1R - 452

# REPORTS

# DATE:

11/18/2005

MAXIM TECHNOLOGIES
A DIVISION OF TETRA TECH, INC.

*1703 W. Industrial Ave.*
*Midland, Texas 79701*
*(432) 686-8081*

November 18, 2005

Mr. Wayne Price
New Mexico Energy, Minerals & Natural Resources Department
Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

**RE:** **ConocoPhillips Flowline 87**
Section 22, T17S, R32E
Request for Closure

Dear Mr. Price:

On behalf of ConocoPhillips, Maxim Technologies (Maxim) is submitting this report to describe actions taken to remediate soils at ConocoPhillips Flowline 87 historic release site (Site). This work was in support of ConocoPhillips efforts to voluntarily restore areas that may have been damaged by historic work practices in the Maljamar Unit located in Lea County. The Site is located below Mescalero Ridge, approximately 0.9 miles east of ConocoPhillips MCA Unit Office in Lea County, New Mexico (Figure 1; N32° 48.969N, W103° 45.249W, NAD27). The U.S. Bureau of Land Management (BLM) administers the land at this Site. This report describes the path forward for closure for soil remediation at this Site in accordance with New Mexico Oil Conservation Division's (NMOCD) e-mail guidance, dated August 12, 2005 (Attachment A).

## BACKGROUND

As described in Maxim's April 27, 2005 Findings Report, three soil borings were advanced (March 28-30) to describe the subsurface soil environment at the site. Soil Boring SB-1 was advanced to a depth of 68 feet below ground surface (fbgs). Red Bed clay was penetrated at approximately 45 fbgs and groundwater was not encountered. Maxim was informed by NMOCD that if groundwater was not impacted, then only surface remediation would be needed. Following the ranking criteria presented in "*Guidelines for Remediation of Leaks, Spills, and Releases*" promulgated on August 13, 1993 by the NMOCD this Site had the following score;

| Criteria | | Ranking Score |
|---|---|---|
| Depth to groundwater | >100 feet | 0 |
| Distance from water source | >1000 feet | 0 |
| Distance from domestic water source | >200 feet | 0 |
| Distance from surface water body | >200 feet | 0 |
| **Total Ranking Score** | | 0 |

The remediation action level for a ranking score of 0 is 10 parts per million (ppm) for benzene, 50 ppm for total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 5,000 ppm for total petroleum hydrocarbons (TPH).

## SCOPE OF WORK

Remediation activities were conducted on Site from October 24 through October 28, 2005 in accordance with the plan approved by the NMOCD, August 12, 2005 (Attachment A). These activities included removing affected soil from the site, backfilling the area with suitable material, capping the backfill with two feet of clean topsoil, and seeding the entire site with a seed mix prescribed by the BLM. The NMOCD approved work plan included:

1. Soil in the area of SB-1 was excavated to remove the most highly affected soils. This soil was hauled to a State approved disposal facility

2. The excavated area was TPH field screened using a PetroFLAG System to determine when petroleum hydrocarbon affected soil had been successfully removed (USEPA 2001[1]). Aliquot soil samples were collected in a "W" pattern, composited into one sample for each sidewall and floor, and field analyzed using a Photo-Ionization Detector (PID) and PetroFLAG to determine that remediation levels had been achieved. Companion composite samples were also be submitted to a laboratory for TPH (GRO, DRO) and BTEX analysis to confirm that hydrocarbons have been removed.

3. Clean backfill was placed into an excavation of approximately 154'L X 30'W to a depth of approximately 5 feet. At the SB-1 location an area approximately 15 feet in diameter and approximately 15 feet deep was excavated and backfilled. Two feet of topsoil, with no rocks or debris, was used as top cover. The BLM prescribed seed mix was spread out over the entire area and the seed was covered by dragging a chain-linked screen over the area. Photographs were taken to document the before and after treatment at the site (Figure 1).

## FINDINGS

The soils encountered during excavation activities at the Site consisted of mostly brownish-red sands with caliche bands. In all areas caliche bands were encountered in the 5 to 6 feet below ground surface (fbgs) range. A summary of field screening data is presented in Table 1. Most of the sampling locations had measurable concentrations of volatile organic compounds (VOC's) above non-detectable levels ranging from 0 - 194.2 ppm using the PID.

Seven rounds of PetroFLAG sampling occurred before confirmation samples were taken. The concentrations of TPH diesel range organics (DRO) tested by PetroFLAG in the soils ranged from 184 - >5,000 milligrams per kilogram (mg/kg) TPH.

[1] U.S. Environmental Protection Agency, 2001. Innovative Technology Verification Report, Dexsil Corporation PetroFLAG System. Prepared by Tetra Tech EM Inc. for USEPA National Exposure Research Laboratory Office of Research and Development. EPA/R-01/092.

The concentrations of field-screened chlorides are presented in Table 1. Detectable concentrations of chlorides were detectable in all sampling locations and ranged from 50 – 670 ppm.

Confirmation analysis for TPH, BTEX and chlorides are presented in Table 2. BTEX concentration levels were non-detectable, TPH concentration levels were below remediation guidelines (5,000 mg/kg), and chloride levels ranged from 12.7 – 1,100 mg/kg.

## CONCLUSIONS

Approximately 1,518 cubic yards of affected soil was removed from the area at Flowline 87 and hauled to CRI – Midway for disposal. Clean material was returned from CRI-Midway and used as backfill. A topsoil layer was placed on top of the backfill and BLM approved seed mix was dispersed onto the surface.

According to laboratory analysis of soils collected during this remediation, TPH concentrations were below remediation guidelines. Total BTEX concentrations were not detected. Based on the ranking criteria presented in "*Guidelines for Remediation of Leaks, Spills, and Releases*" by NMOCD, this Site has been remediated.

## RECOMMENDATIONS

Based on the work performed at this Site, Maxim recommends no further action is required. Upon your review and approval of this report, Maxim on behalf of ConocoPhillips, requests closure for this historic spill site location. If you have any questions or need additional information, please call Mr. Neal Goates (ConocoPhillips, 823-379-6427) or me.

