REPORT OF FINDINGS
SUBSURFACE INVESTIGATION
CONOCOPHILLIPS LUSK DISCHARGE LINE
LEA COUNTY, NEW MEXICO

Prepared for:

ConocoPhillips

ConocoPhillips Remediation Technology
Maxim Project No. 3690059

Prepared by:

MAXIM TECHNOLOGIES INC®
1701 W. Industrial Ave.
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July 21, 2003

ConocoPhillips - 217817
facility - fPAC0604038413
incident - nPAC0604038559
application - pPAC0604038690

MAXIM
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A TETRA TECH COMPANY

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Midland, Texas 79701
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July 29, 2003

Mr. Larry Johnson
NM Oil Conservation Division, District I
1625 French Drive
Hobbs, NM 88240

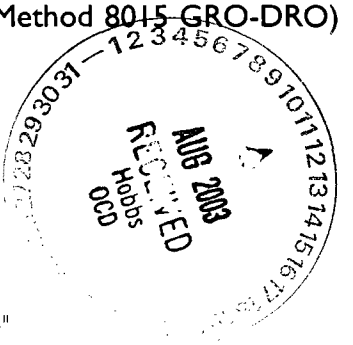
RE: Lusk Discharge Line Release – Investigation Report
Location SE Qtr, Sec 31, T 17, R 32 E
Maxim Project No. 3690059

Dear Mr. Johnson:

At the request of ConocoPhillips, Maxim Technologies Inc. (Maxim) performed a field investigation on May 15 and June 26, 2003, of the above-referenced release. The condensate release was found on April 17, 2003 (Form C-141 is attached). An estimated 15 to 25 barrels of condensate were released into a sand dune area in which the pipeline right-of-way passes through.

The attached report summarizes soil data collected adjacent to the pipeline during two sampling events. Based on the risk-based ranking criteria presented in the New Mexico Oil Conservation Division (NMOCD) *Guidelines for Remediation of Leaks, Spills and Releases*, the effects related to the April 2003 release were above the NMOCD action levels (Total ranking score of 10, with site-specific remediation levels of 5,000 milligrams per kilogram for total petroleum hydrocarbon [TPH] and 50 parts per million from a Photo-Ionization Detector (PID) for benzene, toluene, ethylbenzene and total xylenes).

It is ConocoPhillips' plan to excavate additional condensate-affected soil and haul this soil to a state-approved disposal location. To ensure all soil left in place are within NMODC remediation standards, excavation side wall (4) and bottom (1) samples will be collected, split, and tested. One split will be field soil vapor headspace tested using a PID. A PID reading of <50 will be the criteria used to stop further excavation. The second split will be placed into glass sample jars, sealed with Teflon-lined lids, and placed on ice for transportation to an analytical laboratory. These spilt samples will be analyzed for TPH (Method 8015 GRO-DRO) and used for confirmation.



MAXIM TECHNOLOGIES INC
A TETRA TECH COMPANY

We are prepared to initiate these actions as soon as we receive your approval to proceed. If you have any questions or comments regarding the attached report, please do not hesitate to contact me or Mr. Neal Goates (ConocoPhillips) at 832-379-6427.

Sincerely,

MAXIM TECHNOLOGIES, INC.

Charles Durrett
Project Manager

Attachments

Cc: Mr. Wayne Price, NMOCD
Mr. Donald Peterson, US Bureau of Land Management
Mr. Neal Goates, ConocoPhillips
Mr. Clyde Yancey, Maxim Technologies, Inc.

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CONOCOPHILLIPS LUSK DISCHARGE LINE
LEA COUNTY, NEW MEXICO

1.0 INTRODUCTION

This report describes the methods and results of work performed by Maxim Technologies, Inc. (Maxim) to characterize subsurface conditions at the ConocoPhillips Lusk 8-inch Discharge Line crude oil/condensate release site. The site is approximately 2.4 miles southwest of the Frontier Energy's Maljamar Gas Plant (recently sold by ConocoPhillips to Frontier) and 0.7 mile due south of Hwy 529 in Lea County, New Mexico (Figure 1). The site may be found on the Maljamar, New Mexico, topographic map (U.S.G.S. 1985). Site installations consist of two crude oil/condensate pipelines (8- and 10-inch diameter). This investigation is to delineate a recent release of hydrocarbon and determine the site's status as it relates to the New Mexico Oil Conservation Division's (NMOCD) action levels for crude oil/condensate in non-sensitive sites. This report summarizes the May 15 and June 2003 activities and results.

1.1 BACKGROUND

The Lusk Discharge Line hydrocarbon release was discovered April 17, 2003, and was reported to NMODC and to the US Bureau of Land Management.

Immediately after the release ConocoPhillips removed approximately 126 cubic yards (CY) of affected soil from the site leaving an excavation of roughly 35 ft X 31 ft X sloping to 8 feet.

On May 15 and June 26, 2003, Maxim visited the site to collect soil samples. The return visit was necessary owing to a series of laboratory instrument failures and successful analyses were not completed within the sample hold time.

1.2 HEALTH AND SAFETY

Maxim required safety and health procedures that were appropriate for the level of environmental hazard known to exist on this site. Mark Bishop, ConocoPhillips Safety, Health and Environmental representative, was notified prior to the start of fieldwork. All contractors complied with Conoco's "Contractors Safety Manual" (revised 2002). Level D Personal Protective Equipment (PPE) (including an outer layer of Nomex clothing, required by ConocoPhillips) was adequate for this activity. Personnel were equipped with respirators with organic vapor cartridges in the event of a sudden release of noxious fumes from the site. For further details, please refer to the site-specific Health and Safety Plan (HASP) prepared and amended for the Lusk Discharge Line dated May 13, 2003. On the second excursion, Maxim notified New Mexico One Call. Only Frontier Resources have pipelines in the immediate vicinity of the release site and they were aware of Maxim's activities.

1.3 INVESTIGATION-DERIVED WASTE

Soil cuttings generated by soil auger and backhoe activities were returned to the ground inside the affected area.

1.4 TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY

The site is located in the sand dune area of the Querecho Plains. Depth to water in the vicinity of the Maljamar Gas Plant, approximately 2.4 miles to the northeast, is approximately 100 feet below ground surface (bgs). Depth to water at a water well 1.8 miles to the east-southeast is 65 feet bgs. Depth to water at a water well approximately 2.2 miles south is 460 feet bgs. On the USGS Topo sheet there is a water well located approximately 0.7 miles south-southeast, a windmill approximately 1.6 miles southwest, and a water well approximately 3 miles west of the site. There is not any information on the depth of water in these wells. The Bureau of Land Management (BLM) administers most of this land (Figure 1).

Lusk Discharge Line is located in the northern portion of the Delaware Basin, a structural basin underlying present-day southeastern New Mexico and western Texas which contains a thick sequence of sandstones, shales, carbonates, and evaporites. The sediments accumulated during the Permian period and represent the thickest portion of the sequence in the northern Delaware Basin (DOE, 2001). At the site, Permian rocks are overlain by sediments of the Triassic Dockum Group undivided. Groundwater in the vicinity of Lusk Discharge Line is thought to be between 65 and 100 feet bgs.

The soil consists of excessively drained, non-calcareous loose sands of the Kermit series. These soils are formed in wind deposited sands in the Southern Desertic Plains. Soils of the Kermit series are undulating to billowy, forming stabilized dunes 4 to 15 feet or more high. Typically, the surface layer is light brown, fine sand about 8 inches thick. It is underlain by pale reddish brown fine sand to a depth of 6 feet. Below this is moderate reddish orange, slightly sandy clay. Underlying the clay is white moderate to well indurated caliche. Approximately 6 feet of blow sand covers 2 feet of sandy clay underlain by caliche at the site.

2.0 SCOPE OF WORK

Maxim collected soil samples adjacent to the pipeline to delineate the affected soil at the site. Samples were collected around the existing excavation to a depth of 10 to 13 feet using a hand auger or backhoe. The sandy nature of the soil facilitated the use of the hand auger but roots below surface hindered sample retrieval. A backhoe was used to collect the remaining samples. Figure 2 presents a site map showing the pipeline right-of-way and location of soil samples. A split of each soil sample was sealed in a plastic bag and headspace measurements made with a photo-ionization detector (PID). Soil samples were also submitted to a laboratory for analysis of total petroleum hydrocarbons (TPH), both diesel range organics (DRO) and gasoline range organics (GRO). Synthetic Precipitation Leaching Procedure (SPLP) analysis was performed on the bottom of excavation sample (BH-5, 12 feet).

2.1 SOIL VAPOR

Soil samples were field screened (head-space analysis) to detect the presence of volatile organic compound (VOC) vapors. The investigation program entailed the collection of soil in 3-foot intervals from 6 shallow borings or trenches (approximately 12 feet deep) for detection of VOCs. The sample locations are shown on Figure 2. Each interval sample was bagged, labeled, and heated for approximately 15 minutes. After the waiting period, the bags were penetrated with the tip of the PID and a measurement taken of the organic vapors present within the bag. Observations of the hand auger (HA) cuttings and backhoe (BH) samples tested with a PID are presented in Appendix A.

2.2 SOIL

Collected soil was placed into 4-oz. glass sample jars sealed with Teflon-lined lids, manifested, and placed on ice for transportation to an analytical laboratory. Severn Trent Laboratory analyzed each sample for TPH (Method 8015 GRO-DRO), and chloride (USEPA Method 300). The bottom of pit sample (BH-5) was analyzed using SPLP (Method 1312 for volatile hydrocarbon and semivolatile hydrocarbon organics). Observations concerning soil types, lithologic changes, and the environmental condition of the encountered soil types are presented in soil logs (Appendix A).

2.3 FREE LIQUID

Free liquid was not observed during hand auger or backhoe operations. Observations concerning moisture conditions encountered are presented in soil logs presented as Appendix A.

3.0 ANALYTICAL RESULTS

A summary of subsurface soil conditions is presented in Table 1 and the complete analytical report is presented in Appendix B. The soil encountered during boring activities consists of red dune sand overlying red sandy clay and white caliche. In all sample locations caliche substrate was encountered in the 10- to 12-foot-depth range.

PID readings in the Lusk Discharge Line soils are presented in Table 1 and recorded on field logs (Appendix A). Hand auger and backhoe samples exhibited PID readings of less than 100 parts per million (ppm). Location HA-6 was used to describe the condition of the affected zone at the site and had PID readings of 48 and 10.7 ppm.

The concentrations of hydrocarbon in the soils are presented in Table 2. DRO hydrocarbons were noted in all sampling locations except the BH-4 12-foot interval that registered nondetection. Sample location HA-6 2-foot interval, located immediately below the point of release, exhibited a DRO concentration of 9,000 milligrams per kilogram (mg/kg). DRO values at all other sample locations were less than 15 mg/kg.

(GRO) hydrocarbon was not detected in any sample locations except in sample locations BH-5 13-foot interval (214.0 mg/kg) and HA-6 2-foot interval (27.5 mg/kg).

Synthetic Precipitation Leaching Procedure (SPLP) is an EPA SW-846 analytical method (Method 1312) designed to determine the mobility of toxic organic and inorganic soil contaminants (Table 2). SPLP concentrations for volatile and semivolatile organic material were not detected in the bottom of the excavation sample (BH-5, 12 foot interval).

Chloride concentrations in the soils are presented in Table 2. Chloride was not detected in sample locations HA-1 10-foot interval and BH-4 12-foot interval. All other sample locations exhibited the presence of chloride. The highest Chloride concentration was noted in sample BH-5 13-foot interval (91.9 mg/kg).

4.0 CONCLUSIONS

According to visual observation, PID screening and laboratory analysis there is hydrocarbon present at the site. Based on the risk-based ranking criteria presented in the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases*, the following risk factors are applied to the subject site:

Depth to Groundwater 65 feet	Ranking score of	10
Wellhead Protection Area >1000 ft from a water source >200 ft from private domestic water source	Ranking score of	0
Distance to Surface Water Body >1000 horizontal ft	Ranking score of	0

Based on a total ranking score of 10, the site-specific remediation levels are 5,000 mg/kg for TPH and 50 ppm (from a PID) for benzene, toluene, ethylbenzene and total xylenes (BTEX). Based on the results presented in Table 2 and visual observation of soil staining, the impacts relative to the May 2003 discovery are above the NMOCD action levels in the immediate vicinity of the initial release, as represented by location HA-6.

Therefore, the boundary (35 ft x 31 ft x 10 ft) established by this investigation defines the affected area (401.9 cubic yards [CY]). Approximately 126 CY of affected soil were removed from the site immediately after the release, leaving an excavation of roughly 35 ft X 31 ft X sloping to 8 feet. Subtracting the removed volume (126 CY) form the total affected area volume (401.9 CY), leaves approximately 275.9 CY of material to be removed.

5.0 RECOMMENDATIONS

Based on these findings, Maxim recommends the removal and disposal of hydrocarbon-affected material.

