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# DRAFT
# 2012 ANNUAL GROUNDWATER MONITORING REPORT
# INSTALLATION RESTORATION PROGRAM SITE 40

**Naval Weapons Station Seal Beach**
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# TABLE OF CONTENTS

**SECTION** **PAGE**


**1.0 INTRODUCTION ..... 1**

**2.0 LAND USE CONTROLS ..... 1**

**3.0 SUMMARY OF DATA ..... 2**

3.1 Changes from Previous Monitoring Event ..... 2

3.2 COCs in Regularly Monitored Wells ..... 2

*3.2.1 COC Concentrations ..... 2*

3.3 Plume Interpretations ..... 4

3.4 Geochemical Parameters ..... 4

3.5 Soil Gas Data ..... 5

3.6 Groundwater Level Measurements ..... 6

**4.0 CONCLUSIONS ..... 6**

**5.0 RECOMMENDATIONS ..... 6**

**6.0 REFERENCES ..... 7**


**TABLES**


Table 1 Summary of Monitoring Activities Conducted in December 2012

Table 2 Concentrations of COCs in Groundwater in December 2012

Table 3 Anions, TDS, TOC, DO, ORP, and pH Data Collected in December 2012

Table 4 Cation Concentrations in Samples Collected in December 2012

Table 5 Soil Gas Field Parameter Data Collected in December 2012

Table 6 Concentrations of COCs in Soil Gas in December 2012


**FIGURES**


Figure 1 COC Concentrations in Select Groundwater, Injection, and Vapor Wells in December 2012

Figure 2 Composite of Interpreted Plume Extent for cis-1,2-DCE

Figure 3 Composite of Interpreted Plume Extent for VC


**APPENDICES**


A Laboratory Data (included on CD)

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# ACRONYMS

| | |
|---|---|
| COC | chemical of concern |
| COD | chemical oxygen demand |
| DCE | dichloroethene |
| DO | dissolved oxygen |
| DON | Department of the Navy |
| DTSC | Department of Toxic Substances Control |
| EISB | enhanced in-situ bioremediation |
| HRC | hydrogen release compound |
| IRP | Installation Restoration Program |
| LUC | land use control |
| MNA | monitored natural attenuation |
| msl | mean sea level |
| NAVWPNSTA | Naval Weapons Station |
| ORP | oxidation reduction potential |
| PCE | tetrachloroethene |
| RAP | Remedial Action Plan |
| ROD | Record of Decision |
| TCE | trichloroethene |
| TCG | target cleanup goal |
| TDS | total dissolved solids |
| TOC | total organic carbon |
| VC | vinyl chloride |
| VOC | volatile organic compound |

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# 1.0 INTRODUCTION

This report provides an overview of site activities conducted in December 2012 associated with enhanced in situ bioremediation (EISB) of groundwater at Installation Restoration Program (IRP) Site 40 at Naval Weapons Station (NAVWPNSTA) Seal Beach, Seal Beach, California. This report includes the presentation and assessment of relevant monitoring data collected during this period. The Site is currently in Monitored Natural Attenuation (MNA) phase and this was the fourth sampling event conducted after the final application of Hydrogen Release Compound (HRC®) in November 2008. A summary of the general status of the project and recommendations based on the conclusions are also provided.

The field activities for this period included groundwater and soil gas monitoring in various wells/locations, and surface gas emissions monitoring. These activities, along with the dates they were conducted, are listed in Table 1. For this monitoring event (December 2012), chemicals of concern (COCs), including primary COCs tetrachloroethene (PCE) and trichloroethene (TCE), and secondary COCs including cis-1,2-dichloroethene (DCE), and vinyl chloride (VC), were assessed in groundwater samples from monitoring wells MW-40-07, -08, -14, -22, -25, -27, -30, -31 -32, -34, -35, -36, and -37; and injection wells IW-2, -4, -10, and -18. These wells were proposed for annual monitoring based on the Final 2011 Annual Groundwater Monitoring Report, Installation Restoration Program Site 40 (CKY 2012a). Most of these wells are key compliance wells located in the central portion of the site where low-level contamination is still being detected.

# 2.0 LAND USE CONTROLS

Land use controls (LUC) and their implementation were inspected and reviewed as part of the Navy's Project Review Process in accordance with Naval Weapons Station Seal Beach Instruction 5090.5B, Environmental Aspects and Requirements Review Procedures for Actions, Projects, Business Practices and Land Use (DON 2012). The land use controls for Site 40 are as follows:

- No new groundwater extraction, injection, or drinking water wells shall be installed within the IR Site 40 groundwater plume or associated buffer zone without prior review and written concurrence from the DON [Department of the Navy] and the DTSC [Department of Toxic Substances Control]

- Injection and monitoring wells and associated piping and equipment that are included in the remedial action shall not be altered, disturbed, or removed without the prior review and written concurrence from the DON and DTSC.

- The DON, DTSC, and their authorized agents, employees, contractors, and subcontractors will have the right to:
    - enter the premises to conduct investigations, tests, or surveys;
    - inspect field activities;
    - construct, operate, and maintain the remedial action described in this ROD/RAP [Record of Decision/Remedial Action Plan]; and
    - undertake any other remedial response or remedial action as required or necessary under the cleanup program.

During the 2012 reporting period, no new groundwater wells were installed in IRP Site 40 or the 500-foot buffer zone, and all existing wells and associated piping were in proper working condition and did not appear to be tampered with or altered. Two well boxes, MW-40-30 and MW-40-31, had settled and were replaced with no impact to the integrity of the wellhead. The DON, regulatory agencies, and contractors had full access to the Site to perform monitoring activities as prescribed in the ROD (DON 2004). The LUCs will be inspected and reviewed during the next annual monitoring event and summarized in the 2013

groundwater monitoring report.

# 3.0 SUMMARY OF DATA

Data from the 2010, 2011, and 2012 sampling events are presented on Figure 1. The analytical data reports from the December 2012 sampling event is included on a CD in Appendix A. Current (December 2012) concentrations and inferred plume delineations for the COCs remaining above target cleanup goals (TCG), cis-1,2-DCE and VC, are presented on Figures 2 and 3, respectively.

## 3.1 Changes from Previous Monitoring Event

The following changes from the previous monitoring event were implemented:

- Monitoring points MW-40-06 and MW-40-13 were replaced by MW-40-25 and MW-40-27 as recommended in the 2011 Site 40 Monitoring Report (CKY 2012a)
- Chemical oxygen demand (COD), microbial monitoring, and dissolved gases were not monitored as recommended in the 2011 Site 40 Monitoring Report (CKY 2012a)
- Surface emission monitoring of volatile organic compounds (VOCs) with a photo-ionization detector was performed in accordance with the Final 2005-2010 Five-Year Review Report for IRP Sites 40 and 70 (CKY 2012b)

## 3.2 COCs in Regularly Monitored Wells

This subsection provides a summary of data collected in December 2012 to assess existing COC concentrations across the Site in relation to their respective target cleanup goal (TCG), followed by key observations regarding COC concentrations in the selected groundwater monitoring wells sampled during the December 2012 event.

The following are the TCGs for the COCs at Site 40:

| Chemicals of Concern | TCG (µg/L) |
|---|---|
| Tetrachloroethene | 5 |
| Trichloroethene | 5 |
| cis-1,2-Dichloroethene | 6 |
| Vinyl chloride | 0.5 |

Evaluation of COC concentrations and plume dynamics included assessment of shallow interval groundwater monitoring wells MW-40-07, -08, -22, -25, -27, -30, -32, -34, -36, and -37; shallow interval injection wells IW-2, -4, -10, and -18; and mid-shallow interval wells MW-40-14, -31, and -35 (refer to Figure 1 for well locations). None of the wells monitored had concentration of PCE or TCE above the TCG. MW-40-08 and MW-40-37 were the only monitoring points that had concentrations of cis-1,2-DCE above the TCG. Thirteen of the seventeen monitoring points had concentrations of VC above the TCG.

### *3.2.1 COC Concentrations*

Figure 1 presents COC concentrations of the December 2012 monitoring points. All wells monitored in the December 2012 monitoring event had concentrations of the primary COC concentrations, PCE and TCE, below the TCGs. Combined with the 2010 and 2011 sampling data, the key wells sampled have had at least two consecutive sampling events with COC concentrations below the TCGs. The only COCs with concentrations remaining above the TCGs at the site are cis-1,2-DCE and VC.

Figure 2 presents the interpreted plume delineations for cis-1,2-DCE and Figure 3 presents the interpreted

plume delineations for VC, based on the December 2012 data. Observations on the fate of COCs are presented below. A concentration followed by the letter "J" indicates that the concentration is an estimated level and a "U" indicates the concentration was not detected above the associated reporting limit.

- Decreases in concentrations of cis-1,2-DCE in comparing with prior results include:

  1.0 to 0.73J µg/L in IW-8

  56 to 42 µg/L in MW-40-08

  3.7 to 2.7 µg/L in MW-40-14

  7.9 to 0.96J µg/L in MW-40-22

  3.4 to 1.3 µg/L in MW-40-35

  61 to 37 µg/L in MW-40-37

- Decreases in concentrations of VC in comparing with prior results include:

  1.2 to 0.75J µg/L in IW-4

  1.3 to 0.95J µg/L in IW-18

  5.3 to 3.6 µg/L in MW-40-14

  4.8 to 0.72J µg/L in MW-40-22

  1.2 to 0.96J µg/L in MW-40-30

  0.80 to 0.55J µg/L in MW-40-32

  0.55 to 0.5U µg/L in MW-40-35

  8.7 to 3.9 µg/L in MW-40-37

- Increases in concentrations of cis-1,2-DCE in comparing with prior results include:

  1.3 from 0.72J µg/L in IW-10

  0.89J from 0.5U µg/L in MW-40-07

  1.2 from 0.95 µg/L in MW-40-30

  0.98J from 0.72 µg/L in MW-40-32

  2.8 from 1.4 µg/L in MW-40-36

- Increases in concentrations of VC in comparing with prior results include:

  0.90J from 0.64 µg/L in IW-10

  0.98J from 0.5 µg/L in MW-40-07

  1.4 from 0.44J µg/L in MW-40-08

  0.50U from 0.38J µg/L in MW-40-34

  1.6 from 1.2 µg/L in MW-40-36

Of the monitoring points that had increased concentrations of cis-1,2-DCE and VC for the 2012 monitoring event, all but one have exhibited some minor fluctuation over the past several monitoring events. MW-40-08 has exhibited an increase of VC over the past two monitoring events. This is likely due to continued biodegradation of cis-1,2-DCE, which coincidentally was highest in concentration (42 µg/L) at MW-40-08. The differences in COC increases and decreases are considered minor and are expected based on the relatively low concentrations observed at the site. The contaminants are affected more dramatically at low concentrations by their surrounding environment. Overall there do not appear to be large increases in concentrations that would demonstrate the occurrence of rebound. The maximum concentration of VC

detected from 2011 to 2012 has decreased from 8.7 µg/L to 3.9 µg/L (MW-40-37) indicating that biodegradation is still occurring at the Site.

## 3.3 Plume Interpretations

- Concentrations of PCE and TCE have not exceeded the TCGs (5 µg/L for both COCs) in any wells since the 2010 monitoring event.
- Concentrations of cis-1,2-DCE exceed the TCG (6 µg/L) in only two of the seventeen monitoring points (MW-40-08 and MW-40-37). The concentrations in these wells are approximately seven times the TCG. Both wells have shown a decrease in concentration from the 2011 monitoring event.
- Low concentrations of VC, generally in the 0.5 to 1.0 µg/L range, form a residual plume in the central portion of the Site. Four wells (MW-40-08, -14, -36, and -37) had concentrations over 1 µg/L with the maximum at 3.9 µg/L (MW-40-37).

While an increase in VC concentration in MW-40-08 and to a lesser extent in other wells were noted during this event, in most wells COC concentrations are below TCGs or are near TCGs and decreasing. There is a significant year over year reduction in maximum COC concentrations at the Site; 30% reduction of cis-1,2-DCE and 55% reduction of VC.

## 3.4 Geochemical Parameters

Anions, totals dissolved solids (TDS), total organic carbon (TOC), DO, ORP, and pH data are included in Table 3, and cation (calcium, magnesium, potassium, iron, and sodium) concentrations are presented in Table 4. Monitoring of these parameters provide additional indication of the potential for further reductive dechlorination.

Key observations regarding geochemical parameters are as follows (refer to Tables 3 and 4):

- Based on the December 2012 readings, DO concentrations in the monitoring wells remained at or less than 0.9 mg/L (given limitations associated with this measurement, this essentially represents not detected).
- ORP values measured during the December 2012 event were negative for all 17 monitoring points, ranging from -74.4 millivolts (mV) to -168.3 mV. These values reflect reducing conditions favorable for reductive dechlorination, however slightly below the optimum value of 240 mV.
- Nitrate and sulfate levels were relatively low in plume monitoring wells which reflects reducing conditions favorable for reductive dechlorination. However, these levels are on average higher than previous monitoring events indicating that dechlorination is happening at a slower pace.
- The pH readings ranged from 6.6 to 7.3 pH units. These values are within the 6.5 to 8.5 range that is considered favorable for bioremediation.
- Cation data are of interest mainly to track the persistence of sodium cation, a component of the originally injected electron donor (sodium lactate). Concentrations of sodium cation in the monitoring wells measured during the December 2012 event ranged from 28.6 to 1,740 mg/L. These concentrations are generally comparable to the 2011 monitoring event (178 to 1,860 mg/L).
- TOC is used to track organic amendments in EISB and is used to assess substrate availability. TOC above 20 mg/L is generally considered necessary to support dechlorination. Concentrations at Site 40 were low, ranging from 20U to 50U mg/L, below the laboratory reporting limit. The reporting limits were higher than optimal resulting from a dilution analysis performed by the laboratory due to sample matrix interferences; most likely from sulfides/anions detected during the sample pre-screening. Although the TOC results are low, they are generally consistent with previous monitoring events. The low TOC readings indicate the injected substrate is near depletion and

natural attenuation is occurring. This is expected with the corresponding low COC concentrations and likely dwindling Dhc population. While the data indicate TOC is lower than optimum (50 mg/L), it is evident that dechlorination is still occurring at the site based on other parameters monitored and the decreasing trend in COC concentrations.

- TDS were measured during this event to help in assessment of secondary groundwater quality effects. Although lower than the previous year's highest level at 7,320 mg/L, relatively high TDS levels were measured in MW-40-35 (4,170 mg/L) and MW-40-31 (3,130 mg/L), which appear to correlate to high concentrations of sodium cation (Table 4). These values are higher than the average of 2,000 mg/L to 3,000 mg/L prior to bioaugmentation in 2005.

The December 2012 geochemical data indicate the presence of sufficient parameters supportive of continued reductive dechlorination in most areas. While continued reductive dechlorination will continue to occur at the Site, the rates will continue to decline as concentrations of COCs are reduced.

## 3.5 Soil Gas Data

Soil gas monitoring at IW-1, -3, -7, -10, -18, MW-40-32, -34, -35, -36, -37, and VW-40-01,-02, -03, -04, -06 for field parameters was conducted from December 17–19, 2012. Parameters were scheduled to be collected from MW-40-30 and MW-40-31 however water was present in the soil gas monitoring probes that prevented the measurement of field parameters. IW-18 was selected for monitoring this year however the well does not contain a vapor monitoring probe. Parameters from this location were collected at the top of the well casing. Of the remaining points monitored in the field, methane gas was present at concentrations from 0.0 to 63.8 percent (%) in air. The highest methane concentration was in the soil gas probe in vapor well VW-40-03. The average methane concentration was 36% in air, which is lower than the average of 56% recorded in 2011. Hydrogen sulfide was reported in 8 of 15 probes with concentrations ranging from 0 to 83 parts per million (ppm). The highest hydrogen sulfide concentration was in the soil gas probe in monitoring well MW-40-37, which is one of the monitoring points with the highest levels of COCs in groundwater. Table 5 summarizes the soil gas field parameter data.

In addition, soil gas samples were collected in 6-liter SUMMA™ canisters from four vapor monitoring wells (VW-40-02, -03, -04, and -06) and soil gas monitoring probes that are installed in groundwater monitoring wells MW-40-32 and -37 and injection wells IW-1 and -3. Table 6 lists the analytical results for the soil gas analyses.

Although certain COCs such as PCE and TCE are well below the target cleanup goals in groundwater, they are still present in the vadose zone in soil gas. PCE was reported in the soil gas samples ranging from non-detect to 155.9 $\mu g/m^3$ and TCE was reported ranging from 3.87J to 3,866 $\mu g/m^3$. The maximum reported concentration in 2011 was 7.5 and 3,600 $\mu g/m^3$ for PCE and TCE, respectively. These results are considered comparable year over year and are expected to remain at these levels while biodegradation is ongoing.

Concentrations of cis-1,2-DCE were reported in all sampled wells at concentrations ranging from non-detect in the soil gas probe installed in injection well VW-40-04 to 4,752 $\mu g/m^3$ in soil gas monitoring well VW-40-03. The average cis-1,2-DCE concentration was 1,320 $\mu g/m^3$ compared to 2,440 $\mu g/m^3$ in 2011. The average concentration is significantly lower reflecting the continuing reductive dechlorination.

VC was reported at concentrations from non-detect in the vapor monitoring well VW-40-04 to 4,608 micrograms per cubic meter ($\mu g/m^3$) in vapor monitoring well VW-40-02. The average VC concentration was 1,525 $\mu g/m^3$ compared to 1,550 $\mu g/m^3$ in 2011. The average concentration is similar likely due to continued reduction of cis-1,2-DCE concentrations.

Methane gas concentrations in samples collected in SUMMA™ canisters from the soil gas monitoring probes and vapor monitoring wells ranged from below the detection limit in soil gas monitoring well VW-40-04 to 54.8% by volume in the soil gas monitoring well VW-40-03. In comparison 2011 results, methane

gas concentrations are similar but trending lower. Soil gas is expected to be present as a result of volatilization and bio-fermentation.

Methane gas and VOC surface emissions monitoring was performed on December 17, 2012. During this monitoring event, neither methane gas nor VOC emissions were detected within Buildings 239 or 240, or in the surrounding areas.

### 3.6 Groundwater Level Measurements

Groundwater level measurements were collected on December 17, 2012. Groundwater elevations within the site ranged from 1.52 feet above mean sea level (msl) in MW-40-14 to 2.37 feet above msl in IW-2. In general, water level measurements collected in December 2012 were similar in comparison with the elevations measured during the previous monitoring event in 2011. Minor fluctuations are likely due to seasonal/annual variation in precipitation. Groundwater elevation trends since the start of the project (March 2005) are similar but show an overall slight decline in groundwater level at the site. Groundwater levels ranged from approximately 1.5 to 2.5 feet above msl in 2005. Differences in groundwater elevation are not significant enough to have an impact on achieving the remedial goals of this project.

## 4.0 CONCLUSIONS

While the contaminant plume boundaries have shifted slightly (as expected due to dechlorination activity), significant reductions in total chloroethene concentrations have been observed in all monitoring wells over the life of the project. Geochemical data suggest an environment favorable for reductive dechlorination to continue. However, COC concentrations have decreased to very low levels across the site, which would limit the rate of dechlorination.

Therefore, the potential for enhanced bioremediation of chloroethenes has probably reached its limit at this point, and slower, localized biodegradation, along with other natural attenuation processes, will likely dominate the further reduction of COC levels. While the rates of dechlorination will slow down, MNA will be sufficient to reach remedial action goals.

## 5.0 RECOMMENDATIONS

At this time, the COC levels in the majority of wells are less than their respective TCGs, or are close to the TCGs and are exhibiting decreasing trends. With this in mind, the following recommendations are made:

1. Perform laboratory analysis of only VOCs in groundwater. While other laboratory analysis is informative and essential when monitoring the performance of EISB, monitoring for these parameters is not critical since the remedial action is in MNA phase and additional HRC injection into the formation is not anticipated. Field parameters (dissolved oxygen, oxidation reduction potential, and pH) should continue to be monitored.

2. Discontinue monitoring of soil vapor field parameters at MW-40-30, MW-40-31, and IW-18. The monitoring well points have consistently drawn water and there is no probe installed at IW-18. As the plumes are decreasing in concentration and size, there is no beneficial use to replacing these monitoring points.

3. Remove monitoring points MW-40-34 and MW-40-25 from the groundwater monitoring program. As the plumes have decreased in size, MW-40-34 is no longer necessary to assess plume dynamics and has not had COCs above the action level in at least two monitoring events. MW-40-25 is not necessary as the plume delineations are bound by MW-40-22. If there is a rise in COC concentrations in MW-40-22 in future monitoring events, MW-40-25 will be reintroduced to the monitoring program. However, as the plumes are decreasing in concentration and size, there is no beneficial use to replacing these monitoring points.

# 6.0 REFERENCES

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# TABLES

# TABLE 1

## SUMMARY OF MONITORING ACTIVITIES CONDUCTED IN DECEMBER 2012

| Date | Event | Wells Sampled[a] | Analytes/Parameters | Notes |
|---|---|---|---|---|
| 12/17 | Groundwater level measurement | MW-40-07, 08, -14, -22, -25, -27, -30, -31, -32, -34, -35, 36, and -37, and IW-2, -4, -10, and -18. | Not applicable | Groundwater level measurements |
| 12/17 | Surface emissions monitoring | Not applicable | Methane gas and VOC concentrations | Inside Building 240 and western portion of Building 239, and areas between the buildings in the Site 40 vicinity |
| 12/17, 12/18, and 12/19 | Groundwater sampling | MW-40-07, 08, -14, -22, -25, -27, -30, -31, -32, -34, -35, 36, and -37, and IW-2, -4, -10, and -18. | VOCs, TDS, cations, anions, and TOC | Laboratory and field parameters |
| 12/17, 12/18, and 12/19 | Soil vapor/gas probe monitoring | Probes in wells VW-40-01, -02, -03, -04, and -06, and nested probes in MW-40-32, -34, -35, -36, and -37 and IW-1, -3, -7, 10, -18 (MW-40-30 and -31 were scheduled for monitoring but the presence of water in the probe prevented the measurement of parameters.) | Methane, oxygen, carbon dioxide, hydrogen sulfide, VOCs, and carbon monoxide | Field testing |
| 12/18 and 12/19 | Soil vapor sampling | Probes in wells VW-40-02, 03, 04, and VW-40-06, and nested probes in MW-40-32 and -37, and IW-1 and IW-3 | VOCs and fixed gases | Laboratory analysis |

***Notes:***

[a] Refer to figures for well/sampling locations.

***Abbreviations and Acronyms:***

COD – chemical oxygen demand
DNA – deoxyribonucleic acid
TDS – total dissolved solid
TOC – total organic carbon
VOC – volatile organic compound

## TABLE 2

## CONCENTRATIONS OF COCs IN GROUNDWATER
## DECEMBER 2012

| Location | PCE (µg/L) | TCE (µg/L) | cis-1,2-DCE (µg/L) | VC (µg/L) |
|---|---|---|---|---|
| IW-2 | <0.50U | <0.50U | <0.50U | <0.50U |
| IW-4 | <0.50U | <0.50U | <0.50U | 0.75J |
| IW-10 | <0.50U | 0.84J | 1.3 | 0.90J |
| IW-18 | <0.50U | 1.8 | 0.73J | 0.95J |
| MW-40-07 | <0.50U | 0.46J | 0.89J | 0.98J |
| MW-40-08 | <0.50U | <0.50U | 42 | 1.4 |
| MW-40-14 | <0.50U | 1.5 | 2.7 | 3.6 |
| MW-40-22 | <0.50U | <0.50U | 0.96J | 0.72J |
| MW-40-25 | <0.50U | <0.50U | <0.50U | 0.72J |
| MW-40-27 | <0.50U | 0.84J | <0.50U | 0.61J |
| MW-40-30 | <0.50U | <0.50U | 1.2 | 0.96J |
| MW-40-31 | <0.50U | <0.50U | <0.50U | <0.50U |
| MW-40-32 | <0.50U | <0.50U | 0.98J | 0.55J |
| MW-40-34 | <0.50U | <0.50U | <0.50U | <0.50U |
| MW-40-35 | <0.50U | <0.50U | 1.3 | <0.50U |
| MW-40-36 | <0.50U | 0.80J | 2.8 | 1.6 |
| MW-40-37 | <0.50U | 0.81J | 37 | 3.9 |

***Notes:***

J – estimated value
U – not detected above the associated reporting limit

***Abbreviations and Acronyms:***

µg/L – micrograms per liter
PCE – tetrachloroethene
TCE – trichloroethene
DCE – dichloroethene
VC – vinyl chloride

## TABLE 3

## ANIONS, TDS, TOC, DO, ORP, AND pH
## DECEMBER 2012

| Location | Chloride (mg/L) | Nitrite (mg/L) | Nitrate (mg/L) | Sulfate (mg/L) | TDS (mg/L) | TOC (mg/L) | DO (mg/L) | ORP (mV) | pH (pH units) |
|---|---|---|---|---|---|---|---|---|---|
| IW-2 | 290 | <0.50U | 0.038J | 120 | 1,190 | <50U | 0.78 | -142.3 | 7.14 |
| IW-4 | 260 | <0.50U | 0.040J | 4.6 | 1,110 | <50U | 0.57 | -125.7 | 7.09 |
| IW-10 | 100 | <0.50U | <0.050U | 49 | 1,140 | <20U | 0.86 | -131.6 | 7.12 |
| IW-18 | 450 | <0.50U | <0.050U | 210 | 2,050 | <20U | 0.74 | -140.6 | 7.03 |
| MW-40-07 | 180 | <0.05U | 0.05J | 77 | 1,340 | <20U | 0.82 | -95.6 | 6.62 |
| MW-40-08 | 210 | <0.05U | 0.038J | 100 | 995 | <20U | 0.93 | -100.4 | 6.85 |
| MW-40-14 | 250 | <0.05U | 0.052J | 73 | 1,710 | <20U | 0.77 | -74.4 | 6.85 |
| MW-40-22 | 370 | <0.05U | 0.042J | 20 | 1,170 | <20U | 0.83 | -90.1 | 7.32 |
| MW-40-25 | 410 | <0.05U | 0.032J | 120 | 1,060 | <50U | 0.93 | -168.3 | 7.10 |
| MW-40-27 | 240 | <0.50U | 0.042J | 37 | 2,240 | <50U | 0.71 | -139.8 | 7.09 |
| MW-40-30 | 130 | <0.05U | 0.037J | 38 | 1,180 | <20U | 0.66 | -86.9 | 6.80 |
| MW-40-31 | 580 | <0.050U | <0.050U | 37 | 3,130 | <50U | 0.47 | -130.2 | 7.15 |
| MW-40-32 | 140 | <0.05U | <0.050U | 40 | 900 | <20U | 0.71 | -140.6 | 6.87 |
| MW-40-34 | 15 | <0.50U | 1.8 | 35 | 205 | <50U | 0.79 | -115.7 | 7.22 |
| MW-40-35 | 360 | <0.1U | 0.06J | 2.9 J | 4,170 | <20U | 0.63 | -101.7 | 7.15 |
| MW-40-36 | 230 | <0.050U | 0.044J | 41 | 1,380 | <50U | 0.32 | -161.8 | 7.13 |
| MW-40-37 | 530 | <0.50U | 0.032J | 160 | 2,120 | <50U | 0.74 | -129.3 | 6.95 |

***Abbreviations and Acronyms:***

DO – dissolved oxygen
mg/L – milligrams per liter
mV – millivolt

ND – not detected
ORP – oxidation/reduction potential
TDS – total dissolved solids
TOC – total organic carbon
U – not detected above the associated reporting limit

## TABLE 4

## CATION CONCENTRATIONS IN GROUNDWATER
## DECEMBER 2012

| Location | Calcium (mg/L) | Iron (mg/L) | Magnesium (mg/L) | Potassium (mg/L) | Sodium (mg/L) |
|---|---|---|---|---|---|
| IW-2 | 82.6 | 16.0 | 22.5 | 1.61 | 314 |
| IW-4 | 133 | 6.86 | 40.6 | 11.0 | 225 |
| IW-10 | 108 | 30.4 | 42.8 | 1.93 | 264 |
| IW-18 | 175 | 5.04 | 51.2 | 3.21 | 514 |
| MW-40-07 | 188 | 22.4 | 56.0 | 4.83 | 341 |
| MW-40-08 | 141 | 8.89 | 43.2 | 2.48 | 254 |
| MW-40-14 | 217 | 15.3 | 58.9 | 5.20 | 464 |
| MW-40-22 | 50.2 | 0.833 | 19.5 | 3.46 | 458 |
| MW-40-25 | 74.5 | 4.07 | 29.3 | 6.72 | 377 |
| MW-40-27 | 10.4 | 1.22 | 5.08 | 2.98 | 892 |
| MW-40-30 | 199 | 33.0 | 49.8 | 5.46 | 276 |
| MW-40-31 | 141 | 21.6 | 60.1 | 7.58 | 960 |
| MW-40-32 | 143 | 25.0 | 48.3 | 3.85 | 201 |
| MW-40-34 | 24.4 | 1.93 | 3.34 | 4.37 | 28.6 |
| MW-40-35 | 96.3 | 10.1 | 72.1 | 9.28 | 1,740 |
| MW-40-36 | 146 | 28.2 | 60.2 | 3.91 | 280 |
| MW-40-37 | 261 | 18.2 | 104 | 4.40 | 375 |

***Abbreviations and Acronyms:***

mg/L – milligrams per liter

# TABLE 5

## SOIL GAS FIELD PARAMETER DATA
## DECEMBER 2012

| Probe/Well ID* | Oxygen (%) | Carbon Dioxide (%) | Methane (%) | Barometric Pressure (in.Hg) | Hydrogen Sulfide (ppm) | Carbon Monoxide (ppm) | VOCs (ppm) |
|---|---|---|---|---|---|---|---|
| IW-1 | 0.0 | 15.3 | 13 | 30.13 | 3 | 12 | 0.0 |
| IW-3 | 0.0 | 18.1 | 41.4 | 29.73 | 6 | 7 | 0.0 |
| IW-7 | 0.8 | 19.7 | 47.6 | 30.00 | 0 | 32 | 0.0 |
| IW-10 | 0.0 | 19.7 | 31.7 | 28.46 | 0 | 13 | 0.0 |
| IW-18** | 19.7 | 2.1 | 1.5 | 29.95 | 0 | 0 | 0.0 |
| MW-40-32 | 0.4 | 9.6 | 4.8 | 29.76 | 0 | 4 | 0.0 |
| MW-40-34 | 0.3 | 21.7 | 19.3 | 29.98 | 0 | 0 | 0.0 |
| MW-40-35 | 0.1 | 27.3 | 60.2 | 29.95 | 1 | 22 | 0.0 |
| MW-40-36 | 0.8 | 19.7 | 47.6 | 30.00 | 0 | 32 | 0.0 |
| MW-40-37 | 0.0 | 23.9 | 38.4 | 29.76 | 83 | 2 | 0.0 |
| VW-40-01 | 0.1 | 16.4 | 49.7 | 29.95 | 3 | 35 | 0.0 |
| VW-40-02 | 0.0 | 17.0 | 37.9 | 28.05 | 1 | 11 | 0.0 |
| VW-40-03 | 0.1 | 26.1 | 63.8 | 30.11 | 0 | 13 | 0.0 |
| VW-40-04 | 15.2 | 3.3 | 0 | 28.32 | 0 | 6 | 0.0 |
| VW-40-06 | 0.1 | 27.1 | 43.8 | 29.76 | 9 | 8 | 0.0 |

** Water was pulled during purging at MW40-30 and MW40-31 therefore parameters were not collected.*

*** A soil gas monitoring probe was not installed at IW-18 so parameters were collected from the top of the well casing.*

***Abbreviations and Acronyms:***

in.Hg – inches of mercury
J – estimated value
ppm – parts per million
U – not detected above the associated reporting limit

## TABLE 6

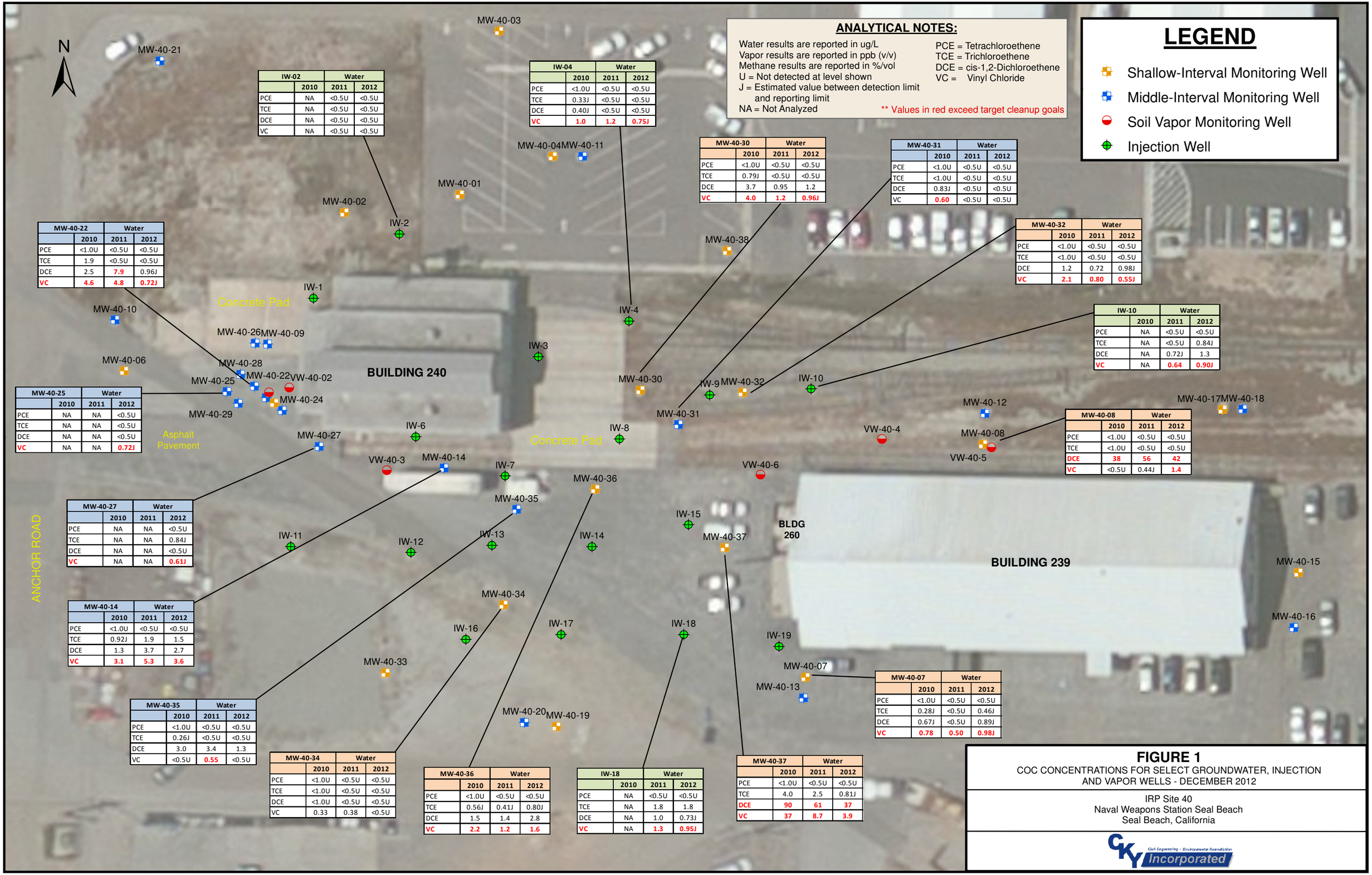
## CONCENTRATIONS OF COCs IN SOIL GAS
## DECEMBER 2012

| Probe/Well ID | PCE | | TCE | | cis-1,2-DCE | | Vinyl Chloride | | methane |
|---|---|---|---|---|---|---|---|---|---|
| | ppbv | µg/m$^3$ | ppbv | µg/m$^3$ | ppbv | µg/m$^3$ | ppbv | µg/m$^3$ | %v |
| IW-1 | 4.7 | 31.87 | 100 | 537 | 330 | 1,307 | 940 | 2,406 | 11.2 |
| IW-3 | <0.40U | <2.71U | 0.72J | 3.87J | 2.3 | 9.11 | 240 | 614.4 | 41.8 |
| MW-40-32 | 12 | 81.36 | 5.7 | 30.61 | 14 | 55.44 | 32 | 81.92 | 5.28 |
| MW-40-37 | 1.2J | 8.14J | 22 | 118.1 | 82 | 324.7 | 470 | 1,203 | 41.3 |
| VW-40-02 | 23 | 155.9 | 720 | 3,866 | 1,000 | 3,960 | 1,800 | 4,608 | 39.1 |
| VW-40-03 | 7.8 | 52.88 | 480 | 2,578 | 1,200 | 4,752 | 1,100 | 2,816 | 54.8 |
| VW-40-04 | 67 | 454.3 | 0.76 | 4.08 | <0.20U | <0.79U | <0.50U | <1.28U | <0.255U |
| VW-40-06 | 2.4 | 16.27 | 27 | 145 | 38 | 150.5 | 190 | 486.4 | 44.5 |

***Abbreviations and Acronyms:***

µg/m$^3$ – micrograms per cubic meter
DCE – dichloroethene
ID – identification
J – estimated value
PCE – tetrachloroethene
ppbv – parts per billion by volume
TCE – trichloroethene
U – not detected above the associated reporting limit

# FIGURES




## ANALYTICAL NOTES:

Water results are reported in ug/L
Vapor results are reported in ppb (v/v)
Methane results are reported in %/vol
U = Not detected at level shown
J = Estimated value between detection limit and reporting limit
NA = Not Analyzed

PCE = Tetrachloroethene
TCE = Trichloroethene
DCE = cis-1,2-Dichloroethene
VC = Vinyl Chloride

** Values in red exceed target cleanup goals

## LEGEND

- Shallow-Interval Monitoring Well
- Middle-Interval Monitoring Well
- Soil Vapor Monitoring Well
- Injection Well

| IW-02 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | NA | <0.5U | <0.5U |
| TCE | NA | <0.5U | <0.5U |
| DCE | NA | <0.5U | <0.5U |
| VC | NA | <0.5U | <0.5U |

| IW-04 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | 0.33J | <0.5U | <0.5U |
| DCE | 0.40J | <0.5U | <0.5U |
| VC | 1.0 | 1.2 | 0.75J |

| MW-40-30 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | 0.79J | <0.5U | <0.5U |
| DCE | 3.7 | 0.95 | 1.2 |
| VC | 4.0 | 1.2 | 0.96J |

| MW-40-31 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | <1.0U | <0.5U | <0.5U |
| DCE | 0.83J | <0.5U | <0.5U |
| VC | 0.60 | <0.5U | <0.5U |

| MW-40-32 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | <1.0U | <0.5U | <0.5U |
| DCE | 1.2 | 0.72 | 0.98J |
| VC | 2.1 | 0.80 | 0.55J |

| MW-40-22 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | 1.9 | <0.5U | <0.5U |
| DCE | 2.5 | 7.9 | 0.96J |
| VC | 4.6 | 4.8 | 0.72J |

| IW-10 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | NA | <0.5U | <0.5U |
| TCE | NA | <0.5U | 0.84J |
| DCE | NA | 0.72J | 1.3 |
| VC | NA | 0.64 | 0.90J |

| MW-40-25 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | NA | NA | <0.5U |
| TCE | NA | NA | <0.5U |
| DCE | NA | NA | <0.5U |
| VC | NA | NA | 0.72J |

| MW-40-08 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | <1.0U | <0.5U | <0.5U |
| DCE | 38 | 56 | 42 |
| VC | <0.5U | 0.44J | 1.4 |

| MW-40-27 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | NA | NA | <0.5U |
| TCE | NA | NA | 0.84J |
| DCE | NA | NA | <0.5U |
| VC | NA | NA | 0.61J |

| MW-40-14 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | 0.92J | 1.9 | 1.5 |
| DCE | 1.3 | 3.7 | 2.7 |
| VC | 3.1 | 5.3 | 3.6 |

| MW-40-35 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | 0.26J | <0.5U | <0.5U |
| DCE | 3.0 | 3.4 | 1.3 |
| VC | <0.5U | 0.55 | <0.5U |

| MW-40-07 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | 0.28J | <0.5U | 0.46J |
| DCE | 0.67J | <0.5U | 0.89J |
| VC | 0.78 | 0.50 | 0.98J |

| MW-40-34 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | <1.0U | <0.5U | <0.5U |
| DCE | <1.0U | <0.5U | <0.5U |
| VC | 0.33 | 0.38 | <0.5U |

| MW-40-36 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | 0.56J | 0.41J | 0.80J |
| DCE | 1.5 | 1.4 | 2.8 |
| VC | 2.2 | 1.2 | 1.6 |

| IW-18 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | NA | <0.5U | <0.5U |
| TCE | NA | 1.8 | 1.8 |
| DCE | NA | 1.0 | 0.73J |
| VC | NA | 1.3 | 0.95J |

| MW-40-37 | Water | | |
|---|---|---|---|
| | 2010 | 2011 | 2012 |
| PCE | <1.0U | <0.5U | <0.5U |
| TCE | 4.0 | 2.5 | 0.81J |
| DCE | 90 | 61 | 37 |
| VC | 37 | 8.7 | 3.9 |

# FIGURE 1

COC CONCENTRATIONS FOR SELECT GROUNDWATER, INJECTION AND VAPOR WELLS - DECEMBER 2012

IRP Site 40
Naval Weapons Station Seal Beach
Seal Beach, California

CKY Incorporated
Civil Engineering · Environmental Remediation

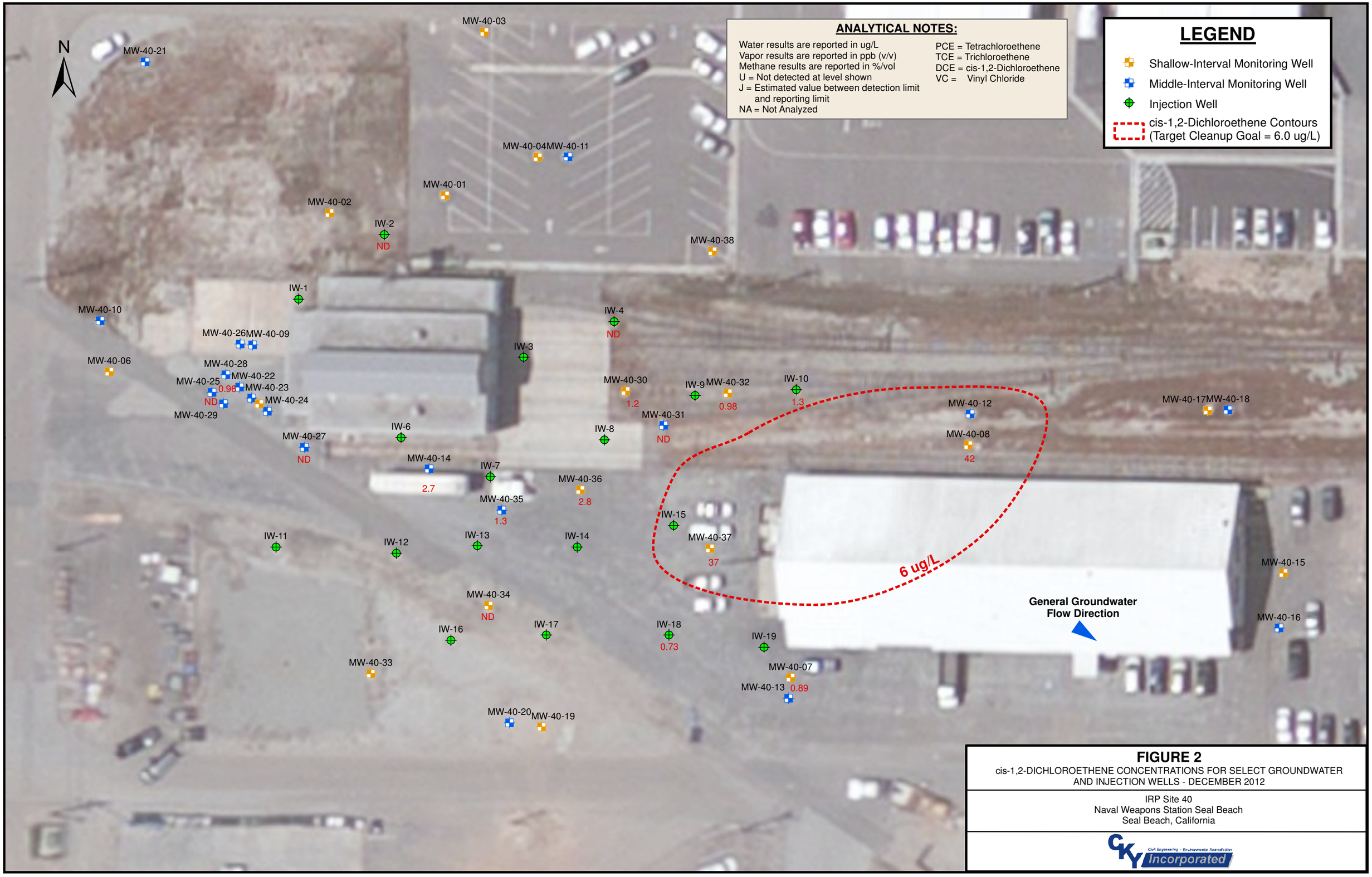



**FIGURE 2**

cis-1,2-DICHLOROETHENE CONCENTRATIONS FOR SELECT GROUNDWATER AND INJECTION WELLS - DECEMBER 2012

IRP Site 40
Naval Weapons Station Seal Beach
Seal Beach, California

CKY Incorporated
Clark Engineering - Environmental Remediation

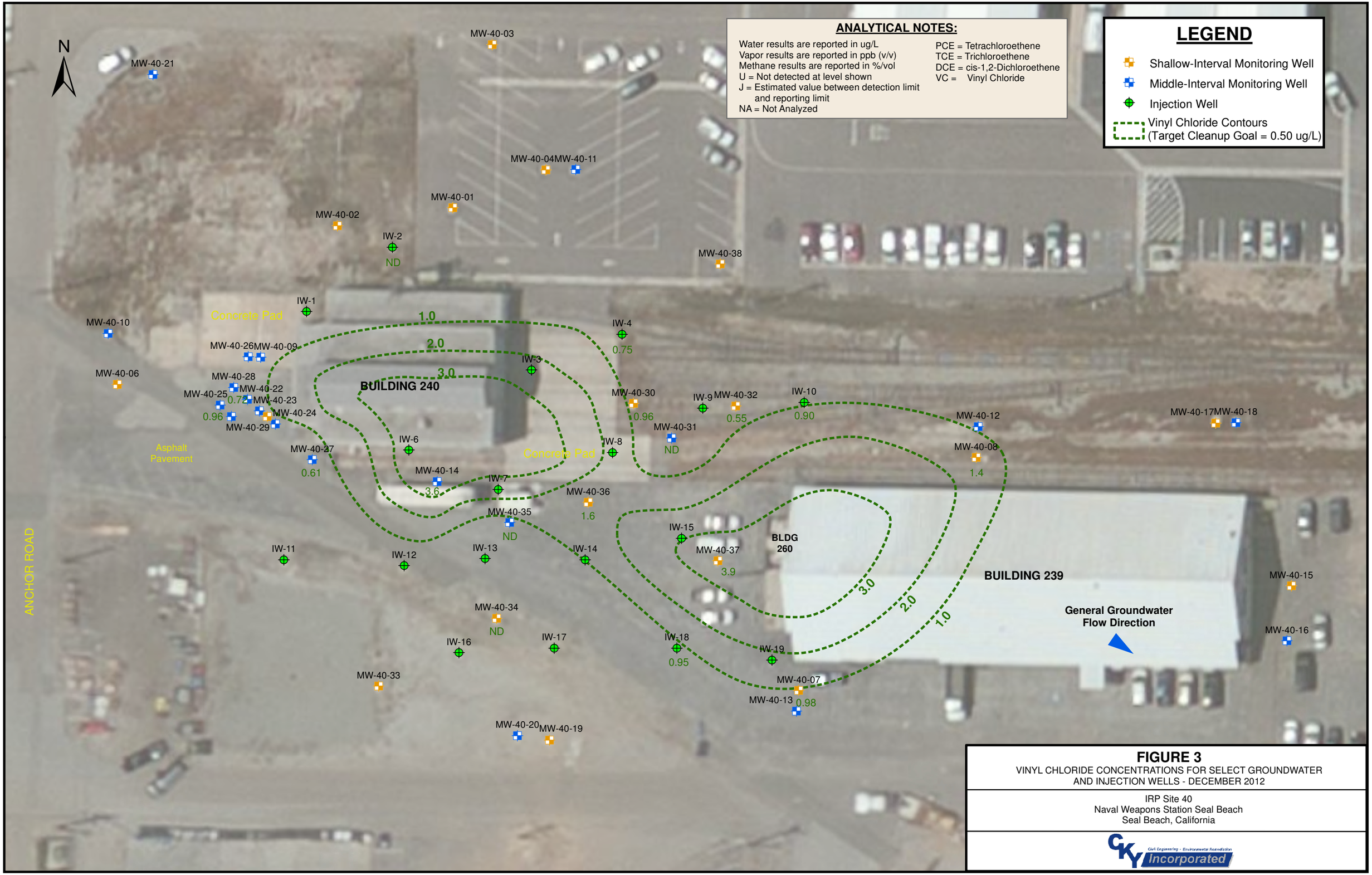



**FIGURE 3**

VINYL CHLORIDE CONCENTRATIONS FOR SELECT GROUNDWATER AND INJECTION WELLS - DECEMBER 2012

IRP Site 40
Naval Weapons Station Seal Beach
Seal Beach, California

CKY Incorporated
Civil Engineering · Environmental Remediation

# APPENDIX A
# LABORATORY DATA

(Included on CD)

**Laboratory Data Consultants, Inc.**

**7750 El Camino Real, Ste. 2L Carlsbad, CA 92009**

**Phone** 760.634.0437 **Web** www.lab-data.com **Fax** 760.634.0439

CKY Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731
ATTN: Ms. Carol Moldoveanu

January 24, 2013

SUBJECT: Seal Beach NWS, Data Validation

Dear Ms. Moldoveanu,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on January 7, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

**LDC Project # 29020:**

| SDG # | Fraction |
|---|---|
| 12-12-1107 12-12-1318 12-12-1323 | Volatiles, Metals, Wet Chemistry, Fixed Gases |

The data validation was performed under EPA Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan, Field Sampling Plan & Quality Assurance Plan, for Long Term Monitoring, Site 40, Naval Weapons Station Seal Beach, CA, November 2011
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2, October 2010
- USEPA, Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Ming-Hwa Hwang
Project Manager/Senior Chemist

L:\CKY\Seal Beach\29020COV.wpd

EDD/NIRIS

# LDC #29020 (CKY Inc.-San Pedro, CA / Seal Beach NWS)

| LDC | SDG# | DATE REC'D | (3) DATE DUE | VOA (8260B) | | Metals (6010B) | | Fixed Gases (D1946) | | Cl, $SO_4$ $NO_2$-N $NO_3$-N | | TDS (2540C) | | TOC (5310B) | | VOA (TO-15) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Matrix: | Air/Water/Solid | | | W | S | W | S | A | S | W | S | W | S | W | S | A | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S | W | S |
| A | 12-12-1107 | 01/07/13 | 01/28/13 | 9 | 0 | 8 | 0 | - | - | 8 | 0 | 8 | 0 | 8 | 0 | - | - | | | | | | | | | | | | | | | | | | |
| B | 12-12-1318 | 01/07/13 | 01/28/13 | 1 | 0 | 1 | 0 | - | - | 1 | 0 | 1 | 0 | 1 | 0 | - | - | | | | | | | | | | | | | | | | | | |
| C | 12-12-1323 | 01/07/13 | 01/28/13 | - | - | - | - | 8 | 0 | - | - | - | - | - | - | 8 | 0 | | | | | | | | | | | | | | | | | | |
| C | 12-12-1323 | 01/07/13 | 01/28/13 | - | - | - | - | 1 | 0 | - | - | - | - | - | - | 1 | 0 | | | | | | | | | | | | | | | | | | |
| Total | A/MH | | | 10 | 0 | 9 | 0 | 9 | 0 | 9 | 0 | 9 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 64 |

Shaded cells indicate Level IV validation (all other cells are Level III validation, not included MS/MSD

# Laboratory Data Consultants, Inc.
# Data Validation Report

| | |
|---|---|
| **Project/Site Name:** | Seal Beach NWS, CTO 0004 |
| **Collection Date:** | December 17, 2012 |
| **LDC Report Date:** | January 22, 2013 |
| **Matrix:** | Water |
| **Parameters:** | Volatiles |
| **Validation Level:** | EPA Level III |
| **Laboratory:** | Calscience Environmental Laboratories, Inc. |
| **Sample Delivery Group (SDG):** | 12-12-1107 |

**Sample Identification**

TB-1
MW-40-07
MW-40-08
DUP-1
MW-40-14
MW-40-22
MW-40-30
MW-40-32
MW-40-35
MW-40-08MS
MW-40-08MSD

## Introduction

This data review covers 11 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Plan) for Long Term Monitoring, Site 40, Naval Weapons Station Seal Beach, CA (November 2011), the U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 (October 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

Average relative response factors (RRF) for all compounds were within method and validation criteria.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

## V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

Sample TB-1 was identified as a trip blank. No volatile contaminants were found.

