSIC JR PHONE NO: 909.946.1707 FAX NO: SAME

SAMPLER NAME: (Printed) A. J. URSIC JR (Signature) *A. J. URSIC JR*

TAT (Analytical Turn Around Time) 0 = Same day; 1 = 24 Hour; 2 = 48 Hour; (Etc.) N = NORMAL

CONTAINER TYPES: B = Brass, E = Encore G = Glass, P = Plastic, V = VOA Vial, O = Other:

UST Project: Y (N) - Global ID#

| SAMPLE ID | DATE SAMPLED | TIME SAMPLED | SAMPLE DESCRIPTION | MATRIX | | | TAT | CONTAINER | | | | | | | | | | | |
|-----------|--------------|--------------|--------------------|--------|------|--------|-----|-----------|---|------|---|--|--|--|--|--|--|--|--|
| | | | | WATER | SOIL | SLUDGE | | OTHER | # | TYPE | | | | | | | | | |
| 1 | 9, 29, 05 | 9:20A | A-11-15 | | X | | | N | 1 | B | ✓ | | | | | | | | |
| 2 | 9, 29, 05 | 10:10A | A-11-40 | | X | | | N | 1 | B | ✓ | | | | | | | | |
| 3 | 9, 29, 05 | 10:31A | A-11-45 | | X | | | N | 1 | B | ✓ | | | | | | | | |
| 4 | 9, 29, 05 | 12:18P | A-3-10 | | X | | | N | 1 | B | ✓ | | | | | | | | |
| 5 | 9, 29, 05 | 12:39P | A-3-25 | | X | | | N | 1 | B | ✓ | | | | | | | | |
| 6 | 9, 29, 05 | 1:03P | A-3-40 | | X | | | N | 1 | B | ✓ | | | | | | | | |
| 7 | 9, 29, 05 | 1:47P | A-3-55 | | X | | | N | 1 | B | ✓ | | | | | | | | |

ANALYSES REQUESTED:

ROISH HCRANGE
C6-C10, C10-C20

SAMPLE CONDITION/
CONTAINER/COMMENTS:

AIRBILL NO: _____
COOLER TEMP: 5°C
PRESERVED: _____

REMARKS:

Relinquished By: (Signature and Printed Name) *A. J. URSIC JR* Received By: (Signature and Printed Name) *A. J. URSIC JR* Date: 9-29-05 Time: 1:50

Relinquished By: (Signature and Printed Name) *[Signature]* Received By: (Signature and Printed Name) *[Signature]* Date: 9-30-05 Time: 07:50

Relinquished By: (Signature and Printed Name) Received By: (Signature and Printed Name) Date: _____ Time: _____

SAMPLE DISPOSITION:
1. Samples returned to client? YES NO
2. Samples will not be stored over 30 days, unless additional storage time is requested.
3. Storage time requested: _____ days

By _____ Date _____

SPECIAL INSTRUCTIONS:



CHAIN OF CUSTODY ANALYSIS REQUEST

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

DATE: 09,30,05 PAGE 1 OF 1
FILE NO. LAB NO. 595100

CLIENT NAME: epc Project Name/No. STODDARD SOLVENT

ADDRESS: P.O. Box 1814, UPLAND, CA 91785-1814

PROJECT MANAGER: A. J. URSIC JR. PHONE NO. 909.946.1707 FAX NO. []

SAMPLER NAME: (Printed) A. J. URSIC JR. (Signature) [Signature]

TAT (Analytical Turn Around Time) 0 = Same day; 1 = 24 Hour; 2 = 48 Hour; (Etc.) N = NORMAL

CONTAINER TYPES: B = Brass, E = Encore G = Glass, P = Plastic, V = VOA Vial, O = Other.

UST Project: Y (N) - Global ID#

| SAMPLE ID | DATE SAMPLED | TIME SAMPLED | SAMPLE DESCRIPTION | MATRIX | | | TAT | CONTAINER | | ANALYSES REQUESTED: | AIRBILL NO.: | COOLER TEMP.: | PRESERVED: | REMARKS: | SAMPLE CONDITION/CONTAINER COMMENTS: |
|-----------|--------------|--------------|--------------------|--------|------|--------|-----|-----------|---|---------------------|--------------|---------------|------------|----------|--------------------------------------|
| | | | | WATER | SOIL | SLUDGE | | OTHER | # | | | | | | |
| 1 | 9.30.05 | 8:31A | A-1-15 | X | | | | N | 1 | B | | | | | |
| 2 | 9.30.05 | 8:56A | A-1-30 | X | | | | N | 1 | B | | | | | |
| 3 | 9.30.05 | 9:40A | A-1-57.5 | X | | | | N | 1 | B | | | | | |
| 4 | 9.30.05 | 10:00A | A-1-58.5 | X | | | | N | 1 | B | | | | | |
| 5 | 9.30.05 | 10:20A | A-1-60 | X | | | | N | 1 | B | | | | | |
| 6 | 9.30.05 | | C-1-15 | X | | | | N | 1 | B | | | | | |
| 7 | 9.30.05 | | C-1-40 | X | | | | N | 1 | B | | | | | |
| 8 | 9.30.05 | | C-1-45 | X | | | | N | 1 | B | | | | | |
| 9 | 9.30.05 | | C-1-60 | X | | | | N | 1 | B | | | | | |
| 10 | 9.30.05 | | C-1-65 | X | | | | N | 1 | B | | | | | |

