GW - 20

WORK PLANS

NOV. '81

V

JUL '87

MAXIM TECHNOLOGIES INC

10601 Lomas NE, Suite 106
Albuquerque, NM 87112
505-237-8440

OIL CONSERVATION DIV.
02 AUG -9 PM 1:02

August 8, 2002

Mr. Roger Anderson
Mr. Wayne Price
New Mexico Energy Department
Oil Conservation Division
1220 S Saint Francis Dr
Santa Fe, NM 87505

RE: Work Plan to Determine the Extent and Source(s) of Contamination, Maljamar Gas Plant, Maljamar, New Mexico
Maxim Project No. 2007216.130

Dear Messrs. Anderson and Price:

On behalf of Conoco Inc., Maxim Technologies, Inc. (Maxim) is pleased to submit this work plan to determine the extent and source(s) of impacts to groundwater at the Conoco Maljamar Gas Plant (Plant) located in Lea County, New Mexico, as stated in your letter to Conoco dated April 29, 2002.

BACKGROUND

A network of 13 monitor wells (including 4 temporary monitor wells) has been emplaced by Conoco at and near the Plant. Data collected during well boring installation indicate the presence of a saturated zone comprised of sand, the upper surface of which is located between approximately 75 to 90 feet below ground surface (bgs). The sand contains groundwater that is potentiometrically mounded and appears to be confined beneath overlying shale. The lateral extent and competency of the shale is unknown. In monitor wells to the immediate south and southwest of the Plant, the presence of hydrocarbon product has been observed on top of the groundwater column, while groundwater samples drawn from a monitor well north of the Plant contained elevated chloride and total dissolved solids (TDS) concentrations.

During the March 2002 drilling program, Maxim noted the absence of the saturated sand approximately one-third mile northwest and west of the Plant's western fence line. Hence, a western limit of the groundwater system has been delineated. To the north, east, and south of the Plant, the presence and quality of groundwater and the lateral extents and thicknesses of the fluid-bearing zone and overlying shale are all currently unknown.

Work to date has not pinpointed the location of the top of the mound nor allowed determination of the hydrocarbon or chloride sources. Maxim has developed the following work plan to fill in the data gaps listed above and further delineate the extent of contamination.

SCOPE OF WORK

Maxim proposes to augment the existing monitor well installation with approximately 6 to 10 additional monitor wells in the vicinity of the Plant. All well borings will be located on existing caliche pads to facilitate drill rig access. Conoco will provide an archeologist to clear all potential drilling locations prior to emplacement of temporary wells. The temporary wells will be located to the northeast, east and southeast of the Plant area and are intended to confirm and define the extent of dissolved phase hydrocarbons, chloride-rich waters, and the subsurface lateral and vertical extents of the fluid-bearing zone and the confining shale.

To meet these objectives, Maxim will:

Objective 1

Advance six borings for the purpose of installing temporary monitor wells. It should be noted that up to four additional temporary monitor wells may be installed, depending on findings from the original six well borings. Proposed locations for monitor wells are shown on Figure 1. Maxim proposes that Sites 15, 16, and 17 be placed first. Upon review of findings, Maxim will select subsequent temporary well locations by either stepping out (eastward) or stepping in (westward) from the first locations. Borings where groundwater is encountered will be completed as temporary monitor wells (discussed below).

Maxim notes that the installation of the first three temporary monitor wells will provide information needed to assess the scale of the groundwater system. In the case that the borings show dry, Maxim will step in toward existing monitor wells to the west and repeat the well boring effort in attempt to install temporary monitor wells to define the groundwater system. (On Figure 1 these locations are labeled 18A, 19A and 20A.) In this case, the northern, eastern, and southern limits of the groundwater system will be established, and Maxim will install six temporary monitor wells (Figure 1) to characterize water quality and develop stratigraphic and hydrogeologic controls.

Should groundwater be encountered at Sites 15, 16, and 17, Maxim will step out toward the east (second case) to set additional well borings (18, 19 and 20). In this second case, the position for monitor well 20 has been located at the base of the escarpment approximately three-quarter mile distant from the eastern Plant fence line to allow further investigation of chloride-enriched groundwater detected during drilling at the Well 327 site. Maxim notes that in this case the scale of the investigation will have been expanded and that monitor wells installed during this phase will be too widely spaced to allow data collected from them to be incorporated with certainty into data from the existing monitor well network. In this case, four additional intermediately spaced monitor wells may be set following consultation with Conoco. Potential locations for these four additional wells are shown on Figure 1.

Objective 2

The borings will be advanced with a truck-mounted air rotary drill rig, equipped for split spoon sampling. The borings will be advanced to approximately 75 feet bgs using air rotary methods and collecting shovel samples at five-foot intervals. Formations encountered will be logged according to the Unified Soil Classification System so that observations concerning soil types, lithologic changes, and the environmental condition of the soils can be noted. Upon nondetection of volatile organic compounds (VOCs) by photo-ionization detector (PID), two of the well borings will be sampled by continuous split spoon from the base of the confining shale zone through the base of the fluid-bearing sand to provide data regarding its position and thickness.

Objective 3

At each well boring, Maxim will collect soil samples and field screen samples with a PID to detect the presence of VOCs.

Objective 4

Soil cuttings generated by soil boring activities will be staged on plastic liners at the wellhead area. Upon confirmation of the absence of VOCs, cuttings will be scattered at the wellhead area. In the event VOCs are present in concentrations greater than 100 parts per million, as indicated by a PID, cuttings will be retained on plastic liners and the VOCs allowed to evaporate.

Objective 5

The monitor wells will be installed following New Mexico Oil Conservation Division (OCD) guidelines stipulated in *Guidelines For Remediation of Leaks, Spills and Releases* published August 13, 1993. Figure 1 presents the proposed locations of the monitor wells. Nine proposed locations are shown on Figure 1. An additional four wells could potentially be installed based on findings from the original six. The only deviation from the OCD guidelines will be that all wells will be considered "temporary". The use of temporary wells has been agreed upon between Conoco and the OCD.

A temporary well is defined as: following the placement of a sand pack and bentonite seal about the monitor well, no grout will be placed in the open annulus between surface and the bentonite seal. Following assessment of well data and water quality data, Conoco will meet with OCD and discuss which wells should remain for the duration of the project and what wells can be pulled, plugged and abandoned immediately (i.e., they provide redundant information relative to other wells). The wells that remain will be grouted per OCD guidelines.

Objective 6

Following installation, wells will be developed by purging. Collected purge water from the temporary monitoring wells will be drummed and disposed of appropriately. All sampling equipment will be cleaned between each boring installation with a steam cleaner. Rinse water will be contained and disposed of per appropriate regulatory procedures.

Objective 7

Following development of the wells, groundwater samples will be collected and submitted to Severn Trent Laboratories for analysis. A groundwater sample will also be collected from Well RA-10175, located south of the Plant as well as all currently existing wells. If free product is present, the well will not be sampled. A minimum of 17 and a maximum of 24 groundwater samples (providing there is no free product), one duplicate sample, and one trip blank (for a total of 19 to 26 samples) will be analyzed for benzene, toluene, ethylbenzene and total xylenes (BTEX). Samples will also be analyzed for major ions, pH, and TDS. This analytical suite is abbreviated relative to previous sampling rounds but will provide required data as far as water quality (major cations and anions including chloride, bromide, sulfate, bicarbonate) and the presence or absence of dissolved phase hydrocarbon impacts. A down-hole conductivity probe will be utilized in the field to determine if fresh water to saline water interface exists within each monitor well completed to date at the site.

Objective 8

Following sampling, the wells will be surveyed by Basin Surveys, so that accurate water level elevations can be obtained and incorporated into the existing potentiometric surface map. Depth-to-water measurements will be taken at each well in the network following sampling.

Objective 9

Upon receipt of laboratory results, Maxim will issue a comprehensive report on investigative results to date.

PROJECT SCHEDULE

Maxim is prepared to initiate this scope of work as soon as Conoco grants approval and a drill rig(s) is available.

PROJECT APPROACH

Mr. Clyde Yancey will serve as the Project Manager and will have the authority to commit whatever resources are necessary to support the project team. It will be his responsibility to assure that the Clients needs are met in terms of scope of work and schedule. Mr. Frank Lichnovsky and Ms. Anne Stewart will perform the fieldwork under the supervision of Mr. Yancey.

If you have any questions or comments regarding this work plan, please do not hesitate to contact me.

Sincerely,

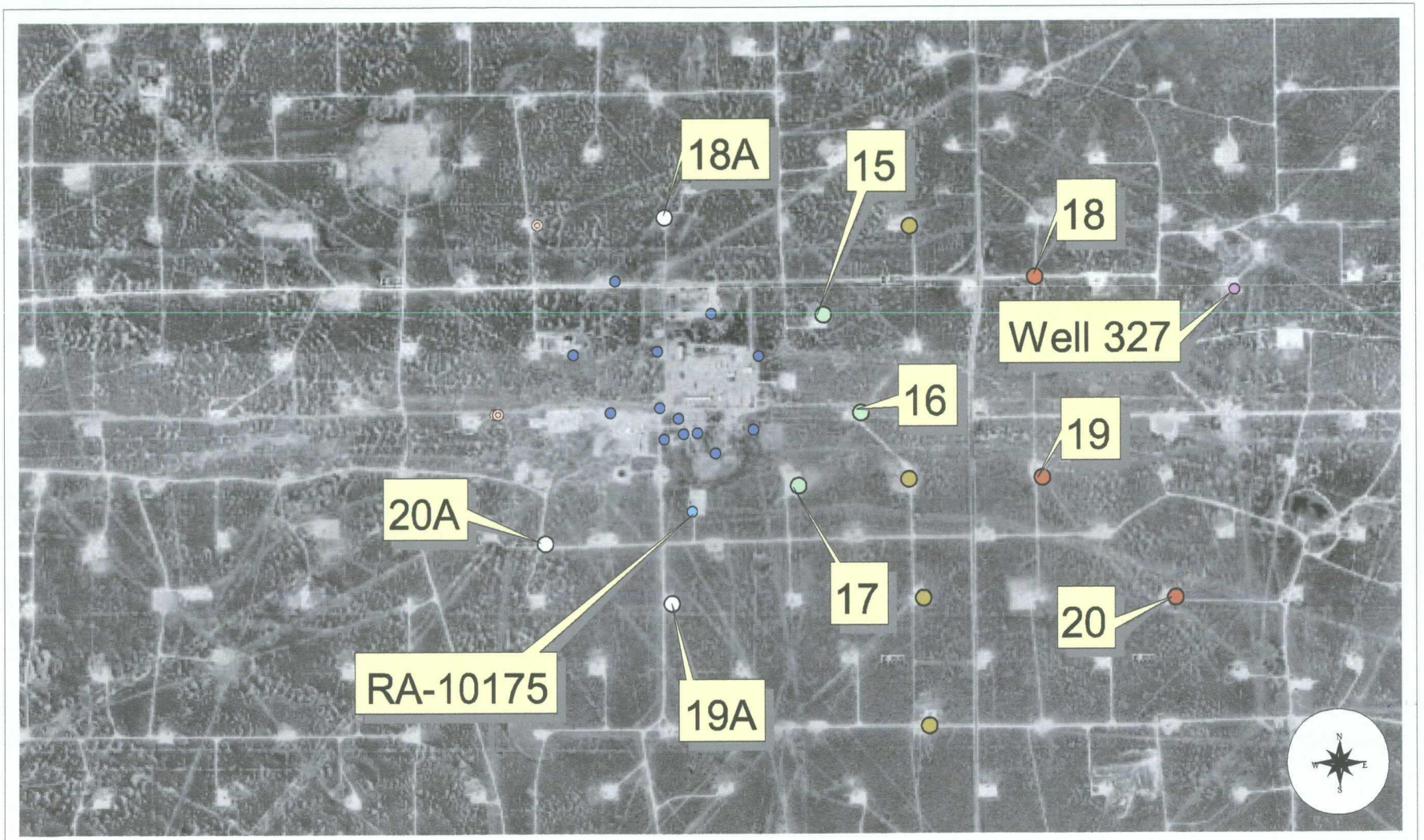
MAXIM TECHNOLOGIES, INC.

Clyde L. Yancey, P.G.
Senior Project Manager

Attachments

Copies To: Neal Goates, Conoco RT, Houston, Texas
Joyce Miley, Conoco Gas & Power, Houston, Texas
Suzanne Holland, Conoco EP Americas, Midland, Texas

F:\SHARE\Anne\Maljamar Ground Water\GIS Projects\CYpropwellsMGP.apr \ View - Figure 4 July 2002 Proposed Wells\ Layout - Figure 1



Proposed Well Locations

- Temporary Well 15, 16, 17
- Potential Locations for Case 2 Intermediate Wells
- Potential Location for 18, 19, 20
- Alternate Location for 18, 19, 20

Existing Features

- Existing Monitor Well Network
- Well RA-10175
- Dry Borings (3/02)

1000 0 1000 2000 Feet

SITE:	**Maljamar Gas Plant**
ADDRESS:	**Conoco Road,**
CITY/COUNTY/STATE:	**Maljamar, Lea County NM**

SOURCES:

USGS, Dog Lake 7.5 Minute Quadrangle (Provisional Edition, 1985)
USGS, Maljamar 7.5 Minute Quadrangle (Provisional Edition, 1985)
USGS / Microsoft Terraserver, 2002, download of 1995 digital orthophoto quadrangle plates.

MAXIM TECHNOLOGIES INC

Project Number: 169016.100

FIGURE 1

MAXIM TECHNOLOGIES INC

10601 Lomas NE
Suite 106
Albuquerque, NM 87112

505-237-8440

February 21, 2001

Mr. Wayne Price
NM Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87504

RE: Proposal to Discharge Treated RO Water From the Conoco Maljamar Gas Plant to the Conoco MCA Playa Lake Project, Maljamar, Lea County, New Mexico

Dear Mr. Price:

On behalf of Conoco Inc. (Conoco), Maxim Technologies, Inc. (Maxim) is submitting this proposal to the New Mexico Oil Conservation Division (OCD) for approval to discharge treated RO water from the Maljamar Gas Plant to the nearby MCA Playa Lake Project created by Conoco. In order to facilitate OCD approval, Conoco had the treated RO water analyzed, and contacted the Carlsbad office of the U.S. Bureau of Land Management (BLM) for their input.

The treated RO water was sampled for benzene, ethylbenzene, toluene and total xylenes (purgable aromatics) by USEPA Method SW8021B, and Total Petroleum Hydrocarbons (TPH) by TPH Texas 1005 Method at SPL Laboratories. All sample results were non-detects (laboratory report is attached). The treated RO water was also analyzed for the 8 RCRA metals and major cations and anions by Cardinal Laboratories (laboratory report is attached). All laboratory results were within the New Mexico Water Quality Control Commission groundwater standards. During the initial analytical run, lead was analyzed by USEPA Method 600/239.1 rather than typical USEPA Method 600/239.2, and a value of 0.178 mg/L was obtained. Due to the immobility of lead, this result was considered very unusual. A subsequent sample was obtained and rerun with a value of <0.002 mg/L.

Conoco contacted the BLM Carlsbad office to inquire about any potential interplay between the National Environmental Policy Act (NEPA) and the treated RO water discharge to the playa. BLM indicated that they had no problem with the discharge, and in fact encouraged Conoco to pursue this proposal. It is their desire to maintain the playa as an aquatic habitat for various plant and animal species. BLM further indicated that they had 2001 funding to assist Conoco with control of salt cedar at the MCA Playa Lake Project.

Conoco intends to route the treated RO water to the playa via a PVC pipeline. Engineering specifications are currently being developed. The treated water will be pumped from the treated RO water holding tank to the playa at a rate of approximately 200 barrels per week.

If you should have any questions regarding this proposal, please do not hesitate to call either Mark Bishop with Conoco (505-676-3519) or myself (505-237-8440). We would appreciate your attention to this proposal at your earliest convenience.

Sincerely,
MAXIM TECHNOLOGIES, INC.

Clyde L. Yancey
Sr. Project Manager/Office Manager

Attachments

Copy to:
Mr. Mark Bishop, Conoco/Natural Gas & Gas Producers, Maljamar, New Mexico
Mr. John Skopak, Conoco/Remediation Technology, Houston, Texas

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
CONOCO INC. NGGP
ATTN: MARK BISHOP
P.O. BOX 90
MALJAMAR, NM 88264
FAX TO:

Receiving Date: 02/05/01
Reporting Date: 02/06/01
Project Number: NOT GIVEN
Project Name: MALJAMAR PLANT RO WATER
Project Location: NOT GIVEN

Analysis Date: 02/06/01
Sampling Date: 02/05/01
Sample Type: WASTEWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Fe (ppm)
H5578-1	RO WASTEWATER	0.425
Quality Control		2.010
True Value QC		2.000
% Recovery		101
Relative Percent Difference		0.4

1.0 mg/L

METHOD: EPA 600/4-79-020 236.1

Chemist

Date 02/06/2001

H5578M2.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
CONOCO INC. NGGP
ATTN: MARK BISHOP
P.O. BOX 90
MALJAMAR, NM 88264
FAX TO:

Receiving Date: 02/05/01
Reporting Date: 02/06/01
Project Number: NOT GIVEN
Project Name: MALJAMAR PLANT RO WATER
Project Location: NOT GIVEN

Sampling Date: 02/05/01
Sample Type: WASTEWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: AH

RCRA METALS

0.05

LAB NUMBER	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
ANALYSIS DATE:		02/06/01	02/06/01	02/06/01	02/06/01	02/06/01	02/06/01	02/06/01	02/05/01
H5578-1	RO WASTEWATER	<0.1	<0.1	<0.1	<0.01	<0.01	0.178	<0.02	<0.01
Quality Control		0.051	4.870	49.95	1.008	0.985	5.051	0.00587	0.197
True Value QC		0.050	5.000	50.00	1.000	1.000	5.000	0.00600	0.200
% Recovery		102	97.4	99.9	101	98.5	101	97.8	98.5
Relative Percent Difference		5.5	0.3	1.2	0.2	3.6	0.4	2.2	8.5
METHODS: EPA 600/4-79-020		206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2
METHODS:	SW-846	7060A	7760A	7080A	7130	7190	7420	7470A	7740

Chemist: [signature]

Date: 02/06/2001

H5578A-1 XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
CONOCO INC. NGGP
ATTN: MARK BISHOP
P.O. BOX 90
MALJAMAR, NM 88264
FAX TO:

Receiving Date: 02/05/01
Reporting Date: 02/06/01
Project Number: NOT GIVEN
Project Name: MALJAMAR PLANT RO WATER
Project Location: NOT GIVEN

Sampling Date: 02/05/01
Sample Type: WASTEWATER
Sample Condition: COOL AND INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Na (mg/L)	Ca (mg/L)	Mg (mg/L)	K (mg/L)	Conductivity (mS/cm)	T-Alkalinity ($mgCaCO_3/L$)
ANALYSIS DATE:		02/06/01	02/05/01	02/05/11	02/05/01	02/05/01	02/05/01
H5578-1	RO WASTEWATER	48	50	11	15.78	587	182
Quality Control		1.139	47	52	6.04	1489	NR
True Value QC		1.000	50	50	6.00	1413	NR
% Accuracy		114	94.3	104	101	105	NR
Relative Percent Difference		0.6	8.5	0	2.0	0.3	NR
METHODS:		273.1	3500-Ca-D	3500-Mg E	8049	120.1	310.1

LAB NUMBER	SAMPLE ID	Cl^- (mg/L)	SO_4 (mg/L)	CO_3 (mg/L)	HCO_3 (mg/L)	pH (s.u.)	TDS (mg/L)
ANALYSIS DATE:		02/05/01	02/05/01	02/05/01	02/05/01	02/05/01	02/06/01
H5578-1	RO WASTEWATER	44	48	0	222	7.80	315
Quality Control		980	53.03	NR	995	7.04	NR
True Value QC		1000	50.00	NR	1000	7.00	NR
% Accuracy		98.0	106	NR	99.5	101	NR
Relative Percent Difference		7.2	3.0	NR	0	0	
METHODS:		SM4500-Cl-B	375.4	310.1	310.1	150.1	160.1

Gayle A. Potter (signature)
Gayle A. Potter, Chemist

02/06/2001
Date

H5578A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 · 2111 BEECHWOOD · ABILENE, TX 79603
PHONE (505) 393-2326 · 101 E. MARLAND · HOBBS, NM 88240

ANALYTICAL RESULTS FOR
CONOCO, INC.
ATTN: MARK BISHOP
P.O. BOX 90
MALJAMAR, NM 88264
FAX TO: (505) 676-2401

Receiving Date: 02/09/01
Reporting Date: 02/16/01
Project Number: NOT GIVEN
Project Name: NOT GIVEN
Project Location: NOT GIVEN

Analysis Date: 02/15/01
Sampling Date: 02/09/01
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Pb (mg/L)
H5598-1	R.O. WASTEWATER	<0.002
Quality Control		0.011
True Value QC		0.010
% Recovery		110
Relative Percent Difference		1.3

METHOD: EPA 600/4-79-020 239.2

Chemist

02/16/2001
Date

CARDINAL LABORATORIES, INC.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Page ____ of ____

Company Name: Conoco Inc. N660	BILL TO
Project Manager: MARK Bishop.	P.O. #:
Address: PO Box 90	Company:
City: Maljamar State: NM Zip: 88264	Attn:
Phone #: 505 676 3514 Fax #:	Address:
Project #: Project Owner:	City:
Project Name: Maljamar Plant RO Water	State: Zip:
Project Location:	Phone #:
Sampler Name:	Fax #:

FOR LAB USE ONLY				MATRIX							PRESERV			SAMPLING		ANALYSIS REQUEST												
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	CATIONS/ANIONS	RCRA METALS												
H5518-1	RO Waste Water				4								2-5-01		✓	✓												

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts over 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Mark Bishop	Date:	Received By:	
Relinquished By:	Time:		
	Date: 2/5/01	Received By: (Lab Staff)	
Delivered By: (Circle One)	Time: 9:15		
Sampler - UPS - Bus - Other:		Sample Condition: Cool ☐ Yes ☐ No; Intact ☐ Yes ☐ No	CHECKED BY: (Initials)

Phone Result:	☐ Yes	☐ No	Add'l Phone #:
Fax Result:	☐ Yes	☐ No	Add'l Fax #:
REMARKS: Need ASAP!!!			

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Case Narrative for:

Conoco Inc.

Certificate of Analysis Number:

00090154

Report To:		Project Name:	RO Wastewater
Conoco Inc.		Site:	Maljamar Gas Plant
Rudy Quiroz		Site Address:	
P.O. Box 90			
1001 Conoco Rd		PO Number:	
Maljamar		State:	New Mexico
NM		State Cert. No.:	
88264-		Date Reported:	
ph: (505) 676-3503	fax: (505) 676-3533		

Any data flags or quality control exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

West, Sonia
Senior Project Manager

9/12/00
Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Conoco Inc.