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## IX. Regional Quality Assurance and Quality Control

Not applicable.

## X. Internal Standards

All internal standard areas and retention times were within QC limits.

## XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

## XII. Compound Quantitation

Raw data were not reviewed for this SDG.

## XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

## XIV. System Performance

Raw data were not reviewed for this SDG.

## XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## XVI. Field Duplicates

Samples MW-40-08 and DUP-1 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

| Compound | Concentration (ug/L) | | RPD |
|---|---|---|---|
| | MW-40-08 | DUP-1 | |
| cis-1,2-Dichloroethene | 42 | 37 | 13 |

| Compound | Concentration (ug/L) | | RPD |
|---|---|---|---|
| | MW-40-08 | DUP-1 | |
| Vinyl chloride | 1.4 | 0.94 | 39 |

**Seal Beach NWS, CTO 0004**
**Volatiles - Data Qualification Summary - SDG 12-12-1107**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 12-12-1107**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Volatiles - Field Blank Data Qualification Summary - SDG 12-12-1107**

No Sample Data Qualified in this SDG

9

LDC #: 28020A1

# VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 1/21/13

SDG #: 12-12-1107

Page: 1 of 1

Laboratory: Calscience Environmental Laboratories Inc.

Reviewer: D

2nd Reviewer: [illegible]

**METHOD:** GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Technical holding times | A | Sampling dates: 12/17/12 |
| II. | GC/MS Instrument performance check | A | |
| III. | Initial calibration | A | % RSD ≤ 15/30 |
| IV. | Continuing calibration/ICV | A | ICV/CCV ≤ 20 |
| V. | Blanks | A | |
| VI. | Surrogate spikes | A | |
| VII. | Matrix spike/Matrix spike duplicates | A | |
| VIII. | Laboratory control samples | A | LCS/D |
| IX. | Regional Quality Assurance and Quality Control | N | |
| X. | Internal standards | A | |
| XI. | Target compound identification | N | |
| XII. | Compound quantitation/RL/LOQ/LODs | N | |
| XIII. | Tentatively identified compounds (TICs) | N | |
| XIV. | System performance | N | |
| XV. | Overall assessment of data | A | |
| XVI. | Field duplicates | SW | D = 3, 4 |
| XVII. | Field blanks | ND | TB = 1 |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: water

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | TB-1 | 11 | MW-40-08MSD | 21 | 121218L01 | 31 | |
| 2 | MW-40-07 | 12 | | 22 | 121219L01 | 32 | |
| 3 | MW-40-08 | 13 | | 23 | | 33 | |
| 4 | DUP-1 | 14 | | 24 | | 34 | |
| 5 | MW-40-14 | 15 | | 25 | | 35 | |
| 6 | MW-40-22 | 16 | | 26 | | 36 | |
| 7 | MW-40-30 | 17 | | 27 | | 37 | |
| 8 | MW-40-32 | 18 | | 28 | | 38 | |
| 9 | MW-40-35 | 19 | | 29 | | 39 | |
| 10 | MW-40-08MS | 20 | | 30 | | 40 | |

# TARGET COMPOUND WORKSHEET

## METHOD: VOA

| | | | | |
|---|---|---|---|---|
| A. Chloromethane | U. 1,1,2-Trichloroethane | OO. 2,2-Dichloropropane | III. n-Butylbenzene | CCCC.1-Chlorohexane |
| B. Bromomethane | V. Benzene | PP. Bromochloromethane | JJJ. 1,2-Dichlorobenzene | DDDD. Isopropyl alcohol |
| C. Vinyl choride | W. trans-1,3-Dichloropropene | QQ. 1,1-Dichloropropene | KKK. 1,2,4-Trichlorobenzene | EEEE. Acetonitrile |
| D. Chloroethane | X. Bromoform | RR. Dibromomethane | LLL. Hexachlorobutadiene | FFFF. Acrolein |
| E. Methylene chloride | Y. 4-Methyl-2-pentanone | SS. 1,3-Dichloropropane | MMM. Naphthalene | GGGG. Acrylonitrile |
| F. Acetone | Z. 2-Hexanone | TT. 1,2-Dibromoethane | NNN. 1,2,3-Trichlorobenzene | HHHH. 1,4-Dioxane |
| G. Carbon disulfide | AA. Tetrachloroethene | UU. 1,1,1,2-Tetrachloroethane | OOO. 1,3,5-Trichlorobenzene | IIII. Isobutyl alcohol |
| H. 1,1-Dichloroethene | BB. 1,1,2,2-Tetrachloroethane | VV. Isopropylbenzene | PPP. trans-1,2-Dichloroethene | JJJJ. Methacrylonitrile |
| I. 1,1-Dichloroethane | CC. Toluene | WW. Bromobenzene | QQQ. cis-1,2-Dichloroethene | KKKK. Propionitrile |
| J. 1,2-Dichloroethene, total | DD. Chlorobenzene | XX. 1,2,3-Trichloropropane | RRR. m,p-Xylenes | LLLL. Ethyl ether |
| K. Chloroform | EE. Ethylbenzene | YY. n-Propylbenzene | SSS. o-Xylene | MMMM. Benzyl chloride |
| L. 1,2-Dichloroethane | FF. Styrene | ZZ. 2-Chlorotoluene | TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane | NNNN. Iodomethane |
| M. 2-Butanone | GG. Xylenes, total | AAA. 1,3,5-Trimethylbenzene | UUU. 1,2-Dichlorotetrafluoroethane | OOOO.1,1-Difluoroethane |
| N. 1,1,1-Trichloroethane | HH. Vinyl acetate | BBB. 4-Chlorotoluene | VVV. 4-Ethyltoluene | PPPP. |
| O. Carbon tetrachloride | II. 2-Chloroethylvinyl ether | CCC. tert-Butylbenzene | WWW. Ethanol | QQQQ. |
| P. Bromodichloromethane | JJ. Dichlorodifluoromethane | DDD. 1,2,4-Trimethylbenzene | XXX. Di-isopropyl ether | RRRR. |
| Q. 1,2-Dichloropropane | KK. Trichlorofluoromethane | EEE. sec-Butylbenzene | YYY. tert-Butanol | SSSS. |
| R. cis-1,3-Dichloropropene | LL. Methyl-tert-butyl ether | FFF. 1,3-Dichlorobenzene | ZZZ. tert-Butyl alcohol | TTTT. |
| S. Trichloroethene | MM. 1,2-Dibromo-3-chloropropane | GGG. p-Isopropyltoluene | AAAA. Ethyl tert-butyl ether | UUUU. |
| T. Dibromochloromethane | NN. Methyl ethyl ketone | HHH. 1,4-Dichlorobenzene | BBBB. tert-Amyl methyl ether | VVVV. |

LDC #: 28020A1

# VALIDATION FINDINGS WORKSHEET
## Field Duplicates

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: [illegible]

**METHOD:** GC/MS VOA (EPA Method 8260)

Y N N/A Were field duplicate pairs identified in this SDG?
Y N N/A Were target compounds detected in the field duplicate pairs?

| Compound | Concentration ( ug/L ) | | RPD |
|---|---|---|---|
| | 3 | 4 | |
| QQQ | 42 | 37 | 13 |
| C | 1.4 | 0.94 | 39 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| Compound | Concentration ( ) | | RPD |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

| Compound | Concentration ( ) | | RPD |
|---|---|---|---|
| | | | |
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| | | | |

**LDC Report#** 29020A4

# Laboratory Data Consultants, Inc.
# Data Validation Report

| | |
|---|---|
| **Project/Site Name:** | Seal Beach NWS, CTO 0004 |
| **Collection Date:** | December 17, 2012 |
| **LDC Report Date:** | January 17, 2013 |
| **Matrix:** | Water |
| **Parameters:** | Metals |
| **Validation Level:** | EPA Level III |
| **Laboratory:** | Calscience Environmental Laboratories, Inc. |
| **Sample Delivery Group (SDG):** | 12-12-1107 |

**Sample Identification**

MW-40-07
MW-40-08
DUP-1
MW-40-14
MW-40-22
MW-40-30
MW-40-32
MW-40-35
MW-40-08MS
MW-40-08MSD

## Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010B for Metals. The metals analyzed Calcium, Iron, Magnesium, Potassium, and Sodium.

This review follows the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Plan) for Long Term Monitoring, Site 40, Naval Weapons Station Seal Beach, CA (November 2011), the U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 (October 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. ICPMS Tune

ICP-MS was not utilized in this SDG.

## III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

## IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|---|---|---|---|
| ICB/CCB | Calcium<br>Magnesium<br>Sodium | 0.0127 mg/L<br>0.0058 mg/L<br>0.1055 mg/L | MW-40-07<br>MW-40-08<br>DUP-1<br>MW-40-14<br>MW-40-22<br>MW-40-30 |
| ICB/CCB | Magnesium | 0.0101 mg/L | MW-40-32<br>MW-40-35 |
| ICB/CCB | Sodium | 0.1550 mg/L | MW-40-32 |

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

## V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

## VI. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## IX. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

## X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

## XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

## XII. Sample Result Verification

Raw data were not reviewed for this SDG.

## XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## XIV. Field Duplicates

Samples MW-40-08 and DUP-1 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

| Analyte | Concentration (mg/L) | | RPD |
|---|---|---|---|
| | MW-40-08 | DUP-1 | |
| Calcium | 141 | 141 | 0 |

| Analyte | Concentration (mg/L) | | RPD |
|---|---|---|---|
| | MW-40-08 | DUP-1 | |
| Iron | 8.89 | 8.77 | 1 |
| Magnesium | 43.2 | 42.9 | 1 |
| Potassium | 2.48 | 2.52 | 2 |
| Sodium | 254 | 255 | 0 |

**Seal Beach NWS, CTO 0004**
**Metals - Data Qualification Summary - SDG 12-12-1107**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Metals - Laboratory Blank Data Qualification Summary - SDG 12-12-1107**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Metals - Field Blank Data Qualification Summary - SDG 12-12-1107**

No Sample Data Qualified in this SDG

LDC #: 29020A4 **VALIDATION COMPLETENESS WORKSHEET** Date: 1-17-13

SDG #: 12-12-1107 Level III Page: 1 of 1

Laboratory: Calscience Environmental Laboratories Inc. Reviewer: MG

2nd Reviewer: [illegible]

**METHOD:** Metals (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Technical holding times | A | Sampling dates: 12-17-12 |
| II. | ICP/MS Tune | N | not utilized |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | A | MS/MSD (Ca, Fe, Mg, Na - 4x) |
| VII. | Duplicate Sample Analysis | N | |
| VIII. | Laboratory Control Samples (LCS) | A | LCS/LCSD |
| IX. | Internal Standard (ICP-MS) | N | not utilized |
| X. | Furnace Atomic Absorption QC | N | " " |
| XI. | ICP Serial Dilution | N | not performed |
| XII. | Sample Result Verification | N | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | SW | D = 2 + 3 |
| XV | Field Blanks | N | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: all water

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | MW-40-07 | 11 | | 21 | | 31 | |
| 2 | MW-40-08 | 12 | | 22 | | 32 | |
| 3 | DUP-1 | 13 | | 23 | | 33 | |
| 4 | MW-40-14 | 14 | | 24 | | 34 | |
| 5 | MW-40-22 | 15 | | 25 | | 35 | |
| 6 | MW-40-30 | 16 | | 26 | | 36 | |
| 7 | MW-40-32 | 17 | | 27 | | 37 | |
| 8 | MW-40-35 | 18 | | 28 | | 38 | |
| 9 | MW-40-08MS | 19 | | 29 | | 39 | |
| 10 | MW-40-08MSD | 20 | PBW | 30 | | 40 | |

Notes:

LDC #: 29020A4

# VALIDATION FINDINGS WORKSHEET
## Sample Specific Element Reference


Reviewer: MG
2nd reviewer: ✓

All circled elements are applicable to each sample.

| Sample ID | Matrix | Target Analyte List (TAL) |
|---|---|---|
| 1→8 | W | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| QC 9,10 | ↓ | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| **Analysis Method** | | |
| ICP | W | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| ICP-MS | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| GFAA | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, |

Comments: Mercury by CVAA if performed

LDC #: 29020A4
SDG #: See Cover
**METHOD:** Trace metals (EPA SW 864 Method 6010B/6020/7000)

**VALIDATION FINDINGS WORKSHEET**
**PB/ICB/CCB QUALIFIED SAMPLES**

Soil preparation factor applied: NA


Reviewer: MG
2nd Reviewer: [illegible]

Sample Concentration units, unless otherwise noted: mg/L
Associated Samples: 1-6 (>5x)

| Analyte | Maximum PB[a] (mg/Kg) | Maximum PB[a] (mg/L) | Maximum ICB/CCB[a] (mg/L) | Action Limit | No Qual's. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ca | | | 0.0127 | 0.0635 | | | | | | | | | | |
| Mg | | | 0.0058 | 0.0290 | | | | | | | | | | |
| Na | | | 0.1055 | 0.5275 | | | | | | | | | | |

Sample Concentration units, unless otherwise noted: mg/L
Associated Samples: 7,8 (20x dil, >5x)

| Analyte | Maximum PB[a] (mg/Kg) | Maximum PB[a] (mg/L) | Maximum ICB/CCB[a] (mg/L) | Action Limit | No Qual's. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mg | | | 0.0101 | 1.0100 | | | | | | | | | | |

Sample Concentration units, unless otherwise noted: mg/L
Associated Samples: 7 (>5x)

| Analyte | Maximum PB[a] (mg/Kg) | Maximum PB[a] (mg/L) | Maximum ICB/CCB[a] (mg/L) | Action Limit | No Qual. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Na | | | 0.1550 | 0.7750 | | | | | | | | | | |

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC#: 29020A4

# VALIDATION FINDINGS WORKSHEET
## Field Duplicates


Reviewer: MG
2nd Reviewer: [illegible]

**METHOD**: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Analyte | Concentration (mg/L) | | RPD | |
|---|---|---|---|---|
| | 2 | 3 | | |
| Calcium | 141 | 141 | 0 | |
| Iron | 8.89 | 8.77 | 1 | |
| Magnesium | 43.2 | 42.9 | 1 | |
| Potassium | 2.48 | 2.52 | 2 | |
| Sodium | 254 | 255 | 0 | |

V:\FIELD DUPLICATES\FD_inorganic\29020A4.WPD

**LDC Report#** 29020A6

# Laboratory Data Consultants, Inc.
# Data Validation Report

| | |
|---|---|
| **Project/Site Name:** | Seal Beach NWS, CTO 0004 |
| **Collection Date:** | December 17, 2012 |
| **LDC Report Date:** | January 17, 2013 |
| **Matrix:** | Water |
| **Parameters:** | Wet Chemistry |
| **Validation Level:** | EPA Level III |
| **Laboratory:** | Calscience Environmental Laboratories, Inc. |
| **Sample Delivery Group (SDG):** | 12-12-1107 |

**Sample Identification**

MW-40-07
MW-40-08
DUP-1
MW-40-14
MW-40-22
MW-40-30
MW-40-32
MW-40-35
MW-40-30MS
MW-40-30MSD

## Introduction

This data review covers 10 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method 300.0 for Chloride, Nitrate as Nitrogen, Nitrite as Nitrogen, and Sulfate, Standard Method 2540C for Total Dissolved Solids, and Standard Method 5310B for Total Organic Carbon.

This review follows the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Plan) for Long Term Monitoring, Site 40, Naval Weapons Station Seal Beach, CA (November 2011), the U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 (October 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. Initial Calibration

All criteria for the initial calibration of each method were met.

## III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

## IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

## V. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Sample Result Verification

Raw data were not reviewed for this SDG.

## IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## X. Field Duplicates

Samples MW-40-08 and DUP-1 were identified as field duplicates. No contaminant concentrations were detected in any of the samples with the following exceptions:

| Analyte | Concentration (mg/L) | | RPD |
|---|---|---|---|
| | MW-40-08 | DUP-1 | |
| Chloride | 210 | 210 | 0 |
| Nitrate as N | 0.038 | 0.039 | 3 |
| Sulfate | 100 | 100 | 0 |
| Total dissolved solids | 995 | 990 | 1 |

**Seal Beach NWS, CTO 0004**
**Wet Chemistry - Data Qualification Summary - SDG 12-12-1107**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 12-12-1107**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Wet Chemistry - Field Blank Data Qualification Summary - SDG 12-12-1107**

No Sample Data Qualified in this SDG

LDC #: 29020A6 **VALIDATION COMPLETENESS WORKSHEET** Date: 1-17-13

SDG #: 12-12-1107 Level III Page: 1 of 1

Laboratory: Calscience Environmental Laboratories Inc. Reviewer: MG

2nd Reviewer: W

**METHOD:** Chloride, Nitrate-N, Nitrite-N, Sulfate (EPA Method 300.0), TDS (SM2540C), TOC (SM5310B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Technical holding times | A | Sampling dates: 12-17-12 |
| II | Initial calibration | A | |
| III. | Calibration verification | A | |
| IV | Blanks | A | |
| V | Matrix Spike/Matrix Spike Duplicates | A | MS/MSD |
| VI. | Duplicates | N | |
| VII. | Laboratory control samples | A | LCS/LCSD |
| VIII. | Sample result verification | N | |
| IX. | Overall assessment of data | A | |
| X. | Field duplicates | SW | D = 2+3 |
| XI. | Field blanks | N | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

all water

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | MW-40-07 | 11 | #6 MS | 21 | | 31 | |
| 2 | MW-40-08 | 12 | #6 MSD | 22 | | 32 | |
| 3 | DUP-1 | 13 | | 23 | | 33 | |
| 4 | MW-40-14 | 14 | | 24 | | 34 | |
| 5 | MW-40-22 | 15 | | 25 | | 35 | |
| 6 | MW-40-30 | 16 | | 26 | | 36 | |
| 7 | MW-40-32 | 17 | | 27 | | 37 | |
| 8 | MW-40-35 | 18 | | 28 | | 38 | |
| mg 9 | ~~MW-40-08MS~~ | 19 | | 29 | PBW1 | 39 | |
| 10 | ~~MW-40-08MSD~~ | 20 | | 30 | PBW2 | 40 | |

Notes:

LDC #: 29020A6

# VALIDATION FINDINGS WORKSHEET
## Sample Specific Analysis Reference


Reviewer: MG
2nd reviewer: ✓

All circled methods are applicable to each sample.

| Sample ID | Matrix | Parameter |
|---|---|---|
| 1→8 | W | pH (TDS) (Cl) F (NO3) (NO2) (SO4) PO4 ALK CN- NH3 TKN (TOC) CR6+ ClO4 ____ ____ |
| QC 11,12 | ↓ | pH TDS (Cl) F (NO3) (NO2) (SO4) PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |
| | | pH TDS Cl F NO3 NO2 SO4 PO4 ALK CN- NH3 TKN TOC CR6+ ClO4 ____ ____ |

Comments: _____

LDC# 29020A6

# VALIDATION FINDINGS WORKSHEET
## Field Duplicates


Reviewer: MG
2nd Reviewer: [illegible]

**Inorganics**: Method See Cover

| Analyte | Concentration (mg/L) | | RPD | |
|---|---|---|---|---|
| | 2 | 3 | | |
| Chloride | 210 | 210 | 0 | |
| Nitrate as N | 0.038 | 0.039 | 3 | |
| Sulfate | 100 | 100 | 0 | |
| TDS | 995 | 990 | 1 | |

V:\FIELD DUPLICATES\FD_inorganic\29020A6.WPD

**LDC Report#** 29020B1

# Laboratory Data Consultants, Inc.
# Data Validation Report

| | |
|---|---|
| **Project/Site Name:** | Seal Beach NWS, CTO 0004 |
| **Collection Date:** | December 19, 2012 |
| **LDC Report Date:** | January 22, 2013 |
| **Matrix:** | Water |
| **Parameters:** | Volatiles |
| **Validation Level:** | EPA Level IV |
| **Laboratory:** | Calscience Environmental Laboratories, Inc. |
| **Sample Delivery Group (SDG):** | 12-12-1318 |

**Sample Identification**

MW-40-31

## Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Plan) for Long Term Monitoring, Site 40, Naval Weapons Station Seal Beach, CA (November 2011), the U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 (October 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination ($r^2$) were greater than or equal to 0.990.

Average relative response factors (RRF) for all compounds were within method and validation criteria.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

## V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks.

No field blanks were identified in this SDG.

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## IX. Regional Quality Assurance and Quality Control

Not applicable.

## X. Internal Standards

All internal standard areas and retention times were within QC limits.

## XI. Target Compound Identifications

All target compound identifications were within validation criteria.

## XII. Compound Quantitation

All compound quantitation were within validation criteria.

## XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

## XIV. System Performance

The system performance was acceptable.

## XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## XVI. Field Duplicates

No field duplicates were identified in this SDG.

**Seal Beach NWS, CTO 0004**
**Volatiles - Data Qualification Summary - SDG 12-12-1318**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 12-12-1318**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Volatiles - Field Blank Data Qualification Summary - SDG 12-12-1318**

No Sample Data Qualified in this SDG

LDC #: 29020B1 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/21/13
SDG #: 12-12-1318 Level IV Page: 1 of 1
Laboratory: Calscience Environmental Laboratories Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

**METHOD:** GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Technical holding times | A | Sampling dates: 12/19/12 |
| II. | GC/MS Instrument performance check | A | |
| III. | Initial calibration | A | % RSD ≤ 15/30, $r^2$ |
| IV. | Continuing calibration/ICV | A | 10/CCV ≤ 20 |
| V. | Blanks | A | |
| VI. | Surrogate spikes | A | |
| VII. | Matrix spike/Matrix spike duplicates | N | client specified |
| VIII. | Laboratory control samples | A | LCS/D |
| IX. | Regional Quality Assurance and Quality Control | N | |
| X. | Internal standards | A | |
| XI. | Target compound identification | A | |
| XII. | Compound quantitation/RL/LOQ/LODs | A | |
| XIII. | Tentatively identified compounds (TICs) | N | |
| XIV. | System performance | A | |
| XV. | Overall assessment of data | A | |
| XVI. | Field duplicates | N | |
| XVII. | Field blanks | N | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | MW-40-31 | 11 | 121220L07 | 21 | | 31 | |
| 2 | | 12 | | 22 | | 32 | |
| 3 | | 13 | | 23 | | 33 | |
| 4 | | 14 | | 24 | | 34 | |
| 5 | | 15 | | 25 | | 35 | |
| 6 | | 16 | | 26 | | 36 | |
| 7 | | 17 | | 27 | | 37 | |
| 8 | | 18 | | 28 | | 38 | |
| 9 | | 19 | | 29 | | 39 | |
| 10 | | 20 | | 30 | | 40 | |

LDC #: 29020B /

# VALIDATION FINDINGS CHECKLIST


Reviewer: FT
2nd Reviewer: ov

**Method:** Volatiles (EPA SW 846 Method 8260B)

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| I. Technical holding times | | | | |
| All technical holding times were met. | ✓ | | | |
| Cooler temperature criteria was met. | ✓ | | | |
| II. GC/MS Instrument performance check | | | | |
| Were the BFB performance results reviewed and found to be within the specified criteria? | ✓ | | | |
| Were all samples analyzed within the 12 hour clock criteria? | ✓ | | | |
| III. Initial calibration | | | | |
| Did the laboratory perform a 5 point calibration prior to sample analysis? | ✓ | | | |
| Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs? | ✓ | | | |
| Was a curve fit used for evaluation? | ✓ | | | |
| Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990? | ✓ | | | |
| Were all percent relative standard deviations (%RSD) ≤ ~~30%~~ 15/30 and relative response factors (RRF) ≥ 0.05? | ✓ | | | |
| IV. Continuing calibration | | | | |
| Was a continuing calibration standard analyzed at least once every 12 hours for each instrument? | ✓ | | | |
| Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs? | ✓ | | | |
| Were all percent differences (%D) ≤ ~~25%~~ 20 and relative response factors (RRF) ≥ 0.05? | ✓ | | | |
| V. Blanks | | | | |
| Was a method blank associated with every sample in this SDG? | ✓ | | | |
| Was a method blank analyzed at least once every 12 hours for each matrix and concentration? | ✓ | | | |
| Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet. | | | ✓ | |
| VI. Surrogate spikes | | | | |
| Were all surrogate %R within QC limits? | ✓ | | | |
| If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria? | | | ✓ | |
| VII. Matrix spike/Matrix spike duplicates | | | | |
| Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water. | | | ✓ | |
| Was a MS/MSD analyzed every 20 samples of each matrix? | | | ✓ | |
| Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits? | | | ✓ | |
| VIII. Laboratory control samples | | | | |
| Was an LCS analyzed for this SDG? | ✓ | | | |

LDC #: 29020B7

# VALIDATION FINDINGS CHECKLIST


Reviewer: FT
2nd Reviewer: [illegible]

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| Was an LCS analyzed per analytical batch? | ✓ | | | |
| Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits? | ✓ | | | |
| IX. Regional Quality Assurance and Quality Control | | | | |
| Were performance evaluation (PE) samples performed? | | | ✓ | |
| Were the performance evaluation (PE) samples within the acceptance limits? | | | ✓ | |
| X. Internal standards | | | | |
| Were internal standard area counts within -50% or +100% of the associated calibration standard? | ✓ | | | |
| Were retention times within ± 30 seconds of the associated calibration standard? | ✓ | | | |
| XI. Target compound identification | | | | |
| Were relative retention times (RRT's) within ± 0.06 RRT units of the standard? | N | | ✓ | |
| Did compound spectra meet specified EPA "Functional Guidelines" criteria? | N | | ✓ | |
| Were chromatogram peaks verified and accounted for? | ✓ | | | |
| XII. Compound quantitation/CRQLs | | | | |
| Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound? | | | ✓ | |
| Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation? | ✓ | | | |
| XIII. Tentatively identified compounds (TICs) | | | | |
| Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum? | | | ✓ | |
| Were relative intensities of the major ions within ± 20% between the sample and the reference spectra? | | | ✓ | |
| Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)? | | | ✓ | |
| XIV. System performance | | | | |
| System performance was found to be acceptable. | ✓ | | | |
| XV. Overall assessment of data | | | | |
| Overall assessment of data was found to be acceptable. | ✓ | | | |
| XVI. Field duplicates | | | | |
| Field duplicate pairs were identified in this SDG. | | ✓ | | |
| Target compounds were detected in the field duplicates. | | | ✓ | |
| XVII. Field blanks | | | | |
| Field blanks were identified in this SDG. | | ✓ | | |
| Target compounds were detected in the field blanks. | | | ✓ | |

# TARGET COMPOUND WORKSHEET

## METHOD: VOA (EPA SW 846 Method 8260B)

| | | | | |
|---|---|---|---|---|
| A. Chloromethane* | U. 1,1,2-Trichloroethane | OO. 2,2-Dichloropropane | III. n-Butylbenzene | CCCC.1-Chlorohexane |
| B. Bromomethane | V. Benzene | PP. Bromochloromethane | JJJ. 1,2-Dichlorobenzene | DDDD. Isopropyl alcohol |
| C. Vinyl choride** | W. trans-1,3-Dichloropropene | QQ. 1,1-Dichloropropene | KKK. 1,2,4-Trichlorobenzene | EEEE. Acetonitrile |
| D. Chloroethane | X. Bromoform* | RR. Dibromomethane | LLL. Hexachlorobutadiene | FFFF. Acrolein |
| E. Methylene chloride | Y. 4-Methyl-2-pentanone | SS. 1,3-Dichloropropane | MMM. Naphthalene | GGGG. Acrylonitrile |
| F. Acetone | Z. 2-Hexanone | TT. 1,2-Dibromoethane | NNN. 1,2,3-Trichlorobenzene | HHHH. 1,4-Dioxane |
| G. Carbon disulfide | AA. Tetrachloroethene | UU. 1,1,1,2-Tetrachloroethane | OOO. 1,3,5-Trichlorobenzene | IIII. Isobutyl alcohol |
| H. 1,1-Dichloroethene** | BB. 1,1,2,2-Tetrachloroethane* | VV. Isopropylbenzene | PPP. trans-1,2-Dichloroethene | JJJJ. Methacrylonitrile |
| I. 1,1-Dichloroethane* | CC. Toluene** | WW. Bromobenzene | QQQ. cis-1,2-Dichloroethene | KKKK. Propionitrile |
| J. 1,2-Dichloroethene, total | DD. Chlorobenzene* | XX. 1,2,3-Trichloropropane | RRR. m,p-Xylenes | LLLL. Ethyl ether |
| K. Chloroform** | EE. Ethylbenzene** | YY. n-Propylbenzene | SSS. o-Xylene | MMMM. Benzyl chloride |
| L. 1,2-Dichloroethane | FF. Styrene | ZZ. 2-Chlorotoluene | TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane | NNNN. |
| M. 2-Butanone | GG. Xylenes, total | AAA. 1,3,5-Trimethylbenzene | UUU. 1,2-Dichlorotetrafluoroethane | OOOO. |
| N. 1,1,1-Trichloroethane | HH. Vinyl acetate | BBB. 4-Chlorotoluene | VVV. 4-Ethyltoluene | PPPP. |
| O. Carbon tetrachloride | II. 2-Chloroethylvinyl ether | CCC. tert-Butylbenzene | WWW. Ethanol | QQQQ. |
| P. Bromodichloromethane | JJ. Dichlorodifluoromethane | DDD. 1,2,4-Trimethylbenzene | XXX. Di-isopropyl ether | RRRR. |
| Q. 1,2-Dichloropropane** | KK. Trichlorofluoromethane | EEE. sec-Butylbenzene | YYY. tert-Butanol | SSSS. |
| R. cis-1,3-Dichloropropene | LL. Methyl-tert-butyl ether | FFF. 1,3-Dichlorobenzene | ZZZ. tert-Butyl alcohol | TTTT. |
| S. Trichloroethene | MM. 1,2-Dibromo-3-chloropropane | GGG. p-Isopropyltoluene | AAAA. Ethyl tert-butyl ether | UUUU. |
| T. Dibromochloromethane | NN. Methyl ethyl ketone | HHH. 1,4-Dichlorobenzene | BBBB. tert-Amyl methyl ether | VVVV. |

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29020B7

# VALIDATION FINDINGS WORKSHEET
## Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CR

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

RRF = $(A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

$A_x$ = Area of compound,
$C_x$ = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

$A_{is}$ = Area of associated internal standard
$C_{is}$ = Concentration of internal standard

| # | Standard ID | Calibration Date | Compound (Reference Internal Standard) | Reported RRF (50/~~250~~ std) | Recalculated RRF (50/~~250~~ std) | Reported Average RRF (initial) | Recalculated Average RRF (initial) | Reported %RSD | Recalculated %RSD |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ICAL | 12/18/12 | ~~ZZZ~~ (1st internal standard) | 1.281 | 1.281 | 1.326 | 1.326 | 7.10 | 7.10 |
| | | | V (2nd internal standard) | 1.178 | 1.178 | 1.170 | 1.170 | 6.21 | 6.21 |
| | | | EE (3rd internal standard) | 1.769 | 1.769 | 1.685 | 1.685 | 3.34 | 3.34 |
| | | | BB (4th internal standard) | 0.692 | 0.692 | 0.675 | 0.675 | 2.95 | 2.95 |
| 2 | | | C (1st internal standard) | 0.894 | 0.894 | 0.882 | 0.882 | 1.56 | 1.56 |
| | | | (2nd internal standard) | | | | | | |
| | | | (3rd internal standard) | | | | | | |
| | | | (4th internal standard) | | | | | | |
| 3 | | | (1st internal standard) | | | | | | |
| | | | (2nd internal standard) | | | | | | |
| | | | (3rd internal standard) | | | | | | |
| | | | (4th internal standard) | | | | | | |
| 4 | | | (1st internal standard) | | | | | | |
| | | | (2nd internal standard) | | | | | | |
| | | | (3rd internal standard) | | | | | | |
| | | | (4th internal standard) | | | | | | |

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020B1

# VALIDATION FINDINGS WORKSHEET
## Continuing Calibration Results Verification


Reviewer: FT
2nd Reviewer: [illegible]

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
$A_x$ = Area of compound, $A_{is}$ = Area of associated internal standard
$C_x$ = Concentration of compound, $C_{is}$ = Concentration of internal standard

| # | Standard ID | Calibration Date | Compound (Reference internal Standard) | Average RRF (initial) | Reported RRF (CC) | Recalculated RRF (CC) | Reported %D | Recalculated %D |
|---|---|---|---|---|---|---|---|---|
| 1 | CCV 9:44 | 12/20/12 | ZZZ (1st internal standard) | 1.326 | 1.278 | 1.278 | 3.6 | 3.6 |
| | | | C (2nd internal standard) | 0.882 | 0.767 | 0.767 | 13.0 | 13.0 |
| | | | V (3rd internal standard) | 1.170 | 1.110 | 1.110 | 5.1 | 5.1 |
| | | | EE (4th internal standard) | 1.685 | 1.669 | 1.669 | 0.9 | 0.9 |
| 2 | | | BB (1st internal standard) | 0.675 | 0.666 | 0.666 | 1.3 | 1.3 |
| | | | (2nd internal standard) | | | | | |
| | | | (3rd internal standard) | | | | | |
| | | | (4th internal standard) | | | | | |
| 3 | | | (1st internal standard) | | | | | |
| | | | (2nd internal standard) | | | | | |
| | | | (3rd internal standard) | | | | | |
| | | | (4th internal standard) | | | | | |
| 4 | | | (1st internal standard) | | | | | |
| | | | (2nd internal standard) | | | | | |
| | | | (3rd internal standard) | | | | | |
| | | | (4th internal standard) | | | | | |

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020B1

# VALIDATION FINDINGS WORKSHEET
## Surrogate Results Verification


Reviewer: FT
2nd reviewer: CN

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

**Sample ID:** #1

| | Surrogate Spiked | Surrogate Found | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference |
|---|---|---|---|---|---|
| Dibromofluoromethane | 50.0 | 44.70 | 89 | 89 | 0 |
| 1,2-Dichloroethane-d4 | ↓ | 47.42 | 95 | 95 | ↓ |
| Toluene-d8 | | 48.02 | 96 | 96 | |
| Bromofluorobenzene | | 49.27 | 99 | 99 | |

**Sample ID:**

| | Surrogate Spiked | Surrogate Found | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference |
|---|---|---|---|---|---|
| Dibromofluoromethane | | | | | |
| 1,2-Dichloroethane-d4 | | | | | |
| Toluene-d8 | | | | | |
| Bromofluorobenzene | | | | | |

**Sample ID:**

| | Surrogate Spiked | Surrogate Found | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference |
|---|---|---|---|---|---|
| Dibromofluoromethane | | | | | |
| 1,2-Dichloroethane-d4 | | | | | |
| Toluene-d8 | | | | | |
| Bromofluorobenzene | | | | | |

**Sample ID:**

| | Surrogate Spiked | Surrogate Found | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference |
|---|---|---|---|---|---|
| Dibromofluoromethane | | | | | |
| 1,2-Dichloroethane-d4 | | | | | |
| Toluene-d8 | | | | | |
| Bromofluorobenzene | | | | | |

**Sample ID:**

| | Surrogate Spiked | Surrogate Found | Percent Recovery Reported | Percent Recovery Recalculated | Percent Difference |
|---|---|---|---|---|---|
| Dibromofluoromethane | | | | | |
| 1,2-Dichloroethane-d4 | | | | | |
| Toluene-d8 | | | | | |
| Bromofluorobenzene | | | | | |

LDC #: 29020B1

# VALIDATION FINDINGS WORKSHEET
## Laboratory Control Sample Results Verification


Reviewer: FT
2nd Reviewer: OR

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA  Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCS - LCSD I * 2/(LCS + LCSD)  LCS = Laboraotry control sample percent recovery  LCSD = Laboratory control sample duplicate percent recovery

LCS ID: 121220L01

| Compound | Spike Added (ug/L) | | Spiked Sample Concentration (ug/L) | | LCS Percent Recovery | | LCSD Percent Recovery | | LCS/LCSD RPD | |
|---|---|---|---|---|---|---|---|---|---|---|
| | LCS | LCSD | LCS | LCSD | Reported | Recalc. | Reported | Recalc. | Reported | Recalculated |
| 1,1-Dichloroethene | 50.0 | NA | 40.17 | 40.49 | 80 | 80 | 81 | 81 | 1 | 1 |
| Trichloroethene | ↓ | ↓ | 50.91 | 52.33 | 102 | 102 | 105 | 105 | 3 | 3 |
| Benzene | ↓ | ↓ | 49.57 | 49.90 | 99 | 99 | 100 | 100 | 1 | 1 |
| Toluene | ↓ | ↓ | 50.23 | 52.16 | 100 | 100 | 104 | 104 | 4 | 4 |
| Chlorobenzene | ↓ | ↓ | 52.37 | 52.99 | 105 | 105 | 106 | 106 | 1 | 1 |
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Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020B1

# VALIDATION FINDINGS WORKSHEET
## Sample Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd reviewer: [illegible]

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

| | | |
|---|---|---|
| $A_x$ | = | Area of the characteristic ion (EICP) for the compound to be measured |
| $A_{is}$ | = | Area of the characteristic ion (EICP) for the specific internal standard |
| $I_s$ | = | Amount of internal standard added in nanograms (ng) |
| RRF | = | Relative response factor of the calibration standard. |
| $V_o$ | = | Volume or weight of sample pruged in milliliters (ml) or grams (g). |
| Df | = | Dilution factor. |
| %S | = | Percent solids, applicable to soils and solid matrices only. |

Example:

Sample I.D. _____ , _____:

Conc. = (_____)(_____)(_____) / (_____)(_____)(_____)(_____)

= ND

| # | Sample ID | Compound | Reported Concentration ( ) | Calculated Concentration ( ) | Qualification |
|---|---|---|---|---|---|
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**LDC Report#** 29020B4

# Laboratory Data Consultants, Inc.
# Data Validation Report

| | |
|---|---|
| **Project/Site Name:** | Seal Beach NWS, CTO 0004 |
| **Collection Date:** | December 19, 2012 |
| **LDC Report Date:** | January 17, 2013 |
| **Matrix:** | Water |
| **Parameters:** | Metals |
| **Validation Level:** | EPA Level IV |
| **Laboratory:** | Calscience Environmental Laboratories, Inc. |
| **Sample Delivery Group (SDG):** | 12-12-1318 |

**Sample Identification**

MW-40-31

## Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010B for Metals. The metals analyzed Calcium, Iron, Magnesium, Potassium, and Sodium.

This review follows the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Plan) for Long Term Monitoring, Site 40, Naval Weapons Station Seal Beach, CA (November 2011), the U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 (October 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. ICPMS Tune

ICP-MS was not utilized in this SDG.

## III. Calibration

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

## IV. Blanks

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte | Maximum Concentration | Associated Samples |
|---|---|---|---|
| ICB/CCB | Calcium | 0.0150 mg/L | All samples in SDG 12-12-1318 |

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

No field blanks were identified in this SDG.

## V. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

## VI. Matrix Spike Analysis

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## IX. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

## X. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

## XI. ICP Serial Dilution

ICP serial dilution was not performed for this SDG.

## XII. Sample Result Verification

All sample result verifications were acceptable.

## XIII. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## XIV. Field Duplicates

No field duplicates were identified in this SDG.

**Seal Beach NWS, CTO 0004**
**Metals - Data Qualification Summary - SDG 12-12-1318**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Metals - Laboratory Blank Data Qualification Summary - SDG 12-12-1318**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Metals - Field Blank Data Qualification Summary - SDG 12-12-1318**

No Sample Data Qualified in this SDG

LDC #: 29020B4 **VALIDATION COMPLETENESS WORKSHEET** Date: 1-17-13

SDG #: 12-12-1318 Level IV Page: 1 of 1

Laboratory: Calscience Environmental Laboratories Inc. Reviewer: MG

2nd Reviewer: ✓

**METHOD:** Metals (EPA SW 846 Method 6010B ~~/7000)~~ 9m/y

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Technical holding times | A | Sampling dates: 12-19-12 |
| II. | ICP/MS Tune | N | |
| III. | Calibration | A | |
| IV. | Blanks | SW | |
| V. | ICP Interference Check Sample (ICS) Analysis | A | |
| VI. | Matrix Spike Analysis | N | client specified |
| VII. | Duplicate Sample Analysis | N | |
| VIII. | Laboratory Control Samples (LCS) | A | LCS/LCSD |
| IX. | Internal Standard (ICP-MS) | N | not utilized |
| X. | Furnace Atomic Absorption QC | N | " " |
| XI. | ICP Serial Dilution | N | not performed |
| XII. | Sample Result Verification | A | |
| XIII. | Overall Assessment of Data | A | |
| XIV. | Field Duplicates | N | |
| XV | Field Blanks | N | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
water

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | MW-40-31 | 11 | | 21 | | 31 | |
| 2 | | 12 | | 22 | | 32 | |
| 3 | | 13 | | 23 | | 33 | |
| 4 | | 14 | | 24 | | 34 | |
| 5 | | 15 | | 25 | | 35 | |
| 6 | | 16 | | 26 | | 36 | |
| 7 | | 17 | | 27 | | 37 | |
| 8 | | 18 | | 28 | | 38 | |
| 9 | | 19 | | 29 | | 39 | |
| 10 | | 20 | PBW | 30 | | 40 | |

Notes:

LDC #: 29020B4

# VALIDATION FINDINGS CHECKLIST


Reviewer: MG
2nd Reviewer: ✓

**Method:** Metals (EPA SW 846 Method 6010B/7000/6020)

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| ***I. Technical holding times*** | | | | |
| All technical holding times were met. | ✓ | | | |
| Cooler temperature criteria was met. | ✓ | | | |
| ***II. ICP/MS Tune*** | | | | |
| Were all isotopes in the tuning solution mass resolution within 0.1 amu? | | | ✓ | |
| Were %RSD of isotopes in the tuning solution ≤5%? | | | ✓ | |
| ***III. Calibration*** | | | | |
| Were all instruments calibrated daily, each set-up time? | ✓ | | | |
| Were the proper number of standards used? | ✓ | | | |
| Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits? | ✓ | | | |
| Were all initial calibration correlation coefficients ≥ 0.995? | ✓ | | | |
| ***IV. Blanks*** | | | | |
| Was a method blank associated with every sample in this SDG? | ✓ | | | |
| Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet. | ✓ | | | |
| ***V. ICP Interference Check Sample*** | | | | |
| Were ICP interference check samples performed daily? | ✓ | | | |
| Were the AB solution percent recoveries (%R) with the 80-120% QC limits? | ✓ | | | |
| ***VI. Matrix spike/Matrix spike duplicates*** | | | | |
| Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water | | ✓ | | |
| Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken. | | | ✓ | |
| Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL. | | | ✓ | |
| ***VII. Laboratory control samples*** | | | | |
| Was an LCS anaylzed for this SDG? | ✓ | | | |
| Was an LCS analyzed per extraction batch? | ✓ | | | |
| Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils? | ✓ | | | |

LDC #: 29020B4

# VALIDATION FINDINGS CHECKLIST


Reviewer: MG
2nd Reviewer: ✓

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| ***VIII. Furnace Atomic Absorption QC*** | | | | |
| If MSA was performed, was the correlation coefficients > 0.995? | | | ✓ | |
| Do all applicable analysies have duplicate injections? (Level IV only) | | | ✓ | |
| For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only) | | | ✓ | |
| Were analytical spike recoveries within the 85-115% QC limits? | | | ✓ | |
| ***IX. ICP Serial Dilution*** | | | | |
| Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)? | | ✓ | | |
| Were all percent differences (%Ds) < 10%? | | | ✓ | |
| Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data. | | | ✓ | |
| ***X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)*** | | | | |
| Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration? | | | ✓ | |
| If the %Rs were outside the criteria, was a reanalysis performed? | | | ✓ | |
| ***XI. Regional Quality Assurance and Quality Control*** | | | | |
| Were performance evaluation (PE) samples performed? | | ✓ | | |
| Were the performance evaluation (PE) samples within the acceptance limits? | | | ✓ | |
| ***XII. Sample Result Verification*** | | | | |
| Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation? | ✓ | | | |
| ***XIII. Overall assessment of data*** | | | | |
| Overall assessment of data was found to be acceptable. | ✓ | | | |
| ***XIV. Field duplicates*** | | | | |
| Field duplicate pairs were identified in this SDG. | | ✓ | | |
| Target analytes were detected in the field duplicates. | | | ✓ | |
| ***XV. Field blanks*** | | | | |
| Field blanks were identified in this SDG. | | ✓ | | |
| Target analytes were detected in the field blanks. | | | ✓ | |

LDC #: 29020 B4

# VALIDATION FINDINGS WORKSHEET
## Sample Specific Element Reference


Reviewer: MG
2nd reviewer: ✓

All circled elements are applicable to each sample.

| Sample ID | Matrix | Target Analyte List (TAL) |
|---|---|---|
| 1 | W | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| **Analysis Method** | | |
| ICP | W | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| ICP-MS | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |
| GFAA | | Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Si, $CN^-$, ____ |

Comments: Mercury by CVAA if performed

LDC #: 29020B4
SDG #: See Cover
**METHOD:** Trace metals (EPA SW 864 Method 6010B/6020/7000)
Sample Concentration units, unless otherwise noted: mg/L

**VALIDATION FINDINGS WORKSHEET**
**PB/ICB/CCB QUALIFIED SAMPLES**
Soil preparation factor applied: NA
Associated Samples: all (>5x)


Reviewer: MG
2nd Reviewer: [illegible]

| Analyte | Maximum PB[a] (mg/Kg) | Maximum PB[a] (mg/L) | Maximum ICB/CCB[a] (mg/L) | Action Limit | No Qual. | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ca | | | 0.0150 | 0.0750 | | | | | | | | | | |

Samples with analyte concentrations within five times the associated ICB, CCB or PB concentration are listed above with the identifications from the Validation Completeness Worksheet. These sample results were qualified as not detected, "U".
Note : a - The listed analyte concentration is the highest ICB, CCB, or PB detected in the analysis of each element.