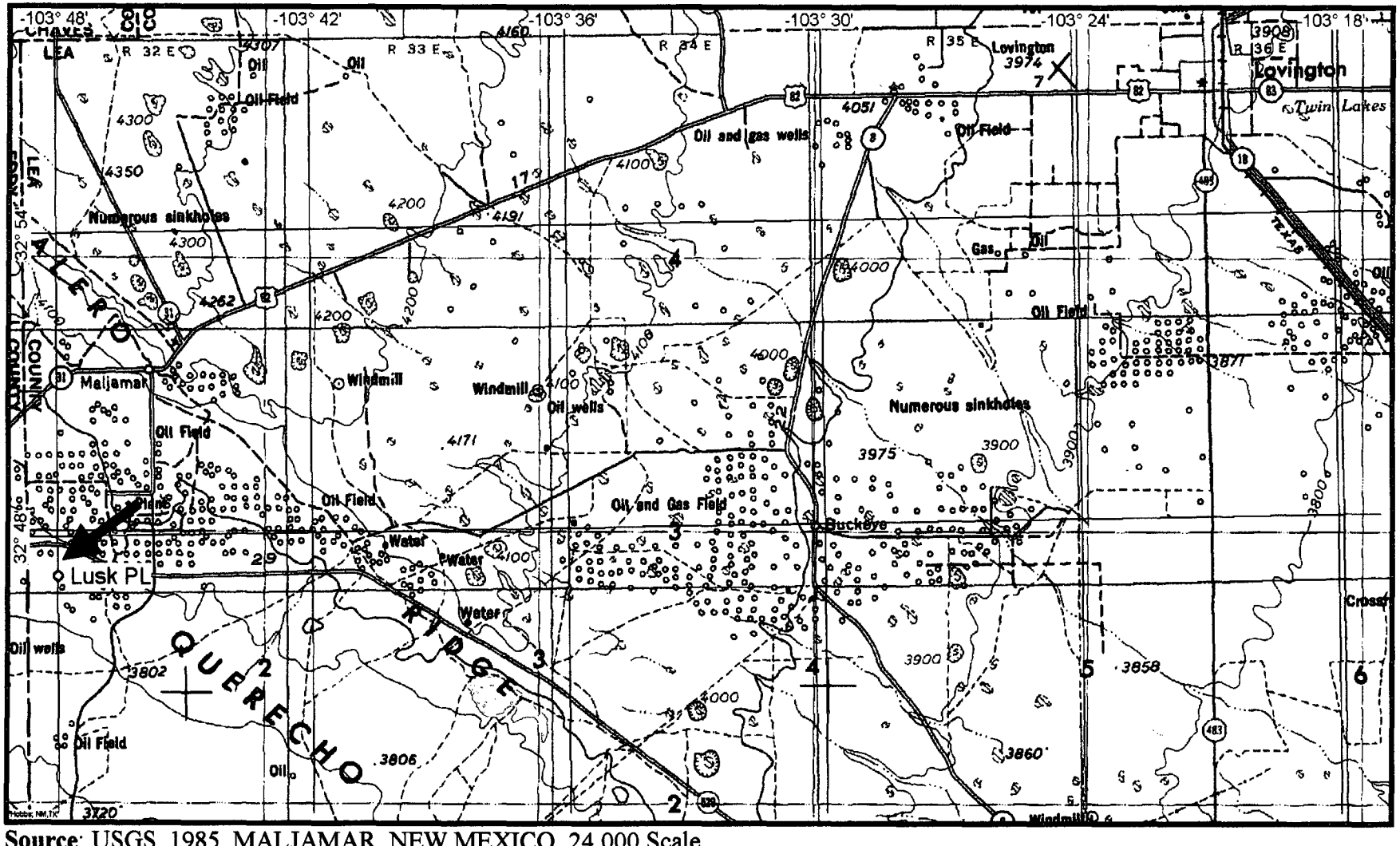
6.0 REFERENCES

Department of Energy, 2001. Environmental Assessment for Conducting Astrophysics and Other Basic Science Experiments at the WIPP Site. Doc No. DOE/EA-1340, USDOE, Washington, D.C.

Turner, Millard T., Cox, Dellon N., Mickelson, Brice C., Roath, Archie J., and Wilson, Carl D., 1974. *Soil Survey of Lea County, New Mexico. USDA, Soil Conservation Service.*

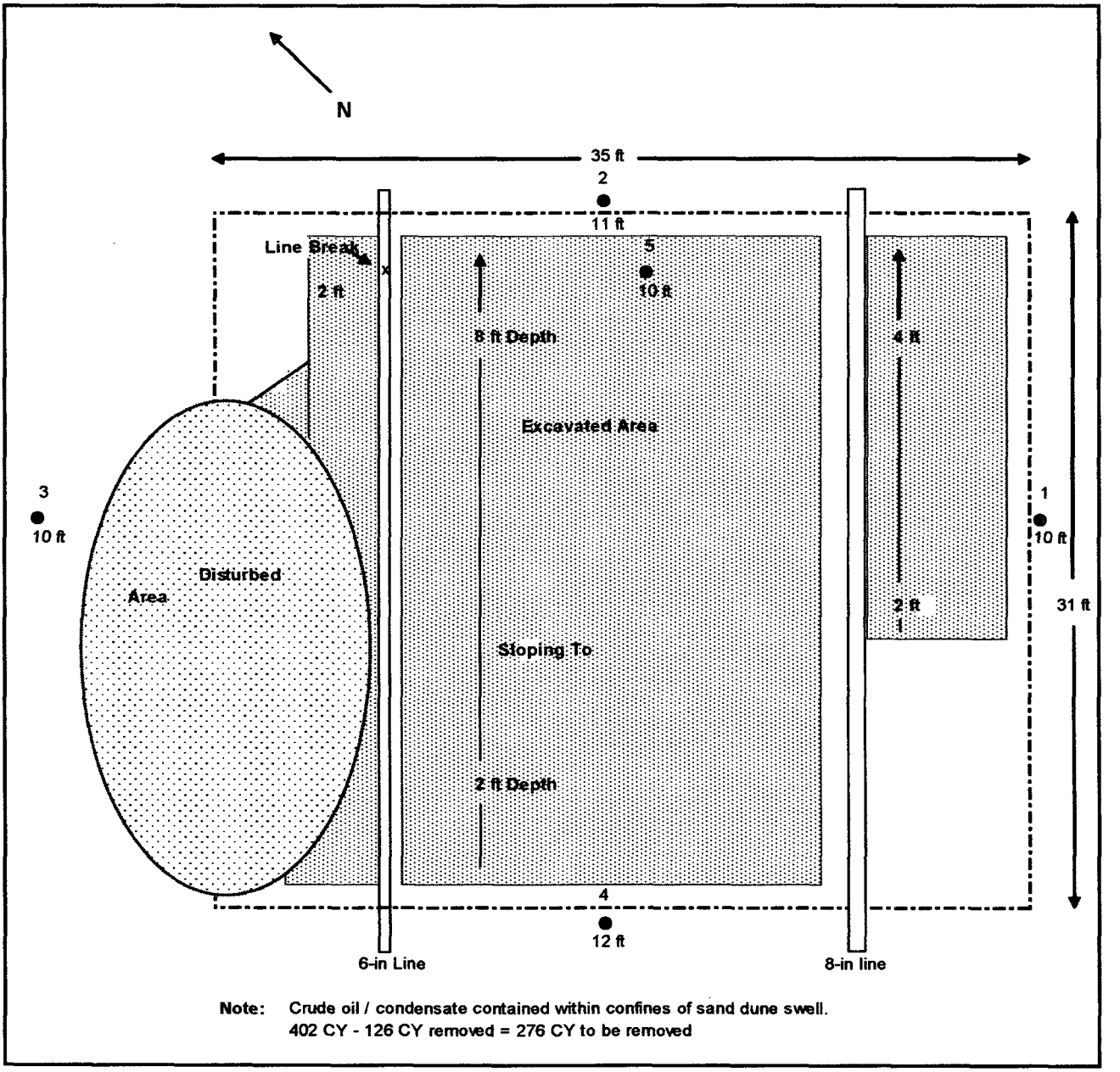
U.S. Geological Survey, Maljamar, New Mexico 7.5 Minute Topographic Map, 1985.

FIGURES



Source: USGS, 1985. MALJAMAR, NEW MEXICO. 24,000 Scale.

MAXIM TECHNOLOGIES INC	
ConocoPhillips	Southeastern New Mexico Operating Unit
Figure 1. Lusk Pipeline Area Map	



Note: Crude oil / condensate contained within confines of sand dune swell.
402 CY - 126 CY removed = 276 CY to be removed

MAXIM TECHNOLOGIES INC	
ConocoPhillips	Southeastern New Mexico Operating Unit
Figure 2. Lusk Discharge Line Site Drawing	

TABLES

Table 1.
Lusk Discharge Line
Photo-ionization Detector Readings

Depth (ft)	May 15, 2003 Readings at Sampling Location (ppm)						June 26, 2003 Readings at Sampling Location (ppm)					
	HA -1	HA -2	HA -3	BH-4	BH-5*	HA -6**	HA -1	HA -2	HA -3	BH-4	BH-5*	HA -6**
0-3	0.3	1.0	0.7	17.0	-	48.0					-	10.7
3-6	0.3	0.5	0.8	4.5	-		0.2	0.7	0.5	2.0	-	
6-9	0.8	0.4	0.4	1.4	-						-	
9-12	0.4	0.2	0.4	1.1	15.7		0.6	0.2	1.5	0.9	50.8	

* Below bottom of excavated area

** Inside condensate/crude oil affected area

Results in parts per million (ppm)

Table 2.
Lusk Discharge Line
Delineation of Condensate/Crude Oil Release

Parameter	Date	Data Analysis - Sampling Locations									
		HA -1		HA -2		HA -3		BH-4		BH-5*	HA -6**
Sampling Depth Interval (ft)	5-15-2003	6	10/12***	6	11	6	10	3	12/10***	11/13***	2
TPH (mg/kg)											
Diesel Range	5-15-2003	4.2	6	12	1.8	2.6	2.3	2.5	ND	18	**9000**
Gasoline Range	6-26-2003	ND	ND	ND	ND	ND	ND	ND	ND	214.0	27.5
SPLP (mg/kg)											
Semivolatiles	6-26-2003								ND		
Volatiles	6-26-2003								ND		
Moisture (%)	6-26-2003								31.0		
Cl (mg/kg)	5-15-2003	11.4	ND	36.7	10.9	31.2	17.7	37.4	ND	91.9	13

* Below bottom of excavated area

** Inside condensate/crude oil affected area

*** Depth at which samples were collected (5-15-2003 / 6-26-2003)

ND – not detected

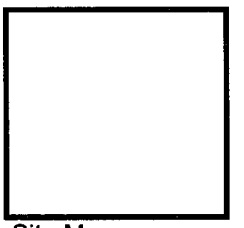
Results in milligrams per kilogram (mg/kg)

APPENDIX A

Geoprobe Split-spoon Logs

MAXIM Hand Auger Log

Client_Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line_____ Driller _____
Boring/Well No.___LS - 1_____ Drilling Co._____
Surface Elevation_____ Boring Dia._5 in._____
Dates Drilled__5-15-03_____ Fluids used_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___cloudy_____

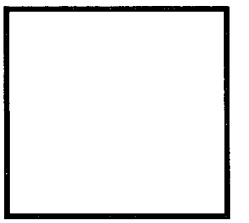


Site Map

	Description	Interval	PID	Graphic	Well Design
0	Sand, light brown, fine grained.	0 - 3	0.3		
	Sand, light brown, fine grained	3 - 6	0.3		
5					
	Clay, moderate reddish brown, slightly sandy	6 - 9	0.8		
10	Caliche, white, moderate to well indurated	9 - 10	0.4		
	TD 10 feet				

MAXIM Hand Auger Log

Client_Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line__ Driller _____
Boring/Well No.___LS - 1a_____ Drilling Co._____
Surface Elevation_____ Boring Dia.__Backhoe pit_____
Dates Drilled__6-26-03_____ Fluids used_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___sundy and windy_____

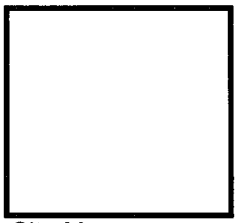


Site Map

	Description	Interval	PID	Graphic	Well Design
0	Sand, light brown, fine grained.	0 - 3			
	Sand, light brown, fine grained	3 - 6			
5			0.2		
	Clay, moderate reddish brown, slightly sandy	6 - 9			
10		9 - 11			
	Caliche, white, moderate to well indurated	11 - 12	0.6		
	TD 12 feet				

MAXIM Hand Auger Log

Client Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line____ Driller _____
Boring/Well No.___LS - 2_____ Drilling Co._____
Surface Elevation_____ Boring Dia._5 in._____
Dates Drilled__5-15-03_____ Fluids used___Air_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___cloudy_____

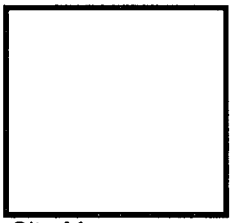


Site Map

	Description	Interval	PID	Graphic	Well Design
0	Sand, light brown, fine grained.	0 - 3	1.0		
	Sand, light brown, fine grained	3 - 6	0.5		
5					
	Clay, moderate reddish brown, slightly sandy	6 - 9	0.4		
10	Caliche, white, moderate to well indurated	9 - 10	0.2		
	TD 11 feet				

MAXIM Hand Auger Log

Client Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line____ Driller _____
Boring/Well No.___LS - 2a_____ Drilling Co._____
Surface Elevation_____ Boring Dia._Backhoe pit____
Dates Drilled__6-26-03_____ Fluids used___Air_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___sunny and windy_____

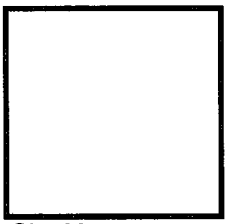


Site Map

Description	Interval	PID	Graphic	Well Design
Sand, light brown, fine grained.	0 - 3			
Sand, light brown, fine grained	3 - 6	0.7		
Clay, moderate reddish brown, slightly sandy	6 - 11			
Caliche, white, moderate to well indurated	11 - 12	0.2		
TD 12 feet				

MAXIM Hand Auger Log

Client_Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line____ Driller _____
Boring/Well No.___LS - 3_____ Drilling Co._____
Surface Elevation_____ Boring Dia._5 in._____
Dates Drilled__5-15-03_____ Fluids used___Air_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___cloudy_____

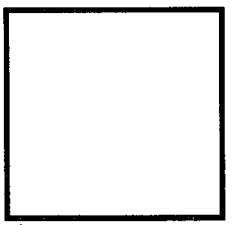


Site Map

	Description	Interval	PID	Graphic	Well Design
0	Sand, light brown, fine grained.	0 - 3	0.7		
	Sand, light brown, fine grained	3 - 6	0.8		
5					
	Clay, moderate reddish brown, slightly sandy	6 - 9	0.04		
10	Caliche, white, moderate to well indurated	9 - 10	0.4		
	TD 11 feet				

MAXIM Hand Auger Log

Client_Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line____ Driller _____
Boring/Well No.___LS - 3a_____ Drilling Co._____
Surface Elevation_____ Boring Dia._Backhoe pit_____
Dates Drilled__6-26-03_____ Fluids used___Air_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___sunny and windy_____

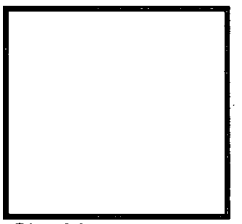


Site Map

	Description	Interval	PID	Graphic	Well Design
0	Sand, light brown, fine grained.	0 - 3			
	Sand, light brown, fine grained	3 - 6			
5			0.5		
	Clay, moderate reddish brown, slightly sandy	6 - 9			
10	Caliche, white, moderate to well indurated	9 - 10	1.5		
	TD 10 feet				