Certificate of Analysis Number:

00090154

Report To:	Conoco Inc. Rudy Quiroz P.O. Box 90 1001 Conoco Rd Maljamar NM 88264- ph: (505) 676-3503	fax: (505) 676-3533	**Project Name:** **Site:** **Site Address:** **PO Number:** **State:** **State Cert. No.:** **Date Reported:**	RO Wastewater Maljamar Gas Plant New Mexico
Fax To:	*Conoco Inc.* *Rudy Quiroz*	*fax: (505) 676-3533*		

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
RO Wastewater	00090154-01	Water	9/7/00 8:15:00 AM	9/8/00 10:00:00 AM	099330	☐

West, Sonia
Senior Project Manager

9/12/00
Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Client Sample ID RO Wastewater **Collected:** 9/7/00 8:15:00 A **SPL Sample ID:** 00090154-01

Site: Maljamar Gas Plant

Analyses/Method	Result		Rep.Limit	Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
PURGEABLE AROMATICS			**MCL**	**SW8021B**		**Units: ug/L**		
Benzene	ND		1	1		09/09/00 1:05	DL	394978
Ethylbenzene	ND		1	1		09/09/00 1:05	DL	394978
Toluene	ND		1	1		09/09/00 1:05	DL	394978
Xylenes,Total	ND		1	1		09/09/00 1:05	DL	394978
Surr: 1,4-Difluorobenzene	97.9	%	72-137	1		09/09/00 1:05	DL	394978
Surr: 4-Bromofluorobenzene	105	%	48-156	1		09/09/00 1:05	DL	394978
TPH TEXAS 1005			**MCL**	**TX_EPH**		**Units: mg/L**		
C6-C10	ND		5	1		09/10/00 18:31	AM	395057
> C10-C28	ND		5	1		09/10/00 18:31	AM	395057
Total (C6-C28)	ND		5	1		09/10/00 18:31	AM	395057

Run ID/Seq #: HP_K_000910A-395057

Prep Method	Prep Date	Prep Initials
TX_EPH	09/08/2000 15:37	J_F

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

Conoco Inc.

RO Wastewater

Analysis: TPH Texas 1005 **WorkOrder:** 00090154
Method: TX_EPH **Lab Batch ID:** 7138

Method Blank

RunID: HP_K_000910A-395051 Units: mg/L
Analysis Date: 09/10/2000 16:42 Analyst: AM
Preparation Date: 09/08/2000 15:37 Prep By: J_F Method TX_EPH

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00090154-01A	RO Wastewater

Analyte	Result	Rep Limit
> C10-C28	ND	5.0
C6-C10	ND	5.0
Total (C6-C28)	ND	5.0

Laboratory Control Sample (LCS)

RunID: HP_K_000910A-395052 Units: mg/L
Analysis Date: 09/10/2000 17:36 Analyst: AM
Preparation Date: 09/08/2000 15:37 Prep By: J_F Method TX_EPH

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
> C10-C28	50	60	121	70	130
C6-C10	50	52	105	70	130
Total (C6-C28)	100	112	112	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00090154-01
RunID: HP_K_000910A-395058 Units: mg/L
Analysis Date: 09/10/2000 19:25 Analyst: AM
Preparation Date: 09/08/2000 15:37 Prep By: J_F Method TX_EPH

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
> C10-C28	ND	50	58	117	50	59	117	0.527	30	70	130
C6-C10	ND	50	50	101	50	51	102	1.10	30	70	130
Total (C6-C28)	ND	100	108	108	100	110	110	1.83	30	70	130

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
* - Recovery Outside Advisable QC Limits
D - Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Quality Control Report

Conoco Inc.

RO Wastewater

Analysis: Purgeable Aromatics
Method: SW8021B
WorkOrder: 00090154
Lab Batch ID: R20333

Method Blank

RunID: HP_U_000908A-394953 Units: ug/L
Analysis Date: 09/08/2000 16:00 Analyst: DL

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
00090154-01B	RO Wastewater

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Toluene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,4-Difluorobenzene	98.8	72-137
Surr: 4-Bromofluorobenzene	104.8	48-156

Laboratory Control Sample (LCS)

RunID: HP_U_000908A-394951 Units: ug/L
Analysis Date: 09/08/2000 15:11 Analyst: DL

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50	45	91	70	130
Ethylbenzene	50	48	96	70	130
Toluene	50	47	93	70	130
Xylenes,Total	150	143	95	70	130

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 00090123-01
RunID: HP_U_000908A-394955 Units: ug/L
Analysis Date: 09/08/2000 16:25 Analyst: DL

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	20	16	79.0	20	17	85.8	8.22	21	32	164
Ethylbenzene	ND	20	17	84.1	20	19	92.0	8.94	19	52	142
Toluene	ND	20	16	82.0	20	18	89.5	8.73	20	38	159
Xylenes,Total	ND	60	51	85.0	60	55	91.7	7.55	18	53	144

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
* - Recovery Outside Advisable QC Limits
D - Recovery Unreportable due to Dilution
MI - Matrix Interference

Chain of Custody

And

Sample Receipt Checklist

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No: 00090154 — 099330

page 1 of 1

Client Name: Conoco Inc.

Address/Phone: Box 90 Maljamar, N.M. 505-676-3528

Client Contact: Rudy Quiroz

Project Name: RO Waste Water

Project Number:

Project Location: Maljamar Gas Plant

Invoice To: Conoco Inc. Box 90 Maljamar N.M. 88264

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil SL=sludge O=other:)	bottle (P=plastic A=amber glass G=glass V=vial)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz)	pres. (1=HCl 2=HNO3 3=H2SO4 O=other:)	Number of Containers	Requested Analysis: TPH	Requested Analysis: BTEX
RO Waste Water	9/7/00	8:15 Am			W	✓	40		6	X	X

RUSH

Client/Consultant Remarks: Fax Results to Ashley Finan 281-293-1214

Laboratory remarks:

Intact? ☐ Y ☐ N

Temp: 3c

Requested TAT

24hr ☒ 72hr ☐

48hr ☐ Standard ☐

Other ☐ _____

Special Reporting Requirements: Fax Results ☐ Raw Data ☐ Standard QC ☒ Level 3 QC ☐ Level 4 QC ☐

Special Detection Limits (specify):

PM review (initial): RD

	date	time
1. Relinquished by Sampler: Rudy Quiroz	9/7/00	8:45 Am
2. Received by:		
3. Relinquished by:	date	time
4. Received by:		
5. Relinquished by:	date	time
6. Received by Laboratory: Nancy Barnes	9/8/00	1000

☒ 8880 Interchange Drive, Houston, TX 77054 (713) 660-0901

☐ 459-Hughes Drive, Traverse City, MI 49684 (616) 947-5777

☐ 500 Ambassador Caffery Parkway, Scott, LA 70583 (318) 237-4775

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	00090154	Received by:	Barrera, Nancy
Date and Time Received:	9/8/00 10:00:00 AM	Carrier name:	FedEx
Temperature:	3		

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Water - VOA vials have zero headspace?	Yes ☑	No ☐	Not Present ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	

10601 Lomas NE
Suite 106
Albuquerque, NM 87112

505-237-8440

September 19, 2000

Mr. Wayne Price
Oil Conservation Division
NM Energy, Minerals, and Natural Resources Department
2040 South Pacheco
Santa Fe, NM 87505

RE: Closure Plan for Area 1/"Bermed Area," Impacted by the February 13, 2000 Fifteen (15) Barrel Condensate Release
Conoco Maljamar Gas Plant, Maljamar, New Mexico

Dear Mr. Price:

This letter is intended to be an addendum to the August 11, 2000 transmittal to your office of the *Subsurface Investigation, Maljamar Gas Plant* report from Mr. John E. Skopak, Conoco Inc. The intent of this letter is to present a closure plan to be followed during final remediation of the February 13, 2000 release of 15 barrels of condensate in Area 1 ("the bermed area").

In the above referenced report of August 11, 2000, Conoco stated that they believe the rapid excavation of soil within the bermed area was very successful in recovering soil related impacts from the condensate spill. Also, we believe that our subsequent soil borings were successful in delineating the horizontal and vertical impacts from the release. However, during our soil boring installation, it became evident that historical impacts were present, unrelated to the 15-barrel release. The following plan is presented to gain closure of the 15-barrel release only. The investigation of the historical release is ongoing, and will be addressed in subsequent field investigations.

In order to prepare a plan for closure, we followed the Oil Conservation Division (OCD) *Guidelines for Remediation of Leaks, Spills and Releases* dated August 13, 1993. We classified the soils as *unsaturated contaminated soils* as defined in section III.B.2. We then applied the ranking criteria found in section IV to determine the appropriate soil remediation action levels using a risk-based approach. Following is our ranking:

- Depth to Groundwater – Score: 10
- Wellhead Protection Area – Score: 0 (or No)
- Distance to Surface Water Body – Score: 0

Total Score of 10

Based on the ranking presented above, we will use the OCD prescribed guidance for remediation action levels during cleanup of the site (section IV.2.b):

- Field headspace readings of 50 ppm to guide our cleanup of benzene and BTEX concentrations, and
- 1000 ppm analytical for the cleanup of TPH.

It is our intent to excavate any remaining soils in the bermed area between the surface and five feet below surface exhibiting soil vapor headspace readings in excess of 50 ppm. Confirmatory samples will be collected for laboratory analysis to guide our excavation, and will be presented to the OCD in our request for closure. Excavated soils will be added to the existing soil stockpile, and subsequently removed offsite to an approved disposal facility.

We believe that excavating to a depth of five feet will be adequate in recovering any impacts resultant from the 15-barrel release. At depths greater than five feet, we believe, based on the results of our ongoing investigation, that we would be influenced by the historical release currently under investigation.

Our request to the OCD for closure of the 15-barrel condensate release will present a map of all additional excavations, volumes, locations of all confirmatory headspace sampling locations, a table of analytical values of all confirmatory soil sampling results, and final disposition of the excavated soil.

If you have any questions regarding this plan, please do not hesitate to call.

Sincerely,
MAXIM TECHNOLOGIES, INC.

Clyde L. Yancey
Senior Project Manager

cc:
Joyce M. Miley
John E. Skopak
Rudy R. Quiroz

John E. Skopak
Senior Project Manager
Remediation Technology
Room PO3054
281-293-5584
Fax: 240-359-4098

Conoco Inc.
P. O. Box 2197
Houston TX 77252-2197

August 11, 2000

Mr. Wayne Price
Oil Conservation Division, Environmental Bureau
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: Subsurface Investigation, Maljamar Gas Plant
Maljamar, New Mexico

Dear Mr. Price:

Attached for your review and approval is a copy of the two phase Subsurface Investigation performed in April and June 2000 by Maxim Technologies on our Maljamar Gas Plant. This work was performed to assess the site after the excavation of soil following a 15 BBL release that occurred in a bermed area in February 2000 and to assess any impacts to soil/groundwater from any historical release(s). The second phase of this work was carried out under the requirements of Section 14 Part A of our Groundwater Discharge Plan GW-020.

Conoco strongly believes that our rapid excavation of the soil from the bermed area following the 15 barrel condensate release on February13, 2000 was very successful and did not impact groundwater. We understand that there is some near surface soil near B-4 that still needs to excavated which we plan on removing during our final clean-up and restoration of the bermed area. We request your concurrence to grant us a closure on this 15 BBL release with the knowledge that these surface soils near B-4 will be excavated.

We are also requesting your approval of our recommended plan to help define the source of the groundwater contamination near Areas 1 and 2. We feel that the recommended placement of these two wells will help in the definition of a potential source as well as facilitate the determination of the groundwater gradient.

We appreciate your timely consideration in both of these requests. If you have any questions regarding the results of our investigation or our recommended path forward, please do not hesitate to call me or Clyde Yancey at Maxim Technologies at 505-237-8440.

Sincerely,

Conoco Inc.

John E. Skopak
Senior Project Manager

cc: Joyce Woodfin – Conoco NG&GP
Marshall Honeyman – Conoco Maljamar
Clyde Yancey – Maxim Technologies

MAXIM
TECHNOLOGIES INC

August 8, 2000

Mr. John E. Skopak
Senior Project Manager
Conoco Inc.
600 North Dairy Ashford
Houston, Texas 77079-1175

Re: **Subsurface Investigation**
Maljamar Gas Plant
1001 Conoco Road
Maljamar, New Mexico
Maxim Project No. 2005110

Dear Mr. Skopak:

Submitted herewith is a letter report detailing the Subsurface Investigation conducted at the above-referenced site. The purpose of the Subsurface Investigation was to assess the potential for impacts to the subsurface underlying two bermed areas where condensate was historically stored. Specifically, this assessment consisted of drilling, collecting and describing soil samples for field screening and laboratory analysis from twelve (12) soil borings. One soil boring was converted into a groundwater monitor well from which one groundwater sample was collected for laboratory analysis.

BACKGROUND

On February 13, 2000, approximately 15 barrels of condensate were released within a bermed area approximately 75' by 50' in size (hereinafter Area 1) on the south side of the Maljamar Gas Plant. Conoco Inc. (Conoco) contacted the New Mexico Oil Conservation Division (OCD) immediately following the release. In an effort to address the impacts to soil, Conoco excavated approximately 20 cubic yards of soil from the bermed area, and stockpiled the soil on plastic sheeting with secondary containment to prevent runoff. Conoco believes that all impacted soil from the February spill was removed in the excavation of the approximately 20 cubic yards of soil. Suspect hydrocarbon impacted soils from historical release(s) were encountered during the excavation of the freshly impacted soil. Conoco determined that a subsurface investigation consisting of soil borings should be conducted to assess the vertical and horizontal impact resulting from historical releases.

At Conoco's request, Maxim Technologies, Inc. (Maxim) conducted a subsurface investigation in and around Area 1, consisting of the advancement of five (5) soil borings on April 27 and 28, 2000. During this investigation phase, it was determined through field screening and analytical results that the February condensate release had been mitigated through Conoco's soil excavation efforts. However, based on analytical results generated during the first phase of the subsurface investigation, evidence of a historical release was identified within the extreme northeast portion of Area 1. A potential source for the historical release was identified as the former above-ground storage tanks (ASTs) located within a bermed area adjacent to and east of Area 1 (hereinafter Area 2). The former ASTs historically contained condensate. These ASTs are no longer utilized, and were properly cleaned and removed from the site during May of 2000.

Maxim initiated the second phase of the subsurface investigation on June 21 and 22, 2000. The purpose of this phase was two-fold:

(1) Advance additional soil borings in and around Area 2 to determine potential horizontal and vertical impact to the subsurface from historical release(s) at this location.
(2) Advance one soil boring to a depth of 200 feet below ground surface (bgs) or groundwater, whichever was encountered first at the request of the OCD.

The horizontal and vertical delineation of the historical release within the vadose zone underlying Areas 1 and 2 were determined in the subsurface investigation. Groundwater was encountered at approximately 72 feet bgs, sampled, and a monitor well was installed. Details and results of the subsurface investigation of both bermed areas are described below.

The investigation included a description of site soils, field screening of borings, and the collection of selected soil samples for laboratory analysis.

SOIL ASSESSMENT

On April 27 and 28, 2000, and June 21 and 22, 2000, Maxim advanced twelve soil borings (designated B-1 through B-12) around and within the vicinity of the two bermed areas previously mentioned. The soil borings were advanced with a truck-mounted air rotary drill rig that sampled with a 2-foot continuous, 2-inch diameter direct push split spoon sampler. Soil borings B-1 through B-5 were placed within or immediately outside of Area 1, while soil borings B-6 through B-12 were placed in the vicinity of Area 2. The soil boring locations are depicted in Figure 1 presented as Attachment A.

- Site Soils and Hydrogeology

The soil borings generally encountered brownish-red silty sand from surface to approximately 9 feet bgs. A light pink silty sand layer (ranging from four to ten feet in thickness) was encountered in the soil borings at depths ranging from 9 to 20 feet bgs. The soil borings generally encountered well cemented sandstone to coarse gravel intermixed with the silty sand at depths ranging from 20 feet to 45 feet bgs. This cemented sandstone/gravel prevented effective sample retrieval at various intervals below 30 feet in soil borings B-2, B-8, and B-10. Soil boring B-9 was the only boring drilled deeper than 60 feet bgs (B-9 is downgradient of Areas 1 and 2, and was drilled in an unimpacted area as the groundwater test boring). Soils encountered in soil boring B-9 remained as generally described above to a depth of 55 feet bgs, where a tannish-gray silty sand was encountered. Olive-brown, tightly cemented silty sand encountered from 65 feet to 93 feet bgs in B-9.

Moisture was encountered in soil boring B-9 in a medium brown silty sand intermixed with gravel from 93 feet bgs to 97 feet bgs. Drilling operations were terminated at that point and the boring was allowed to sit for approximately 30 minutes, following which time compressed air was jetted into the boring. It was apparent by the water jetted from the boring that a saturated horizon had been encountered. Water level measurements over the next hour indicated that the water level in the open boring was rising. The boring was completed as monitor well MW-1. The well was screened from 72 feet to 92 feet bgs with 0.10-inch slot PVC screen. The following day, the water level had risen to approximately 77 feet bgs. At that time the well was developed by bailing and surging per OCD guidance, and a groundwater sample was collected for analysis.

Since moisture was not encountered until 93 bgs during drilling, and a well cemented sand overlain the saturated sand/gravel unit, it was hypothesized that a confined unit was encountered with a driving head coming off the Mescalero Ridge north of the Maljamar Gas Plant. With the exception of soil boring B-9, groundwater was not encountered in the soil borings. Soil boring logs are presented in Attachment B.

- Field Screening

Field headspace analyses were conducted on-site by placing two-foot composite samples from a soil boring in re-sealable plastic bags and allowing the samples to volatilize for approximately 15 minutes per OCD guidance. The headspace area in the bag above the soil samples was then analyzed with a photo-ionization detector (PID). The PID detects petroleum hydrocarbons and

other low molecular weight organic compounds in parts per million (ppm) concentrations. PID readings ranged as follows:

- 1.1 ppm to 8.8 ppm in B-1;
- 1.4 ppm to 3,239 ppm in B-2;
- 25 ppm to 2,287 ppm in B-3;
- 12.7 ppm to 2,099 ppm in B-4;
- 10.4 ppm to 3,567 ppm in B-5;
- 0 ppm in B-6;
- 3 ppm to 26 ppm in B-7;
- 8 ppm to 829 ppm in B-8;
- 3 ppm to 17 ppm in B-9;
- 5 ppm to 1,222 ppm in B-10;
- 0 ppm to 5 ppm in B-11;
- and 3 ppm to 47 ppm in B-12.

The soil boring logs, presented in Attachment B, list all PID readings with respect to the intervals that they were detected. The PID readings were used to identify intervals where samples for analysis should be collected.

- Soil Sampling and Analysis

Two soil samples were collected for analysis from each soil boring. One sample was collected from the sample interval registering the highest PID reading, and a second confirmatory "clean" sample collected from either the bottom or near the bottom of each soil boring. Additional soil samples were also collected from the 10'-12' intervals of soil borings B-4 and B-5. Following field screening, the soil samples were immediately placed into factory-cleaned 4-ounce glass sample jars with Teflon-lined lids, placed on ice, and submitted to Severn Trent Laboratories, Inc. (STL) in Earth City, Missouri (B-1 through B-5) and Austin, Texas (B-6 through B-12). The soil samples were analyzed for volatile petroleum hydrocarbons (VPH), EPA Method 8015 modified, and benzene, toluene, ethylbenzene, xylenes (BTEX), EPA method 8260B. Soil samples collected from soil boring B-4 were also analyzed for Resource Conservation and Recovery Act (RCRA) metals using EPA approved method 6010B-RCRA metals.

Table 1, on the following page, lists the analytical results of the soil samples. Laboratory analytical results, method detection limits, and chain-of-custody documentation are included in Attachment C.

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
VPH, BTEX, and RCRA METALS
Soil Samples B-1 through B-5 Collected on April 27 & 28, 2000
Soil Samples B-6 through B-12 Collected June 21 & 22, 2000

Sample ID	VPH mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Total Xylenes mg/kg	RCRA Metals mg/kg
B-1 @ 14'-16'	<0.1	<0.005	<0.005	<0.005	<0.005	--
B-1 @ 18'-20'	<0.1	0.004*	<0.005	<0.005	<0.005	--
B-2 @ 8'-10'	2,700	0.690*	<1.0	25.0	23.0	--
B-2 @ 33'-35'	26.0	14.0	1.4	29.0	38.0	--
B-3 @ 2'-4'	2,300	9.4	0.410*	26.0	34.0	--
B-3 @ 33'-35'	<0.1	0.0017*	<0.005	<0.005	<0.005	--
B-4 @ 0'-2'	4,900	19.0	1.1*	46.0	84.0	Arsenic – 2.3 Barium – 88.9 Cadmium – <0.5 Lead – 7.7 Chromium – 12.7 Selenium - <0.5 Silver - <1.0 Mercury – 0.26
B-4 @ 10'-12'	690	0.92*	2.8	10.0	20.0	Arsenic – 1.9 Barium – 72.8 Cadmium – <0.5 Lead – 2.1 Chromium – 2.0 Selenium - <0.5 Silver - <1.0 Mercury – <0.03
B-4 @ 33'-35'	<0.1	0.028	0.0062	0.0084	0.014	Arsenic – 1.9 Barium – 144 Cadmium – <0.5 Lead – 3.3 Chromium – 4.2 Selenium - <0.5 Silver - <1.0 Mercury – <0.03
B-5 @ 6'-8'	89.0	0.002*	0.0028*	0.025	0.1	--
B-5 @ 10'-12'	0.28	<0.005	0.006	0.0032*	0.034	--
B-5 @ 28'-30'	<0.1	<0.005	<0.005	<0.005	<0.005	--
B-6 @ 5'	<5	<0.005	<0.005	<0.005	<0.005	--
B-6 @ 25'-27'	<5	<0.005	<0.005	<0.005	<0.005	--

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
VPH, BTEX, and RCRA METALS
Soil Samples B-1 through B-5 Collected on April 27 & 28, 2000
Soil Samples B-6 through B-12 Collected June 21 & 22, 2000

Sample ID	VPH mg/kg	Benzene mg/kg	Toluene mg/kg	Ethyl-benzene mg/kg	Total Xylenes mg/kg	RCRA Metals mg/kg
B-7 @ 25'-27'	<5	<0.005	<0.005	<0.005	<0.005	--
B-7 @ 30'-32'	<5	<0.005	<0.005	<0.005	<0.005	--
B-8 @ 5'	3,000	3.8	19	<0.001	43	--
B-8 @ 35'-37'	<5	<0.005	<0.005	<0.005	<0.005	--
B-9 @ 30'-32'	<5	<0.005	<0.005	<0.005	<0.005	--
B-9 @ 90'	<5	<0.005	<0.005	<0.005	<0.005	--
B-10 @ 8'-10'	210	<0.250	1.8	0.860	6.8	--
B-10 @35'-37'	<5	<0.005	<0.005	<0.005	<0.005	--
B-10 @50'-52'	<5	<0.005	<0.005	<0.005	<0.005	--
B-11 @25'-27'	<5	<0.005	<0.005	<0.005	<0.005	--
B-12 @ 0-2'	<5	<0.005	<0.005	<0.005	<0.005	--
B-12 @40'-42'	<5	<0.005	<0.005	<0.005	<0.005	--

Results listed in mg/kg (parts per million; ppm).
Analyses conducted at STL, Inc. in Earth City, Missouri and Austin, Texas.
* Estimated Result. Results are less than detection limits.
-- Not Analyzed

GROUNDWATER ASSESSMENT

- Groundwater was encountered at a depth of 93 feet bgs in soil boring B-9. Groundwater was not encountered in the remaining soil borings during the subsurface investigation. MW-1 was constructed on June 21, 2000 in boring B-9 of a 20 foot, 2-inch diameter, .010-inch factory slotted PVC well screen, and seventy-two feet of 2-inch diameter PVC well casing. A sand pack consisting of 20/40 silica sand was placed into the annular space between the 2-inch diameter monitor well and the 6 1/4-inch borehole. The sand pack extends from the bottom of the boring to approximately six feet above the well screen. Above the sand pack, a bentonite seal was

placed into the same annular space to approximately six feet below surface grade. The borehole was filled with concrete from surface grade to six feet bgs, and a locking manhole cover and concrete drainage pad installed at grade.