LDC #: 29020B4

# VALIDATION FINDINGS WORKSHEET
## Initial and Continuing Calibration Calculation Verification


Reviewer: MG
2nd Reviewer: ✓

**METHOD:** Trace Metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

| Standard ID | Type of Analysis | Element | Found (ug/L) | True (ug/L) | Recalculated %R | Reported %R | Acceptable (Y/N) |
|---|---|---|---|---|---|---|---|
| 1135 ICV | ICP (Initial calibration) | Mg | 10200 | 10000 | 102.00 | 101.99 | Y |
| | ICP/MS (Initial calibration) | | | | | | |
| | CVAA (Initial calibration) | | | | | | |
| 1540 CCV | ICP (Continuing calibration) | Fe | 3767 | 3750 | 100.45 | 100.46 | |
| | ICP/MS (Continuing calibration) | | | | | | |
| | CVAA (Continuing calibration) | | | | | | |
| | GFAA (Initial calibration) | | | | | | |
| | GFAA (Continuing calibation) | | | | | | |

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020B4

# VALIDATION FINDINGS WORKSHEET
## Level IV Recalculation Worksheet


Reviewer: MG
2nd Reviewer: [illegible]

**METHOD:** Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

| Sample ID | Type of Analysis | Element | Found / S / I (units) | True / D / SDR (units) | Recalculated %R / RPD / %D | Reported %R / RPD / %D | Acceptable (Y/N) |
|---|---|---|---|---|---|---|---|
| 1147 ICSAB | ICP interference check | Ca | 125.4 (mg/L) | 120 (mg/L) | 104 | not reported | Y |
| 1529 LCS | Laboratory control sample | K | 4.939 (mg/L) | 5.000 (mg/L) | 99 | 99 | ↓ |
| — | Matrix spike | — | (SSR-SR) — | — | — | — | — |
| — | Duplicate | — | — | — | — | — | — |
| — | ICP serial dilution | — | — | — | — | — | — |

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020B4

# VALIDATION FINDINGS WORKSHEET
## Sample Calculation Verification


Reviewer: MG
2nd reviewer: [illegible]

**METHOD:** Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for # 1, Na were recalculated and verified using the following equation:

Concentration = $\frac{(RD)(FV)(Dil)}{(In.\ Vol.)}$

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

$$\frac{(96.02\ mg/L)(0.050\ L)(10)}{0.050\ L} = 960.2\ mg/L$$

| # | Sample ID | Analyte | Reported Concentration (mg/L) | Calculated Concentration (mg/L) | Acceptable (Y/N) |
|---|---|---|---|---|---|
| 1 | 1 | Ca | 141 | 141 | Y |
| | | Fe | 21.6 | 21.6 | ↓ |
| | | Mg | 60.1 | 60.1 | ↓ |
| | | K | 7.58 | 7.58 | ↓ |
| | | Na | 960 | 960 | ↓ |
| | | | | | |
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Note:

**LDC Report#** 29020B6

# Laboratory Data Consultants, Inc.
# Data Validation Report

| | |
|---|---|
| **Project/Site Name:** | Seal Beach NWS, CTO 0004 |
| **Collection Date:** | December 19, 2012 |
| **LDC Report Date:** | January 17, 2013 |
| **Matrix:** | Water |
| **Parameters:** | Wet Chemistry |
| **Validation Level:** | EPA Level IV |
| **Laboratory:** | Calscience Environmental Laboratories, Inc. |
| **Sample Delivery Group (SDG):** | 12-12-1318 |

**Sample Identification**

MW-40-31

## Introduction

This data review covers one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were EPA Method 300.0 for Chloride, Nitrite as Nitrogen, Nitrate as Nitrogen, and Sulfate, Standard Method 2540C for Total Dissolved Solids, and Standard Method 5310B for Total Organic Carbon.

This review follows the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Plan) for Long Term Monitoring, Site 40, Naval Weapons Station Seal Beach, CA (November 2011), the U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 (October 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. Initial Calibration

All criteria for the initial calibration of each method were met.

## III. Continuing Calibration

Continuing calibration frequency and analysis criteria were met for each method when applicable.

## IV. Blanks

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

## V. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## VI. Duplicates

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## VII. Laboratory Control Samples

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Sample Result Verification

All sample result verifications were acceptable.

## IX. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## X. Field Duplicates

No field duplicates were identified in this SDG.

**Seal Beach NWS, CTO 0004**
**Wet Chemistry - Data Qualification Summary - SDG 12-12-1318**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG 12-12-1318**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Wet Chemistry - Field Blank Data Qualification Summary - SDG 12-12-1318**

No Sample Data Qualified in this SDG

LDC #: 29020B6 **VALIDATION COMPLETENESS WORKSHEET** Date: 1-17-13
SDG #: 12-12-1318 Level IV Page: 1 of 1
Laboratory: Calscience Environmental Laboratories Inc. Reviewer: MG
2nd Reviewer: [illegible]

**METHOD:** Chloride, Nitrite as Nitrogen, Nitrate as Nitrogen, Sulfate (EPA Method 300.0), Total Dissolved Solids (SM2540C), Total Organic Carbon (SM5310B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Technical holding times | A | Sampling dates: 12-19-12 |
| II | Initial calibration | A | |
| III. | Calibration verification | A | |
| IV | Blanks | A | |
| V | Matrix Spike/Matrix Spike Duplicates | N | client specified |
| VI. | Duplicates | N | " " |
| VII. | Laboratory control samples | A | LCS/LCSD |
| VIII. | Sample result verification | A | |
| IX. | Overall assessment of data | A | |
| X. | Field duplicates | N | |
| XI. | Field blanks | N | |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:
water

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | MW-40-31 | 11 | | 21 | | 31 | |
| 2 | | 12 | | 22 | | 32 | |
| 3 | | 13 | | 23 | | 33 | |
| 4 | | 14 | | 24 | | 34 | |
| 5 | | 15 | | 25 | | 35 | |
| 6 | | 16 | | 26 | | 36 | |
| 7 | | 17 | | 27 | | 37 | |
| 8 | | 18 | | 28 | | 38 | |
| 9 | | 19 | PBW1 | 29 | | 39 | |
| 10 | | 20 | PBW2 | 30 | | 40 | |

Notes:

LDC #: 29020B6

# VALIDATION FINDINGS CHECKLIST


Reviewer: MG
2nd Reviewer: [illegible]

**Method:** Inorganics (EPA Method see cover )

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| ***I. Technical holding times*** | | | | |
| All technical holding times were met. | ✓ | | | |
| Cooler temperature criteria was met. | ✓ | | | |
| ***II. Calibration*** | | | | |
| Were all instruments calibrated daily, each set-up time? | ✓ | | | |
| Were the proper number of standards used? | ✓ | | | |
| Were all initial calibration correlation coefficients ≥ 0.995? | ✓ | | | |
| Were all initial and continuing calibration verification %Rs within the 90-110% QC limits? | ✓ | | | |
| Were titrant checks performed as required? (Level IV only) | | | ✓ | |
| Were balance checks performed as required? (Level IV only) | ✓ | | | |
| ***III. Blanks*** | | | | |
| Was a method blank associated with every sample in this SDG? | ✓ | | | |
| Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet. | | ✓ | | |
| ***IV. Matrix spike/Matrix spike duplicates and Duplicates*** | | | | |
| Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water | | ✓ | | |
| Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken. | | | ✓ | |
| Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of ≤ CRDL(≤ 2X CRDL for soil) was used for samples that were ≤ 5X the CRDL, including when only one of the duplicate sample values were ≤ 5X the CRDL. | | | ✓ | |
| ***V. Laboratory control samples*** | | | | |
| Was an LCS anaylzed for this SDG? | ✓ | | | |
| Was an LCS analyzed per extraction batch? | ✓ | | | |
| Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits? | ✓ | | | |
| ***VI. Regional Quality Assurance and Quality Control*** | | | | |
| Were performance evaluation (PE) samples performed? | | ✓ | | |
| Were the performance evaluation (PE) samples within the acceptance limits? | | | ✓ | |

LDC #: 29020B6

# VALIDATION FINDINGS CHECKLIST


Reviewer: MG
2nd Reviewer: ✓

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| ***VII. Sample Result Verification*** | | | | |
| Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation? | ✓ | | | |
| Were detection limits < RL? | ✓ | | | |
| ***VIII. Overall assessment of data*** | | | | |
| Overall assessment of data was found to be acceptable. | ✓ | | | |
| ***IX. Field duplicates*** | | | | |
| Field duplicate pairs were identified in this SDG. | | ✓ | | |
| Target analytes were detected in the field duplicates. | | | ✓ | |
| ***X. Field blanks*** | | | | |
| Field blanks were identified in this SDG. | | ✓ | | |
| Target analytes were detected in the field blanks. | | | ✓ | |

LDC #: 29020B6

# VALIDATION FINDINGS WORKSHEET
## Sample Specific Analysis Reference


Reviewer: MG
2nd reviewer: [illegible]

All circled methods are applicable to each sample.

| Sample ID | Matrix | Parameter |
|---|---|---|
| 1 | W | pH TDS Cl F $NO_3$ $NO_2$ $SO_4$ $PO_4$ ALK $CN^-$ $NH_3$ TKN TOC $CR^{6+}$ $ClO_4$ _____ _____ |
| | | pH TDS Cl F $NO_3$ $NO_2$ $SO_4$ $PO_4$ ALK $CN^-$ $NH_3$ TKN TOC $CR^{6+}$ $ClO_4$ _____ _____ |
| | | pH TDS Cl F $NO_3$ $NO_2$ $SO_4$ $PO_4$ ALK $CN^-$ $NH_3$ TKN TOC $CR^{6+}$ $ClO_4$ _____ _____ |
| | | pH TDS Cl F $NO_3$ $NO_2$ $SO_4$ $PO_4$ ALK $CN^-$ $NH_3$ TKN TOC $CR^{6+}$ $ClO_4$ _____ _____ |
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| | | pH TDS Cl F $NO_3$ $NO_2$ $SO_4$ $PO_4$ ALK $CN^-$ $NH_3$ TKN TOC $CR^{6+}$ $ClO_4$ _____ _____ |

Comments: _____

LDC #: 29020B6

# VALIDATION FINDINGS WORKSHEET
## Initial and Continuing Calibration Calculation Verification


Reviewer: MG
2nd Reviewer: [illegible]

**METHOD**: Inorganics, Method See cover

The correlation coefficient (r) for the calibration of Cl was recalculated. Calibration date: 12-3-12

An initial or continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = Found / True x 100 Where, Found = concentration of each analyte measured in the analysis of the ICV or CCV solution
True = concentration of each analyte in the ICV or CCV source

| Type of Analysis | Analyte | Standard ID | Conc Found (units) | Area True (units) | Recalculated r or %R | Reported r or %R | Acceptable (Y/N) |
|---|---|---|---|---|---|---|---|
| Initial calibration | Cl | Blank | | | r=0.997629 | r=0.996842 | Y |
| | | Standard 1 | 1.0 (mg/L) | 0.202 | | | |
| | | Standard 2 | 20.0 ( ) | 4.382 | | | |
| | | Standard 3 | 40.0 ( ) | 9.683 | | | |
| | | Standard 4 | 50.0 ( ) | 12.564 | | | |
| | | Standard 5 | 60.0 ( ) | 15.580 | | | |
| | | Standard 6 | 80.0 ( ) | 21.812 | | | |
| | | Standard 7 | 100.0 ( ) | 28.228 | | | |
| Calibration verification | $NO_3$-N | 0913 CCV | 4.996 (mg/L) | 5.0 (mg/L) | 100 | not reported | |
| Calibration verification | $NO_2$-N | 0913 CCV | 2.572 (mg/L) | 2.5 (mg/L) | 103 | | |
| Calibration verification | TOC | CCV1 | 9.642 (mg/L) | 10.0 (mg/L) | 96.4 | | |

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020B6

# VALIDATION FINDINGS WORKSHEET
## Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: MG
2nd Reviewer: [illegible]

**METHOD:** Inorganics, Method See cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$ Where, Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$ Where, S = Original sample concentration
D = Duplicate sample concentration

| Sample ID | Type of Analysis | Element | Found / S (units) | True / D (units) | Recalculated %R / RPD | Reported %R / RPD | Acceptable (Y/N) |
|---|---|---|---|---|---|---|---|
| 0510 LCS1 | Laboratory control sample | $NO_3$-N | 4.852 (mg/L) | 5.0 (mg/L) | 97 | 98 | Y |
| — | Matrix spike sample | — | (SSR-SR) — | — | — | — | — |
| — | Duplicate sample | — | — | — | — | — | — |

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

TOTCLC.6

LDC #: 29020B6

# VALIDATION FINDINGS WORKSHEET
## Sample Calculation Verification

Page: 1 of 1
Reviewer: MG
2nd reviewer: [signature]

**METHOD:** Inorganics, Method see cover

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments?
Y N N/A Are all detection limits below the CRQL?

Compound (analyte) results for #1, $SO_4$ reported with a positive detect were recalculated and verified using the following equation:

Concentration =

$y = mx + b$

where $m = 0.1658$
$b = -0.0100$
dil = 1x

Recalculation:

$6.146 = 0.1658(x) - 0.0100$

$37.129$ mg/L $= x$

| # | Sample ID | Analyte | Reported Concentration (mg/L) | Calculated Concentration (mg/L) | Acceptable (Y/N) |
|---|---|---|---|---|---|
| 1 | 1 | Cl | 580 | 580 | Y |
| | | $SO_4$ | 37 | 37 | ↓ |
| | | TDS | 3130 | 3130 | ↓ |
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Note:

# Laboratory Data Consultants, Inc.
# Data Validation Report

| | |
|---|---|
| **Project/Site Name:** | Seal Beach NWS, CTO 0004 |
| **Collection Date:** | December 18 through December 19, 2012 |
| **LDC Report Date:** | January 23, 2013 |
| **Matrix:** | Air |
| **Parameters:** | Volatiles |
| **Validation Level:** | EPA Level III & IV |
| **Laboratory:** | Calscience Environmental Laboratories, Inc. |
| **Sample Delivery Group (SDG):** | 12-12-1323 |

**Sample Identification**

VW-40-04
MW-40-32**
VW-40-06
IW-03
VW-40-02
DUP-1
VW-40-03
IW-01
FB-1

**Indicates sample underwent EPA Level IV review

## Introduction

This data review covers 9 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA Method TO-15 for Volatiles.

This review follows the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Plan) for Long Term Monitoring, Site 40, Naval Weapons Station Seal Beach, CA (November 2011), the U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 (October 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent an EPA Level IV review. An EPA Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by EPA Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

## II. GC/MS Instrument Performance Check

Instrument performance was checked at 24 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all compounds.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% .

The percent differences (%D) of the second source calibration standard were less than or equal to 30% for all compounds.

## V. Blanks

Method blank analyses were performed at the required frequency. No volatile contaminants were found in the method blanks with the following exceptions:

| Method Blank ID | Analysis Date | Compound TIC (RT in minutes) | Concentration | Associated Samples |
|---|---|---|---|---|
| 12122OL01-MB | 12/20/12 | Hexachloro-1,3-Butadiene<br>Methylene chloride | 0.15 ppb(v/v)<br>0.28 ppb(v/v) | All samples in SDG 12-12-1323 |

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

| Sample | Compound TIC (RT in minutes) | Reported Concentration | Modified Final Concentration |
|---|---|---|---|
| FB-1 | Methylene chloride | 0.39 ppb(v/v) | 0.39U ppb(v/v) |

Sample FB-1 was identified as a field blank. No volatile contaminants were found with the following exceptions:

| Blank ID | Sampling Date | Compound | Concentration | Associated Samples |
|---|---|---|---|---|
| FB-1 | 12/19/12 | Benzene | 0.60 ppb(v/v) | VW-40-04 |
| | | Chloromethane | 0.61 ppb(v/v) | MW-40-32** |
| | | Dichlorodifluoromethane | 0.59 ppb(v/v) | VW-40-06 |
| | | Ethanol | 8.0 ppb(v/v) | IW-03 |
| | | Ethylbenzene | 0.15 ppb(v/v) | VW-40-02 |
| | | Methylene chloride | 0.39 ppb(v/v) | DUP-1 |
| | | o-Xylene | 0.28 ppb(v/v) | VW-40-03 |
| | | m,p-Xylenes | 0.70 ppb(v/v) | IW-01 |
| | | Toluene | 1.2 ppb(v/v) | |
| | | Trichlorofluoromethane | 0.24 ppb(v/v) | |
| | | 1,2,4-Trimethylbenzene | 0.17 ppb(v/v) | |

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

| Sample | Compound | Reported Concentration | Modified Final Concentration |
|---|---|---|---|
| VW-40-04 | Dichlorodifluoromethane | 0.45 ppb(v/v) | 0.45U ppb(v/v) |
| | Trichlorofluoromethane | 0.23 ppb(v/v) | 0.23U ppb(v/v) |
| IW-01 | Benzene | 3.0 ppb(v/v) | 3.0U ppb(v/v) |
| MW-40-32** | Benzene | 0.28 ppb(v/v) | 0.28U ppb(v/v) |
| | o-Xylene | 0.15 ppb(v/v) | 0.15U ppb(v/v) |
| | m,p-Xylenes | 0.21 ppb(v/v) | 0.21U ppb(v/v) |
| | Toluene | 0.16 ppb(v/v) | 0.16U ppb(v/v) |
| | 1,2,4-Trimethylbenzene | 0.17 ppb(v/v) | 0.17U ppb(v/v) |
| VW-40-06 | Ethanol | 5.5 ppb(v/v) | 5.5U ppb(v/v) |
| | Ethylbenzene | 1.0 ppb(v/v) | 1.0U ppb(v/v) |
| | o-Xylene | 0.34 ppb(v/v) | 0.34U ppb(v/v) |
| | m,p-Xylenes | 0.86 ppb(v/v) | 0.86U ppb(v/v) |
| | Toluene | 1.6 ppb(v/v) | 1.6U ppb(v/v) |
| | 1,2,4-Trimethylbenzene | 0.30 ppb(v/v) | 0.30U ppb(v/v) |
| IW-03 | Ethanol | 5.1 ppb(v/v) | 5.1U ppb(v/v) |
| | Toluene | 1.2 ppb(v/v) | 1.2U ppb(v/v) |
| VW-40-02 | Benzene | 3.0 ppb(v/v) | 3.0U ppb(v/v) |
| DUP-1 | Benzene | 2.6 ppb(v/v) | 2.6U ppb(v/v) |
| | 1,2,4-Trimethylbenzene | 0.51 ppb(v/v) | 0.51U ppb(v/v) |

## VI. Surrogate Spikes

Surrogates were not required by the method.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

## VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## IX. Regional Quality Assurance and Quality Control

Not applicable.

## X. Internal Standards

All internal standard areas and retention times were within QC limits.

## XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

## XII. Compound Quantitation

All compound quantitation were within validation criteria for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

## XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

## XIV. System Performance

The system performance was acceptable for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

## XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## XVI. Field Duplicates

Samples VW-40-02 and DUP-1 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

| Compound | Concentration (ppb(v/v)) | | RPD |
|---|---|---|---|
| | VW-40-02 | DUP-1 | |
| Benzene | 3.0 | 2.6 | 14 |
| 1,1-Dichloroethene | 31 | 29 | 7 |
| cis-1,2-Dichloroethene | 1000 | 840 | 17 |
| trans-1,2-Dichloroethene | 1000 | 880 | 13 |
| Tetrachloroethene | 23 | 21 | 9 |
| Trichloroethene | 720 | 620 | 15 |
| 1,3,5-Trimethylbenzene | 0.84 | 0.51 | 49 |
| Vinyl chloride | 1800 | 1500 | 18 |

## Seal Beach NWS, CTO 0004
## Volatiles - Data Qualification Summary - SDG 12-12-1323

No Sample Data Qualified in this SDG

## Seal Beach NWS, CTO 0004
## Volatiles - Laboratory Blank Data Qualification Summary - SDG 12-12-1323

| SDG | Sample | Compound TIC (RT in minutes) | Modified Final Concentration | A or P |
|---|---|---|---|---|
| 12-12-1323 | FB-1 | Methylene chloride | 0.39U ppb(v/v) | A |

## Seal Beach NWS, CTO 0004
## Volatiles - Field Blank Data Qualification Summary - SDG 12-12-1323

| SDG | Sample | Compound | Modified Final Concentration | A or P |
|---|---|---|---|---|
| 12-12-1323 | VW-40-04 | Dichlorodifluoromethane<br>Trichlorofluoromethane | 0.45U ppb(v/v)<br>0.23U ppb(v/v) | A |
| 12-12-1323 | IW-01 | Benzene | 3.0U ppb(v/v) | A |
| 12-12-1323 | MW-40-32** | Benzene<br>o-Xylene<br>m,p-Xylenes<br>Toluene<br>1,2,4-Trimethylbenzene | 0.28U ppb(v/v)<br>0.15U ppb(v/v)<br>0.21U ppb(v/v)<br>0.16U ppb(v/v)<br>0.17U ppb(v/v) | A |
| 12-12-1323 | VW-40-06 | Ethanol<br>Ethylbenzene<br>o-Xylene<br>m,p-Xylenes<br>Toluene<br>1,2,4-Trimethylbenzene | 5.5U ppb(v/v)<br>1.0U ppb(v/v)<br>0.34U ppb(v/v)<br>0.86U ppb(v/v)<br>1.6U ppb(v/v)<br>0.30U ppb(v/v) | A |
| 12-12-1323 | IW-03 | Ethanol<br>Toluene | 5.1U ppb(v/v)<br>1.2U ppb(v/v) | A |
| 12-12-1323 | VW-40-02 | Benzene | 3.0U ppb(v/v) | A |
| 12-12-1323 | DUP-1 | Benzene<br>1,2,4-Trimethylbenzene | 2.6U ppb(v/v)<br>0.51U ppb(v/v) | A |

LDC #: 29020C48 **VALIDATION COMPLETENESS WORKSHEET** Date: 1/21/13
SDG #: 12-12-1323 Level III/IV Page: 1 of 1
Laboratory: Calscience Environmental Laboratories, Inc. Reviewer: [illegible]
2nd Reviewer: [illegible]

**METHOD:** GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Technical holding times | A | Sampling dates: 12/18/12 - 12/19/12 |
| II. | GC/MS Instrument performance check | A | |
| III. | Initial calibration | A | % RSD ≤30 |
| IV. | Continuing calibration/ICV | A | ICV/CCV ≤30 |
| V. | Blanks | SW | |
| VI. | Surrogate spikes | N | |
| VII. | Matrix spike/Matrix spike duplicates | N | |
| VIII. | Laboratory control samples | A | LCS/LD |
| IX. | Regional Quality Assurance and Quality Control | N | |
| X. | Internal standards | A | |
| XI. | Target compound identification | A | Not reviewed for Level III validation. |
| XII. | Compound quantitation/RL/LOQ/LODs | A | Not reviewed for Level III validation. |
| XIII. | Tentitatively identified compounds (TICs) | N | Not reviewed for Level III validation. |
| XIV. | System performance | A | Not reviewed for Level III validation. |
| XV. | Overall assessment of data | A | |
| XVI. | Field duplicates | SW | D = 5, 6 |
| XVII. | Field blanks | SW | FB = 9 |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples: ** Indicates sample underwent Level IV validation

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | VW ~~VM~~-40-04 | 11 | 121220L01 | 21 | | 31 | |
| 2 | MW-40-32** | 12 | 121221L01 | 22 | | 32 | |
| 3 | VW ~~VM~~-40-06 | 13 | | 23 | | 33 | |
| 4 | IW-03 | 14 | | 24 | | 34 | |
| 5 | VW ~~VM~~-40-02 | 15 | | 25 | | 35 | |
| 6 | 2 = QQQ, PPP, S, C DUP-1 | 16 | | 26 | | 36 | |
| 7 | VW 2 = QQQ, PPP, C ~~VM~~-40-03 | 17 | | 27 | | 37 | |
| 8 | 2 = QQQ, PPP, C IW-01 | 18 | | 28 | | 38 | |
| 9 | FB-1 | 19 | | 29 | | 39 | |
| 10 | | 20 | | 30 | | 40 | |

(All) helium ND

29020C48W.wpd

DC #: 29020 C48
SDG #: See cover

# VALIDATION FINDINGS CHECKLIST


Reviewer: B
2nd Reviewer: [illegible]

**Method:** Volatiles (EPA Method TO-15)

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| I. Technical holding times | | | | |
| All technical holding times were met. | ✓ | | | |
| Canister pressure criteria was met. | ✓ | | | |
| II. GC/MS Instrument performance check | | | | |
| Were the BFB performance results reviewed and found to be within the specified criteria? | ✓ | | | |
| Were all samples analyzed within the 12 hour clock criteria? | ✓ | | | |
| III. Initial calibration | | | | |
| Did the laboratory perform a 5 point calibration prior to sample analysis? | ✓ | | | |
| Were all percent relative standard deviations (%RSD) $\leq$ 30% and relative response factors (RRF) $\geq$ 0.05? | ✓ | | | |
| IV. Continuing calibration | | | | |
| Was a continuing calibration standard analyzed at least once every 12 hours for each instrument? | ✓ | | | |
| Were all percent differences (%D) $\leq$ 30% and relative response factors (RRF) $\geq$ 0.05? | ✓ | | | |
| V. Blanks | | | | |
| Was a method blank associated with every sample in this SDG? | ✓ | | | |
| Was a method blank analyzed at least once every 12 hours for each matrix and concentration? | ✓ | | | |
| Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet. | ✓ | | | |
| VI. Surrogate spikes | | | | |
| Were all surrogate %R within QC limits? | | | ✓ | |
| If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria? | | | ✓ | |
| VII. Matrix spike/Matrix spike duplicates | | | | |
| Was a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for this SDG? | | | ✓ | |
| Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits? | | | ✓ | |
| VIII. Laboratory control samples | | | | |
| Was an LCS analyzed for this SDG? | ✓ | | | |
| Was an LCS analyzed per analytical batch? | ✓ | | | |
| Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits? | ✓ | | | |

DC #: 29020048
SDG #: per cover

# VALIDATION FINDINGS CHECKLIST


Reviewer: [illegible]
2nd Reviewer: [illegible]

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| IX. Regional Quality Assurance and Quality Control | | | | |
| Were performance evaluation (PE) samples performed? | | | ✓ | |
| Were the performance evaluation (PE) samples within the acceptance limits? | | | ✓ | |
| X. Internal standards | | | | |
| Were internal standard area counts within +/-40% from the associated calibration standard? | ✓ | | | |
| Were retention times within +/- 20.0 seconds from the associated calibration standard? | ✓ | | | |
| XI. Target compound identification | | | | |
| Were relative retention times (RRT's) within ± 0.06 RRT units of the standard? | ✓ | | | |
| Did compound spectra meet specified EPA "Functional Guidelines" criteria? | ✓ | | | |
| Were chromatogram peaks verified and accounted for? | ✓ | | | |
| XII. Compound quantitation/CRQLs | | | | |
| Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound? | ✓ | | | |
| Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation? | ✓ | | | |
| XIII. Tentatively identified compounds (TICs) | | | | |
| Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum? | | | ✓ | |
| Were relative intensities of the major ions within ± 20% between the sample and the reference spectra? | | | ✓ | |
| Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)? | | | ✓ | |
| XIV. System performance | | | | |
| System performance was found to be acceptable. | ✓ | | | |
| XV. Overall assessment of data | | | | |
| Overall assessment of data was found to be acceptable. | ✓ | | | |
| XVI. Field duplicates | | | | |
| Field duplicate pairs were identified in this SDG. | ✓ | | | |
| Target compounds were detected in the field duplicates. | ✓ | | | |
| XVII. Field blanks | | | | |
| Field blanks were identified in this SDG. | ✓ | | | |
| Target compounds were detected in the field blanks. | ✓ | | | |

# TARGET COMPOUND WORKSHEET

METHOD: VOA (EPA Method TO-15)

| | | | | |
|---|---|---|---|---|
| A. Chloromethane* | S. Trichloroethene | KK. Trichlorofluoromethane | CCC. tert-Butylbenzene | UUU. Benzyl chloride |
| B. Bromomethane | T. Dibromochloromethane | LL. Methyl-tert-butyl ether | DDD. 1,2,4-Trimethylbenzene | VVV. 4-Ethyltoluene |
| C. Vinyl chorlde** | U. 1,1,2-Trichloroethane | MM. 1,2-Dibromo-3-chloropropane | EEE. sec-Butylbenzene | WWW. Ethanol |
| D. Chloroethane | V. Benzene | NN. Diethyl ether | FFF. 1,3-Dichlorobenzene | XXX. Ethyl ether |
| E. Methylene chloride | W. trans-1,3-Dichloropropene | OO. 2,2-Dichloropropane | GGG. p-Isopropyltoluene | YYY. tert-Butanol |
| F. Acetone | X. Bromoform* | PP. Bromochloromethane | HHH. 1,4-Dichlorobenzene | ZZZ. tert-Butyl alcohol |
| G. Carbon disulfide | Y. 4-Methyl-2-pentanone | QQ. 1,1-Dichloropropene | III. n-Butylbenzene | AAAA. Ethyl tert-butyl ether |
| H. 1,1-Dichloroethene** | Z. 2-Hexanone | RR. Dibromomethane | JJJ. 1,2-Dichlorobenzene | BBBB. tert-Amyl methyl ether |
| I. 1,1-Dichloroethane* | AA. Tetrachloroethene | SS. 1,3-Dichloropropane | KKK. 1,2,4-Trichlorobenzene | CCCC.1-Chlorohexane |
| J. 1,2-Dichloroethene, total | BB. 1,1,2,2-Tetrachloroethane* | TT. 1,2-Dibromoethane | LLL. Hexachlorobutadiene | DDDD. Isopropyl alcohol |
| K. Chloroform** | CC. Toluene** | UU. 1,1,1,2-Tetrachloroethane | MMM. Naphthalene | EEEE. Acetonitrile |
| L. 1,2-Dichloroethane | DD. Chlorobenzene* | VV. Isopropylbenzene | NNN. 1,2,3-Trichlorobenzene | FFFF. Acrolein |
| M. 2-Butanone | EE. Ethylbenzene** | WW. Bromobenzene | OOO. 1,3,5-Trichlorobenzene | GGGG. Acrylonitrile |
| N. 1,1,1-Trichloroethane | FF. Styrene | XX. 1,2,3-Trichloropropane | PPP. trans-1,2-Dichloroethene | HHHH. 1,4-Dioxane |
| O. Carbon tetrachloride | GG. Xylenes, total | YY. n-Propylbenzene | QQQ. cis-1,2-Dichloroethene | IIII. Isobutyl alcohol |
| P. Bromodichloromethane | HH. Vinyl acetate | ZZ. 2-Chlorotoluene | RRR. m,p-Xylenes | JJJJ. Methacrylonitrile |
| Q. 1,2-Dichloropropane** | II. 2-Chloroethylvinyl ether | AAA. 1,3,5-Trimethylbenzene | SSS. o-Xylene | KKKK. Propionitrile |
| R. cis-1,3-Dichloropropene | JJ. Dichlorodifluoromethane | BBB. 4-Chlorotoluene | TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane | LLLL. |

* = System performance check compounds (SPCC) for RRF ; ** = Calibration check compounds (CCC) for %RSD.

LDC #: 29020C48

# VALIDATION FINDINGS WORKSHEET
## Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

**METHOD:** GC/MS VOA (EPA SW 846 Method ~~8260~~) TO-15
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank associated with every sample in this SDG?
Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?
Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

**Blank analysis date:** 12/20/12
**Conc. units:** ppb (v/v)
Associated Samples: All

| Compound | Blank ID | Sample Identification | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 121220L01-MB | | | 9 | | | | | | |
| Hexachloro-1,3-Butadiene | 0.15 | | | - | | | | | | |
| E | 0.28 | | | 0.39/4 | | | | | | |
| | | | | | | | | | | |
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**Blank analysis date:** 12/21/12
**Conc. units:** ppb (v/v)
Associated Samples:

| Compound | Blank ID | Sample Identification | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 121221L01-MB | | | | | | | | | |
| E | 0.26 | | | | | | | | | |
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All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 29020C48

# VALIDATION FINDINGS WORKSHEET
## Field Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

**METHOD:** GC/MS VOA (EPA SW 846 Method ~~8260~~) TO-15

Y N /N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

**Blank units:** ppb v/v **Associated sample units:** ppb (v/v)
**Sampling date:** 12/19/12
**Field blank type:** (circle one) Field Blank / Rinsate / Trip Blank / Other: FB Associated Samples: ~~7, 8~~ 1 → 8

| Compound | Blank ID | Sample Identification | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 5X/10X | 1 | 8 | 2 | 3 | 4 | 5 (~~4X~~) | 6 | |
| V | 0.60 | 3 | | 3.0/U | 0.28/U | | | 3.0/U | 2.6/U | |
| A | 0.61 | 3.05 | | | | | | | | |
| JJ | 0.59 | 2.95 | 0.45/U | | | | | | | |
| WWW | 8.0 | 40 | | | | 5.5/U | 5.1/U | | | |
| EE | 0.15 | 0.75 | | | | 1.0/U | | | | |
| E | 0.39 | ~~4.95~~ 3.9 | | | | | | | | |
| SSS | 0.28 | 1.4 | | | 0.15/U | 0.34/U | | | | |

**Blank units:** ↓ **Associated sample units:** ↓
**Sampling date:** ↓
**Field blank type:** (circle one) Field Blank / Rinsate / Trip Blank / Other: FB Associated Samples: ~~7, 8~~ 1 → 8

| Compound | Blank ID | Sample Identification | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9 | 5X/10X | 1 | 8 | 2 | 3 | 4 | 5 | 6 | |
| RRR | 0.70 | 3.5 | | – | 0.21/U | 0.86/U | | | | |
| CC | 1.2 | 6 | | – | 0.16/U | 1.6/U | 1.2/U | | | |
| KK | 0.24 | 1.2 | 0.23/U | – | | | | | | |
| PPP | 0.17 | 0.85 | | | 0.17/U | 0.30/U | | | 0.51/U | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC#: 29020C48 **VALIDATION FINDINGS WORKSHEET**

**Field Duplicates**

Page: 1 of 1
Reviewer: EJ
2nd Reviewer: CV

**METHOD**: GC/MS VOA (EPA Method TO-15)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

| Compound | Concentration ppb(v/v) | | RPD |
|---|---|---|---|
| | 5 | 6 | |
| V | 3.0 | 2.6 | 14 |
| H | 31 | 29 | 7 |
| QQQ | 1000 | 840 | 17 |
| PPP | 1000 | 880 | 13 |
| AA | 23 | 21 | 9 |
| S | 720 | 620 | 15 |
| AAA | 0.84 | 0.51 | 49 |
| C | 1800 | 1500 | 18 |

LDC #: 29020C48
SDG #: all same

# VALIDATION FINDINGS WORKSHEET
## Initial Calibration Calculation Verification


Reviewer:
2nd Reviewer:

METHOD: GC/MS VOA (EPA Method TO-15)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

$A_x$ = Area of compound,
$C_x$ = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

$A_{is}$ = Area of associated internal standard
$C_{is}$ = Concentration of internal standard

| # | Standard ID | Calibration Date | Compound (Reference Internal Standard) | Reported RRF (2nd std) | Recalculated RRF (2nd std) | Reported Average RRF (initial) | Recalculated Average RRF (initial) | Reported %RSD | Recalculated %RSD |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1CAL | 12/17/12 | Methylene chloride (1st internal standard) | 0.777 | 0.777 | 0.834 | 0.834 | 14.51 | 14.51 |
| | | | Trichlorethene (2nd internal standard) | 0.344 | 0.344 | 0.353 | 0.353 | 7.81 | 7.81 |
| | | | Toluene (3rd internal standard) | 0.997 | 0.997 | 1.030 | 1.030 | 6.77 | 6.77 |
| 2 | | | Methylene chloride (1st internal standard) | | | | | | |
| | | | Trichlorethene (2nd internal standard) | | | | | | |
| | | | Toluene (3rd internal standard) | | | | | | |
| 3 | | | Methylene chloride (1st internal standard) | | | | | | |
| | | | Trichlorethene (2nd internal standard) | | | | | | |
| | | | Toluene (3rd internal standard) | | | | | | |
| 4 | | | Methylene chloride (1st internal standard) | | | | | | |
| | | | Trichlorethene (2nd internal standard) | | | | | | |
| | | | Toluene (3rd internal standard) | | | | | | |

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020C48
SDG #: per cover

# VALIDATION FINDINGS WORKSHEET
## Continuing Calibration Results Verification


Reviewer: [illegible]
2nd Reviewer: [illegible]

**METHOD:** GC/MS VOA (EPA TO-15)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
$A_x$ = Area of compound, $A_{is}$ = Area of associated internal standard
$C_x$ = Concentration of compound, $C_{is}$ = Concentration of internal standard

| # | Standard ID | Calibration Date | Compound (Reference Internal Standard) | Average RRF (initial) | Reported RRF (CC) | Recalculated RRF (CC) | Reported %D | Recalculated %D |
|---|---|---|---|---|---|---|---|---|
| 1 | CCV 10:22 | 12/21/12 | Methylene chloride (1st internal standard) | 0.834 | 0.745 | 0.745 | 10.7 | 10.7 |
| | | | Trichlorethene (2nd internal standard) | 0.353 | 0.361 | 0.361 | 2.3 | 2.3 |
| | | | Toluene (3rd internal standard) | 1.030 | 1.042 | 1.042 | 1.2 | 1.2 |
| 2 | CCV 10:33 | 12/20/12 | Methylene chloride (1st internal standard) | | 0.759 | 0.759 | 9.0 | 9.0 |
| | | | Trichlorethene (2nd internal standard) | | 0.352 | 0.352 | 0.3 | 0.3 |
| | | | Toluene (3rd internal standard) | | 1.054 | 1.054 | 2.3 | 2.3 |
| 3 | | | Methylene chloride (1st internal standard) | | | | | |
| | | | Trichlorethene (2nd internal standard) | | | | | |
| | | | Toluene (3rd internal standard) | | | | | |
| 4 | | | Methylene chloride (1st internal standard) | | | | | |
| | | | Trichlorethene (2nd internal standard) | | | | | |
| | | | Toluene (3rd internal standard) | | | | | |

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020C48
SDG #: see cover

# VALIDATION FINDINGS WORKSHEET
## Sample Calculation Verification

Page: 1 of 1
Reviewer:
2nd reviewer:

**METHOD:** GC/MS VOA (EPA Method TO-15)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

| | | |
|---|---|---|
| $A_x$ | = | Area of the characteristic ion (EICP) for the compound to be measured |
| $A_{is}$ | = | Area of the characteristic ion (EICP) for the specific internal standard |
| $I_s$ | = | Amount of internal standard added, in nanograms (ng) |
| RRF | = | Relative response factor of the calibration standard. |
| $V_o$ | = | Volume or weight of sample pruged in milliliters (ml) or grams (g). |
| Df | = | Dilution factor. |
| %S | = | Percent solids, applicable to soils and solid matrices only. |

Example:

Sample I.D. #2 . 0&G :

Conc. = (249014)(25)( )
(48/909)(0.938)( )( )

=

14 ppb (v/v)

| # | Sample ID | Compound | Reported Concentration ( ) | Calculated Concentration ( ) | Qualification |
|---|---|---|---|---|---|
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# Laboratory Data Consultants, Inc.
# Data Validation Report

| | |
|---|---|
| **Project/Site Name:** | Seal Beach NWS, CTO 0004 |
| **Collection Date:** | December 18 through December 19, 2012 |
| **LDC Report Date:** | January 23, 2013 |
| **Matrix:** | Air |
| **Parameters:** | Fixed Gases |
| **Validation Level:** | EPA Level III & IV |
| **Laboratory:** | Calscience Environmental Laboratories, Inc. |
| **Sample Delivery Group (SDG):** | 12-12-1323 |

**Sample Identification**

VW-40-04
MW-40-32**
VW-40-06
IW-03
VW-40-02
DUP-1
VW-40-03
IW-01
FB-1

**Indicates sample underwent EPA Level IV review

## Introduction

This data review covers 9 air samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM D-1946 for Fixed Gases.

This review follows the Final Sampling and Analysis Plan (Field Sampling Plan and Quality Assurance Plan) for Long Term Monitoring, Site 40, Naval Weapons Station Seal Beach, CA (November 2011), the U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 4.2 (October 2010), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent an EPA Level IV review. An EPA Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by EPA Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

NJ Presumptive evidence of presence of the compound at an estimated quantity.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

## II. Initial Calibration

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

## III. Continuing Calibration

Continuing calibration was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 20.0% QC limits.

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds.

## IV. Blanks

Method blanks were performed at the required frequency. No fixed gases contaminants were found in the method blanks.

Sample FB-1 was identified as a field blank. No total petroleum hydrocarbons as diesel contaminants were found.

## V. Surrogate Recovery

Surrogates were not required by the method and therefore were not added.

## VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were not required by the method.

## VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Target Compound Identification

All target compound identifications were within validation criteria for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

## IX. Compound Quantitation

All compound quantitations were within validation criteria for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

## X. System Performance

The system performance was acceptable for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

## XI. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

## XII. Field Duplicates

Samples VW-40-02 and DUP-1 were identified as field duplicates. No fixed gases were detected in any of the samples with the following exceptions:

| Compound | Concentration (%v) | | RPD |
|---|---|---|---|
| | VW-40-02 | DUP-1 | |
| Methane | 39.1 | 39.0 | 1 |

**Seal Beach NWS, CTO 0004**
**Fixed Gases - Data Qualification Summary - SDG 12-12-1323**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Fixed Gases - Laboratory Blank Data Qualification Summary - SDG 12-12-1323**

No Sample Data Qualified in this SDG

**Seal Beach NWS, CTO 0004**
**Fixed Gases - Field Blank Data Qualification Summary - SDG 12-12-1323**

No Sample Data Qualified in this SDG

LDC #: 29070C51 (20) **VALIDATION COMPLETENESS WORKSHEET** Date: 1/21/13

SDG #: 12-12-1323 Level III/IV Page: 1 of 1

Laboratory: Calscience Environmental Laboratories Inc. Reviewer: [illegible]

2nd Reviewer: [illegible]

**METHOD:** GC Fixed Gases (ASTM D-1946) (Methane

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

| | Validation Area | | Comments |
|---|---|---|---|
| I. | Technical holding times | A | Sampling dates: 12/18/12 – 12/19/12 |
| II | Initial calibration | A | % RSD ≤ 20 |
| III. | Calibration verification/~~CCV~~ ICV | A | ICV/CCV ≤ 20 |
| IV. | Blanks | A | |
| V | Surrogate recovery | N | not required |
| VI. | Matrix spike/Matrix spike duplicates | N | not required |
| VII. | Laboratory control samples | A | LCS/D |
| VIII. | Target compound identification | A | Not reviewed for Level III validation. |
| IX. | Compound quantitation/RL/LOQ/LODs | A | Not reviewed for Level III validation. |
| X. | System Performance | A | Not reviewed for Level III validation. |
| XI. | Overall assessment of data | A | |
| XII. | Field duplicates | SW | DUP = 5, 6 |
| XIII. | Field blanks | ND | FB = 9 |

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank

Validated Samples:** Indicates sample underwent Level IV validation

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | ~~VM~~ VW-40-04 | 11 | 12/22/2012 | 21 | | 31 | |
| 2 | MW-40-32** | 12 | | 22 | | 32 | |
| 3 | ~~VM~~ VW-40-06 | 13 | | 23 | | 33 | |
| 4 | IW-03 | 14 | | 24 | | 34 | |
| 5 | ~~VM~~ VW-40-02 | 15 | | 25 | | 35 | |
| 6 | DUP-1 | 16 | | 26 | | 36 | |
| 7 | ~~VM~~ VW-40-03 | 17 | | 27 | | 37 | |
| 8 | IW-01 | 18 | | 28 | | 38 | |
| 9 | FB-1 | 19 | | 29 | | 39 | |
| 10 | | 20 | | 30 | | 40 | |

Notes: Helium all ND

LDC #: 29020C51
SDG #: per cover

# VALIDATION FINDINGS CHECKLIST


Reviewer: [illegible]
2nd Reviewer: [illegible]

**Method:** ✓ GC ____ HPLC

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| **I. Technical holding times** | | | | |
| All technical holding times were met. | ✓ | | | |
| Cooler temperature criteria was met. | ✓ | | | |
| **II. Initial calibration** | | | | |
| Did the laboratory perform a 5 point calibration prior to sample analysis? | ✓ | | | |
| Were all percent relative standard deviations (%RSD) ≤ 20%? | ✓ | | | |
| Was a curve fit used for evaluation? | | ✓ | | |
| Did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990? | | | ✓ | |
| Were the RT windows properly established? | ✓ | | | |
| **IV. Continuing calibration** | | | | |
| Was a continuing calibration analyzed daily? | ✓ | | | |
| Were all percent differences (%D) ≤ 20%.0 or percent recoveries 80-120%? | ✓ | | | |
| Were all the retention times within the acceptance windows? | ✓ | | | |
| **V. Blanks** | | | | |
| Was a method blank associated with every sample in this SDG? | ✓ | | | |
| Was a method blank analyzed for each matrix and concentration? | ✓ | | | |
| Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet. | | ✓ | | |
| **VI. Surrogate spikes** | | | | |
| Were all surrogate %R within the QC limits? | | | ✓ | |
| If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria? | | | ✓ | |
| **VII. Matrix spike/Matrix spike duplicates** | | | | |
| Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water. | | | ✓ | |
| Was a MS/MSD analyzed every 20 samples of each matrix? | | | ✓ | |
| Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits? | | | ✓ | |
| **VIII. Laboratory control samples** | | | | |
| Was an LCS analyzed for this SDG? | ✓ | | | |
| Was an LCS analyzed per extraction batch? | ✓ | | | |
| Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits? | ✓ | | | |
| **IX. Regional Quality Assurance and Quality Control** | | | | |
| Were performance evaluation (PE) samples performed? | | | ✓ | |
| Were the performance evaluation (PE) samples within the acceptance limits? | | | ✓ | |

LDC #: 29020C5 1
SDG #: per cover

# VALIDATION FINDINGS CHECKLIST


Reviewer: FJ
2nd Reviewer: JV

| Validation Area | Yes | No | NA | Findings/Comments |
|---|---|---|---|---|
| X. Target compound identification | | | | |
| Were the retention times of reported detects within the RT windows? | ✓ | | | |
| XI. Compound quantitation/CRQLs | | | | |
| Were compound quantitation and CRQLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation? | ✓ | | | |
| XII. System performance | | | | |
| System performance was found to be acceptable. | ✓ | | | |
| XIII. Overall assessment of data | | | | |
| Overall assessment of data was found to be acceptable. | ✓ | | | |
| XIV. Field duplicates | | | | |
| Field duplicate pairs were identified in this SDG. | ✓ | | | |
| Target compounds were detected in the field duplicates. | ✓ | | | |
| XV. Field blanks | | | | |
| Field blanks were identified in this SDG. | ✓ | | | |
| Target compounds were detected in the field blanks. | | ✓ | | |

LDC #: 29020C5

# VALIDATION FINDINGS WORKSHEET

## Field Duplicates



Reviewer: FT

2nd reviewer: CR

METHOD: ✓ GC __ HPLC

Y N N/A Were field duplicate pairs identified in this SDG?