MAXIM Hand Auger Log

Client_Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line____ Driller _____
Boring/Well No.___LS - 4_____ Drilling Co._____
Surface Elevation_____ Boring Dia._5 in._____
Dates Drilled__5-15-03_____ Fluids used___Air_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___cloudy_____

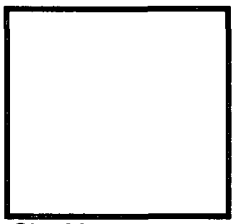


Site Map

	Description	Interval	PID	Graphic	Well Design
0	Sand, light brown, fine grained.	0 - 3	17		
	Sand, light brown, fine grained	3 - 6	4.5		
5					
	Clay, moderate reddish brown, slightly sandy	6 - 9	1.4		
10	Clay, moderate reddish brown, slightly sandy	9 - 12	1.1		
	TD 12 feet				

MAXIM Hand Auger Log

Client_Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line____ Driller _____
Boring/Well No.___LS - 4a_____ Drilling Co._____
Surface Elevation_____ Boring Dia._Backhoe pit_____
Dates Drilled__6-26-03_____ Fluids used___Air_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___sunny and windy_____

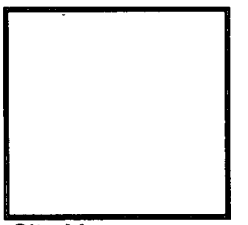


Site Map

	Description	Interval	PID	Graphic	Well Design
0	Sand, light brown, fine grained.	0 - 3	2.0		
	Sand, light brown, fine grained	3 - 7			
5					
	Clay, moderate reddish brown, slightly sandy	7 - 9			
10	Caliche, white, moderate to well indurated	9 - 11	0.9		
	TD 11 feet				

MAXIM Hand Auger Log

Client_Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line____ Driller _____
Boring/Well No.___LS - 5a_____ Drilling Co._____
Surface Elevation_____ Boring Dia._Backhoe pit_____
Dates Drilled__6-26-03_____ Fluids used___Air_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___sunny and windy_____

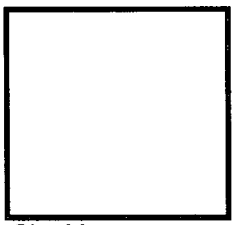


Site Map

Description	Interval	PID	Graphic	Well Design
Pit	0 - 3			
Pit	3 - 7			
Clay, brownish gray, slightly sandy	7 - 11	50.8		
Caliche, white, moderate to well indurated	11 - 13	49.8		
TD 13 feet				

MAXIM Hand Auger Log

Client_Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line____ Driller _____
Boring/Well No.___LS - 6a_____ Drilling Co._____
Surface Elevation_____ Boring Dia._ pit_____
Dates Drilled__6-26-03_____ Fluids used___Air_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___sunny and windy_____

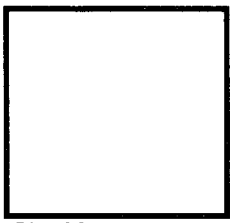


Site Map

	Description	Interval	PID	Graphic	Well Design
0	Pit Wall, Sand, brownish black, fine grained, heavy condensate staining and odor Sample under pipeline.	0 - 3	10.7		
	TD 4 feet				

MAXIM Hand Auger Log

Client_Conoco_____ Project No.__3690059_____
Location__Lusk Discharge Line____ Driller _____
Boring/Well No.___LS - 6a_____ Drilling Co._____
Surface Elevation_____ Boring Dia._ pit_____
Dates Drilled__6-26-03_____ Fluids used___Air_____
Logged By__Lichnovsky_____ Depth to Water_____
Weather___sunny and windy_____



Site Map

	Description	Interval	PID	Graphic	Well Design
0	Pit Wall, Sand, brownish black, fine grained, heavy condensate staining and odor Sample under pipeline.	0 - 3	10.7		
	TD 4 feet				

APPENDIX B

Analytical Report

SEVERN TRENT STL

Certificate of Analysis

STL Austin • 14046 Summit Drive, Austin, TX 78728 • Tel 512 244 0855 • Fax 512 244 0160 • *www.stl-inc.com*

ANALYTICAL REPORT

PROJECT NO. HOBBS, NM

6511 Lusk Discharge Line

Lot #: I3E160172

Charles Durrett

Maxim Technologies
1703 W Industrial Ave
Midland, TX 79701

SEVERN TRENT LABORATORIES, INC.

Carla Butler

Carla M. Butler
Project Manager

June 18, 2003

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories

STL LOT NUMBER: **I3E160172**
PO/CONTRACT: 4501675631 Subsurface investigation

Charles Durrett
Maxim Technologies
1703 W Industrial Ave
Midland, TX 79701

Dear Charles Durrett,

This report contains the analytical results for the 10 samples received under chain of custody by Severn Trent Laboratories (STL) on May 16 and May 22, 2003. These samples are associated with your 6511 Lusk Discharge Line project.

All samples were received in good condition and within temperature requirements. The date collected was taken from the bottle labels because was not present on Chain of Custody 009802.

The GRO analysis performed within hold time had unacceptable QC data. Due to a series of instrument failures, successful analyses were not completed within hold time. The laboratory will pay for resampling.

The DRO extract for sample 010 could only be concentrated to a final volume of 10 ml instead of the routine 1 ml.

Surrogate recoveries are not reported because the matrix required dilution below the ability to calculate recoveries for the DRO analysis of sample 010 and the Matrix Spike/Matrix Spike Duplicate of 010. Spike recoveries were not calculated for the DRO Matrix Spike/Matrix Spike Duplicate because the sample amount was more than four times the spike amount.

Recoveries outside limits for the Matrix Spike/Matrix Spike Duplicate of non-project specific batch QC samples are not discussed in this case narrative.

If you have any questions, please feel free to call me at (512) 244-0855.

EXECUTIVE SUMMARY - Detection Highlights

I3E160172

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
1-6FT 05/15/03 001				
Diesel Range Organics	4200	1700	ug/kg	SW846 8015B
Chloride	11.4	10.0	mg/kg	MCAWW 300.0A
1-10FT 05/15/03 002				
Diesel Range Organics	6000	1700	ug/kg	SW846 8015B
2-6FT 05/15/03 003				
Diesel Range Organics	12000	1700	ug/kg	SW846 8015B
Chloride	36.7	10.0	mg/kg	MCAWW 300.0A
2-11FT 05/15/03 004				
Diesel Range Organics	1800	1700	ug/kg	SW846 8015B
Chloride	10.9	10.0	mg/kg	MCAWW 300.0A
3-6FT 05/15/03 005				
Diesel Range Organics	2600	1700	ug/kg	SW846 8015B
Chloride	31.2	10.0	mg/kg	MCAWW 300.0A
3-10FT 05/15/03 006				
Diesel Range Organics	2300	1700	ug/kg	SW846 8015B
Chloride	17.7	10.0	mg/kg	MCAWW 300.0A
4-3FT 05/15/03 007				
Diesel Range Organics	2500	1700	ug/kg	SW846 8015B
Chloride	37.4	10.0	mg/kg	MCAWW 300.0A
5-11FT 05/15/03 009				
Diesel Range Organics	18000	1700	ug/kg	SW846 8015B
Chloride	91.9	10.0	mg/kg	MCAWW 300.0A
6-2 FT 05/19/03 10:30 010				
Diesel Range Organics	9000000	340000	ug/kg	SW846 8015B
Chloride	13.0	10.0	mg/kg	MCAWW 300.0A

ANALYTICAL METHODS SUMMARY

I3E160172

PARAMETER	ANALYTICAL METHOD
Chloride	MCAWW 300.0A
Extractable Petroleum Hydrocarbons	SW846 8015B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

I3E160172

ANALYTICAL METHOD	ANALYST	ANALYST ID
MCAWW 300.0A	David A. Tocher	800002
SW846 8015B	Ellen Grett	014902

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

I3E160172

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
FNVL6	001	1-6FT	05/15/03	
FNVMA	002	1-10FT	05/15/03	
FNVMC	003	2-6FT	05/15/03	
FNVMD	004	2-11FT	05/15/03	
FNVMF	005	3-6FT	05/15/03	
FNVMG	006	3-10FT	05/15/03	
FNVMH	007	4-3FT	05/15/03	
FNVMN	008	4-12FT	05/15/03	
FNVMP	009	5-11FT	05/15/03	
FN7DM	010	6-2 FT	05/19/03	10:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

QC DATA ASSOCIATION SUMMARY

I3E160172

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264
002	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264
003	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264
004	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264
005	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264
006	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264
007	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264
008	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264
009	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264
010	SOLID	MCAWW 300.0A		3151125	3151021
	SOLID	SW846 8015B		3142475	3142264

CONOCOPHILLIPS

Client Sample ID: 1-6FT

GC Semivolatiles

Lot-Sample #...: I3E160172-001 **Work Order #...:** FNVL61AC **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
Prep Date.....: 05/22/03 **Analysis Date..:** 05/27/03
Prep Batch #...: 3142475
Dilution Factor: 1
% Moisture.....: **Method.....:** SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**4200**	**1700**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	94	(40 - 144)
Dotriacontane	103	(42 - 159)

CONOCOPHILLIPS

Client Sample ID: 1-6FT

General Chemistry

Lot-Sample #...: I3E160172-001 **Work Order #...:** FNVL6 **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	**11.4**	**10.0**	**mg/kg**	**MCAWW 300.0A**	**05/30/03**	**3151125**

Dilution Factor: 1

CONOCOPHILLIPS

Client Sample ID: 1-10FT

GC Semivolatiles

Lot-Sample #...: I3E160172-002 **Work Order #...:** FNVMA1AC **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
Prep Date.....: 05/22/03 **Analysis Date..:** 05/27/03
Prep Batch #...: 3142475
Dilution Factor: 0.99
% Moisture.....: **Method.....:** SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**6000**	**1700**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	93	(40 - 144)
Dotriacontane	100	(42 - 159)

CONOCOPHILLIPS

Client Sample ID: 1-10FT

General Chemistry

Lot-Sample #...: I3E160172-002 **Work Order #...:** FNVMA **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	ND	10.0	mg/kg	MCAWW 300.0A	05/30/03	3151125

Dilution Factor: 1

CONOCOPHILLIPS

Client Sample ID: 2-6FT

GC Semivolatiles

Lot-Sample #...:	I3E160172-003	**Work Order #...:**	FNVMC1AC	**Matrix.....:**	SOLID
Date Sampled...:	05/15/03	**Date Received..:**	05/16/03		
Prep Date.....:	05/22/03	**Analysis Date..:**	05/27/03		
Prep Batch #...:	3142475				
Dilution Factor:	0.99				
% Moisture.....:		**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**12000**	**1700**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	93	(40 - 144)
Dotriacontane	102	(42 - 159)

CONOCOPHILLIPS

Client Sample ID: 2-6FT

General Chemistry

Lot-Sample #...: I3E160172-003 **Work Order #...:** FNVMC **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	**36.7**	**10.0**	**mg/kg**	**MCAWW 300.0A**	**05/30/03**	**3151125**

Dilution Factor: 1

CONOCOPHILLIPS

Client Sample ID: 2-11FT

GC Semivolatiles

Lot-Sample #...: I3E160172-004 **Work Order #...:** FNVMD1AC **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
Prep Date.....: 05/22/03 **Analysis Date..:** 05/27/03
Prep Batch #...: 3142475
Dilution Factor: 1
% Moisture.....: **Method.....:** SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**1800**	**1700**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	88	(40 - 144)
Dotriacontane	105	(42 - 159)

CONOCOPHILLIPS

Client Sample ID: 2-11FT

General Chemistry

Lot-Sample #...: I3E160172-004 **Work Order #...:** FNVMD **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	10.9	10.0	mg/kg	MCAWW 300.0A	05/30/03	3151125

Dilution Factor: 1

CONOCOPHILLIPS

Client Sample ID: 3-6FT

GC Semivolatiles

Lot-Sample #...:	I3E160172-005	**Work Order #...:**	FNVMF1AC	**Matrix.....:**	SOLID
Date Sampled...:	05/15/03	**Date Received..:**	05/16/03		
Prep Date.....:	05/22/03	**Analysis Date..:**	05/27/03		
Prep Batch #...:	3142475				
Dilution Factor:	1				
% Moisture.....:		**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**2600**	**1700**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	97	(40 - 144)
Dotriacontane	114	(42 - 159)

CONOCOPHILLIPS

Client Sample ID: 3-6FT

General Chemistry

Lot-Sample #...: I3E160172-005 **Work Order #...:** FNVMF **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	**31.2**	**10.0**	**mg/kg**	**MCAWW 300.0A**	**05/30/03**	**3151125**

Dilution Factor: 1

CONOCOPHILLIPS

Client Sample ID: 3-10FT

GC Semivolatiles

Lot-Sample #...:	I3E160172-006	**Work Order #...:**	FNVMG1AC	**Matrix.....:**	SOLID
Date Sampled...:	05/15/03	**Date Received..:**	05/16/03		
Prep Date.....:	05/22/03	**Analysis Date..:**	05/27/03		
Prep Batch #...:	3142475				
Dilution Factor:	0.99				
% Moisture.....:		**Method.....:**	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**2300**	**1700**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	93	(40 - 144)
Dotriacontane	105	(42 - 159)

CONOCOPHILLIPS

Client Sample ID: 3-10FT

General Chemistry

Lot-Sample #...: I3E160172-006 **Work Order #...:** FNVMG **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	**17.7**	**10.0**	**mg/kg**	**MCAWW 300.0A**	**05/30/03**	**3151125**

Dilution Factor: 1

CONOCOPHILLIPS

Client Sample ID: 4-3FT

GC Semivolatiles

Lot-Sample #...: I3E160172-007 **Work Order #...:** FNVMH1AC **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
Prep Date.....: 05/22/03 **Analysis Date..:** 05/27/03
Prep Batch #...: 3142475
Dilution Factor: 0.99
% Moisture.....: **Method.....:** SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**2500**	**1700**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	99	(40 - 144)
Dotriacontane	112	(42 - 159)

CONOCOPHILLIPS

Client Sample ID: 4-3FT

General Chemistry

Lot-Sample #...: I3E160172-007 **Work Order #...:** FNVMH **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	**37.4**	**10.0**	**mg/kg**	**MCAWW 300.0A**	**05/30/03**	**3151125**