The day following well completion, the water level rose to 77 feet bgs. MW-1 was developed and sampled on June 22, 2000. A groundwater sample was obtained from the monitor well by lowering a disposable bailer into the well and transferring the sample into six 40 ml septum sealed VOA vials, and one 40 ounce jar, each with Teflon-lined lids. The containers were labeled, documented on a chain-of-custody form, placed on ice, according to EPA protocol, and submitted to Severn Trent Laboratories, Inc. (STL) in Austin, Texas. The groundwater sample was analyzed for gasoline range organics, BTEX, and total chlorides using EPA approved method 8015 modified–GRO and 8260B-BTEX.

Table 2 lists the analytical results of the groundwater sample. Laboratory analytical results, method detection limits, and chain-of-custody documentation are included in Attachment C.

TABLE 2
GROUNDWATER SAMPLE ANALYTICAL RESULTS
Sample Collected on June 22, 2000

Monitor Well ID	GRO	Benzene	Toluene	Ethylbenzene	Xylenes	Chloride
MW-1	5.2	1.8	0.075	<0.050	<0.050	227

Results listed in mg/L (parts per million; ppm).
Analyses conducted at STL, Inc. in Austin, Texas.

CONCLUSIONS

Based upon the preceding discussions, the following conclusions can be drawn:

- Data indicated that the soil excavation performed by Conoco most likely captured the 15 barrels of condensate released in February 2000. No additional effort is anticipated.
- All soil borings that encountered contamination within and around Areas 1 and 2 contained clean soil material prior to encountering groundwater. The deepest soil contamination was reported in soil boring B-2 at a depth of 35 feet bgs. Groundwater was not encountered in B-2. This is indicative of delineating the vertical extent of soil contamination.
- Based on the location and results of the soil-boring placement, data indicate that the horizontal extent of soil contamination has been delineated.

- The impacts from the historical release are limited to the eastern half of Area 1 and the western half of Area 2.
- This investigation indicated that groundwater is most likely under confined conditions at 77 feet bgs. Groundwater was not encountered in B-2. Approximately 42 feet of vadose zone remains between groundwater and the base of contamination in B-2.
- Groundwater contamination was encountered southeast (most likely downgradient) of Areas 1 and 2. However, no definitive source term can be identified within Areas 1 and 2 because no contamination was tracked from surface to groundwater.

RECOMMENDATIONS

Maxim recommends that two additional groundwater-monitor wells be installed within the immediate vicinity of Areas 1 and 2. The rationale for the proposed well placement is provided below and the locations of the proposed monitor wells are shown in Figure 1.

- MW-2 is proposed to be 800 feet west of soil boring B-6. Based on available information, we believe that proposed monitor well MW-2 would be upgradient of Areas 1 and 2. If the groundwater is unimpacted, it could possibly indicate that Areas 1 and 2 are source terms. If the groundwater encountered in MW-2 is impacted, it could possibly indicate a source term other than Areas 1 and 2.
- MW-3 is proposed to be 1,600 feet west of MW-1. If MW-1 were not directly downgradient of Areas 1 and 2, MW-3 would likely cover the other potential downgradient component.
- If the two additional monitor wells are placed as proposed, the resulting monitor well configuration would facilitate determining groundwater gradient.
- All three monitor wells would be sampled for BTEX (EPA Method 8260) and gasoline range organics (EPA Method 8015B).

Maxim appreciates the opportunity to provide you with our professional consulting services. If you have any questions or comments, feel free to contact us at (505) 237-8440.

Respectfully,

MAXIM TECHNOLOGIES, INC.

for Craig R. Maddox
Environmental Specialist

For Clyde L. Yancey, P.G.
Senior Project Manager

ATTACHMENT A

SOIL BORING LOCATIONS

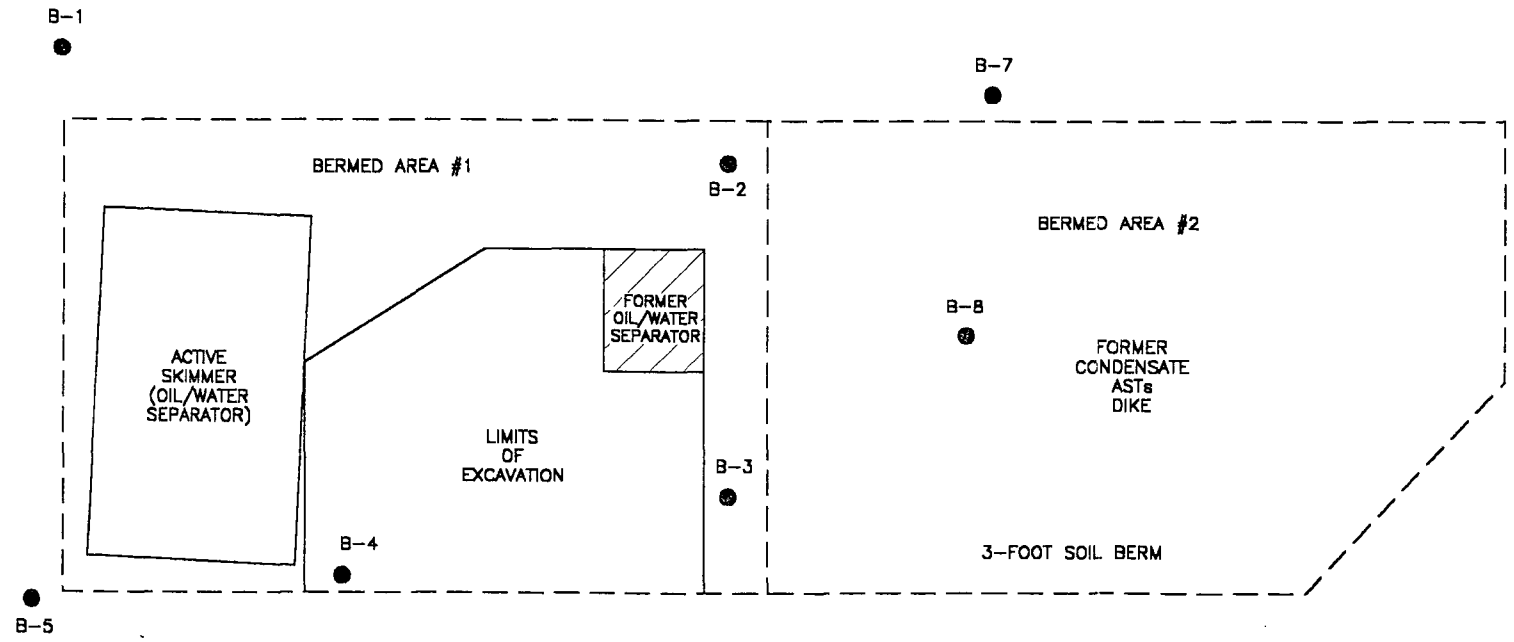


FIGURE 1 SITE MAP

MALJAMAR GAS PLANT
1001 CONOCO ROAD
MALJAMAR, NEW MEXICO

DRAWING BY: JD CHECKED BY: CM	DATE: 06/26/00 DATE: 06/26/00	SCALE: 1" = 20'
PROJECT NO. 2005069 FILE NAME: 2005069.DWG	MAXIM TECHNOLOGIES INC	

ATTACHMENT B

SOIL BORING LOGS

SOIL BORING LOG

BORING/WELL #: B-1
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 20.0'
SURFACE ELEV:
SCREEN: DIA: N/A LENGTH: N/A SIZE: N/A
CASING: DIA: N/A LENGTH: N/A TYPE: N/A
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: N/A 24 HOURS: N/A
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 4/27/00
DRILLER: C. HARRISON
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Brownish red SILTY SAND	0.0'-11.0'			2.3			0
					2.3			
	-No retreival from 2.0'-4.0'							
5					1.9			5
					1.9			
					1.1			
					1.1			
					2.6			
10					2.6			10
					3.7			
	Light pink SILTY SAND	11.0-15.0'			3.7			
					5.7			
					5.7			
15					8.8			15
	Brownish red SILTY SAND	15.0-20.0'			8.8			
					3.6			
					3.6			
					4.5			
20					4.5			20
	End of boring at 20.0'							
	No stains or odors							
	No groundwater encountered							
25								25
30								30
35								35
40								40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-2
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 57.0'
SURFACE ELEV:
SCREEN: DIA: N/A LENGTH: N/A SIZE: N/A
CASING: DIA: N/A LENGTH: N/A TYPE: N/A
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: N/A 24 HOURS: N/A
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 4/27/00
DRILLER: C. HARRISON
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y	CORE N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
	Brownish red SILTY SAND	0.0'-11.0'		■		1.4			
				■		1.4			
				■		2.2			
				■		2.2			
5				■		1.2			5
				■		1.2			
	-Black stains and petroleum odors at 6.0'			■		616.0			
				■		616.0			
				■		3239.0			
10				■		3239.0			10
				■		2436.0			
	Light pink SILTY SAND	11.0-15.0'		■		2436.0			
	-Stains stop at 12.0', odors remain			■		2208.0			
				■		2208.0			
15				■		2028.0			15
	Brownish red SILTY SAND	15.0-25.0'		■		2028.0			
				■		1537.0			
				■		1537.0			
				■		1461.0			
20				■		1461.0			20
					■				
					■				
					■				
				■		1565.0			
				■		1565.0			
25									25
	SANDSTONE/fairly coarse gravel	25.0-27.0'			■				
					■				
	Brownish red SILTY SAND	27.0-35.0'			■				
				■		2631.0			
30				■		2631.0			30
					■				
					■				
					■				
				■		326.0			
				■		326.0			
35									35
	Brownish red SILTY SAND intermixed with sandstone/gravel	35.0-57.0'			■				
	-From 35.0'-57.0'				■				
	Silty sand sample retrieval was probably slough only. Very little retrieval.				■				
				■		501.0			
				■		501.0			
40									40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-2
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 57.0'
SURFACE ELEV:
SCREEN: DIA: N/A LENGTH: N/A SIZE: N/A
CASING: DIA: N/A LENGTH: N/A TYPE: N/A
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: N/A 24 HOURS: N/A
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 4/27/00
DRILLER: C. HARRISON
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
45	Brownish red SILTY SAND intermixed with sandstone/gravel				395.0 395.0			45
50	-Silty sand sample retrieval was most likely slough only. Very little retrieval.							50
55					15.7			55
60	End of boring at 57.0' No groundwater encountered							60
65								65
70								70
75								75
80								80

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-3
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 35.0'
SURFACE ELEV:
SCREEN: DIA: N/A LENGTH: N/A SIZE: N/A
CASING: DIA: N/A LENGTH: N/A TYPE: N/A
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: N/A 24 HOURS: N/A
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 4/27/00
DRILLER: C. HARRISON
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y	CORE N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Heavily stained SILTY SAND with strong odors	0.0'-11.0'		■		1996.0			0
				■		1996.0			
	-Light stains from 2.0'-4.0'			■		2287.0			
				■		2287.0			
	-No retrieval from 4.0'-6.0'			■					
5				■					5
				■		51.0			
				■		51.0			
				■		80.0			
				■		80.0			
10				■		1245.0			10
	Light pink SILTY SAND	11.0-15.0'		■		1245.0			
				■		528.0			
				■		528.0			
	-No significant staining at 14.0'			■		796.0			
15	Brownish red SILTY SAND	15.0-35.0'		■		796.0			15
				■		313.0			
				■		313.0			
				■		38.0			
				■		38.0			
20					■				20
					■				
					■				
				■		25.0			
				■		25.0			
25	-Intermixed with sandstone/gravel at 25.0'				■				25
					■				
				■		55.0			
				■		55.0			
30					■				30
					■				
					■				
				■		5.2			
35				■		5.2			35
	End of boring at 35.0' No groundwater encountered								
40									40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
▽ AT COMPLETION
▼ AFTER HOURS
■ SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-4
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 35.0'
SURFACE ELEV:
SCREEN: DIA: N/A LENGTH: N/A SIZE: N/A
CASING: DIA: N/A LENGTH: N/A TYPE: N/A
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: N/A 24 HOURS: N/A
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 4/27/00
DRILLER: C. HARRISON
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y	CORE N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	SILTY SAND	0.0'-10.0'		■		2651.0			0
	-Heavily stained with odor from 0.0'-2.0'			■		2651.0			
	-No stains from 2.0'-4.0', moist			■		1832.0			
				■		1832.0			
	-No retreival from 4.0'-6.0'			■					
5				■					5
				■		1076.0			
				■		1076.0			
				■		1535.0			
				■		1535.0			
10	Light pink SILTY SAND	10.0-15.0'		■		2099.0			10
				■		2099.0			
				■		1836.0			
				■		1836.0			
				■		1544.0			
15	Brownish red SILTY SAND	15.0-35.0'		■		1544.0			15
				■		1015.0			
				■		1015.0			
				■		136.0			
				■		136.0			
20					■				20
					■				
					■				
				■		14.0			
				■		14.0			
25					■				25
					■				
					■				
				■		15.7			
				■		15.7			
30					■				30
					■				
					■				
				■		12.7			
35				■		12.7			35
	End of boring at 35.0'								
	No groundwater encountered								
40									40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-5
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 35.0'
SURFACE ELEV:
SCREEN: DIA: N/A LENGTH: N/A SIZE: N/A
CASING: DIA: N/A LENGTH: N/A TYPE: N/A
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: N/A 24 HOURS: N/A
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 4/28/00
DRILLER: C. HARRISON
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Brownish red SILTY SAND	0.0'-10.0'			140.0			0
					140.0			
					40.0			
					40.0			
5					1884.0			5
					1884.0			
					3567.0			
	-Petroleum odors begining at 7.0'				3567.0			
					298.0			
10					298.0			10
	Light pink SILTY SAND	10.0-12.0'			23.3			
					23.3			
	Reddish brown SILTY SAND	12.0-35.0'			20.4			
					20.4			
15					26.5			15
	-No odors at 15.0'				26.5			
					10.4			
					10.4			
					16.7			
20					16.7			20
					18.9			
25					18.9			25
					21.2			
					21.2			
30								30
					14.8			
35					14.8			35
	End of boring at 35.0'							
	No groundwater encountered							
40								40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-6
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 27.0'
SURFACE ELEV:
SCREEN: DIA: LENGTH: SIZE:
CASING: DIA: LENGTH: TYPE:
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 24 HOURS:
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/21/00
DRILLER: C. MADDOX
OVERSIGHT: K. COOPER

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Brownish red SILTY SAND	0.0'-15.0'			0.0			0
5					0.0			5
10					0.0 0.0			10
15	Light pink SILTY SAND	15.0-25.0'			0.0 0.0			15
20	-Intermixed with sandstone/fairly coarse gravel at 20.0'				0.0 0.0			20
25	Reddish brown SILTY SAND	25.0-27.0'			0.0 0.0			25
30	End of boring at 27.0' No stains or odors No groundwater							30
35								35
40								40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-7
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 32.0'
SURFACE ELEV:
SCREEN: DIA: LENGTH: SIZE:
CASING: DIA: LENGTH: TYPE:
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 24 HOURS:
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/21/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Brownish red SILTY SAND	0.0'-15.0'			6.0			0
					6.0			
					3.0			
5								5
					9.0			
					9.0			
10	-Black stains from 9.5'-10.0'							10
15	Light pink SILTY SAND	15.0-22.0'			21.0			15
					21.0			
20					18.0			20
					18.0			
		22.0-32.0'						
25	Reddish brown SILTY SAND				26.0			25
					26.0			
30	-Intermixed with sandstone/fairly coarse gravel at 30.0'				8.0			30
					8.0			
	End of boring at 32.0'							
35								35
40								40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-8
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 42.0'
SURFACE ELEV:
SCREEN: DIA: LENGTH: SIZE:
CASING: DIA: LENGTH: TYPE:
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 24 HOURS:
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/21/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Black-stained SILTY SAND with strong odors	0.0'-10.0'			737.0 737.0 829.0 592.0 592.0			0
10	Brown-stained SILTY SAND with odors	10.0-15.0'						10
15	Brownish red SILTY SAND	15.0-20.0'			102.0 102.0			15
20	Light pink SILTY SAND	20.0-25.0'			331.0 331.0			20
25	Reddish brown SILTY SAND (little sample retrieval) -Intermixed with sandstone/fairly coarse gravel from 27.0'-42.0'	25.0-27.0' 27.0-30.0'			74.0 74.0			25
30	SANDSTONE/GRAVEL (Very little retrieval), did not screen -No retrieval from 30.0'-32.0'	30.0-35.0'			N/A			30
35	Brownish red SILTY SAND	35.0-40.0'			8.0			35
40	SANDSTONE (very little retrieval)							40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-8
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 42.0'
SURFACE ELEV:
SCREEN: DIA: LENGTH: SIZE:
CASING: DIA: LENGTH: TYPE:
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 24 HOURS:
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/21/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
	SANDSTONE (very little retrieval)	40.0-42.0'			9.0			
	End of boring at 42.0'							
45								45
50								50
55								55
60								60
65								65
70								70
75								75
80								80

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING/MONITOR WELL LOG

BORING/WELL #: B-9/MW-1
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 97.0'
SURFACE ELEV:
SCREEN: DIA: 2" LENGTH: 2.0' SIZE: 0.010"
CASING: DIA: 2" LENGTH: 72' TYPE: PVC
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 93.0'24 HOURS: 77.0'
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/21/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Brownish red SILTY SAND	0.0'-10.0'			6.0			0
					6.0			
5					8.0			5
					6.0			
10					6.0			10
	Light pink SILTY SAND	10.0-15.0'						
15					3.0			15
	Brownish red SILTY SAND	15.0-25.0'			3.0			
20					3.0			20
					3.0			
25					3.0			25
	Light pink SILTY SAND intermixed with sandstone/fairly coarse gravel	25.0-30.0'			3.0			
30					17.0			30
	Reddish brown SILTY SAND	30.0-50.0'			17.0			
35					15.0			35
					15.0			
40								40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING/MONITOR WELL LOG

BORING/WELL #: B-9/MW-1
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 97.0'
SURFACE ELEV:
SCREEN: DIA: 2" LENGTH: 2.0' SIZE: 0.010"
CASING: DIA: 2" LENGTH: 72' TYPE: PVC
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 93.0'24 HOURS: 77.0'
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/21/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
45	Reddish brown SILTY SAND -Very little sample retrieval from 40.0'-42.0'				5.0 5.0			45
50	Medium brown SILTY SAND -Started describing soils from cuttings at 50.0'. Collected samples every 10.0'- for *potential lab analysis.*	50.0-57.0'						50
55								55
60	Tannish gray SILTY SAND	57.0-64.0'						60
65	Olive-brown SILTY SAND	64.0-93.0'						65
70								70
75								75
▼								
80								80

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
▽ AT COMPLETION
▼ AFTER HOURS
■ SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING/MONITOR WELL LOG

BORING/WELL #: B-9/MW-1
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 97.0'
SURFACE ELEV:
SCREEN: DIA: 2" LENGTH: 2.0' SIZE: 0.010"
CASING: DIA: 2" LENGTH: 72' TYPE: PVC
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 93.0'24 HOURS: 77.0'
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/21/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
85	Olive-brown SILTY SAND -Intermixed with small sandstone and clayey, shaley type material							85
90								90
▽	Medium brown SILTY SAND intermixed with gravel -Groundwater at 93.0'	93.0-97.0'						
95								95
	End of boring at 97.0'							
100								100
105								105
110								110
115								115
120								120

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
▽ AT COMPLETION
▼ AFTER HOURS
■ SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-10
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 52.0'
SURFACE ELEV:
SCREEN: DIA: LENGTH: SIZE:
CASING: DIA: LENGTH: TYPE:
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 24 HOURS:
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/21/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Brownish red SILTY SAND	0.0'-30.0'			91.0			0
					91.0			
5					142.0			5
	-Odors at 8.0'				1222.0			
10					1222.0			10
15					992.0			15
					992.0			
20					938.0			20
					938.0			
25	-Very little sample retrieval intermixed with sandstone/fairly coarse gravel at 25.0'-27.0'				67.0			25
					67.0			
30	SANDSTONE (very little retrieval)	30.0-35.0'			211.0			30
					211.0			
35	Light pink SILTY SAND	35.0-40.0'			197.0			35
	Brownish red SILTY SAND							
40								40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-10
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 52.0'
SURFACE ELEV:
SCREEN: DIA: LENGTH: SIZE:
CASING: DIA: LENGTH: TYPE:
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 24 HOURS:
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/21/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
	SANDSTONE (very little retrieval) -Slight odors remain at 40.0'-42.0' (very little retrieval)	40.0-45.0'			15.0			
45	-No retrieval from 45.0'-47.0'	45.0-50.0'			18.0			45
50	Medium brown SILTY SAND	50.0-52.0'			5.0			50
	End of boring at 52.0'							
55								55
60								60
65								65
70								70
75								75
80								80