Y N N/A Were target compounds detected in the field duplicate pairs?

| Compound | Concentration ( % V ) | | %RPD Limit_____ | Qualification Parent only / All Samples |
|---|---|---|---|---|
| | 5 | 6 | | |
| Methane | 39.1 | 39.0 | 1 | |
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| Compound | Concentration ( ) | | %RPD Limit _____ | Qualification Parent only / All Samples |
|---|---|---|---|---|
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LDC #: 29020C51
SDG #: [illegible]

# VALIDATION FINDINGS WORKSHEET
## Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC ✓ HPLC ____

The calibration Factor (CF), average CF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

CF = A/C
average CF = sum of the CF/number of standards
%RSD = 100 * (S/X)

A = Area of compound,
C = Concentration of compound,
S = Standard deviation of the CF
X = Mean of the CFs

| # | Standard ID | Calibration Date | Compound | Reported CF (10./std) | Recalculated CF (10./std) | Reported Average CF (initial) | Recalculated Average CF (initial) | Reported %RSD | Recalculated %RSD |
|---|---|---|---|---|---|---|---|---|---|
| 1 | ICAL | 12/3/12 | Methane | 13180.99 | 13180.99 | 13626.83 | 13626.83 | 5 | 5 |
| | | | | | | | | | |
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| 4 | | | | | | | | | |
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Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020251
SDG #: pw cover

# VALIDATION FINDINGS WORKSHEET
## Continuing Calibration Results Verification

Page: 1 of 7
Reviewer: FZ
2nd Reviewer: CR

**METHOD:** GC ✓ HPLC_____

The percent difference (%D) of the initial calibration average Calibration Factors (CF) and the continuing calibration CF were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. CF - CF)/ave. CF
CF = A/C

Where: ave. CF = initial calibration average CF
CF = continuing calibration CF
A = Area of compound
C = Concentration of compound

| # | Standard ID | Calibration Date | Compound | Average CF(Ical)/ CCV Conc. | Reported CF/Conc. CCV | Recalculated CF/Conc. CCV | Reported %D | Recalculated %D |
|---|---|---|---|---|---|---|---|---|
| 1 | CCV | 12/20/12 | methane | 13626.83 | $1.27 \times 10^4$ | 12697.833 | 7 | 6.8 |
| | 12:31 | | | | | | | |
| | | | | | | | | |
| 2 | | | | | | | | |
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| 3 | | | | | | | | |
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| 4 | | | | | | | | |
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Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

CONCLC.1S

LDC #: 29020c51
SDG #: µ covers

# VALIDATION FINDINGS WORKSHEET
## Laboratory Control Sample/Laboratory Control Sample Duplicate Results Verification


Reviewer: [illegible]
2nd Reviewer: [illegible]

**METHOD:** ✓ GC __HPLC

The percent recoveries (%R) and Relative Percent difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100* (SSC-SC)/SA
RPD = I LCS - LCSD I * 2/(LCS + LCSD)

Where: SSC = Spiked sample concentration
SA = Spike added
LCS = Laboratory control sample percent recovery
SC = Concentration
LCSD = Laboratory control sample duplicate percent recovery

LCS/LCSD samples: LCS 10

| Compound | Spike Added (~~%~~ V) | | Spiked Sample Concentration (~~%~~ V) | | LCS Percent Recovery | | LCSD Percent Recovery | | LCS/LCSD RPD | |
|---|---|---|---|---|---|---|---|---|---|---|
| | LCS | LCSD | LCS | LCSD | Reported | Recalc. | Reported | Recalc. | Reported | Recalc. |
| Gasoline (8015) | | | | | | | | | | |
| Diesel (8015) | | | | | | | | | | |
| Benzene (8021B) | | | | | | | | | | |
| Methane (RSK-175) | 10.12 | 10.12 | 10.17 | 9.854 | 100 | 100 | 97 | 97 | 3 | 3 |
| 2,4-D (8151) | | | | | | | | | | |
| Dinoseb (8151) | | | | | | | | | | |
| Naphthalene (8310) | | | | | | | | | | |
| Anthracene (8310) | | | | | | | | | | |
| HMX (8330) | | | | | | | | | | |
| 2,4,6-Trinitrotoluene (8330) | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicate findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 29020es1
SDG #: [illegible]

# VALIDATION FINDINGS WORKSHEET
## Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

**METHOD:** ✓ GC ___ HPLC

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds within 10% of the reported results?

Concentration= (A)(Fv)(Df) / (RF)(Vs or Ws)(%S/100)

A= Area or height of the compound to be measured
Fv= Final Volume of extract
Df= Dilution Factor
RF= Average response factor of the compound in the initial calibration
Vs= Initial volume of the sample
Ws= Initial weight of the sample
%S= Percent Solid

Example:

Sample ID. #2 Compound Name Methane

Concentration = $\frac{7.08\ 732 \times 10^{4}}{13626.83}$

= 5.2 %

| # | Sample ID | Compound | Reported Concentrations ( ) | Recalculated Results Concentrations ( ) | Qualifications |
|---|---|---|---|---|---|
| | | | | | |
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Comments:

SAMPCALew.wpd

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 12-12-1107

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** CKY, Incorporated

**Client Project Name:** Seal Beach NWS

**Attention:** Howard Wittenberg
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Approved for release on 12/28/2012 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: Seal Beach NWS
Work Order Number: 12-12-1107


1 Client Sample Data . . . . . 3
1.1 EPA 6010B ICP Metals (Aqueous) . . . . . 3
1.2 EPA 300.0 / 9056 Anions (Aqueous) . . . . . 6
1.3 SM 5310 B Total Organic Carbon (Aqueous) . . . . . 9
1.4 SM 2540 C Total Dissolved Solids (Aqueous) . . . . . 11
1.5 EPA 8260B Volatile Organics (Aqueous) . . . . . 13

2 Quality Control Sample Data . . . . . 35
2.1 MS/MSD and/or Duplicate . . . . . 35
2.2 LCS/LCSD . . . . . 43

3 Glossary of Terms and Qualifiers . . . . . 52

4 Chain of Custody/Sample Receipt Form . . . . . 53

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1107 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-2 Client ID: MW-40-07 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 10:19**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 188 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:05 | 121219LA3D |
| Iron | 22.4 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:05 | 121219LA3D |
| Magnesium | 56.0 | | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:05 | 121219LA3D |
| Potassium | 4.83 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:05 | 121219LA3D |
| Sodium | 341 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:05 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-3 Client ID: MW-40-08 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 10:53**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 141 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:00 | 121219LA3D |
| Iron | 8.89 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:00 | 121219LA3D |
| Magnesium | 43.2 | | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:00 | 121219LA3D |
| Potassium | 2.48 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:00 | 121219LA3D |
| Sodium | 254 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:00 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-4 Client ID: DUP-1 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 00:00**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 141 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:06 | 121219LA3D |
| Iron | 8.77 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:06 | 121219LA3D |
| Magnesium | 42.9 | | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:06 | 121219LA3D |
| Potassium | 2.52 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:06 | 121219LA3D |
| Sodium | 255 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:06 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-5 Client ID: MW-40-14 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 11:45**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 217 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:07 | 121219LA3D |
| Iron | 15.3 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:07 | 121219LA3D |
| Magnesium | 58.9 | | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:07 | 121219LA3D |
| Potassium | 5.20 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:07 | 121219LA3D |
| Sodium | 464 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:07 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1107 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-6 Client ID: MW-40-22 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 12:21**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 50.2 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:08 | 121219LA3D |
| Iron | 0.833 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:08 | 121219LA3D |
| Magnesium | 19.5 | | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:08 | 121219LA3D |
| Potassium | 3.46 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:08 | 121219LA3D |
| Sodium | 458 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:08 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-7 Client ID: MW-40-30 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 13:22**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 199 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:09 | 121219LA3D |
| Iron | 33.0 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:09 | 121219LA3D |
| Magnesium | 49.8 | | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:09 | 121219LA3D |
| Potassium | 5.46 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:09 | 121219LA3D |
| Sodium | 276 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:09 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-8 Client ID: MW-40-32 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 13:59**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 143 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:14 | 121219LA3D |
| Iron | 25.0 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:14 | 121219LA3D |
| Magnesium | 48.3 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:14 | 121219LA3D |
| Potassium | 3.85 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:14 | 121219LA3D |
| Sodium | 201 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:14 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-9 Client ID: MW-40-35 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 14:42**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 96.3 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:15 | 121219LA3D |
| Iron | 10.1 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:15 | 121219LA3D |
| Magnesium | 72.1 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:15 | 121219LA3D |
| Potassium | 9.28 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:15 | 121219LA3D |
| Sodium | 1740 | | 2.06 | 5.00 | 10.0 | 20 | 12/19/12 00:00 | 12/20/12 14:15 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 099-14-483 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**099-14-483-35 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/21/12 11:14**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | <0.0200 | U | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Iron | <0.0200 | U | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Magnesium | <0.0100 | U | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Potassium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Sodium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1107 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-2 Client ID: MW-40-07 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 10:19**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 180 | | 0.66 | 2.5 | 10 | 5 | | 12/19/12 04:57 | 121218L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/18/12 11:51 | 121218L01 |
| Nitrate (as N) | 0.050 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/18/12 11:51 | 121218L01 |
| Sulfate | 77 | | 0.13 | 0.50 | 2.0 | 1 | | 12/18/12 11:51 | 121218L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-3 Client ID: MW-40-08 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 10:53**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 210 | | 0.66 | 2.5 | 10 | 5 | | 12/19/12 05:15 | 121218L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/18/12 12:08 | 121218L01 |
| Nitrate (as N) | 0.038 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/18/12 12:08 | 121218L01 |
| Sulfate | 100 | | 0.66 | 2.5 | 10 | 5 | | 12/19/12 05:15 | 121218L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-4 Client ID: DUP-1 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 00:00**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 210 | | 0.66 | 2.5 | 10 | 5 | | 12/19/12 05:32 | 121218L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/18/12 12:26 | 121218L01 |
| Nitrate (as N) | 0.039 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/18/12 12:26 | 121218L01 |
| Sulfate | 100 | | 0.66 | 2.5 | 10 | 5 | | 12/19/12 05:32 | 121218L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-5 Client ID: MW-40-14 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 11:45**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 250 | | 0.66 | 2.5 | 10 | 5 | | 12/19/12 05:50 | 121218L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/18/12 12:43 | 121218L01 |
| Nitrate (as N) | 0.052 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/18/12 12:43 | 121218L01 |
| Sulfate | 73 | | 0.13 | 0.50 | 2.0 | 1 | | 12/18/12 12:43 | 121218L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1107 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-6 Client ID: MW-40-22 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 12:21**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 370 | | 0.66 | 2.5 | 10 | 5 | | 12/19/12 06:07 | 121218L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/18/12 13:00 | 121218L01 |
| Nitrate (as N) | 0.042 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/18/12 13:00 | 121218L01 |
| Sulfate | 20 | | 0.13 | 0.50 | 2.0 | 1 | | 12/18/12 13:00 | 121218L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-7 Client ID: MW-40-30 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 13:22**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 130 | | 0.66 | 2.5 | 10 | 5 | | 12/19/12 06:24 | 121218L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/18/12 14:10 | 121218L01 |
| Nitrate (as N) | 0.037 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/18/12 14:10 | 121218L01 |
| Sulfate | 38 | | 0.13 | 0.50 | 2.0 | 1 | | 12/18/12 14:10 | 121218L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-8 Client ID: MW-40-32 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 13:59**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 140 | | 0.66 | 2.5 | 10 | 5 | | 12/19/12 06:42 | 121218L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/18/12 14:45 | 121218L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/18/12 14:45 | 121218L01 |
| Sulfate | 40 | | 0.13 | 0.50 | 2.0 | 1 | | 12/18/12 14:45 | 121218L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-9 Client ID: MW-40-35 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 14:42**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 360 | | 1.3 | 5.0 | 20 | 10 | | 12/19/12 06:59 | 121218L03 |
| Nitrite (as N) | <0.10 | U | 0.043 | 0.10 | 0.40 | 2 | | 12/18/12 15:02 | 121218L01 |
| Nitrate (as N) | 0.060 | J | 0.042 | 0.10 | 0.20 | 2 | | 12/18/12 15:02 | 121218L01 |
| Sulfate | 2.9 | J | 0.26 | 1.0 | 4.0 | 2 | | 12/18/12 15:02 | 121218L01 |

-The reporting limit is elevated resulting from matrix interference.
-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 099-14-547 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**099-14-547-61 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/21/12 14:27**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/18/12 08:35 | 121218L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/18/12 08:35 | 121218L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/18/12 08:35 | 121218L01 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/18/12 08:35 | 121218L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-547-62 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/21/12 14:30**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 04:05 | 121218L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 04:05 | 121218L03 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 04:05 | 121218L03 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 04:05 | 121218L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1107 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-2 Client ID: MW-40-07 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 10:19**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-3 Client ID: MW-40-08 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 10:53**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-4 Client ID: DUP-1 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 00:00**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-5 Client ID: MW-40-14 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 11:45**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-6 Client ID: MW-40-22 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 12:21**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-7 Client ID: MW-40-30 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 13:22**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1107 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-8 Client ID: MW-40-32 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 13:59**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-9 Client ID: MW-40-35 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 14:42**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-15-594-1 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 17:27**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <2.0 | U | 0.24 | 2.0 | 5.0 | 1 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1107 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-2 Client ID: MW-40-07 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 10:19**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 1340 | | 0.820 | 1.60 | 2.00 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-3 Client ID: MW-40-08 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 10:53**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 995 | | 0.820 | 1.60 | 2.00 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-4 Client ID: DUP-1 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 00:00**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 990 | | 0.820 | 1.60 | 2.00 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-5 Client ID: MW-40-14 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 11:45**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 1710 | | 0.820 | 1.60 | 2.00 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-6 Client ID: MW-40-22 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 12:21**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 1170 | | 0.820 | 1.60 | 2.00 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-7 Client ID: MW-40-30 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 13:22**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 1180 | | 0.820 | 1.60 | 2.00 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1107 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-8 Client ID: MW-40-32 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 13:59**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 900 | | 0.820 | 1.60 | 2.00 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1107-9 Client ID: MW-40-35 Matrix: Aqueous Units: mg/L Sampled: 12/17/12 14:42**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 4170 | | 0.820 | 1.60 | 2.00 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-577-11 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/20/12 08:43**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | <1.6 | U | 0.82 | 1.6 | 2.0 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-1 Client ID: TB-1 Matrix: Aqueous Units: ug/L Sampled: 12/17/12 07:00**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 20:04 | 121219L01 |

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 20:04* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *93%* | *12/19/12 00:00* | *12/19/12 20:04* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *90%* | *12/19/12 00:00* | *12/19/12 20:04* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 20:04* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-2 Client ID: MW-40-07 Matrix: Aqueous Units: ug/L Sampled: 12/17/12 10:19**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| c-1,2-Dichloroethene | 0.89 | J | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Trichloroethene | 0.46 | J | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Vinyl Chloride | 0.98 | J | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 18:45 | 121219L01 |

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 18:45* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/19/12 00:00* | *12/19/12 18:45* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *90%* | *12/19/12 00:00* | *12/19/12 18:45* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *100%* | *12/19/12 00:00* | *12/19/12 18:45* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-3 Client ID: MW-40-08 Matrix: Aqueous Units: ug/L Sampled: 12/17/12 10:53**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| c-1,2-Dichloroethene | 42 | | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Vinyl Chloride | 1.4 | | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 16:32 | 121219L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 16:32* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *93%* | *12/19/12 00:00* | *12/19/12 16:32* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *91%* | *12/19/12 00:00* | *12/19/12 16:32* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *100%* | *12/19/12 00:00* | *12/19/12 16:32* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-4 Client ID: DUP-1 Matrix: Aqueous Units: ug/L Sampled: 12/17/12 00:00**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| c-1,2-Dichloroethene | 37 | | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Vinyl Chloride | 0.94 | J | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 19:11 | 121219L01 |

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 19:11* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *94%* | *12/19/12 00:00* | *12/19/12 19:11* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *92%* | *12/19/12 00:00* | *12/19/12 19:11* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 19:11* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-5 Client ID: MW-40-14 Matrix: Aqueous Units: ug/L Sampled: 12/17/12 11:45**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| c-1,2-Dichloroethene | 2.7 | | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| t-1,2-Dichloroethene | 0.58 | J | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Trichloroethene | 1.5 | | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Vinyl Chloride | 3.6 | | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 19:37 | 121219L01 |

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *100%* | *12/19/12 00:00* | *12/19/12 19:37* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *93%* | *12/19/12 00:00* | *12/19/12 19:37* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *91%* | *12/19/12 00:00* | *12/19/12 19:37* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 19:37* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-6 Client ID: MW-40-22 Matrix: Aqueous Units: ug/L Sampled: 12/17/12 12:21**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| c-1,2-Dichloroethene | 0.96 | J | 0.48 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| t-1,2-Dichloroethene | 1.2 | | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Vinyl Chloride | 0.72 | J | 0.30 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/18/12 00:00 | 12/18/12 19:59 | 121218L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *94%* | *12/18/12 00:00* | *12/18/12 19:59* | *121218L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/18/12 00:00* | *12/18/12 19:59* | *121218L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *78%* | *12/18/12 00:00* | *12/18/12 19:59* | *121218L01* |
| *Surr: Toluene-d8 (85-120%)* | *97%* | *12/18/12 00:00* | *12/18/12 19:59* | *121218L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-7 Client ID: MW-40-30 Matrix: Aqueous Units: ug/L Sampled: 12/17/12 13:22**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| c-1,2-Dichloroethene | 1.2 | | 0.48 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Vinyl Chloride | 0.96 | J | 0.30 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/18/12 00:00 | 12/18/12 20:26 | 121218L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *94%* | *12/18/12 00:00* | *12/18/12 20:26* | *121218L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *89%* | *12/18/12 00:00* | *12/18/12 20:26* | *121218L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *79%* | *12/18/12 00:00* | *12/18/12 20:26* | *121218L01* |
| *Surr: Toluene-d8 (85-120%)* | *96%* | *12/18/12 00:00* | *12/18/12 20:26* | *121218L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-8 Client ID: MW-40-32 Matrix: Aqueous Units: ug/L Sampled: 12/17/12 13:59**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| c-1,2-Dichloroethene | 0.98 | J | 0.48 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Vinyl Chloride | 0.55 | J | 0.30 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/18/12 00:00 | 12/18/12 20:53 | 121218L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *94%* | *12/18/12 00:00* | *12/18/12 20:53* | *121218L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/18/12 00:00* | *12/18/12 20:53* | *121218L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *78%* | *12/18/12 00:00* | *12/18/12 20:53* | *121218L01* |
| *Surr: Toluene-d8 (85-120%)* | *97%* | *12/18/12 00:00* | *12/18/12 20:53* | *121218L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**12-12-1107-9 Client ID: MW-40-35 Matrix: Aqueous Units: ug/L Sampled: 12/17/12 14:42**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Carbon Disulfide | 0.44 | J | 0.41 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| c-1,2-Dichloroethene | 1.3 | | 0.48 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Toluene | 0.32 | J | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/18/12 00:00 | 12/18/12 21:19 | 121218L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1107<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *96%* | *12/18/12 00:00* | *12/18/12 21:19* | *121218L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/18/12 00:00* | *12/18/12 21:19* | *121218L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *79%* | *12/18/12 00:00* | *12/18/12 21:19* | *121218L01* |
| *Surr: Toluene-d8 (85-120%)* | *97%* | *12/18/12 00:00* | *12/18/12 21:19* | *121218L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**099-14-479-123 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 12/18/12 11:08**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/18/12 00:00 | 12/18/12 12:20 | 121218L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | | |
|---|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *97%* | *12/18/12 00:00* | *12/18/12 12:20* | *121218L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *96%* | *12/18/12 00:00* | *12/18/12 12:20* | *121218L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *88%* | *12/18/12 00:00* | *12/18/12 12:20* | *121218L01* |
| *Surr: Toluene-d8 (85-120%)* | *98%* | *12/18/12 00:00* | *12/18/12 12:20* | *121218L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

**099-14-479-124 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 12/19/12 15:09**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/17/12 17:50 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *100%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *95%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *94%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *101%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

| | |
|---|---|
| Date Received: | 12/17/12 |
| Work Order No: | 12-12-1107 |
| Preparation: | EPA 3010A Total |
| Method: | EPA 6010B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **MW-40-08** | **Aqueous** | **ICP 7300** | **12/19/12** | **12/20/12** | **121219SA3** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 141.2 | 0.5000 | 148.4 | 4X | 143.5 | 4X | 80-120 | 4X | 0-20 | Q |
| Iron | 8.893 | 0.5000 | 9.803 | 4X | 9.433 | 4X | 80-120 | 4X | 0-20 | Q |
| Magnesium | 43.21 | 0.5000 | 45.05 | 4X | 43.57 | 4X | 80-120 | 4X | 0-20 | Q |
| Potassium | 2.483 | 5.000 | 8.177 | 114 | 7.787 | 106 | 80-120 | 5 | 0-20 | |
| Sodium | 253.6 | 5.000 | 272.2 | 4X | 260.8 | 4X | 80-120 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received | 12/17/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS / PDSD Batch Number |
|---|---|---|---|---|---|
| **MW-40-08** | **Aqueous** | **ICP 7300** | **12/19/12** | **12/20/12** | **121219SA3** |

| Parameter | SAMPLE CONC | SPIKE ADDED | PDS CONC | PDS %REC | PDSD CONC | PDSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 141.2 | 0.5000 | 141.1 | 4X | 140.2 | 4X | 75-125 | 4X | 0-20 | Q |
| Iron | 8.893 | 0.5000 | 9.180 | 4X | 9.202 | 4X | 75-125 | 4X | 0-20 | Q |
| Magnesium | 43.21 | 0.5000 | 42.33 | 4X | 42.84 | 4X | 75-125 | 4X | 0-20 | Q |
| Potassium | 2.483 | 5.000 | 7.970 | 110 | 8.527 | 121 | 75-125 | 7 | 0-20 | |
| Sodium | 253.6 | 5.000 | 258.9 | 4X | 258.9 | 4X | 75-125 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/17/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **MW-40-30** | **Aqueous** | **IC 7** | **N/A** | **12/18/12** | **121218S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 160 | 5000 | 5400 | 104 | 5400 | 104 | 80-120 | 0 | 0-20 | |
| Nitrite (as N) | ND | 250 | 260 | 104 | 260 | 105 | 80-120 | 1 | 0-20 | |
| Nitrate (as N) | ND | 500 | 510 | 102 | 520 | 103 | 80-120 | 1 | 0-20 | |
| Sulfate | 38 | 5000 | 5100 | 102 | 5100 | 102 | 80-120 | 0 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/17/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1197-1** | **Aqueous** | **TOC 8** | **12/27/12** | **12/28/12** | **C1227TOCS1** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | ND | 10 | 89 | 887 | 90 | 904 | 70-130 | 2 | 0-25 | 3 |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: 12/17/12
Work Order No: 12-12-1107
Preparation: EPA 5030C
Method: EPA 8260B

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1053-1** | **Aqueous** | **GC/MS OO** | **12/18/12** | **12/18/12** | **121218S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 50.00 | 46.92 | 94 | 47.96 | 96 | 80-120 | 2 | 0-20 | |
| Bromodichloromethane | ND | 50.00 | 50.04 | 100 | 50.18 | 100 | 75-120 | 0 | 0-20 | |
| Bromoform | ND | 50.00 | 52.90 | 106 | 55.13 | 110 | 70-130 | 4 | 0-20 | |
| 2-Butanone | ND | 50.00 | 41.81 | 84 | 40.09 | 80 | 30-150 | 4 | 0-20 | |
| Carbon Disulfide | ND | 50.00 | 42.89 | 86 | 43.51 | 87 | 35-160 | 1 | 0-20 | |
| Carbon Tetrachloride | ND | 50.00 | 49.57 | 99 | 50.71 | 101 | 65-140 | 2 | 0-20 | |
| Chlorobenzene | ND | 50.00 | 51.49 | 103 | 52.76 | 106 | 80-120 | 2 | 0-20 | |
| Chloroethane | ND | 50.00 | 48.34 | 97 | 47.52 | 95 | 60-135 | 2 | 0-20 | |
| Chloroform | ND | 50.00 | 48.29 | 97 | 48.25 | 97 | 65-135 | 0 | 0-20 | |
| Chloromethane | ND | 50.00 | 44.68 | 89 | 44.97 | 90 | 40-125 | 1 | 0-20 | |
| Dibromochloromethane | ND | 50.00 | 52.54 | 105 | 53.20 | 106 | 60-135 | 1 | 0-20 | |
| Dichlorodifluoromethane | ND | 50.00 | 48.44 | 97 | 48.28 | 97 | 30-155 | 0 | 0-20 | |
| 1,1-Dichloroethane | ND | 50.00 | 46.26 | 93 | 46.15 | 92 | 70-135 | 0 | 0-20 | |
| 1,2-Dichloroethane | ND | 50.00 | 45.95 | 92 | 46.76 | 94 | 70-130 | 2 | 0-20 | |
| 1,1-Dichloroethene | ND | 50.00 | 37.86 | 76 | 38.56 | 77 | 70-130 | 2 | 0-20 | |
| c-1,2-Dichloroethene | ND | 50.00 | 49.73 | 99 | 49.82 | 100 | 70-125 | 0 | 0-20 | |
| t-1,2-Dichloroethene | ND | 50.00 | 49.59 | 99 | 49.57 | 99 | 60-140 | 0 | 0-20 | |
| Ethylbenzene | ND | 50.00 | 50.27 | 101 | 51.73 | 103 | 75-125 | 3 | 0-20 | |
| 2-Hexanone | ND | 50.00 | 44.82 | 90 | 46.44 | 93 | 55-130 | 4 | 0-20 | |
| Isopropylbenzene | ND | 50.00 | 50.86 | 102 | 52.50 | 105 | 75-125 | 3 | 0-20 | |
| Methylene Chloride | ND | 50.00 | 46.53 | 93 | 47.01 | 94 | 55-140 | 1 | 0-20 | |
| 4-Methyl-2-Pentanone | ND | 50.00 | 45.63 | 91 | 48.19 | 96 | 60-135 | 5 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 50.00 | 47.04 | 94 | 48.98 | 98 | 80-130 | 4 | 0-20 | |
| Tetrachloroethene | ND | 50.00 | 38.60 | 77 | 39.92 | 80 | 45-150 | 3 | 0-20 | |
| Toluene | ND | 50.00 | 49.79 | 100 | 51.27 | 103 | 75-120 | 3 | 0-20 | |
| 1,1,1-Trichloroethane | ND | 50.00 | 49.06 | 98 | 49.39 | 99 | 65-130 | 1 | 0-20 | |
| 1,1,2-Trichloroethane | ND | 50.00 | 47.93 | 96 | 49.25 | 98 | 75-125 | 3 | 0-20 | |
| Trichloroethene | ND | 50.00 | 49.02 | 98 | 50.29 | 101 | 70-125 | 3 | 0-20 | |
| Trichlorofluoromethane | ND | 50.00 | 49.88 | 100 | 50.64 | 101 | 60-145 | 2 | 0-20 | |
| 1,2,4-Trimethylbenzene | ND | 50.00 | 49.18 | 98 | 52.41 | 105 | 75-130 | 6 | 0-20 | |
| 1,3,5-Trimethylbenzene | ND | 50.00 | 50.19 | 100 | 52.69 | 105 | 75-130 | 5 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/17/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1053-1** | **Aqueous** | **GC/MS OO** | **12/18/12** | **12/18/12** | **121218S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | ND | 50.00 | 47.10 | 94 | 48.25 | 96 | 50-145 | 2 | 0-20 | |
| p/m-Xylene | ND | 100.0 | 97.07 | 97 | 100.5 | 100 | 75-130 | 3 | 0-20 | |
| o-Xylene | ND | 50.00 | 48.92 | 98 | 50.78 | 102 | 80-120 | 4 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | ND | 50.00 | 43.76 | 88 | 44.18 | 88 | 65-125 | 1 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | ND | 250.0 | 248.7 | 99 | 262.2 | 105 | 46-154 | 5 | 0-35 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: 12/17/12
Work Order No: 12-12-1107
Preparation: EPA 5030C
Method: EPA 8260B

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **MW-40-08** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 50.00 | 46.99 | 94 | 51.91 | 104 | 80-120 | 10 | 0-20 | |
| Bromodichloromethane | ND | 50.00 | 47.56 | 95 | 52.47 | 105 | 75-120 | 10 | 0-20 | |
| Bromoform | ND | 50.00 | 42.20 | 84 | 46.74 | 93 | 70-130 | 10 | 0-20 | |
| 2-Butanone | ND | 50.00 | 44.62 | 89 | 46.46 | 93 | 30-150 | 4 | 0-20 | |
| Carbon Disulfide | ND | 50.00 | 42.74 | 85 | 47.11 | 94 | 35-160 | 10 | 0-20 | |
| Carbon Tetrachloride | ND | 50.00 | 44.86 | 90 | 50.04 | 100 | 65-140 | 11 | 0-20 | |
| Chlorobenzene | ND | 50.00 | 48.67 | 97 | 54.34 | 109 | 80-120 | 11 | 0-20 | |
| Chloroethane | ND | 50.00 | 46.34 | 93 | 54.05 | 108 | 60-135 | 15 | 0-20 | |
| Chloroform | ND | 50.00 | 48.78 | 98 | 53.43 | 107 | 65-135 | 9 | 0-20 | |
| Chloromethane | ND | 50.00 | 40.03 | 80 | 45.45 | 91 | 40-125 | 13 | 0-20 | |
| Dibromochloromethane | ND | 50.00 | 45.28 | 91 | 51.97 | 104 | 60-135 | 14 | 0-20 | |
| Dichlorodifluoromethane | ND | 50.00 | 46.95 | 94 | 52.28 | 105 | 30-155 | 11 | 0-20 | |
| 1,1-Dichloroethane | ND | 50.00 | 46.99 | 94 | 51.87 | 104 | 70-135 | 10 | 0-20 | |
| 1,2-Dichloroethane | ND | 50.00 | 47.57 | 95 | 52.70 | 105 | 70-130 | 10 | 0-20 | |
| 1,1-Dichloroethene | ND | 50.00 | 39.32 | 79 | 44.15 | 88 | 70-130 | 12 | 0-20 | |
| c-1,2-Dichloroethene | 42.12 | 50.00 | 85.38 | 87 | 92.26 | 100 | 70-125 | 8 | 0-20 | |
| t-1,2-Dichloroethene | ND | 50.00 | 47.68 | 95 | 52.52 | 105 | 60-140 | 10 | 0-20 | |
| Ethylbenzene | ND | 50.00 | 47.79 | 96 | 52.74 | 105 | 75-125 | 10 | 0-20 | |
| 2-Hexanone | ND | 50.00 | 42.88 | 86 | 49.39 | 99 | 55-130 | 14 | 0-20 | |
| Isopropylbenzene | ND | 50.00 | 48.42 | 97 | 53.33 | 107 | 75-125 | 10 | 0-20 | |
| Methylene Chloride | ND | 50.00 | 46.37 | 93 | 50.40 | 101 | 55-140 | 8 | 0-20 | |
| 4-Methyl-2-Pentanone | ND | 50.00 | 46.94 | 94 | 51.81 | 104 | 60-135 | 10 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 50.00 | 45.94 | 92 | 51.38 | 103 | 80-130 | 11 | 0-20 | |
| Tetrachloroethene | ND | 50.00 | 45.28 | 91 | 49.51 | 99 | 45-150 | 9 | 0-20 | |
| Toluene | ND | 50.00 | 49.14 | 98 | 53.94 | 108 | 75-120 | 9 | 0-20 | |
| 1,1,1-Trichloroethane | ND | 50.00 | 46.63 | 93 | 51.88 | 104 | 65-130 | 11 | 0-20 | |
| 1,1,2-Trichloroethane | ND | 50.00 | 49.58 | 99 | 53.41 | 107 | 75-125 | 7 | 0-20 | |
| Trichloroethene | ND | 50.00 | 48.24 | 96 | 52.85 | 106 | 70-125 | 9 | 0-20 | |
| Trichlorofluoromethane | ND | 50.00 | 46.87 | 94 | 52.04 | 104 | 60-145 | 10 | 0-20 | |
| 1,2,4-Trimethylbenzene | ND | 50.00 | 47.88 | 96 | 52.03 | 104 | 75-130 | 8 | 0-20 | |
| 1,3,5-Trimethylbenzene | ND | 50.00 | 47.61 | 95 | 52.52 | 105 | 75-130 | 10 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/17/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **MW-40-08** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 1.356 | 50.00 | 48.03 | 93 | 53.48 | 104 | 50-145 | 11 | 0-20 | |
| p/m-Xylene | ND | 100.0 | 92.36 | 92 | 102.4 | 102 | 75-130 | 10 | 0-20 | |
| o-Xylene | ND | 50.00 | 48.20 | 96 | 53.26 | 107 | 80-120 | 10 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | ND | 50.00 | 43.79 | 88 | 48.73 | 97 | 65-125 | 11 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | ND | 250.0 | 254.8 | 102 | 306.4 | 123 | 46-154 | 18 | 0-35 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-483-35** | **Aqueous** | **ICP 7300** | **12/19/12** | **12/20/12** | **121219LA3D** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 0.5000 | 0.4912 | 98 | 0.4895 | 98 | 80-120 | 0 | 0-20 | |
| Iron | 0.5000 | 0.5201 | 104 | 0.5210 | 104 | 80-120 | 0 | 0-20 | |
| Magnesium | 0.5000 | 0.5258 | 105 | 0.5320 | 106 | 80-120 | 1 | 0-20 | |
| Potassium | 5.000 | 5.040 | 101 | 4.991 | 100 | 80-120 | 1 | 0-20 | |
| Sodium | 5.000 | 5.151 | 103 | 5.173 | 103 | 80-120 | 0 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-62** | **Aqueous** | **IC 7** | **N/A** | **12/19/12** | **121218L03** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 51 | 103 | 51 | 102 | 90-110 | 0 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.7 | 106 | 2.7 | 107 | 90-110 | 1 | 0-15 | |
| Nitrate (as N) | 5.0 | 5.1 | 102 | 5.0 | 100 | 90-110 | 2 | 0-15 | |
| Sulfate | 50 | 50 | 100 | 50 | 100 | 90-110 | 0 | 0-15 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-61** | **Aqueous** | **IC 7** | **N/A** | **12/18/12** | **121218L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 52 | 103 | 52 | 104 | 90-110 | 1 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.6 | 103 | 2.6 | 105 | 90-110 | 1 | 0-15 | |
| Nitrate (as N) | 5.0 | 5.0 | 101 | 5.2 | 104 | 90-110 | 3 | 0-15 | |
| Sulfate | 50 | 50 | 101 | 51 | 102 | 90-110 | 1 | 0-15 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-15-594-1** | **Aqueous** | **TOC 8** | **12/27/12** | **12/28/12** | **C1227TOCL1** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | 10 | 10 | 102 | 9.5 | 95 | 80-120 | 7 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 2540 C |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-577-11** | **Aqueous** | **SC 5** | **12/18/12** | **12/18/12** | **C1218TDSL3** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 100 | 85 | 85 | 90 | 90 | 80-120 | 6 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1107
Preparation: EPA 5030C
Method: EPA 8260B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-123** | **Aqueous** | **GC/MS OO** | **12/18/12** | **12/18/12** | **121218L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 50.00 | 51.37 | 103 | 48.65 | 97 | 80-120 | 73-127 | 5 | 0-20 | |
| Bromodichloromethane | 50.00 | 54.96 | 110 | 52.82 | 106 | 75-120 | 68-128 | 4 | 0-20 | |
| Bromoform | 50.00 | 61.20 | 122 | 58.17 | 116 | 70-130 | 60-140 | 5 | 0-20 | |
| 2-Butanone | 50.00 | 55.78 | 112 | 56.10 | 112 | 30-150 | 10-170 | 1 | 0-20 | |
| Carbon Disulfide | 50.00 | 47.64 | 95 | 44.05 | 88 | 35-160 | 14-181 | 8 | 0-20 | |
| Carbon Tetrachloride | 50.00 | 55.54 | 111 | 52.20 | 104 | 65-140 | 52-152 | 6 | 0-20 | |
| Chlorobenzene | 50.00 | 56.04 | 112 | 52.71 | 105 | 80-120 | 73-127 | 6 | 0-20 | |
| Chloroethane | 50.00 | 52.54 | 105 | 48.54 | 97 | 60-135 | 48-148 | 8 | 0-20 | |
| Chloroform | 50.00 | 51.49 | 103 | 50.24 | 100 | 65-135 | 53-147 | 2 | 0-20 | |
| Chloromethane | 50.00 | 49.32 | 99 | 46.03 | 92 | 40-125 | 26-139 | 7 | 0-20 | |
| Dibromochloromethane | 50.00 | 57.91 | 116 | 55.26 | 111 | 60-135 | 48-148 | 5 | 0-20 | |
| Dichlorodifluoromethane | 50.00 | 52.71 | 105 | 48.69 | 97 | 30-155 | 9-176 | 8 | 0-20 | |
| 1,1-Dichloroethane | 50.00 | 50.37 | 101 | 48.37 | 97 | 70-135 | 59-146 | 4 | 0-20 | |
| 1,2-Dichloroethane | 50.00 | 51.13 | 102 | 49.38 | 99 | 70-130 | 60-140 | 3 | 0-20 | |
| 1,1-Dichloroethene | 50.00 | 43.13 | 86 | 39.63 | 79 | 70-130 | 60-140 | 8 | 0-20 | |
| c-1,2-Dichloroethene | 50.00 | 52.18 | 104 | 51.45 | 103 | 70-125 | 61-134 | 1 | 0-20 | |
| t-1,2-Dichloroethene | 50.00 | 53.27 | 107 | 50.50 | 101 | 60-140 | 47-153 | 5 | 0-20 | |
| Ethylbenzene | 50.00 | 56.03 | 112 | 52.25 | 104 | 75-125 | 67-133 | 7 | 0-20 | |
| 2-Hexanone | 50.00 | 58.80 | 118 | 55.19 | 110 | 55-130 | 42-142 | 6 | 0-20 | |
| Isopropylbenzene | 50.00 | 56.30 | 113 | 52.75 | 106 | 75-125 | 67-133 | 7 | 0-20 | |
| Methylene Chloride | 50.00 | 50.72 | 101 | 48.14 | 96 | 55-140 | 41-154 | 5 | 0-20 | |
| 4-Methyl-2-Pentanone | 50.00 | 51.65 | 103 | 50.81 | 102 | 60-135 | 48-148 | 2 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 50.00 | 53.19 | 106 | 49.24 | 98 | 80-130 | 72-138 | 8 | 0-20 | |
| Tetrachloroethene | 50.00 | 47.98 | 96 | 45.79 | 92 | 45-150 | 28-168 | 5 | 0-20 | |
| Toluene | 50.00 | 54.59 | 109 | 51.39 | 103 | 75-120 | 68-128 | 6 | 0-20 | |
| 1,1,1-Trichloroethane | 50.00 | 53.84 | 108 | 50.73 | 101 | 65-130 | 54-141 | 6 | 0-20 | |
| 1,1,2-Trichloroethane | 50.00 | 53.04 | 106 | 50.50 | 101 | 75-125 | 67-133 | 5 | 0-20 | |
| Trichloroethene | 50.00 | 54.55 | 109 | 50.89 | 102 | 70-125 | 61-134 | 7 | 0-20 | |
| Trichlorofluoromethane | 50.00 | 53.83 | 108 | 49.95 | 100 | 60-145 | 46-159 | 7 | 0-20 | |
| 1,2,4-Trimethylbenzene | 50.00 | 57.33 | 115 | 55.20 | 110 | 75-130 | 66-139 | 4 | 0-20 | |
| 1,3,5-Trimethylbenzene | 50.00 | 57.13 | 114 | 53.09 | 106 | 75-130 | 66-139 | 7 | 0-20 | |
| Vinyl Chloride | 50.00 | 51.60 | 103 | 48.13 | 96 | 50-145 | 34-161 | 7 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-123** | **Aqueous** | **GC/MS OO** | **12/18/12** | **12/18/12** | **121218L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | 100.0 | 108.2 | 108 | 101.5 | 101 | 75-130 | 66-139 | 6 | 0-20 | |
| o-Xylene | 50.00 | 54.60 | 109 | 51.25 | 103 | 80-120 | 73-127 | 6 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | 50.00 | 46.69 | 93 | 46.26 | 93 | 65-125 | 55-135 | 1 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | 250.0 | 273.6 | 109 | 257.0 | 103 | 46-154 | 28-172 | 6 | 0-25 | |

Total number of LCS compounds : 36
Total number of ME compounds : 0
Total number of ME compounds allowed : 2
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1107
Preparation: EPA 5030C
Method: EPA 8260B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-124** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 50.00 | 54.23 | 108 | 50.27 | 101 | 80-120 | 73-127 | 8 | 0-20 | |
| Bromodichloromethane | 50.00 | 55.71 | 111 | 51.97 | 104 | 75-120 | 68-128 | 7 | 0-20 | |
| Bromoform | 50.00 | 50.88 | 102 | 47.94 | 96 | 70-130 | 60-140 | 6 | 0-20 | |
| 2-Butanone | 50.00 | 56.99 | 114 | 54.49 | 109 | 30-150 | 10-170 | 4 | 0-20 | |
| Carbon Disulfide | 50.00 | 50.06 | 100 | 46.54 | 93 | 35-160 | 14-181 | 7 | 0-20 | |
| Carbon Tetrachloride | 50.00 | 53.64 | 107 | 50.98 | 102 | 65-140 | 52-152 | 5 | 0-20 | |
| Chlorobenzene | 50.00 | 55.38 | 111 | 51.51 | 103 | 80-120 | 73-127 | 7 | 0-20 | |
| Chloroethane | 50.00 | 55.48 | 111 | 51.05 | 102 | 60-135 | 48-148 | 8 | 0-20 | |
| Chloroform | 50.00 | 56.76 | 114 | 52.59 | 105 | 65-135 | 53-147 | 8 | 0-20 | |
| Chloromethane | 50.00 | 47.13 | 94 | 45.09 | 90 | 40-125 | 26-139 | 4 | 0-20 | |
| Dibromochloromethane | 50.00 | 55.19 | 110 | 50.84 | 102 | 60-135 | 48-148 | 8 | 0-20 | |
| Dichlorodifluoromethane | 50.00 | 54.44 | 109 | 50.67 | 101 | 30-155 | 9-176 | 7 | 0-20 | |
| 1,1-Dichloroethane | 50.00 | 54.73 | 109 | 51.37 | 103 | 70-135 | 59-146 | 6 | 0-20 | |
| 1,2-Dichloroethane | 50.00 | 55.73 | 111 | 51.68 | 103 | 70-130 | 60-140 | 8 | 0-20 | |
| 1,1-Dichloroethene | 50.00 | 46.11 | 92 | 43.34 | 87 | 70-130 | 60-140 | 6 | 0-20 | |
| c-1,2-Dichloroethene | 50.00 | 57.01 | 114 | 52.80 | 106 | 70-125 | 61-134 | 8 | 0-20 | |
| t-1,2-Dichloroethene | 50.00 | 54.89 | 110 | 50.98 | 102 | 60-140 | 47-153 | 7 | 0-20 | |
| Ethylbenzene | 50.00 | 55.21 | 110 | 50.94 | 102 | 75-125 | 67-133 | 8 | 0-20 | |
| 2-Hexanone | 50.00 | 55.15 | 110 | 55.04 | 110 | 55-130 | 42-142 | 0 | 0-20 | |
| Isopropylbenzene | 50.00 | 54.78 | 110 | 50.99 | 102 | 75-125 | 67-133 | 7 | 0-20 | |
| Methylene Chloride | 50.00 | 54.06 | 108 | 49.82 | 100 | 55-140 | 41-154 | 8 | 0-20 | |
| 4-Methyl-2-Pentanone | 50.00 | 57.09 | 114 | 54.58 | 109 | 60-135 | 48-148 | 4 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 50.00 | 53.34 | 107 | 48.71 | 97 | 80-130 | 72-138 | 9 | 0-20 | |
| Tetrachloroethene | 50.00 | 53.50 | 107 | 51.54 | 103 | 45-150 | 28-168 | 4 | 0-20 | |
| Toluene | 50.00 | 55.98 | 112 | 52.47 | 105 | 75-120 | 68-128 | 6 | 0-20 | |
| 1,1,1-Trichloroethane | 50.00 | 54.22 | 108 | 51.06 | 102 | 65-130 | 54-141 | 6 | 0-20 | |
| 1,1,2-Trichloroethane | 50.00 | 57.41 | 115 | 52.56 | 105 | 75-125 | 67-133 | 9 | 0-20 | |
| Trichloroethene | 50.00 | 54.82 | 110 | 52.16 | 104 | 70-125 | 61-134 | 5 | 0-20 | |
| Trichlorofluoromethane | 50.00 | 53.21 | 106 | 50.05 | 100 | 60-145 | 46-159 | 6 | 0-20 | |
| 1,2,4-Trimethylbenzene | 50.00 | 54.44 | 109 | 51.43 | 103 | 75-130 | 66-139 | 6 | 0-20 | |
| 1,3,5-Trimethylbenzene | 50.00 | 54.46 | 109 | 50.62 | 101 | 75-130 | 66-139 | 7 | 0-20 | |
| Vinyl Chloride | 50.00 | 54.53 | 109 | 51.31 | 103 | 50-145 | 34-161 | 6 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1107 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-124** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | 100.0 | 106.3 | 106 | 98.96 | 99 | 75-130 | 66-139 | 7 | 0-20 | |
| o-Xylene | 50.00 | 55.54 | 111 | 51.56 | 103 | 80-120 | 73-127 | 7 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | 50.00 | 53.12 | 106 | 48.42 | 97 | 65-125 | 55-135 | 9 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | 250.0 | 285.6 | 114 | 275.7 | 110 | 46-154 | 28-172 | 4 | 0-25 | |

Total number of LCS compounds : 36
Total number of ME compounds : 0
Total number of ME compounds allowed : 2
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order Number: 12-12-1107

| Qualifier | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

Return to Contents

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 12-17-12
PAGE: 1 OF 1

LABORATORY CLIENT: CKY
ADDRESS: 302 W 5th St, San Pedro, CA 90731
TEL: (310) 519-4000 FAX: (310) 519-4029 E-MAIL: howard@ckyinc.com

CLIENT PROJECT NAME / NUMBER: Seal Beach NWS
PROJECT CONTACT: Howard Wittenberg
SAMPLER(S): (SIGNATURE)
COELT LOG CODE
P.O. NO.:
LAB USE ONLY: 12-12-1107
COOLER RECEIPT Temp = °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ Standard

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ COELT EDF ☐

SPECIAL INSTRUCTIONS

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | CEL SAMPLE # | SAMPLING DATE | SAMPLING TIME | MATRIX | NO. OF CONT. | VOCs | Anions | Cations | TDS | TOC | Level III |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB-1 | | 12-17-12 | 0700 | GW | 2 | X | | | | | X |
| 2 | MW-40-07 | | | 1019 | GW | 7 | X | X | X | X | X | X |
| 3 | MW-40-08 | | | 1053 | GW | 10 | X | X | X | X | X | X |
| 4 | Dup-1 | | | — | GW | 7 | X | X | X | X | X | X |
| 5 | MW-40-14 | | | 1145 | GW | 7 | X | X | X | X | X | X |
| 6 | MW-40-22 | | | 1221 | GW | 7 | X | X | X | X | X | X |
| 7 | MW-40-30 | | | 1322 | GW | 7 | X | X | X | X | X | X |
| 8 | MW-40-32 | | | 1359 | GW | 7 | X | X | X | X | X | X |
| 9 | MW-40-35 | | | 1442 | GW | 7 | X | X | X | X | X | X |
| | | | | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Nicoleisco | Nicoleisco | 12/17/12 | 1600 |
| Nicoleisco | Alex Mayz CEL | 12/17/12 | 1600 |
| Alex Mayz | Dannyle CEL | 12/17/12 | 17:50 |

Revision: 072611



Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-12-1107

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: CKY

DATE: 12/17/12

**TEMPERATURE:** Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.9 °C - 0.3 °C (CF) = 2.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: AM

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: AM

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: JS

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ 12/17/12 JS | ☑ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☑ | ☐ | ☐ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☑ | ☐ | ☐ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☑3VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☑1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:** 12120A **Labeled/Checked by:** JS

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** nC

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** nC



Return to Contents

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 12-12-1197

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** CKY, Incorporated

**Client Project Name:** Seal Beach NWS

**Attention:** Howard Wittenberg
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Approved for release on 12/31/2012 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: Seal Beach NWS
Work Order Number: 12-12-1197


1 Client Sample Data . . . . . 3
1.1 EPA 6010B ICP Metals (Aqueous) . . . . . 3
1.2 EPA 300.0 / 9056 Anions (Aqueous) . . . . . 4
1.3 SM 5310 B Total Organic Carbon (Aqueous) . . . . . 5
1.4 SM 2540 C Total Dissolved Solids (Aqueous) . . . . . 6
1.5 EPA 8260B Volatile Organics (Aqueous) . . . . . 7

2 Quality Control Sample Data . . . . . 11
2.1 MS/MSD and/or Duplicate . . . . . 11
2.2 LCS/LCSD . . . . . 17

3 Glossary of Terms and Qualifiers . . . . . 24

4 Chain of Custody/Sample Receipt Form . . . . . 25

Calscience Environmental Laboratories, Inc.