Dilution Factor: 1

CONOCOPHILLIPS

Client Sample ID: 4-12FT

GC Semivolatiles

Lot-Sample #...: I3E160172-008 **Work Order #...:** FNVMN1AC **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
Prep Date.....: 05/22/03 **Analysis Date..:** 05/27/03
Prep Batch #...: 3142475
Dilution Factor: 0.99
% Moisture.....: **Method.....:** SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	ND	1700	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	97	(40 - 144)
Dotriacontane	107	(42 - 159)

CONOCOPHILLIPS

Client Sample ID: 4-12FT

General Chemistry

Lot-Sample #...: I3E160172-008 **Work Order #...:** FNVMN **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	ND	10.0	mg/kg	MCAWW 300.0A	05/30/03	3151125

Dilution Factor: 1

CONOCOPHILLIPS

Client Sample ID: 5-11FT

GC Semivolatiles

Lot-Sample #...: I3E160172-009 **Work Order #...:** FNVMP1AC **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
Prep Date.....: 05/22/03 **Analysis Date..:** 05/27/03
Prep Batch #...: 3142475
Dilution Factor: 1
% Moisture.....: **Method.....:** SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**18000**	**1700**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	108	(40 - 144)
Dotriacontane	118	(42 - 159)

CONOCOPHILLIPS

Client Sample ID: 5-11FT

General Chemistry

Lot-Sample #...: I3E160172-009 **Work Order #...:** FNVMP **Matrix.....:** SOLID
Date Sampled...: 05/15/03 **Date Received..:** 05/16/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	**91.9**	**10.0**	**mg/kg**	**MCAWW 300.0A**	**05/30/03**	**3151125**

Dilution Factor: 1

CONOCOPHILLIPS

Client Sample ID: 6-2 FT

GC Semivolatiles

Lot-Sample #...: I3E160172-010 **Work Order #...:** FN7DM1AC **Matrix.....:** SOLID
Date Sampled...: 05/19/03 10:30 **Date Received..:** 05/22/03
Prep Date.....: 05/22/03 **Analysis Date..:** 05/29/03
Prep Batch #...: 3142475
Dilution Factor: 200
% Moisture.....: **Method.....:** SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Diesel Range Organics	**9000000**	**340000**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	NC,DIL	(40 - 144)
Dotriacontane	NC,DIL	(42 - 159)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

CONOCOPHILLIPS

Client Sample ID: 6-2 FT

General Chemistry

Lot-Sample #...: I3E160172-010 **Work Order #...:** FN7DM **Matrix.....:** SOLID
Date Sampled...: 05/19/03 10:30 **Date Received..:** 05/22/03
% Moisture.....:

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	**13.0**	**10.0**	**mg/kg**	**MCAWW 300.0A**	**05/30/03**	**3151125**

Dilution Factor: 1

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: I3E160172 **Work Order #...:** FN8TN1AA **Matrix.....:** SOLID
MB Lot-Sample #: I3E220000-475

Prep Date.....: 05/22/03
Analysis Date..: 05/27/03 **Prep Batch #...:** 3142475
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Diesel Range Organics	ND	1700	ug/kg	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	95	(40 - 144)
Dotriacontane	41 *	(42 - 159)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

* Surrogate recovery is outside stated control limits.

METHOD REQUIRES ONLY ONE SURROGATE TO PASS

METHOD BLANK REPORT

General Chemistry

Client Lot #...: I3E160172 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: FPPQQ1AA		MB Lot-Sample #:	I3E310000-125	
	ND	10.0	mg/kg	MCAWW 300.0A	05/30/03	3151125
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: I3E160172 **Work Order #...:** FN8TN1AC **Matrix.....:** SOLID
LCS Lot-Sample#: I3E220000-475
Prep Date.....: 05/22/03 **Analysis Date..:** 05/27/03
Prep Batch #...: 3142475
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Diesel Range Organics	**48**	**(38 - 139)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	91	(40 - 144)
Dotriacontane	54	(42 - 159)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: I3E160172 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: FPPQQ1AC LCS Lot-Sample#: I3E310000-125			
	93	(80 - 120)	MCAWW 300.0A	05/30/03	3151125
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: I3E160172 **Work Order #...:** FN7DM1AE-MS **Matrix.....:** SOLID
MS Lot-Sample #: I3E160172-010 FN7DM1AF-MSD
Date Sampled...: 05/19/03 10:30 **Date Received..:** 05/22/03
Prep Date.....: 05/22/03 **Analysis Date..:** 05/29/03
Prep Batch #...: 3142475
Dilution Factor: 200 **% Moisture.....:**

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Diesel Range Organics	**0.0 a,MSB**	**(40 - 126)**			**SW846 8015B**
	0.0 a,MSB	**(40 - 126)**	**0.0**	**(0-30)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
o-Terphenyl	NC,DIL	(40 - 144)
	NC,DIL	(40 - 144)
Dotriacontane	NC,DIL	(42 - 159)
	NC,DIL	(42 - 159)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

a Spiked analyte recovery is outside stated control limits.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: I3E160172 **Matrix.....:** SOLID
Date Sampled...: 05/14/03 08:00 **Date Received..:** 05/16/03

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
						% Moisture.....: 100	
Chloride		WO#: FNVPF1AJ-MS/FNVPF1AK-MSD				MS Lot-Sample #: I3E160181-001	
	82	(75 - 125)			MCAWW 300.0A	05/30/03	3151125
	80	(75 - 125)	1.9	(0-20)	MCAWW 300.0A	05/30/03	3151125
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

Chain of Custody Record

I32160172

SEVERN TRENT **STL**

Severn Trent Laboratories, Inc.

009802

STL4149 (1202)

Client	Project Manager	Date	Page 1 of 1
Maxim Technologies	Charles Durrett	5/15/03	
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Location**	**Analysis**
1703 W. Industrial Ave	432-686-8081 / 0805	STL Austin	
City / **State** / **Zip Code**	**Site Contact**		
Midland / TX / 79701	Charles Durrett		
Project Number/Name	**Carrier/Waybill Number**		
Lusk ConocoPhillips Discharge Line 36959	8361-2330-2133		
Contract/Purchase Order/Quote Number			
Contract/PO #: 4500 Subsurface Investigation			

Sample I.D. Number and Description	Date	Time	Sample Type	Containers: Volume	Containers: Type	Containers: No.	Preservative	Condition on Receipt/Comments	TPH (GRO) 8015	TPH (DRO) 8015	Chloride 300.0
1 - 6 ft			Soil	120 ml	Clear GL	1	None	2.0° 5/16/03 @	X	X	X
1 - 10 ft			Soil	120 ml	Clear GL	1	None	SEE COC Add	X	X	X
2 - 6 ft			Soil	120 ml	Clear GL	1	None		X	X	X
2 - 11 ft			Soil	120 ml	Clear GL	1	None		X	X	X
3 - 6 ft			Soil	120 ml	Clear GL	1	None		X	X	X
3 - 10 ft			Soil	120 ml	Clear GL	1	None		X	X	X
4 - 3 ft			Soil	120 ml	Clear GL	1	None		X	X	X
4 - 12 ft			Soil	120 ml	Clear GL	1	None		X	X	X
5 - 11 ft			Soil	120 ml	Clear GL	1	None		X	X	X
			~~Soil~~	~~120 ml~~	~~Clear GL~~	~~1~~	~~None~~		X	X	X
Trip Blank			Water	40 ml	Vial	2	1:1 HCl	NOT BOILED			

Special Instructions: Chloride, TPH (GRO & DRO)

Possible Hazard Identification

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal

☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

(A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required

☒ Normal ☐ Rush ☐ Other _____

QC Level

☐ I. ☐ II. ☐ III.

Project Specific Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By	5/15/03	4:00	1. Received By	5/16/03	0815
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

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Chain of Custody Record

I3E160172

SEVERN TRENT **STL**

Severn Trent Laboratories, inc.

009794

STL4149 (1202)

Client	Project Manager	Date	Page 1 of 1
Maxim Technologies	Charles Durrett	5/19/03	
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Location**	**Analysis**
1703 W. Industrial Ave	432-686-8081	STL Austin	
City / **State** / **Zip Code**	**Site Contact**		
Midland / TX / 79701	Charles Durrett		
Project Number/Name	**Carrier/Waybill Number**		
Snow Phillips 369059 Lusk Discharge Line	8361 2330 3221		
Contract/Purchase Order/Quote Number			
TBD Subsurface investigation			

Sample I.D. Number and Description	Date	Time	Sample Type	Containers: Volume	Containers: Type	Containers: No.	Preservative	Condition on Receipt/Comments	TPH (GRO) 8015	TPH (DRO) 8015	Chloride 300
6 - 2 Ft	5/19/03	1030	Solid	120 ml	Glass	1	None	Ic-5/22/03-BG	X	X	X

Special Instructions: Chloride, TPH (GRO & DRO) Add to Lot I3E160172

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
(A fee may be assessed if samples are retained longer than 3 months)

Turn Around Time Required
☐ Normal ☐ Rush ☒ Other w/other Lusk Samples

QC Level
☐ I. ☐ II. ☐ III.

Project Specific Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished By			1. Received By T. J. Linhard	5-16-03	
2. Relinquished By T. J. Linhard	5-21-03	1800:	2. Received By James Crandall	5/22/03	0815
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with the Sample; CANARY - Returned to Client with Report; PINK - Field Copy

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SEVERN TRENT **STL**

CHAIN-OF-CUSTODY ADDENDUM

Lot No: I3E160172

RECEIVED BY: DW

DATE/TIME RECEIVED: 5/16/03 0815

UNPACKED DATE/TIME: 5/16/03 1030

CLIENT/PROJECT: MAXIM

COC NUMBER:

QUOTE/PROFILE: ~~53144~~ 53132 5-16-03

SAMPLES LOGGED IN: [signature]

LOG-IN REVISED: DW

Number of Shipping Containers Received with Chain of Custody: 1

VOC AIR SAMPLES ☐ YES **SEE SECTIONS 1.0, 2.0, & 6.0**

1.0 CONTAINERS EXAMINED UPON RECEIPT: DW

Container Sealed: ☐ YES ☐ NO

Custody Seal Present: ☐ YES ☐ NO Custody Seal Signed/Dated: ☐ YES ☐ NO

If seal not intact, list air bill number of that container(s): _____

2.0 VOC CANISTERS EXAMINED UPON RECEIPT: _____

Canister Valves Closed: ☐ YES ☐ NO Samples Received Match Chain: ☐ YES ☐ NO

Canister Valves Capped: ☐ YES ☐ NO See Additional Comments: ☐ YES ☐ NO

Packing Material Used: (circle) None / Absorbent / Paper / Bubble Wrap

Can Size: ☐ 6L ☐ 15L Other _____

3.0 SAMPLE TEMPERATURE UPON RECEIPT: DW **PYROMETER #:** P-4

The temperature of the container(s) is: *(acceptable tolerance 1-4°C)*

2.0										

If temperature is outside acceptable tolerance, Project Manager was notified (_____PM). Date: _____ Time: _____

Samples received do not require cooling _____ OK to analyze samples: ☑ YES ☐ NO

PRESERVATION OF SAMPLES REQUIRED: ☑ NA ☐ YES **VERIFIED BY:** DW

Base samples are>pH 12: ☐ YES ☐ NO Acid preserved are<pH 2: ☐ YES ☐ NO

Cyanide samples checked for sulfides: ☐ YES

Sulfide samples appear to be preserved with zinc acetate: ☐ YES ☐ NO

Samples checked for chlorine per specification: ☐ YES

Free chlorine present: ☐ YES ☐ NO

If sample preservation/temperature (°C) is outside acceptable tolerance, Project Manager was notified (_____PM)
Date: _____ Time: _____ ☐ see pH adjustment form

VOLATILE SAMPLES FILLED COMPLETELY, IF NOT, LIST ID AND HEADSPACE OF VOAs CONTAINING BUBBLES EXCEEDING 6MM IN DIAMETER:

Sample ID	mm Headspace

Sample ID	mm Headspace

4.0 CONDITION OF BOTTLES/CONTAINERS VERIFIED BY: KD

Samples received match COC: ☐ YES ☑ NO Bottles received intact: ☑ YES ☐ NO

See additional discrepancies/comments section: ☑ YES ☐ NO Samples received from USDA restricted area: ☐ YES ☑ NO

VOA trip blanks included: ☐ YES ☑ NO ☐ N/A

5.0 ADDITIONAL DISCREPANCIES

Appears on COC		Appears on Label		
Sample ID	**Date/Time**	**Sample ID**	**Date/Time**	**Comments**
	N/A		5/16/03	

6.0 SHIPPING DOCUMENTATION

Air/freight bill is available and attached to COC: ☑ YES ☐ NO Air bill #: _____

Hand-delivered Carrier: _____ Date: _____ Time: _____

7.0 OTHER COMMENTS:

DID NOT RECEIVE TRIP BLANK. NO DATE/TIME ON COC.

CORRECTIVE ACTION:

Client's Name: _____ Informed verbally on: _____ By: _____

Client's Name: _____ Informed verbally on: _____ By: _____

Sample(s) processed "as is" comments: _____

Samples(s) on hold until: _____ If released, notify: _____

REVIEW:

Client COC is "received"; i.e., signed and dated with time of receipt. ☑ YES

COC Addendum number is noted in the 'Comments' section of COC, as required for Horizon LIMS. ☐ YES ☑ N/A

Project Management: CMB Date: 6-18-03

SIGNED ORIGINAL MUST BE RETAINED IN THE PROJECT FILE

SEVERN TRENT STL

ANALYTICAL REPORT

JOB NUMBER: 256706

Prepared For:

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

Attention: Charlie Durret

Date: 07/08/2003

Signature

Name: Sachin G. Kudchadkar

Title: Project Manager III

E-Mail: skudchadkar@stl-inc.com

07/08/03
Date

Severn Trent Laboratories
6310 Rothway Drive
Houston, TX 77040

PHONE: (713) 690-4444

TOTAL NO. OF PAGES 37

SEVERN TRENT STL

07/08/2003

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

Reference:
Project : LUSK DL
Project No. : 256706
Date Received : 07/01/2003
STL Job : 256706

Dear Charlie Durret:

Enclosed are the analytical results for your project referenced above. The following samples are included in the report.