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-11
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 32.0'
SURFACE ELEV:
SCREEN: DIA: LENGTH: SIZE:
CASING: DIA: LENGTH: TYPE:
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 24 HOURS:
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/22/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Brownish red SILTY SAND	0.0'-9.0'		Y	0.0			0
				Y	0.0			
				Y				
				Y				
5				Y	2.0			5
				N				
				N				
				N				
				Y	2.0			
10	Light pink SILTY SAND with sandstone fragments	9.0'-19.5'		Y	2.0			10
				N				
				N				
				N				
				N				
15				N				15
				Y	2.0			
				Y	2.0			
				N				
				N				
20	Brownish red SILTY SAND	19.5-32.0'		N				20
				Y	3.0			
				Y	3.0			
				N				
				N				
25				N				25
				Y	5.0			
				Y	5.0			
				N				
				N				
30	-Very little retrieval from 30.0'-32.0'			Y	2.0			30
				Y	2.0			
	-Sandstone at 32.0'							
	End of boring at 32.0'							
35								35
40								40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-12
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 42.0'
SURFACE ELEV:
SCREEN: DIA: LENGTH: SIZE:
CASING: DIA: LENGTH: TYPE:
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 24 HOURS:
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/22/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
0	Brownish red SILTY SAND -Odd odor from 0.0'-5.0'	0.0'-8.0'			14.0 14.0 5.0			0
5								5
8	Light pink SILTY SAND with sandstone fragments	8.0'-9.0'			3.0			8
9	Brownish red SILTY SAND	9.0'-25.0'			3.0			9
10								10
15	-Intermixed with sandstone/fairly coarse gravel at 15.0'							15
20	-Very little retrieval from 20.0'-22.0'				6.0 6.0			20
25	Light pink SILTY SAND with sandstone fragments	25.0-30.0'			5.0 5.0			25
30	Brownish red SILTY SAND -Very little retrieval from 30.0'-32.0' -Slight odd odor at 30.0'	30.0-35.0'			17.0 17.0			30
35	Brownish red SILTY SAND (Very slight odd odor)	35.0-40.0'			47.0 47.0			35
40								40

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

SOIL BORING LOG

BORING/WELL #: B-12
PROJECT NO.: 2005069
LOCATION: 1001 CONOCO ROAD, MALJAMAR, NEW MEXICO
TOTAL DEPTH: 42.0'
SURFACE ELEV:
SCREEN: DIA: LENGTH: SIZE:
CASING: DIA: LENGTH: TYPE:
DRILLING METHOD(S): Air Rotary

CLIENT: CONOCO, INC.
PROJECT: MALJAMAR GAS PLANT
WATER LEVEL: INITIAL: 24 HOURS:
BORE HOLE DIAMETER: 6.25"
DRILLING COMPANY: HARRISON & COOPER
DATE DRILLED: 6/22/00
DRILLER: K. COOPER
OVERSIGHT: C. MADDOX

DEPTH FEET	SOIL DESCRIPTION	DESCRIPTION INTERVAL	SAMPLE INTERVAL	CORE Y N	OVM or Hnu (PPM)	GRAPHIC LOG	WELL DESIGN	DEPTH FEET
	Brownish red SILTY SAND	40.0-42.0'		■	5.0 5.0			
	End of boring at 42.0'							
45								45
50								50
55								55
60								60
65								65
70								70
75								75
80								80

SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
RC - ROCK CORE
CT - 5 FT CONTINUOUS SAMPLER
NR - NO READINGS TAKEN

HSA - HOLLOW STEM AUGER
CFA - CONTINUOUS FLIGHT AUGERS
MD - MUD DRILLING
AD - AIR DRILLING

WATER LEVEL
AT COMPLETION
AFTER HOURS
SOIL SAMPLE SUBMITTED TO LAB

BOTTOM CAP
SAND PACK
BENTONITE SEAL

FACTORY - SLOTTED WELL SCREEN
WELL CASING
BENTONITE/CEMENT GROUT SEAL

ATTACHMENT C

LABORATORY ANALYTICAL RESULTS

Certificate of Analysis

STL Austin
14046 Summit Drive
Austin, Texas 78728

Tel: 512 310 5202
Fax: 512 244 0160
www.stl-inc.com

SEVERN TRENT SERVICES
STL Austin

ANALYTICAL REPORT

PROJECT NO. MALJAMAR,NM

Maljamar Gas Plant

Lot #: I0F260148

Clyde Yancey

Maxim Technologies, Inc.
8235 Douglas Ave Ste 700 LB44
Dallas, TX 75225

SEVERN TRENT LABORATORIES, INC.

Carla M. Butler
Project Manager

July 14, 2000

American Council of Independent Laboratories
International Association of Environmental Testing Laboratories

STL Austin is a part of Severn Trent Laboratories, Inc.

CASE NARRATIVE

I0F260148

Samples received in good condition within acceptable cooler temperature.

8260 Analysis

The following had targets reported non-detect at elevated reporting limits:

- Sample 015 due to dilutions required by high native concentration of some target compounds.
- Samples 005 and 009 because matrix required a medium level preparation.

Toluene was outside control limits for the Matrix Spike/Matrix Spike Duplicate of 009, batch 0193213.
Recoveries of some compounds were outside limits for the Matrix Spike/Matrix Spike Duplicate of the non-project specific QC sample for batch 0192173.

8015B GRO Analysis

Surrogate recovery was outside control limits due to demonstrated matrix effect for samples 005 and 009.
Recoveries were outside limits for the Matrix Spike/Matrix Spike Duplicate of the non-project specific QC sample for batch 0184103.

EXECUTIVE SUMMARY - Detection Highlights

I0F260148

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
B-6@5' 06/21/00 09:15 001				
Percent Moisture	19.6	0.50	%	ASTM D 2216-90
B-6@25'-27' 06/21/00 09:20 002				
Percent Moisture	17.2	0.50	%	ASTM D 2216-90
B-7@25'-27' 06/21/00 10:25 003				
Percent Moisture	11.3	0.50	%	ASTM D 2216-90
B-7@30'-32' 06/21/00 10:30 004				
Percent Moisture	9.9	0.50	%	ASTM D 2216-90
B-8@5' 06/21/00 11:30 005				
Gasoline Range Organics	3000000	100000	ug/kg	SW846 8015B
Benzene	3800	1000	ug/kg	SW846 8260B
Ethylbenzene	19000	1000	ug/kg	SW846 8260B
Xylenes (total)	43000	1000	ug/kg	SW846 8260B
Percent Moisture	6.8	0.50	%	ASTM D 2216-90
B-8@35'-37' 06/21/00 11:35 006				
Percent Moisture	14.9	0.50	%	ASTM D 2216-90
B-9@30'-32' 06/21/00 14:40 007				
Percent Moisture	14.3	0.50	%	ASTM D 2216-90
B-9@90' 06/21/00 14:45 008				
Percent Moisture	17.5	0.50	%	ASTM D 2216-90
B-10@8'-10' 06/21/00 16:20 009				
Gasoline Range Organics	210000	5000	ug/kg	SW846 8015B
Ethylbenzene	1800	250	ug/kg	SW846 8260B
Toluene	860	250	ug/kg	SW846 8260B
Xylenes (total)	6800	250	ug/kg	SW846 8260B
Percent Moisture	10.5	0.50	%	ASTM D 2216-90

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

I0F260148

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
B-10@35'-37' 06/21/00 16:25 010				
Percent Moisture	17.1	0.50	%	ASTM D 2216-90
B-10@50'-52' 06/21/00 16:30 011				
Percent Moisture	17.0	0.50	%	ASTM D 2216-90
B-11@25'-27' 06/22/00 08:30 012				
Percent Moisture	9.2	0.50	%	ASTM D 2216-90
B-12@0'-2' 06/22/00 09:30 013				
Percent Moisture	9.2	0.50	%	ASTM D 2216-90
B-12@40'-42' 06/22/00 09:35 014				
Percent Moisture	17.0	0.50	%	ASTM D 2216-90
MW-1 06/22/00 11:00 015				
Gasoline Range Organics	5200	500	ug/L	SW846 8015B
Benzene	1800	50	ug/L	SW846 8260B
Ethylbenzene	75	50	ug/L	SW846 8260B
Chloride	227	20.0	mg/L	MCAWW 300.0A

ANALYTICAL METHODS SUMMARY

I0F260148

PARAMETER	ANALYTICAL METHOD
Chloride	MCAWW 300.0A
Method for Determination of Water Content of Soil	ASTM D 2216-90
Volatile Organics by GC/MS	SW846 8260B
Volatile Petroleum Hydrocarbons	SW846 8015B

References:

ASTM Annual Book Of ASTM Standards.

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

I0F260148

ANALYTICAL METHOD	ANALYST	ANALYST ID
ASTM D 2216-90	Leigh Jandle	013321
MCAWW 300.0A	David A. Tocher	800002
SW846 8015B	Loan Carley	074741
SW846 8015B	Loan Carley	74741
SW846 8260B	David Yancey	014906
SW846 8260B	Sam Bivone	011612
SW846 8260B	Stuart Bosio	006487

References:

ASTM Annual Book Of ASTM Standards.

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

I0F260148

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
DFALR	001	B-6@5'	06/21/00	09:15
DFAME	002	B-6@25'-27'	06/21/00	09:20
DFAMJ	003	B-7@25'-27'	06/21/00	10:25
DFAMM	004	B-7@30'-32'	06/21/00	10:30
DFAMP	005	B-8@5'	06/21/00	11:30
DFAMT	006	B-8@35'-37'	06/21/00	11:35
DFAMV	007	B-9@30'-32'	06/21/00	14:40
DFAN0	008	B-9@90'	06/21/00	14:45
DFAN3	009	B-10@8'-10'	06/21/00	16:20
DFAN6	010	B-10@35'-37'	06/21/00	16:25
DFAN8	011	B-10@50'-52'	06/21/00	16:30
DFAN9	012	B-11@25'-27'	06/22/00	08:30
DFANK	013	B-12@0'-2'	06/22/00	09:30
DFANX	014	B-12@40'-42'	06/22/00	09:35
DFAP1	015	MW-1	06/22/00	11:00
DFAQV	016	TRIP BLANK	06/22/00	

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.

CONOCO INC.

Client Sample ID: B-6@5'

GC Volatiles

Lot-Sample #...:	I0F260148-001	Work Order #...:	DFALR102	Matrix.....:	SOLID
Date Sampled...:	06/21/00 09:15	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	20	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	80	(75 - 125)

CONOCO INC.

Client Sample ID: B-6@5'

GC/MS Volatiles

Lot-Sample #...: I0F260148-001 Work Order #...: DFALR101 Matrix.....: SOLID
Date Sampled...: 06/21/00 09:15 Date Received..: 06/24/00
Prep Date.....: 07/03/00 Analysis Date..: 07/03/00
Prep Batch #...: 0192311
Dilution Factor: 1
% Moisture.....: 20 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	86	(42 - 183)
Toluene-d8	94	(69 - 128)
Dibromofluoromethane	97	(63 - 141)
1,2-Dichloroethane-d4	93	(58 - 141)

CONOCO INC.

Client Sample ID: B-6@25'-27'

GC Volatiles

Lot-Sample #...:	I0F260148-002	Work Order #...:	DFAME102	Matrix.....:	SOLID
Date Sampled...:	06/21/00 09:20	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/03/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	17	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	78	(75 - 125)

CONOCO INC.

Client Sample ID: B-6@25'-27'

GC/MS Volatiles

Lot-Sample #...:	I0F260148-002	Work Order #...:	DFAME101	Matrix.....:	SOLID
Date Sampled...:	06/21/00 09:20	Date Received..:	06/24/00		
Prep Date.....:	07/03/00	Analysis Date..:	07/03/00		
Prep Batch #...:	0192311				
Dilution Factor:	1				
% Moisture.....:	17	Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	87	(42 - 183)
Toluene-d8	96	(69 - 128)
Dibromofluoromethane	94	(63 - 141)
1,2-Dichloroethane-d4	100	(58 - 141)

CONOCO INC.

Client Sample ID: B-7@25'-27'

GC Volatiles

Lot-Sample #...: I0F260148-003 Work Order #...: DFAMJ102 Matrix.....: SOLID
Date Sampled...: 06/21/00 10:25 Date Received..: 06/24/00
Prep Date.....: 07/02/00 Analysis Date..: 07/02/00
Prep Batch #...: 0187300
Dilution Factor: 1
% Moisture.....: 11 Method.....: SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	84	(75 - 125)

CONOCO INC.

Client Sample ID: B-7@25'-27'

GC/MS Volatiles

Lot-Sample #...:	I0F260148-003	Work Order #...: DFAMJ101	Matrix.....: SOLID
Date Sampled...:	06/21/00 10:25	Date Received..: 06/24/00	
Prep Date.....:	07/03/00	Analysis Date..: 07/03/00	
Prep Batch #...:	0192311		
Dilution Factor:	1		
% Moisture.....:	11	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	87	(42 - 183)
Toluene-d8	96	(69 - 128)
Dibromofluoromethane	90	(63 - 141)
1,2-Dichloroethane-d4	97	(58 - 141)

CONOCO INC.

Client Sample ID: B-7@30'-32'

GC Volatiles

Lot-Sample #...:	I0F260148-004	Work Order #...:	DFAMM102	Matrix.....:	SOLID
Date Sampled...:	06/21/00 10:30	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	9.9	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	82	(75 - 125)

CONOCO INC.

Client Sample ID: B-7@30'-32'

GC/MS Volatiles

Lot-Sample #...: I0F260148-004 Work Order #...: DFAMM101 Matrix.....: SOLID
Date Sampled...: 06/21/00 10:30 Date Received..: 06/24/00
Prep Date.....: 07/03/00 Analysis Date..: 07/03/00
Prep Batch #...: 0192311
Dilution Factor: 1
% Moisture.....: 9.9 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	87	(42 - 183)
Toluene-d8	100	(69 - 128)
Dibromofluoromethane	95	(63 - 141)
1,2-Dichloroethane-d4	99	(58 - 141)

CONOCO INC.

Client Sample ID: B-8@5'

GC Volatiles

Lot-Sample #...:	I0F260148-005	Work Order #...:	DFAMP102	Matrix.....:	SOLID
Date Sampled...:	06/21/00 11:30	Date Received..:	06/24/00		
Prep Date.....:	07/01/00	Analysis Date..:	07/01/00		
Prep Batch #...:	0184103				
Dilution Factor:	1000				
% Moisture.....:	6.8	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	3000000	100000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	64 *	(75 - 125)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Surrogates outside acceptance criteria due to demonstrated matrix effect.

CONOCO INC.

Client Sample ID: B-8@5'

GC/MS Volatiles

Lot-Sample #...:	I0F260148-005	Work Order #...:	DFAMP101	Matrix.....:	SOLID
Date Sampled...:	06/21/00 11:30	Date Received..:	06/24/00		
Prep Date.....:	07/05/00	Analysis Date..:	07/05/00		
Prep Batch #...:	0193213				
Dilution Factor:	4				
% Moisture.....:	6.8	Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**3800**	**1000**	**ug/kg**
Ethylbenzene	**19000**	**1000**	**ug/kg**
Toluene	ND	1000	ug/kg
Xylenes (total)	**43000**	**1000**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	96	(47 - 157)
Toluene-d8	115	(65 - 133)
Dibromofluoromethane	80	(42 - 142)
1,2-Dichloroethane-d4	75	(34 - 162)

CONOCO INC.

Client Sample ID: B-8@35'-37'

GC Volatiles

Lot-Sample #...:	I0F260148-006	Work Order #...:	DFAMT102	Matrix.....:	SOLID
Date Sampled...:	06/21/00 11:35	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	15	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	106	(75 - 125)

CONOCO INC.

Client Sample ID: B-8@35'-37'

GC/MS Volatiles

Lot-Sample #...: I0F260148-006 Work Order #...: DFAMT101 Matrix.....: SOLID
Date Sampled...: 06/21/00 11:35 Date Received..: 06/24/00
Prep Date.....: 07/05/00 Analysis Date..: 07/05/00
Prep Batch #...: 0193282
Dilution Factor: 1
% Moisture.....: 15 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	96	(42 - 183)
Toluene-d8	93	(69 - 128)
Dibromofluoromethane	93	(63 - 141)
1,2-Dichloroethane-d4	97	(58 - 141)

CONOCO INC.

Client Sample ID: B-9@30'-32'

GC Volatiles

Lot-Sample #...:	I0F260148-007	Work Order #...:	DFAMV102	Matrix.....:	SOLID
Date Sampled...:	06/21/00 14:40	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	14	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	79	(75 - 125)

CONOCO INC.

Client Sample ID: B-9@30'-32'

GC/MS Volatiles

Lot-Sample #...: I0F260148-007 Work Order #...: DFAMV101 Matrix.....: SOLID
Date Sampled...: 06/21/00 14:40 Date Received..: 06/24/00
Prep Date.....: 07/03/00 Analysis Date..: 07/03/00
Prep Batch #...: 0192311
Dilution Factor: 1
% Moisture.....: 14 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	88	(42 - 183)
Toluene-d8	97	(69 - 128)
Dibromofluoromethane	94	(63 - 141)
1,2-Dichloroethane-d4	107	(58 - 141)

CONOCO INC.

Client Sample ID: B-9@90'

GC Volatiles

Lot-Sample #...: I0F260148-008 Work Order #...: DFAN0102 Matrix.....: SOLID
Date Sampled...: 06/21/00 14:45 Date Received..: 06/24/00
Prep Date.....: 07/02/00 Analysis Date..: 07/02/00
Prep Batch #...: 0187300
Dilution Factor: 1
% Moisture.....: 17 Method.....: SW846 8015B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	77	(75 - 125)

CONOCO INC.

Client Sample ID: B-9@90'

GC/MS Volatiles

Lot-Sample #...:	I0F260148-008	Work Order #...:	DFAN0101
Date Sampled...:	06/21/00 14:45	Date Received..:	06/24/00
Prep Date.....:	07/03/00	Analysis Date..:	07/03/00
Prep Batch #...:	0192311		
Dilution Factor:	1		
% Moisture.....:	17	Method.....:	SW846 8260B

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	85	(42 - 183)
Toluene-d8	97	(69 - 128)
Dibromofluoromethane	95	(63 - 141)
1,2-Dichloroethane-d4	98	(58 - 141)

CONOCO INC.

Client Sample ID: B-10@8'-10'

GC Volatiles

Lot-Sample #...:	I0F260148-009	Work Order #...:	DFAN3102	Matrix.....:	SOLID
Date Sampled...:	06/21/00 16:20	Date Received..:	06/24/00		
Prep Date.....:	07/01/00	Analysis Date..:	07/01/00		
Prep Batch #...:	0184103				
Dilution Factor:	50				
% Moisture.....:	11	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	210000	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	142 *	(75 - 125)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Surrogates outside acceptance criteria due to demonstrated matrix effect.

CONOCO INC.

Client Sample ID: B-10@8'-10'

GC/MS Volatiles

Lot-Sample #...:	I0F260148-009	Work Order #...:	DFAN3101
Date Sampled...:	06/21/00 16:20	Date Received..:	06/24/00
Prep Date.....:	07/05/00	Analysis Date..:	07/05/00
Prep Batch #...:	0193213		
Dilution Factor:	1		
% Moisture.....:	11	Method.....:	SW846 8260B

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	250	ug/kg
Ethylbenzene	**1800**	**250**	**ug/kg**
Toluene	**860**	**250**	**ug/kg**
Xylenes (total)	**6800**	**250**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	84	(47 - 157)
Toluene-d8	92	(65 - 133)
Dibromofluoromethane	83	(42 - 142)
1,2-Dichloroethane-d4	95	(34 - 162)

CONOCO INC.

Client Sample ID: B-10@35'-37'

GC Volatiles

Lot-Sample #...:	I0F260148-010	Work Order #...:	DFAN6102	Matrix.....:	SOLID
Date Sampled...:	06/21/00 16:25	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	17	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	90	(75 - 125)

CONOCO INC.

Client Sample ID: B-10@35'-37'

GC/MS Volatiles

Lot-Sample #...:	I0F260148-010	Work Order #...:	DFAN6101	Matrix.....:	SOLID
Date Sampled...:	06/21/00 16:25	Date Received..:	06/24/00		
Prep Date.....:	07/03/00	Analysis Date..:	07/03/00		
Prep Batch #...:	0192311				
Dilution Factor:	1				
% Moisture.....:	17	Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	87	(42 - 183)
Toluene-d8	99	(69 - 128)
Dibromofluoromethane	96	(63 - 141)
1,2-Dichloroethane-d4	102	(58 - 141)

CONOCO INC.

Client Sample ID: B-10@50'-52'

GC Volatiles

Lot-Sample #...:	I0F260148-011	Work Order #...:	DFAN8102	Matrix.....:	SOLID
Date Sampled...:	06/21/00 16:30	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	17	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	83	(75 - 125)

CONOCO INC.

Client Sample ID: B-10@50'-52'

GC/MS Volatiles

Lot-Sample #...: I0F260148-011 Work Order #...: DFAN8101 Matrix.....: SOLID
Date Sampled...: 06/21/00 16:30 Date Received..: 06/24/00
Prep Date.....: 07/05/00 Analysis Date..: 07/05/00
Prep Batch #...: 0193282
Dilution Factor: 1
% Moisture.....: 17 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	91	(42 - 183)
Toluene-d8	94	(69 - 128)
Dibromofluoromethane	93	(63 - 141)
1,2-Dichloroethane-d4	112	(58 - 141)

CONOCO INC.

Client Sample ID: B-11@25'-27'

GC Volatiles

Lot-Sample #...:	I0F260148-012	Work Order #...:	DFAN9102	Matrix.....:	SOLID
Date Sampled...:	06/22/00 08:30	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	9.2	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	86	(75 - 125)

CONOCO INC.

Client Sample ID: B-11@25'-27'

GC/MS Volatiles

Lot-Sample #...: I0F260148-012 Work Order #...: DFAN9101 Matrix.....: SOLID
Date Sampled...: 06/22/00 08:30 Date Received..: 06/24/00
Prep Date.....: 07/05/00 Analysis Date..: 07/05/00
Prep Batch #...: 0193282
Dilution Factor: 1
% Moisture.....: 9.2 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	96	(42 - 183)
Toluene-d8	94	(69 - 128)
Dibromofluoromethane	91	(63 - 141)
1,2-Dichloroethane-d4	96	(58 - 141)

CONOCO INC.

Client Sample ID: B-12@0'-2'

GC Volatiles

Lot-Sample #...:	I0F260148-013	Work Order #...:	DFANK102	Matrix.....:	SOLID
Date Sampled...:	06/22/00 09:30	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	9.2	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	78	(75 - 125)

CONOCO INC.

Client Sample ID: B-12@0'-2'

GC/MS Volatiles

Lot-Sample #...:	I0F260148-013	Work Order #...:	DFANK101
Date Sampled...:	06/22/00 09:30	Date Received..:	06/24/00
Prep Date.....:	07/05/00	Analysis Date..:	07/05/00
Prep Batch #...:	0193282		
Dilution Factor:	1		
% Moisture.....:	9.2	Method.....:	SW846 8260B

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	115	(42 - 183)
Toluene-d8	84	(69 - 128)
Dibromofluoromethane	94	(63 - 141)
1,2-Dichloroethane-d4	96	(58 - 141)

CONOCO INC.

Client Sample ID: B-12@40'-42'

GC Volatiles

Lot-Sample #...:	I0F260148-014	Work Order #...:	DFANX102	Matrix.....:	SOLID
Date Sampled...:	06/22/00 09:35	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1				
% Moisture.....:	17	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	ND	5000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	79	(75 - 125)

CONOCO INC.