The difference is service

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1197 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1197-1 Client ID: MW-40-25 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 08:28**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 74.5 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:27 | 121219LA3D |
| Iron | 4.07 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:27 | 121219LA3D |
| Magnesium | 29.3 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:27 | 121219LA3D |
| Potassium | 6.72 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:27 | 121219LA3D |
| Sodium | 377 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:27 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-483-35 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/21/12 11:14**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | <0.0200 | U | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Iron | <0.0200 | U | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Magnesium | <0.0100 | U | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Potassium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Sodium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1197 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1197-1 Client ID: MW-40-25 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 08:28**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 410 | | 1.3 | 5.0 | 20 | 10 | | 12/22/12 06:55 | 121221L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 11:11 | 121219L01 |
| Nitrate (as N) | 0.032 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 11:11 | 121219L01 |
| Sulfate | 120 | | 1.3 | 5.0 | 20 | 10 | | 12/22/12 06:55 | 121221L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-547-63 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/26/12 14:43**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 08:09 | 121219L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 08:09 | 121219L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 08:09 | 121219L01 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 08:09 | 121219L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-547-64 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/26/12 14:47**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/22/12 04:53 | 121221L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/22/12 04:53 | 121221L03 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/22/12 04:53 | 121221L03 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/22/12 04:53 | 121221L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1197 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1197-1 Client ID: MW-40-25 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 08:28**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <50 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

**099-15-594-1 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 17:27**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <5.0 | U | 0.24 | 2.0 | 5.0 | 1 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1197 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1197-1 Client ID: MW-40-25 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 08:28**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 1060 | | 0.820 | 1.60 | 2.00 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-577-11 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/20/12 08:43**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | <1.6 | U | 0.82 | 1.6 | 2.0 | 1 | 12/18/12 00:00 | 12/18/12 22:00 | C1218TDSL3 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1197<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1197-1 Client ID: MW-40-25 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 08:28**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| t-1,2-Dichloroethene | 0.56 | J | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Vinyl Chloride | 0.72 | J | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 21:50 | 121219L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1197<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *97%* | *12/19/12 00:00* | *12/19/12 21:50* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/19/12 00:00* | *12/19/12 21:50* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *91%* | *12/19/12 00:00* | *12/19/12 21:50* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 21:50* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**099-14-479-124 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 12/19/12 15:09**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *100%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *95%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *94%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *101%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1197 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1107-3** | **Aqueous** | **ICP 7300** | **12/19/12** | **12/20/12** | **121219SA3** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 141.2 | 0.5000 | 148.4 | 4X | 143.5 | 4X | 80-120 | 4X | 0-20 | Q |
| Iron | 8.893 | 0.5000 | 9.803 | 4X | 9.433 | 4X | 80-120 | 4X | 0-20 | Q |
| Magnesium | 43.21 | 0.5000 | 45.05 | 4X | 43.57 | 4X | 80-120 | 4X | 0-20 | Q |
| Potassium | 2.483 | 5.000 | 8.177 | 114 | 7.787 | 106 | 80-120 | 5 | 0-20 | |
| Sodium | 253.6 | 5.000 | 272.2 | 4X | 260.8 | 4X | 80-120 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1197 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS / PDSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1107-3** | **Aqueous** | **ICP 7300** | **12/19/12** | **12/20/12** | **121219SA3** |

| Parameter | SAMPLE CONC | SPIKE ADDED | PDS CONC | PDS %REC | PDSD CONC | PDSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 141.2 | 0.5000 | 141.1 | 4X | 140.2 | 4X | 75-125 | 4X | 0-20 | Q |
| Iron | 8.893 | 0.5000 | 9.180 | 4X | 9.202 | 4X | 75-125 | 4X | 0-20 | Q |
| Magnesium | 43.21 | 0.5000 | 42.33 | 4X | 42.84 | 4X | 75-125 | 4X | 0-20 | Q |
| Potassium | 2.483 | 5.000 | 7.970 | 110 | 8.527 | 121 | 75-125 | 7 | 0-20 | |
| Sodium | 253.6 | 5.000 | 258.9 | 4X | 258.9 | 4X | 75-125 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1197 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **MW-40-25** | **Aqueous** | **IC 7** | **N/A** | **12/19/12** | **121219S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 520 | 5000 | 5300 | 96 | 5400 | 97 | 80-120 | 0 | 0-20 | |
| Nitrite (as N) | ND | 250 | 260 | 103 | 250 | 101 | 80-120 | 2 | 0-20 | |
| Nitrate (as N) | ND | 500 | 480 | 97 | 480 | 96 | 80-120 | 1 | 0-20 | |
| Sulfate | 140 | 5000 | 4900 | 95 | 4900 | 95 | 80-120 | 0 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1197 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **MW-40-25** | **Aqueous** | **TOC 8** | **12/27/12** | **12/28/12** | **C1227TOCS1** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | ND | 10 | 89 | 887 | 90 | 904 | 70-130 | 2 | 0-25 | 3 |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: 12/18/12
Work Order No: 12-12-1197
Preparation: EPA 5030C
Method: EPA 8260B

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1107-3** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 50.00 | 46.99 | 94 | 51.91 | 104 | 80-120 | 10 | 0-20 | |
| Bromodichloromethane | ND | 50.00 | 47.56 | 95 | 52.47 | 105 | 75-120 | 10 | 0-20 | |
| Bromoform | ND | 50.00 | 42.20 | 84 | 46.74 | 93 | 70-130 | 10 | 0-20 | |
| 2-Butanone | ND | 50.00 | 44.62 | 89 | 46.46 | 93 | 30-150 | 4 | 0-20 | |
| Carbon Disulfide | ND | 50.00 | 42.74 | 85 | 47.11 | 94 | 35-160 | 10 | 0-20 | |
| Carbon Tetrachloride | ND | 50.00 | 44.86 | 90 | 50.04 | 100 | 65-140 | 11 | 0-20 | |
| Chlorobenzene | ND | 50.00 | 48.67 | 97 | 54.34 | 109 | 80-120 | 11 | 0-20 | |
| Chloroethane | ND | 50.00 | 46.34 | 93 | 54.05 | 108 | 60-135 | 15 | 0-20 | |
| Chloroform | ND | 50.00 | 48.78 | 98 | 53.43 | 107 | 65-135 | 9 | 0-20 | |
| Chloromethane | ND | 50.00 | 40.03 | 80 | 45.45 | 91 | 40-125 | 13 | 0-20 | |
| Dibromochloromethane | ND | 50.00 | 45.28 | 91 | 51.97 | 104 | 60-135 | 14 | 0-20 | |
| Dichlorodifluoromethane | ND | 50.00 | 46.95 | 94 | 52.28 | 105 | 30-155 | 11 | 0-20 | |
| 1,1-Dichloroethane | ND | 50.00 | 46.99 | 94 | 51.87 | 104 | 70-135 | 10 | 0-20 | |
| 1,2-Dichloroethane | ND | 50.00 | 47.57 | 95 | 52.70 | 105 | 70-130 | 10 | 0-20 | |
| 1,1-Dichloroethene | ND | 50.00 | 39.32 | 79 | 44.15 | 88 | 70-130 | 12 | 0-20 | |
| c-1,2-Dichloroethene | 42.12 | 50.00 | 85.38 | 87 | 92.26 | 100 | 70-125 | 8 | 0-20 | |
| t-1,2-Dichloroethene | ND | 50.00 | 47.68 | 95 | 52.52 | 105 | 60-140 | 10 | 0-20 | |
| Ethylbenzene | ND | 50.00 | 47.79 | 96 | 52.74 | 105 | 75-125 | 10 | 0-20 | |
| 2-Hexanone | ND | 50.00 | 42.88 | 86 | 49.39 | 99 | 55-130 | 14 | 0-20 | |
| Isopropylbenzene | ND | 50.00 | 48.42 | 97 | 53.33 | 107 | 75-125 | 10 | 0-20 | |
| Methylene Chloride | ND | 50.00 | 46.37 | 93 | 50.40 | 101 | 55-140 | 8 | 0-20 | |
| 4-Methyl-2-Pentanone | ND | 50.00 | 46.94 | 94 | 51.81 | 104 | 60-135 | 10 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 50.00 | 45.94 | 92 | 51.38 | 103 | 80-130 | 11 | 0-20 | |
| Tetrachloroethene | ND | 50.00 | 45.28 | 91 | 49.51 | 99 | 45-150 | 9 | 0-20 | |
| Toluene | ND | 50.00 | 49.14 | 98 | 53.94 | 108 | 75-120 | 9 | 0-20 | |
| 1,1,1-Trichloroethane | ND | 50.00 | 46.63 | 93 | 51.88 | 104 | 65-130 | 11 | 0-20 | |
| 1,1,2-Trichloroethane | ND | 50.00 | 49.58 | 99 | 53.41 | 107 | 75-125 | 7 | 0-20 | |
| Trichloroethene | ND | 50.00 | 48.24 | 96 | 52.85 | 106 | 70-125 | 9 | 0-20 | |
| Trichlorofluoromethane | ND | 50.00 | 46.87 | 94 | 52.04 | 104 | 60-145 | 10 | 0-20 | |
| 1,2,4-Trimethylbenzene | ND | 50.00 | 47.88 | 96 | 52.03 | 104 | 75-130 | 8 | 0-20 | |
| 1,3,5-Trimethylbenzene | ND | 50.00 | 47.61 | 95 | 52.52 | 105 | 75-130 | 10 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1197 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1107-3** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 1.356 | 50.00 | 48.03 | 93 | 53.48 | 104 | 50-145 | 11 | 0-20 | |
| p/m-Xylene | ND | 100.0 | 92.36 | 92 | 102.4 | 102 | 75-130 | 10 | 0-20 | |
| o-Xylene | ND | 50.00 | 48.20 | 96 | 53.26 | 107 | 80-120 | 10 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | ND | 50.00 | 43.79 | 88 | 48.73 | 97 | 65-125 | 11 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | ND | 250.0 | 254.8 | 102 | 306.4 | 123 | 46-154 | 18 | 0-35 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1197
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-483-35** | **Aqueous** | **ICP 7300** | **12/19/12** | **12/20/12** | **121219LA3D** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 0.5000 | 0.4912 | 98 | 0.4895 | 98 | 80-120 | 0 | 0-20 | |
| Iron | 0.5000 | 0.5201 | 104 | 0.5210 | 104 | 80-120 | 0 | 0-20 | |
| Magnesium | 0.5000 | 0.5258 | 105 | 0.5320 | 106 | 80-120 | 1 | 0-20 | |
| Potassium | 5.000 | 5.040 | 101 | 4.991 | 100 | 80-120 | 1 | 0-20 | |
| Sodium | 5.000 | 5.151 | 103 | 5.173 | 103 | 80-120 | 0 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1197
Preparation: N/A
Method: EPA 300.0 / 9056

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-64** | **Aqueous** | **IC 7** | **N/A** | **12/22/12** | **121221L03** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 49 | 98 | 49 | 98 | 90-110 | 0 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.4 | 96 | 2.4 | 97 | 90-110 | 0 | 0-15 | |
| Nitrate (as N) | 5.0 | 4.9 | 98 | 4.9 | 98 | 90-110 | 0 | 0-15 | |
| Sulfate | 50 | 48 | 96 | 48 | 96 | 90-110 | 0 | 0-15 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1197 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-63** | **Aqueous** | **IC 7** | **N/A** | **12/19/12** | **121219L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 49 | 98 | 50 | 101 | 90-110 | 3 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.5 | 101 | 2.5 | 101 | 90-110 | 0 | 0-15 | |
| Nitrate (as N) | 5.0 | 4.8 | 97 | 5.0 | 100 | 90-110 | 4 | 0-15 | |
| Sulfate | 50 | 48 | 95 | 49 | 98 | 90-110 | 3 | 0-15 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1197 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-15-594-1** | **Aqueous** | **TOC 8** | **12/27/12** | **12/28/12** | **C1227TOCL1** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | 10 | 10 | 102 | 9.5 | 95 | 80-120 | 7 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1197 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 2540 C |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-577-11** | **Aqueous** | **SC 5** | **12/18/12** | **12/18/12** | **C1218TDSL3** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 100 | 85 | 85 | 90 | 90 | 80-120 | 6 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1197
Preparation: EPA 5030C
Method: EPA 8260B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-124** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 50.00 | 54.23 | 108 | 50.27 | 101 | 80-120 | 73-127 | 8 | 0-20 | |
| Bromodichloromethane | 50.00 | 55.71 | 111 | 51.97 | 104 | 75-120 | 68-128 | 7 | 0-20 | |
| Bromoform | 50.00 | 50.88 | 102 | 47.94 | 96 | 70-130 | 60-140 | 6 | 0-20 | |
| 2-Butanone | 50.00 | 56.99 | 114 | 54.49 | 109 | 30-150 | 10-170 | 4 | 0-20 | |
| Carbon Disulfide | 50.00 | 50.06 | 100 | 46.54 | 93 | 35-160 | 14-181 | 7 | 0-20 | |
| Carbon Tetrachloride | 50.00 | 53.64 | 107 | 50.98 | 102 | 65-140 | 52-152 | 5 | 0-20 | |
| Chlorobenzene | 50.00 | 55.38 | 111 | 51.51 | 103 | 80-120 | 73-127 | 7 | 0-20 | |
| Chloroethane | 50.00 | 55.48 | 111 | 51.05 | 102 | 60-135 | 48-148 | 8 | 0-20 | |
| Chloroform | 50.00 | 56.76 | 114 | 52.59 | 105 | 65-135 | 53-147 | 8 | 0-20 | |
| Chloromethane | 50.00 | 47.13 | 94 | 45.09 | 90 | 40-125 | 26-139 | 4 | 0-20 | |
| Dibromochloromethane | 50.00 | 55.19 | 110 | 50.84 | 102 | 60-135 | 48-148 | 8 | 0-20 | |
| Dichlorodifluoromethane | 50.00 | 54.44 | 109 | 50.67 | 101 | 30-155 | 9-176 | 7 | 0-20 | |
| 1,1-Dichloroethane | 50.00 | 54.73 | 109 | 51.37 | 103 | 70-135 | 59-146 | 6 | 0-20 | |
| 1,2-Dichloroethane | 50.00 | 55.73 | 111 | 51.68 | 103 | 70-130 | 60-140 | 8 | 0-20 | |
| 1,1-Dichloroethene | 50.00 | 46.11 | 92 | 43.34 | 87 | 70-130 | 60-140 | 6 | 0-20 | |
| c-1,2-Dichloroethene | 50.00 | 57.01 | 114 | 52.80 | 106 | 70-125 | 61-134 | 8 | 0-20 | |
| t-1,2-Dichloroethene | 50.00 | 54.89 | 110 | 50.98 | 102 | 60-140 | 47-153 | 7 | 0-20 | |
| Ethylbenzene | 50.00 | 55.21 | 110 | 50.94 | 102 | 75-125 | 67-133 | 8 | 0-20 | |
| 2-Hexanone | 50.00 | 55.15 | 110 | 55.04 | 110 | 55-130 | 42-142 | 0 | 0-20 | |
| Isopropylbenzene | 50.00 | 54.78 | 110 | 50.99 | 102 | 75-125 | 67-133 | 7 | 0-20 | |
| Methylene Chloride | 50.00 | 54.06 | 108 | 49.82 | 100 | 55-140 | 41-154 | 8 | 0-20 | |
| 4-Methyl-2-Pentanone | 50.00 | 57.09 | 114 | 54.58 | 109 | 60-135 | 48-148 | 4 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 50.00 | 53.34 | 107 | 48.71 | 97 | 80-130 | 72-138 | 9 | 0-20 | |
| Tetrachloroethene | 50.00 | 53.50 | 107 | 51.54 | 103 | 45-150 | 28-168 | 4 | 0-20 | |
| Toluene | 50.00 | 55.98 | 112 | 52.47 | 105 | 75-120 | 68-128 | 6 | 0-20 | |
| 1,1,1-Trichloroethane | 50.00 | 54.22 | 108 | 51.06 | 102 | 65-130 | 54-141 | 6 | 0-20 | |
| 1,1,2-Trichloroethane | 50.00 | 57.41 | 115 | 52.56 | 105 | 75-125 | 67-133 | 9 | 0-20 | |
| Trichloroethene | 50.00 | 54.82 | 110 | 52.16 | 104 | 70-125 | 61-134 | 5 | 0-20 | |
| Trichlorofluoromethane | 50.00 | 53.21 | 106 | 50.05 | 100 | 60-145 | 46-159 | 6 | 0-20 | |
| 1,2,4-Trimethylbenzene | 50.00 | 54.44 | 109 | 51.43 | 103 | 75-130 | 66-139 | 6 | 0-20 | |
| 1,3,5-Trimethylbenzene | 50.00 | 54.46 | 109 | 50.62 | 101 | 75-130 | 66-139 | 7 | 0-20 | |
| Vinyl Chloride | 50.00 | 54.53 | 109 | 51.31 | 103 | 50-145 | 34-161 | 6 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1197 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-124** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | 100.0 | 106.3 | 106 | 98.96 | 99 | 75-130 | 66-139 | 7 | 0-20 | |
| o-Xylene | 50.00 | 55.54 | 111 | 51.56 | 103 | 80-120 | 73-127 | 7 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | 50.00 | 53.12 | 106 | 48.42 | 97 | 65-125 | 55-135 | 9 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | 250.0 | 285.6 | 114 | 275.7 | 110 | 46-154 | 28-172 | 4 | 0-25 | |

Total number of LCS compounds : 36
Total number of ME compounds : 0
Total number of ME compounds allowed : 2
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order Number: 12-12-1197

| Qualifier | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

Return to Contents

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 12-18-12
PAGE: 1 OF 1

LABORATORY CLIENT: CKY
ADDRESS: 302 W 5th St, San Pedro, CA 90731
TEL: (310) 519-4000 | FAX: (310) 519-4029 | E-MAIL: howard@ckyinc.com

CLIENT PROJECT NAME / NUMBER: Seal Beach NWS
PROJECT CONTACT: Howard Wittenberg
SAMPLER(S): (SIGNATURE)
COELT LOG CODE
P.O. NO.:
LAB USE ONLY: 12-12-1197
COOLER RECEIPT Temp = °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ Standard
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ COELT EDF ☐
SPECIAL INSTRUCTIONS

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | CEL SAMPLE # | SAMPLING DATE | SAMPLING TIME | MATRIX | NO. OF CONT. | VOCs | Anions | Cations | TDS | | TOC | | | | Level IV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-40-25 | | 12-18-12 | 0828 | GW | 7 | X | X | X | X | | X | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | Nicole (SCI) | 12-18-12 | 16:30 |
| Nicole (SCI) | CEL | 12/18/12 | 17:20 |
| | Danny Le CEL | 12/18/12 | 18:30 |

Revision: 072611



Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-12-1197

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: CKY

DATE: 12/18/12

**TEMPERATURE:** Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.8 °C - 0.3 °C (CF) = 3.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: DCE

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: DCE

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: MS

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☑ | ☐ | ☐ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☑ | ☐ | ☐ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☑3 VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☑1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** MS

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** [illegible]

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** [illegible]



Return to Contents

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 12-12-1198

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AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** CKY, Incorporated

**Client Project Name:** Seal Beach NWS

**Attention:** Howard Wittenberg
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Approved for release on 12/31/2012 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

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# Contents

Client Project Name: Seal Beach NWS
Work Order Number: 12-12-1198


1 Client Sample Data . . . . . 3
1.1 EPA 6010B ICP Metals (Aqueous) . . . . . 3
1.2 EPA 300.0 / 9056 Anions (Aqueous) . . . . . 6
1.3 SM 5310 B Total Organic Carbon (Aqueous) . . . . . 9
1.4 SM 2540 C Total Dissolved Solids (Aqueous) . . . . . 11
1.5 EPA 8260B Volatile Organics (Aqueous) . . . . . 13

2 Quality Control Sample Data . . . . . 35
2.1 MS/MSD and/or Duplicate . . . . . 35
2.2 LCS/LCSD . . . . . 43

3 Glossary of Terms and Qualifiers . . . . . 52

4 Chain of Custody/Sample Receipt Form . . . . . 53

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1198 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-2 Client ID: MW-40-27 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 09:14**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 10.4 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:16 | 121219LA3D |
| Iron | 1.22 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:16 | 121219LA3D |
| Magnesium | 5.08 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:16 | 121219LA3D |
| Potassium | 2.98 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:16 | 121219LA3D |
| Sodium | 892 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:16 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-3 Client ID: MW-40-34 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 10:12**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 24.4 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:17 | 121219LA3D |
| Iron | 1.93 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:17 | 121219LA3D |
| Magnesium | 3.34 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:17 | 121219LA3D |
| Potassium | 4.37 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:17 | 121219LA3D |
| Sodium | 28.6 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:17 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-4 Client ID: DUP-2 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 00:00**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 24.6 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:18 | 121219LA3D |
| Iron | 1.36 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:18 | 121219LA3D |
| Magnesium | 3.29 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:18 | 121219LA3D |
| Potassium | 4.43 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:18 | 121219LA3D |
| Sodium | 28.6 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:18 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-5 Client ID: MW-40-37 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 11:09**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 261 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:19 | 121219LA3D |
| Iron | 18.2 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:19 | 121219LA3D |
| Magnesium | 104 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:19 | 121219LA3D |
| Potassium | 4.40 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:19 | 121219LA3D |
| Sodium | 375 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:19 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1198 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-6 Client ID: MW-40-36 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 12:22**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 146 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:20 | 121219LA3D |
| Iron | 28.2 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:20 | 121219LA3D |
| Magnesium | 60.2 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:20 | 121219LA3D |
| Potassium | 3.91 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:20 | 121219LA3D |
| Sodium | 280 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:20 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-7 Client ID: EB-1 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 12:50**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 0.919 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/26/12 11:17 | 121219LA3D |
| Iron | 0.0115 | J | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/26/12 11:17 | 121219LA3D |
| Magnesium | 0.0452 | J | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/26/12 11:17 | 121219LA3D |
| Potassium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/26/12 11:17 | 121219LA3D |
| Sodium | 0.218 | J | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/26/12 11:17 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-8 Client ID: IW-2 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 13:23**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 82.6 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:22 | 121219LA3D |
| Iron | 16.0 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:22 | 121219LA3D |
| Magnesium | 22.5 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:22 | 121219LA3D |
| Potassium | 1.61 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:22 | 121219LA3D |
| Sodium | 314 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:22 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-9 Client ID: IW-4 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 14:29**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 133 | | 0.235 | 0.400 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:23 | 121219LA3D |
| Iron | 6.86 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 14:23 | 121219LA3D |
| Magnesium | 40.6 | | 0.0673 | 0.200 | 2.00 | 20 | 12/19/12 00:00 | 12/20/12 14:23 | 121219LA3D |
| Potassium | 11.0 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:23 | 121219LA3D |
| Sodium | 225 | | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 14:23 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 099-14-483 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**099-14-483-35 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/21/12 11:14**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | <0.0200 | U | 0.0118 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Iron | <0.0200 | U | 0.0101 | 0.0200 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Magnesium | <0.0100 | U | 0.00336 | 0.0100 | 0.100 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Potassium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |
| Sodium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/19/12 00:00 | 12/20/12 13:27 | 121219LA3D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1198 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-2 Client ID: MW-40-27 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 09:14**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 240 | | 0.66 | 2.5 | 10 | 5 | | 12/22/12 07:30 | 121221L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 11:46 | 121219L01 |
| Nitrate (as N) | 0.042 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 11:46 | 121219L01 |
| Sulfate | 37 | | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 11:46 | 121219L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-3 Client ID: MW-40-34 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 10:12**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 15 | | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 12:03 | 121219L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 12:03 | 121219L01 |
| Nitrate (as N) | 1.8 | | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 12:03 | 121219L01 |
| Sulfate | 35 | | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 12:03 | 121219L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-4 Client ID: DUP-2 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 00:00**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14 | | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 12:20 | 121219L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 12:20 | 121219L01 |
| Nitrate (as N) | 1.9 | | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 12:20 | 121219L01 |
| Sulfate | 35 | | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 12:20 | 121219L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-5 Client ID: MW-40-37 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 11:09**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 530 | | 1.3 | 5.0 | 20 | 10 | | 12/22/12 07:47 | 121221L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 12:38 | 121219L01 |
| Nitrate (as N) | 0.032 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 12:38 | 121219L01 |
| Sulfate | 160 | | 1.3 | 5.0 | 20 | 10 | | 12/22/12 07:47 | 121221L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1198 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-6 Client ID: MW-40-36 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 12:22**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 230 | | 0.66 | 2.5 | 10 | 5 | | 12/22/12 08:05 | 121221L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 12:56 | 121219L01 |
| Nitrate (as N) | 0.044 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 12:56 | 121219L01 |
| Sulfate | 41 | | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 12:56 | 121219L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-7 Client ID: EB-1 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 12:50**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 0.34 | J | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 14:57 | 121219L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 14:57 | 121219L01 |
| Nitrate (as N) | 0.12 | | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 14:57 | 121219L01 |
| Sulfate | 0.34 | J | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 14:57 | 121219L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-8 Client ID: IW-2 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 13:23**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 290 | | 0.66 | 2.5 | 10 | 5 | | 12/22/12 08:22 | 121221L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 15:32 | 121219L01 |
| Nitrate (as N) | 0.038 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 15:32 | 121219L01 |
| Sulfate | 120 | | 0.66 | 2.5 | 10 | 5 | | 12/22/12 08:22 | 121221L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1198-9 Client ID: IW-4 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 14:29**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 260 | | 0.66 | 2.5 | 10 | 5 | | 12/22/12 08:39 | 121221L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 15:49 | 121219L01 |
| Nitrate (as N) | 0.040 | J | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 15:49 | 121219L01 |
| Sulfate | 4.6 | | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 15:49 | 121219L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 099-14-547 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**099-14-547-63 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/26/12 14:43**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 08:09 | 121219L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/19/12 08:09 | 121219L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/19/12 08:09 | 121219L01 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/19/12 08:09 | 121219L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-547-64 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/26/12 14:47**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/22/12 04:53 | 121221L03 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/22/12 04:53 | 121221L03 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/22/12 04:53 | 121221L03 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/22/12 04:53 | 121221L03 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1198 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-2 Client ID: MW-40-27 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 09:14**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <50 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

**12-12-1198-3 Client ID: MW-40-34 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 10:12**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <50 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

**12-12-1198-4 Client ID: DUP-2 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 00:00**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <50 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

**12-12-1198-5 Client ID: MW-40-37 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 11:09**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <50 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

**12-12-1198-6 Client ID: MW-40-36 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 12:22**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <50 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

**12-12-1198-7 Client ID: EB-1 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 12:50**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <5.0 | U | 0.24 | 2.0 | 5.0 | 1 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1198 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-8 Client ID: IW-2 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 13:23**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <50 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

**12-12-1198-9 Client ID: IW-4 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 14:29**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <50 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

**099-15-594-1 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 17:27**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <5.0 | U | 0.24 | 2.0 | 5.0 | 1 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1198 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-2 Client ID: MW-40-27 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 09:14**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 2240 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

**12-12-1198-3 Client ID: MW-40-34 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 10:12**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 205 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

**12-12-1198-4 Client ID: DUP-2 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 00:00**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 205 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

**12-12-1198-5 Client ID: MW-40-37 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 11:09**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 2120 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

**12-12-1198-6 Client ID: MW-40-36 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 12:22**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 1380 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

**12-12-1198-7 Client ID: EB-1 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 12:50**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | <2.0 | U | 0.82 | 1.6 | 2.0 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1198 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-8 Client ID: IW-2 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 13:23**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 1190 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

**12-12-1198-9 Client ID: IW-4 Matrix: Aqueous Units: mg/L Sampled: 12/18/12 14:29**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 1110 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

**099-14-577-12 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 11:30**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | <2.0 | U | 0.82 | 1.6 | 2.0 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-1 Client ID: TB-2 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 07:00**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 20:31 | 121219L01 |

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *98%* | *12/19/12 00:00* | *12/19/12 20:31* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *92%* | *12/19/12 00:00* | *12/19/12 20:31* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *88%* | *12/19/12 00:00* | *12/19/12 20:31* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 20:31* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-2 Client ID: MW-40-27 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 09:14**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| t-1,2-Dichloroethene | 2.7 | | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Toluene | 0.27 | J | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Trichloroethene | 0.84 | J | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Vinyl Chloride | 0.61 | J | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 20:57 | 121219L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *98%* | *12/19/12 00:00* | *12/19/12 20:57* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/19/12 00:00* | *12/19/12 20:57* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *88%* | *12/19/12 00:00* | *12/19/12 20:57* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *100%* | *12/19/12 00:00* | *12/19/12 20:57* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-3 Client ID: MW-40-34 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 10:12**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 21:24 | 121219L01 |

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *98%* | *12/19/12 00:00* | *12/19/12 21:24* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *93%* | *12/19/12 00:00* | *12/19/12 21:24* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *89%* | *12/19/12 00:00* | *12/19/12 21:24* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/19/12 00:00* | *12/19/12 21:24* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-4 Client ID: DUP-2 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 00:00**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 13:53 | 121220L01 |

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *100%* | *12/20/12 00:00* | *12/20/12 13:53* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *88%* | *12/20/12 00:00* | *12/20/12 13:53* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *90%* | *12/20/12 00:00* | *12/20/12 13:53* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *98%* | *12/20/12 00:00* | *12/20/12 13:53* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-5 Client ID: MW-40-37 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 11:09**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| c-1,2-Dichloroethene | 37 | | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| t-1,2-Dichloroethene | 1.3 | | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Trichloroethene | 0.81 | J | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Vinyl Chloride | 3.9 | | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 14:22 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *99%* | *12/20/12 00:00* | *12/20/12 14:22* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *89%* | *12/20/12 00:00* | *12/20/12 14:22* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *93%* | *12/20/12 00:00* | *12/20/12 14:22* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/20/12 00:00* | *12/20/12 14:22* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-6 Client ID: MW-40-36 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 12:22**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.16 | J | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| c-1,2-Dichloroethene | 2.8 | | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| t-1,2-Dichloroethene | 1.8 | | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Trichloroethene | 0.80 | J | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Vinyl Chloride | 1.6 | | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | 21 | J | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 14:50 | 121220L01 |

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *98%* | *12/20/12 00:00* | *12/20/12 14:50* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *92%* | *12/20/12 00:00* | *12/20/12 14:50* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *96%* | *12/20/12 00:00* | *12/20/12 14:50* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/20/12 00:00* | *12/20/12 14:50* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-7 Client ID: EB-1 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 12:50**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 17:11 | 121220L01 |

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *101%* | *12/20/12 00:00* | *12/20/12 17:11* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *89%* | *12/20/12 00:00* | *12/20/12 17:11* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *93%* | *12/20/12 00:00* | *12/20/12 17:11* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/20/12 00:00* | *12/20/12 17:11* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-8 Client ID: IW-2 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 13:23**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 17:39 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *96%* | *12/20/12 00:00* | *12/20/12 17:39* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *88%* | *12/20/12 00:00* | *12/20/12 17:39* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *92%* | *12/20/12 00:00* | *12/20/12 17:39* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *98%* | *12/20/12 00:00* | *12/20/12 17:39* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**12-12-1198-9 Client ID: IW-4 Matrix: Aqueous Units: ug/L Sampled: 12/18/12 14:29**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Toluene | 0.44 | J | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Vinyl Chloride | 0.75 | J | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 18:08 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1198<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *99%* | *12/20/12 00:00* | *12/20/12 18:08* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *89%* | *12/20/12 00:00* | *12/20/12 18:08* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *94%* | *12/20/12 00:00* | *12/20/12 18:08* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *99%* | *12/20/12 00:00* | *12/20/12 18:08* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**099-14-479-124 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 12/19/12 15:09**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/19/12 00:00 | 12/19/12 16:04 | 121219L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *100%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *95%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *94%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |
| *Surr: Toluene-d8 (85-120%)* | *101%* | *12/19/12 00:00* | *12/19/12 16:04* | *121219L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

**099-14-479-127 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 12/21/12 09:49**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/18/12 18:30 |

## ANALYTICAL REPORT

| | | | | | |
|---|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *101%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *93%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *100%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1107-3** | **Aqueous** | **ICP 7300** | **12/19/12** | **12/20/12** | **121219SA3** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 141.2 | 0.5000 | 148.4 | 4X | 143.5 | 4X | 80-120 | 4X | 0-20 | Q |
| Iron | 8.893 | 0.5000 | 9.803 | 4X | 9.433 | 4X | 80-120 | 4X | 0-20 | Q |
| Magnesium | 43.21 | 0.5000 | 45.05 | 4X | 43.57 | 4X | 80-120 | 4X | 0-20 | Q |
| Potassium | 2.483 | 5.000 | 8.177 | 114 | 7.787 | 106 | 80-120 | 5 | 0-20 | |
| Sodium | 253.6 | 5.000 | 272.2 | 4X | 260.8 | 4X | 80-120 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - PDS / PDSD

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS / PDSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1107-3** | **Aqueous** | **ICP 7300** | **12/19/12** | **12/20/12** | **121219SA3** |

| Parameter | SAMPLE CONC | SPIKE ADDED | PDS CONC | PDS %REC | PDSD CONC | PDSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 141.2 | 0.5000 | 141.1 | 4X | 140.2 | 4X | 75-125 | 4X | 0-20 | Q |
| Iron | 8.893 | 0.5000 | 9.180 | 4X | 9.202 | 4X | 75-125 | 4X | 0-20 | Q |
| Magnesium | 43.21 | 0.5000 | 42.33 | 4X | 42.84 | 4X | 75-125 | 4X | 0-20 | Q |
| Potassium | 2.483 | 5.000 | 7.970 | 110 | 8.527 | 121 | 75-125 | 7 | 0-20 | |
| Sodium | 253.6 | 5.000 | 258.9 | 4X | 258.9 | 4X | 75-125 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1197-1** | **Aqueous** | **IC 7** | **N/A** | **12/19/12** | **121219S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 520 | 5000 | 5300 | 96 | 5400 | 97 | 80-120 | 0 | 0-20 | |
| Nitrite (as N) | ND | 250 | 260 | 103 | 250 | 101 | 80-120 | 2 | 0-20 | |
| Nitrate (as N) | ND | 500 | 480 | 97 | 480 | 96 | 80-120 | 1 | 0-20 | |
| Sulfate | 140 | 5000 | 4900 | 95 | 4900 | 95 | 80-120 | 0 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1197-1** | **Aqueous** | **TOC 8** | **12/27/12** | **12/28/12** | **C1227TOCS1** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | ND | 10 | 89 | 887 | 90 | 904 | 70-130 | 2 | 0-25 | 3 |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: 12/18/12
Work Order No: 12-12-1198
Preparation: EPA 5030C
Method: EPA 8260B

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1107-3** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 50.00 | 46.99 | 94 | 51.91 | 104 | 80-120 | 10 | 0-20 | |
| Bromodichloromethane | ND | 50.00 | 47.56 | 95 | 52.47 | 105 | 75-120 | 10 | 0-20 | |
| Bromoform | ND | 50.00 | 42.20 | 84 | 46.74 | 93 | 70-130 | 10 | 0-20 | |
| 2-Butanone | ND | 50.00 | 44.62 | 89 | 46.46 | 93 | 30-150 | 4 | 0-20 | |
| Carbon Disulfide | ND | 50.00 | 42.74 | 85 | 47.11 | 94 | 35-160 | 10 | 0-20 | |
| Carbon Tetrachloride | ND | 50.00 | 44.86 | 90 | 50.04 | 100 | 65-140 | 11 | 0-20 | |
| Chlorobenzene | ND | 50.00 | 48.67 | 97 | 54.34 | 109 | 80-120 | 11 | 0-20 | |
| Chloroethane | ND | 50.00 | 46.34 | 93 | 54.05 | 108 | 60-135 | 15 | 0-20 | |
| Chloroform | ND | 50.00 | 48.78 | 98 | 53.43 | 107 | 65-135 | 9 | 0-20 | |
| Chloromethane | ND | 50.00 | 40.03 | 80 | 45.45 | 91 | 40-125 | 13 | 0-20 | |
| Dibromochloromethane | ND | 50.00 | 45.28 | 91 | 51.97 | 104 | 60-135 | 14 | 0-20 | |
| Dichlorodifluoromethane | ND | 50.00 | 46.95 | 94 | 52.28 | 105 | 30-155 | 11 | 0-20 | |
| 1,1-Dichloroethane | ND | 50.00 | 46.99 | 94 | 51.87 | 104 | 70-135 | 10 | 0-20 | |
| 1,2-Dichloroethane | ND | 50.00 | 47.57 | 95 | 52.70 | 105 | 70-130 | 10 | 0-20 | |
| 1,1-Dichloroethene | ND | 50.00 | 39.32 | 79 | 44.15 | 88 | 70-130 | 12 | 0-20 | |
| c-1,2-Dichloroethene | 42.12 | 50.00 | 85.38 | 87 | 92.26 | 100 | 70-125 | 8 | 0-20 | |
| t-1,2-Dichloroethene | ND | 50.00 | 47.68 | 95 | 52.52 | 105 | 60-140 | 10 | 0-20 | |
| Ethylbenzene | ND | 50.00 | 47.79 | 96 | 52.74 | 105 | 75-125 | 10 | 0-20 | |
| 2-Hexanone | ND | 50.00 | 42.88 | 86 | 49.39 | 99 | 55-130 | 14 | 0-20 | |
| Isopropylbenzene | ND | 50.00 | 48.42 | 97 | 53.33 | 107 | 75-125 | 10 | 0-20 | |
| Methylene Chloride | ND | 50.00 | 46.37 | 93 | 50.40 | 101 | 55-140 | 8 | 0-20 | |
| 4-Methyl-2-Pentanone | ND | 50.00 | 46.94 | 94 | 51.81 | 104 | 60-135 | 10 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | ND | 50.00 | 45.94 | 92 | 51.38 | 103 | 80-130 | 11 | 0-20 | |
| Tetrachloroethene | ND | 50.00 | 45.28 | 91 | 49.51 | 99 | 45-150 | 9 | 0-20 | |
| Toluene | ND | 50.00 | 49.14 | 98 | 53.94 | 108 | 75-120 | 9 | 0-20 | |
| 1,1,1-Trichloroethane | ND | 50.00 | 46.63 | 93 | 51.88 | 104 | 65-130 | 11 | 0-20 | |
| 1,1,2-Trichloroethane | ND | 50.00 | 49.58 | 99 | 53.41 | 107 | 75-125 | 7 | 0-20 | |
| Trichloroethene | ND | 50.00 | 48.24 | 96 | 52.85 | 106 | 70-125 | 9 | 0-20 | |
| Trichlorofluoromethane | ND | 50.00 | 46.87 | 94 | 52.04 | 104 | 60-145 | 10 | 0-20 | |
| 1,2,4-Trimethylbenzene | ND | 50.00 | 47.88 | 96 | 52.03 | 104 | 75-130 | 8 | 0-20 | |
| 1,3,5-Trimethylbenzene | ND | 50.00 | 47.61 | 95 | 52.52 | 105 | 75-130 | 10 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1107-3** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Vinyl Chloride | 1.356 | 50.00 | 48.03 | 93 | 53.48 | 104 | 50-145 | 11 | 0-20 | |
| p/m-Xylene | ND | 100.0 | 92.36 | 92 | 102.4 | 102 | 75-130 | 10 | 0-20 | |
| o-Xylene | ND | 50.00 | 48.20 | 96 | 53.26 | 107 | 80-120 | 10 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | ND | 50.00 | 43.79 | 88 | 48.73 | 97 | 65-125 | 11 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | ND | 250.0 | 254.8 | 102 | 306.4 | 123 | 46-154 | 18 | 0-35 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: 12/18/12
Work Order No: 12-12-1198
Preparation: EPA 5030C
Method: EPA 8260B