Sincerely,

Charles Durrett

Digitally signed by Charles Durrett
DN: CN = Charles Durrett, C = US, O = Maxim Technologies, Inc.
Date: 2005.11.18 11:15:53 -06'00'

***MAXIM*** Technologies
Charles Durrett
Senior Project Manager

Cc: Chris Williams, NMOCD District 1
Paul Evans, USBLM
Mr. Neal Goates, ConocoPhillips

# TABLES

Table 1

ConocoPhillips

Maljamar - MCA Flowlines 4A Header

October 24-26, 2005

Field Data

| Sampling Round | Composite Sample Location | Petroflag (mg/kg) | Chlorides (ppm) | VOC (ppm) | Date of Field Test | Sample Time | Lab Sample |
|---|---|---|---|---|---|---|---|
| 1 | North Wall | 409 | 390 | 21.7 | 10/24/2005 | 1:35 | |
| | South Wall | 350 | 470 | 17.3 | " | 1:42 | |
| | East Wall | >5,000 | 290 | 110.1 | " | 1:50 | |
| | West Wall | >5,000 | 180 | 126.4 | " | 2:00 | |
| 2 | North Wall | 460 | 270 | 13.6 | 10/24/2005 | 2:10 | |
| | South Wall | 353 | 320 | 21.8 | " | 2:21 | |
| | East Wall | >5,000 | 240 | 129.9 | " | 2:32 | |
| | West Wall | 496 | 110 | 47.7 | " | 2:40 | |
| 3 | North Wall | 307 | 100 | 9.4 | 10/24/2005 | 4:11 | |
| | South Wall | 260 | 300 | 16.3 | " | 4:20 | |
| | East Wall | >5,000 | 220 | 100.1 | " | 4:29 | |
| | West Wall | 320 | 250 | 37.6 | " | 4:38 | |
| Confirmation | South Wall | 54 | 75 | 0 | 10/25/2005 | 2:45 | SS |
| Confirmation | East Wall | 56 | 50 | 0 | " | 2:30 | SE |
| Confirmation | West Wall | 221 | 80 | 7.4 | " | 3:00 | SW |
| 5 | Floor | 1,530 | 100 | 19.8 | 10/25/2005 | 3:31 | |
| | Floor North | 874 | 70 | 9.4 | " | 3:35 | |
| | Floor Middle | 543 | 60 | 4.3 | " | 3:39 | |
| | Floor South | 167 | 80 | 3.6 | " | 3:43 | |
| 6 | North Floor 8-12' | >,5000 | 170 | 194.2 | 10/26/2005 | 2:45 | |
| Confirmation | 3-Point Floor | 1,239 | 120 | 37.3 | " | 3:00 | F-1 |
| Confirmation | North Wall of Pit | 1,529 | 450 | 14 | 10/26/2005 | 3:30 | PS |
| Confirmation | Floor of Pit ~20' Deep | 268 | 100 | 17.1 | " | 3:00 | F-2 |
| Confirmation | South Wall of Pit | 3,200 | 370 | 56.4 | " | 3:30 | PS |
| Confirmation | East Wall of Pit | 348 | 490 | 2.3 | " | 3:30 | PS |
| Confirmation | West Wall of Pit | 184 | 670 | 0 | " | 3:30 | PS |
| | Backfill Material #1 | 0 | 0 | 0.1 | 10/27/2005 | | |
| | Backfill Material #2 | 0 | 0 | 0.1 | " | | |
| | Backfill Material #3 | 0 | 0 | 0 | " | | |
| | Topsoil | 0 | 0 | 0 | " | | |

VOC - Volatile Organic Compounds

ppm - parts per million

mg/kg - milligrams per kilogram

Table 2

ConocoPhillips

Maljamar - Flowline 87

October 25, 2005

Soil Analysis

| Sample Location | Parameter (mg/kg) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | TPH DRO | TPH GRO | Total TPH | Benzene | Ethyl-benzene | Toluene | Total Xylenes | Total BTEX | Chloride |
| SS | ND | ND | ND | ND | ND | ND | ND | ND | 21.9 |
| SE | ND | ND | ND | ND | ND | ND | ND | ND | 12.7 |
| SW | 64 | ND | 64 | ND | ND | ND | ND | ND | 29 |
| F-1 | 180 | 1,770 | 1,950 | ND | ND | ND | ND | ND | 48.3 |
| F-2 | ND | ND | ND | ND | ND | ND | ND | ND | 101 |
| PS | 330 | 4,460 | 4,790 | ND | ND | ND | ND | ND | 1,100 |