Client Sample ID: B-12@40'-42'

GC/MS Volatiles

Lot-Sample #...: I0F260148-014 Work Order #...: DFANX101 Matrix.....: SOLID
Date Sampled...: 06/22/00 09:35 Date Received..: 06/24/00
Prep Date.....: 07/05/00 Analysis Date..: 07/05/00
Prep Batch #...: 0193282
Dilution Factor: 1
% Moisture.....: 17 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(42 - 183)
Toluene-d8	101	(69 - 128)
Dibromofluoromethane	102	(63 - 141)
1,2-Dichloroethane-d4	98	(58 - 141)

CONOCO INC.

Client Sample ID: MW-1

GC Volatiles

Lot-Sample #...:	I0F260148-015	Work Order #...:	DFAP1102	Matrix.....:	WATER
Date Sampled...:	06/22/00 11:00	Date Received..:	06/24/00		
Prep Date.....:	06/29/00	Analysis Date..:	06/30/00		
Prep Batch #...:	0182455				
Dilution Factor:	5	Method.....:	SW846 8015B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Gasoline Range Organics	5200	500	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	77	(75 - 125)

CONOCO INC.

Client Sample ID: MW-1

GC/MS Volatiles

Lot-Sample #...: I0F260148-015 Work Order #...: DFAP1101 Matrix.....: WATER
Date Sampled...: 06/22/00 11:00 Date Received..: 06/24/00
Prep Date.....: 07/06/00 Analysis Date..: 07/06/00
Prep Batch #...: 0192173
Dilution Factor: 50 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	**1800**	**50**	**ug/L**
Ethylbenzene	**75**	**50**	**ug/L**
Toluene	ND	50	ug/L
Xylenes (total)	ND	50	ug/L
Methyl tert-butyl ether	ND	50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	101	(73 - 137)
Toluene-d8	87	(78 - 124)
Dibromofluoromethane	97	(82 - 130)
1,2-Dichloroethane-d4	102	(84 - 135)

CONOCO INC.

Client Sample ID: TRIP BLANK

GC/MS Volatiles

Lot-Sample #...: I0F260148-016 Work Order #...: DFAQV101 Matrix.....: WATER
Date Sampled...: 06/22/00 Date Received..: 06/24/00
Prep Date.....: 06/29/00 Analysis Date..: 06/29/00
Prep Batch #...: 0182174
Dilution Factor: 1 Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	1.0	ug/L
Ethylbenzene	ND	1.0	ug/L
Toluene	ND	1.0	ug/L
Xylenes (total)	ND	1.0	ug/L
Methyl tert-butyl ether	ND	1.0	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	105	(73 - 137)
Toluene-d8	109	(78 - 124)
Dibromofluoromethane	119	(82 - 130)
1,2-Dichloroethane-d4	111	(84 - 135)

CONOCO INC.

Client Sample ID: MW-1

General Chemistry

Lot-Sample #...: I0F260148-015 Work Order #...: DFAP1 Matrix.....: WATER
Date Sampled...: 06/22/00 11:00 Date Received..: 06/24/00

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride	227	20.0	mg/L	MCAWW 300.0A	07/10/00	0192140
	Dilution Factor: 20					

QC DATA ASSOCIATION SUMMARY

I0F260148

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
001	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0192311	0192153
002	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0192311	0192153
003	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0192311	0192153
004	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0192311	0192153
005	SOLID	SW846 8015B		0184103	0184008
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0193213	0193075
006	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0193282	0193130
007	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0192311	0192153
008	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0192311	0192153
009	SOLID	SW846 8015B		0184103	0184008
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0193213	0193075
010	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0192311	0192153
011	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0193282	0193130

(Continued on next page)

QC DATA ASSOCIATION SUMMARY

I0F260148

Sample Preparation and Analysis Control Numbers

SAMPLE#	MATRIX	ANALYTICAL METHOD	LEACH BATCH #	PREP BATCH #	MS RUN#
012	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0193282	0193130
013	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0193282	0193130
014	SOLID	SW846 8015B		0187300	0187116
	SOLID	ASTM D 2216-90		0181417	0181205
	SOLID	SW846 8260B		0193282	0193130
015	WATER	MCAWW 300.0A		0192140	0192025
	WATER	SW846 8015B		0182455	0182213
	WATER	SW846 8260B		0192173	0192047
016	WATER	SW846 8260B		0182174	0182053

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFJV0101 Matrix.....: WATER
MB Lot-Sample #: I0F300000-174

Prep Date.....: 06/29/00
Analysis Date..: 06/29/00 Prep Batch #...: 0182174
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	101	(73 - 137)
Toluene-d8	104	(78 - 124)
Dibromofluoromethane	114	(82 - 130)
1,2-Dichloroethane-d4	86	(84 - 135)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFXAE101 Matrix.....: WATER
MB Lot-Sample #: I0G100000-173

Prep Date.....: 07/06/00
Analysis Date..: 07/06/00 Prep Batch #...: 0192173
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	1.0	ug/L	SW846 8260B
Ethylbenzene	ND	1.0	ug/L	SW846 8260B
Toluene	ND	1.0	ug/L	SW846 8260B
Xylenes (total)	ND	1.0	ug/L	SW846 8260B
Methyl tert-butyl ether	ND	1.0	ug/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	107	(73 - 137)
Toluene-d8	90	(78 - 124)
Dibromofluoromethane	102	(82 - 130)
1,2-Dichloroethane-d4	97	(84 - 135)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFXVC101 Matrix.....: SOLID
MB Lot-Sample #: I0G100000-311

Prep Date.....: 07/03/00
Analysis Date..: 07/03/00 Prep Batch #...: 0192311
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	95	(42 - 183)
Toluene-d8	100	(69 - 128)
Dibromofluoromethane	100	(63 - 141)
1,2-Dichloroethane-d4	111	(58 - 141)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DG0TL101 Matrix.....: SOLID
MB Lot-Sample #: I0G110000-213

Prep Date.....: 07/05/00
Analysis Date..: 07/05/00 Prep Batch #...: 0193213
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	250	ug/kg	SW846 8260B
Ethylbenzene	ND	250	ug/kg	SW846 8260B
Toluene	ND	250	ug/kg	SW846 8260B
Xylenes (total)	ND	250	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	93	(47 - 157)
Toluene-d8	100	(65 - 133)
Dibromofluoromethane	94	(42 - 142)
1,2-Dichloroethane-d4	105	(34 - 162)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DG12N101 Matrix.....: SOLID
MB Lot-Sample #: I0G110000-282

Prep Date.....: 07/05/00
Analysis Date..: 07/05/00 Prep Batch #...: 0193282
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(42 - 183)
Toluene-d8	96	(69 - 128)
Dibromofluoromethane	99	(63 - 141)
1,2-Dichloroethane-d4	109	(58 - 141)

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: I0F260148 Work Order #...: DFLDW101 Matrix.....: WATER
MB Lot-Sample #: I0F300000-455

Prep Date.....: 06/29/00
Analysis Date..: 06/29/00 Prep Batch #...: 0182455
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Gasoline Range Organics	ND	100	ug/L	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	77	(75 - 125)

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: I0F260148 Work Order #...: DFN62101 Matrix.....: SOLID
MB Lot-Sample #: I0G020000-103

Prep Date.....: 07/01/00
Analysis Date..: 07/01/00 Prep Batch #...: 0184103
Dilution Factor: 50

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Gasoline Range Organics	ND	5000	ug/kg	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	103	(75 - 125)

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: I0F260148 Work Order #...: DFPF4101 Matrix.....: SOLID
MB Lot-Sample #: I0G050000-300

Prep Date.....: 07/02/00
Analysis Date..: 07/02/00 Prep Batch #...: 0187300
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Gasoline Range Organics	ND	5000	ug/kg	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	81	(75 - 125)

NOTE(S):

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

METHOD BLANK REPORT

General Chemistry

Client Lot #...: I0F260148 Matrix.....: WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: DFX82101		MB Lot-Sample #:	I0G100000-140	
	ND	1.0	mg/L	MCAWW 300.0A	07/10/00	0192140
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFJV0102 Matrix.....: WATER
LCS Lot-Sample#: I0F300000-174
Prep Date.....: 06/29/00 Analysis Date..: 06/29/00
Prep Batch #...: 0182174
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	80	(64 - 127)	SW846 8260B
Trichloroethene	117	(85 - 121)	SW846 8260B
Chlorobenzene	103	(85 - 117)	SW846 8260B
Benzene	103	(86 - 121)	SW846 8260B
Toluene	98	(81 - 121)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	103	(73 - 137)
Toluene-d8	110	(78 - 124)
Dibromofluoromethane	124	(82 - 130)
1,2-Dichloroethane-d4	115	(84 - 135)

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

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFXAE102 Matrix.....: WATER
LCS Lot-Sample#: I0G100000-173
Prep Date.....: 07/06/00 Analysis Date..: 07/06/00
Prep Batch #...: 0192173
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	107	(64 - 127)	SW846 8260B
Trichloroethene	109	(85 - 121)	SW846 8260B
Chlorobenzene	105	(85 - 117)	SW846 8260B
Benzene	101	(86 - 121)	SW846 8260B
Toluene	112	(81 - 121)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	102	(73 - 137)
Toluene-d8	88	(78 - 124)
Dibromofluoromethane	100	(82 - 130)
1,2-Dichloroethane-d4	87	(84 - 135)

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

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFXVC102 Matrix.....: SOLID
LCS Lot-Sample#: I0G100000-311
Prep Date.....: 07/03/00 Analysis Date..: 07/03/00
Prep Batch #...: 0192311
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**110**	**(81 - 120)**	**SW846 8260B**
Toluene	**108**	**(78 - 126)**	**SW846 8260B**
1,1-Dichloroethene	**102**	**(56 - 138)**	**SW846 8260B**
Trichloroethene	**113**	**(75 - 121)**	**SW846 8260B**
Chlorobenzene	**107**	**(83 - 118)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	99	(42 - 183)
Toluene-d8	95	(69 - 128)
Dibromofluoromethane	104	(63 - 141)
1,2-Dichloroethane-d4	95	(58 - 141)

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

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DG0TL102 Matrix.....: SOLID
LCS Lot-Sample#: I0G110000-213
Prep Date.....: 07/05/00 Analysis Date..: 07/05/00
Prep Batch #...: 0193213
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
1,1-Dichloroethene	82	(67 - 126)	SW846 8260B
Trichloroethene	95	(66 - 116)	SW846 8260B
Benzene	92	(78 - 113)	SW846 8260B
Chlorobenzene	94	(82 - 117)	SW846 8260B
Toluene	92	(80 - 119)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	92	(47 - 157)
Toluene-d8	96	(65 - 133)
Dibromofluoromethane	88	(42 - 142)
1,2-Dichloroethane-d4	97	(34 - 162)

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

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DG12N102 Matrix.....: SOLID
LCS Lot-Sample#: I0G110000-282
Prep Date.....: 07/05/00 Analysis Date..: 07/05/00
Prep Batch #...: 0193282
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**101**	**(81 - 120)**	**SW846 8260B**
Toluene	**97**	**(78 - 126)**	**SW846 8260B**
1,1-Dichloroethene	**92**	**(56 - 138)**	**SW846 8260B**
Trichloroethene	**109**	**(75 - 121)**	**SW846 8260B**
Chlorobenzene	**100**	**(83 - 118)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	97	(42 - 183)
Toluene-d8	99	(69 - 128)
Dibromofluoromethane	100	(63 - 141)
1,2-Dichloroethane-d4	108	(58 - 141)

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

GC Volatiles

Client Lot #...: I0F260148 Work Order #...: DFLDW102 Matrix.....: WATER
LCS Lot-Sample#: I0F300000-455
Prep Date.....: 06/29/00 Analysis Date..: 06/29/00
Prep Batch #...: 0182455
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Gasoline Range Organics	**97**	**(80 - 120)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	85	(75 - 125)

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

GC Volatiles

Client Lot #...: I0F260148 Work Order #...: DFN62102 Matrix.....: SOLID
LCS Lot-Sample#: I0G020000-103
Prep Date.....: 07/01/00 Analysis Date..: 07/01/00
Prep Batch #...: 0184103
Dilution Factor: 50

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Gasoline Range Organics	**114**	**(70 - 134)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	108	(75 - 125)

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

GC Volatiles

Client Lot #...: I0F260148 Work Order #...: DFPF4102 Matrix.....: SOLID
LCS Lot-Sample#: I0G050000-300
Prep Date.....: 07/02/00 Analysis Date..: 07/02/00
Prep Batch #...: 0187300
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Gasoline Range Organics	93	**(70 - 134)**	**SW846 8015B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	85	(75 - 125)

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 #...: I0F260148 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		Work Order #: DFX82102	LCS Lot-Sample#: I0G100000-140		
	92	(80 - 120)	MCAWW 300.0A	07/10/00	0192140
		Dilution Factor: 1			

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFALR105-MS Matrix.....: SOLID
MS Lot-Sample #: I0F260148-001 DFALR106-MSD
Date Sampled...: 06/21/00 09:15 Date Received..: 06/24/00
Prep Date.....: 07/03/00 Analysis Date..: 07/03/00
Prep Batch #...: 0192311
Dilution Factor: 1 % Moisture.....: 20

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	93	(74 - 120)			SW846 8260B
	94	(74 - 120)	1.4	(0-13)	SW846 8260B
Toluene	88	(76 - 126)			SW846 8260B
	89	(76 - 126)	0.82	(0-33)	SW846 8260B
1,1-Dichloroethene	96	(69 - 122)			SW846 8260B
	96	(69 - 122)	0.21	(0-15)	SW846 8260B
Trichloroethene	98	(50 - 130)			SW846 8260B
	103	(50 - 130)	5.2	(0-18)	SW846 8260B
Chlorobenzene	86	(78 - 121)			SW846 8260B
	88	(78 - 121)	2.0	(0-13)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	86	(42 - 183)
	84	(42 - 183)
Toluene-d8	97	(69 - 128)
	101	(69 - 128)
Dibromofluoromethane	90	(63 - 141)
	99	(63 - 141)
1,2-Dichloroethane-d4	91	(58 - 141)
	105	(58 - 141)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFAN3104-MS Matrix.....: SOLID
MS Lot-Sample #: I0F260148-009 DFAN3105-MSD
Date Sampled...: 06/21/00 16:20 Date Received..: 06/24/00
Prep Date.....: 07/05/00 Analysis Date..: 07/05/00
Prep Batch #...: 0193213
Dilution Factor: 1 % Moisture.....: 11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	79	(69 - 122)			SW846 8260B
	80	(69 - 122)	2.3	(0-30)	SW846 8260B
Trichloroethene	91	(50 - 130)			SW846 8260B
	97	(50 - 130)	6.4	(0-30)	SW846 8260B
Benzene	82	(74 - 120)			SW846 8260B
	86	(74 - 120)	4.4	(0-30)	SW846 8260B
Chlorobenzene	80	(78 - 121)			SW846 8260B
	83	(78 - 121)	3.4	(0-30)	SW846 8260B
Toluene	65 a,MSC	(76 - 126)			SW846 8260B
	59 a,MSC	(76 - 126)	6.0	(0-30)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	83	(47 - 157)
	60	(47 - 157)
Toluene-d8	90	(65 - 133)
	69	(65 - 133)
Dibromofluoromethane	76	(42 - 142)
	61	(42 - 142)
1,2-Dichloroethane-d4	81	(34 - 162)
	71	(34 - 162)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MSC The percent recovery of this analyte in the associated laboratory control sample is within control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFAN8104-MS Matrix.....: SOLID
MS Lot-Sample #: I0F260148-011 DFAN8105-MSD
Date Sampled...: 06/21/00 16:30 Date Received..: 06/24/00
Prep Date.....: 07/05/00 Analysis Date..: 07/05/00
Prep Batch #...: 0193282
Dilution Factor: 1 % Moisture.....: 17

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Benzene	99	(74 - 120)			SW846 8260B
	98	(74 - 120)	0.99	(0-13)	SW846 8260B
Toluene	98	(76 - 126)			SW846 8260B
	94	(76 - 126)	4.0	(0-33)	SW846 8260B
1,1-Dichloroethene	92	(69 - 122)			SW846 8260B
	96	(69 - 122)	3.4	(0-15)	SW846 8260B
Trichloroethene	102	(50 - 130)			SW846 8260B
	104	(50 - 130)	2.1	(0-18)	SW846 8260B
Chlorobenzene	97	(78 - 121)			SW846 8260B
	93	(78 - 121)	3.9	(0-13)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	96	(42 - 183)
	97	(42 - 183)
Toluene-d8	97	(69 - 128)
	97	(69 - 128)
Dibromofluoromethane	96	(63 - 141)
	95	(63 - 141)
1,2-Dichloroethane-d4	108	(58 - 141)
	96	(58 - 141)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DFCX6103-MS Matrix.....: WATER
MS Lot-Sample #: I0F270201-012 DFCX6104-MSD
Date Sampled...: 06/22/00 07:30 Date Received..: 06/27/00
Prep Date.....: 07/06/00 Analysis Date..: 07/06/00
Prep Batch #...: 0192173
Dilution Factor: 5

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	102	(64 - 127)			SW846 8260B
	98	(64 - 127)	3.5	(0-20)	SW846 8260B
Trichloroethene	114	(85 - 121)			SW846 8260B
	115	(85 - 121)	0.64	(0-20)	SW846 8260B
Chlorobenzene	106	(85 - 117)			SW846 8260B
	105	(85 - 117)	0.64	(0-20)	SW846 8260B
Benzene	139 a,MSC	(86 - 121)			SW846 8260B
	136 a,MSC	(86 - 121)	0.55	(0-20)	SW846 8260B
Toluene	85	(81 - 121)			SW846 8260B
	80 a,MSC	(81 - 121)	1.5	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	93	(73 - 137)
	100	(73 - 137)
Toluene-d8	85	(78 - 124)
	93	(78 - 124)
Dibromofluoromethane	92	(82 - 130)
	98	(82 - 130)
1,2-Dichloroethane-d4	97	(84 - 135)
	108	(84 - 135)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MSC The percent recovery of this analyte in the associated laboratory control sample is within control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: I0F260148 Work Order #...: DF5GJ104-MS Matrix.....: WATER
MS Lot-Sample #: I0F220210-016 DF5GJ105-MSD
Date Sampled...: 06/20/00 09:31 Date Received..: 06/21/00
Prep Date.....: 06/29/00 Analysis Date..: 06/29/00
Prep Batch #...: 0182174
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,1-Dichloroethene	76	(64 - 127)			SW846 8260B
	79	(64 - 127)	4.2	(0-20)	SW846 8260B
Trichloroethene	111	(85 - 121)			SW846 8260B
	114	(85 - 121)	2.3	(0-20)	SW846 8260B
Chlorobenzene	105	(85 - 117)			SW846 8260B
	106	(85 - 117)	1.3	(0-20)	SW846 8260B
Benzene	104	(86 - 121)			SW846 8260B
	104	(86 - 121)	0.02	(0-20)	SW846 8260B
Toluene	99	(81 - 121)			SW846 8260B
	97	(81 - 121)	1.8	(0-20)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(73 - 137)
	98	(73 - 137)
Toluene-d8	109	(78 - 124)
	108	(78 - 124)
Dibromofluoromethane	117	(82 - 130)
	118	(82 - 130)
1,2-Dichloroethane-d4	119	(84 - 135)
	117	(84 - 135)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I0F260148 Work Order #...: DFCQF107-MS Matrix.....: SOLID
MS Lot-Sample #: I0F270182-002 DFCQF108-MSD
Date Sampled...: 06/24/00 12:00 Date Received..: 06/27/00
Prep Date.....: 07/01/00 Analysis Date..: 07/01/00
Prep Batch #...: 0184103
Dilution Factor: 200 % Moisture.....: 0.0

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Gasoline Range Organics	154 a,MSC	(70 - 134)			SW846 8015B
	142 a,MSC	(70 - 134)	4.4	(0-30)	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	118	(75 - 125)
	84	(75 - 125)

NOTE(S):

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

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MSC The percent recovery of this analyte in the associated laboratory control sample is within control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...:	I0F260148	Work Order #...:	DFANX104-MS	Matrix.....:	SOLID
MS Lot-Sample #:	I0F260148-014		DFANX105-MSD		
Date Sampled...:	06/22/00 09:35	Date Received..:	06/24/00		
Prep Date.....:	07/02/00	Analysis Date..:	07/02/00		
Prep Batch #...:	0187300				
Dilution Factor:	1	% Moisture.....:	17		

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Gasoline Range Organics	110	(70 - 134)			SW846 8015B
	102	(70 - 134)	6.9	(0-30)	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	88	(75 - 125)
	86	(75 - 125)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: I0F260148 Work Order #...: DF4ML107-MS Matrix.....: WATER
MS Lot-Sample #: I0F220147-010 DF4ML108-MSD
Date Sampled...: 06/20/00 16:05 Date Received..: 06/22/00
Prep Date.....: 06/29/00 Analysis Date..: 06/30/00
Prep Batch #...: 0182455
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Gasoline Range Organics	105	(80 - 120)			SW846 8015B
	95	(80 - 120)	10	(0-30)	SW846 8015B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Bromofluorobenzene	94	(75 - 125)
	100	(75 - 125)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: I0F260148 Matrix.....: WATER
Date Sampled...: 06/19/00 11:05 Date Received..: 06/21/00

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Chloride		WO#: DF59N104-MS/DF59N105-MSD				MS Lot-Sample #: I0F220210-001	
	87	(75 - 125)			MCAWW 300.0A	07/10/00	0192140
	87	(75 - 125)	0.06	(0-20)	MCAWW 300.0A	07/10/00	0192140
		Dilution Factor: 1					

NOTE(S):

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

Chain of Custody Record

CHAIN OF CUSTODY NUMBER
$0003964-001

Lot # 10+26014B

Quanterra

25646

QUA-4149 (1097)

Client	Project Manager	Date	Page 1 of 2
Maxim Technologies, Inc.	Clyde Yancey	06/19/2000	
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Location**	**Analysis**
8235 Douglas Ave Ste 700 LB44	(214) 369-4395 / (000)	STL Austin	
City / **State** / **Zip Code**	**Site Contact**		
Dallas / TX / 75225	CRAIG MADDOX		
Project Number/Name	**Carrier/Waybill Number**		
Maljamar Gas Plant	FedEx 820500949139		