ETPA 8015 MHC RAN 6/28
G6 - C10, C10 - C28

SAMPLE DISPOSITION:
 1. Samples returned to client? YES NO
 2. Samples will not be stored over 30 days, unless additional storage time is requested.
 3. Storage time requested: _____ days

Date: 9/30/05 Time: 2:50
 Date: 4/00 Time:
 Date: Time:

Relinquished By: (Signature and Printed Name) [Signature] A. J. URSIC JR.
 Received By: (Signature and Printed Name) [Signature]
 Relinquished By: (Signature and Printed Name) [Signature]
 Received By: (Signature and Printed Name) [Signature]

SPECIAL INSTRUCTIONS:

LAB COPY



CHAIN OF CUSTODY ANALYSIS REQUEST

781 East Washington Blvd., Los Angeles, CA 90021
(213) 745-5312 FAX (213) 745-6372

DATE: 10.04.05 PAGE 1 OF 1
FILE NO. LAB NO. 9100015

CLIENT NAME: epc Project Name/No. STANDARD SOLVENT P.O. NO.

ADDRESSES: P.O. Box 1814, UPLAND, CA 91785-1814
PROJECT MANAGER: A. J. URSIC JR PHONE 909 946 1707 FAX NO. [blank]
SAMPLER NAME: (Printed) A. J. URSIC (Signature) [Signature]

TAT (Analytical Turn Around Time) 0 = Same day; 1 = 24 Hour; 2 = 48 Hour; (Etc.) N = NORMAL
CONTAINER TYPES: B = Brass, E = Encore G = Glass, P = Plastic, V = VOA Vial, O = Other.

UST Project: Y (N) - Global ID#

| SAMPLE ID | DATE SAMPLED | TIME SAMPLED | SAMPLE DESCRIPTION | MATRIX | | | TAT | CONTAINER | | | | |
|-----------|--------------|--------------|--------------------|--------|------|--------|-----|-----------|---|------|---|--|
| | | | | WATER | SOIL | SLUDGE | | OTHER | # | TYPE | | |
| 1 | 10.04.05 | 7:26A | D-1-15 | | X | | | N | 1 | B | ✓ | |
| 2 | 10.04.05 | 8:00A | D-1-35 | | X | | | N | 1 | B | ✓ | |
| 3 | 10.04.05 | 8:26A | D-1-41.5 | | X | | | N | 1 | B | ✓ | |
| 4 | 10.04.05 | 8:43A | D-1-43 | | X | | | N | 1 | B | ✓ | |
| 5 | 10.04.05 | 9:00A | D-1-44.5 | | X | | | N | 1 | B | ✓ | |
| 6 | 10.04.05 | 10:41A | D-2-10 | | X | | | N | 1 | B | ✓ | |
| 7 | 10.04.05 | 11:02A | D-2-25 | | X | | | N | 1 | B | ✓ | |
| 8 | 10.04.05 | 11:24A | D-2-35 | | X | | | N | 1 | B | ✓ | |
| 9 | 10.04.05 | 11:49A | D-2-45 | | X | | | N | 1 | B | ✓ | |
| 10 | | | | | | | | | | | | |

ANALYSES REQUESTED:

| | | | | | | | | | | | | |
|----------------|--|--|--|--|--|--|--|--|--|--|--|--|
| 6-C101 C10-C28 | | | | | | | | | | | | |
| 6-C101 C10-C28 | | | | | | | | | | | | |
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SAMPLE CONDITION/CONTAINER/COMMENTS:

AIRBILL NO: _____
COOLER TEMP: 2.0
PRESERVED: _____
REMARKS: _____

Relinquished By: (Signature and Printed Name) [Signature] A. J. URSIC JR Received By: (Signature and Printed Name) [Signature] Time: 10/4/05 4:55

Relinquished By: (Signature and Printed Name) [Signature] Received By: (Signature and Printed Name) [Signature] Time: 10/4/05 4:55

Relinquished By: (Signature and Printed Name) [Signature] Received By: (Signature and Printed Name) [Signature] Time: _____

SAMPLE DISPOSITION:
1. Samples returned to client? YES NO
2. Samples will not be stored over 30 days, unless additional storage time is requested.
3. Storage time requested: _____ days

By _____ Date _____

SPECIAL INSTRUCTIONS:

LAB COPY