1. LB 1 6FT	2. LB 1 12FT	3. LB 2 6FT
4. LB 2 11FT	5. LB 3 6FT	6. LB 3 10FT
7. LB 4 3FT	8. LB 4 10FT	9. LB 5 13FT
10. LB 6 2FT		

All holding times were met for the tests performed on these samples.

Enclosed, please find the Quality Control Summary. All quality control results for the QC batch that are applicable to the sample(s) are acceptable except as noted in the QC batch reports.

The test results in this report meet all NELAP requirements for STL Houston's NELAP accredited parameters. Any exceptions to NELAP requirements will be noted and included in a case narrative as a part of this report.

If the report is acceptable, please approve the enclosed invoice and forward it for payment.

Thank you for selecting Severn-Trent Laboratories to serve as your analytical laboratory on this project. If you have any questions concerning these results, please feel free to contact me at any time.

We look forward to working with you on future projects.

Sincerely,

Sachin G. Kudchadkar
Project Manager

SEVERN TRENT STL

SAMPLE INFORMATION
Date: 07/08/2003

Job Number.: 256706
Customer...: Maxim Technologies, Inc.
Attn.....: Charlie Durret

Project Number.....: 99003817
Customer Project ID....: LUSK DL
Project Description....: LUSK DL

Laboratory Sample ID	Customer Sample ID	Sample Matrix	Date Sampled	Time Sampled	Date Received	Time Received
256706-1	LB 1 6FT	Soil	06/26/2003	10:00	07/01/2003	09:12
256706-2	LB 1 12FT	Soil	06/26/2003	10:00	07/01/2003	09:12
256706-3	LB 2 6FT	Soil	06/26/2003	10:30	07/01/2003	09:12
256706-4	LB 2 11FT	Soil	06/26/2003	10:30	07/01/2003	09:12
256706-5	LB 3 6FT	Soil	06/26/2003	11:00	07/01/2003	09:12
256706-6	LB 3 10FT	Soil	06/26/2003	11:00	07/01/2003	09:12
256706-7	LB 4 3FT	Soil	06/26/2003	12:00	07/01/2003	09:12
256706-8	LB 4 10FT	Soil	06/26/2003	12:00	07/01/2003	09:12
256706-9	LB 5 13FT	Soil	06/26/2003	12:30	07/01/2003	09:12
256706-10	LB 6 2FT	Soil	06/26/2003	13:00	07/01/2003	09:12

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 1 6FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 10:00
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-1
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	ND	O	10000.0	ug/Kg	07/07/03	cad

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 1 12FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 10:00
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-2
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	ND		1000.00	ug/Kg	07/03/03	cad

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 2 6FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 10:30
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-3
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	ND		1000.00	ug/Kg	07/03/03	cad

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 2 11FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 10:30
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-4
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	ND		1000.00	ug/Kg	07/03/03	cad

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 3 6FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 11:00
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-5
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	ND		1000.00	ug/Kg	07/07/03	cad

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 3 10FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 11:00
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-6
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	ND		1000.00	ug/Kg	07/07/03	cad

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 4 3FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-7
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	ND		1000.00	ug/Kg	07/03/03	cad

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 4 10FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 12:00
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-8
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	ND		1000.00	ug/Kg	07/03/03	cad

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 5 13FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 12:30
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-9
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 3510C	Extraction (Sep. Funnel) SVOC						
	Separatory Funnel Liq/Liq Extraction, SPLP	Complete				07/03/03	mra
SW-846 8270C	Semivolatile Organics						
	Acenaphthene, SPLP	ND		20	ug/L	07/03/03	kri
	Acenaphthylene, SPLP	ND		20	ug/L	07/03/03	kri
	Anthracene, SPLP	ND		20	ug/L	07/03/03	kri
	Benzo(a)anthracene, SPLP	ND		20	ug/L	07/03/03	kri
	Benzo(b)fluoranthene, SPLP	ND		20	ug/L	07/03/03	kri
	Benzo(k)fluoranthene, SPLP	ND		20	ug/L	07/03/03	kri
	Benzo(ghi)perylene, SPLP	ND		20	ug/L	07/03/03	kri
	Benzo(a)pyrene, SPLP	ND		20	ug/L	07/03/03	kri
	Butyl Benzyl Phthalate, SPLP	ND		20	ug/L	07/03/03	kri
	bis(2-chloroethoxy)methane, SPLP	ND		20	ug/L	07/03/03	kri
	bis(2-Chloroethyl)ether, SPLP	ND		20	ug/L	07/03/03	kri
	bis(2-chloroisopropyl)ether, SPLP	ND		20	ug/L	07/03/03	kri
	bis(2-ethylhexyl)phthalate, SPLP	ND		20	ug/L	07/03/03	kri
	4-Bromophenyl Phenyl Ether, SPLP	ND		20	ug/L	07/03/03	kri
	4-Chloroaniline, SPLP	ND		20	ug/L	07/03/03	kri
	2-Chloronaphthalene, SPLP	ND		20	ug/L	07/03/03	kri
	4-Chlorophenyl Phenyl Ether, SPLP	ND		20	ug/L	07/03/03	kri
	Chrysene, SPLP	ND		20	ug/L	07/03/03	kri
	Dibenzo(a,h)anthracene, SPLP	ND		20	ug/L	07/03/03	kri
	Dibenzofuran, SPLP	ND		20	ug/L	07/03/03	kri
	1,2-Dichlorobenzene, SPLP	ND		20	ug/L	07/03/03	kri
	1,3-Dichlorobenzene, SPLP	ND		20	ug/L	07/03/03	kri
	1,4-Dichlorobenzene, SPLP	ND		20	ug/L	07/03/03	kri
	Diethyl Phthalate, SPLP	ND		20	ug/L	07/03/03	kri
	Dimethyl Phthalate, SPLP	ND		20	ug/L	07/03/03	kri
	Di-n-butyl Phthalate, SPLP	ND		20	ug/L	07/03/03	kri
	Di-n-octyl Phthalate, SPLP	ND		20	ug/L	07/03/03	kri
	2,4-Dinitrotoluene, SPLP	ND		20	ug/L	07/03/03	kri
	2,6-Dinitrotoluene, SPLP	ND		20	ug/L	07/03/03	kri
	Fluoranthene, SPLP	ND		20	ug/L	07/03/03	kri
	Fluorene, SPLP	ND		20	ug/L	07/03/03	kri
	Hexachlorobenzene, SPLP	ND		20	ug/L	07/03/03	kri
	Hexachlorobutadiene, SPLP	ND		20	ug/L	07/03/03	kri
	Hexachlorocyclopentadiene, SPLP	ND		20	ug/L	07/03/03	kri
	Hexachloroethane, SPLP	ND		20	ug/L	07/03/03	kri
	Indeno(1,2,3-cd)pyrene, SPLP	ND		20	ug/L	07/03/03	kri
	Isophorone, SPLP	ND		20	ug/L	07/03/03	kri
	2-Methylnaphthalene, SPLP	ND		20	ug/L	07/03/03	kri
	Naphthalene, SPLP	ND		20	ug/L	07/03/03	kri
	Nitrobenzene, SPLP	ND		20	ug/L	07/03/03	kri
	n-Nitrosodi-n-propylamine, SPLP	ND		20	ug/L	07/03/03	kri
	n-Nitrosodiphenylamine, SPLP	ND		20	ug/L	07/03/03	kri
	Phenanthrene, SPLP	ND		20	ug/L	07/03/03	kri
	Pyrene, SPLP	ND		20	ug/L	07/03/03	kri
	1,2,4-Trichlorobenzene, SPLP	ND		20	ug/L	07/03/03	kri

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 5 13FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 12:30
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-9
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
	4-Chloro-3-methylphenol, SPLP	ND		20	ug/L	07/03/03	kri
	2-Chlorophenol, SPLP	ND		20	ug/L	07/03/03	kri
	2,4-Dichlorophenol, SPLP	ND		20	ug/L	07/03/03	kri
	2,4-Dimethylphenol, SPLP	ND		20	ug/L	07/03/03	kri
	2,4-Dinitrophenol, SPLP	ND		100	ug/L	07/03/03	kri
	2-Methyl-4,6-dinitrophenol, SPLP	ND		100	ug/L	07/03/03	kri
	2-Methylphenol (o-Cresol), SPLP	ND		20	ug/L	07/03/03	kri
	4-Methylphenol (p-Cresol), SPLP	ND		20	ug/L	07/03/03	kri
	2-Nitrophenol, SPLP	ND		20	ug/L	07/03/03	kri
	4-Nitrophenol, SPLP	ND		100	ug/L	07/03/03	kri
	Pentachlorophenol, SPLP	ND		100	ug/L	07/03/03	kri
	Phenol, SPLP	ND		20	ug/L	07/03/03	kri
	2,4,5-Trichlorophenol, SPLP	ND		20	ug/L	07/03/03	kri
	2,4,6-Trichlorophenol, SPLP	ND		20	ug/L	07/03/03	kri
	2-Nitroaniline, SPLP	ND		100	ug/L	07/03/03	kri
	3-Nitroaniline, SPLP	ND		100	ug/L	07/03/03	kri
	4-Nitroaniline, SPLP	ND		100	ug/L	07/03/03	kri
	Carbazole, SPLP	ND		20	ug/L	07/03/03	kri
	3,3'-Dichlorobenzidine, SPLP	ND		20	ug/L	07/03/03	kri
SW-846 8260B	Volatile Organics						
	Benzene, SPLP	ND		5	ug/L	07/03/03	ydy
	Bromodichloromethane, SPLP	ND		5	ug/L	07/03/03	ydy
	Bromoform, SPLP	ND		5	ug/L	07/03/03	ydy
	Bromomethane, SPLP	ND		10	ug/L	07/03/03	ydy
	Carbon Tetrachloride, SPLP	ND		5	ug/L	07/03/03	ydy
	Chlorobenzene, SPLP	ND		5	ug/L	07/03/03	ydy
	Chloroethane, SPLP	ND		10	ug/L	07/03/03	ydy
	Chloroform, SPLP	ND		5	ug/L	07/03/03	ydy
	Chloromethane, SPLP	ND		10	ug/L	07/03/03	ydy
	Dibromochloromethane, SPLP	ND		5	ug/L	07/03/03	ydy
	1,1-Dichloroethane, SPLP	ND		5	ug/L	07/03/03	ydy
	1,2-Dichloroethane, SPLP	ND		5	ug/L	07/03/03	ydy
	1,1-Dichloroethene, SPLP	ND		5	ug/L	07/03/03	ydy
	1,2-Dichloroethene (total), SPLP	ND		10.0	ug/L	07/03/03	ydy
	cis-1,2-Dichloroethene, SPLP	ND		5	ug/L	07/03/03	ydy
	trans-1,2-Dichloroethene, SPLP	ND		5	ug/L	07/03/03	ydy
	1,2-Dichloropropane, SPLP	ND		5	ug/L	07/03/03	ydy
	Ethylbenzene, SPLP	ND		5	ug/L	07/03/03	ydy
	Methylene Chloride, SPLP	ND		10	ug/L	07/03/03	ydy
	Styrene, SPLP	ND		5	ug/L	07/03/03	ydy
	1,1,2,2-Tetrachloroethane, SPLP	ND		5	ug/L	07/03/03	ydy
	Tetrachloroethene, SPLP	ND		5	ug/L	07/03/03	ydy
	Toluene, SPLP	ND		5	ug/L	07/03/03	ydy
	1,1,1-Trichloroethane, SPLP	ND		5	ug/L	07/03/03	ydy
	1,1,2-Trichloroethane, SPLP	ND		5	ug/L	07/03/03	ydy
	Trichloroethene, SPLP	ND		5	ug/L	07/03/03	ydy
	Vinyl Chloride, SPLP	ND		10	ug/L	07/03/03	ydy
	Xylenes (total), SPLP	ND		15	ug/L	07/03/03	ydy

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 5 13FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 12:30
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-9
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
	Acetone, SPLP	88.6	b	10	ug/L	07/03/03	ydy
	Carbon Disulfide, SPLP	ND		5	ug/L	07/03/03	ydy
	Methyl Ethyl Ketone (2-Butanone), SPLP	ND		10	ug/L	07/03/03	ydy
	cis-1,3-Dichloropropene, SPLP	ND		5	ug/L	07/03/03	ydy
	trans-1,3-Dichloropropene, SPLP	ND		5	ug/L	07/03/03	ydy
	2-Hexanone, SPLP	ND		10	ug/L	07/03/03	ydy
	4-Methyl-2-pentanone (MIBK), SPLP	ND		10	ug/L	07/03/03	ydy
SM 2540G Mod.	% Solids, Soil	69.0		0.01	%	07/02/03	slv
SM 2540G Mod.	Moisture, Soil	31.0		0.01	%	07/02/03	slv
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil*	214000		72488.1	ug/Kg	07/07/03	cad
SW-846 1312	SPLP Semivolatiles Analysis, Solid*	Complete				07/02/03	dme
SW-846 1312	Zero Head Space (ZHE) Extraction, Solid*	Complete			mL	07/02/03	dme

* In Description = Dry Wgt.

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SEVERN TRENT STL

LABORATORY TEST RESULTS

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Customer Sample ID: LB 6 2FT
Date Sampled.....: 06/26/2003
Time Sampled.....: 13:00
Sample Matrix.....: Soil

Laboratory Sample ID: 256706-10
Date Received.....: 07/01/2003
Time Received.....: 09:12

TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	FLAGS	REPORTING LIMIT	UNITS	DATE	TECH
SW-846 8015B	Total Volatile Petroleum Hydrocarbons TVPH as GRO, Soil	27500		5000.00	ug/Kg	07/07/03	cad

* In Description = Dry Wgt.