Contract/Purchase Order/Quote Number

CONTRACT / PURCHASE ORDER # : Maljamar Gas Plant QUOTE: 36906

Sample I.D. Number and Description	Date	Time	Sample Type	Containers: Volume	Containers: Type	Containers: No.	Preservative	Condition on Receipt/Comments	MS826/S	TPH/S	MS826/LL	TPH/LL
B-6 @ 5'	6/21/00	0915	SOLID	60mL	CLEAR GL	2	None		X	X		
B-6 @ 25'-27'	6/21/00	0920	SOLID	60mL	CLEAR GL	2	None		X	X		
B-7 @ 25'-27'	6/21/00	1025	SOLID	60mL	CLEAR GL	2	None	4°C - 6/26/00	X	X		
B-7 @ 30'-32'	6/21/00	1030	SOLID	60mL	CLEAR GL	2	None		X	X		
B-8 @ 5'	6/21/00	1130	SOLID	60mL	CLEAR GL	2	None	Good	X	X		
B-6 @ 35'-37'	6/21/00	1135	SOLID	60mL	CLEAR GL	2	None		X	X		
B-9 @ 30'-32'	6/21/00	1440	SOLID	60mL	CLEAR GL	2	None		X	X		
B-9 @ 90'	6/21/00	1445	SOLID	60mL	CLEAR GL	2	None		X	X		
B-10 @ 8'-10'	6/21/00	1620	SOLID	60mL	CLEAR GL	2	None		X	X		
B-10 @ 35'-37'	6/21/00	1625	SOLID	60mL	CLEAR GL	2	None		X	X		
B-10 @ 50'-52'	6/21/00	1630	SOLID	60mL	CLEAR GL	2	None		X	X		
B-11 @ 25'-27'	6/22/00	0830	SOLID	60mL	CLEAR GL	2	None		X	X		
B-12 @ 0'-2'	6/22/00	0930	SOLID	60mL	CLEAR GL	2	None		X	X		
B-12 @ 40'-42'	6/22/00	0935	SOLID	60mL	CLEAR GL	2	None		X	X		
~~B-13~~			SOLID	60mL	CLEAR GL	2	None		X	X		
B-13			SOLID	60mL	CLEAR GL	2	None		X	X		

Special Instructions: 8260B BTEX; 8015B GRO

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	6/23/00	0930	1. Received By	6/24/00	930
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

Chain of Custody Record

CHAIN OF CUSTODY NUMBER $8003964-002

Lot # I0F260148

Quanterra

25647

QUA-4149 (1097)

Client	Project Manager	Date
Maxim Technologies, Inc.	Clyde Yancey	06/19/2000
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Location**
8235 Douglas Ave Ste 700 LB44	(214) 369-4395 / (000)	STL Austin
City / **State** / **Zip Code**	**Site Contact**	
Dallas / TX / 75225	CRAIG MADDOX	
Project Number/Name	**Carrier/Waybill Number**	
Naljamar Gas Plant		

Page 2 of 2

Contract/Purchase Order/Quote Number

CONTRACT / PURCHASE ORDER # : Naljamar Gas Plant QUOTE: 36906

Sample I.D. Number and Description	Date	Time	Sample Type	Containers: Volume	Containers: Type	Containers: No.	Preservative	Condition on Receipt/Comments	Analysis: MS 8260 S	Analysis: TPH V S	Analysis: MS 8260 LL	Analysis: TPH V LL	Analysis: Chlorides
~~B-14~~			SOLID	60mL	CLEAR GL	2	None		X	X			
B-14			SOLID	60mL	CLEAR GL	2	None		X	X			
B-15			SOLID	60mL	CLEAR GL	2	None	4°C - 6/26/00	X	X			
B-15 CM			SOLID	60mL	CLEAR GL	2	None		X	X			
B-16			SOLID	60mL	CLEAR GL	2	None	Good - Ef	X	X			
~~MS-1~~ MW-2	6/22/00	1100	WATER	40mL	VIAL	6	1:1 HCL				X	X	
TRIP BLANK	6/19/00	1400	WATER	40mL	VIAL	2	1:1 HCL				X		
MW-2	6/22/00	1100	Water	60ml ~~40~~cm	Clear Gl	1	None						X

Special Instructions: 8260B BTEX; 8015B GRO

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	C.R. Maddox	6/23/00	0930	1. Received By		
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

Quanterra Incorporated
13715 Rider Trail North
Earth City, Missouri 63045

314 298-8566 Telephone
314 298-8757 Fax

ANALYTICAL REPORT

PROJECT NO. CONOCO

Maljamar Gas Plant

Lot #: F0E010130

Clyde Yancey

Maxim Technologies, Inc.
8235 Douglas Avenue
Suite 700 LB44
Dallas, TX 75225

SEVERN TRENT LABORATORIES, INC.

Ron Martino
Project Manager

May 11, 2000

Case Narrative
LOT NUMBER: **F0E010130**

This report contains the analytical results for the 12 samples received under chain of custody by STL St. Louis on April 29, 2000. These samples are associated with your Maljamar Gas Plant project.

All applicable quality control procedures met method-specified acceptance criteria except as noted on the following page.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Observations/Nonconformances

Nonconformance F00333

Affected Samples:
8: B-5 10-12 9: B-5 28-30

Affected Methods:
8260B

Case Narrative:
Due to a line clog the 5 gram MSD did not properly purge and therefore no useable results were obtained. The MS and LCS purged fine. Therefore this batch 0129208 is being reported without a MS/MSD.

METHODS SUMMARY

F0E010130

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A	SW846 7471A
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3050B
Volatile Organics by GC/MS	SW846 8260B	SW846 5030
Volatile Organics by GC/MS	SW846 8260B	SW846 5035
Volatile Petroleum Hydrocarbons	SW846 8015 MOD	SW846 5030

References:

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

SAMPLE SUMMARY

F0E010130

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
DCKTN	001	B-1 14-16	04/27/00	08:50
DCKX6	002	B-1 18-20	04/27/00	09:00
DCKX7	003	B-2 8-10	04/27/00	11:30
DCKXA	004	B-2 33-35	04/27/00	11:40
DCKXC	005	B-3 2-4	04/27/00	13:40
DCKXD	006	B-3 33-35	04/27/00	13:50
DCKXE	007	B-5 6-8	04/28/00	08:55
DCKXG	008	B-5 10-12	04/28/00	09:00
DCKXH	009	B-5 28-30	04/28/00	09:05
DCKXJ	010	B-4 0-2	04/27/00	14:50
DCKXK	011	B-4 10-12	04/27/00	15:00
DCKXL	012	B-4 33-35	04/27/00	15:10

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.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-1 14-16

GC/MS Volatiles

Lot-Sample #...:	F0E010130-001	Work Order #...: DCKTN102	Matrix.....: SOLID
Date Sampled...:	04/27/00 08:50	Date Received..: 04/29/00	
Prep Date.....:	05/05/00	Analysis Date..: 05/05/00	
Prep Batch #...:	0129208	Analysis Time..: 14:51	
Dilution Factor:	1		
% Moisture.....:		Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	78	(73 - 109)
Toluene-d8	104	(82 - 119)
Dibromofluoromethane	82	(82 - 132)
1,2-Dichloroethane-d4	88	(60 - 140)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-1 14-16

GC Volatiles

Lot-Sample #...:	F0E010130-001	Work Order #...:	DCKTN101	Matrix.....:	SOLID
Date Sampled...:	04/27/00 08:50	Date Received..:	04/29/00		
Prep Date.....:	05/05/00	Analysis Date..:	05/05/00		
Prep Batch #...:	0128114	Analysis Time..:	19:44		
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	ND	0.10	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	87	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-1 18-20

GC/MS Volatiles

Lot-Sample #...: F0E010130-002 Work Order #...: DCKX6102 Matrix.....: SOLID
Date Sampled...: 04/27/00 09:00 Date Received..: 04/29/00
Prep Date.....: 05/08/00 Analysis Date..: 05/08/00
Prep Batch #...: 0130229 Analysis Time..: 17:10
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	4.0 J	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	93	(73 - 109)
Toluene-d8	104	(82 - 119)
Dibromofluoromethane	96	(82 - 132)
1,2-Dichloroethane-d4	110	(60 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-1 18-20

GC Volatiles

Lot-Sample #...:	F0E010130-002	Work Order #...:	DCKX6101
Date Sampled...:	04/27/00 09:00	Date Received..:	04/29/00
Prep Date.....:	05/05/00	Analysis Date..:	05/05/00
Prep Batch #...:	0128114	Analysis Time..:	20:20
Dilution Factor:	1		
% Moisture.....:		Method.....:	SW846 8015 MOD

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	ND	0.10	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	69	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-2 8-10

GC/MS Volatiles

Lot-Sample #...:	F0E010130-003	Work Order #...:	DCKX7102	Matrix.....:	SOLID
Date Sampled...:	04/27/00 11:30	Date Received..:	04/29/00		
Prep Date.....:	05/08/00	Analysis Date..:	05/08/00		
Prep Batch #...:	0130231	Analysis Time..:	19:52		
Dilution Factor:	4				
% Moisture.....:		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	690 J	1000	ug/kg
Ethylbenzene	25000	1000	ug/kg
Toluene	ND	1000	ug/kg
Xylenes (total)	23000	1000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	82	(73 - 109)
Toluene-d8	97	(82 - 119)
Dibromofluoromethane	96	(82 - 132)
1,2-Dichloroethane-d4	95	(60 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-2 8-10

GC Volatiles

Lot-Sample #...: F0E010130-003 Work Order #...: DCKX7101 Matrix.....: SOLID
Date Sampled...: 04/27/00 11:30 Date Received..: 04/29/00
Prep Date.....: 05/07/00 Analysis Date..: 05/07/00
Prep Batch #...: 0129167 Analysis Time..: 19:51
Dilution Factor: 1250
% Moisture.....: Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	2700	120	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	83	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-2 33-35

GC/MS Volatiles

Lot-Sample #...:	F0E010130-004	Work Order #...: DCKXA102	Matrix.....: SOLID
Date Sampled...:	04/27/00 11:40	Date Received..: 04/29/00	
Prep Date.....:	05/05/00	Analysis Date..: 05/05/00	
Prep Batch #...:	0129213	Analysis Time..: 21:51	
Dilution Factor:	4		
% Moisture.....:		Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	14000	1000	ug/kg
Ethylbenzene	29000	1000	ug/kg
Toluene	1400	1000	ug/kg
Xylenes (total)	38000	1000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	103	(73 - 109)
Toluene-d8	118	(82 - 119)
Dibromofluoromethane	84	(82 - 132)
1,2-Dichloroethane-d4	88	(60 - 140)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-2 33-35

GC Volatiles

Lot-Sample #...:	F0E010130-004	Work Order #...:	DCKXA101	Matrix.....:	SOLID
Date Sampled...:	04/27/00 11:40	Date Received..:	04/29/00		
Prep Date.....:	05/07/00	Analysis Date..:	05/07/00		
Prep Batch #...:	0129163	Analysis Time..:	20:27		
Dilution Factor:	5				
% Moisture.....:		Method.....:	SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	26	0.50	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	51	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-3 2-4

GC/MS Volatiles

Lot-Sample #...: F0E010130-005 Work Order #...: DCKXC102 Matrix.....: SOLID
Date Sampled...: 04/27/00 13:40 Date Received..: 04/29/00
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0129213 Analysis Time..: 22:56
Dilution Factor: 4
% Moisture.....: Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	9400	1000	ug/kg
Ethylbenzene	26000	1000	ug/kg
Toluene	410 J	1000	ug/kg
Xylenes (total)	34000	1000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	97	(73 - 109)
Toluene-d8	116	(82 - 119)
Dibromofluoromethane	79 *	(82 - 132)
1,2-Dichloroethane-d4	105	(60 - 140)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-3 2-4

GC/MS Volatiles

Lot-Sample #...: F0E010130-005 Work Order #...: DCKXC202 Matrix.....: SOLID
Date Sampled...: 04/27/00 13:40 Date Received..: 04/29/00
Prep Date.....: 05/08/00 Analysis Date..: 05/08/00
Prep Batch #...: 0130231 Analysis Time..: 20:57
Dilution Factor: 4
% Moisture.....: Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	8600	1000	ug/kg
Ethylbenzene	28000	1000	ug/kg
Toluene	490 J	1000	ug/kg
Xylenes (total)	33000	1000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	94	(73 - 109)
Toluene-d8	106	(82 - 119)
Dibromofluoromethane	77 *	(82 - 132)
1,2-Dichloroethane-d4	97	(60 - 140)

NOTE(S):

* Surrogate recovery is outside stated control limits.

J Estimated result. Result is less than RL.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-3 2-4

GC Volatiles

Lot-Sample #...: F0E010130-005 Work Order #...: DCKXC101 Matrix.....: SOLID
Date Sampled...: 04/27/00 13:40 Date Received..: 04/29/00
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0128115 Analysis Time..: 22:07
Dilution Factor: 1250
% Moisture.....: Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	2300	120	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	78	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-3 33-35

GC/MS Volatiles

Lot-Sample #...: F0E010130-006 Work Order #...: DCKXD102 Matrix.....: SOLID
Date Sampled...: 04/27/00 13:50 Date Received..: 04/29/00
Prep Date.....: 05/08/00 Analysis Date..: 05/08/00
Prep Batch #...: 0130229 Analysis Time..: 16:37
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	1.7 J	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	95	(73 - 109)
Toluene-d8	107	(82 - 119)
Dibromofluoromethane	112	(82 - 132)
1,2-Dichloroethane-d4	109	(60 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-3 33-35

GC Volatiles

Lot-Sample #...: F0E010130-006 Work Order #...: DCKXD101 Matrix.....: SOLID
Date Sampled...: 04/27/00 13:50 Date Received..: 04/29/00
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0128114 Analysis Time..: 22:43
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	ND	0.10	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	75	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-5 6-8

GC/MS Volatiles

Lot-Sample #...:	F0E010130-007	Work Order #...:	DCKXE102
Date Sampled...:	04/28/00 08:55	Date Received..:	04/29/00
Prep Date.....:	05/09/00	Analysis Date..:	05/09/00
Prep Batch #...:	0132117	Analysis Time..:	11:11
Dilution Factor:	1		
% Moisture.....:		Method.....:	SW846 8260B

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	2.0 J	5.0	ug/kg
Ethylbenzene	25	5.0	ug/kg
Toluene	2.8 J	5.0	ug/kg
Xylenes (total)	100	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	96	(73 - 109)
Toluene-d8	101	(82 - 119)
Dibromofluoromethane	96	(82 - 132)
1,2-Dichloroethane-d4	86	(60 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-5 6-8

GC Volatiles

Lot-Sample #...:	F0E010130-007	Work Order #...:	DCKXE101
Date Sampled...:	04/28/00 08:55	Date Received..:	04/29/00
Prep Date.....:	05/05/00	Analysis Date..:	05/05/00
Prep Batch #...:	0128115	Analysis Time..:	23:20
Dilution Factor:	125		
% Moisture.....:		Method.....:	SW846 8015 MOD

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	89	12	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	73	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-5 10-12

GC/MS Volatiles

Lot-Sample #...:	F0E010130-008	Work Order #...:	DCKXG102	Matrix.....:	SOLID
Date Sampled...:	04/28/00 09:00	Date Received..:	04/29/00		
Prep Date.....:	05/05/00	Analysis Date..:	05/05/00		
Prep Batch #...:	0129208	Analysis Time..:	16:28		
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	3.2 J	5.0	ug/kg
Toluene	6.0	5.0	ug/kg
Xylenes (total)	34	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	84	(73 - 109)
Toluene-d8	95	(82 - 119)
Dibromofluoromethane	100	(82 - 132)
1,2-Dichloroethane-d4	95	(60 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-5 10-12

GC Volatiles

Lot-Sample #...:	F0E010130-008	Work Order #...:	DCKXG101	Matrix.....:	SOLID
Date Sampled...:	04/28/00 09:00	Date Received..:	04/29/00		
Prep Date.....:	05/07/00	Analysis Date..:	05/07/00		
Prep Batch #...:	0129163	Analysis Time..:	21:40		
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	0.28	0.10	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	61	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-5 28-30

GC/MS Volatiles

Lot-Sample #...:	F0E010130-009	Work Order #...:	DCKXH102	Matrix.....:	SOLID
Date Sampled...:	04/28/00 09:05	Date Received..:	04/29/00		
Prep Date.....:	05/05/00	Analysis Date..:	05/05/00		
Prep Batch #...:	0129208	Analysis Time..:	17:00		
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.0	ug/kg
Ethylbenzene	ND	5.0	ug/kg
Toluene	ND	5.0	ug/kg
Xylenes (total)	ND	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	73	(73 - 109)
Toluene-d8	90	(82 - 119)
Dibromofluoromethane	82	(82 - 132)
1,2-Dichloroethane-d4	83	(60 - 140)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-5 28-30

GC Volatiles

Lot-Sample #...: F0E010130-009 Work Order #...: DCKXH101 Matrix.....: SOLID
Date Sampled...: 04/28/00 09:05 Date Received..: 04/29/00
Prep Date.....: 05/05/00 Analysis Date..: 05/06/00
Prep Batch #...: 0128114 Analysis Time..: 01:44
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	ND	0.10	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	86	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 0-2

GC/MS Volatiles

Lot-Sample #...: F0E010130-010 Work Order #...: DCKXJ102 Matrix.....: SOLID
Date Sampled...: 04/27/00 14:50 Date Received..: 04/29/00
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0129213 Analysis Time..: 22:23
Dilution Factor: 4
% Moisture.....: Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	19000	1000	ug/kg
Ethylbenzene	41000 E	1000	ug/kg
Toluene	760 J	1000	ug/kg
Xylenes (total)	79000	1000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	277 *	(73 - 109)
Toluene-d8	114	(82 - 119)
Dibromofluoromethane	74 *	(82 - 132)
1,2-Dichloroethane-d4	101	(60 - 140)

NOTE(S):

* Surrogate recovery is outside stated control limits.

E Estimated result. Result concentration exceeds the calibration range.

J Estimated result. Result is less than RL.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 0-2

GC/MS Volatiles

Lot-Sample #...: F0E010130-010 Work Order #...: DCKXJ202 Matrix.....: SOLID
Date Sampled...: 04/27/00 14:50 Date Received..: 04/29/00
Prep Date.....: 05/08/00 Analysis Date..: 05/08/00
Prep Batch #...: 0130231 Analysis Time..: 20:24
Dilution Factor: 8
% Moisture.....: Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	19000 D	2000	ug/kg
Ethylbenzene	46000 D	2000	ug/kg
Toluene	1100 J,JD	2000	ug/kg
Xylenes (total)	84000 D	2000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	286 *	(73 - 109)
Toluene-d8	111	(82 - 119)
Dibromofluoromethane	80 *	(82 - 132)
1,2-Dichloroethane-d4	101	(60 - 140)

NOTE(S):

* Surrogate recovery is outside stated control limits.

D Result was obtained from the analysis of a dilution.

J Estimated result. Result is less than RL.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 0-2

GC Volatiles

Lot-Sample #...: F0E010130-010 Work Order #...: DCKXJ101 Matrix.....: SOLID
Date Sampled...: 04/27/00 14:50 Date Received..: 04/29/00
Prep Date.....: 05/07/00 Analysis Date..: 05/07/00
Prep Batch #...: 0129167 Analysis Time..: 22:16
Dilution Factor: 1250
% Moisture.....: Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	4900	120	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	75	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 10-12

GC/MS Volatiles

Lot-Sample #...: F0E010130-011 Work Order #...: DCKXK102 Matrix.....: SOLID
Date Sampled...: 04/27/00 15:00 Date Received..: 04/29/00
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0129213 Analysis Time..: 19:09
Dilution Factor: 4
% Moisture.....: Method.....: SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	920 J	1000	ug/kg
Ethylbenzene	10000	1000	ug/kg
Toluene	2800	1000	ug/kg
Xylenes (total)	20000	1000	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	91 J	(73 - 109)
Toluene-d8	98 J	(82 - 119)
Dibromofluoromethane	72 *,J	(82 - 132)
1,2-Dichloroethane-d4	83 J	(60 - 140)

NOTE(S):

J Estimated result. Result is less than RL.

* Surrogate recovery is outside stated control limits.

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 10-12

GC Volatiles

Lot-Sample #...: F0E010130-011 Work Order #...: DCKXK101 Matrix.....: SOLID
Date Sampled...: 04/27/00 15:00 Date Received..: 04/29/00
Prep Date.....: 05/07/00 Analysis Date..: 05/07/00
Prep Batch #...: 0129167 Analysis Time..: 22:52
Dilution Factor: 125
% Moisture.....: Method.....: SW846 8015 MOD

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	690	12	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	97	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 33-35

GC/MS Volatiles

Lot-Sample #...:	F0E010130-012	Work Order #...: DCKXL102	Matrix.....: SOLID
Date Sampled...:	04/27/00 15:10	Date Received..: 04/29/00	
Prep Date.....:	05/08/00	Analysis Date..: 05/08/00	
Prep Batch #...:	0130229	Analysis Time..: 17:42	
Dilution Factor:	1		
% Moisture.....:		Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	28	5.0	ug/kg
Ethylbenzene	8.4	5.0	ug/kg
Toluene	6.2	5.0	ug/kg
Xylenes (total)	14	5.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	97	(73 - 109)
Toluene-d8	105	(82 - 119)
Dibromofluoromethane	87	(82 - 132)
1,2-Dichloroethane-d4	99	(60 - 140)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 33-35

GC Volatiles

Lot-Sample #...:	F0E010130-012	Work Order #...:	DCKXL101	Matrix.....:	SOLID
Date Sampled...:	04/27/00 15:10	Date Received..:	04/29/00		
Prep Date.....:	05/07/00	Analysis Date..:	05/07/00		
Prep Batch #...:	0129163	Analysis Time..:	23:28		
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8015 MOD		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Volatile Petroleum Hydrocarbons	ND	0.10	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	63	(50 - 150)

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 0-2

TOTAL Metals

Lot-Sample #...: F0E010130-010 Matrix.....: SOLID
Date Sampled...: 04/27/00 14:50 Date Received..: 04/29/00
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0124321						
Mercury	0.26	0.033	mg/kg	SW846 7471A	05/04/00	DCKXJ10A
		Dilution Factor: 1		Analysis Time..: 17:25		
Prep Batch #...: 0126225						
Arsenic	2.3	1.0	mg/kg	SW846 6010B	05/05-05/09/00	DCKXJ103
		Dilution Factor: 1		Analysis Time..: 17:37		
Lead	7.7	0.30	mg/kg	SW846 6010B	05/05-05/09/00	DCKXJ104
		Dilution Factor: 1		Analysis Time..: 17:37		
Selenium	ND	0.50	mg/kg	SW846 6010B	05/05-05/09/00	DCKXJ105
		Dilution Factor: 1		Analysis Time..: 17:37		
Silver	ND	1.0	mg/kg	SW846 6010B	05/05-05/09/00	DCKXJ106
		Dilution Factor: 1		Analysis Time..: 17:37		
Barium	88.9	20.0	mg/kg	SW846 6010B	05/05-05/09/00	DCKXJ107
		Dilution Factor: 1		Analysis Time..: 17:37		
Cadmium	ND	0.50	mg/kg	SW846 6010B	05/05-05/09/00	DCKXJ108
		Dilution Factor: 1		Analysis Time..: 17:37		
Chromium	12.7	1.0	mg/kg	SW846 6010B	05/05-05/09/00	DCKXJ109
		Dilution Factor: 1		Analysis Time..: 17:37		

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 10 12

TOTAL Metals

Lot-Sample #...: F0E010130-011 Matrix.....: SOLID
Date Sampled...: 04/27/00 15:00 Date Received..: 04/29/00
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0124321						
Mercury	ND	0.033 Dilution Factor: 1	mg/kg	SW846 7471A Analysis Time..: 17:28	05/04/00	DCKXK10A
Prep Batch #...: 0126225						
Arsenic	1.9	1.0 Dilution Factor: 1	mg/kg	SW846 6010B Analysis Time..: 17:55	05/05-05/09/00	DCKXK103
Lead	2.1	0.30 Dilution Factor: 1	mg/kg	SW846 6010B Analysis Time..: 17:55	05/05-05/09/00	DCKXK104
Selenium	ND	0.50 Dilution Factor: 1	mg/kg	SW846 6010B Analysis Time..: 17:55	05/05-05/09/00	DCKXK105
Silver	ND	1.0 Dilution Factor: 1	mg/kg	SW846 6010B Analysis Time..: 17:55	05/05-05/09/00	DCKXK106
Barium	72.8	20.0 Dilution Factor: 1	mg/kg	SW846 6010B Analysis Time..: 17:55	05/05-05/09/00	DCKXK107
Cadmium	ND	0.50 Dilution Factor: 1	mg/kg	SW846 6010B Analysis Time..: 17:55	05/05-05/09/00	DCKXK108
Chromium	2.0	1.0 Dilution Factor: 1	mg/kg	SW846 6010B Analysis Time..: 17:55	05/05-05/09/00	DCKXK109

MAXIM TECHNOLOGIES, INC.