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1194-9** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 50.00 | 50.40 | 101 | 49.75 | 99 | 80-120 | 1 | 0-20 | |
| Bromodichloromethane | ND | 50.00 | 52.17 | 104 | 51.62 | 103 | 75-120 | 1 | 0-20 | |
| Bromoform | ND | 50.00 | 50.68 | 101 | 51.73 | 103 | 70-130 | 2 | 0-20 | |
| 2-Butanone | ND | 50.00 | 46.66 | 93 | 46.13 | 92 | 30-150 | 1 | 0-20 | |
| Carbon Disulfide | ND | 50.00 | 46.86 | 94 | 47.37 | 95 | 35-160 | 1 | 0-20 | |
| Carbon Tetrachloride | ND | 50.00 | 46.68 | 93 | 47.86 | 96 | 65-140 | 2 | 0-20 | |
| Chlorobenzene | ND | 50.00 | 52.66 | 105 | 54.55 | 109 | 80-120 | 4 | 0-20 | |
| Chloroethane | ND | 50.00 | 42.51 | 85 | 45.18 | 90 | 60-135 | 6 | 0-20 | |
| Chloroform | ND | 50.00 | 47.87 | 96 | 48.47 | 97 | 65-135 | 1 | 0-20 | |
| Chloromethane | ND | 50.00 | 38.98 | 78 | 40.77 | 82 | 40-125 | 4 | 0-20 | |
| Dibromochloromethane | ND | 50.00 | 52.36 | 105 | 54.11 | 108 | 60-135 | 3 | 0-20 | |
| Dichlorodifluoromethane | ND | 50.00 | 41.90 | 84 | 43.20 | 86 | 30-155 | 3 | 0-20 | |
| 1,1-Dichloroethane | ND | 50.00 | 45.42 | 91 | 46.13 | 92 | 70-135 | 2 | 0-20 | |
| 1,2-Dichloroethane | 0.5190 | 50.00 | 53.87 | 107 | 51.96 | 103 | 70-130 | 4 | 0-20 | |
| 1,1-Dichloroethene | ND | 50.00 | 42.20 | 84 | 42.67 | 85 | 70-130 | 1 | 0-20 | |
| c-1,2-Dichloroethene | ND | 50.00 | 48.18 | 96 | 49.77 | 100 | 70-125 | 3 | 0-20 | |
| t-1,2-Dichloroethene | ND | 50.00 | 45.97 | 92 | 46.54 | 93 | 60-140 | 1 | 0-20 | |
| Ethylbenzene | ND | 50.00 | 51.76 | 104 | 54.36 | 109 | 75-125 | 5 | 0-20 | |
| 2-Hexanone | ND | 50.00 | 52.19 | 104 | 54.76 | 110 | 55-130 | 5 | 0-20 | |
| Isopropylbenzene | ND | 50.00 | 51.13 | 102 | 53.37 | 107 | 75-125 | 4 | 0-20 | |
| Methylene Chloride | ND | 50.00 | 46.42 | 93 | 46.64 | 93 | 55-140 | 0 | 0-20 | |
| 4-Methyl-2-Pentanone | ND | 50.00 | 51.24 | 102 | 50.77 | 102 | 60-135 | 1 | 0-20 | |
| Tetrachloroethene | 23.22 | 50.00 | 62.67 | 79 | 64.69 | 83 | 45-150 | 3 | 0-20 | |
| Toluene | ND | 50.00 | 52.30 | 105 | 51.84 | 104 | 75-120 | 1 | 0-20 | |
| 1,1,1-Trichloroethane | ND | 50.00 | 47.04 | 94 | 48.83 | 98 | 65-130 | 4 | 0-20 | |
| 1,1,2-Trichloroethane | ND | 50.00 | 54.30 | 109 | 56.74 | 113 | 75-125 | 4 | 0-20 | |
| Trichloroethene | 5.235 | 50.00 | 56.45 | 102 | 57.20 | 104 | 70-125 | 1 | 0-20 | |
| Trichlorofluoromethane | ND | 50.00 | 44.68 | 89 | 45.47 | 91 | 60-145 | 2 | 0-20 | |
| 1,2,4-Trimethylbenzene | ND | 50.00 | 50.41 | 101 | 54.01 | 108 | 75-130 | 7 | 0-20 | |
| 1,3,5-Trimethylbenzene | ND | 50.00 | 52.56 | 105 | 55.06 | 110 | 75-130 | 5 | 0-20 | |
| Vinyl Chloride | ND | 50.00 | 43.48 | 87 | 44.59 | 89 | 50-145 | 3 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/18/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1194-9** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | ND | 100.0 | 103.0 | 103 | 107.6 | 108 | 75-130 | 4 | 0-20 | |
| o-Xylene | ND | 50.00 | 53.27 | 107 | 55.15 | 110 | 80-120 | 3 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | ND | 50.00 | 45.11 | 90 | 44.70 | 89 | 65-125 | 1 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | ND | 250.0 | 295.9 | 118 | 287.9 | 115 | 46-154 | 3 | 0-35 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1198
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-483-35** | **Aqueous** | **ICP 7300** | **12/19/12** | **12/20/12** | **121219LA3D** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 0.5000 | 0.4912 | 98 | 0.4895 | 98 | 80-120 | 0 | 0-20 | |
| Iron | 0.5000 | 0.5201 | 104 | 0.5210 | 104 | 80-120 | 0 | 0-20 | |
| Magnesium | 0.5000 | 0.5258 | 105 | 0.5320 | 106 | 80-120 | 1 | 0-20 | |
| Potassium | 5.000 | 5.040 | 101 | 4.991 | 100 | 80-120 | 1 | 0-20 | |
| Sodium | 5.000 | 5.151 | 103 | 5.173 | 103 | 80-120 | 0 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-64** | **Aqueous** | **IC 7** | **N/A** | **12/22/12** | **121221L03** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 49 | 98 | 49 | 98 | 90-110 | 0 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.4 | 96 | 2.4 | 97 | 90-110 | 0 | 0-15 | |
| Nitrate (as N) | 5.0 | 4.9 | 98 | 4.9 | 98 | 90-110 | 0 | 0-15 | |
| Sulfate | 50 | 48 | 96 | 48 | 96 | 90-110 | 0 | 0-15 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-63** | **Aqueous** | **IC 7** | **N/A** | **12/19/12** | **121219L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 49 | 98 | 50 | 101 | 90-110 | 3 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.5 | 101 | 2.5 | 101 | 90-110 | 0 | 0-15 | |
| Nitrate (as N) | 5.0 | 4.8 | 97 | 5.0 | 100 | 90-110 | 4 | 0-15 | |
| Sulfate | 50 | 48 | 95 | 49 | 98 | 90-110 | 3 | 0-15 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-15-594-1** | **Aqueous** | **TOC 8** | **12/27/12** | **12/28/12** | **C1227TOCL1** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | 10 | 10 | 102 | 9.5 | 95 | 80-120 | 7 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 2540 C |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-577-12** | **Aqueous** | **SC 5** | **12/20/12** | **12/20/12** | **C1220TDSL1** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 100 | 100 | 100 | 95 | 95 | 80-120 | 5 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1198
Preparation: EPA 5030C
Method: EPA 8260B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-124** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 50.00 | 54.23 | 108 | 50.27 | 101 | 80-120 | 73-127 | 8 | 0-20 | |
| Bromodichloromethane | 50.00 | 55.71 | 111 | 51.97 | 104 | 75-120 | 68-128 | 7 | 0-20 | |
| Bromoform | 50.00 | 50.88 | 102 | 47.94 | 96 | 70-130 | 60-140 | 6 | 0-20 | |
| 2-Butanone | 50.00 | 56.99 | 114 | 54.49 | 109 | 30-150 | 10-170 | 4 | 0-20 | |
| Carbon Disulfide | 50.00 | 50.06 | 100 | 46.54 | 93 | 35-160 | 14-181 | 7 | 0-20 | |
| Carbon Tetrachloride | 50.00 | 53.64 | 107 | 50.98 | 102 | 65-140 | 52-152 | 5 | 0-20 | |
| Chlorobenzene | 50.00 | 55.38 | 111 | 51.51 | 103 | 80-120 | 73-127 | 7 | 0-20 | |
| Chloroethane | 50.00 | 55.48 | 111 | 51.05 | 102 | 60-135 | 48-148 | 8 | 0-20 | |
| Chloroform | 50.00 | 56.76 | 114 | 52.59 | 105 | 65-135 | 53-147 | 8 | 0-20 | |
| Chloromethane | 50.00 | 47.13 | 94 | 45.09 | 90 | 40-125 | 26-139 | 4 | 0-20 | |
| Dibromochloromethane | 50.00 | 55.19 | 110 | 50.84 | 102 | 60-135 | 48-148 | 8 | 0-20 | |
| Dichlorodifluoromethane | 50.00 | 54.44 | 109 | 50.67 | 101 | 30-155 | 9-176 | 7 | 0-20 | |
| 1,1-Dichloroethane | 50.00 | 54.73 | 109 | 51.37 | 103 | 70-135 | 59-146 | 6 | 0-20 | |
| 1,2-Dichloroethane | 50.00 | 55.73 | 111 | 51.68 | 103 | 70-130 | 60-140 | 8 | 0-20 | |
| 1,1-Dichloroethene | 50.00 | 46.11 | 92 | 43.34 | 87 | 70-130 | 60-140 | 6 | 0-20 | |
| c-1,2-Dichloroethene | 50.00 | 57.01 | 114 | 52.80 | 106 | 70-125 | 61-134 | 8 | 0-20 | |
| t-1,2-Dichloroethene | 50.00 | 54.89 | 110 | 50.98 | 102 | 60-140 | 47-153 | 7 | 0-20 | |
| Ethylbenzene | 50.00 | 55.21 | 110 | 50.94 | 102 | 75-125 | 67-133 | 8 | 0-20 | |
| 2-Hexanone | 50.00 | 55.15 | 110 | 55.04 | 110 | 55-130 | 42-142 | 0 | 0-20 | |
| Isopropylbenzene | 50.00 | 54.78 | 110 | 50.99 | 102 | 75-125 | 67-133 | 7 | 0-20 | |
| Methylene Chloride | 50.00 | 54.06 | 108 | 49.82 | 100 | 55-140 | 41-154 | 8 | 0-20 | |
| 4-Methyl-2-Pentanone | 50.00 | 57.09 | 114 | 54.58 | 109 | 60-135 | 48-148 | 4 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 50.00 | 53.34 | 107 | 48.71 | 97 | 80-130 | 72-138 | 9 | 0-20 | |
| Tetrachloroethene | 50.00 | 53.50 | 107 | 51.54 | 103 | 45-150 | 28-168 | 4 | 0-20 | |
| Toluene | 50.00 | 55.98 | 112 | 52.47 | 105 | 75-120 | 68-128 | 6 | 0-20 | |
| 1,1,1-Trichloroethane | 50.00 | 54.22 | 108 | 51.06 | 102 | 65-130 | 54-141 | 6 | 0-20 | |
| 1,1,2-Trichloroethane | 50.00 | 57.41 | 115 | 52.56 | 105 | 75-125 | 67-133 | 9 | 0-20 | |
| Trichloroethene | 50.00 | 54.82 | 110 | 52.16 | 104 | 70-125 | 61-134 | 5 | 0-20 | |
| Trichlorofluoromethane | 50.00 | 53.21 | 106 | 50.05 | 100 | 60-145 | 46-159 | 6 | 0-20 | |
| 1,2,4-Trimethylbenzene | 50.00 | 54.44 | 109 | 51.43 | 103 | 75-130 | 66-139 | 6 | 0-20 | |
| 1,3,5-Trimethylbenzene | 50.00 | 54.46 | 109 | 50.62 | 101 | 75-130 | 66-139 | 7 | 0-20 | |
| Vinyl Chloride | 50.00 | 54.53 | 109 | 51.31 | 103 | 50-145 | 34-161 | 6 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-124** | **Aqueous** | **GC/MS OO** | **12/19/12** | **12/19/12** | **121219L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | 100.0 | 106.3 | 106 | 98.96 | 99 | 75-130 | 66-139 | 7 | 0-20 | |
| o-Xylene | 50.00 | 55.54 | 111 | 51.56 | 103 | 80-120 | 73-127 | 7 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | 50.00 | 53.12 | 106 | 48.42 | 97 | 65-125 | 55-135 | 9 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | 250.0 | 285.6 | 114 | 275.7 | 110 | 46-154 | 28-172 | 4 | 0-25 | |

Total number of LCS compounds : 36
Total number of ME compounds : 0
Total number of ME compounds allowed : 2
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1198
Preparation: EPA 5030C
Method: EPA 8260B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-127** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 50.00 | 49.57 | 99 | 49.90 | 100 | 80-120 | 73-127 | 1 | 0-20 | |
| Bromodichloromethane | 50.00 | 49.32 | 99 | 51.61 | 103 | 75-120 | 68-128 | 5 | 0-20 | |
| Bromoform | 50.00 | 50.51 | 101 | 53.19 | 106 | 70-130 | 60-140 | 5 | 0-20 | |
| 2-Butanone | 50.00 | 47.74 | 95 | 46.92 | 94 | 30-150 | 10-170 | 2 | 0-20 | |
| Carbon Disulfide | 50.00 | 44.60 | 89 | 44.91 | 90 | 35-160 | 14-181 | 1 | 0-20 | |
| Carbon Tetrachloride | 50.00 | 45.31 | 91 | 45.52 | 91 | 65-140 | 52-152 | 0 | 0-20 | |
| Chlorobenzene | 50.00 | 52.37 | 105 | 52.99 | 106 | 80-120 | 73-127 | 1 | 0-20 | |
| Chloroethane | 50.00 | 41.80 | 84 | 40.27 | 81 | 60-135 | 48-148 | 4 | 0-20 | |
| Chloroform | 50.00 | 45.75 | 91 | 45.45 | 91 | 65-135 | 53-147 | 1 | 0-20 | |
| Chloromethane | 50.00 | 40.48 | 81 | 39.04 | 78 | 40-125 | 26-139 | 4 | 0-20 | |
| Dibromochloromethane | 50.00 | 50.87 | 102 | 51.72 | 103 | 60-135 | 48-148 | 2 | 0-20 | |
| Dichlorodifluoromethane | 50.00 | 39.47 | 79 | 39.54 | 79 | 30-155 | 9-176 | 0 | 0-20 | |
| 1,1-Dichloroethane | 50.00 | 43.82 | 88 | 44.28 | 89 | 70-135 | 59-146 | 1 | 0-20 | |
| 1,2-Dichloroethane | 50.00 | 49.57 | 99 | 51.75 | 103 | 70-130 | 60-140 | 4 | 0-20 | |
| 1,1-Dichloroethene | 50.00 | 40.17 | 80 | 40.49 | 81 | 70-130 | 60-140 | 1 | 0-20 | |
| c-1,2-Dichloroethene | 50.00 | 46.57 | 93 | 47.14 | 94 | 70-125 | 61-134 | 1 | 0-20 | |
| t-1,2-Dichloroethene | 50.00 | 44.16 | 88 | 44.60 | 89 | 60-140 | 47-153 | 1 | 0-20 | |
| Ethylbenzene | 50.00 | 51.54 | 103 | 52.19 | 104 | 75-125 | 67-133 | 1 | 0-20 | |
| 2-Hexanone | 50.00 | 52.27 | 105 | 54.85 | 110 | 55-130 | 42-142 | 5 | 0-20 | |
| Isopropylbenzene | 50.00 | 50.35 | 101 | 51.67 | 103 | 75-125 | 67-133 | 3 | 0-20 | |
| Methylene Chloride | 50.00 | 43.70 | 87 | 44.18 | 88 | 55-140 | 41-154 | 1 | 0-20 | |
| 4-Methyl-2-Pentanone | 50.00 | 48.44 | 97 | 55.14 | 110 | 60-135 | 48-148 | 13 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 50.00 | 43.75 | 88 | 45.09 | 90 | 80-130 | 72-138 | 3 | 0-20 | |
| Tetrachloroethene | 50.00 | 49.84 | 100 | 49.11 | 98 | 45-150 | 28-168 | 1 | 0-20 | |
| Toluene | 50.00 | 50.23 | 100 | 52.16 | 104 | 75-120 | 68-128 | 4 | 0-20 | |
| 1,1,1-Trichloroethane | 50.00 | 46.20 | 92 | 46.05 | 92 | 65-130 | 54-141 | 0 | 0-20 | |
| 1,1,2-Trichloroethane | 50.00 | 52.14 | 104 | 53.92 | 108 | 75-125 | 67-133 | 3 | 0-20 | |
| Trichloroethene | 50.00 | 50.91 | 102 | 52.33 | 105 | 70-125 | 61-134 | 3 | 0-20 | |
| Trichlorofluoromethane | 50.00 | 41.63 | 83 | 42.48 | 85 | 60-145 | 46-159 | 2 | 0-20 | |
| 1,2,4-Trimethylbenzene | 50.00 | 51.32 | 103 | 53.80 | 108 | 75-130 | 66-139 | 5 | 0-20 | |
| 1,3,5-Trimethylbenzene | 50.00 | 52.41 | 105 | 52.78 | 106 | 75-130 | 66-139 | 1 | 0-20 | |
| Vinyl Chloride | 50.00 | 41.67 | 83 | 42.09 | 84 | 50-145 | 34-161 | 1 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1198 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-127** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | 100.0 | 103.6 | 104 | 101.7 | 102 | 75-130 | 66-139 | 2 | 0-20 | |
| o-Xylene | 50.00 | 52.68 | 105 | 53.74 | 107 | 80-120 | 73-127 | 2 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | 50.00 | 43.05 | 86 | 43.81 | 88 | 65-125 | 55-135 | 2 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | 250.0 | 237.0 | 95 | 257.8 | 103 | 46-154 | 28-172 | 8 | 0-25 | |

Total number of LCS compounds : 36
Total number of ME compounds : 0
Total number of ME compounds allowed : 2
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order Number: 12-12-1198

| Qualifier | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

Return to Contents

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 12-17-12
PAGE: 1 OF 1

LABORATORY CLIENT: CKY
ADDRESS: 302 W 5th St, San Pedro, CA 90731
TEL: (310) 519-4000 | FAX: (310) 519-4029 | E-MAIL: howard@ckyinc.com

CLIENT PROJECT NAME / NUMBER: Seal Beach NWS
PROJECT CONTACT: Howard Wittenberg
SAMPLER(S): (SIGNATURE)
COELT LOG CODE
P.O. NO.:
LAB USE ONLY: 12-12-1198
COOLER RECEIPT Temp = °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ Standard

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ COELT EDF ☐

SPECIAL INSTRUCTIONS

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | CEL SAMPLE # | SAMPLING DATE | SAMPLING TIME | MATRIX | NO. OF CONT. | VOCs | Anions | Cations | TDS | TOC | Level III |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB-2 | | 12-18-12 | 0700 | GW | 2 | X | | | | | X |
| 2 | MW-40-27 | | | 0914 | GW | 7 | X | X | X | X | X | X |
| 3 | MW-40-34 | | | 1012 | GW | 7 | X | X | X | X | X | X |
| 4 | DUP-2 | | | – | GW | 7 | X | X | X | X | X | X |
| 5 | MW-40-37 | | | 1109 | GW | 7 | X | X | X | X | X | X |
| 6 | MW-40-36 | | | 1222 | GW | 7 | X | X | X | X | X | X |
| 7 | EB-1 | | | 1250 | GW | 7 | X | X | X | X | X | X |
| 8 | IW-2 | | | 1323 | GW | 7 | X | X | X | X | X | X |
| 9 | IW-4 | | | 1429 | GW | 7 | X | X | X | X | X | X |
| | | | | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | Nicole (SC) | 12-18-12 | 16:30 |
| Nicole (SC) | CEL | 12/18/12 | 17:20 |
| | Dannyle CEL | 12/18/12 | 18:30 |

Revision: 072611



Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-12-1198

# SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: CKY

DATE: 12/18/12

**TEMPERATURE:** Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.7 °C - 0.3 °C (CF) = 3.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: DCE

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: DCE

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: MS

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☑ | ☐ | ☐ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☑ | ☐ | ☐ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☑VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☑1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:** 121210A **Labeled/Checked by:** MS

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WK

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WK



Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-12-1198

# SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: CKY

DATE: 12/18/12

**TEMPERATURE:** Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.5 °C - 0.3 °C (CF) = 3.2 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: DEE

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: DEE

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: MS

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☑ | ☐ | ☐ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☑ | ☐ | ☐ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☑VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☑1PB ☐1PB**na** ☐500PB ☑250PB ☑250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** MS

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WC

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WC



Return to Contents

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 12-12-1317

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AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** CKY, Incorporated

**Client Project Name:** Seal Beach NWS

**Attention:** Howard Wittenberg
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Approved for release on 01/9/2013 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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# Contents

Client Project Name: Seal Beach NWS
Work Order Number: 12-12-1317


1 Client Sample Data . . . . . 3
1.1 EPA 6010B ICP Metals (Aqueous) . . . . . 3
1.2 EPA 300.0 / 9056 Anions (Aqueous) . . . . . 4
1.3 SM 5310 B Total Organic Carbon (Aqueous) . . . . . 6
1.4 SM 2540 C Total Dissolved Solids (Aqueous) . . . . . 7
1.5 EPA 8260B Volatile Organics (Aqueous) . . . . . 8

2 Quality Control Sample Data . . . . . 18
2.1 MS/MSD and/or Duplicate . . . . . 18
2.2 LCS/LCSD . . . . . 24

3 Glossary of Terms and Qualifiers . . . . . 31

4 Chain of Custody/Sample Receipt Form . . . . . 32

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1317 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1317-2 Client ID: EB-2 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 09:15**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 0.0781 | J | 0.0118 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:44 | 121220LA4D |
| Iron | <0.0200 | U | 0.0101 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:44 | 121220LA4D |
| Magnesium | 0.0199 | J | 0.00336 | 0.0100 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:44 | 121220LA4D |
| Potassium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:44 | 121220LA4D |
| Sodium | 0.237 | J | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:44 | 121220LA4D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1317-3 Client ID: IW-10 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 09:39**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 108 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:45 | 121220LA4D |
| Iron | 30.4 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:45 | 121220LA4D |
| Magnesium | 42.8 | | 0.00336 | 0.0100 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:45 | 121220LA4D |
| Potassium | 1.93 | | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:45 | 121220LA4D |
| Sodium | 264 | | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:45 | 121220LA4D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1317-4 Client ID: IW-18 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 10:42**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 175 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:46 | 121220LA4D |
| Iron | 5.04 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:46 | 121220LA4D |
| Magnesium | 51.2 | | 0.00336 | 0.0100 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:46 | 121220LA4D |
| Potassium | 3.21 | | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:46 | 121220LA4D |
| Sodium | 514 | | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:46 | 121220LA4D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-483-36 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/26/12 18:15**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | <0.0200 | U | 0.0118 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |
| Iron | <0.0200 | U | 0.0101 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |
| Magnesium | <0.0100 | U | 0.00336 | 0.0100 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |
| Potassium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |
| Sodium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1317 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1317-2 Client ID: EB-2 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 09:15**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/20/12 12:03 | 121220L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/20/12 12:03 | 121220L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/20/12 12:03 | 121220L01 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/20/12 12:03 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1317-3 Client ID: IW-10 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 09:39**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 100 | | 0.26 | 1.0 | 4.0 | 2 | | 12/26/12 16:34 | 121226L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/20/12 12:24 | 121220L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/20/12 12:24 | 121220L01 |
| Sulfate | 49 | | 0.13 | 0.50 | 2.0 | 1 | | 12/20/12 12:24 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1317-4 Client ID: IW-18 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 10:42**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 450 | | 1.3 | 5.0 | 20 | 10 | | 12/26/12 16:52 | 121226L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/20/12 12:42 | 121220L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/20/12 12:42 | 121220L01 |
| Sulfate | 210 | | 1.3 | 5.0 | 20 | 10 | | 12/26/12 16:52 | 121226L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-547-65 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 14:35**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/20/12 04:52 | 121220L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/20/12 04:52 | 121220L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/20/12 04:52 | 121220L01 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/20/12 04:52 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 099-14-547 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**099-14-547-66 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 14:41**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/26/12 09:51 | 121226L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/26/12 09:51 | 121226L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/26/12 09:51 | 121226L01 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/26/12 09:51 | 121226L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1317 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1317-2 Client ID: EB-2 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 09:15**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <2.0 | U | 0.24 | 2.0 | 5.0 | 1 | 01/07/13 00:00 | 01/07/13 22:49 | D0107TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1317-3 Client ID: IW-10 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 09:39**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 01/07/13 00:00 | 01/07/13 22:49 | D0107TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1317-4 Client ID: IW-18 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 10:42**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <20 | U | 2.4 | 20 | 50 | 10 | 01/07/13 00:00 | 01/07/13 22:49 | D0107TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-15-594-2 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 01/09/13 13:53**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <2.0 | U | 0.24 | 2.0 | 5.0 | 1 | 01/07/13 00:00 | 01/07/13 22:49 | D0107TOCL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1317 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1317-2 Client ID: EB-2 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 09:15**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | <1.6 | U | 0.82 | 1.6 | 2.0 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1317-3 Client ID: IW-10 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 09:39**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 1140 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1317-4 Client ID: IW-18 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 10:42**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 2050 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-577-12 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 11:30**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | <1.6 | U | 0.82 | 1.6 | 2.0 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1317<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1317-1 Client ID: TB-3 Matrix: Aqueous Units: ug/L Sampled: 12/19/12 07:00**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 18:36 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1317<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *99%* | *12/20/12 00:00* | *12/20/12 18:36* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *89%* | *12/20/12 00:00* | *12/20/12 18:36* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *91%* | *12/20/12 00:00* | *12/20/12 18:36* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *95%* | *12/20/12 00:00* | *12/20/12 18:36* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1317<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1317-2 Client ID: EB-2 Matrix: Aqueous Units: ug/L Sampled: 12/19/12 09:15**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 19:04 | 121220L01 |

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1317<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *100%* | *12/20/12 00:00* | *12/20/12 19:04* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *91%* | *12/20/12 00:00* | *12/20/12 19:04* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *93%* | *12/20/12 00:00* | *12/20/12 19:04* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *97%* | *12/20/12 00:00* | *12/20/12 19:04* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1317<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1317-3 Client ID: IW-10 Matrix: Aqueous Units: ug/L Sampled: 12/19/12 09:39**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| c-1,2-Dichloroethene | 1.3 | | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Trichloroethene | 0.84 | J | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Vinyl Chloride | 0.90 | J | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 19:32 | 121220L01 |

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1317<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *98%* | *12/20/12 00:00* | *12/20/12 19:32* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/20/12 00:00* | *12/20/12 19:32* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *95%* | *12/20/12 00:00* | *12/20/12 19:32* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *97%* | *12/20/12 00:00* | *12/20/12 19:32* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1317<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1317-4 Client ID: IW-18 Matrix: Aqueous Units: ug/L Sampled: 12/19/12 10:42**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Carbon Disulfide | 0.57 | J | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| c-1,2-Dichloroethene | 0.73 | J | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| t-1,2-Dichloroethene | 0.46 | J | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Trichloroethene | 1.8 | | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Vinyl Chloride | 0.95 | J | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 20:01 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1317<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *99%* | *12/20/12 00:00* | *12/20/12 20:01* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *87%* | *12/20/12 00:00* | *12/20/12 20:01* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *90%* | *12/20/12 00:00* | *12/20/12 20:01* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *101%* | *12/20/12 00:00* | *12/20/12 20:01* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**099-14-479-127 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 12/21/12 09:49**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

| | | | | | |
|---|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *101%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *93%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *100%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **IW-10** | **Aqueous** | **ICP 7300** | **12/20/12** | **12/21/12** | **121220SA4** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 108.2 | 0.5000 | 107.9 | 4X | 108.9 | 4X | 80-120 | 4X | 0-20 | Q |
| Iron | 30.42 | 0.5000 | 30.93 | 4X | 31.02 | 4X | 80-120 | 4X | 0-20 | Q |
| Magnesium | 42.84 | 0.5000 | 43.90 | 4X | 43.42 | 4X | 80-120 | 4X | 0-20 | Q |
| Potassium | 1.928 | 5.000 | 7.343 | 108 | 7.408 | 110 | 80-120 | 1 | 0-20 | |
| Sodium | 264.1 | 5.000 | 265.6 | 4X | 268.8 | 4X | 80-120 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - PDS / PDSD

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS / PDSD Batch Number |
|---|---|---|---|---|---|
| **IW-10** | **Aqueous** | **ICP 7300** | **12/20/12** | **12/21/12** | **121220SA4** |

Analysis Comment: * - Analyzed 12/26/2012 4:38:00 PM

| Parameter | SAMPLE CONC | SPIKE ADDED | PDS CONC | PDS %REC | PDSD CONC | PDSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 108.2 | 0.5000 | 110.4 | 4X | 110.7 | 4X | 75-125 | 4X | 0-20 | Q |
| Iron | 30.42 | 0.5000 | 32.27 | 4X | 31.98 | 4X | 75-125 | 4X | 0-20 | Q |
| Magnesium | 42.84 | 0.5000 | 44.44 | 4X | 44.20 | 4X | 75-125 | 4X | 0-20 | Q |
| Potassium | 1.928 | 5.000 | 7.434 | 110 | 7.381 | 109 | 75-125 | 1 | 0-20 | |
| Sodium | 264.1 | 5.000 | 278.8 | 4X | 274.6 | 4X | 75-125 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **IW-18** | **Aqueous** | **IC 7** | **N/A** | **12/20/12** | **121220S01A** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 540 | 5000 | 5600 | 101 | 5600 | 101 | 80-120 | 0 | 0-20 | |
| Nitrite (as N) | ND | 250 | 260 | 104 | 260 | 103 | 80-120 | 1 | 0-20 | |
| Nitrate (as N) | ND | 500 | 500 | 101 | 500 | 101 | 80-120 | 0 | 0-20 | |
| Sulfate | 270 | 5000 | 5300 | 100 | 5200 | 99 | 80-120 | 0 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **IW-18** | **Aqueous** | **TOC 8** | **01/07/13** | **01/07/13** | **D0107TOCS1** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | ND | 100 | 85 | 85 | 93 | 93 | 70-130 | 9 | 0-25 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: 12/19/12
Work Order No: 12-12-1317
Preparation: EPA 5030C
Method: EPA 8260B

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1194-9** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 50.00 | 50.40 | 101 | 49.75 | 99 | 80-120 | 1 | 0-20 | |
| Bromodichloromethane | ND | 50.00 | 52.17 | 104 | 51.62 | 103 | 75-120 | 1 | 0-20 | |
| Bromoform | ND | 50.00 | 50.68 | 101 | 51.73 | 103 | 70-130 | 2 | 0-20 | |
| 2-Butanone | ND | 50.00 | 46.66 | 93 | 46.13 | 92 | 30-150 | 1 | 0-20 | |
| Carbon Disulfide | ND | 50.00 | 46.86 | 94 | 47.37 | 95 | 35-160 | 1 | 0-20 | |
| Carbon Tetrachloride | ND | 50.00 | 46.68 | 93 | 47.86 | 96 | 65-140 | 2 | 0-20 | |
| Chlorobenzene | ND | 50.00 | 52.66 | 105 | 54.55 | 109 | 80-120 | 4 | 0-20 | |
| Chloroethane | ND | 50.00 | 42.51 | 85 | 45.18 | 90 | 60-135 | 6 | 0-20 | |
| Chloroform | ND | 50.00 | 47.87 | 96 | 48.47 | 97 | 65-135 | 1 | 0-20 | |
| Chloromethane | ND | 50.00 | 38.98 | 78 | 40.77 | 82 | 40-125 | 4 | 0-20 | |
| Dibromochloromethane | ND | 50.00 | 52.36 | 105 | 54.11 | 108 | 60-135 | 3 | 0-20 | |
| Dichlorodifluoromethane | ND | 50.00 | 41.90 | 84 | 43.20 | 86 | 30-155 | 3 | 0-20 | |
| 1,1-Dichloroethane | ND | 50.00 | 45.42 | 91 | 46.13 | 92 | 70-135 | 2 | 0-20 | |
| 1,2-Dichloroethane | 0.5190 | 50.00 | 53.87 | 107 | 51.96 | 103 | 70-130 | 4 | 0-20 | |
| 1,1-Dichloroethene | ND | 50.00 | 42.20 | 84 | 42.67 | 85 | 70-130 | 1 | 0-20 | |
| c-1,2-Dichloroethene | ND | 50.00 | 48.18 | 96 | 49.77 | 100 | 70-125 | 3 | 0-20 | |
| t-1,2-Dichloroethene | ND | 50.00 | 45.97 | 92 | 46.54 | 93 | 60-140 | 1 | 0-20 | |
| Ethylbenzene | ND | 50.00 | 51.76 | 104 | 54.36 | 109 | 75-125 | 5 | 0-20 | |
| 2-Hexanone | ND | 50.00 | 52.19 | 104 | 54.76 | 110 | 55-130 | 5 | 0-20 | |
| Isopropylbenzene | ND | 50.00 | 51.13 | 102 | 53.37 | 107 | 75-125 | 4 | 0-20 | |
| Methylene Chloride | ND | 50.00 | 46.42 | 93 | 46.64 | 93 | 55-140 | 0 | 0-20 | |
| 4-Methyl-2-Pentanone | ND | 50.00 | 51.24 | 102 | 50.77 | 102 | 60-135 | 1 | 0-20 | |
| Tetrachloroethene | 23.22 | 50.00 | 62.67 | 79 | 64.69 | 83 | 45-150 | 3 | 0-20 | |
| Toluene | ND | 50.00 | 52.30 | 105 | 51.84 | 104 | 75-120 | 1 | 0-20 | |
| 1,1,1-Trichloroethane | ND | 50.00 | 47.04 | 94 | 48.83 | 98 | 65-130 | 4 | 0-20 | |
| 1,1,2-Trichloroethane | ND | 50.00 | 54.30 | 109 | 56.74 | 113 | 75-125 | 4 | 0-20 | |
| Trichloroethene | 5.235 | 50.00 | 56.45 | 102 | 57.20 | 104 | 70-125 | 1 | 0-20 | |
| Trichlorofluoromethane | ND | 50.00 | 44.68 | 89 | 45.47 | 91 | 60-145 | 2 | 0-20 | |
| 1,2,4-Trimethylbenzene | ND | 50.00 | 50.41 | 101 | 54.01 | 108 | 75-130 | 7 | 0-20 | |
| 1,3,5-Trimethylbenzene | ND | 50.00 | 52.56 | 105 | 55.06 | 110 | 75-130 | 5 | 0-20 | |
| Vinyl Chloride | ND | 50.00 | 43.48 | 87 | 44.59 | 89 | 50-145 | 3 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1194-9** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | ND | 100.0 | 103.0 | 103 | 107.6 | 108 | 75-130 | 4 | 0-20 | |
| o-Xylene | ND | 50.00 | 53.27 | 107 | 55.15 | 110 | 80-120 | 3 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | ND | 50.00 | 45.11 | 90 | 44.70 | 89 | 65-125 | 1 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | ND | 250.0 | 295.9 | 118 | 287.9 | 115 | 46-154 | 3 | 0-35 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1317
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-483-36** | **Aqueous** | **ICP 7300** | **12/20/12** | **12/21/12** | **121220LA4D** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 0.5000 | 0.5139 | 103 | 0.5063 | 101 | 80-120 | 1 | 0-20 | |
| Iron | 0.5000 | 0.5176 | 104 | 0.5179 | 104 | 80-120 | 0 | 0-20 | |
| Magnesium | 0.5000 | 0.5056 | 101 | 0.5073 | 101 | 80-120 | 0 | 0-20 | |
| Potassium | 5.000 | 4.939 | 99 | 4.945 | 99 | 80-120 | 0 | 0-20 | |
| Sodium | 5.000 | 5.240 | 105 | 5.235 | 105 | 80-120 | 0 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-66** | **Aqueous** | **IC 7** | **N/A** | **12/26/12** | **121226L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 51 | 102 | 51 | 102 | 90-110 | 0 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.5 | 99 | 2.5 | 99 | 90-110 | 1 | 0-15 | |
| Nitrate (as N) | 5.0 | 4.9 | 98 | 4.9 | 98 | 90-110 | 1 | 0-15 | |
| Sulfate | 50 | 50 | 100 | 50 | 100 | 90-110 | 0 | 0-15 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-65** | **Aqueous** | **IC 7** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 49 | 98 | 49 | 98 | 90-110 | 0 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.6 | 102 | 2.6 | 103 | 90-110 | 1 | 0-15 | |
| Nitrate (as N) | 5.0 | 4.9 | 97 | 4.8 | 97 | 90-110 | 0 | 0-15 | |
| Sulfate | 50 | 48 | 96 | 48 | 96 | 90-110 | 0 | 0-15 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-15-594-2** | **Aqueous** | **TOC 8** | **01/07/13** | **01/07/13** | **D0107TOCL1** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | 10 | 10 | 104 | 10 | 105 | 80-120 | 1 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 2540 C |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-577-12** | **Aqueous** | **SC 5** | **12/20/12** | **12/20/12** | **C1220TDSL1** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 100 | 100 | 100 | 95 | 95 | 80-120 | 5 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1317
Preparation: EPA 5030C
Method: EPA 8260B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-127** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 50.00 | 49.57 | 99 | 49.90 | 100 | 80-120 | 73-127 | 1 | 0-20 | |
| Bromodichloromethane | 50.00 | 49.32 | 99 | 51.61 | 103 | 75-120 | 68-128 | 5 | 0-20 | |
| Bromoform | 50.00 | 50.51 | 101 | 53.19 | 106 | 70-130 | 60-140 | 5 | 0-20 | |
| 2-Butanone | 50.00 | 47.74 | 95 | 46.92 | 94 | 30-150 | 10-170 | 2 | 0-20 | |
| Carbon Disulfide | 50.00 | 44.60 | 89 | 44.91 | 90 | 35-160 | 14-181 | 1 | 0-20 | |
| Carbon Tetrachloride | 50.00 | 45.31 | 91 | 45.52 | 91 | 65-140 | 52-152 | 0 | 0-20 | |
| Chlorobenzene | 50.00 | 52.37 | 105 | 52.99 | 106 | 80-120 | 73-127 | 1 | 0-20 | |
| Chloroethane | 50.00 | 41.80 | 84 | 40.27 | 81 | 60-135 | 48-148 | 4 | 0-20 | |
| Chloroform | 50.00 | 45.75 | 91 | 45.45 | 91 | 65-135 | 53-147 | 1 | 0-20 | |
| Chloromethane | 50.00 | 40.48 | 81 | 39.04 | 78 | 40-125 | 26-139 | 4 | 0-20 | |
| Dibromochloromethane | 50.00 | 50.87 | 102 | 51.72 | 103 | 60-135 | 48-148 | 2 | 0-20 | |
| Dichlorodifluoromethane | 50.00 | 39.47 | 79 | 39.54 | 79 | 30-155 | 9-176 | 0 | 0-20 | |
| 1,1-Dichloroethane | 50.00 | 43.82 | 88 | 44.28 | 89 | 70-135 | 59-146 | 1 | 0-20 | |
| 1,2-Dichloroethane | 50.00 | 49.57 | 99 | 51.75 | 103 | 70-130 | 60-140 | 4 | 0-20 | |
| 1,1-Dichloroethene | 50.00 | 40.17 | 80 | 40.49 | 81 | 70-130 | 60-140 | 1 | 0-20 | |
| c-1,2-Dichloroethene | 50.00 | 46.57 | 93 | 47.14 | 94 | 70-125 | 61-134 | 1 | 0-20 | |
| t-1,2-Dichloroethene | 50.00 | 44.16 | 88 | 44.60 | 89 | 60-140 | 47-153 | 1 | 0-20 | |
| Ethylbenzene | 50.00 | 51.54 | 103 | 52.19 | 104 | 75-125 | 67-133 | 1 | 0-20 | |
| 2-Hexanone | 50.00 | 52.27 | 105 | 54.85 | 110 | 55-130 | 42-142 | 5 | 0-20 | |
| Isopropylbenzene | 50.00 | 50.35 | 101 | 51.67 | 103 | 75-125 | 67-133 | 3 | 0-20 | |
| Methylene Chloride | 50.00 | 43.70 | 87 | 44.18 | 88 | 55-140 | 41-154 | 1 | 0-20 | |
| 4-Methyl-2-Pentanone | 50.00 | 48.44 | 97 | 55.14 | 110 | 60-135 | 48-148 | 13 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 50.00 | 43.75 | 88 | 45.09 | 90 | 80-130 | 72-138 | 3 | 0-20 | |
| Tetrachloroethene | 50.00 | 49.84 | 100 | 49.11 | 98 | 45-150 | 28-168 | 1 | 0-20 | |
| Toluene | 50.00 | 50.23 | 100 | 52.16 | 104 | 75-120 | 68-128 | 4 | 0-20 | |
| 1,1,1-Trichloroethane | 50.00 | 46.20 | 92 | 46.05 | 92 | 65-130 | 54-141 | 0 | 0-20 | |
| 1,1,2-Trichloroethane | 50.00 | 52.14 | 104 | 53.92 | 108 | 75-125 | 67-133 | 3 | 0-20 | |
| Trichloroethene | 50.00 | 50.91 | 102 | 52.33 | 105 | 70-125 | 61-134 | 3 | 0-20 | |
| Trichlorofluoromethane | 50.00 | 41.63 | 83 | 42.48 | 85 | 60-145 | 46-159 | 2 | 0-20 | |
| 1,2,4-Trimethylbenzene | 50.00 | 51.32 | 103 | 53.80 | 108 | 75-130 | 66-139 | 5 | 0-20 | |
| 1,3,5-Trimethylbenzene | 50.00 | 52.41 | 105 | 52.78 | 106 | 75-130 | 66-139 | 1 | 0-20 | |
| Vinyl Chloride | 50.00 | 41.67 | 83 | 42.09 | 84 | 50-145 | 34-161 | 1 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1317 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-127** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | 100.0 | 103.6 | 104 | 101.7 | 102 | 75-130 | 66-139 | 2 | 0-20 | |
| o-Xylene | 50.00 | 52.68 | 105 | 53.74 | 107 | 80-120 | 73-127 | 2 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | 50.00 | 43.05 | 86 | 43.81 | 88 | 65-125 | 55-135 | 2 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | 250.0 | 237.0 | 95 | 257.8 | 103 | 46-154 | 28-172 | 8 | 0-25 | |

Total number of LCS compounds : 36
Total number of ME compounds : 0
Total number of ME compounds allowed : 2
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order Number: 12-12-1317

| Qualifier | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

Return to Contents

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 12/19/12
PAGE: 1 OF 1

LABORATORY CLIENT: CKY
ADDRESS: 302 W 5th St, San Pedro, CA 90731
TEL: (310) 519-4000 FAX: (310) 519-4029 E-MAIL: howard@ckyinc.com

CLIENT PROJECT NAME / NUMBER: Seal Beach NWS
PROJECT CONTACT: Howard Wittenberg
SAMPLER(S): (SIGNATURE)
COELT LOG CODE
P.O. NO.:
LAB USE ONLY: 12-12-1317
COOLER RECEIPT Temp = °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ Standard
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ COELT EDF ☐
SPECIAL INSTRUCTIONS

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | CEL SAMPLE # | SAMPLING DATE | SAMPLING TIME | MATRIX | NO. OF CONT. | VOCs | Anions | Cations | TDS | TOC | Level III |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TB-3 | | 12-19-12 | 0700 | GW | 2 | X | | | | | X |
| 2 | EB-2 | | ↓ | 0915 | GW | 7 | X | X | X | X | X | X |
| 3 | IW-10 | | ↓ | 0939 | GW | 7 | X | X | X | X | X | X |
| 4 | IW-18 | | ↓ | 1042 | GW | 7 | X | X | X | X | X | X |
| | | | | | | | | | | | | X |
| | | | | | | | | | | | | X |
| | | | | | | | | | | | | X |
| | | | | | | | | | | | | X |
| | | | | | | | | | | | | X |
| | | | | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | MA (SC) | 12/19/12 | 1300 |
| MA (SC) | CEL | 12/19/12 | 1655 |
| | Dannyle CEL | 12/19/12 | 19:00 |

Revision: 072611



Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-12-1317

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: CKY

DATE: 12/19/12

**TEMPERATURE:** Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.1 °C - 0.3 °C (CF) = 2.8 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: AP

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: AP

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☑ | ☐ | ☐ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☑ | ☐ | ☐ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☑VOAh (3) ☐VOA**na₂** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na₂** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☑1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na₂** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:** 120926A **Labeled/Checked by:** BW/HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** LHS

**Preservative:** **h:** HCL **n:** $HNO_3$ **na₂:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TS



Return to Contents

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 12-12-1318

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** CKY, Incorporated

**Client Project Name:** Seal Beach NWS

**Attention:** Howard Wittenberg
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Approved for release on 01/3/2013 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

Accredited in accordance with nelac

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: Seal Beach NWS
Work Order Number: 12-12-1318


1 Client Sample Data . . . . . 3
1.1 EPA 6010B ICP Metals (Aqueous) . . . . . 3
1.2 EPA 300.0 / 9056 Anions (Aqueous) . . . . . 4
1.3 SM 5310 B Total Organic Carbon (Aqueous) . . . . . 5
1.4 SM 2540 C Total Dissolved Solids (Aqueous) . . . . . 6
1.5 EPA 8260B Volatile Organics (Aqueous) . . . . . 7

2 Quality Control Sample Data . . . . . 11
2.1 MS/MSD and/or Duplicate . . . . . 11
2.2 LCS/LCSD . . . . . 17

3 Glossary of Terms and Qualifiers . . . . . 24

4 Chain of Custody/Sample Receipt Form . . . . . 25

Calscience Environmental Laboratories, Inc.

The difference is service

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1318 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1318-1 Client ID: MW-40-31 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 08:39**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 141 | | 0.0118 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:48 | 121220LA4D |
| Iron | 21.6 | | 0.0101 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:48 | 121220LA4D |
| Magnesium | 60.1 | | 0.00336 | 0.0100 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:48 | 121220LA4D |
| Potassium | 7.58 | | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:48 | 121220LA4D |
| Sodium | 960 | | 1.03 | 2.50 | 5.00 | 10 | 12/20/12 00:00 | 12/21/12 15:48 | 121220LA4D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-483-36 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/26/12 18:15**

**EPA 6010B ICP Metals Extraction: EPA 3010A Total**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | <0.0200 | U | 0.0118 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |
| Iron | <0.0200 | U | 0.0101 | 0.0200 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |
| Magnesium | <0.0100 | U | 0.00336 | 0.0100 | 0.100 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |
| Potassium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |
| Sodium | <0.250 | U | 0.103 | 0.250 | 0.500 | 1 | 12/20/12 00:00 | 12/21/12 15:27 | 121220LA4D |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1318 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1318-1 Client ID: MW-40-31 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 08:39**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 580 | | 1.3 | 5.0 | 20 | 10 | | 12/26/12 17:26 | 121226L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/20/12 13:17 | 121220L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/20/12 13:17 | 121220L01 |
| Sulfate | 37 | | 0.13 | 0.50 | 2.0 | 1 | | 12/20/12 13:17 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-547-65 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 14:35**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/20/12 04:52 | 121220L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/20/12 04:52 | 121220L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/20/12 04:52 | 121220L01 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/20/12 04:52 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-547-66 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 14:41**

**EPA 300.0 / 9056 Anions Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/26/12 09:51 | 121226L01 |
| Nitrite (as N) | <0.050 | U | 0.021 | 0.050 | 0.20 | 1 | | 12/26/12 09:51 | 121226L01 |
| Nitrate (as N) | <0.050 | U | 0.021 | 0.050 | 0.10 | 1 | | 12/26/12 09:51 | 121226L01 |
| Sulfate | <0.50 | U | 0.13 | 0.50 | 2.0 | 1 | | 12/26/12 09:51 | 121226L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1318 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1318-1 Client ID: MW-40-31 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 08:39**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <50 | U | 2.4 | 20 | 50 | 10 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

Comment- Reporting limits elevated due to matrix interferences.