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Test Method.....: SM 2540G Mod. Analyst...: slv
Method Description.: Moisture (Total + Fixed Solids, Ash) Units.....: % Test Code.: %SOLID
Parameter.....: % Solids Batch(s)...: 78525

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result *	Limits	F	Date	Time
DU	256706-9		70.2836			68.9768	1.9	10.0		07/02/2003	1800
MB			0.0000							07/02/2003	1800
DU	256769-1		95.7799			95.4739	0.3	10.0		07/02/2003	1800

Test Method.....: SM 2540G Mod. Analyst...: slv
Method Description.: Moisture (Total + Fixed Solids, Ash) Units.....: % Test Code.: MOIST
Parameter.....: Moisture Batch(s)...: 78525

QC	Lab ID	Reagent	QC Result	QC Result	True Value	Orig. Value	Calc. Result *	Limits	F	Date	Time
DU	256769-1		4.2201			4.5261	7.0	10.0		07/02/2003	1800
DU	256706-9		29.7164			31.0232	4.3	10.0		07/02/2003	1800

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL 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)...: 78661 78712

CCV	Continuing Calibration Verification	SCCV970			07/03/2003	0930

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO	258.080		250		103.2		85.0-115.0	

CCV	Continuing Calibration Verification	SCCV970			07/03/2003	1701

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO	246.364		250		98.5		85.0-115.0	

CCV	Continuing Calibration Verification	SCCV970			07/03/2003	1726

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO	249.349		250		99.7		85.0-115.0	

CCV	Continuing Calibration Verification	SCCV970			07/03/2003	2022

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO	245.826		250		98.3		85.0-115.0	

CCV	Continuing Calibration Verification	SCCV970			07/03/2003	2048

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO	252.235		250		100.9		85.0-115.0	

LCS	Laboratory Control Sample	BXS062503E	78661-1		07/03/2003	1020

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO, Soil	284.792		250.000000		113.9		49-151	

MB	Method Blank		78661-1		07/03/2003	1045

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO, Soil	13.6648							

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MS	Matrix Spike	BX051603A	256706-8		07/03/2003	1907

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO, Soil	196.569		250.000000	11.2265	74.1		50-150	

MSD	Matrix Spike Duplicate	BX051603A	256706-8		07/03/2003	1932

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO, Soil	199.192	196.569	250.000000	11.2265	75.2		50-150	
					1.3		20	

CCV	Continuing Calibration Verification	SCCV970			07/07/2003	0919

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO	234.768		250		93.9		85.0-115.0	

CCV	Continuing Calibration Verification	SCCV970			07/07/2003	1428

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO	231.409		250		92.6		85.0-115.0	

LCS	Laboratory Control Sample	BXS062503E	78712-1		07/07/2003	0958

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO, Soil	284.988		250.000000		114.0		49-151	

MB	Method Blank		78712-1		07/07/2003	1023

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO, Soil	12.6594							

SB	Spiked Blank	BX051603A	78712-1		07/07/2003	1338

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO, Soil	224.693		250.000000	12.6594	85		49.0-151.0	

SBD	Spiked Blank Duplicate	BX051603A	78712-1		07/07/2003	1403

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
TVPH as GRO, Soil	230.687	224.693	250.000000	12.6594	92.3		49-151	
					2.6		20	

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
LCS	Laboratory Control Sample	SVS052703V	78569		07/03/2003	1739

Test Method.....: SW-846 8270C Units.....: ug/L Analyst...: kri
Method Description.: Semivolatile Organics Batch(s)...: 78648

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	44.3704		50.000000	0	88.7		57-127	
Acenaphthylene, Water	40.9949		50.000000	0	82.0		50-116	
Anthracene, Water	53.0856		50.000000	0	106.2		65-131	
Benzo(a)anthracene, Water	47.0901		50.000000	0	94.2		66-130	
Benzo(b)fluoranthene, Water	40.5275		50.000000	0	81.1		58-135	
Benzo(k)fluoranthene, Water	63.5503		50.000000	0	127.1		62-133	
Benzo(ghi)perylene, Water	40.2125		50.000000	0	80.4		54-142	
Benzo(a)pyrene, Water	46.8995		50.000000	0	93.8		65-126	
Benzyl Alcohol, Water	38.0529		50.000000	0	76.1		40-119	
Butyl Benzyl Phthalate, Water	48.1844		50.000000	0	96.4		56-139	
bis(2-chloroethoxy)methane, Water	46.0904		50.000000	0	92.2		64-126	
bis(2-Chloroethyl)ether, Water	47.1834		50.000000	0	94.4		56-125	
bis(2-chloroisopropyl)ether, Water	44.0439		50.000000	0	88.1		40-154	
bis(2-ethylhexyl)phthalate, Water	48.0288		50.000000	0	96.1		59-135	
4-Bromophenyl Phenyl Ether, Water	48.0394		50.000000	0	96.1		63-134	
4-Chloroaniline, Water	40.9610		50.000000	0	81.9		53-111	
2-Chloronaphthalene, Water	44.6433		50.000000	0	89.3		53-126	
4-Chlorophenyl Phenyl Ether, Water	45.9742		50.000000	0	91.9		61-129	
Chrysene, Water	52.3325		50.000000	0	104.7		66-131	
Dibenzo(a,h)anthracene, Water	43.3772		50.000000	0	86.8		54-141	
Dibenzofuran, Water	44.0089		50.000000	0	88.0		61-129	
1,2-Dichlorobenzene, Water	46.4788		50.000000	0	93.0		32-127	
1,3-Dichlorobenzene, Water	45.1698		50.000000	0	90.3		45-124	
1,4-Dichlorobenzene, Water	43.7399		50.000000	0	87.5		46-125	
Diethyl Phthalate, Water	45.3370		50.000000	0	90.7		52-146	
Dimethyl Phthalate, Water	46.2972		50.000000	0	92.6		54-140	
Di-n-butyl Phthalate, Water	45.8896		50.000000	0	91.8		61-140	
Di-n-octyl Phthalate, Water	48.9978		50.000000	0	98.0		52-151	
2,4-Dinitrotoluene, Water	48.1955		50.000000	0	96.4		62-129	
2,6-Dinitrotoluene, Water	48.0029		50.000000	0	96.0		71-128	
Fluoranthene, Water	45.9170		50.000000	0	91.8		65-137	
Fluorene, Water	45.5872		50.000000	0	91.2		64-133	
Hexachlorobenzene, Water	45.7565		50.000000	0	91.5		66-134	
Hexachlorobutadiene, Water	53.0589		50.000000	0	106.1		32-143	
Hexachlorocyclopentadiene, Water	14.6649		50.000000	0	29.3		14-103	
Hexachloroethane, Water	44.6405		50.000000	0	89.3		24-130	
Indeno(1,2,3-cd)pyrene, Water	50.6703		50.000000	0	101.3		50-145	
Isophorone, Water	40.3968		50.000000	0	80.8		64-122	
2-Methylnaphthalene, Water	47.9693		50.000000	0	95.9		53-124	
Naphthalene, Water	45.4411		50.000000	0	90.9		48-120	
Nitrobenzene, Water	46.7952		50.000000	0	93.6		61-121	
n-Nitrosodi-n-propylamine, Water	46.9533		50.000000	0	93.9		59-138	
n-Nitrosodiphenylamine, Water	45.0560		50.000000	0	90.1		65-131	
Phenanthrene, Water	43.6043		50.000000	0	87.2		64-128	
Pyrene, Water	47.3730		50.000000	0	94.7		56-141	
1,2,4-Trichlorobenzene, Water	45.6518		50.000000	0	91.3		39-120	
Benzoic Acid, Water	24.2727		50.000000	0	48.5		10-88	
4-Chloro-3-methylphenol, Water	44.0955		50.000000	0	88.2		44-131	
2-Chlorophenol, Water	38.0152		50.000000	0	76.0		37-125	
2,4-Dichlorophenol, Water	46.9788		50.000000	0	94.0		45-130	

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
LCS	Laboratory Control Sample	SVS052703V	78569		07/03/2003	1739

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
2,4-Dimethylphenol, Water	44.8770		50.000000	0	89.8		25-128	
2,4-Dinitrophenol, Water	55.4555		50.000000	0	110.9		23-155	
2-Methyl-4,6-dinitrophenol, Water	53.3177		50.000000	0	106.6		35-139	
2-Methylphenol (o-Cresol), Water	32.8913		50.000000	0	65.8		34-109	
4-Methylphenol (p-Cresol), Water	31.1083		50.000000	0	62.2		27-105	
2-Nitrophenol, Water	50.0940		50.000000	0	100.2		36-134	
4-Nitrophenol, Water	20.5447		50.000000	0	41.1		12-68	
Pentachlorophenol, Water	40.7817		50.000000	0	81.6		28-171	
Phenol, Water	17.8328		50.000000	0	35.7		16-66	
2,4,5-Trichlorophenol, Water	42.1710		50.000000	0	84.3		38-145	
2,4,6-Trichlorophenol, Water	44.7593		50.000000	0	89.5		30-143	
2-Nitroaniline, Water	45.1611		50.000000	0	90.3		53-131	
3-Nitroaniline, Water	48.8319		50.000000	0	97.7		55-123	
4-Nitroaniline, Water	48.9404		50.000000	0	97.9		50-137	
Carbazole, Water	52.2568		50.000000	0	104.5		60-139	
3,3'-Dichlorobenzidine, Water	87.7573		50.000000	0	175.5		10-150	P

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank	SVS061603H	78569		07/03/2003	1708

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	0							
Acenaphthylene, Water	0							
Anthracene, Water	0							
Benzo(a)anthracene, Water	0							
Benzo(b)fluoranthene, Water	0							
Benzo(k)fluoranthene, Water	0							
Benzo(ghi)perylene, Water	0							
Benzo(a)pyrene, Water	0							
Benzyl Alcohol, Water	0							
Butyl Benzyl Phthalate, Water	0							
bis(2-chloroethoxy)methane, Water	0							
bis(2-Chloroethyl)ether, Water	0							
bis(2-chloroisopropyl)ether, Water	0							
bis(2-ethylhexyl)phthalate, Water	0							
4-Bromophenyl Phenyl Ether, Water	0							
4-Chloroaniline, Water	0							
2-Chloronaphthalene, Water	0							
4-Chlorophenyl Phenyl Ether, Water	0							
Chrysene, Water	0							
Dibenzo(a,h)anthracene, Water	0							
Dibenzofuran, Water	0							
1,2-Dichlorobenzene, Water	0							
1,3-Dichlorobenzene, Water	0							
1,4-Dichlorobenzene, Water	0							
Diethyl Phthalate, Water	0							
Dimethyl Phthalate, Water	0							
Di-n-butyl Phthalate, Water	0							
Di-n-octyl Phthalate, Water	0							
2,4-Dinitrotoluene, Water	0							
2,6-Dinitrotoluene, Water	0							
Fluoranthene, Water	0							
Fluorene, Water	0							

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank	SVS061603H	78569		07/03/2003	1708

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Hexachlorobenzene, Water	0							
Hexachlorobutadiene, Water	0							
Hexachlorocyclopentadiene, Water	0							
Hexachloroethane, Water	0							
Indeno(1,2,3-cd)pyrene, Water	0							
Isophorone, Water	0							
2-Methylnaphthalene, Water	0							
Naphthalene, Water	0							
Nitrobenzene, Water	0							
n-Nitrosodi-n-propylamine, Water	0							
n-Nitrosodiphenylamine, Water	0							
Phenanthrene, Water	0							
Pyrene, Water	0							
1,2,4-Trichlorobenzene, Water	0							
Benzoic Acid, Water	0							
4-Chloro-3-methylphenol, Water	0							
2-Chlorophenol, Water	0							
2,4-Dichlorophenol, Water	0							
2,4-Dimethylphenol, Water	0							
2,4-Dinitrophenol, Water	0							
2-Methyl-4,6-dinitrophenol, Water	0							
2-Methylphenol (o-Cresol), Water	0							
4-Methylphenol (p-Cresol), Water	0							
2-Nitrophenol, Water	0							
4-Nitrophenol, Water	0							
Pentachlorophenol, Water	0							
Phenol, Water	0							
2,4,5-Trichlorophenol, Water	0							
2,4,6-Trichlorophenol, Water	0							
n-Nitrosodimethylamine, Water	0							
Pyridine, Water	0							
1-Methylnaphthalene, Water	0							
2-Nitroaniline, Water	0							
3-Nitroaniline, Water	0							
4-Nitroaniline, Water	0							
1,2-Diphenylhydrazine, Water	0							
Carbazole, Water	0							
3,3'-Dichlorobenzidine, Water	0							

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
PB	Prep. Blank	SVS061603H	78569		07/03/2003	2020

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, SPLP	0							
Acenaphthylene, SPLP	0							
Anthracene, SPLP	0							
Benzo(a)anthracene, SPLP	0							
Benzo(b)fluoranthene, SPLP	0							
Benzo(k)fluoranthene, SPLP	0							
Benzo(ghi)perylene, SPLP	0							
Benzo(a)pyrene, SPLP	0							
Benzyl Alcohol, SPLP	0							
Butyl Benzyl Phthalate, SPLP	0							

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
PB	Prep. Blank	SVS061603H	78569		07/03/2003	2020

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
bis(2-chloroethoxy)methane, SPLP	0							
bis(2-Chloroethyl)ether, SPLP	0							
bis(2-chloroisopropyl)ether, SPLP	0							
bis(2-ethylhexyl)phthalate, SPLP	0							
4-Bromophenyl Phenyl Ether, SPLP	0							
4-Chloroaniline, SPLP	0							
2-Chloronaphthalene, SPLP	0							
4-Chlorophenyl Phenyl Ether, SPLP	0							
Chrysene, SPLP	0							
Dibenzo(a,h)anthracene, SPLP	0							
Dibenzofuran, SPLP	0							
1,2-Dichlorobenzene, SPLP	0							
1,3-Dichlorobenzene, SPLP	0							
1,4-Dichlorobenzene, SPLP	0							
Diethyl Phthalate, SPLP	0							
Dimethyl Phthalate, SPLP	0							
Di-n-butyl Phthalate, SPLP	0							
Di-n-octyl Phthalate, SPLP	0							
2,4-Dinitrotoluene, SPLP	0							
2,6-Dinitrotoluene, SPLP	0							
Fluoranthene, SPLP	0							
Fluorene, SPLP	0							
Hexachlorobenzene, SPLP	0							
Hexachlorobutadiene, SPLP	0							
Hexachlorocyclopentadiene, SPLP	0							
Hexachloroethane, SPLP	0							
Indeno(1,2,3-cd)pyrene, SPLP	0							
Isophorone, SPLP	0							
2-Methylnaphthalene, SPLP	0							
Naphthalene, SPLP	0							
Nitrobenzene, SPLP	0							
n-Nitrosodi-n-propylamine, SPLP	0							
n-Nitrosodiphenylamine, SPLP	0							
Phenanthrene, SPLP	0							
Pyrene, SPLP	0							
1,2,4-Trichlorobenzene, SPLP	0							
Benzoic Acid, SPLP	0							
4-Chloro-3-methylphenol, SPLP	0							
2-Chlorophenol, SPLP	0							
2,4-Dichlorophenol, SPLP	0							
2,4-Dimethylphenol, SPLP	0							
2,4-Dinitrophenol, SPLP	0							
2-Methyl-4,6-dinitrophenol, SPLP	0							
2-Methylphenol (o-Cresol), SPLP	0							
4-Methylphenol (p-Cresol), SPLP	0							
2-Nitrophenol, SPLP	0							
4-Nitrophenol, SPLP	0							
Pentachlorophenol, SPLP	0							
Phenol, SPLP	0							
2,4,5-Trichlorophenol, SPLP	0							
2,4,6-Trichlorophenol, SPLP	0							
2-Nitroaniline, SPLP	0							
3-Nitroaniline, SPLP	0							
4-Nitroaniline, SPLP	0							