ND Not Detected at or above the Laboratory detection level

mg/kg - milligrams per kilogram

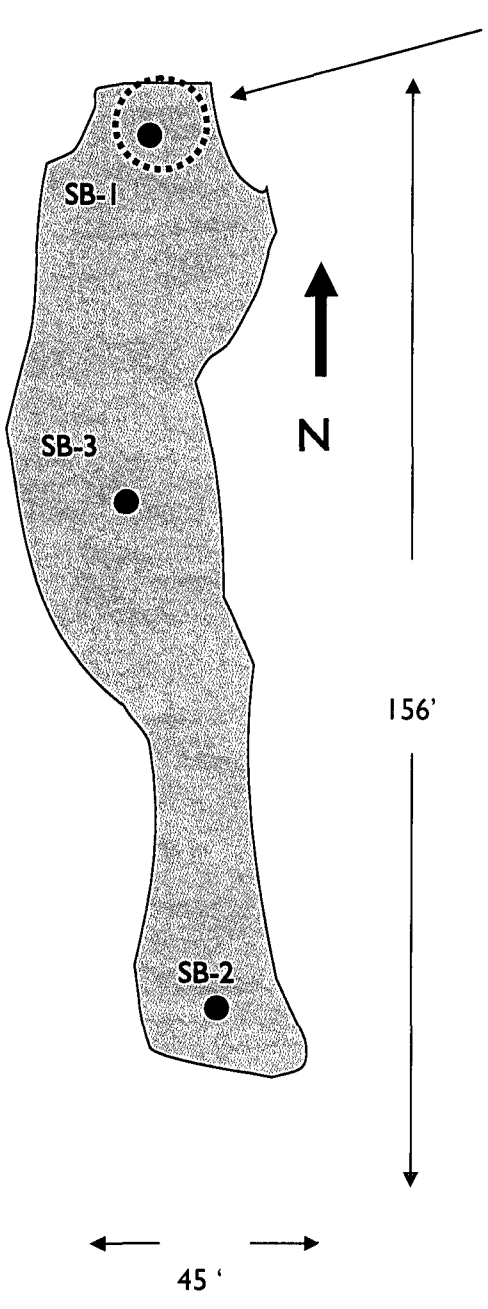
TPH - Total Petroleum Hydrocarbons

DRO - Diesel Range Organic Hydrocarbons

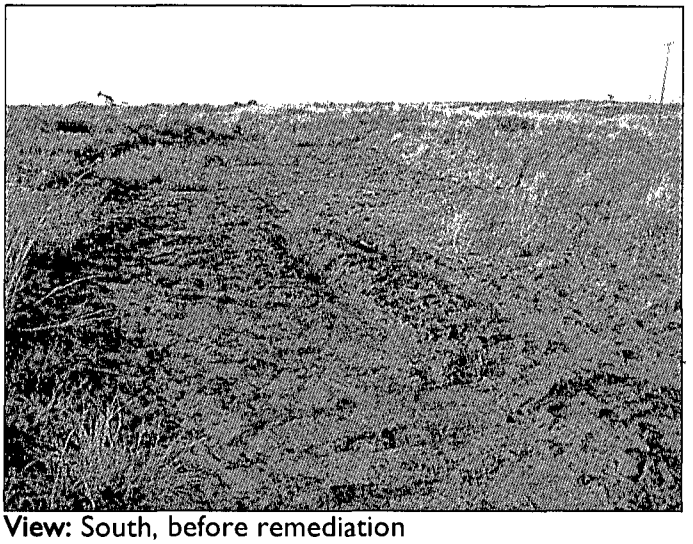
GRO - Gasoline Range Organic Hydrocarbons

FIGURE

## ConocoPhillips MCA Flowline 87




**View:** North, after remediation



**View:** South, before remediation

| MAXIM Technologies | |
|---|---|
| ConocoPhillips | MCA Unit |

**Figure 1.** Flowline 87 Historic Release Area

# APPENDIX A

## Communications

**From:** Goates, R. Neal
**To:** Cwdurrett1@aol.com
**Subject:** Fw: CP Flowline 87 1R0452
**Date:** Fri, 12 Aug 2005 16:40:55 -0500

---
Sent from my BlackBerry Wireless Handheld

-----Original Message-----
From: Price, Wayne, EMNRD <wayne.price@state.nm.us>
To: Goates, R. Neal <N.Goates@conocophillips.com>
CC: Sheeley, Paul, EMNRD <paul.sheeley@state.nm.us>; cyancey@maximusa.com <cyancey@maximusa.com>
Sent: Fri Aug 12 16:42:56 2005
Subject: CP Flowline 87 1R0452

Dear Mr. Goates:

The NMOCD Environmental Bureau has reviewed the April 27, 2005 findings report and work plan for the CP Flowline 87. OCD hereby approves of the plan with the following conditions:

1. Please collect confirmation chloride samples of the excavated area and include in the final report.

2. Please provide two photos with the closure report. One showing the excavated area and the other photo showing the final graded site. Please include Lat/Long of the center of the site.

3. Please submit a final report within 30 days after closure.

Please be advised that NMOCD approval of this plan does not relieve (CP) of responsibility should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve (CP) of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Wayne Price-Senior Environmental Engr.
Oil Conservation Division
1220 S. Saint Francis
Santa Fe, NM 87505
E-mail wayne.price@state.nm.us
Tele: 505-476-3487
Fax: 505-4763462

# APPENDIX B

## Laboratory Analysis

# ANALYTICAL REPORT

JOB NUMBER: 304990
Project ID: FLOW 87

Prepared For:

Maxim Technologies, Inc.
1703 West Industrial
Midland, TX 79701

Attention: Charlie Durret

Date: 11/18/2005


Signature

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail: skudchadkar@stl-inc.com

Date

Severn Trent Laboratories
6310 Rothway Drive
Houston, TX 77040

PHONE: 713-690-4444

# SAMPLE INFORMATION
Date: 11/18/2005

Job Number.: 304990
Customer...: Maxim Technologies, Inc.
Attn.....: Charlie Durret

Project Number.....: 99003817
Customer Project ID....: FLOW 87
Project Description....: Conoco Phillips

| Laboratory Sample ID | Customer Sample ID | Sample Matrix | Date Sampled | Time Sampled | Date Received | Time Received |
|---|---|---|---|---|---|---|
| 304990-1 | SS | Soil | 10/25/2005 | 14:45 | 10/28/2005 | 08:50 |
| 304990-2 | SE | Soil | 10/25/2005 | 14:30 | 10/28/2005 | 08:50 |
| 304990-3 | SW | Soil | 10/25/2005 | 15:00 | 10/28/2005 | 08:50 |
| 304990-4 | F-1 | Soil | 10/25/2005 | 15:30 | 10/28/2005 | 08:50 |
| 304990-5 | F-2 | Soil | 10/26/2005 | 15:00 | 10/28/2005 | 08:50 |
| 304990-6 | PS | Soil | 10/26/2005 | 15:30 | 10/28/2005 | 08:50 |

# LABORATORY TEST RESULTS

Job Number: 304990 Date: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

Customer Sample ID: SS
Date Sampled.....: 10/25/2005
Time Sampled.....: 14:45
Sample Matrix.....: Soil

Laboratory Sample ID: 304990-1
Date Received.....: 10/28/2005
Time Received.....: 08:50

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | FLAGS | REPORTING LIMIT | UNITS | DATE | TECH |
|---|---|---|---|---|---|---|---|
| EPA 300.0 | Chloride, Soil | 21.9 | | 4.0 | mg/Kg | 10/31/05 | sur |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | | | | | | |
| | TVPH as GRO, Soil | ND | | 1000.00 | ug/Kg | 10/28/05 | cad |
| SW-846 3550B | Extraction (Ultrasonic) DRO | | | | | | |
| | Ultrasonic Extraction, Soil | Complete | | | | 10/28/05 | mra |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | | | | | | |
| | TEPH - as Diesel, Soil | ND | | 8.3 | mg/Kg | 10/31/05 | jps |
| SW-846 8260B | Volatile Organics | | | | | | |
| | Benzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Ethylbenzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Toluene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Xylenes (total), Soil | ND | | 15 | ug/Kg | 10/29/05 | ydy |

* In Description = Dry Wgt.