**099-15-594-1 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 17:27**

**SM 5310 B Total Organic Carbon Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | <5.0 | U | 0.24 | 2.0 | 5.0 | 1 | 12/27/12 00:00 | 12/28/12 01:18 | C1227TOCL1 |

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1318 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1318-1 Client ID: MW-40-31 Matrix: Aqueous Units: mg/L Sampled: 12/19/12 08:39**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 3130 | | 0.820 | 1.60 | 2.00 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

**099-14-577-12 Client ID: Method Blank Matrix: Aqueous Units: mg/L Sampled: 12/28/12 11:30**

**SM 2540 C Total Dissolved Solids Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | <2.0 | U | 0.82 | 1.6 | 2.0 | 1 | 12/20/12 00:00 | 12/20/12 15:00 | C1220TDSL1 |

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1318<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1318-1 Client ID: MW-40-31 Matrix: Aqueous Units: ug/L Sampled: 12/19/12 08:39**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 20:57 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1318<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

| | | | | |
|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *99%* | *12/20/12 00:00* | *12/20/12 20:57* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *89%* | *12/20/12 00:00* | *12/20/12 20:57* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *95%* | *12/20/12 00:00* | *12/20/12 20:57* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *96%* | *12/20/12 00:00* | *12/20/12 20:57* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**099-14-479-127 Client ID: Method Blank Matrix: Aqueous Units: ug/L Sampled: 12/21/12 09:49**

**EPA 8260B Volatile Organics Extraction: EPA 5030C**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.21 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Bromoform | <1.0 | U | 0.50 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 2-Butanone | <5.0 | U | 2.2 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Carbon Disulfide | <0.50 | U | 0.41 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.17 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chloroethane | <5.0 | U | 2.3 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chloroform | <0.50 | U | 0.46 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Chloromethane | <5.0 | U | 1.8 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.46 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.43 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| c-1,2-Dichloroethene | <0.50 | U | 0.48 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| t-1,2-Dichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.14 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 2-Hexanone | <5.0 | U | 2.1 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Isopropylbenzene | <1.0 | U | 0.58 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Methylene Chloride | <1.0 | U | 0.64 | 1.0 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 4.4 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.45 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Tetrachloroethene | <0.50 | U | 0.39 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Toluene | <0.50 | U | 0.24 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.30 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.38 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Trichloroethene | <0.50 | U | 0.37 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.50 | U | 0.36 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.28 | 0.50 | 5.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.30 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.30 | 1.0 | 10 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| o-Xylene | <0.50 | U | 0.23 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.31 | 0.50 | 1.0 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |
| Tert-Butyl Alcohol (TBA) | <5.0 | U | 4.6 | 5.0 | 25 | 1 | 12/20/12 00:00 | 12/20/12 12:29 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-479<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

| | | | | | |
|---|---|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (75-120%)* | *101%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |
| *Surr: Dibromofluoromethane (85-115%)* | *90%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (70-120%)* | *93%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |
| *Surr: Toluene-d8 (85-120%)* | *100%* | *12/20/12 00:00* | *12/20/12 12:29* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1317-3** | **Aqueous** | **ICP 7300** | **12/20/12** | **12/21/12** | **121220SA4** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 108.2 | 0.5000 | 107.9 | 4X | 108.9 | 4X | 80-120 | 4X | 0-20 | Q |
| Iron | 30.42 | 0.5000 | 30.93 | 4X | 31.02 | 4X | 80-120 | 4X | 0-20 | Q |
| Magnesium | 42.84 | 0.5000 | 43.90 | 4X | 43.42 | 4X | 80-120 | 4X | 0-20 | Q |
| Potassium | 1.928 | 5.000 | 7.343 | 108 | 7.408 | 110 | 80-120 | 1 | 0-20 | |
| Sodium | 264.1 | 5.000 | 265.6 | 4X | 268.8 | 4X | 80-120 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 3010A Total |
| | | Method: | EPA 6010B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS / PDSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1317-3** | **Aqueous** | **ICP 7300** | **12/20/12** | **12/21/12** | **121220SA4** |

Analysis Comment: * - Analyzed 12/26/2012 4:38:00 PM

| Parameter | SAMPLE CONC | SPIKE ADDED | PDS CONC | PDS %REC | PDSD CONC | PDSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcium | 108.2 | 0.5000 | 110.4 | 4X | 110.7 | 4X | 75-125 | 4X | 0-20 | Q |
| Iron | 30.42 | 0.5000 | 32.27 | 4X | 31.98 | 4X | 75-125 | 4X | 0-20 | Q |
| Magnesium | 42.84 | 0.5000 | 44.44 | 4X | 44.20 | 4X | 75-125 | 4X | 0-20 | Q |
| Potassium | 1.928 | 5.000 | 7.434 | 110 | 7.381 | 109 | 75-125 | 1 | 0-20 | |
| Sodium | 264.1 | 5.000 | 278.8 | 4X | 274.6 | 4X | 75-125 | 4X | 0-20 | Q |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1317-4** | **Aqueous** | **IC 7** | **N/A** | **12/20/12** | **121220S01A** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 540 | 5000 | 5600 | 101 | 5600 | 101 | 80-120 | 0 | 0-20 | |
| Nitrite (as N) | ND | 250 | 260 | 104 | 260 | 103 | 80-120 | 1 | 0-20 | |
| Nitrate (as N) | ND | 500 | 500 | 101 | 500 | 101 | 80-120 | 0 | 0-20 | |
| Sulfate | 270 | 5000 | 5300 | 100 | 5200 | 99 | 80-120 | 0 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1197-1** | **Aqueous** | **TOC 8** | **12/27/12** | **12/28/12** | **C1227TOCS1** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | ND | 10 | 89 | 887 | 90 | 904 | 70-130 | 2 | 0-25 | 3 |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: 12/19/12
Work Order No: 12-12-1318
Preparation: EPA 5030C
Method: EPA 8260B

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1194-9** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 50.00 | 50.40 | 101 | 49.75 | 99 | 80-120 | 1 | 0-20 | |
| Bromodichloromethane | ND | 50.00 | 52.17 | 104 | 51.62 | 103 | 75-120 | 1 | 0-20 | |
| Bromoform | ND | 50.00 | 50.68 | 101 | 51.73 | 103 | 70-130 | 2 | 0-20 | |
| 2-Butanone | ND | 50.00 | 46.66 | 93 | 46.13 | 92 | 30-150 | 1 | 0-20 | |
| Carbon Disulfide | ND | 50.00 | 46.86 | 94 | 47.37 | 95 | 35-160 | 1 | 0-20 | |
| Carbon Tetrachloride | ND | 50.00 | 46.68 | 93 | 47.86 | 96 | 65-140 | 2 | 0-20 | |
| Chlorobenzene | ND | 50.00 | 52.66 | 105 | 54.55 | 109 | 80-120 | 4 | 0-20 | |
| Chloroethane | ND | 50.00 | 42.51 | 85 | 45.18 | 90 | 60-135 | 6 | 0-20 | |
| Chloroform | ND | 50.00 | 47.87 | 96 | 48.47 | 97 | 65-135 | 1 | 0-20 | |
| Chloromethane | ND | 50.00 | 38.98 | 78 | 40.77 | 82 | 40-125 | 4 | 0-20 | |
| Dibromochloromethane | ND | 50.00 | 52.36 | 105 | 54.11 | 108 | 60-135 | 3 | 0-20 | |
| Dichlorodifluoromethane | ND | 50.00 | 41.90 | 84 | 43.20 | 86 | 30-155 | 3 | 0-20 | |
| 1,1-Dichloroethane | ND | 50.00 | 45.42 | 91 | 46.13 | 92 | 70-135 | 2 | 0-20 | |
| 1,2-Dichloroethane | 0.5190 | 50.00 | 53.87 | 107 | 51.96 | 103 | 70-130 | 4 | 0-20 | |
| 1,1-Dichloroethene | ND | 50.00 | 42.20 | 84 | 42.67 | 85 | 70-130 | 1 | 0-20 | |
| c-1,2-Dichloroethene | ND | 50.00 | 48.18 | 96 | 49.77 | 100 | 70-125 | 3 | 0-20 | |
| t-1,2-Dichloroethene | ND | 50.00 | 45.97 | 92 | 46.54 | 93 | 60-140 | 1 | 0-20 | |
| Ethylbenzene | ND | 50.00 | 51.76 | 104 | 54.36 | 109 | 75-125 | 5 | 0-20 | |
| 2-Hexanone | ND | 50.00 | 52.19 | 104 | 54.76 | 110 | 55-130 | 5 | 0-20 | |
| Isopropylbenzene | ND | 50.00 | 51.13 | 102 | 53.37 | 107 | 75-125 | 4 | 0-20 | |
| Methylene Chloride | ND | 50.00 | 46.42 | 93 | 46.64 | 93 | 55-140 | 0 | 0-20 | |
| 4-Methyl-2-Pentanone | ND | 50.00 | 51.24 | 102 | 50.77 | 102 | 60-135 | 1 | 0-20 | |
| Tetrachloroethene | 23.22 | 50.00 | 62.67 | 79 | 64.69 | 83 | 45-150 | 3 | 0-20 | |
| Toluene | ND | 50.00 | 52.30 | 105 | 51.84 | 104 | 75-120 | 1 | 0-20 | |
| 1,1,1-Trichloroethane | ND | 50.00 | 47.04 | 94 | 48.83 | 98 | 65-130 | 4 | 0-20 | |
| 1,1,2-Trichloroethane | ND | 50.00 | 54.30 | 109 | 56.74 | 113 | 75-125 | 4 | 0-20 | |
| Trichloroethene | 5.235 | 50.00 | 56.45 | 102 | 57.20 | 104 | 70-125 | 1 | 0-20 | |
| Trichlorofluoromethane | ND | 50.00 | 44.68 | 89 | 45.47 | 91 | 60-145 | 2 | 0-20 | |
| 1,2,4-Trimethylbenzene | ND | 50.00 | 50.41 | 101 | 54.01 | 108 | 75-130 | 7 | 0-20 | |
| 1,3,5-Trimethylbenzene | ND | 50.00 | 52.56 | 105 | 55.06 | 110 | 75-130 | 5 | 0-20 | |
| Vinyl Chloride | ND | 50.00 | 43.48 | 87 | 44.59 | 89 | 50-145 | 3 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | 12/19/12 |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-12-1194-9** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | ND | 100.0 | 103.0 | 103 | 107.6 | 108 | 75-130 | 4 | 0-20 | |
| o-Xylene | ND | 50.00 | 53.27 | 107 | 55.15 | 110 | 80-120 | 3 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | ND | 50.00 | 45.11 | 90 | 44.70 | 89 | 65-125 | 1 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | ND | 250.0 | 295.9 | 118 | 287.9 | 115 | 46-154 | 3 | 0-35 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1318
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-483-36** | **Aqueous** | **ICP 7300** | **12/20/12** | **12/21/12** | **121220LA4D** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Calcium | 0.5000 | 0.5139 | 103 | 0.5063 | 101 | 80-120 | 1 | 0-20 | |
| Iron | 0.5000 | 0.5176 | 104 | 0.5179 | 104 | 80-120 | 0 | 0-20 | |
| Magnesium | 0.5000 | 0.5056 | 101 | 0.5073 | 101 | 80-120 | 0 | 0-20 | |
| Potassium | 5.000 | 4.939 | 99 | 4.945 | 99 | 80-120 | 0 | 0-20 | |
| Sodium | 5.000 | 5.240 | 105 | 5.235 | 105 | 80-120 | 0 | 0-20 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-66** | **Aqueous** | **IC 7** | **N/A** | **12/26/12** | **121226L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 51 | 102 | 51 | 102 | 90-110 | 0 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.5 | 99 | 2.5 | 99 | 90-110 | 1 | 0-15 | |
| Nitrate (as N) | 5.0 | 4.9 | 98 | 4.9 | 98 | 90-110 | 1 | 0-15 | |
| Sulfate | 50 | 50 | 100 | 50 | 100 | 90-110 | 0 | 0-15 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA 300.0 / 9056 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-547-65** | **Aqueous** | **IC 7** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Chloride | 50 | 49 | 98 | 49 | 98 | 90-110 | 0 | 0-15 | |
| Nitrite (as N) | 2.5 | 2.6 | 102 | 2.6 | 103 | 90-110 | 1 | 0-15 | |
| Nitrate (as N) | 5.0 | 4.9 | 97 | 4.8 | 97 | 90-110 | 0 | 0-15 | |
| Sulfate | 50 | 48 | 96 | 48 | 96 | 90-110 | 0 | 0-15 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 5310 B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-15-594-1** | **Aqueous** | **TOC 8** | **12/27/12** | **12/28/12** | **C1227TOCL1** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Carbon, Total Organic | 10 | 10 | 102 | 9.5 | 95 | 80-120 | 7 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | SM 2540 C |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-577-12** | **Aqueous** | **SC 5** | **12/20/12** | **12/20/12** | **C1220TDSL1** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Solids, Total Dissolved | 100 | 100 | 100 | 95 | 95 | 80-120 | 5 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1318
Preparation: EPA 5030C
Method: EPA 8260B

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-127** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 50.00 | 49.57 | 99 | 49.90 | 100 | 80-120 | 73-127 | 1 | 0-20 | |
| Bromodichloromethane | 50.00 | 49.32 | 99 | 51.61 | 103 | 75-120 | 68-128 | 5 | 0-20 | |
| Bromoform | 50.00 | 50.51 | 101 | 53.19 | 106 | 70-130 | 60-140 | 5 | 0-20 | |
| 2-Butanone | 50.00 | 47.74 | 95 | 46.92 | 94 | 30-150 | 10-170 | 2 | 0-20 | |
| Carbon Disulfide | 50.00 | 44.60 | 89 | 44.91 | 90 | 35-160 | 14-181 | 1 | 0-20 | |
| Carbon Tetrachloride | 50.00 | 45.31 | 91 | 45.52 | 91 | 65-140 | 52-152 | 0 | 0-20 | |
| Chlorobenzene | 50.00 | 52.37 | 105 | 52.99 | 106 | 80-120 | 73-127 | 1 | 0-20 | |
| Chloroethane | 50.00 | 41.80 | 84 | 40.27 | 81 | 60-135 | 48-148 | 4 | 0-20 | |
| Chloroform | 50.00 | 45.75 | 91 | 45.45 | 91 | 65-135 | 53-147 | 1 | 0-20 | |
| Chloromethane | 50.00 | 40.48 | 81 | 39.04 | 78 | 40-125 | 26-139 | 4 | 0-20 | |
| Dibromochloromethane | 50.00 | 50.87 | 102 | 51.72 | 103 | 60-135 | 48-148 | 2 | 0-20 | |
| Dichlorodifluoromethane | 50.00 | 39.47 | 79 | 39.54 | 79 | 30-155 | 9-176 | 0 | 0-20 | |
| 1,1-Dichloroethane | 50.00 | 43.82 | 88 | 44.28 | 89 | 70-135 | 59-146 | 1 | 0-20 | |
| 1,2-Dichloroethane | 50.00 | 49.57 | 99 | 51.75 | 103 | 70-130 | 60-140 | 4 | 0-20 | |
| 1,1-Dichloroethene | 50.00 | 40.17 | 80 | 40.49 | 81 | 70-130 | 60-140 | 1 | 0-20 | |
| c-1,2-Dichloroethene | 50.00 | 46.57 | 93 | 47.14 | 94 | 70-125 | 61-134 | 1 | 0-20 | |
| t-1,2-Dichloroethene | 50.00 | 44.16 | 88 | 44.60 | 89 | 60-140 | 47-153 | 1 | 0-20 | |
| Ethylbenzene | 50.00 | 51.54 | 103 | 52.19 | 104 | 75-125 | 67-133 | 1 | 0-20 | |
| 2-Hexanone | 50.00 | 52.27 | 105 | 54.85 | 110 | 55-130 | 42-142 | 5 | 0-20 | |
| Isopropylbenzene | 50.00 | 50.35 | 101 | 51.67 | 103 | 75-125 | 67-133 | 3 | 0-20 | |
| Methylene Chloride | 50.00 | 43.70 | 87 | 44.18 | 88 | 55-140 | 41-154 | 1 | 0-20 | |
| 4-Methyl-2-Pentanone | 50.00 | 48.44 | 97 | 55.14 | 110 | 60-135 | 48-148 | 13 | 0-20 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 50.00 | 43.75 | 88 | 45.09 | 90 | 80-130 | 72-138 | 3 | 0-20 | |
| Tetrachloroethene | 50.00 | 49.84 | 100 | 49.11 | 98 | 45-150 | 28-168 | 1 | 0-20 | |
| Toluene | 50.00 | 50.23 | 100 | 52.16 | 104 | 75-120 | 68-128 | 4 | 0-20 | |
| 1,1,1-Trichloroethane | 50.00 | 46.20 | 92 | 46.05 | 92 | 65-130 | 54-141 | 0 | 0-20 | |
| 1,1,2-Trichloroethane | 50.00 | 52.14 | 104 | 53.92 | 108 | 75-125 | 67-133 | 3 | 0-20 | |
| Trichloroethene | 50.00 | 50.91 | 102 | 52.33 | 105 | 70-125 | 61-134 | 3 | 0-20 | |
| Trichlorofluoromethane | 50.00 | 41.63 | 83 | 42.48 | 85 | 60-145 | 46-159 | 2 | 0-20 | |
| 1,2,4-Trimethylbenzene | 50.00 | 51.32 | 103 | 53.80 | 108 | 75-130 | 66-139 | 5 | 0-20 | |
| 1,3,5-Trimethylbenzene | 50.00 | 52.41 | 105 | 52.78 | 106 | 75-130 | 66-139 | 1 | 0-20 | |
| Vinyl Chloride | 50.00 | 41.67 | 83 | 42.09 | 84 | 50-145 | 34-161 | 1 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1318 |
| San Pedro, CA 90731-2738 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-479-127** | **Aqueous** | **GC/MS FFF** | **12/20/12** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| p/m-Xylene | 100.0 | 103.6 | 104 | 101.7 | 102 | 75-130 | 66-139 | 2 | 0-20 | |
| o-Xylene | 50.00 | 52.68 | 105 | 53.74 | 107 | 80-120 | 73-127 | 2 | 0-20 | |
| Methyl-t-Butyl Ether (MTBE) | 50.00 | 43.05 | 86 | 43.81 | 88 | 65-125 | 55-135 | 2 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | 250.0 | 237.0 | 95 | 257.8 | 103 | 46-154 | 28-172 | 8 | 0-25 | |

Total number of LCS compounds : 36
Total number of ME compounds : 0
Total number of ME compounds allowed : 2
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order Number: 12-12-1318

| Qualifier | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

Return to Contents

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 12.19.12
PAGE: 1 OF 1

LABORATORY CLIENT: CKY
ADDRESS: 302 W 5th St, San Pedro, CA 90731
TEL: (310) 519-4000 | FAX: (310) 519-4029 | E-MAIL: howard@ckyinc.com

CLIENT PROJECT NAME / NUMBER: Seal Beach NWS
PROJECT CONTACT: Howard Wittenberg
SAMPLER(S): (SIGNATURE)
COELT LOG CODE
P.O. NO.:
LAB ACCOUNT: 12-12-1318
COOLER RECEIPT Temp = °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ Standard

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ COELT EDF ☐

SPECIAL INSTRUCTIONS

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | CEL SAMPLE # | SAMPLING DATE | SAMPLING TIME | MATRIX | NO. OF CONT. | VOCs | Anions | Cations | TDS | TOC | Level IV |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MW-4031 | | 12.19.12 | 0839 | Gw | 7 | X | X | X | X | X | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date | Time |
|---|---|---|---|
| | MA (SC) | 12.19.12 | 1300 |
| MA (SC) | | 12/19/12 | 1655 |
| | Dannyle CEL | 12/19/12 | 19:00 |

Revision: 072611



Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-12-1318

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: CKY

DATE: 12/19/12

**TEMPERATURE:** Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 3.1 °C - 0.3 °C (CF) = 2.8 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: AP

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: AP

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☑ | ☐ | ☐ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☑VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☑250CGB**s** ☑1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** LBC HH

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** YL 12/19

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** _____



Return to Contents

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 12-12-1323

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AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** CKY, Incorporated

**Client Project Name:** Seal Beach NWS

**Attention:** Howard Wittenberg
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Approved for release on 12/28/2012 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

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# Contents

Client Project Name: Seal Beach NWS
Work Order Number: 12-12-1323


1 Client Sample Data . . . . . 3
1.1 ASTM D-1946 Fixed Gases (Air) . . . . . 3
1.2 ASTM D-1946 (M) Fixed Gases (H2 and/or He) (Air) . . . . . 5
1.3 EPA TO-15 Full List (Air) . . . . . 7

2 Quality Control Sample Data . . . . . 29
2.1 LCS/LCSD . . . . . 29

3 Summa Canister Vacuum Summary . . . . . 37

4 Glossary of Terms and Qualifiers . . . . . 38

5 Chain of Custody/Sample Receipt Form . . . . . 39

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1323 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-1 Client ID: VM-40-04 Matrix: Air Units: %v Sampled: 12/18/12 10:00**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | <0.255 | U | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 15:55 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-2 Client ID: MW-40-32 Matrix: Air Units: %v Sampled: 12/18/12 10:52**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 5.28 | | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 16:36 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-3 Client ID: VM-40-06 Matrix: Air Units: %v Sampled: 12/18/12 11:40**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 44.5 | | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 17:11 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-4 Client ID: IW-03 Matrix: Air Units: %v Sampled: 12/18/12 12:31**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 41.8 | | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 17:50 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-5 Client ID: VM-40-02 Matrix: Air Units: %v Sampled: 12/18/12 14:38**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 39.1 | | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 18:30 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-6 Client ID: DUP-1 Matrix: Air Units: %v Sampled: 12/18/12 00:00**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 39.0 | | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 19:02 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1323 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-7 Client ID: VM-40-03 Matrix: Air Units: %v Sampled: 12/19/12 08:40**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 54.8 | | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 19:50 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-8 Client ID: IW-01 Matrix: Air Units: %v Sampled: 12/19/12 09:38**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 11.2 | | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 20:27 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-9 Client ID: FB-1 Matrix: Air Units: %v Sampled: 12/19/12 08:47**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | <0.255 | U | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 21:03 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-535-6 Client ID: Method Blank Matrix: Air Units: %v Sampled: 12/27/12 12:47**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | <0.255 | U | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 14:10 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1323 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-1 Client ID: VM-40-04 Matrix: Air Units: %v Sampled: 12/18/12 10:00**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 12:00 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-2 Client ID: MW-40-32 Matrix: Air Units: %v Sampled: 12/18/12 10:52**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 12:23 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-3 Client ID: VM-40-06 Matrix: Air Units: %v Sampled: 12/18/12 11:40**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 12:47 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-4 Client ID: IW-03 Matrix: Air Units: %v Sampled: 12/18/12 12:31**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 13:32 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-5 Client ID: VM-40-02 Matrix: Air Units: %v Sampled: 12/18/12 14:38**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 14:16 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-6 Client ID: DUP-1 Matrix: Air Units: %v Sampled: 12/18/12 00:00**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 14:37 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1323 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-7 Client ID: VM-40-03 Matrix: Air Units: %v Sampled: 12/19/12 08:40**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 14:59 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-8 Client ID: IW-01 Matrix: Air Units: %v Sampled: 12/19/12 09:38**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 15:26 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**12-12-1323-9 Client ID: FB-1 Matrix: Air Units: %v Sampled: 12/19/12 08:47**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 15:49 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-15-156-1 Client ID: Method Blank Matrix: Air Units: %v Sampled: 12/20/12 11:10**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 10:37 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-1 Client ID: VM-40-04 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 10:00**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.20 | U | 0.052 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| Benzyl Chloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Bromoform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Bromomethane | <0.20 | U | 0.14 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 2-Butanone | <0.50 | U | 0.18 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Carbon Disulfide | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/20/12 23:16 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Chlorobenzene | <0.10 | U | 0.061 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| Chloroethane | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/20/12 23:16 | 121220L01 |
| Chloroform | 3.0 | | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Chloromethane | <0.50 | U | 0.24 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Dichlorodifluoromethane | 0.45 | J | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.20 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,2-Dibromoethane | <0.10 | U | 0.041 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,2-Dichlorobenzene | <0.10 | U | 0.053 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,2-Dichloroethane | <0.20 | U | 0.056 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,2-Dichloropropane | <0.20 | U | 0.19 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,3-Dichlorobenzene | <0.10 | U | 0.052 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,4-Dichlorobenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| c-1,2-Dichloroethene | <0.20 | U | 0.087 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| t-1,2-Dichloroethene | <0.20 | U | 0.13 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Ethanol | <2.0 | U | 0.87 | 2.0 | 5.0 | 1 | | 12/20/12 23:16 | 121220L01 |
| Ethylbenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 4-Ethyltoluene | <0.20 | U | 0.057 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| Hexachloro-1,3-Butadiene | <0.10 | U | 0.078 | 0.10 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| 2-Hexanone | <0.50 | U | 0.44 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Methylene Chloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| 4-Methyl-2-Pentanone | <0.50 | U | 0.37 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| o-Xylene | <0.10 | U | 0.055 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| p/m-Xylene | <0.20 | U | 0.15 | 0.20 | 1.0 | 1 | | 12/20/12 23:16 | 121220L01 |
| Styrene | <0.20 | U | 0.064 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| Tetrachloroethene | 67 | | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-1 Client ID: VM-40-04 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 10:00**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <0.20 | U | 0.080 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| Trichloroethene | 0.76 | | 0.046 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| Trichlorofluoromethane | 0.23 | J | 0.17 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.20 | U | 0.10 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,1,1-Trichloroethane | <0.10 | U | 0.079 | 0.10 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,1,2-Trichloroethane | <0.20 | U | 0.18 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.20 | U | 0.051 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.20 | U | 0.070 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.20 | U | 0.12 | 0.20 | 0.50 | 1 | | 12/20/12 23:16 | 121220L01 |
| Vinyl Acetate | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.22 | 0.50 | 1.2 | 1 | | 12/20/12 23:16 | 121220L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *103%* | *12/20/12 23:16* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *99%* | *12/20/12 23:16* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *102%* | *12/20/12 23:16* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-2 Client ID: MW-40-32 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 10:52**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.28 | J | 0.052 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| Benzyl Chloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Bromoform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Bromomethane | <0.20 | U | 0.14 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 2-Butanone | <0.50 | U | 0.18 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Carbon Disulfide | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/21/12 05:31 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Chlorobenzene | <0.10 | U | 0.061 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| Chloroethane | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/21/12 05:31 | 121220L01 |
| Chloroform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Chloromethane | <0.50 | U | 0.24 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.20 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,2-Dibromoethane | <0.10 | U | 0.041 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,2-Dichlorobenzene | <0.10 | U | 0.053 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,2-Dichloroethane | <0.20 | U | 0.056 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,2-Dichloropropane | <0.20 | U | 0.19 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,3-Dichlorobenzene | <0.10 | U | 0.052 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,4-Dichlorobenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| c-1,2-Dichloroethene | 14 | | 0.087 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| t-1,2-Dichloroethene | 1.0 | | 0.13 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Ethanol | <2.0 | U | 0.87 | 2.0 | 5.0 | 1 | | 12/21/12 05:31 | 121220L01 |
| Ethylbenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 4-Ethyltoluene | <0.20 | U | 0.057 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| Hexachloro-1,3-Butadiene | <0.10 | U | 0.078 | 0.10 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| 2-Hexanone | <0.50 | U | 0.44 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Methylene Chloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| 4-Methyl-2-Pentanone | <0.50 | U | 0.37 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| o-Xylene | 0.15 | J | 0.055 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| p/m-Xylene | 0.21 | J | 0.15 | 0.20 | 1.0 | 1 | | 12/21/12 05:31 | 121220L01 |
| Styrene | <0.20 | U | 0.064 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| Tetrachloroethene | 12 | | 0.067 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-2 Client ID: MW-40-32 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 10:52**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | 0.16 | J | 0.080 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| Trichloroethene | 5.7 | | 0.046 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| Trichlorofluoromethane | <0.50 | U | 0.17 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.20 | U | 0.10 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,1,1-Trichloroethane | <0.10 | U | 0.079 | 0.10 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,1,2-Trichloroethane | <0.20 | U | 0.18 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.20 | U | 0.051 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,2,4-Trimethylbenzene | 0.17 | J | 0.070 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.20 | U | 0.12 | 0.20 | 0.50 | 1 | | 12/21/12 05:31 | 121220L01 |
| Vinyl Acetate | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |
| Vinyl Chloride | 32 | | 0.22 | 0.50 | 1.2 | 1 | | 12/21/12 05:31 | 121220L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *104%* | *12/21/12 05:31* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *98%* | *12/21/12 05:31* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *102%* | *12/21/12 05:31* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-3 Client ID: VM-40-06 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 11:40**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 3.3 | | 0.13 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Benzyl Chloride | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Bromodichloromethane | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Bromoform | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Bromomethane | <0.50 | U | 0.35 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 2-Butanone | <1.2 | U | 0.46 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Carbon Disulfide | <3.1 | U | 1.6 | 3.1 | 6.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Carbon Tetrachloride | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Chlorobenzene | <0.25 | U | 0.15 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Chloroethane | 3.7 | J | 1.6 | 3.1 | 6.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Chloroform | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Chloromethane | <1.2 | U | 0.60 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Dibromochloromethane | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Dichlorodifluoromethane | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,1-Dichloroethane | 1.2 | J | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,1-Dichloroethene | 1.1 | J | 0.50 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,2-Dibromoethane | <0.25 | U | 0.10 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,2-Dichlorobenzene | <0.25 | U | 0.13 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,2-Dichloroethane | <0.50 | U | 0.14 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,2-Dichloropropane | <0.50 | U | 0.48 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,3-Dichlorobenzene | <0.25 | U | 0.13 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,4-Dichlorobenzene | <0.25 | U | 0.17 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| c-1,3-Dichloropropene | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| c-1,2-Dichloroethene | 38 | | 0.22 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| t-1,2-Dichloroethene | 19 | | 0.32 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| t-1,3-Dichloropropene | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Ethanol | 5.5 | J | 2.2 | 5.0 | 12 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Ethylbenzene | 1.0 | J | 0.17 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 4-Ethyltoluene | <0.50 | U | 0.14 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Hexachloro-1,3-Butadiene | <0.25 | U | 0.20 | 0.25 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 2-Hexanone | <1.2 | U | 1.1 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Methylene Chloride | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 4-Methyl-2-Pentanone | <1.2 | U | 0.93 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| o-Xylene | 0.34 | J | 0.14 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| p/m-Xylene | 0.86 | J | 0.38 | 0.50 | 2.5 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Styrene | <0.50 | U | 0.16 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Tetrachloroethene | 2.4 | | 0.17 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-3 Client ID: VM-40-06 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 11:40**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | 1.6 | | 0.20 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Trichloroethene | 27 | | 0.12 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Trichlorofluoromethane | <1.2 | U | 0.43 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,1,1-Trichloroethane | <0.25 | U | 0.20 | 0.25 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,1,2-Trichloroethane | <0.50 | U | 0.46 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.50 | U | 0.13 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,2,4-Trimethylbenzene | 0.30 | J | 0.18 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.50 | U | 0.31 | 0.50 | 1.2 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Vinyl Acetate | <1.2 | U | 0.62 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |
| Vinyl Chloride | 190 | | 0.56 | 1.2 | 3.1 | 2.5 | | 12/21/12 06:17 | 121220L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *105%* | *12/21/12 06:17* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *99%* | *12/21/12 06:17* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *102%* | *12/21/12 06:17* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-4 Client ID: IW-03 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 12:31**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 3.1 | | 0.21 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Benzyl Chloride | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Bromodichloromethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Bromoform | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Bromomethane | <0.80 | U | 0.55 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 2-Butanone | <2.0 | U | 0.74 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Carbon Disulfide | <5.0 | U | 2.5 | 5.0 | 10 | 4 | | 12/21/12 01:36 | 121220L01 |
| Carbon Tetrachloride | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Chlorobenzene | <0.40 | U | 0.24 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Chloroethane | <5.0 | U | 2.5 | 5.0 | 10 | 4 | | 12/21/12 01:36 | 121220L01 |
| Chloroform | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Chloromethane | <2.0 | U | 0.96 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Dibromochloromethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Dichlorodifluoromethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,1-Dichloroethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,1-Dichloroethene | <2.0 | U | 0.80 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,2-Dibromoethane | <0.40 | U | 0.17 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,2-Dichlorobenzene | <0.40 | U | 0.21 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,2-Dichloroethane | <0.80 | U | 0.22 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,2-Dichloropropane | <0.80 | U | 0.76 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,3-Dichlorobenzene | <0.40 | U | 0.21 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,4-Dichlorobenzene | <0.40 | U | 0.27 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| c-1,3-Dichloropropene | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| c-1,2-Dichloroethene | 2.3 | | 0.35 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| t-1,2-Dichloroethene | 120 | | 0.51 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| t-1,3-Dichloropropene | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Ethanol | 5.1 | J | 3.5 | 8.0 | 20 | 4 | | 12/21/12 01:36 | 121220L01 |
| Ethylbenzene | <0.40 | U | 0.27 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 4-Ethyltoluene | <0.80 | U | 0.23 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Hexachloro-1,3-Butadiene | <0.40 | U | 0.31 | 0.40 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 2-Hexanone | <2.0 | U | 1.8 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Methylene Chloride | <2.0 | U | 0.99 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 4-Methyl-2-Pentanone | <2.0 | U | 1.5 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| o-Xylene | <0.40 | U | 0.22 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| p/m-Xylene | <0.80 | U | 0.60 | 0.80 | 4.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Styrene | <0.80 | U | 0.25 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Tetrachloroethene | <0.40 | U | 0.27 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-4 Client ID: IW-03 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 12:31**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | 1.2 | J | 0.32 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Trichloroethene | 0.72 | J | 0.19 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Trichlorofluoromethane | <2.0 | U | 0.68 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.80 | U | 0.40 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,1,1-Trichloroethane | <0.40 | U | 0.32 | 0.40 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,1,2-Trichloroethane | <0.80 | U | 0.73 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.80 | U | 0.21 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.80 | U | 0.28 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.80 | U | 0.50 | 0.80 | 2.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Vinyl Acetate | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |
| Vinyl Chloride | 240 | | 0.89 | 2.0 | 5.0 | 4 | | 12/21/12 01:36 | 121220L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *111%* | *12/21/12 01:36* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *99%* | *12/21/12 01:36* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *103%* | *12/21/12 01:36* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-5 Client ID: VM-40-02 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 14:38**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 3.0 | | 0.21 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Benzyl Chloride | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Bromodichloromethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Bromoform | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Bromomethane | <0.80 | U | 0.55 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 2-Butanone | <2.0 | U | 0.74 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Carbon Disulfide | <5.0 | U | 2.5 | 5.0 | 10 | 4 | | 12/21/12 02:22 | 121220L01 |
| Carbon Tetrachloride | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Chlorobenzene | <0.40 | U | 0.24 | 0.40 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Chloroethane | <5.0 | U | 2.5 | 5.0 | 10 | 4 | | 12/21/12 02:22 | 121220L01 |
| Chloroform | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Chloromethane | <2.0 | U | 0.96 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Dibromochloromethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Dichlorodifluoromethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,1-Dichloroethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,1-Dichloroethene | 31 | | 0.80 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,2-Dibromoethane | <0.40 | U | 0.17 | 0.40 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,2-Dichlorobenzene | <0.40 | U | 0.21 | 0.40 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,2-Dichloroethane | <0.80 | U | 0.22 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,2-Dichloropropane | <0.80 | U | 0.76 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,3-Dichlorobenzene | <0.40 | U | 0.21 | 0.40 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,4-Dichlorobenzene | <0.40 | U | 0.27 | 0.40 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| c-1,3-Dichloropropene | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| c-1,2-Dichloroethene | 1000 | | 1.7 | 4.0 | 10 | 20 | | 12/21/12 07:02 | 121220L01 |
| t-1,2-Dichloroethene | 1000 | | 2.5 | 4.0 | 10 | 20 | | 12/21/12 07:02 | 121220L01 |
| t-1,3-Dichloropropene | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Ethanol | <8.0 | U | 3.5 | 8.0 | 20 | 4 | | 12/21/12 02:22 | 121220L01 |
| Ethylbenzene | <0.40 | U | 0.27 | 0.40 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 4-Ethyltoluene | <0.80 | U | 0.23 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Hexachloro-1,3-Butadiene | <0.40 | U | 0.31 | 0.40 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 2-Hexanone | <2.0 | U | 1.8 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Methylene Chloride | <2.0 | U | 0.99 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 4-Methyl-2-Pentanone | <2.0 | U | 1.5 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| o-Xylene | <0.40 | U | 0.22 | 0.40 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| p/m-Xylene | <0.80 | U | 0.60 | 0.80 | 4.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Styrene | <0.80 | U | 0.25 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Tetrachloroethene | 23 | | 0.27 | 0.40 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-5 Client ID: VM-40-02 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 14:38**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <0.80 | U | 0.32 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Trichloroethene | 720 | | 0.93 | 2.0 | 10 | 20 | | 12/21/12 07:02 | 121220L01 |
| Trichlorofluoromethane | <2.0 | U | 0.68 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.80 | U | 0.40 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,1,1-Trichloroethane | <0.40 | U | 0.32 | 0.40 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,1,2-Trichloroethane | <0.80 | U | 0.73 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,3,5-Trimethylbenzene | 0.84 | J | 0.21 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.80 | U | 0.28 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.80 | U | 0.50 | 0.80 | 2.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Vinyl Acetate | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 02:22 | 121220L01 |
| Vinyl Chloride | 1800 | | 4.4 | 10 | 25 | 20 | | 12/21/12 07:02 | 121220L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *109%* | *12/21/12 02:22* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *99%* | *12/21/12 02:22* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *100%* | *12/21/12 02:22* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-6 Client ID: DUP-1 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 00:00**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 2.6 | | 0.21 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Benzyl Chloride | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Bromodichloromethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Bromoform | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Bromomethane | <0.80 | U | 0.55 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 2-Butanone | <2.0 | U | 0.74 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Carbon Disulfide | <5.0 | U | 2.5 | 5.0 | 10 | 4 | | 12/21/12 03:08 | 121220L01 |
| Carbon Tetrachloride | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Chlorobenzene | <0.40 | U | 0.24 | 0.40 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Chloroethane | <5.0 | U | 2.5 | 5.0 | 10 | 4 | | 12/21/12 03:08 | 121220L01 |
| Chloroform | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Chloromethane | <2.0 | U | 0.96 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Dibromochloromethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Dichlorodifluoromethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,1-Dichloroethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,1-Dichloroethene | 29 | | 0.80 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,2-Dibromoethane | <0.40 | U | 0.17 | 0.40 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,2-Dichlorobenzene | <0.40 | U | 0.21 | 0.40 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,2-Dichloroethane | <0.80 | U | 0.22 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,2-Dichloropropane | <0.80 | U | 0.76 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,3-Dichlorobenzene | <0.40 | U | 0.21 | 0.40 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,4-Dichlorobenzene | <0.40 | U | 0.27 | 0.40 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| c-1,3-Dichloropropene | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| c-1,2-Dichloroethene | 840 | | 1.7 | 4.0 | 10 | 20 | | 12/21/12 21:29 | 121221L01 |
| t-1,2-Dichloroethene | 880 | | 2.5 | 4.0 | 10 | 20 | | 12/21/12 21:29 | 121221L01 |
| t-1,3-Dichloropropene | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Ethanol | <8.0 | U | 3.5 | 8.0 | 20 | 4 | | 12/21/12 03:08 | 121220L01 |
| Ethylbenzene | <0.40 | U | 0.27 | 0.40 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 4-Ethyltoluene | <0.80 | U | 0.23 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Hexachloro-1,3-Butadiene | <0.40 | U | 0.31 | 0.40 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 2-Hexanone | <2.0 | U | 1.8 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Methylene Chloride | <2.0 | U | 0.99 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 4-Methyl-2-Pentanone | <2.0 | U | 1.5 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| o-Xylene | <0.40 | U | 0.22 | 0.40 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| p/m-Xylene | <0.80 | U | 0.60 | 0.80 | 4.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Styrene | <0.80 | U | 0.25 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Tetrachloroethene | 21 | | 0.27 | 0.40 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-6 Client ID: DUP-1 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 00:00**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <0.80 | U | 0.32 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Trichloroethene | 620 | | 0.93 | 2.0 | 10 | 20 | | 12/21/12 21:29 | 121221L01 |
| Trichlorofluoromethane | <2.0 | U | 0.68 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.80 | U | 0.40 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,1,1-Trichloroethane | <0.40 | U | 0.32 | 0.40 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,1,2-Trichloroethane | <0.80 | U | 0.73 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,3,5-Trimethylbenzene | 0.92 | J | 0.21 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,2,4-Trimethylbenzene | 0.51 | J | 0.28 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.80 | U | 0.50 | 0.80 | 2.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Vinyl Acetate | <2.0 | U | 1.0 | 2.0 | 5.0 | 4 | | 12/21/12 03:08 | 121220L01 |
| Vinyl Chloride | 1500 | | 4.4 | 10 | 25 | 20 | | 12/21/12 21:29 | 121221L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *106%* | *12/21/12 03:08* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *99%* | *12/21/12 03:08* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *101%* | *12/21/12 03:08* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-7 Client ID: VM-40-03 Matrix: Air Units: ppb (v/v) Sampled: 12/19/12 08:40**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 4.0 | | 0.26 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| Benzyl Chloride | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Bromodichloromethane | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Bromoform | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Bromomethane | <1.0 | U | 0.69 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 2-Butanone | <2.5 | U | 0.92 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Carbon Disulfide | <6.2 | U | 3.1 | 6.2 | 12 | 5 | | 12/21/12 03:53 | 121220L01 |
| Carbon Tetrachloride | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Chlorobenzene | <0.50 | U | 0.31 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| Chloroethane | <6.2 | U | 3.1 | 6.2 | 12 | 5 | | 12/21/12 03:53 | 121220L01 |
| Chloroform | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Chloromethane | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Dibromochloromethane | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Dichlorodifluoromethane | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,1-Dichloroethane | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,1-Dichloroethene | 11 | | 0.99 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,2-Dibromoethane | <0.50 | U | 0.21 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,2-Dichlorobenzene | <0.50 | U | 0.27 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,2-Dichloroethane | <1.0 | U | 0.28 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,2-Dichloropropane | <1.0 | U | 0.95 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,3-Dichlorobenzene | <0.50 | U | 0.26 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,4-Dichlorobenzene | <0.50 | U | 0.34 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| c-1,3-Dichloropropene | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| c-1,2-Dichloroethene | 1200 | | 1.7 | 4.0 | 10 | 20 | | 12/21/12 22:59 | 121221L01 |
| t-1,2-Dichloroethene | 750 | | 2.5 | 4.0 | 10 | 20 | | 12/21/12 22:59 | 121221L01 |
| t-1,3-Dichloropropene | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Ethanol | <10 | U | 4.3 | 10 | 25 | 5 | | 12/21/12 03:53 | 121220L01 |
| Ethylbenzene | <0.50 | U | 0.34 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 4-Ethyltoluene | <1.0 | U | 0.28 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| Hexachloro-1,3-Butadiene | <0.50 | U | 0.39 | 0.50 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| 2-Hexanone | <2.5 | U | 2.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Methylene Chloride | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| 4-Methyl-2-Pentanone | <2.5 | U | 1.9 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| o-Xylene | <0.50 | U | 0.28 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| p/m-Xylene | <1.0 | U | 0.75 | 1.0 | 5.0 | 5 | | 12/21/12 03:53 | 121220L01 |
| Styrene | <1.0 | U | 0.32 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| Tetrachloroethene | 7.8 | | 0.33 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-7 Client ID: VM-40-03 Matrix: Air Units: ppb (v/v) Sampled: 12/19/12 08:40**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <1.0 | U | 0.40 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| Trichloroethene | 480 | | 0.23 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| Trichlorofluoromethane | <2.5 | U | 0.85 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <1.0 | U | 0.50 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,1,1-Trichloroethane | <0.50 | U | 0.39 | 0.50 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,1,2-Trichloroethane | <1.0 | U | 0.91 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,3,5-Trimethylbenzene | <1.0 | U | 0.26 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,2,4-Trimethylbenzene | <1.0 | U | 0.35 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| 1,2,4-Trichlorobenzene | <1.0 | U | 0.62 | 1.0 | 2.5 | 5 | | 12/21/12 03:53 | 121220L01 |
| Vinyl Acetate | <2.5 | U | 1.2 | 2.5 | 6.2 | 5 | | 12/21/12 03:53 | 121220L01 |
| Vinyl Chloride | 1100 | | 4.4 | 10 | 25 | 20 | | 12/21/12 22:59 | 121221L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *110%* | *12/21/12 03:53* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *100%* | *12/21/12 03:53* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *101%* | *12/21/12 03:53* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-8 Client ID: IW-01 Matrix: Air Units: ppb (v/v) Sampled: 12/19/12 09:38**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 3.0 | | 0.17 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Benzyl Chloride | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Bromodichloromethane | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Bromoform | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Bromomethane | <0.64 | U | 0.44 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 2-Butanone | <1.6 | U | 0.59 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Carbon Disulfide | <4.0 | U | 2.0 | 4.0 | 8.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Carbon Tetrachloride | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Chlorobenzene | <0.32 | U | 0.20 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Chloroethane | <4.0 | U | 2.0 | 4.0 | 8.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Chloroform | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Chloromethane | <1.6 | U | 0.77 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Dibromochloromethane | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Dichlorodifluoromethane | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,1-Dichloroethane | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,1-Dichloroethene | 4.8 | | 0.64 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,2-Dibromoethane | <0.32 | U | 0.13 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,2-Dichlorobenzene | <0.32 | U | 0.17 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,2-Dichloroethane | <0.64 | U | 0.18 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,2-Dichloropropane | <0.64 | U | 0.61 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,3-Dichlorobenzene | <0.32 | U | 0.17 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,4-Dichlorobenzene | <0.32 | U | 0.22 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| c-1,3-Dichloropropene | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| c-1,2-Dichloroethene | 330 | | 1.4 | 3.2 | 8.0 | 16 | | 12/21/12 23:44 | 121221L01 |
| t-1,2-Dichloroethene | 410 | | 2.0 | 3.2 | 8.0 | 16 | | 12/21/12 23:44 | 121221L01 |
| t-1,3-Dichloropropene | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Ethanol | <6.4 | U | 2.8 | 6.4 | 16 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Ethylbenzene | <0.32 | U | 0.22 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 4-Ethyltoluene | <0.64 | U | 0.18 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Hexachloro-1,3-Butadiene | <0.32 | U | 0.25 | 0.32 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 2-Hexanone | <1.6 | U | 1.4 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Methylene Chloride | <1.6 | U | 0.79 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 4-Methyl-2-Pentanone | <1.6 | U | 1.2 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| o-Xylene | <0.32 | U | 0.18 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| p/m-Xylene | <0.64 | U | 0.48 | 0.64 | 3.2 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Styrene | <0.64 | U | 0.20 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Tetrachloroethene | 4.7 | | 0.21 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-8 Client ID: IW-01 Matrix: Air Units: ppb (v/v) Sampled: 12/19/12 09:38**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <0.64 | U | 0.26 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Trichloroethene | 100 | | 0.15 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Trichlorofluoromethane | <1.6 | U | 0.55 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.64 | U | 0.32 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,1,1-Trichloroethane | <0.32 | U | 0.25 | 0.32 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,1,2-Trichloroethane | <0.64 | U | 0.58 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.64 | U | 0.16 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.64 | U | 0.23 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.64 | U | 0.40 | 0.64 | 1.6 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Vinyl Acetate | <1.6 | U | 0.80 | 1.6 | 4.0 | 3.2 | | 12/21/12 04:40 | 121220L01 |
| Vinyl Chloride | 940 | | 3.6 | 8.0 | 20 | 16 | | 12/21/12 23:44 | 121221L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *107%* | *12/21/12 04:40* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *102%* | *12/21/12 04:40* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *102%* | *12/21/12 04:40* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-9 Client ID: FB-1 Matrix: Air Units: ppb (v/v) Sampled: 12/19/12 08:47**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.60 | | 0.052 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| Benzyl Chloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Bromoform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Bromomethane | <0.20 | U | 0.14 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 2-Butanone | <0.50 | U | 0.18 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Carbon Disulfide | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/20/12 22:26 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Chlorobenzene | <0.10 | U | 0.061 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| Chloroethane | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/20/12 22:26 | 121220L01 |
| Chloroform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Chloromethane | 0.61 | J | 0.24 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Dichlorodifluoromethane | 0.59 | J | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.20 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,2-Dibromoethane | <0.10 | U | 0.041 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,2-Dichlorobenzene | <0.10 | U | 0.053 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,2-Dichloroethane | <0.20 | U | 0.056 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,2-Dichloropropane | <0.20 | U | 0.19 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,3-Dichlorobenzene | <0.10 | U | 0.052 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,4-Dichlorobenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| c-1,2-Dichloroethene | <0.20 | U | 0.087 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| t-1,2-Dichloroethene | <0.20 | U | 0.13 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Ethanol | 8.0 | | 0.87 | 2.0 | 5.0 | 1 | | 12/20/12 22:26 | 121220L01 |
| Ethylbenzene | 0.15 | J | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 4-Ethyltoluene | <0.20 | U | 0.057 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| Hexachloro-1,3-Butadiene | <0.10 | U | 0.078 | 0.10 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| 2-Hexanone | <0.50 | U | 0.44 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Methylene Chloride | 0.39 | B,J | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| 4-Methyl-2-Pentanone | <0.50 | U | 0.37 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| o-Xylene | 0.28 | J | 0.055 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| p/m-Xylene | 0.70 | J | 0.15 | 0.20 | 1.0 | 1 | | 12/20/12 22:26 | 121220L01 |
| Styrene | <0.20 | U | 0.064 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| Tetrachloroethene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1323<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1323-9 Client ID: FB-1 Matrix: Air Units: ppb (v/v) Sampled: 12/19/12 08:47**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | 1.2 | | 0.080 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| Trichloroethene | <0.10 | U | 0.046 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| Trichlorofluoromethane | 0.24 | J | 0.17 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.20 | U | 0.10 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,1,1-Trichloroethane | <0.10 | U | 0.079 | 0.10 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,1,2-Trichloroethane | <0.20 | U | 0.18 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.20 | U | 0.051 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,2,4-Trimethylbenzene | 0.17 | J | 0.070 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.20 | U | 0.12 | 0.20 | 0.50 | 1 | | 12/20/12 22:26 | 121220L01 |
| Vinyl Acetate | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.22 | 0.50 | 1.2 | 1 | | 12/20/12 22:26 | 121220L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *106%* | *12/20/12 22:26* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *97%* | *12/20/12 22:26* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *99%* | *12/20/12 22:26* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-523<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**099-14-523-29 Client ID: Method Blank Matrix: Air Units: ppb (v/v) Sampled: 12/27/12 14:32**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.20 | U | 0.052 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Benzyl Chloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Bromoform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Bromomethane | <0.20 | U | 0.14 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 2-Butanone | <0.50 | U | 0.18 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Carbon Disulfide | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/20/12 14:02 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Chlorobenzene | <0.10 | U | 0.061 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Chloroethane | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/20/12 14:02 | 121220L01 |
| Chloroform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Chloromethane | <0.50 | U | 0.24 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.20 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2-Dibromoethane | <0.10 | U | 0.041 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2-Dichlorobenzene | <0.10 | U | 0.053 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2-Dichloroethane | <0.20 | U | 0.056 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2-Dichloropropane | <0.20 | U | 0.19 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,3-Dichlorobenzene | <0.10 | U | 0.052 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,4-Dichlorobenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| c-1,2-Dichloroethene | <0.20 | U | 0.087 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| t-1,2-Dichloroethene | <0.20 | U | 0.13 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Ethanol | <2.0 | U | 0.87 | 2.0 | 5.0 | 1 | | 12/20/12 14:02 | 121220L01 |
| Ethylbenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 4-Ethyltoluene | <0.20 | U | 0.057 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Hexachloro-1,3-Butadiene | 0.15 | J | 0.078 | 0.10 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 2-Hexanone | <0.50 | U | 0.44 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Methylene Chloride | 0.28 | J | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 4-Methyl-2-Pentanone | <0.50 | U | 0.37 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| o-Xylene | <0.10 | U | 0.055 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| p/m-Xylene | <0.20 | U | 0.15 | 0.20 | 1.0 | 1 | | 12/20/12 14:02 | 121220L01 |
| Styrene | <0.20 | U | 0.064 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Tetrachloroethene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-523<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**099-14-523-29 Client ID: Method Blank Matrix: Air Units: ppb (v/v) Sampled: 12/27/12 14:32**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <0.20 | U | 0.080 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Trichloroethene | <0.10 | U | 0.046 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Trichlorofluoromethane | <0.50 | U | 0.17 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.20 | U | 0.10 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1,1-Trichloroethane | <0.10 | U | 0.079 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1,2-Trichloroethane | <0.20 | U | 0.18 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.20 | U | 0.051 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.20 | U | 0.070 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.20 | U | 0.12 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Vinyl Acetate | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.22 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *102%* | *12/20/12 14:02* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *100%* | *12/20/12 14:02* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *102%* | *12/20/12 14:02* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-523<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**099-14-523-30 Client ID: Method Blank Matrix: Air Units: ppb (v/v) Sampled: 12/27/12 15:27**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.20 | U | 0.052 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| Benzyl Chloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Bromodichloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Bromoform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Bromomethane | <0.20 | U | 0.14 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 2-Butanone | <0.50 | U | 0.18 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Carbon Disulfide | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/21/12 13:48 | 121221L01 |
| Carbon Tetrachloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Chlorobenzene | <0.10 | U | 0.061 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| Chloroethane | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/21/12 13:48 | 121221L01 |
| Chloroform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Chloromethane | <0.50 | U | 0.24 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.20 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,2-Dibromoethane | <0.10 | U | 0.041 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,2-Dichlorobenzene | <0.10 | U | 0.053 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,2-Dichloroethane | <0.20 | U | 0.056 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,2-Dichloropropane | <0.20 | U | 0.19 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,3-Dichlorobenzene | <0.10 | U | 0.052 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,4-Dichlorobenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| c-1,2-Dichloroethene | <0.20 | U | 0.087 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| t-1,2-Dichloroethene | <0.20 | U | 0.13 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Ethanol | <2.0 | U | 0.87 | 2.0 | 5.0 | 1 | | 12/21/12 13:48 | 121221L01 |
| Ethylbenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 4-Ethyltoluene | <0.20 | U | 0.057 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| Hexachloro-1,3-Butadiene | <0.10 | U | 0.078 | 0.10 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| 2-Hexanone | <0.50 | U | 0.44 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Methylene Chloride | 0.26 | J | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| 4-Methyl-2-Pentanone | <0.50 | U | 0.37 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| o-Xylene | <0.10 | U | 0.055 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| p/m-Xylene | <0.20 | U | 0.15 | 0.20 | 1.0 | 1 | | 12/21/12 13:48 | 121221L01 |
| Styrene | <0.20 | U | 0.064 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| Tetrachloroethene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-523<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**099-14-523-30 Client ID: Method Blank Matrix: Air Units: ppb (v/v) Sampled: 12/27/12 15:27**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <0.20 | U | 0.080 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| Trichloroethene | <0.10 | U | 0.046 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| Trichlorofluoromethane | <0.50 | U | 0.17 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.20 | U | 0.10 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,1,1-Trichloroethane | <0.10 | U | 0.079 | 0.10 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,1,2-Trichloroethane | <0.20 | U | 0.18 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,3,5-Trimethylbenzene | <0.20 | U | 0.051 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,2,4-Trimethylbenzene | <0.20 | U | 0.070 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| 1,2,4-Trichlorobenzene | <0.20 | U | 0.12 | 0.20 | 0.50 | 1 | | 12/21/12 13:48 | 121221L01 |
| Vinyl Acetate | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |
| Vinyl Chloride | <0.50 | U | 0.22 | 0.50 | 1.2 | 1 | | 12/21/12 13:48 | 121221L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *103%* | *12/21/12 13:48* | *121221L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *100%* | *12/21/12 13:48* | *121221L01* |
| *Surr: Toluene-d8 (78-156%)* | *103%* | *12/21/12 13:48* | *121221L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1323
Preparation: N/A
Method: EPA TO-15