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
PB	Prep. Blank	SVS061603H	78569		07/03/2003	2020

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
1,2-Diphenylhydrazine, SPLP	0							
Carbazole, SPLP	0							
3,3'-Dichlorobenzidine, SPLP	0							

SB	Spiked Blank	SVS040403B	78569		07/03/2003	1811

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	42.7185		50.000000	0	85		47.0-145.0	
1,4-Dichlorobenzene, Water	43.7839		50.000000	0	88		20.0-124.0	
2,4-Dinitrotoluene, Water	42.5576		50.000000	0	85		62.0-129.0	
n-Nitrosodi-n-propylamine, Water	42.8831		50.000000	0	86		10.0-138.0	
Pyrene, Water	46.9090		50.000000	0	94		52.0-141.0	
1,2,4-Trichlorobenzene, Water	45.8547		50.000000	0	92		44.0-142.0	
4-Chloro-3-methylphenol, Water	84.1992		100.000000	0	84		22.0-147.0	
2-Chlorophenol, Water	72.2103		100.000000	0	72		23.0-134.0	
4-Nitrophenol, Water	28.7336		100.000000	0	29		10.0-132.0	
Pentachlorophenol, Water	84.1975		100.000000	0	84		14.0-176.0	
Phenol, Water	29.9668		100.000000	0	30		10.0-112.0	

SBD	Spiked Blank Duplicate	SVS040403B	78569		07/03/2003	1843

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Acenaphthene, Water	37.2180	42.7185	50.000000	0	74.4		47-145	
					13.8		31	
1,4-Dichlorobenzene, Water	29.3717	43.7839	50.000000	0	58.7		20-124	
					39.4		28	r
2,4-Dinitrotoluene, Water	38.9115	42.5576	50.000000	0	77.8		62-129	
					9.0		38	
n-Nitrosodi-n-propylamine, Water	36.2192	42.8831	50.000000	0	72.4		10-138	
					16.8		38	
Pyrene, Water	44.3723	46.9090	50.000000	0	88.7		52-141	
					5.6		31	
1,2,4-Trichlorobenzene, Water	32.8621	45.8547	50.000000	0	65.7		44-142	
					33.0		28	r
4-Chloro-3-methylphenol, Water	70.9178	84.1992	100.000000	0	70.9		22-147	
					17.1		42	
2-Chlorophenol, Water	48.2652	72.2103	100.000000	0	48.3		23-134	
					39.8		40	
4-Nitrophenol, Water	24.5920	28.7336	100.000000	0	24.6		10-132	
					15.5		50	
Pentachlorophenol, Water	72.2822	84.1975	100.000000	0	72.3		14-176	
					15.2		50	
Phenol, Water	24.4418	29.9668	100.000000	0	24.4		10-112	
					20.3		23	

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN:

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

Test Method.....: SW-846 8260B Units.....: ug/L Analyst...: ydy
Method Description.: Volatile Organics Batch(s)...: 78692

LCS	Laboratory Control Sample	VS062603E			07/03/2003	1126

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	43.1317		50.00	ND	86.3		68-127	
Bromodichloromethane, Water	40.6312		50.00	ND	81.3		64-129	
Bromoform, Water	38.6149		50.00	ND	77.2		45-147	
Bromomethane, Water	22.2102		50.00	ND	44.4		32-143	
Carbon Tetrachloride, Water	49.5359		50.00	ND	99.1		54-140	
Chlorobenzene, Water	42.8797		50.00	ND	85.8		65-129	
Chloroethane, Water	43.0905		50.00	ND	86.2		47-157	
Chloroform, Water	43.1282		50.00	ND	86.3		71-131	
Chloromethane, Water	44.9489		50.00	ND	89.9		22-160	
Dibromochloromethane, Water	39.3313		50.00	ND	78.7		64-131	
1,1-Dichloroethane, Water	43.5955		50.00	ND	87.2		62-138	
1,2-Dichloroethane, Water	44.0166		50.00	ND	88.0		65-133	
1,1-Dichloroethene, Water	46.8629		50.00	ND	93.7		48-147	
1,2-Dichloroethene (total), Water	83.9768		100.00	ND	84.0		61-130	
cis-1,2-Dichloroethene, Water	40.5944		50.00	ND	81.2		61-129	
trans-1,2-Dichloroethene, Water	43.3824		50.00	ND	86.8		73-138	
1,2-Dichloropropane, Water	42.9434		50.00	ND	85.9		60-124	
Ethylbenzene, Water	42.5763		50.00	ND	85.2		64-132	
Methylene Chloride, Water	40.4388		50.00	1.40326	80.9		54-133	
Styrene, Water	38.2752		50.00	ND	76.6		62-117	
1,1,2,2-Tetrachloroethane, Water	39.2723		50.00	ND	78.5		70-130	
Tetrachloroethene, Water	44.6189		50.00	ND	89.2		59-134	
Toluene, Water	43.2415		50.00	ND	86.5		63-127	
1,1,1-Trichloroethane, Water	47.3528		50.00	ND	94.7		70-130	
1,1,2-Trichloroethane, Water	41.5499		50.00	ND	83.1		70-130	
Trichloroethene, Water	40.0756		50.00	ND	80.2		64-130	
Vinyl Chloride, Water	43.0096		50.00	ND	86.0		35-155	
Xylenes (total), Water	129.498		150.00	ND	86.3		37-161	
Acetone, Water	45.9154		50.00	ND	91.8		60-140	
Carbon Disulfide, Water	57.0265		50.00	ND	114.1		68-158	
Methyl Ethyl Ketone (2-Butanone), Water	43.5028		50.00	ND	87.0		38-186	
cis-1,3-Dichloropropene, Water	44.7098		50.00	ND	89.4		66-130	
trans-1,3-Dichloropropene, Water	41.6891		50.00	ND	83.4		71-139	
2-Hexanone, Water	39.1229		50.00	ND	78.2		29-173	
4-Methyl-2-pentanone (MIBK), Water	43.3842		50.00	ND	86.8		40-144	

MB	Method Blank	VS062603C			07/03/2003	1335

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, Water	ND							
Bromodichloromethane, Water	ND							
Bromoform, Water	ND							
Bromomethane, Water	ND							
Carbon Tetrachloride, Water	ND							
Chlorobenzene, Water	ND							
Chloroethane, Water	ND							
Chloroform, Water	ND							
Chloromethane, Water	ND							

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MB	Method Blank	VS062603C			07/03/2003	1335

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Dibromochloromethane, Water	ND							
1,1-Dichloroethane, Water	ND							
1,2-Dichloroethane, Water	ND							
1,1-Dichloroethene, Water	ND							
1,2-Dichloroethene (total), Water	ND							
cis-1,2-Dichloroethene, Water	ND							
trans-1,2-Dichloroethene, Water	ND							
1,2-Dichloropropane, Water	ND							
Ethylbenzene, Water	ND							
Methylene Chloride, Water	1.40326							
Styrene, Water	ND							
1,1,2,2-Tetrachloroethane, Water	ND							
Tetrachloroethene, Water	ND							
Toluene, Water	ND							
1,1,1-Trichloroethane, Water	ND							
1,1,2-Trichloroethane, Water	ND							
Trichloroethene, Water	ND							
Vinyl Chloride, Water	ND							
Xylenes (total), Water	ND							
Acetone, Water	ND							
Carbon Disulfide, Water	ND							
Methyl Ethyl Ketone (2-Butanone), Water	ND							
cis-1,3-Dichloropropene, Water	ND							
trans-1,3-Dichloropropene, Water	ND							
2-Hexanone, Water	ND							
4-Methyl-2-pentanone (MIBK), Water	ND							

MS	Matrix Spike	VS062603E	256218-1	20.00000	07/03/2003	1426

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, TCLP	44.7535		50.00	ND	90		63-123	
Carbon Tetrachloride, TCLP	44.0235		50.00	ND	88		21-138	
Chlorobenzene, TCLP	44.7628		50.00	ND	90		61-126	
Chloroform, TCLP	45.2442		50.00	ND	90		67-136	
1,2-Dichloroethane, TCLP	47.3005		50.00	ND	95		66-135	
1,1-Dichloroethene, TCLP	43.9791		50.00	ND	88		33-130	
Tetrachloroethene, TCLP	43.8224		50.00	ND	88		40-134	
Trichloroethene, TCLP	40.3986		50.00	ND	81		43-127	
Vinyl Chloride, TCLP	40.7601		50.00	ND	82		9-158	
Methyl Ethyl Ketone (2-Butanone), TCLP	40.6480		50.00	ND	81		9-157	

MSD	Matrix Spike Duplicate	VS062603E	256218-1	20.00000	07/03/2003	1452

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, TCLP	59.2272	44.7535	50.00	ND	118		63.2-123.2	
					27.8		30.0	
Carbon Tetrachloride, TCLP	64.4501	44.0235	50.00	ND	129		21.3-137.7	
					37.7		30.0	A
Chlorobenzene, TCLP	59.5769	44.7628	50.00	ND	119		61.2-125.8	
					28.4		30.0	

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

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SEVERN TRENT STL

QUALITY CONTROL RESULTS

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN:

QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
MSD	Matrix Spike Duplicate	VS062603E	256218-1	20.00000	07/03/2003	1452

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Chloroform, TCLP	59.8392	45.2442	50.00	ND	120		66.5-136.2	
					27.8		30.0	
1,2-Dichloroethane, TCLP	61.8946	47.3005	50.00	ND	124		66.4-135.0	
					26.7		30.0	
1,1-Dichloroethene, TCLP	60.8527	43.9791	50.00	ND	122		33.3-130.1	
					32.2		30.0	A
Tetrachloroethene, TCLP	59.4371	43.8224	50.00	ND	119		40.2-134.3	
					30.2		30.0	A
Trichloroethene, TCLP	53.7257	40.3986	50.00	ND	107		42.7-127.0	
					28.3		30.0	
Vinyl Chloride, TCLP	56.6761	40.7601	50.00	ND	113		8.8-158.2	
					32.7		30.0	A
Methyl Ethyl Ketone (2-Butanone), TCLP	57.5166	40.6480	50.00	ND	115		9.2-157.3	
					34.4		30.0	A

PB	Prep. Blank	VS062603C		20.00000	07/03/2003	1309

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, TCLP	ND							
Carbon Tetrachloride, TCLP	ND							
Chlorobenzene, TCLP	ND							
Chloroform, TCLP	ND							
1,2-Dichloroethane, TCLP	ND							
1,1-Dichloroethene, TCLP	ND							
Tetrachloroethene, TCLP	ND							
Trichloroethene, TCLP	ND							
Vinyl Chloride, TCLP	ND							
Methyl Ethyl Ketone (2-Butanone), TCLP	ND							

PB	Prep. Blank	VS062603C			07/03/2003	1609

Parameter/Test Description	QC Result	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene, SPLP	ND							
Carbon Tetrachloride, SPLP	ND							
Chlorobenzene, SPLP	ND							
Chloroform, SPLP	ND							
1,2-Dichloroethane, SPLP	ND							
1,1-Dichloroethene, SPLP	ND							
Tetrachloroethene, SPLP	ND							
Trichloroethene, SPLP	ND							
Vinyl Chloride, SPLP	ND							
Acetone, SPLP	8.15978							
Methyl Ethyl Ketone (2-Butanone), SPLP	ND							

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SEVERN TRENT STL

SURROGATE RECOVERIES REPORT

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Method.....: Total Volatile Petroleum Hydrocarbons Method Code...: 8015G Prep Batch....:
Batch(s).....: 78661 78712 Test Matrix...: Water Equipment Code: BTEX07

Lab ID	DT	Sample ID	Date	ATFT	BFB
CCV			07/03/2003	103.4	96.9
CCV			07/03/2003	105.2	102.1
CCV			07/03/2003	99.8	99.9
CCV			07/03/2003	100.6	99.1
CCV			07/03/2003	99.4	99.8
CCV			07/07/2003	96.8	97.9
CCV			07/07/2003	96.7	96.0

Test	Test Description	Limits
ATFT	a,a,a-Trifluorotoluene	68 - 143
BFB	BFB (Surrogate)	70 - 139

Method.....: Total Volatile Petroleum Hydrocarbons Method Code...: 8015G Prep Batch....:
Batch(s).....: 78661 78712 Test Matrix...: Soil Equipment Code: BTEX07

Lab ID	DT	Sample ID	Date	ATFT	BFB
78661- 1	LCS		07/03/2003	76.7	94.6
78661- 1	MB		07/03/2003	77.3	99.7
78712- 1	LCS		07/07/2003	77.0	93.2
78712- 1	MB		07/07/2003	81.8	96.1
78712- 1	SB		07/07/2003	94.5	95.6
78712- 1	SBD		07/07/2003	96.0	94.0
256706- 1		LB 1 6FT	07/07/2003	101.1	129.8
256706- 2		LB 1 12FT	07/03/2003	105.2	131.8
256706- 3		LB 2 6FT	07/03/2003	94.1	122.0
256706- 4		LB 2 11FT	07/03/2003	107.0	132.6
256706- 5		LB 3 6FT	07/07/2003	102.6	120.1
256706- 6		LB 3 10FT	07/07/2003	105.2	135.8
256706- 7		LB 4 3FT	07/03/2003	95.8	119.6
256706- 8		LB 4 10FT	07/03/2003	101.5	132.6
256706- 8	MS	LB 4 10FT	07/03/2003	103.0	135.8
256706- 8	MSD	LB 4 10FT	07/03/2003	103.3	138.4
256706- 9		LB 5 13FT	07/07/2003	83.0	126.6
256706- 10		LB 6 2FT	07/07/2003	101.5	131.1