# LABORATORY TEST RESULTS

Job Number: 304990 Date: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

Customer Sample ID: SE
Date Sampled.....: 10/25/2005
Time Sampled.....: 14:30
Sample Matrix.....: Soil

Laboratory Sample ID: 304990-2
Date Received.....: 10/28/2005
Time Received.....: 08:50

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | FLAGS | REPORTING LIMIT | UNITS | DATE | TECH |
|---|---|---|---|---|---|---|---|
| EPA 300.0 | Chloride, Soil | 12.7 | | 4.0 | mg/Kg | 10/31/05 | sur |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | | | | | | |
| | TVPH as GRO, Soil | ND | | 1000.00 | ug/Kg | 10/28/05 | cad |
| SW-846 3550B | Extraction (Ultrasonic) DRO | | | | | | |
| | Ultrasonic Extraction, Soil | Complete | | | | 10/28/05 | mra |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | | | | | | |
| | TEPH - as Diesel, Soil | ND | | 8.3 | mg/Kg | 11/01/05 | jps |
| SW-846 8260B | Volatile Organics | | | | | | |
| | Benzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Ethylbenzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Toluene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Xylenes (total), Soil | ND | | 15 | ug/Kg | 10/29/05 | ydy |

* In Description = Dry Wgt.

# LABORATORY TEST RESULTS

Job Number: 304990 Date: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

Customer Sample ID: SW
Date Sampled.....: 10/25/2005
Time Sampled.....: 15:00
Sample Matrix.....: Soil

Laboratory Sample ID: 304990-3
Date Received.....: 10/28/2005
Time Received.....: 08:50

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | FLAGS | REPORTING LIMIT | UNITS | DATE | TECH |
|---|---|---|---|---|---|---|---|
| EPA 300.0 | Chloride, Soil | 29.0 | | 4.0 | mg/Kg | 10/31/05 | sur |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | | | | | | |
| | TVPH as GRO, Soil | ND | | 1000.00 | ug/Kg | 10/28/05 | cad |
| SW-846 3550B | Extraction (Ultrasonic) DRO | | | | | | |
| | Ultrasonic Extraction, Soil | Complete | | | | 10/28/05 | mra |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | | | | | | |
| | TEPH - as Diesel, Soil | 64 | | 8.3 | mg/Kg | 11/01/05 | jps |
| SW-846 8260B | Volatile Organics | | | | | | |
| | Benzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Ethylbenzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Toluene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Xylenes (total), Soil | ND | | 15 | ug/Kg | 10/29/05 | ydy |

* In Description = Dry Wgt.

# LABORATORY TEST RESULTS

Job Number: 304990

Date: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

Customer Sample ID: F-1
Date Sampled.....: 10/25/2005
Time Sampled.....: 15:30
Sample Matrix.....: Soil

Laboratory Sample ID: 304990-4
Date Received.....: 10/28/2005
Time Received.....: 08:50

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | FLAGS | REPORTING LIMIT | UNITS | DATE | TECH |
|---|---|---|---|---|---|---|---|
| EPA 300.0 | Chloride, Soil | 48.3 | | 4.0 | mg/Kg | 10/31/05 | sur |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | | | | | | |
| | TVPH as GRO, Soil | 1770 | | 1000.00 | ug/Kg | 10/28/05 | cad |
| SW-846 3550B | Extraction (Ultrasonic) DRO | | | | | | |
| | Ultrasonic Extraction, Soil | Complete | | | | 10/28/05 | mra |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | | | | | | |
| | TEPH - as Diesel, Soil | 180 | | 42 | mg/Kg | 11/01/05 | jps |
| SW-846 8260B | Volatile Organics | | | | | | |
| | Benzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Ethylbenzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Toluene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Xylenes (total), Soil | ND | | 15 | ug/Kg | 10/29/05 | ydy |

* In Description = Dry Wgt.

# LABORATORY TEST RESULTS

Job Number: 304990 Date: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

Customer Sample ID: F-2
Date Sampled.....: 10/26/2005
Time Sampled.....: 15:00
Sample Matrix.....: Soil

Laboratory Sample ID: 304990-5
Date Received.....: 10/28/2005
Time Received.....: 08:50

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | FLAGS | REPORTING LIMIT | UNITS | DATE | TECH |
|---|---|---|---|---|---|---|---|
| EPA 300.0 | Chloride, Soil | 101 | | 40 | mg/Kg | 10/31/05 | sur |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | | | | | | |
| | TVPH as GRO, Soil | ND | | 1000.00 | ug/Kg | 10/28/05 | cad |
| SW-846 3550B | Extraction (Ultrasonic) DRO | | | | | | |
| | Ultrasonic Extraction, Soil | Complete | | | | 10/28/05 | mra |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | | | | | | |
| | TEPH - as Diesel, Soil | ND | | 8.3 | mg/Kg | 11/01/05 | jps |
| SW-846 8260B | Volatile Organics | | | | | | |
| | Benzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Ethylbenzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Toluene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Xylenes (total), Soil | ND | | 15 | ug/Kg | 10/29/05 | ydy |

* In Description = Dry Wgt.

LABORATORY TEST RESULTS

Job Number: 304990 Date: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

Customer Sample ID: PS
Date Sampled.....: 10/26/2005
Time Sampled.....: 15:30
Sample Matrix.....: Soil

Laboratory Sample ID: 304990-6
Date Received.....: 10/28/2005
Time Received.....: 08:50

| TEST METHOD | PARAMETER/TEST DESCRIPTION | SAMPLE RESULT | FLAGS | REPORTING LIMIT | UNITS | DATE | TECH |
|---|---|---|---|---|---|---|---|
| EPA 300.0 | Chloride, Soil | 1100 | | 40 | mg/Kg | 10/31/05 | sur |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | | | | | | |
| | TVPH as GRO, Soil | 4460 | | 1000.00 | ug/Kg | 10/28/05 | cad |
| SW-846 3550B | Extraction (Ultrasonic) DRO | | | | | | |
| | Ultrasonic Extraction, Soil | Complete | | | | 10/28/05 | mra |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | | | | | | |
| | TEPH - as Diesel, Soil | 330 | | 83 | mg/Kg | 11/01/05 | jps |
| SW-846 8260B | Volatile Organics | | | | | | |
| | Benzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Ethylbenzene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Toluene, Soil | ND | | 5 | ug/Kg | 10/29/05 | ydy |
| | Xylenes (total), Soil | ND | | 15 | ug/Kg | 10/29/05 | ydy |

* In Description = Dry Wgt.