Client Sample ID: B-4 33-35

TOTAL Metals

Lot-Sample #...: F0E010130-012 Matrix.....: SOLID
Date Sampled...: 04/27/00 15:10 Date Received..: 04/29/00
% Moisture.....:

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 0124321						
Mercury	ND	0.033	mg/kg	SW846 7471A	05/04/00	DCKXL10A
		Dilution Factor: 1		Analysis Time..: 17:30		
Prep Batch #...: 0126225						
Arsenic	1.9	1.0	mg/kg	SW846 6010B	05/05-05/09/00	DCKXL103
		Dilution Factor: 1		Analysis Time..: 17:59		
Lead	3.3	0.30	mg/kg	SW846 6010B	05/05-05/09/00	DCKXL104
		Dilution Factor: 1		Analysis Time..: 17:59		
Selenium	ND	0.50	mg/kg	SW846 6010B	05/05-05/09/00	DCKXL105
		Dilution Factor: 1		Analysis Time..: 17:59		
Barium	144	20.0	mg/kg	SW846 6010B	05/05-05/09/00	DCKXL107
		Dilution Factor: 1		Analysis Time..: 17:59		
Cadmium	ND	0.50	mg/kg	SW846 6010B	05/05-05/09/00	DCKXL108
		Dilution Factor: 1		Analysis Time..: 17:59		
Silver	ND	1.0	mg/kg	SW846 6010B	05/05-05/09/00	DCKXL106
		Dilution Factor: 1		Analysis Time..: 17:59		
Chromium	4.2	1.0	mg/kg	SW846 6010B	05/05-05/09/00	DCKXL109
		Dilution Factor: 1		Analysis Time..: 17:59		

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: F0E010130 Work Order #...: DCVTX101 Matrix.....: SOLID
MB Lot-Sample #: F0E070000-114

Prep Date.....: 05/05/00 Analysis Time..: 17:55
Analysis Date..: 05/05/00 Prep Batch #...: 0128114
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Volatile Petroleum Hydrocarbons	ND	0.10	mg/kg	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	96	(50 - 150)

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: F0E010130 Work Order #...: DCVV0101 Matrix.....: SOLID
MB Lot-Sample #: F0E070000-115

Prep Date.....: 05/05/00 Analysis Time..: 17:55
Analysis Date..: 05/05/00 Prep Batch #...: 0128115
Dilution Factor: 125

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Volatile Petroleum Hydrocarbons	ND	12	mg/kg	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	96	(50 - 150)

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: F0E010130 Work Order #...: DCW1D101 Matrix.....: SOLID
MB Lot-Sample #: F0E080000-167

Prep Date.....: 05/07/00 Analysis Time..: 17:48
Analysis Date..: 05/07/00 Prep Batch #...: 0129167
Dilution Factor: 125

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Volatile Petroleum Hydrocarbons	ND	12	mg/kg	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	96	(50 - 150)

NOTE(S):

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

METHOD BLANK REPORT

GC Volatiles

Client Lot #...: F0E010130 Work Order #...: DCW16101 Matrix.....: SOLID
MB Lot-Sample #: F0E080000-163

Prep Date.....: 05/07/00 Analysis Time..: 17:48
Analysis Date..: 05/07/00 Prep Batch #...: 0129163
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Volatile Petroleum Hydrocarbons	ND	0.10	mg/kg	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	96	(50 - 150)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCW6C101 Matrix.....: SOLID
MB Lot-Sample #: F0E080000 208

Prep Date.....: 05/05/00 Analysis Time..: 13:47
Analysis Date..: 05/05/00 Prep Batch #...: 0129208
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	92	(73 - 109)
Toluene-d8	101	(82 - 119)
Dibromofluoromethane	88	(82 - 132)
1,2-Dichloroethane-d4	80	(60 - 140)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCW6M101 Matrix.....: SOLID
MB Lot-Sample #: F0E080000-213

Prep Date.....: 05/05/00 Analysis Time..: 13:47
Analysis Date..: 05/05/00 Prep Batch #...: 0129213
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	250	ug/kg	SW846 8260B
Ethylbenzene	ND	250	ug/kg	SW846 8260B
Toluene	ND	250	ug/kg	SW846 8260B
Xylenes (total)	ND	250	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	92	(73 - 109)
Toluene-d8	101	(82 - 119)
Dibromofluoromethane	88	(82 - 132)
1,2-Dichloroethane-d4	80	(60 - 140)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCXD5101 Matrix.....: SOLID
MB Lot-Sample #: F0E090000-229

Prep Date.....: 05/08/00 Analysis Time..: 15:56
Analysis Date..: 05/08/00 Prep Batch #...: 0130229
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	103	(73 - 109)
Toluene-d8	110	(82 - 119)
Dibromofluoromethane	97	(82 - 132)
1,2-Dichloroethane-d4	86	(60 - 140)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCXD8101 Matrix.....: SOLID
MB Lot-Sample #: F0E090000-231

Prep Date.....: 05/08/00 Analysis Time..: 15:56
Analysis Date..: 05/08/00 Prep Batch #...: 0130231
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	250	ug/kg	SW846 8260B
Ethylbenzene	ND	250	ug/kg	SW846 8260B
Toluene	ND	250	ug/kg	SW846 8260B
Xylenes (total)	ND	250	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	103	(73 - 109)
Toluene-d8	110	(82 - 119)
Dibromofluoromethane	97	(82 - 132)
1,2-Dichloroethane-d4	86	(60 - 140)

NOTE(S):

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

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DD22P101 Matrix.....: SOLID
MB Lot-Sample #: F0E110000-117

Prep Date.....: 05/09/00 Analysis Time..: 09:34
Analysis Date..: 05/09/00 Prep Batch #...: 0132117
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	96	(73 - 109)
Toluene-d8	100	(82 - 119)
Dibromofluoromethane	89	(82 - 132)
1,2-Dichloroethane-d4	82	(60 - 140)

NOTE(S):

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

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: F0E010130 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: F0E030000-321 **Prep Batch #...:** 0124321						
Mercury	ND	0.033	mg/kg	SW846 7471A	05/04/00	DCP4H101
		Dilution Factor: 1				
		Analysis Time..: 17:08				
MB Lot-Sample #: F0E050000-225 **Prep Batch #...:** 0126225						
Arsenic	ND	1.0	mg/kg	SW846 6010B	05/05-05/09/00	DCRTM101
		Dilution Factor: 1				
		Analysis Time..: 17:17				
Lead	ND	0.30	mg/kg	SW846 6010B	05/05-05/09/00	DCRTM105
		Dilution Factor: 1				
		Analysis Time..: 17:17				
Selenium	ND	0.50	mg/kg	SW846 6010B	05/05-05/09/00	DCRTM107
		Dilution Factor: 1				
		Analysis Time..: 17:17				
Barium	ND	20.0	mg/kg	SW846 6010B	05/05-05/09/00	DCRTM10Q
		Dilution Factor: 1				
		Analysis Time..: 17:17				
Cadmium	ND	0.50	mg/kg	SW846 6010B	05/05-05/09/00	DCRTM10R
		Dilution Factor: 1				
		Analysis Time..: 17:17				
Chromium	ND	1.0	mg/kg	SW846 6010B	05/05-05/09/00	DCRTM10T
		Dilution Factor: 1				
		Analysis Time..: 17:17				
Silver	ND	1.0	mg/kg	SW846 6010B	05/05-05/09/00	DCRTM10P
		Dilution Factor: 1				
		Analysis Time..: 17:17				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Volatiles

Client Lot #...: F0E010130 Work Order #...: DCVTX102-LCS Matrix.....: SOLID
LCS Lot-Sample#: F0E070000-114 DCVTX103-LCSD
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0128114 Analysis Time..: 18:32
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Volatile Petroleum Hydrocarbons	125	(50 - 150)			SW846 8015 MOD
	109	(50 - 150)	14	(0-25)	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	100	(50 - 150)
	100	(50 - 150)

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

GC Volatiles

Client Lot #...: F0E010130 Work Order #...: DCVV0102-LCS Matrix.....: SOLID
LCS Lot-Sample#: F0E070000-115 DCVV0103-LCSD
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0128115 Analysis Time..: 18:32
Dilution Factor: 125

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Volatile Petroleum Hydrocarbons	125	(50 - 150)			SW846 8015 MOD
	109	(50 - 150)	14	(0-25)	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	100	(50 - 150)
	100	(50 - 150)

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

GC Volatiles

Client Lot #...: F0E010130 Work Order #...: DCW1D102-LCS Matrix.....: SOLID
LCS Lot-Sample#: F0E080000-167 DCW1D103-LCSD
Prep Date.....: 05/07/00 Analysis Date..: 05/07/00
Prep Batch #...: 0129167 Analysis Time..: 18:24
Dilution Factor: 125

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Volatile Petroleum Hydrocarbons	129	(50 - 150)			SW846 8015 MOD
	123	(50 - 150)	4.6	(0-25)	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	111	(50 - 150)
	101	(50 - 150)

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

GC Volatiles

Client Lot #...: F0E010130 Work Order #...: DCW16102-LCS Matrix.....: SOLID
LCS Lot-Sample#: F0E080000-163 DCW16103-LCSD
Prep Date.....: 05/07/00 Analysis Date..: 05/07/00
Prep Batch #...: 0129163 Analysis Time..: 18:24
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Volatile Petroleum Hydrocarbons	129	(50 - 150)			SW846 8015 MOD
	123	(50 - 150)	4.7	(0-25)	SW846 8015 MOD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Trifluorotoluene	111	(50 - 150)
	101	(50 - 150)

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

TOTAL Metals

Lot-Sample #...: F0E010130 Matrix.....: SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP-BATCH #
Mercury	99	(58 - 142)			SW846 7471A	05/04/00	0124321
	93	(58 - 142)	5.8	(0-20)	SW846 7471A	05/04/00	0124321
		Dilution Factor: 5					
Arsenic	108	(72 - 128)			SW846 6010B	05/05-05/09/00	0126225
	110	(72 - 128)	2.1	(0-20)	SW846 6010B	05/05-05/09/00	0126225
		Dilution Factor: 1					
Lead	105	(76 - 124)			SW846 6010B	05/05-05/09/00	0126225
	107	(76 - 124)	2.6	(0-20)	SW846 6010B	05/05-05/09/00	0126225
		Dilution Factor: 1					
Selenium	101	(74 - 126)			SW846 6010B	05/05-05/09/00	0126225
	103	(74 - 126)	2.2	(0-20)	SW846 6010B	05/05-05/09/00	0126225
		Dilution Factor: 1					
Barium	101	(77 - 122)			SW846 6010B	05/05-05/09/00	0126225
	104	(77 - 122)	2.9	(0-20)	SW846 6010B	05/05-05/09/00	0126225
		Dilution Factor: 1					
Cadmium	106	(77 - 122)			SW846 6010B	05/05-05/09/00	0126225
	110	(77 - 122)	3.9	(0-20)	SW846 6010B	05/05-05/09/00	0126225
		Dilution Factor: 1					
Chromium	95	(77 - 123)			SW846 6010B	05/05-05/09/00	0126225
	97	(77 - 123)	2.9	(0-20)	SW846 6010B	05/05-05/09/00	0126225
		Dilution Factor: 1					
Silver	107	(75 - 126)			SW846 6010B	05/05-05/09/00	0126225
	110	(75 - 126)	2.2	(0-20)	SW846 6010B	05/05-05/09/00	0126225
		Dilution Factor: 1					

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCW6C102 Matrix.....: SOLID
LCS Lot-Sample#: F0E080000-208
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0129208 Analysis Time..: 14:19
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Chlorobenzene	**91**	**(81 - 119)**	**SW846 8260B**
1,1-Dichloroethene	**102**	**(70 - 149)**	**SW846 8260B**
Trichloroethene	**85**	**(72 - 120)**	**SW846 8260B**
Benzene	**103**	**(79 - 125)**	**SW846 8260B**
Toluene	**111**	**(75 - 124)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	83	(73 - 109)
Toluene-d8	107	(82 - 119)
Dibromofluoromethane	104	(82 - 132)
1,2-Dichloroethane-d4	95	(60 - 140)

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

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCW6M102 Matrix.....: SOLID
LCS Lot-Sample#: F0E080000-213
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0129213 Analysis Time..: 14:19
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Chlorobenzene	**91**	**(81 - 119)**	**SW846 8260B**
1,1-Dichloroethene	**102**	**(70 - 149)**	**SW846 8260B**
Benzene	**103**	**(79 - 125)**	**SW846 8260B**
Trichloroethene	**85**	**(72 - 120)**	**SW846 8260B**
Toluene	**111**	**(75 - 124)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	83	(73 - 109)
Toluene-d8	107	(82 - 119)
Dibromofluoromethane	104	(82 - 132)
1,2-Dichloroethane-d4	95	(60 - 140)

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

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCXD5102 Matrix.....: SOLID
LCS Lot-Sample#: F0E090000-229
Prep Date.....: 05/08/00 Analysis Date..: 05/08/00
Prep Batch #...: 0130229 Analysis Time..: 15:11
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Chlorobenzene	**113**	**(81 - 119)**	**SW846 8260B**
1,1-Dichloroethene	**98**	**(70 - 149)**	**SW846 8260B**
Trichloroethene	**107**	**(72 - 120)**	**SW846 8260B**
Benzene	**114**	**(79 - 125)**	**SW846 8260B**
Toluene	**111**	**(75 - 124)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(73 - 109)
Toluene-d8	104	(82 - 119)
Dibromofluoromethane	105	(82 - 132)
1,2-Dichloroethane-d4	112	(60 - 140)

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

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCXD8102 Matrix.....: SOLID
LCS Lot-Sample#: F0E090000-231
Prep Date.....: 05/08/00 Analysis Date..: 05/08/00
Prep Batch #...: 0130231 Analysis Time..: 15:11
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Chlorobenzene	**113**	**(81 - 119)**	**SW846 8260B**
1,1-Dichloroethene	**98**	**(70 - 149)**	**SW846 8260B**
Benzene	**114**	**(79 - 125)**	**SW846 8260B**
Trichloroethene	**107**	**(72 - 120)**	**SW846 8260B**
Toluene	**111**	**(75 - 124)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	100	(73 - 109)
Toluene-d8	104	(82 - 119)
Dibromofluoromethane	105	(82 - 132)
1,2-Dichloroethane-d4	112	(60 - 140)

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

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DD22P102 Matrix.....: SOLID
LCS Lot-Sample#: F0E110000-117
Prep Date.....: 05/09/00 Analysis Date..: 05/09/00
Prep Batch #...: 0132117 Analysis Time..: 10:06
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Chlorobenzene	**113**	**(81 - 119)**	**SW846 8260B**
1,1-Dichloroethene	**99**	**(70 - 149)**	**SW846 8260B**
Trichloroethene	**112**	**(72 - 120)**	**SW846 8260B**
Benzene	**117**	**(79 - 125)**	**SW846 8260B**
Toluene	**111**	**(75 - 124)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	98	(73 - 109)
Toluene-d8	107	(82 - 119)
Dibromofluoromethane	98	(82 - 132)
1,2-Dichloroethane-d4	106	(60 - 140)

NOTE(S):

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

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F0E010130 Matrix.....: SOLID
Date Sampled...: 04/06/00 Date Received..: 04/28/00

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F0D280169-001 Prep Batch #...: 0124321							
Mercury	0.0 N	(75 - 125)			SW846 7471A	05/04/00	DCHMR10T
	0.0 N	(75 - 125)	0.0	(0-20)	SW846 7471A	05/04/00	DCHMR10U

Dilution Factor: 1
Analysis Time..: 17:19

NOTE(S):

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

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCKXE103-MS Matrix.....: SOLID
MS Lot-Sample #: F0E010130-007 DCKXE104-MSD
Date Sampled...: 04/28/00 08:55 Date Received..: 04/29/00
Prep Date.....: 05/09/00 Analysis Date..: 05/09/00
Prep Batch #...: 0132117 Analysis Time..: 11:43
Dilution Factor: 1 % Moisture.....:

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Chlorobenzene	**113**	**(81 - 119)**			**SW846 8260B**
	111	**(81 - 119)**	**2.1**	**(0-21)**	**SW846 8260B**
1,1-Dichloroethene	**110**	**(70 - 149)**			**SW846 8260B**
	108	**(70 - 149)**	**2.2**	**(0-22)**	**SW846 8260B**
Trichloroethene	**114**	**(72 - 120)**			**SW846 8260B**
	111	**(72 - 120)**	**3.3**	**(0-24)**	**SW846 8260B**
Benzene	**87**	**(79 - 125)**			**SW846 8260B**
	112 p	**(79 - 125)**	**24**	**(0-21)**	**SW846 8260B**
Toluene	**102**	**(75 - 124)**			**SW846 8260B**
	101	**(75 - 124)**	**1.3**	**(0-21)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	104	(73 - 109)
	103	(73 - 109)
Toluene-d8	109	(82 - 119)
	106	(82 - 119)
Dibromofluoromethane	101	(82 - 132)
	103	(82 - 132)
1,2-Dichloroethane-d4	92	(60 - 140)
	116	(60 - 140)

NOTE(S):

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

Bold print denotes control parameters

p Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: F0E010130 Matrix.....: SOLID
Date Sampled...: 04/27/00 14:50 Date Received..: 04/29/00

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: F0E010130-010 Prep Batch #...: 0126225							
Arsenic	100	(75 - 125)			SW846 6010B	05/05-05/09/00	DCKXJ10C
	100	(75 - 125)	0.32	(0-20)	SW846 6010B	05/05-05/09/00	DCKXJ10D
		Dilution Factor: 1					
		Analysis Time..: 17:42					
Lead	97	(75 - 125)			SW846 6010B	05/05-05/09/00	DCKXJ10E
	100	(75 - 125)	2.3	(0-20)	SW846 6010B	05/05-05/09/00	DCKXJ10F
		Dilution Factor: 1					
		Analysis Time..: 17:42					
Selenium	96	(75 - 125)			SW846 6010B	05/05-05/09/00	DCKXJ10G
	96	(75 - 125)	0.03	(0-20)	SW846 6010B	05/05-05/09/00	DCKXJ10H
		Dilution Factor: 1					
		Analysis Time..: 17:42					
Barium	100	(75 - 125)			SW846 6010B	05/05-05/09/00	DCKXJ10L
	108	(75 - 125)	5.0	(0-20)	SW846 6010B	05/05-05/09/00	DCKXJ10M
		Dilution Factor: 1					
		Analysis Time..: 17:42					
Cadmium	100	(75 - 125)			SW846 6010B	05/05-05/09/00	DCKXJ10N
	101	(75 - 125)	0.99	(0-20)	SW846 6010B	05/05-05/09/00	DCKXJ10P
		Dilution Factor: 1					
		Analysis Time..: 17:42					
Chromium	92	(75 - 125)			SW846 6010B	05/05-05/09/00	DCKXJ10Q
	93	(75 - 125)	0.36	(0-20)	SW846 6010B	05/05-05/09/00	DCKXJ10R
		Dilution Factor: 1					
		Analysis Time..: 17:42					
Silver	105	(75 - 125)			SW846 6010B	05/05-05/09/00	DCKXJ10J
	106	(75 - 125)	1.2	(0-20)	SW846 6010B	05/05-05/09/00	DCKXJ10K
		Dilution Factor: 1					
		Analysis Time..: 17:42					

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: F0E010130 Work Order #...: DCKXK10C-MS Matrix.....: SOLID
MS Lot-Sample #: F0E010130-011 DCKXK10D-MSD
Date Sampled...: 04/27/00 15:00 Date Received..: 04/29/00
Prep Date.....: 05/05/00 Analysis Date..: 05/05/00
Prep Batch #...: 0129213 Analysis Time..: 19:41
Dilution Factor: 4 % Moisture.....:

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Chlorobenzene	**95**	**(81 - 119)**			**SW846 8260B**
	91	**(81 - 119)**	**3.9**	**(0-21)**	**SW846 8260B**
1,1-Dichloroethene	74	(70 - 149)			SW846 8260B
	80	(70 - 149)	8.8	(0-22)	SW846 8260B
Benzene	**140 a**	**(79 - 125)**			**SW846 8260B**
	132 a	**(79 - 125)**	**4.5**	**(0-21)**	**SW846 8260B**
Trichloroethene	**77**	**(72 - 120)**			**SW846 8260B**
	76	**(72 - 120)**	**1.2**	**(0-24)**	**SW846 8260B**
Toluene	**220 a**	**(75 - 124)**			**SW846 8260B**
	227 a	**(75 - 124)**	**2.3**	**(0-21)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
4-Bromofluorobenzene	98	(73 - 109)
	80	(73 - 109)
Toluene-d8	110	(82 - 119)
	114	(82 - 119)
Dibromofluoromethane	84	(82 - 132)
	69 *	(82 - 132)
1,2-Dichloroethane-d4	86	(60 - 140)
	79	(60 - 140)

NOTE(S):

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

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

a Spiked analyte recovery is outside stated control limits.

MAXIM
TECHNOLOGIES INC®

September 14, 2000

Mr. Wayne Price
Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
2040 S. Pacheco
Santa Fe, NM 87505

Re: Drainage Plan for Conoco Maljamar Gas Plant

Dear Mr. Price:

Please find enclosed two (2) copies of the drainage plan prepared for the Maljamar Gas Plant as requested by your department. If you require more copies of this plan or have any questions, please contact Joyce Miley at (281) 293-4498 or Marshall Honeyman at (505) 676-3501. Thank you.

Sincerely,

Tom Tangen
Environmental Engineer

enc.