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

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SEVERN TRENT STL

SURROGATE RECOVERIES REPORT

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 78692 Test Matrix...: Water Equipment Code: GCMSVOA05

Lab ID	DT	Sample ID	Date	12DCED	BRFLBE	DBRFLM	TOLD8
78692--21	LCS		07/03/2003	97.0	91.5	94.2	97.4
78692--21	MB		07/03/2003	104.4	104.9	103.9	105.9

Test	Test Description	Limits
12DCED	1,2-Dichloroethane-d4	70 - 130
BRFLBE	4-Bromofluorobenzene	70 - 130
DBRFLM	Dibromofluoromethane	70 - 130
TOLD8	Toluene-d8	70 - 130

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 78692 Test Matrix...: SPLP Equipment Code: GCMSVOA05

Lab ID	DT	Sample ID	Date	12DCED	BRFLBE	DBRFLM	TOLD8
78550--21	PB		07/03/2003	104.1	104.9	102.6	106.6
256706- 9		LB 5 13FT	07/03/2003	109.2	104.9	106.4	108.7

Test	Test Description	Limits
12DCED	1,2-Dichloroethane-d4	70 - 130
BRFLBE	4-Bromofluorobenzene	70 - 130
DBRFLM	Dibromofluoromethane	70 - 130
TOLD8	Toluene-d8	70 - 130

Method.....: Volatile Organics Method Code...: 8260 Prep Batch....:
Batch(s).....: 78692 Test Matrix...: TCLP Equipment Code: GCMSVOA05

Lab ID	DT	Sample ID	Date	12DCED	BRFLBE	DBRFLM	TOLD8
78400--21	PB		07/03/2003	101.5	95.3	100.2	99.7
78548--21	PB		07/03/2003	104.1	99.4	100.1	99.9
256218- 1	MS	WASH BAY SUMP SLUDGE	07/03/2003	91.6	85.7	83.9	84.3
256218- 1	MSD	WASH BAY SUMP SLUDGE	07/03/2003	119.1	105.3	108.5	105.3

Test	Test Description	Limits
12DCED	1,2-Dichloroethane-d4	70 - 130
BRFLBE	4-Bromofluorobenzene	70 - 130
DBRFLM	Dibromofluoromethane	70 - 130
TOLD8	Toluene-d8	70 - 130

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SEVERN TRENT STL

SURROGATE RECOVERIES REPORT

Job Number.: 256706 Report Date.: 07/08/2003

CUSTOMER: 483648 PROJECT: LUSK DL ATTN: Charlie Durret

Method.....: Semivolatile Organics Method Code...: 8270 Prep Batch....: 78569
Batch(s).....: 78648 Test Matrix...: Water Equipment Code: EGCMS05

Lab ID	DT	Sample ID	Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14
785691--21	LCS		07/03/2003	93.3	86.7	50.8	92.2	32.6	91.9
785691--21	MB		07/03/2003	87.9	81.4	50.5	91.9	30.4	97.3
785691--21	SB		07/03/2003	85.1	83.0	47.0	89.6	28.5	90.0
785691--21	SBD		07/03/2003	82.9	69.2	34.2	67.0	24.7	87.7

Test	Test Description	Limits
246TBP	2,4,6-Tribromophenol	10 - 123
2FLUBP	2-Fluorobiphenyl	43 - 116
2FLUPH	2-Fluorophenol	21 - 100
NITRD5	Nitrobenzene-d5	35 - 114
PHEND6	Phenol-d6	10 - 94
TERD14	Terphenyl-d14	33 - 141

Method.....: Semivolatile Organics Method Code...: 8270 Prep Batch....: 78569
Batch(s).....: 78648 Test Matrix...: SPLP Equipment Code: EGCMS05

Lab ID	DT	Sample ID	Date	246TBP	2FLUBP	2FLUPH	NITRD5	PHEND6	TERD14
256706- 9		LB 5 13FT	07/03/2003	131.8K	79.0	73.9	82.4	62.9	78.4
785691--21	PB		07/03/2003	105.1	73.9	58.3	82.5	42.2	83.4

Test	Test Description	Limits
246TBP	2,4,6-Tribromophenol	10 - 123
2FLUBP	2-Fluorobiphenyl	43 - 116
2FLUPH	2-Fluorophenol	21 - 100
NITRD5	Nitrobenzene-d5	35 - 114
PHEND6	Phenol-d6	10 - 94
TERD14	Terphenyl-d14	33 - 141

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SEVERN TRENT STL

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/08/2003

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.

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, maybe 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.

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.
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.

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SEVERN TRENT STL

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/08/2003

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 - 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.

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
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
MS - Matrix Spike
MSD - Matrix Spike Duplicate
ND - Not Detected

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SEVERN TRENT STL

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 07/08/2003

PB - Preparation Blank
PREPF - Preparation Factor
RL - Reporting Limit
RPD - Relative Percent Difference
RRF - Relative Response Factor
RT - Retention Time

Method References:

(1) EPA 600/4-79-020 Methods for the Analysis of Water and Wastes, March 1983.
(2) EPA SW846 Test Methods for Evaluating Solid Waste, Third Edition, September 1986; Update I July 1992; Update II, September 1994, Update IIA August 1193; Update IIB, January 1995; Update III, December 1996.
(3) Standard Methods for the Examination of Water and Wastewater, 16th Edition (1985), 17th Edition (1989), 18th Edition (1992), 19th Edition (1995), 20th Edition (1998).
(4) HACH Water Analysis Handbook 3rd Edition (1997).
(5) Federal Register, July 1, 1990 (40 CFR Part 136).
(6) Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, 2nd Edition, January 1997.
(7) ASTM Annual Book of Methods (Various Years)
(8) Diagnosis and Improvement of Saline and Alkali Soils, Agriculture Handbook No. 60, United States Department of Agriculture, 1954.

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SEVERN TRENT STL

LABORATORY CHRONICLE

Job Number: 256706 Date: 07/08/2003

CUSTOMER: Maxim Technologies, Inc. PROJECT: LUSK DL ATTN: Charlie Durret

Lab ID: 256706-1 Client ID: LB 1 6FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78712			07/07/2003 1158	10.000

Lab ID: 256706-2 Client ID: LB 1 12FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78661			07/03/2003 1405	1.0000

Lab ID: 256706-3 Client ID: LB 2 6FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78661			07/03/2003 1431	1.0000

Lab ID: 256706-4 Client ID: LB 2 11FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78661			07/03/2003 1456	1.0000

Lab ID: 256706-5 Client ID: LB 3 6FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78712			07/07/2003 1107	1.0000

Lab ID: 256706-6 Client ID: LB 3 10FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78712			07/07/2003 1132	1.0000

Lab ID: 256706-7 Client ID: LB 4 3FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78661			07/03/2003 1611	1.0000

Lab ID: 256706-8 Client ID: LB 4 10FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78661			07/03/2003 1752	1.0000

Lab ID: 256706-9 Client ID: LB 5 13FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 1312	1312 SPLP Zero Headspace Extraction	1	78550			07/02/2003 1338	
SW-846 3510C	Extraction (Sep. Funnel) SVOC	1	78569			07/03/2003 1200	
SM 2540G Mod.	Moisture (Total + Fixed Solids, Ash)	1	78525			07/02/2003 1800	
SW-846 8270C	Semivolatile Organics	1	78648	78569		07/03/2003 2052	1.00000
SW-846 1312	Synthetic Precipitate Leachate Procedure	1	78551			07/02/2003 1635	
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78712			07/07/2003 1223	50.000
SW-846 8260B	Volatile Organics	1	78692	78550		07/03/2003 1635	1.00000

Lab ID: 256706-10 Client ID: LB 6 2FT Date Recvd: 07/01/2003 Sample Date: 06/26/2003

METHOD	DESCRIPTION	RUN#	BATCH#	PREP BT	#(S)	DATE/TIME ANALYZED	DILUTION
SW-846 8015B	Total Volatile Petroleum Hydrocarbons	1	78712			07/07/2003 1248	5.0000

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SEVERN TRENT SERVICES

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9900 3817

3690070
STL Re-do Conoco Phillips

No. 001846

CHAIN OF CUSTODY RECORD

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: Maxim Technologies	PROJECT NAME/NUMBER: STL Re do Lusk DL
SEND REPORT TO: Charles Durrett	**BILLING INFORMATION**
ADDRESS: 1701 W. Industrial Ave	BILL TO: Conoco Phillips
Midland TX 79701	ADDRESS: PO Box 2197; 5027 TN
	Houston TX 77252
PHONE: 432-686-8081	PHONE:
FAX: 432-686-8085	FAX: PO NO.: 4501675631

LAB JOB NO. 256704

	SAMPLE NO.	SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER	PRESERV.	NUMBER OF CONTAINERS	ANALYSIS/METHOD REQUEST: TPH (Gro) 8015	SPLP (8260, 8270)	Moisture	BTEX (8260)	REMARKS/PRECAUTIONS
1	LB 1	6 ft		10:00					X				
2	LB 1	12 ft		10:00					X				Call Charles Durrett after processing SPLP to determine if BTEX should be analyzed
3	LB 2	6 ft		10:30					X				
4	LB 2	11 ft		10:30					X				
5	LB 3	6 ft		11:00					X				
6	LB 3	10 ft		11:00					X				
7	LB 4	3 ft		12:00					X				
	LB 4	10 ft		12:00					X				
	LB 5	13 ft		12:30					X	X	X	X	Rush SPLP, Hold BTEX
	LB 6	2 ft		1:00					X				

SAMPLER: Frank Lichnovski

SHIPMENT METHOD: FedEx

AIRBILL NO.:

REQUIRED TURNAROUND* ☐ SAME DAY ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 5 DAYS ☐ 10 DAYS ☒ ROUTINE ☒ OTHER Rush SPLP, Hold BTEX

*RUSH TURNAROUND MAY REQUIRE SURCHARGE

1. RELINQUISHED BY:	DATE	2. RELINQUISHED BY:	DATE	3. RELINQUISHED BY:	DATE
SIGNATURE:	6/24/03	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: Charles Durrett Maxim	TIME 2:00	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME
1. RECEIVED BY:	DATE	2. RECEIVED BY:	DATE	3. RECEIVED BY:	DATE
SIGNATURE:	7/1/03	SIGNATURE:		SIGNATURE:	
PRINTED NAME/COMPANY: STL	TIME 0900	PRINTED NAME/COMPANY:	TIME	PRINTED NAME/COMPANY:	TIME

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STL-8222-H (0700)

8376 0186 2804 PO CS 4pc

rpjsckl | Job Sample Receipt Checklist Report | V2

Job Number.: 256706 Location.: 57216 Check List Number.: 1 Description.:
Customer Job ID.....: Job Check List Date.: 07/01/2003 Date of the Report..: 07/01/2003
Project Number.: 99003817 Project Description.: LUSK DL Project Manager.....: sgk
Customer.....: Maxim Technologies, Inc. Contact.: Charlie Durret

Questions ?	(Y/N)	Comments
Chain of Custody Received?	Y	
...If "yes", completed properly?	Y	
Custody seal on shipping container?	Y	
...If "yes", custody seal intact?	Y	
Custody seals on sample containers?	N	
...If "yes", custody seal intact?		
Samples chilled?	Y	
Temperature of cooler acceptable? (4 deg C +/- 2).	Y	3.8
...If "no", is sample an air matrix?(no temp req.)		
Thermometer ID	Y	368
Samples received intact (good condition)?	Y	
Volatile samples acceptable? (no headspace)		
Correct containers used?	Y	
Adequate sample volume provided?	Y	
Samples preserved correctly?	Y	
Samples received within holding-time?	Y	
Agreement between COC and sample labels?	Y	
Radioactivity at or below background levels?		METER OUT OF ORDER
Additional		
Comments		
Sample Custodian Signature/Date	Y	KRW

KRW 7/1/03

STL HOUSTON - SAMPLE RECEIPT CHECKLIST

RUSH
RUSH

GENERAL SHIPMENT INFORMATION

CLIENT NAME: Maxim
CARRIER/DRIVER NAME: FedEx
DATE SHIPPED: [illegible]
UNPACKED BY: _____
DATE RECEIVED: _____
UNPACKED STAMP: _____
TOTAL # COOLERS RECEIVED: 1
TRACKING NUMBER(S): 8376 0186 2304
(retain air bills in project folder)

COOLER CHECKLIST

COOLER ID	COC Present (Y/N)	CUSTODY TAPE Present (Y/N)	CUSTODY TAPE Intact (Y/N/NA)	COOLER TEMP (deg C)	THERMOMETER #
B444	y	C y	C y	3.8°	368
		B n/a	B n/a		
		C	C		
		B	B		
		C	C		
		B	B		

C-Cooler B-Bottles

COOLER(S) SCREENED FOR RADIATION? Yes ___ No x Method of Screen
SHORT HOLD / RUSH SAMPLES (include department and time delivered)

_____

_____

****

SPECIFIC PROJECT INFORMATION

JOB NUMBER: 286704
PROJECT NAME: 99003807

VOLATILE HEADSPACE ACCEPTABLE? Yes_____ No_____ NA_____ Preserved? Yes_____ No_____
(If ANY headspace is present, list details in INCONSISTENCIES section) Number of VOA vials: _____

pH OF WATER SAMPLES:

PRESERVATION	# BOTTLES	CORRECT PH Y/N	(If N, list sample ID and corresponding pH)
H2SO4 (<2)			
HNO3 (<2)			
HCl (<2) (not VOA vials)			
NaOH-Cyanide (>12)			
NaOH/Zn Acetate-Sulfide (>9)			
Other		NA	

OF NEAT BOTTLES: _____ # OF SOILS JARS: 11

INCONSISTENCIES

Sample date from bottles 5/26. Should be 6/26 per PM.

_____

_____

ACTION TAKEN

PERSON CONTACTED: _____ DATE: _____
RESOLUTION _____

_____

NOTES: _____

_____

Project Manager: _____ (use back of sheet if necessary)

SEVERN TRENT SERVICES

CUSTOD

Date/Time 5-26-03

Name/Company T.J.A