QUALITY CONTROL RESULTS

Job Number.: 304990 Report Date.: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

Test Method.....: EPA 300.0 Analyst...: sur
Method Description.: Ion Chromatography Analysis Units.....: mg/L Test Code.: CHL
Parameter.....: Chloride Batch(s)...: 141491

| QC | Lab ID | Reagent | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F | Date | Time |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ICV | | WCS36937 | 21.469 | | 20.00 | | 107.3 | | 90.0-110. | | 10/31/2005 | 1301 |
| ICB | | | 0.0512 | | | | | | | | 10/31/2005 | 1316 |
| MB | 141491--21 | | 0.0468 | | | | | | | | 10/31/2005 | 1332 |
| LCS | 141491--21 | WCS36937 | 21.441 | | 20.00 | | 107.2 | | 90.0-110. | | 10/31/2005 | 1348 |
| DU | 304710-1 | | 24.812 | | | 25.280 | 1.9 | | 20 | | 10/31/2005 | 1419 |
| MS | 304710-1 | WCS36824 | 33.567 | | 10.000000 | 25.280 | 82.9 | | 90-110 | A | 10/31/2005 | 1435 |
| DU | 304879-1 | | 16.700 | | | 16.563 | 0.8 | | 20 | | 10/31/2005 | 1506 |
| MS | 304879-1 | WCS36824 | 26.467 | | 10.000000 | 16.563 | 99.0 | | 90-110 | | 10/31/2005 | 1521 |
| CCV | | WCS36937 | 21.248 | | 20.00 | | 106.2 | | 90.0-110. | | 10/31/2005 | 1608 |
| CCB | | | 0 | | | | | | | | 10/31/2005 | 1624 |
| DU | 304870-10 | | 8.2840 | | | 8.2769 | 0.1 | | 20 | | 10/31/2005 | 1655 |
| MS | 304870-10 | WCS36824 | 18.546 | | 10.000000 | 8.2769 | 102.7 | | 90-110 | | 10/31/2005 | 1710 |
| DU | 305052-4 | | 9.2287 | | | 9.2081 | 0.2 | | 20 | | 10/31/2005 | 1844 |
| MS | 305052-4 | WCS36824 | 19.476 | | 10.000000 | 9.2081 | 102.7 | | 90-110 | | 10/31/2005 | 1859 |
| CCV | | WCS36937 | 21.331 | | 20.00 | | 106.7 | | 90.0-110. | | 10/31/2005 | 1915 |
| CCB | | | 0.0491 | | | | | | | | 10/31/2005 | 1931 |
| MB | 141491--21 | | 0.0475 | | | | | | | | 10/31/2005 | 1946 |
| LCS | 141491--21 | WCS36937 | 21.242 | | 20.00 | | 106.2 | | 90.0-110. | | 10/31/2005 | 2002 |
| DU | 304811-1 | | 29.553 | | | 29.683 | 0.4 | | 20 | | 10/31/2005 | 2048 |
| MS | 304811-1 | WCS36824 | 37.788 | | 10.000000 | 29.683 | 81.0 | | 90-110 | A | 10/31/2005 | 2104 |
| CCV | | WCS36937 | 21.236 | | 20.00 | | 106.2 | | 90.0-110. | | 10/31/2005 | 2253 |
| CCB | | | 0.0466 | | | | | | | | 10/31/2005 | 2309 |
| MB | 141491--21 | | 0.0500 | | | | | | | | 10/31/2005 | 2324 |
| LCS | 141491--21 | WCS36937 | 21.376 | | 20.00 | | 106.9 | | 90.0-110. | | 10/31/2005 | 2340 |
| DU | 304690-2 | | 21.812 | | | 21.866 | 0.2 | | 20 | | 11/01/2005 | 0058 |
| MS | 304690-2 | WCS36824 | 30.588 | | 10.000000 | 21.866 | 87.2 | | 90-110 | A | 11/01/2005 | 0113 |
| CCV | | WCS36937 | 21.568 | | 20.00 | | 107.8 | | 90.0-110. | | 11/01/2005 | 0200 |
| CCB | | | 0.0475 | | | | | | | | 11/01/2005 | 0216 |



* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

# QUALITY CONTROL RESULTS

Job Number.: 304990 Report Date.: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|

Test Method.....: SW-846 8015B Units.....: ug/L Analyst...: cad
Method Description.: Total Volatile Petroleum Hydrocarbons Batch(s)...: 141431

| LCS | Laboratory Control Sample | BXS102705H | 141431-1 | | 10/28/2005 | 1123 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| TVPH as GRO, Soil | 236.154 | | 250.000000 | | 94.5 | | 49-151 | |

| MB | Method Blank | | 141431-1 | | 10/28/2005 | 1149 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| TVPH as GRO, Soil | ND | | | | | | | |

| MS | Matrix Spike | BX052505A | 304990-3 | | 10/28/2005 | 2120 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| TVPH as GRO, Soil | 163.066 | | 250.000000 | ND | 65.2 | | 50.0-150.0 | |

| MSD | Matrix Spike Duplicate | BX052505A | 304990-3 | | 10/28/2005 | 2145 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| TVPH as GRO, Soil | 196.544 | 163.066 | 250.000000 | ND | 78.6 | | 50-150 | |
| | | | | | 18.6 | | 20 | |

Test Method.....: SW-846 8015B Units.....: mg/L Analyst...: jps
Method Description.: Total Extractable Petroleum Hydrocarbons Batch(s)...: 141843

| LCS | Laboratory Control Sample | GC092805 | 141435 | | 10/31/2005 | 2301 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| TEPH - as Diesel, Soil | 981.06 | | 1000.000000 | | 98.1 | | 70-130 | |

| MB | Method Blank | GC101405 | 141435 | | 11/01/2005 | 2218 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| TEPH - as Diesel, Soil | ND | | | | | | | |



* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

# QUALITY CONTROL RESULTS

Job Number.: 304990 — Report Date.: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. — PROJECT: FLOW 87 — ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MS | Matrix Spike | GC092705 | 304990-5 | | 11/01/2005 | 0443 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| TEPH - as Diesel, Soil | 864.22 | | 1000.000000 | ND | 86 | | 70-130 | |

| MSD | Matrix Spike Duplicate | GC092705 | 304990-5 | | 11/01/2005 | 0526 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| TEPH - as Diesel, Soil | 875.24 | 864.22 | 1000.000000 | ND | 88 | | 70-130 | |
| | | | | | 1.3 | | 30.0 | |