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-523-29** | **Air** | **GC/MS YY** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | 25.00 | 22.60 | 90 | 23.30 | 93 | 50-150 | 33-167 | 3 | 0-35 | |
| Benzene | 25.00 | 23.47 | 94 | 23.60 | 94 | 60-156 | 44-172 | 1 | 0-40 | |
| Benzyl Chloride | 25.00 | 28.07 | 112 | 29.51 | 118 | 50-150 | 33-167 | 5 | 0-35 | |
| Bromodichloromethane | 25.00 | 23.48 | 94 | 23.53 | 94 | 50-150 | 33-167 | 0 | 0-35 | |
| Bromoform | 25.00 | 23.56 | 94 | 23.64 | 95 | 62-134 | 50-146 | 0 | 0-38 | |
| Bromomethane | 25.00 | 22.17 | 89 | 22.44 | 90 | 50-150 | 33-167 | 1 | 0-35 | |
| 1,3-Butadiene | 25.00 | 23.66 | 95 | 24.17 | 97 | 50-150 | 33-167 | 2 | 0-35 | |
| 2-Butanone | 25.00 | 22.91 | 92 | 23.43 | 94 | 50-150 | 33-167 | 2 | 0-35 | |
| Carbon Disulfide | 25.00 | 22.64 | 91 | 23.12 | 92 | 50-150 | 33-167 | 2 | 0-35 | |
| Carbon Tetrachloride | 25.00 | 22.92 | 92 | 23.00 | 92 | 64-154 | 49-169 | 0 | 0-32 | |
| Chlorobenzene | 25.00 | 23.35 | 93 | 23.25 | 93 | 50-150 | 33-167 | 0 | 0-35 | |
| Chloroethane | 25.00 | 22.80 | 91 | 23.22 | 93 | 50-150 | 33-167 | 2 | 0-35 | |
| Chloroform | 25.00 | 22.72 | 91 | 23.38 | 94 | 50-150 | 33-167 | 3 | 0-35 | |
| Chloromethane | 25.00 | 23.63 | 95 | 24.15 | 97 | 50-150 | 33-167 | 2 | 0-35 | |
| Cyclohexane | 25.00 | 24.12 | 96 | 24.25 | 97 | 50-150 | 33-167 | 1 | 0-35 | |
| Dibromochloromethane | 25.00 | 24.09 | 96 | 23.91 | 96 | 50-150 | 33-167 | 1 | 0-35 | |
| Dichlorodifluoromethane | 25.00 | 21.59 | 86 | 22.57 | 90 | 50-150 | 33-167 | 4 | 0-35 | |
| Diisopropyl Ether (DIPE) | 25.00 | 25.02 | 100 | 23.98 | 96 | 50-150 | 33-167 | 4 | 0-35 | |
| 1,1-Dichloroethane | 25.00 | 23.30 | 93 | 23.99 | 96 | 50-150 | 33-167 | 3 | 0-35 | |
| 1,1-Dichloroethene | 25.00 | 22.74 | 91 | 23.15 | 93 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,2-Dibromoethane | 25.00 | 23.88 | 96 | 24.28 | 97 | 54-144 | 39-159 | 2 | 0-36 | |
| Dichlorotetrafluoroethane | 25.00 | 22.17 | 89 | 22.59 | 90 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,2-Dichlorobenzene | 25.00 | 22.54 | 90 | 23.55 | 94 | 34-160 | 13-181 | 4 | 0-47 | |
| 1,2-Dichloroethane | 25.00 | 22.39 | 90 | 22.83 | 91 | 69-153 | 55-167 | 2 | 0-35 | |
| 1,2-Dichloropropane | 25.00 | 23.50 | 94 | 24.59 | 98 | 67-157 | 52-172 | 5 | 0-35 | |
| 1,3-Dichlorobenzene | 25.00 | 21.95 | 88 | 22.57 | 90 | 50-150 | 33-167 | 3 | 0-35 | |
| 1,4-Dichlorobenzene | 25.00 | 22.13 | 89 | 22.82 | 91 | 36-156 | 16-176 | 3 | 0-47 | |
| 1,4-Dioxane | 25.00 | 24.37 | 97 | 24.75 | 99 | 50-150 | 33-167 | 2 | 0-35 | |
| c-1,3-Dichloropropene | 25.00 | 25.19 | 101 | 25.41 | 102 | 61-157 | 45-173 | 1 | 0-35 | |
| c-1,2-Dichloroethene | 25.00 | 23.17 | 93 | 23.51 | 94 | 50-150 | 33-167 | 1 | 0-35 | |
| t-1,2-Dichloroethene | 25.00 | 23.56 | 94 | 23.20 | 93 | 50-150 | 33-167 | 2 | 0-35 | |
| t-1,3-Dichloropropene | 25.00 | 25.84 | 103 | 25.99 | 104 | 50-150 | 33-167 | 1 | 0-35 | |

RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 . TEL:(714) 895-5494 . FAX: (714) 894-7501

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1323
Preparation: N/A
Method: EPA TO-15

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-523-29** | **Air** | **GC/MS YY** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethanol | 100.0 | 97.24 | 97 | 100.2 | 100 | 50-150 | 33-167 | 3 | 0-35 | |
| Ethyl Acetate | 25.00 | 25.92 | 104 | 24.93 | 100 | 50-150 | 33-167 | 4 | 0-35 | |
| Ethyl-t-Butyl Ether (ETBE) | 25.00 | 25.27 | 101 | 25.86 | 103 | 50-150 | 33-167 | 2 | 0-35 | |
| Ethylbenzene | 25.00 | 24.84 | 99 | 24.47 | 98 | 52-154 | 35-171 | 2 | 0-38 | |
| 4-Ethyltoluene | 25.00 | 22.53 | 90 | 22.83 | 91 | 50-150 | 33-167 | 1 | 0-35 | |
| Heptane | 25.00 | 23.53 | 94 | 23.51 | 94 | 50-150 | 33-167 | 0 | 0-35 | |
| Hexachloro-1,3-Butadiene | 25.00 | 25.77 | 103 | 25.86 | 103 | 50-150 | 33-167 | 0 | 0-35 | |
| Hexane | 25.00 | 24.05 | 96 | 24.26 | 97 | 50-150 | 33-167 | 1 | 0-35 | |
| 2-Hexanone | 25.00 | 26.17 | 105 | 26.14 | 105 | 50-150 | 33-167 | 0 | 0-35 | |
| Methyl-t-Butyl Ether (MTBE) | 25.00 | 23.64 | 95 | 24.88 | 100 | 50-150 | 33-167 | 5 | 0-35 | |
| Methylene Chloride | 25.00 | 21.03 | 84 | 21.36 | 85 | 50-150 | 33-167 | 2 | 0-35 | |
| 4-Methyl-2-Pentanone | 25.00 | 24.21 | 97 | 24.36 | 97 | 50-150 | 33-167 | 1 | 0-35 | |
| Naphthalene | 25.00 | 29.70 | 119 | 29.89 | 120 | 40-190 | 15-215 | 1 | 0-35 | |
| o-Xylene | 25.00 | 23.75 | 95 | 23.68 | 95 | 52-148 | 36-164 | 0 | 0-38 | |
| p/m-Xylene | 50.00 | 48.07 | 96 | 48.37 | 97 | 42-156 | 23-175 | 1 | 0-41 | |
| Propene | 25.00 | 23.37 | 93 | 23.88 | 96 | 50-150 | 33-167 | 2 | 0-35 | |
| Styrene | 25.00 | 24.99 | 100 | 24.93 | 100 | 50-150 | 33-167 | 0 | 0-35 | |
| Tert-Amyl-Methyl Ether (TAME) | 25.00 | 28.52 | 114 | 27.38 | 110 | 50-150 | 33-167 | 4 | 0-35 | |
| Tert-Butyl Alcohol (TBA) | 50.00 | 50.14 | 100 | 51.20 | 102 | 50-150 | 33-167 | 2 | 0-35 | |
| Tetrachloroethene | 25.00 | 23.54 | 94 | 23.31 | 93 | 56-152 | 40-168 | 1 | 0-40 | |
| Tetrahydrofuran | 25.00 | 23.65 | 95 | 24.15 | 97 | 50-150 | 33-167 | 2 | 0-35 | |
| Toluene | 25.00 | 23.70 | 95 | 23.60 | 94 | 56-146 | 41-161 | 0 | 0-43 | |
| Trichloroethene | 25.00 | 23.30 | 93 | 23.30 | 93 | 63-159 | 47-175 | 0 | 0-34 | |
| Trichlorofluoromethane | 25.00 | 21.87 | 87 | 22.24 | 89 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 25.00 | 21.91 | 88 | 22.26 | 89 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,1,1-Trichloroethane | 25.00 | 23.36 | 93 | 23.18 | 93 | 50-150 | 33-167 | 1 | 0-35 | |
| 1,1,2-Trichloroethane | 25.00 | 24.31 | 97 | 24.23 | 97 | 65-149 | 51-163 | 0 | 0-37 | |
| Butane | 50.00 | 46.37 | 93 | 47.33 | 95 | 50-150 | 33-167 | 2 | 0-35 | |
| Methanol | 75.00 | 74.34 | 99 | 79.78 | 106 | 50-150 | 33-167 | 7 | 0-35 | |
| 1,3,5-Trimethylbenzene | 25.00 | 22.19 | 89 | 22.56 | 90 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,1,2,2-Tetrachloroethane | 25.00 | 22.92 | 92 | 23.28 | 93 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,2,4-Trimethylbenzene | 25.00 | 22.01 | 88 | 22.68 | 91 | 50-150 | 33-167 | 3 | 0-35 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1323 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA TO-15 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-523-29** | **Air** | **GC/MS YY** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 25.00 | 31.44 | 126 | 31.61 | 126 | 50-150 | 33-167 | 1 | 0-35 | |
| Vinyl Acetate | 25.00 | 23.87 | 95 | 24.97 | 100 | 50-150 | 33-167 | 5 | 0-35 | |
| Vinyl Chloride | 25.00 | 23.04 | 92 | 23.44 | 94 | 45-177 | 23-199 | 2 | 0-36 | |
| Isopropanol | 25.00 | 23.90 | 96 | 24.70 | 99 | 50-150 | 33-167 | 3 | 0-35 | |

Total number of LCS compounds : 68
Total number of ME compounds : 0
Total number of ME compounds allowed : 3
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1323
Preparation: N/A
Method: EPA TO-15

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-523-30** | **Air** | **GC/MS YY** | **N/A** | **12/21/12** | **121221L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Acetone | 25.00 | 22.65 | 91 | 23.14 | 93 | 50-150 | 33-167 | 2 | 0-35 | |
| Benzene | 25.00 | 23.09 | 92 | 23.35 | 93 | 60-156 | 44-172 | 1 | 0-40 | |
| Benzyl Chloride | 25.00 | 28.01 | 112 | 28.47 | 114 | 50-150 | 33-167 | 2 | 0-35 | |
| Bromodichloromethane | 25.00 | 24.23 | 97 | 24.28 | 97 | 50-150 | 33-167 | 0 | 0-35 | |
| Bromoform | 25.00 | 25.08 | 100 | 25.04 | 100 | 62-134 | 50-146 | 0 | 0-38 | |
| Bromomethane | 25.00 | 23.22 | 93 | 23.33 | 93 | 50-150 | 33-167 | 0 | 0-35 | |
| 1,3-Butadiene | 25.00 | 24.37 | 97 | 24.54 | 98 | 50-150 | 33-167 | 1 | 0-35 | |
| 2-Butanone | 25.00 | 22.42 | 90 | 22.78 | 91 | 50-150 | 33-167 | 2 | 0-35 | |
| Carbon Disulfide | 25.00 | 22.62 | 90 | 22.95 | 92 | 50-150 | 33-167 | 1 | 0-35 | |
| Carbon Tetrachloride | 25.00 | 24.46 | 98 | 24.28 | 97 | 64-154 | 49-169 | 1 | 0-32 | |
| Chlorobenzene | 25.00 | 23.47 | 94 | 23.54 | 94 | 50-150 | 33-167 | 0 | 0-35 | |
| Chloroethane | 25.00 | 23.52 | 94 | 23.74 | 95 | 50-150 | 33-167 | 1 | 0-35 | |
| Chloroform | 25.00 | 23.26 | 93 | 23.84 | 95 | 50-150 | 33-167 | 2 | 0-35 | |
| Chloromethane | 25.00 | 24.20 | 97 | 24.40 | 98 | 50-150 | 33-167 | 1 | 0-35 | |
| Cyclohexane | 25.00 | 23.71 | 95 | 24.01 | 96 | 50-150 | 33-167 | 1 | 0-35 | |
| Dibromochloromethane | 25.00 | 25.12 | 100 | 25.02 | 100 | 50-150 | 33-167 | 0 | 0-35 | |
| Dichlorodifluoromethane | 25.00 | 24.15 | 97 | 24.07 | 96 | 50-150 | 33-167 | 0 | 0-35 | |
| Diisopropyl Ether (DIPE) | 25.00 | 24.46 | 98 | 23.70 | 95 | 50-150 | 33-167 | 3 | 0-35 | |
| 1,1-Dichloroethane | 25.00 | 23.03 | 92 | 23.69 | 95 | 50-150 | 33-167 | 3 | 0-35 | |
| 1,1-Dichloroethene | 25.00 | 22.93 | 92 | 23.23 | 93 | 50-150 | 33-167 | 1 | 0-35 | |
| 1,2-Dibromoethane | 25.00 | 24.45 | 98 | 25.04 | 100 | 54-144 | 39-159 | 2 | 0-36 | |
| Dichlorotetrafluoroethane | 25.00 | 23.83 | 95 | 23.78 | 95 | 50-150 | 33-167 | 0 | 0-35 | |
| 1,2-Dichlorobenzene | 25.00 | 22.90 | 92 | 23.13 | 93 | 34-160 | 13-181 | 1 | 0-47 | |
| 1,2-Dichloroethane | 25.00 | 22.85 | 91 | 22.98 | 92 | 69-153 | 55-167 | 1 | 0-35 | |
| 1,2-Dichloropropane | 25.00 | 22.89 | 92 | 24.02 | 96 | 67-157 | 52-172 | 5 | 0-35 | |
| 1,3-Dichlorobenzene | 25.00 | 22.48 | 90 | 22.80 | 91 | 50-150 | 33-167 | 1 | 0-35 | |
| 1,4-Dichlorobenzene | 25.00 | 22.54 | 90 | 22.87 | 91 | 36-156 | 16-176 | 1 | 0-47 | |
| 1,4-Dioxane | 25.00 | 25.03 | 100 | 25.72 | 103 | 50-150 | 33-167 | 3 | 0-35 | |
| c-1,3-Dichloropropene | 25.00 | 25.18 | 101 | 25.45 | 102 | 61-157 | 45-173 | 1 | 0-35 | |
| c-1,2-Dichloroethene | 25.00 | 22.62 | 90 | 23.00 | 92 | 50-150 | 33-167 | 2 | 0-35 | |
| t-1,2-Dichloroethene | 25.00 | 22.99 | 92 | 23.06 | 92 | 50-150 | 33-167 | 0 | 0-35 | |
| t-1,3-Dichloropropene | 25.00 | 26.14 | 105 | 26.38 | 106 | 50-150 | 33-167 | 1 | 0-35 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1323
Preparation: N/A
Method: EPA TO-15

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-523-30** | **Air** | **GC/MS YY** | **N/A** | **12/21/12** | **121221L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Ethanol | 100.0 | 102.6 | 103 | 104.0 | 104 | 50-150 | 33-167 | 1 | 0-35 | |
| Ethyl Acetate | 25.00 | 25.07 | 100 | 24.29 | 97 | 50-150 | 33-167 | 3 | 0-35 | |
| Ethyl-t-Butyl Ether (ETBE) | 25.00 | 23.44 | 94 | 24.18 | 97 | 50-150 | 33-167 | 3 | 0-35 | |
| Ethylbenzene | 25.00 | 25.28 | 101 | 25.12 | 100 | 52-154 | 35-171 | 1 | 0-38 | |
| 4-Ethyltoluene | 25.00 | 22.90 | 92 | 23.14 | 93 | 50-150 | 33-167 | 1 | 0-35 | |
| Heptane | 25.00 | 23.28 | 93 | 23.34 | 93 | 50-150 | 33-167 | 0 | 0-35 | |
| Hexachloro-1,3-Butadiene | 25.00 | 27.48 | 110 | 27.36 | 109 | 50-150 | 33-167 | 0 | 0-35 | |
| Hexane | 25.00 | 23.55 | 94 | 23.84 | 95 | 50-150 | 33-167 | 1 | 0-35 | |
| 2-Hexanone | 25.00 | 25.65 | 103 | 25.71 | 103 | 50-150 | 33-167 | 0 | 0-35 | |
| Methyl-t-Butyl Ether (MTBE) | 25.00 | 22.29 | 89 | 23.57 | 94 | 50-150 | 33-167 | 6 | 0-35 | |
| Methylene Chloride | 25.00 | 20.61 | 82 | 20.97 | 84 | 50-150 | 33-167 | 2 | 0-35 | |
| 4-Methyl-2-Pentanone | 25.00 | 23.93 | 96 | 24.13 | 97 | 50-150 | 33-167 | 1 | 0-35 | |
| Naphthalene | 25.00 | 30.89 | 124 | 31.19 | 125 | 40-190 | 15-215 | 1 | 0-35 | |
| o-Xylene | 25.00 | 24.10 | 96 | 24.19 | 97 | 52-148 | 36-164 | 0 | 0-38 | |
| p/m-Xylene | 50.00 | 49.36 | 99 | 49.59 | 99 | 42-156 | 23-175 | 0 | 0-41 | |
| Propene | 25.00 | 23.16 | 93 | 23.54 | 94 | 50-150 | 33-167 | 2 | 0-35 | |
| Styrene | 25.00 | 24.98 | 100 | 25.16 | 101 | 50-150 | 33-167 | 1 | 0-35 | |
| Tert-Amyl-Methyl Ether (TAME) | 25.00 | 25.93 | 104 | 25.70 | 103 | 50-150 | 33-167 | 1 | 0-35 | |
| Tert-Butyl Alcohol (TBA) | 50.00 | 46.86 | 94 | 48.48 | 97 | 50-150 | 33-167 | 3 | 0-35 | |
| Tetrachloroethene | 25.00 | 23.81 | 95 | 23.71 | 95 | 56-152 | 40-168 | 0 | 0-40 | |
| Tetrahydrofuran | 25.00 | 22.94 | 92 | 23.29 | 93 | 50-150 | 33-167 | 1 | 0-35 | |
| Toluene | 25.00 | 23.53 | 94 | 23.63 | 95 | 56-146 | 41-161 | 0 | 0-43 | |
| Trichloroethene | 25.00 | 23.58 | 94 | 23.59 | 94 | 63-159 | 47-175 | 0 | 0-34 | |
| Trichlorofluoromethane | 25.00 | 22.97 | 92 | 23.10 | 92 | 50-150 | 33-167 | 1 | 0-35 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 25.00 | 22.34 | 89 | 22.49 | 90 | 50-150 | 33-167 | 1 | 0-35 | |
| 1,1,1-Trichloroethane | 25.00 | 23.81 | 95 | 23.78 | 95 | 50-150 | 33-167 | 0 | 0-35 | |
| 1,1,2-Trichloroethane | 25.00 | 25.26 | 101 | 25.26 | 101 | 65-149 | 51-163 | 0 | 0-37 | |
| Butane | 50.00 | 47.53 | 95 | 47.89 | 96 | 50-150 | 33-167 | 1 | 0-35 | |
| Methanol | 75.00 | 75.37 | 100 | 79.49 | 106 | 50-150 | 33-167 | 5 | 0-35 | |
| 1,3,5-Trimethylbenzene | 25.00 | 22.66 | 91 | 22.80 | 91 | 50-150 | 33-167 | 1 | 0-35 | |
| 1,1,2,2-Tetrachloroethane | 25.00 | 23.13 | 93 | 23.36 | 93 | 50-150 | 33-167 | 1 | 0-35 | |
| 1,2,4-Trimethylbenzene | 25.00 | 22.32 | 89 | 22.66 | 91 | 50-150 | 33-167 | 1 | 0-35 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1323 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | EPA TO-15 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-523-30** | **Air** | **GC/MS YY** | **N/A** | **12/21/12** | **121221L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 25.00 | 32.88 | 132 | 32.90 | 132 | 50-150 | 33-167 | 0 | 0-35 | |
| Vinyl Acetate | 25.00 | 23.24 | 93 | 24.15 | 97 | 50-150 | 33-167 | 4 | 0-35 | |
| Vinyl Chloride | 25.00 | 23.78 | 95 | 23.86 | 95 | 45-177 | 23-199 | 0 | 0-36 | |
| Isopropanol | 25.00 | 24.03 | 96 | 24.70 | 99 | 50-150 | 33-167 | 3 | 0-35 | |

Total number of LCS compounds : 68
Total number of ME compounds : 0
Total number of ME compounds allowed : 3
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1323 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | ASTM D-1946 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-535-6** | **Air** | **GC 34** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 10.12 | 10.17 | 100 | 9.854 | 97 | 80-120 | 3 | 0-30 | |
| Carbon Dioxide | 10.07 | 10.57 | 105 | 10.26 | 102 | 80-120 | 3 | 0-30 | |
| Carbon Monoxide | 9.930 | 11.37 | 115 | 11.17 | 112 | 80-120 | 2 | 0-30 | |
| Oxygen + Argon | 3.500 | 3.814 | 109 | 3.585 | 102 | 80-120 | 6 | 0-30 | |
| Nitrogen | 10.02 | 10.81 | 108 | 10.09 | 101 | 80-120 | 7 | 0-30 | |

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1323 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | ASTM D-1946 (M) |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-15-156-1** | **Air** | **GC 55** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Helium | 1.000 | 1.106 | 111 | 1.028 | 103 | 80-120 | 7 | 0-30 | |
| Hydrogen | 1.000 | 1.171 | 117 | 1.088 | 109 | 80-120 | 7 | 0-30 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

## Summa Canister Vacuum Summary

Work Order Number: **12-12-1323**

| Sample Name | Vacuum In | Vacuum Out | Equipment | Description |
|---|---|---|---|---|
| VM-40-04 | -6.00 | -29.60 | D178 | Summa Canister 6L |
| MW-40-32 | -4.00 | -29.60 | D160 | Summa Canister 6L |
| VM-40-06 | -6.00 | -29.60 | D076 | Summa Canister 6L |
| IW-03 | -6.00 | -29.60 | D096 | Summa Canister 6L |
| VM-40-02 | -6.00 | -29.60 | D847 | Summa Canister 6L |
| DUP-1 | -8.00 | -29.60 | D888 | Summa Canister 6L |
| VM-40-03 | -6.00 | -29.60 | D712 | Summa Canister 6L |
| IW-01 | -5.00 | -29.60 | D749 | Summa Canister 6L |
| FB-1 | -5.00 | -29.60 | D775 | Summa Canister 6L |

Return to Contents

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order Number: 12-12-1323

| Qualifier | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

Return to Contents

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 12/18/12
PAGE: 1 OF 1

LABORATORY CLIENT: CKY
ADDRESS: 302 W 5th St, San Pedro, CA 90731
TEL: (310) 519-4000 FAX: (310) 519-4029 E-MAIL: howard@ckyinc.com

CLIENT PROJECT NAME / NUMBER: Seal Beach NWS
PROJECT CONTACT: Howard Wittenberg
SAMPLER(S): (SIGNATURE) Todd Mayle
COELT LOG CODE
P.O. NO.:
LABORATORY JOB NO.: 12-12-1323
COOLER RECEIPT Temp = °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ Standard

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ COELT EDF ☐

SPECIAL INSTRUCTIONS

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | CEL SAMPLE # | SAMPLING DATE | SAMPLING TIME | MATRIX | NO. OF CONT. | VOCs EPA (TO-15) | Methane (ASTM 1946M) | Helium | Level III |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | VW-40-04 | D178 | 12/18/12 | 1000 | Air | 1 | X | X | X | X |
| 2 | MW-40-32 | D160 | ↓ | 1052 | | 1 | X | X | X | X |
| 3 | VW-40-06 | D076 | | 1140 | | 1 | X | X | X | X |
| 4 | IW-03 | D096 | | 1231 | | 1 | X | X | X | X |
| 5 | VW-40-02 | D847 | | 1438 | | 1 | X | X | X | X |
| 6 | DUP-1 | D888 | ↓ | ~~08~~ | | 1 | X | X | X | X |
| 7 | VW-40-03 | D712 | 12/19/12 | 0840 | | 1 | X | X | X | X |
| 8 | IW-01 | D749 | 12/19/12 | 0938 | | 1 | X | X | X | X |
| 9 | FB-1 | D775 | 12/19/12 | 0847 | | 1 | X | X | X | X |

| | | | |
|---|---|---|---|
| Relinquished by: (Signature) Todd Mayle | MA (SC) | Date: 12/19/12 | Time: 1050 |
| Relinquished by: (Signature) MA (SC) | Received by: (Signature) CEL | Date: 12/19/12 | Time: 1655 |
| Relinquished by: (Signature) | Received by: (Signature) Dannyle CEL | Date: 12/19/12 | Time: 19:00 |

Revision: 072611



Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-12-1323

# SAMPLE RECEIPT FORM

Cooler 0 of 0

CLIENT: CKY

DATE: 12/19/12

**TEMPERATURE:** Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature ____.____ °C - 0.3 °C (CF) = ____.____ °C ☐ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☑ Air ☐ Filter **Initial:** AP

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☑ N/A **Initial:** AP

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** HH

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☑ | ☐ |
| ☑ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☑Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TS

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TS



Return to Contents

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 12-12-1324

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** CKY, Incorporated

**Client Project Name:** Seal Beach NWS

**Attention:** Howard Wittenberg
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Approved for release on 01/3/2013 by:
Richard Villafania
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: Seal Beach NWS
Work Order Number: 12-12-1324


1 Client Sample Data . . . . . 3
1.1 ASTM D-1946 Fixed Gases (Air) . . . . . 3
1.2 ASTM D-1946 (M) Fixed Gases (H2 and/or He) (Air) . . . . . 4
1.3 EPA TO-15 Full List (Air) . . . . . 5

2 Quality Control Sample Data . . . . . 9
2.1 LCS/LCSD . . . . . 9

3 Summa Canister Vacuum Summary . . . . . 13

4 Glossary of Terms and Qualifiers . . . . . 14

5 Chain of Custody/Sample Receipt Form . . . . . 15

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1324 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1324-1 Client ID: MW-40-37 Matrix: Air Units: %v Sampled: 12/18/12 13:31**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 41.3 | | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 15:24 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-14-535-6 Client ID: Method Blank Matrix: Air Units: %v Sampled: 12/27/12 12:47**

**ASTM D-1946 Fixed Gases Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Methane | <0.255 | U | 0.155 | 0.255 | 0.510 | 1 | | 12/20/12 14:10 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order: | 12-12-1324 |
| | | Project Name: | Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1324-1 Client ID: MW-40-37 Matrix: Air Units: %v Sampled: 12/18/12 13:31**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 11:06 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

**099-15-156-1 Client ID: Method Blank Matrix: Air Units: %v Sampled: 12/20/12 11:10**

**ASTM D-1946 (M) Fixed Gases (H2 and/or He) Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Helium | <0.0100 | U | 0.00373 | 0.0100 | 0.0250 | 1 | | 12/20/12 10:37 | 121220L01 |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1324<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1324-1 Client ID: MW-40-37 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 13:31**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 2.4 | J | 0.52 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| Benzyl Chloride | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Bromodichloromethane | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Bromoform | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Bromomethane | <2.0 | U | 1.4 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 2-Butanone | <5.0 | U | 1.8 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Carbon Disulfide | <12 | U | 6.2 | 12 | 25 | 10 | | 12/20/12 20:51 | 121220L01 |
| Carbon Tetrachloride | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Chlorobenzene | <1.0 | U | 0.61 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| Chloroethane | 7.1 | J | 6.2 | 12 | 25 | 10 | | 12/20/12 20:51 | 121220L01 |
| Chloroform | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Chloromethane | <5.0 | U | 2.4 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Dibromochloromethane | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Dichlorodifluoromethane | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,1-Dichloroethane | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,1-Dichloroethene | <5.0 | U | 2.0 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,2-Dibromoethane | <1.0 | U | 0.41 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,2-Dichlorobenzene | <1.0 | U | 0.53 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,2-Dichloroethane | <2.0 | U | 0.56 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,2-Dichloropropane | <2.0 | U | 1.9 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,3-Dichlorobenzene | <1.0 | U | 0.52 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,4-Dichlorobenzene | <1.0 | U | 0.67 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| c-1,3-Dichloropropene | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| c-1,2-Dichloroethene | 82 | | 0.87 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| t-1,2-Dichloroethene | 30 | | 1.3 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| t-1,3-Dichloropropene | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Ethanol | <20 | U | 8.7 | 20 | 50 | 10 | | 12/20/12 20:51 | 121220L01 |
| Ethylbenzene | <1.0 | U | 0.67 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 4-Ethyltoluene | <2.0 | U | 0.57 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| Hexachloro-1,3-Butadiene | <1.0 | U | 0.78 | 1.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| 2-Hexanone | <5.0 | U | 4.4 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Methylene Chloride | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| 4-Methyl-2-Pentanone | <5.0 | U | 3.7 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| o-Xylene | <1.0 | U | 0.55 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| p/m-Xylene | <2.0 | U | 1.5 | 2.0 | 10 | 10 | | 12/20/12 20:51 | 121220L01 |
| Styrene | <2.0 | U | 0.64 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| Tetrachloroethene | 1.2 | J | 0.67 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

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|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 12-12-1324<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**12-12-1324-1 Client ID: MW-40-37 Matrix: Air Units: ppb (v/v) Sampled: 12/18/12 13:31**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <2.0 | U | 0.80 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| Trichloroethene | 22 | | 0.46 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| Trichlorofluoromethane | <5.0 | U | 1.7 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <2.0 | U | 1.0 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,1,1-Trichloroethane | <1.0 | U | 0.79 | 1.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,1,2-Trichloroethane | <2.0 | U | 1.8 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,3,5-Trimethylbenzene | <2.0 | U | 0.51 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,2,4-Trimethylbenzene | <2.0 | U | 0.70 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| 1,2,4-Trichlorobenzene | <2.0 | U | 1.2 | 2.0 | 5.0 | 10 | | 12/20/12 20:51 | 121220L01 |
| Vinyl Acetate | <5.0 | U | 2.5 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |
| Vinyl Chloride | 470 | | 2.2 | 5.0 | 12 | 10 | | 12/20/12 20:51 | 121220L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *108%* | *12/20/12 20:51* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *99%* | *12/20/12 20:51* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *100%* | *12/20/12 20:51* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

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| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-523<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**099-14-523-29 Client ID: Method Blank Matrix: Air Units: ppb (v/v) Sampled: 12/27/12 14:32**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | <0.20 | U | 0.052 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Benzyl Chloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Bromodichloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Bromoform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Bromomethane | <0.20 | U | 0.14 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 2-Butanone | <0.50 | U | 0.18 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Carbon Disulfide | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/20/12 14:02 | 121220L01 |
| Carbon Tetrachloride | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Chlorobenzene | <0.10 | U | 0.061 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Chloroethane | <1.2 | U | 0.62 | 1.2 | 2.5 | 1 | | 12/20/12 14:02 | 121220L01 |
| Chloroform | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Chloromethane | <0.50 | U | 0.24 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Dibromochloromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Dichlorodifluoromethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1-Dichloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1-Dichloroethene | <0.50 | U | 0.20 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2-Dibromoethane | <0.10 | U | 0.041 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2-Dichlorobenzene | <0.10 | U | 0.053 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2-Dichloroethane | <0.20 | U | 0.056 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2-Dichloropropane | <0.20 | U | 0.19 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,3-Dichlorobenzene | <0.10 | U | 0.052 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,4-Dichlorobenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| c-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| c-1,2-Dichloroethene | <0.20 | U | 0.087 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| t-1,2-Dichloroethene | <0.20 | U | 0.13 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| t-1,3-Dichloropropene | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Ethanol | <2.0 | U | 0.87 | 2.0 | 5.0 | 1 | | 12/20/12 14:02 | 121220L01 |
| Ethylbenzene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 4-Ethyltoluene | <0.20 | U | 0.057 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Hexachloro-1,3-Butadiene | 0.15 | J | 0.078 | 0.10 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 2-Hexanone | <0.50 | U | 0.44 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Methyl-t-Butyl Ether (MTBE) | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Methylene Chloride | 0.28 | J | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 4-Methyl-2-Pentanone | <0.50 | U | 0.37 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| o-Xylene | <0.10 | U | 0.055 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| p/m-Xylene | <0.20 | U | 0.15 | 0.20 | 1.0 | 1 | | 12/20/12 14:02 | 121220L01 |
| Styrene | <0.20 | U | 0.064 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Tetrachloroethene | <0.10 | U | 0.067 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |

Return to Contents

Calscience Environmental Laboratories, Inc.

The difference is service

| | | | |
|---|---|---|---|
| Client: | CKY, Incorporated<br>302 West Fifth Street, Ste. 310<br>San Pedro, CA 90731-2738 | Work Order:<br>Project Name: | 099-14-523<br>Seal Beach NWS |
| Attn: | Howard Wittenberg | Received: | 12/19/12 19:00 |

## ANALYTICAL REPORT

**099-14-523-29 Client ID: Method Blank Matrix: Air Units: ppb (v/v) Sampled: 12/27/12 14:32**

**EPA TO-15 Full List Extraction: N/A**

| Analyte | Result | Qual. | DL | LOD | LOQ | Dilution Factor | Preparation Date/Time | Analysis Date/Time | Batch |
|---|---|---|---|---|---|---|---|---|---|
| Toluene | <0.20 | U | 0.080 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Trichloroethene | <0.10 | U | 0.046 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Trichlorofluoromethane | <0.50 | U | 0.17 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | <0.20 | U | 0.10 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1,1-Trichloroethane | <0.10 | U | 0.079 | 0.10 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1,2-Trichloroethane | <0.20 | U | 0.18 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,3,5-Trimethylbenzene | <0.20 | U | 0.051 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,1,2,2-Tetrachloroethane | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2,4-Trimethylbenzene | <0.20 | U | 0.070 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| 1,2,4-Trichlorobenzene | <0.20 | U | 0.12 | 0.20 | 0.50 | 1 | | 12/20/12 14:02 | 121220L01 |
| Vinyl Acetate | <0.50 | U | 0.25 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |
| Vinyl Chloride | <0.50 | U | 0.22 | 0.50 | 1.2 | 1 | | 12/20/12 14:02 | 121220L01 |

| | | | |
|---|---|---|---|
| *Surr: 1,4-Bromofluorobenzene (57-129%)* | *102%* | *12/20/12 14:02* | *121220L01* |
| *Surr: 1,2-Dichloroethane-d4 (47-137%)* | *100%* | *12/20/12 14:02* | *121220L01* |
| *Surr: Toluene-d8 (78-156%)* | *102%* | *12/20/12 14:02* | *121220L01* |

-Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1324
Preparation: N/A
Method: EPA TO-15

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-523-29** | **Air** | **GC/MS YY** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 25.00 | 23.47 | 94 | 23.60 | 94 | 60-156 | 44-172 | 1 | 0-40 | |
| Benzyl Chloride | 25.00 | 28.07 | 112 | 29.51 | 118 | 50-150 | 33-167 | 5 | 0-35 | |
| Bromodichloromethane | 25.00 | 23.48 | 94 | 23.53 | 94 | 50-150 | 33-167 | 0 | 0-35 | |
| Bromoform | 25.00 | 23.56 | 94 | 23.64 | 95 | 62-134 | 50-146 | 0 | 0-38 | |
| Bromomethane | 25.00 | 22.17 | 89 | 22.44 | 90 | 50-150 | 33-167 | 1 | 0-35 | |
| 2-Butanone | 25.00 | 22.91 | 92 | 23.43 | 94 | 50-150 | 33-167 | 2 | 0-35 | |
| Carbon Disulfide | 25.00 | 22.64 | 91 | 23.12 | 92 | 50-150 | 33-167 | 2 | 0-35 | |
| Carbon Tetrachloride | 25.00 | 22.92 | 92 | 23.00 | 92 | 64-154 | 49-169 | 0 | 0-32 | |
| Chlorobenzene | 25.00 | 23.35 | 93 | 23.25 | 93 | 50-150 | 33-167 | 0 | 0-35 | |
| Chloroethane | 25.00 | 22.80 | 91 | 23.22 | 93 | 50-150 | 33-167 | 2 | 0-35 | |
| Chloroform | 25.00 | 22.72 | 91 | 23.38 | 94 | 50-150 | 33-167 | 3 | 0-35 | |
| Chloromethane | 25.00 | 23.63 | 95 | 24.15 | 97 | 50-150 | 33-167 | 2 | 0-35 | |
| Dibromochloromethane | 25.00 | 24.09 | 96 | 23.91 | 96 | 50-150 | 33-167 | 1 | 0-35 | |
| Dichlorodifluoromethane | 25.00 | 21.59 | 86 | 22.57 | 90 | 50-150 | 33-167 | 4 | 0-35 | |
| 1,1-Dichloroethane | 25.00 | 23.30 | 93 | 23.99 | 96 | 50-150 | 33-167 | 3 | 0-35 | |
| 1,1-Dichloroethene | 25.00 | 22.74 | 91 | 23.15 | 93 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,2-Dibromoethane | 25.00 | 23.88 | 96 | 24.28 | 97 | 54-144 | 39-159 | 2 | 0-36 | |
| 1,2-Dichlorobenzene | 25.00 | 22.54 | 90 | 23.55 | 94 | 34-160 | 13-181 | 4 | 0-47 | |
| 1,2-Dichloroethane | 25.00 | 22.39 | 90 | 22.83 | 91 | 69-153 | 55-167 | 2 | 0-35 | |
| 1,2-Dichloropropane | 25.00 | 23.50 | 94 | 24.59 | 98 | 67-157 | 52-172 | 5 | 0-35 | |
| 1,3-Dichlorobenzene | 25.00 | 21.95 | 88 | 22.57 | 90 | 50-150 | 33-167 | 3 | 0-35 | |
| 1,4-Dichlorobenzene | 25.00 | 22.13 | 89 | 22.82 | 91 | 36-156 | 16-176 | 3 | 0-47 | |
| c-1,3-Dichloropropene | 25.00 | 25.19 | 101 | 25.41 | 102 | 61-157 | 45-173 | 1 | 0-35 | |
| c-1,2-Dichloroethene | 25.00 | 23.17 | 93 | 23.51 | 94 | 50-150 | 33-167 | 1 | 0-35 | |
| t-1,2-Dichloroethene | 25.00 | 23.56 | 94 | 23.20 | 93 | 50-150 | 33-167 | 2 | 0-35 | |
| t-1,3-Dichloropropene | 25.00 | 25.84 | 103 | 25.99 | 104 | 50-150 | 33-167 | 1 | 0-35 | |
| Ethanol | 100.0 | 97.24 | 97 | 100.2 | 100 | 50-150 | 33-167 | 3 | 0-35 | |
| Ethylbenzene | 25.00 | 24.84 | 99 | 24.47 | 98 | 52-154 | 35-171 | 2 | 0-38 | |
| 4-Ethyltoluene | 25.00 | 22.53 | 90 | 22.83 | 91 | 50-150 | 33-167 | 1 | 0-35 | |
| Hexachloro-1,3-Butadiene | 25.00 | 25.77 | 103 | 25.86 | 103 | 50-150 | 33-167 | 0 | 0-35 | |
| 2-Hexanone | 25.00 | 26.17 | 105 | 26.14 | 105 | 50-150 | 33-167 | 0 | 0-35 | |
| Methyl-t-Butyl Ether (MTBE) | 25.00 | 23.64 | 95 | 24.88 | 100 | 50-150 | 33-167 | 5 | 0-35 | |

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

CKY, Incorporated
302 West Fifth Street, Ste. 310
San Pedro, CA 90731-2738

Date Received: N/A
Work Order No: 12-12-1324
Preparation: N/A
Method: EPA TO-15

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-523-29** | **Air** | **GC/MS YY** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | ME_CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Methylene Chloride | 25.00 | 21.03 | 84 | 21.36 | 85 | 50-150 | 33-167 | 2 | 0-35 | |
| 4-Methyl-2-Pentanone | 25.00 | 24.21 | 97 | 24.36 | 97 | 50-150 | 33-167 | 1 | 0-35 | |
| o-Xylene | 25.00 | 23.75 | 95 | 23.68 | 95 | 52-148 | 36-164 | 0 | 0-38 | |
| p/m-Xylene | 50.00 | 48.07 | 96 | 48.37 | 97 | 42-156 | 23-175 | 1 | 0-41 | |
| Styrene | 25.00 | 24.99 | 100 | 24.93 | 100 | 50-150 | 33-167 | 0 | 0-35 | |
| Tetrachloroethene | 25.00 | 23.54 | 94 | 23.31 | 93 | 56-152 | 40-168 | 1 | 0-40 | |
| Toluene | 25.00 | 23.70 | 95 | 23.60 | 94 | 56-146 | 41-161 | 0 | 0-43 | |
| Trichloroethene | 25.00 | 23.30 | 93 | 23.30 | 93 | 63-159 | 47-175 | 0 | 0-34 | |
| Trichlorofluoromethane | 25.00 | 21.87 | 87 | 22.24 | 89 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,1,2-Trichloro-1,2,2-Trifluoroethane | 25.00 | 21.91 | 88 | 22.26 | 89 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,1,1-Trichloroethane | 25.00 | 23.36 | 93 | 23.18 | 93 | 50-150 | 33-167 | 1 | 0-35 | |
| 1,1,2-Trichloroethane | 25.00 | 24.31 | 97 | 24.23 | 97 | 65-149 | 51-163 | 0 | 0-37 | |
| 1,3,5-Trimethylbenzene | 25.00 | 22.19 | 89 | 22.56 | 90 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,1,2,2-Tetrachloroethane | 25.00 | 22.92 | 92 | 23.28 | 93 | 50-150 | 33-167 | 2 | 0-35 | |
| 1,2,4-Trimethylbenzene | 25.00 | 22.01 | 88 | 22.68 | 91 | 50-150 | 33-167 | 3 | 0-35 | |
| 1,2,4-Trichlorobenzene | 25.00 | 31.44 | 126 | 31.61 | 126 | 50-150 | 33-167 | 1 | 0-35 | |
| Vinyl Acetate | 25.00 | 23.87 | 95 | 24.97 | 100 | 50-150 | 33-167 | 5 | 0-35 | |
| Vinyl Chloride | 25.00 | 23.04 | 92 | 23.44 | 94 | 45-177 | 23-199 | 2 | 0-36 | |

Total number of LCS compounds : 50
Total number of ME compounds : 0
Total number of ME compounds allowed : 2
LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1324 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | ASTM D-1946 |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-14-535-6** | **Air** | **GC 34** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Methane | 10.12 | 10.17 | 100 | 9.854 | 97 | 80-120 | 3 | 0-30 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS/LCS Duplicate

| | | | |
|---|---|---|---|
| CKY, Incorporated | | Date Received: | N/A |
| 302 West Fifth Street, Ste. 310 | | Work Order No: | 12-12-1324 |
| San Pedro, CA 90731-2738 | | Preparation: | N/A |
| | | Method: | ASTM D-1946 (M) |

Project: Seal Beach NWS

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-15-156-1** | **Air** | **GC 55** | **N/A** | **12/20/12** | **121220L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Helium | 1.000 | 1.106 | 111 | 1.028 | 103 | 80-120 | 7 | 0-30 | |

RPD - Relative Percent Difference , CL - Control Limit



Return to Contents

Calscience Environmental Laboratories, Inc.

## Summa Canister Vacuum Summary

Work Order Number: **12-12-1324**

| Sample Name | Vacuum In | Vacuum Out | Equipment | Description |
|---|---|---|---|---|
| MW-40-37 | -6.00 | -29.60 | D896 | Summa Canister 6L |

Return to Contents

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order Number: 12-12-1324

| Qualifier | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| DL | The Detection Limit (DL) is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration at the 99% level of confidence. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| ICH | Initial calibrtn. verif. recov. above method CL for this analyte. |
| ICJ | Initial calibrtn. verif. recov. below method CL for this analyte. |
| IH | Calibrtn. verif. recov. below method CL for this analyte. |
| IJ | Calibrtn. verif. recov. above method CL for this analyte. |
| J | Analyte was detected at a concentration below the LOQ and above the DL. Reported value is estimated. |
| LOD | The Limit of Detection (LOD) is the smallest amount or concentration of a substance that must be present in a sample in order to be detected at 99% confidence level. |
| LOQ | The Limit of Quantitation (LOQ) is the lowest concentration of a substance that produces a quantitative result within specified limits of precision and bias. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| U | Undetected at Detection Limit (DL) and is reported as less than the Limit of Detection (LOD). |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

Return to Contents

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 12/18/12
PAGE: 1 OF 1

LABORATORY CLIENT: CKY
ADDRESS: 302 W 5th St, San Pedro, CA 90731
TEL: (310) 519-4000 FAX: (310) 519-4029 E-MAIL: howard@ckyinc.com

CLIENT PROJECT NAME / NUMBER: Seal Beach NWS
PROJECT CONTACT: Howard Wittenberg
SAMPLER(S): (SIGNATURE) Todd Mashl
COELT LOG CODE
P.O. NO.:
LAB USE ONLY: 12-12-1324
COOLER RECEIPT Temp = °C

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ Standard
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ COELT EDF ☐
SPECIAL INSTRUCTIONS

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | CEL SAMPLE # | SAMPLING DATE | SAMPLING TIME | MAT-RIX | NO. OF CONT. | VOCs EPA (TO-15) | Methane (ASTM 1946M) | Helium | Level IV |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | mw-40-37 | D896 | 12/18/12 | 1331 | Air | 1 | X | X | X | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date | Time |
|---|---|---|---|
| Todd Mashl | MA (SC) | 12/19/12 | 1050 |
| MA (SC) | [illegible] | 12/19/12 | 1655 |
| [illegible] | Dannyle [illegible] | 12/19/12 | 19:00 |

Revision: 072611



Return to Contents

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-12-1324

# SAMPLE RECEIPT FORM

Cooler 0 of 0

CLIENT: CKY

DATE: 12/19/12

**TEMPERATURE:** Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature _____.____ °C - 0.3 °C (CF) = _____.____ °C ☐ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☑ Air ☐ Filter **Initial:** AP

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☐ Not Present ☑ N/A **Initial:** AP

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** HH

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☑Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TS

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TS



Return to Contents