Test Method.....: SW-846 8260B — Units.....: ug/L — Analyst...: ydy
Method Description.: Volatile Organics — Batch(s)...: 141411

| LCS | Laboratory Control Sample | VS101805E | | | 10/29/2005 | 1249 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Soil | 50.0864 | | 50.00 | ND | 100.2 | | 68-121 | |
| Ethylbenzene, Soil | 53.4371 | | 50.00 | ND | 106.9 | | 66-130 | |
| Toluene, Soil | 51.9833 | | 50.00 | ND | 104.0 | | 66-127 | |
| Xylenes (total), Soil | 157.991 | | 150.0 | ND | 105.3 | | 37-160 | |

| MB | Method Blank | VS101805C | | | 10/29/2005 | 1340 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Soil | ND | | | | | | | |
| Ethylbenzene, Soil | ND | | | | | | | |
| Toluene, Soil | ND | | | | | | | |
| Xylenes (total), Soil | ND | | | | | | | |

| MS | Matrix Spike | VS101805E | 304588-9 | | 10/29/2005 | 1433 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Soil | 52.7336 | | 50.00 | 9.30127 | 87 | | 65-135 | |
| Ethylbenzene, Soil | 60.3393 | | 50.00 | 13.1645 | 94 | | 60-140 | |
| Toluene, Soil | 45.7303 | | 50.00 | 1.08870 | 89 | | 64-135 | |
| Xylenes (total), Soil | 157.836 | | 150.0 | 22.5877 | 90 | | 60-140 | |

| MSD | Matrix Spike Duplicate | VS101805E | 304588-9 | | 10/29/2005 | 1459 |
|---|---|---|---|---|---|---|

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Benzene, Soil | 54.3042 | 52.7336 | 50.00 | 9.30127 | 90 | | 65-135 | |
| | | | | | 2.9 | | 30.0 | |
| Ethylbenzene, Soil | 57.1140 | 60.3393 | 50.00 | 13.1645 | 88 | | 60-140 | |
| | | | | | 5.5 | | 30.0 | |
| Toluene, Soil | 41.5610 | 45.7303 | 50.00 | 1.08870 | 81 | | 64-135 | |
| | | | | | 9.6 | | 30.0 | |



* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

# QUALITY CONTROL RESULTS

Job Number.: 304990 Report Date.: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN:

| QC Type | Description | Reag. Code | Lab ID | Dilution Factor | Date | Time |
|---|---|---|---|---|---|---|
| MSD | Matrix Spike Duplicate | VS101805E | 304588-9 | | 10/29/2005 | 1459 |

| Parameter/Test Description | QC Result | QC Result | True Value | Orig. Value | Calc. Result | * | Limits | F |
|---|---|---|---|---|---|---|---|---|
| Xylenes (total), Soil | 146.793 | 157.836 | 150.0 | 22.5877 | 83 | | 60-140 | |
| | | | | | 7.3 | | 30.0 | |



* %=% REC, R=RPD, A=ABS Diff., D=% Diff.

# SURROGATE RECOVERIES REPORT

Job Number.: 304990 Report Date.: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

Method.....: Total Extractable Petroleum Hydrocarbons Method Code...: 8015D Prep Batch....: 141435
Batch(s).....: 141843 Test Matrix...: Soil Equipment Code: EXTGC01

| Lab ID | DT | Sample ID | Date | OTERPH |
|---|---|---|---|---|
| 304990- 1 | | SS | 10/31/2005 | 94 |
| 304990- 2 | | SE | 11/01/2005 | 96 |
| 304990- 3 | | SW | 11/01/2005 | 84 |
| 304990- 4 | | F-1 | 11/01/2005 | 82 |
| 304990- 5 | | F-2 | 11/01/2005 | 85 |
| 304990- 5 | MS | F-2 | 11/01/2005 | 80 |
| 304990- 5 | MSD | F-2 | 11/01/2005 | 84 |
| 304990- 6 | | PS | 11/01/2005 | 82 |
| 141435--21 | LCS | | 10/31/2005 | 97 |
| 141435--21 | MB | | 11/01/2005 | 100 |

| Test | Test Description | Limits |
|---|---|---|
| OTERPH | o-Terphenyl | 60 - 140 |

# SURROGATE RECOVERIES REPORT

Job Number.: 304990 Report Date.: 11/18/2005

CUSTOMER: 483648 PROJECT: FLOW 87 ATTN: Charlie Durret

Method.....: Total Volatile Petroleum Hydrocarbons Method Code...: 8015G Prep Batch....:
Batch(s).....: 141431 Test Matrix...: Soil Equipment Code: BTEX07

| Lab ID | DT | Sample ID | Date | ATFT | BFB |
|---|---|---|---|---|---|
| 141431- 1 | LCS | | 10/28/2005 | 98.6 | 97.7 |
| 141431- 1 | MB | | 10/28/2005 | 99.7 | 102.4 |
| 304990- 1 | | SS | 10/28/2005 | 106.0 | 93.9 |
| 304990- 2 | | SE | 10/28/2005 | 109.2 | 96.6 |
| 304990- 3 | | SW | 10/28/2005 | 103.9 | 95.5 |
| 304990- 3 | MS | SW | 10/28/2005 | 100.0 | 102.6 |
| 304990- 3 | MSD | SW | 10/28/2005 | 99.4 | 97.9 |
| 304990- 4 | | F-1 | 10/28/2005 | 106.9 | 107.3 |
| 304990- 5 | | F-2 | 10/28/2005 | 103.0 | 91.1 |
| 304990- 6 | | PS | 10/28/2005 | 105.9 | 81.0 |

| Test | Test Description | Limits |
|---|---|---|
| ATFT | a,a,a-Trifluorotoluene | 50 - 150 |
| BFB | BFB (Surrogate) | 50 - 150 |

# SURROGATE RECOVERIES REPORT

Job Number.: 304990 Report Date.: 11/18/2005

CUSTOMER: 483648 PROJECT: FLOW 87 ATTN: Charlie Durret

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 141411 Test Matrix...: Soil Equipment Code: GCMSVOA03

| Lab ID | DT | Sample ID | Date | 12DCED | BRFLBE | DBRFLM | TOLD8 |
|---|---|---|---|---|---|---|---|
| 141411--21 | LCS | | 10/29/2005 | 80.5 | 89.8 | 92.0 | 99.3 |
| 141411--21 | MB | | 10/29/2005 | 85.9 | 82.0 | 87.7 | 91.1 |
| 304588- 9 | MS | SW614-1 0"-15" | 10/29/2005 | 80.0 | 89.4 | 89.3 | 96.1 |
| 304588- 9 | MSD | SW614-1 0"-15" | 10/29/2005 | 84.6 | 94.9 | 96.1 | 101.4 |
| 304990- 1 | | SS | 10/29/2005 | 77.1 | 84.3 | 87.5 | 92.1 |
| 304990- 2 | | SE | 10/29/2005 | 76.2 | 80.3 | 85.5 | 92.5 |
| 304990- 3 | | SW | 10/29/2005 | 82.2 | 84.1 | 92.6 | 93.8 |
| 304990- 4 | | F-1 | 10/29/2005 | 75.0 | 84.6 | 84.0 | 90.0 |
| 304990- 5 | | F-2 | 10/29/2005 | 75.5 | 82.6 | 84.6 | 90.9 |
| 304990- 6 | | PS | 10/29/2005 | 80.3 | 89.0 | 86.8 | 93.3 |

| Test | Test Description | Limits |
|---|---|---|
| 12DCED | 1,2-Dichloroethane-d4 | 61 - 130 |
| BRFLBE | 4-Bromofluorobenzene | 57 - 140 |
| DBRFLM | Dibromofluoromethane | 68 - 130 |
| TOLD8 | Toluene-d8 | 50 - 130 |

# QUALITY ASSURANCE METHODS

## REFERENCES AND NOTES

Report Date: 11/18/2005

### REPORT COMMENTS

1) All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
2) Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.
3) According to 40CFR Part 136.3, pH, Chlorine Residual, and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field,(e.g. pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.
4) For all USACE projects, the QC limits are based on "mean +/- 2 sigma", which are the warning limits.

General Information:

- Cresylic Acid is the combination of o,m and p-Cresol. The combination is reportesd as the final result.
- m-Cresol and p-Cresol co-elute. The result of the two is reported as either m&p-cresol or as p-cresol.
- m-Xylene and p-Xylene co-elute. The result of the two is reported as m,p-Xylene.
- N-Nitrosodiphenylamine decomposes in the gas chromatograph inlet forming dipheylamine and, consequently, may be detected as diphenylamine.
- Methylene Chloride and Acetone are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
- Trimethysilyl(Diazomethane) is used to esterify acid herbicides in Method SW-846 8151A.
- For Inorganic analyses, duplicate QC limits are determined as follows: If the sample result is less than or equal to 5 times the reporting limit, the RPD limit is equal to the reporting limit. If the sample result is greater than 5 times the reporting limit, the RPD limit is the method defined RPD.

Explanation of Qualifiers:

U - This qualifier indicates that the analyte was analyzed but not detected.
J - (Organics only) This qualifier indicates that the analyte is an estimated value between the RL and the MDL.
B - (Inorganics only) This Qualifier indicates that the analyte is an estimated value between the RL and the MDL.
N - (Organics only) This flag indicates presumptive evidence of a compound. This flag is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic charachterization of a TIC, such as "chlorinated hydrocarbon", the "N" flag is not used.

Explanation of General QC Outliers:

A - Matrix interference present in sample.
a - MS/MSD analyses yielded comparable poor recoveries, indicating a possible matrix interference. Method performance is demonstrated by acceptable LCS recoveries.
b - Target analyte was found in the method blank.
M - QC sample analysis yielded recoveries outside QC acceptance criteria. This sample was reanalyzed.
L - LCS analysis yielded high recoveries, indicating a potential high bias. No target analytes were observed above the RL in the associated samples.
G - Marginal outlier within 1% of acceptance criteria.
r - RPD value is outside method acceptance criteria.
C - Poor RPD values observed due to the non-homogenous nature of the sample.
O - Sample required dilution due to matrix interference.
D - Sample reported from a dilution.
d - Spike and/or surrogate diluted.
P - The recovery of this analyte is outside default QC limits. The data is accepted and will be used to calculate in-house statistical limits.
E - The reported concentration exceeds the instrument calibration.
F - The analyte is outside QC limits. The sample data is accepted since this analyte is not reported in associated samples.
H - Continuing Calibration Verification (CCV) standard is not associated with the samples reported.
q - See the subcontract final report for qualifier explanation.

W - The MS/MSD recoveries are outside QC acceptance criteria because the amount spiked is much less than the amount found in the sample.
K - High recovery will not affect the quality of reported results.
Z - See case narrative.

Explanation of Organic QC Outliers:

e - Method blank analysis yielded phthalate concentrations above the RL. Phthlates are recognized potential laboratory contaminants. Its presence in the sample up to five times the amount reported in the blank may be attributed to laboratory contamination.
S - Sample reanalyzed/reextracted due to poor surrogate recovery. Reanalysis confirmed original analysis indicating a possible matrix interference.
T - Sample analysis yielded poor surrogate recovery.
R - The RPD between the two GC columns is greater than 40% and no anomalies are present. The higher result is reported as per EPA Method 8000B.
I - The RPD between the two GC columns is greater than 40% and anomalies are present. The lower of the two results has been reported.
X - Gaseous compound. In-house QC limits are advisory.
Y - Ketone compounds have poor purge efficiency. In-house QC limits are advisory.
f - Surrogate not associated with reported analytes.

Explanation of Inorganic QC Outliers:

Q - Method blank analysis yielded target analytes above the RL. Associated sample results are greater than 10 times the concentrations observed in the method blank.
V - The RPD control limit for sample results less than 5 times the RL is +/- the RL value. Sample and duplicate results are within method acceptance criteria.
e - Serial dilution failed due to matrix interference.
g - Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike recovery being below 85 percent. The correlation coefficent for the MSA is greater than or equal to 0.995.
s - BOD/cBOD seed value is not within method acceptance criteria. Due to the nature of the test method, the sample cannot be reanalyzed.
l - BOD/cBOD LCS value is not within method acceptance criteria. Due to the nature of the test method, sample cannot be reanalyzed.
N - Spiked sample recovery is not within control limits.
n - Sample result quantitated by Method of Standard Additions (MSA) due to the analytical spike recovery being below 85 percent. The correlation coefficient for the MSA is less than 0.995.
* - Duplicate analysis is not within control limits.

Abbreviations:

Batch - Designation given to identify a specific extraction, digestion, preparation, or analysis set.
CCV - Continuing Calibration Verification
CRA - Low level standard check - GFAA, Mercury
CRI - Low level standard check - ICP
Dil Fac - Dilution Factor - Secondary dilution analysis
DLFac - Detection Limit Factor
DU - Duplicate
EB - Extraction Blank (TCLP, SPLP, etc.)
ICAL - Initial Calibration
ICB - Initial Calibration Blank
ICV - Initial Calibration Verification
ISA - Interference Check Sample A - ICP
ISB - Interference Check Sample B - ICP
LCD - Laboratory Control Duplicate
LCS - Laboratory Control Sample
MB - Method Blank

MD - Method Duplicate
MDL - Method Detection Limit
MQL - Method Quantitation Limit (TRRP)
MS - Matrix Spike
MSD - Matrix Spike Duplicate
ND - Not Detected
PB - Preparation Blank
PREPF - Preparation Factor
RL - Reporting Limit
RPD - Relative Percent Difference
RRF - Relative Response Factor
RT - Retention Time
SQL - Sample Quantitation Limit (TRRP)
TIC - Tentatively Identified Compound

Method References:

(1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-94-111 Methods for the Determination of METals in Environmental Samples, Supplement I, May 1994.
(3) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1993; Update IIB, January 1995; Update III, December 1996, Update IVA January 1998, Update IVB November 2000.
(4) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989), 18th Edition (1992), 19th Edition (1995), 20th Edition (1998).
(5) HACH Water Analysis Handbook 3rd Edition (1997).
(6) Federal Register, July 1, 1990 (40 CFR Part 136 Appendix A).
(7) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
(8) ASTM Annual Book of Methods (Various Years)
(9) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.

LABORATORY CHRONICLE

Job Number: 304990 Date: 11/18/2005

CUSTOMER: Maxim Technologies, Inc. PROJECT: FLOW 87 ATTN: Charlie Durret

Lab ID: 304990-1 Client ID: SS Date Recvd: 10/28/2005 Sample Date: 10/25/2005

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3550B | Extraction (Ultrasonic) DRO | 1 | 141435 | | 10/28/2005 | 1400 | |
| EPA 300.0 | Ion Chromatography Analysis | 1 | 141491 | | 10/31/2005 | 2120 | |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | 1 | 141843 | 141435 | 10/31/2005 | 2344 | |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | 1 | 141431 | | 10/28/2005 | 1556 | 1.0000 |
| SW-846 8260B | Volatile Organics | 1 | 141411 | | 10/29/2005 | 2038 | 1.00000 |

Lab ID: 304990-2 Client ID: SE Date Recvd: 10/28/2005 Sample Date: 10/25/2005

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3550B | Extraction (Ultrasonic) DRO | 1 | 141435 | | 10/28/2005 | 1400 | |
| EPA 300.0 | Ion Chromatography Analysis | 1 | 141491 | | 10/31/2005 | 2135 | |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | 1 | 141843 | 141435 | 11/01/2005 | 0152 | |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | 1 | 141431 | | 10/28/2005 | 1621 | 1.0000 |
| SW-846 8260B | Volatile Organics | 1 | 141411 | | 10/29/2005 | 2104 | 1.00000 |

Lab ID: 304990-3 Client ID: SW Date Recvd: 10/28/2005 Sample Date: 10/25/2005

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3550B | Extraction (Ultrasonic) DRO | 1 | 141435 | | 10/28/2005 | 1400 | |
| EPA 300.0 | Ion Chromatography Analysis | 1 | 141491 | | 10/31/2005 | 2151 | |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | 1 | 141843 | 141435 | 11/01/2005 | 0235 | |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | 1 | 141431 | | 10/28/2005 | 1938 | 1.0000 |
| SW-846 8260B | Volatile Organics | 1 | 141411 | | 10/29/2005 | 2130 | 1.00000 |

Lab ID: 304990-4 Client ID: F-1 Date Recvd: 10/28/2005 Sample Date: 10/25/2005

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3550B | Extraction (Ultrasonic) DRO | 1 | 141435 | | 10/28/2005 | 1400 | |
| EPA 300.0 | Ion Chromatography Analysis | 1 | 141491 | | 10/31/2005 | 2206 | |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | 1 | 141843 | 141435 | 11/01/2005 | 1244 | 5 |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | 1 | 141431 | | 10/28/2005 | 2003 | 1.0000 |
| SW-846 8260B | Volatile Organics | 1 | 141411 | | 10/29/2005 | 2156 | 1.00000 |

Lab ID: 304990-5 Client ID: F-2 Date Recvd: 10/28/2005 Sample Date: 10/26/2005

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3550B | Extraction (Ultrasonic) DRO | 1 | 141435 | | 10/28/2005 | 1400 | |
| EPA 300.0 | Ion Chromatography Analysis | 1 | 141491 | | 10/31/2005 | 2222 | 10 |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | 1 | 141843 | 141435 | 11/01/2005 | 0400 | |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | 1 | 141431 | | 10/28/2005 | 2029 | 1.0000 |
| SW-846 8260B | Volatile Organics | 1 | 141411 | | 10/29/2005 | 2223 | 1.00000 |

Lab ID: 304990-6 Client ID: PS Date Recvd: 10/28/2005 Sample Date: 10/26/2005

| METHOD | DESCRIPTION | RUN# | BATCH# | PREP BT #(S) | DATE/TIME ANALYZED | | DILUTION |
|---|---|---|---|---|---|---|---|
| SW-846 3550B | Extraction (Ultrasonic) DRO | 1 | 141435 | | 10/28/2005 | 1400 | |
| EPA 300.0 | Ion Chromatography Analysis | 1 | 141491 | | 10/31/2005 | 2237 | 10 |
| SW-846 8015B | Total Extractable Petroleum Hydrocarbons | 1 | 141843 | 141435 | 11/01/2005 | 1328 | 10 |
| SW-846 8015B | Total Volatile Petroleum Hydrocarbons | 1 | 141431 | | 10/28/2005 | 2054 | 1.0000 |
| SW-846 8260B | Volatile Organics | 1 | 141411 | | 10/29/2005 | 2249 | 1.00000 |