C.	Donna Williams	OCD - Hobbs, N.M.
	Joyce M. Miley	Conoco - Houston
	Marshall Honeyman	Conoco - Maljamar
	Clyde Yancey	Maxim

MALJAMAR GAS PLANT
STORMWATER RUNOFF PLAN

PREPARED FOR:
CONOCO INCORPORATED
P.O. BOX 90
MALJAMAR, NEW MEXICO 88260

PREPARED BY:
MAXIM TECHNOLOGIES
10601 LOMAS, SUITE 106
ALBUQUERQUE, NEW MEXICO 87112

SEPTEMBER 2000

1.0 INTRODUCTION

The New Mexico Energy, Minerals, and Natural Resources Department's Oil Conservation Division (OCD) requested that Conoco Inc.'s Maljamar Gas Plant (Maljamar) prepare and submit a stormwater runoff plan addressing potential stormwater issues at the Maljamar site. Maljamar is exempt from stormwater permitting under the CWA NPDES permit, and is not required to have a Stormwater Pollution Prevention Plan (SWPPP). This plan discusses Maljamar's site drainage scenario and outlines actions taken to minimize potential for contamination of and erosion by surface water runoff.

2.0 SITE DESCRIPTION

Conoco, Inc. has operated the Maljamar Gas Plant since 1960. The site is in Lea County, New Mexico, about three miles south of Maljamar off Farm Road 126. The plant processes 40 to 60 million cubic feet of natural gas per day and produces gas liquids (ethane, propane, butane, and condensate). The products are sold and transported off site by pipeline.

2.1 Facilities

Site facilities include several buildings, tanks, and uncovered equipment skids (Figure MJ2001). Major structures include:

- two compressor buildings;
- a refrigerator compressor building;
- controls building;
- maintenance shop;
- warehouse; and
- office building.

Some equipment is on unroofed skids, including:

- refrigeration equipment;
- demethanizers;
- raw product tanks;
- vapor recovery tanks;
- an LP gas tank;
- a sludge tank
- an amine skid;
- assorted control panels;
- assorted chemical storage areas.

2.2 Roads

The site surface is composed primarily of a silty sand soil. Most of the site is accessible to light vehicles, but actual graded roadways are limited. There are no paved roads inside the fenced area controlled by Conoco.

2.3 Buildings

The buildings at Maljamar comprise less than 20 percent of the total area of the site, and as such should have minimal effect on site runoff patterns.

2.4 Containment Areas

Containment is provided for all chemical, fuel, and other reagent storage areas on site. All chemical storage drums are stored on concrete pads with curbs to control spills. The majority of the aboveground saddle tanks are mounted on curbed concrete containment slabs while some are equipped with fiberglass containment tanks. All other tanks on site are inside containment berms.

Compressor skids at Maljamar have been designed to contain engine oil spills and leaks as well as other chemicals or reagents used at the compressors.

2.5 Reagents Stored and Used on Site

Chemicals and other materials stored and used on the Maljamar plant site include the following:

- Diethanolomine;
- Methanol;
- Liquid Antifoam;
- Detergents;
- F-20 Low pH;
- Stoddard solvent;
- LCS-20;
- Emulsotron XY-409;
- Elmar 3000 engine oil;
- Elmar ashless engine oil;
- Kerosene;
- Antifreeze;
- Diesel;
- Turbine oil.

Please refer to the plot plan and chemical inventory (Figure MJ20001). The plot plan includes equipment location as well as location of reagent consumption on the site for each of the above mentioned chemicals.

2.6 Local Weather and Storm Information

The Maljamar site is considered semi-arid to arid, and receives about 12 to 13 inches of precipitation annually, mostly in the form of rain. The 100 year – 24 hour storm for the site is approximately 5 inches (NOAA Atlas 2, Vol. IV., U.S. Department of Commerce, National Oceanic and Atmospheric Administration).

3.0 STORMWATER DRAINAGE

The Maljamar site grades gently from northeast to southwest. The site elevation near the north property fence is 4017 feet above mean sea level (amsl). The elevation near the property fence west of the Clark Compressor building is 4004 feet amsl, resulting in an average grade across the site of approximately 1.4 percent. The steepest pitch on site is southwest of the Clark Compressor building, where the grade runs 6 percent for about 60 feet.

The soil in the Maljamar area is a silty sand with relatively high permeability. It also is somewhat non-cohesive and contains a low percentage of coarse fragments near the surface. While the soil will absorb some precipitation and pass it as interflow, high-intensity, short duration storms could produce sediment transport.

Over most of the Maljamar site, the 100 year-24 hour storm should result in manageable sheet flow, with limited tendency to produce rilling or gullies. Steeper areas near the compressor building on the northeast corner of the site and near the Clark Compressor could result in erosive action during a high intensity, short-duration storm event.

Potential for discharge of surface water runoff from Maljamar to a Water of the U.S. is limited. There are no surface water features (streams, wetlands, springs, or seeps) within one mile of the Maljamar site.

4.0 STORMWATER MANAGEMENT

Stormwater management at Maljamar is accomplished through installation and management of spill and leak containment structures at key points on the site. All chemical storage and usage points on the plant site have been equipped with containment structures. Sumps are maintained regularly. Inspection and preventive maintenance of the containment structures at Maljamar are critical to ensuring proper

operation of the system. Visual inspections of the entire site are conducted at least once per shift (twice per 24 hour period). Spills are cleaned up in a timely manner using environmentally sound methods and equipment.

5.0 CONTACTS

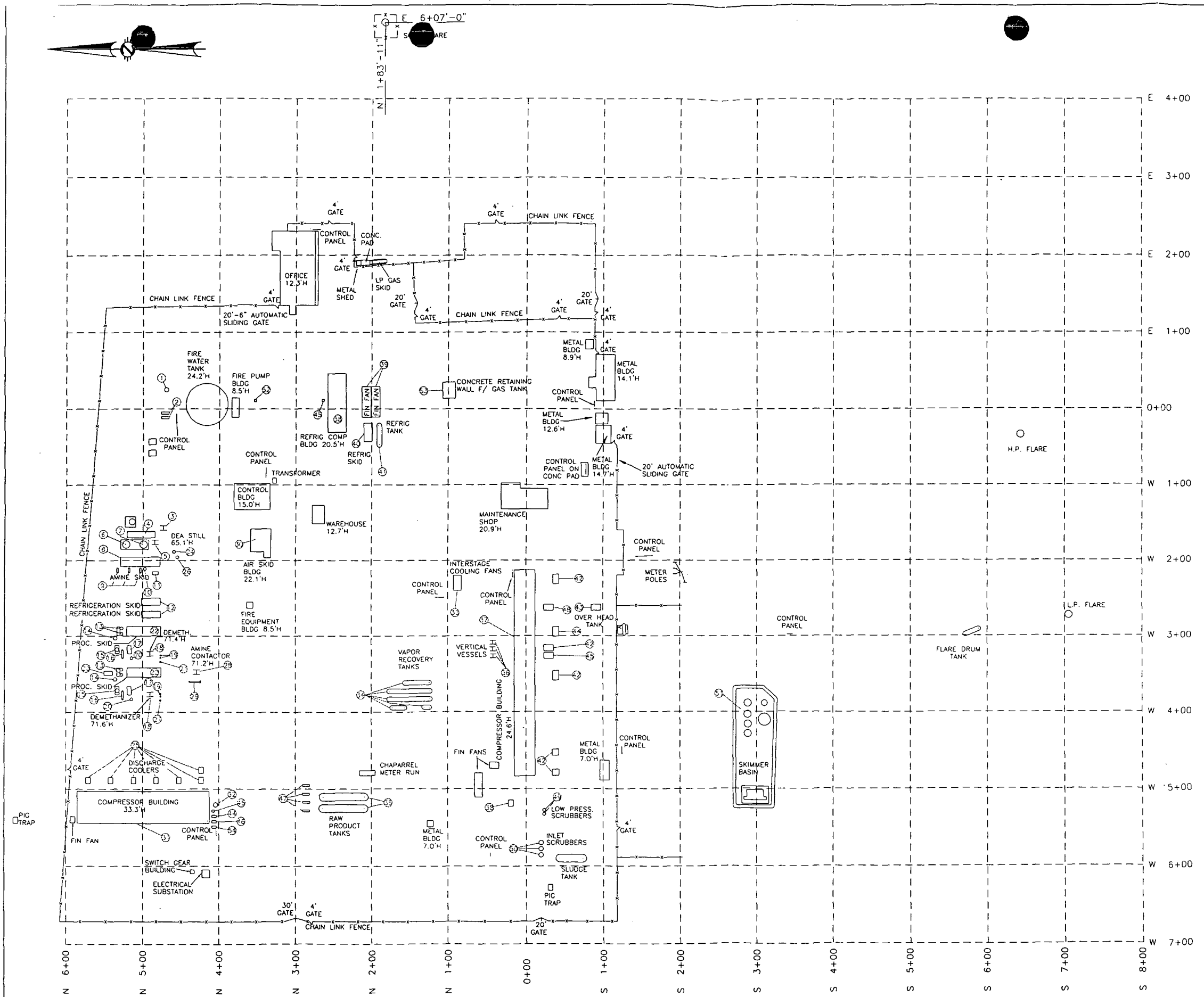
Natural Gas & Gas Products Environmental Contact

Joyce M. Miley
Environmental Consultant
Conoco, Inc., Natural Gas and Gas Products Department
P.O. Box 2197 – Humber 3036
Houston, Texas 777252-2197
(281) 293-4498

Site Contact

Marshall Honeyman
Plant Manager
Conoco Inc. Maljamar Gas Processing Plant
P.O. Box 90
Maljamar, New Mexico 88264
(505) 676-3501

FIGURE



ITEM	NUMBER	EQUIPMENT LIST	CHEMICAL INVENTORY
1	H-760	HOT OIL HEATER (11.1 MMBTU/HR)	HEAT TRANSFER OIL
2	H-750	REGEN GAS HEATERS (1.85 MMBTU/HR) (2)	RESIDUE GAS
3	TK-930	AMINE SUMP	DEA, WATER
4	E-520	AMINE STILL REBOILER	HOT OIL, DEA, WATER
5	T-1300	DEA STILL	DEA, H2S, CO2, WATER
6	AC-700	AMINE COOLER	DEA, WATER
7	AC-705	AMINE STILL CONDENSER	STEAM, H2S, CO2
8		AMINE SKID	DEA,RESIDUE GAS,H2S,CO2,WATER
		- RICH DEA FLASH TANK	TRANSFER OIL, ANTIFOAM INHIBITOR
		- DEA FILTER	
		- AMINE SURGE TANK	
		- ANTIFOAM INHIBITOR PUMP	
		- ANTIFOAM INHIBITOR TANK	
		- AMINE EXCHANGER	
		- HOT OIL EXPANSION TANK	
9		AMINE CIRCULATING PUMPS (3)	DEA, WATER
10	F-830	AMINE CHARCOAL FILTER	DEA, ACTIVATED CARBON
11		SAND FILTER	DEA
12		REFRIGERATION SKID #2	PROPANE, RAW GAS, EPBC
		- PROPANE CHILLER	
		- COLD SEPARATOR	
13	V-110	DEHYDRATORS (2 PER TRAIN, TOTAL OF 4)	RAW GAS, MOLESIEVE
14	F-810	INLET GAS FILTER/SEPARTORS (2)	RAW GAS, WATER
		(ON PROCESS SKIDS)	
15	AC-710	REGEN GAS COOLERS (2)	RESIDUE GAS, AIR
16	V-150	TREATED GAS SEPARATORS (2)	RAW GAS, WATER
17	K,X-600	EXPANDER/COMPRESSORS (2)	RAW GAS
18	T-1000	DEMETHANIZERS (2)	RAW GAS, EPBC, RESIDUE GAS
19	P-104/8	DEMETHANIZER PRODUCT PUMPS (4)	EPBC
20	TK-600	EXPANDER OIL SUMP TANK	LUBE OIL
21	V-260	FUEL GAS SCRUBBERS (2)	RESIDUE GAS
22		PROCESS SKIDS #1&2 (ITEMS PER SKID)	RAW GAS, WATER, EPBC
		- INLET GAS FILTER SEPARATOR	
		- INLET GAS DUST FILTER	
		- REGENERATION GAS COMPRESSOR	
		- WARM GAS/GAS EXCHANGER	
		- COLD GAS/GAS EXCHANGER	
		- PRODUCT HEATER	
		- DEMETHANIZER REBOILER	
		- DEMETHANIZER SIDE HEATER	
		- COLD SEPARATOR	
		- INLET GAS COOLING FAN	
23		METHANOL STORAGE TANK	METHANOL
24	P-47,45	AMINE/WATER MAKE-UP PUMP	DEA, WATER
25		DISCHARGE COOLERS (7)	RAW GAS, RESIDUE GAS
26	TK-910	AMINE STORAGE TANK	DEA
27	AC-715	RESIDUE GAS COOLER	RESIDUE GAS, AIR
28	T-1200	AMINE CONTACTOR	RAW GAS, DEA, WATER
29	E-500	AMINE UNIT - INLET GAS EXCHANGER	RAW GAS, HOT OIL
30		INSTRUMENT AIR BUILDING	INSTRUMENT AIR
31		COMPRESSOR BUILDING	RAW GAS, LUBE OIL
		- GAS DRIVEN INLET COMP.	
		- ELECTRIC DRIVEN INLET COMP.	
		- ELECTRIC DRIVEN INLET/RES COMP.	
		- ELECTRIC DRIVEN INLET COMP. (3)	
32		COMP. BUILDING SUMP	WASTE OIL
33		INTERSTAGE COOLING FANS	RAW GAS, AIR
34		VAPOR RECOVERY SYSTEM (5 VESSELS)	WASTE OIL, LIGHT HYDROCARBONS
35	V-300	RAW PRO. STORAGE TANKS (2)	EPBC
36		INTERSTAGE SCRUBBERS (3)	RAW GAS
37		CLARK COMP. BUILDING	RAW GAS, LUBE OIL
		- RESIDUE COMPRESSOR	
		- INLET COMPRESSORS (7)	
38		COMP. BLDG. (#37) SUMP	WASTE OIL
39	AC-620	PROPANE CONDENSER (2)	PROPANE
40		REFRIGERATION SKID #1	PROPANE, RAW GAS, LUBE OIL
		- PROPANE SUB-COOLER	
		- ECONOMIZER	
		- PROPANE SUCTION SCRUBBER	
		- LUBE OIL COALESCER	
41	V-640	PROPANE ACCUMULATOR	PROPANE
42		WATER/LUBE OIL COOLERS (5)	WATER, LUBE OIL AIR
43		ENGINE OIL STORAGE TANKS (2)	ENGINE OIL
44		ANTIFREEZE STORAGE TANKS	ETHYLENE GLYCOL
45		NALCO CHEMICAL STORAGE (3)	
46		COMP. OIL STORAGE TANK	COMPRESSOR OIL
47		EPBC PIPELINE PUMPS (4)	EPBC
48		WATER STORAGE TANK	WATER
49		LOW PRESSURE SCRUBBERS (2)	RAW GAS
50		INLET SCRUBBERS (3)	RAW GAS
51		SLOP OIL TANKS (5)	WASTE OIL
52		DIESEL STORAGE TANK	DIESEL
53		GASOLINE STORAGE TANK	UNLEADED GASOLINE
54		KEROSINE STORAGE TANKS (1)	KEROSENE
55			

ISSUE	DATE	DRAWN	DESIGNED	CHECKED	APPROVED

ISSUE	DATE	DRAWN	DESIGNED	CHECKED	APPROVED

ISSUE	DATE	DRAWN	DESIGNED	CHECKED	APPROVED
B	6/5/97	RGK			

ADDED (3) VAPOR RECOVERY VESSELS & REV'D EQUIPMENT ITEM #34.

CONOCO

NATURAL GAS & GAS PRODUCTS DEPARTMENT

AFE:

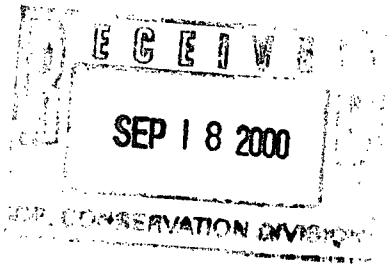
CONOCO NG&GP
MALJAMAR GAS PLANT
PLOT PLAN & CHEMICAL INVENTORY

SCALE: 1"=60'
LOCATION: MALJAMAR GAS PLANT
FILE NO:
MJ20001
REV NO. B

Rudy Quiroz
Operations Tech III
Natural Gas & Gas Products

Conoco Inc.
P.O. Box 90
Maljamar, NM 88264
505-676-3528

September 11, 2000



Mr. Wayne Price
Oil Conservation Division
Energy and Minerals Department
2040 S. Pacheo
Santa Fe, NM 87505

RE: Engineering Plan to Modify the Skimmer Pit Area and Install Impermeable Containment Pursuant to Section 14 D. Discharge Plan GW-020 Renewal

Dear Mr. Price:

Conoco Inc. is pleased to submit this engineering plan to modify the skimmer pit area and install impermeable containment. The engineering plan is in response to the request put forth by the New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division in the Discharge Plan GW-020 Renewal document issued by OCD and dated May 18, 2000.

Enclosed is Conoco's engineering plan to modify the skimmer pit area and install impermeable containment. Included in this plan are modifications to improve the Maljamar Gas Plant handling of waste streams in the facility.

Scope of Work

Conoco Inc. proposes the following scope of work to modify the skimmer pit area and install impermeable containment and improve Maljamar's handling of waste streams in the facility:

1. Maljamar Gas Plant will install a 400-barrel atmospheric tank to replace the skimmer pit. The tank will have proper impermeable containment with the ability to hold one and one third times the capacity of the tank. The tank will handle exempt water waste. The wastewater will be pumped to Conoco Production water tank for their water injection wells under normal operation with the option to truck the wastewater to an OCD approved site when the Production Department is unable to accept the wastewater. Please reference the Liquid Waste Drainage System Flow Diagram.

2. Maljamar Gas Plant will install a 210-barrel atmospheric tank to handle amine waste. The tank will have proper impermeable containment with the ability to hold one and one third times the capacity of the tank. This tank will handle the following waste. Drainage from Charcoal filter, Charcoal sock filter, Amine filter, Amine runoff, amine screen and acid gas flare. The contents of the tank will be disposed at an OCD approved site. Please reference the Amine Handling Diagram.

3. Maljamar Gas Plant will install a 400-barrel atmospheric tank to handle water and waste oil mixture. The tank will have proper impermeable containment with the ability to hold one and one third times the capacity of the tank. The tank will handle the following waste. Waste oil and water from the electric building sump, Clark compressor sumps, and refrigeration sump. These waste streams will be recycled or disposed at an OCD approved site. Please reference the Waste Oil and Water Handling Diagram.

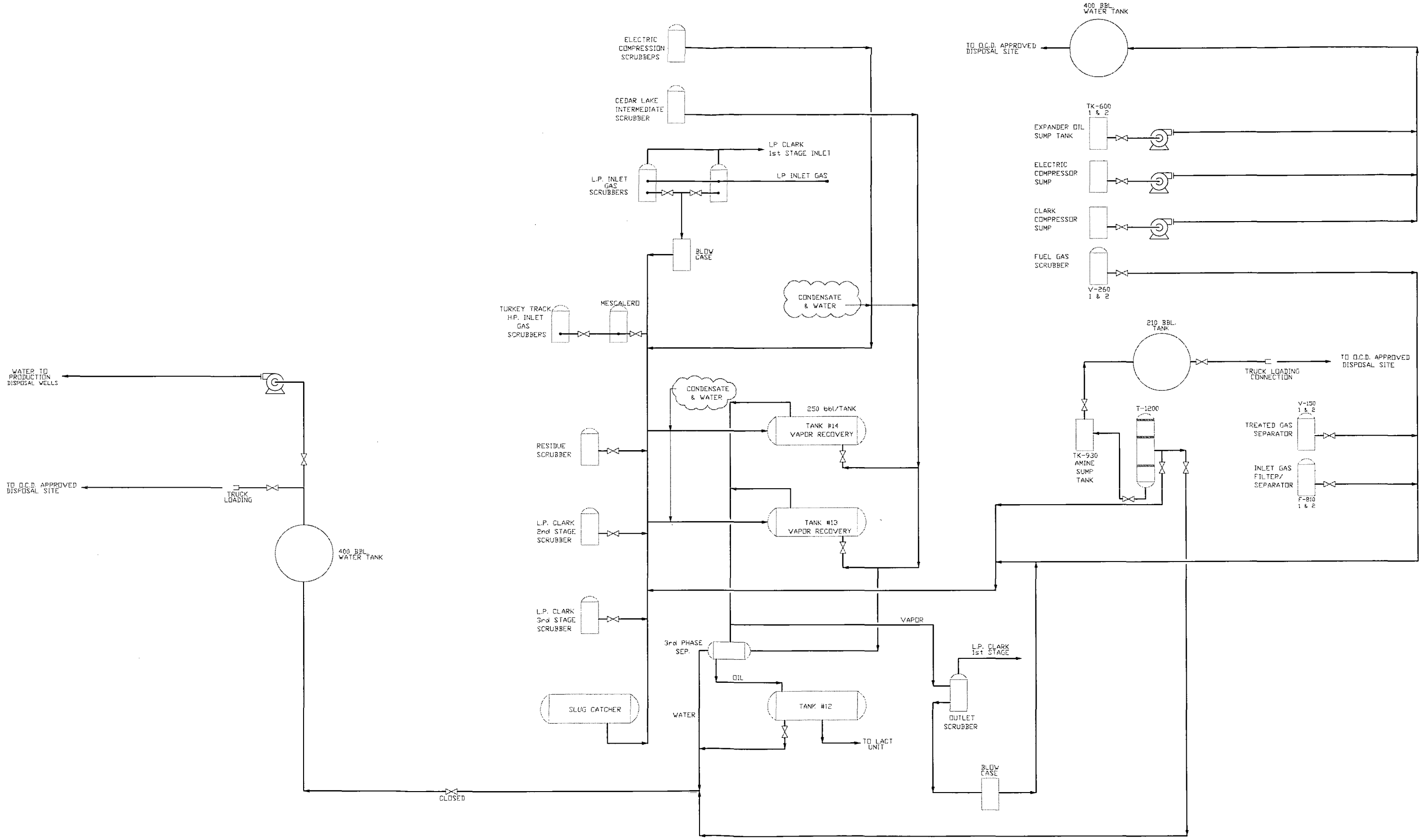
4. Maljamar Gas Plant will install an evaporation pond outside the plant fence. The pond will be filled with the wastewater discharge of the reverse osmosis process. All the proper analytical work will be performed on the water and pre-approved by the OCD. Please reference the Plant Water Balance Diagram.

Conoco Inc. will commence work on this project following receipt of your approval and notification to proceed. If you have any questions or require additional information, please call me at (505) 676-3528. Thank you for your assistance.

Sincerely,

Rudy Quiroz

CC: Joyce Woodfin
File: 215-5-1



NG&GP-MJ-29201

REFERENCE DRAWINGS:

NO.	DATE	REVISION	DRW.	DES.	CHK.	APP.
0	8/25/00	REVISED PER FIELD AS BUILT	PLM	RQ	RQ	RQ
A	01/07/00	ISSUE FOR APPROVAL	PLM			

CONOCO INC.
NATURAL GAS & GAS PRODUCTS DEPARTMENT

MALJAMAR GAS PLANT

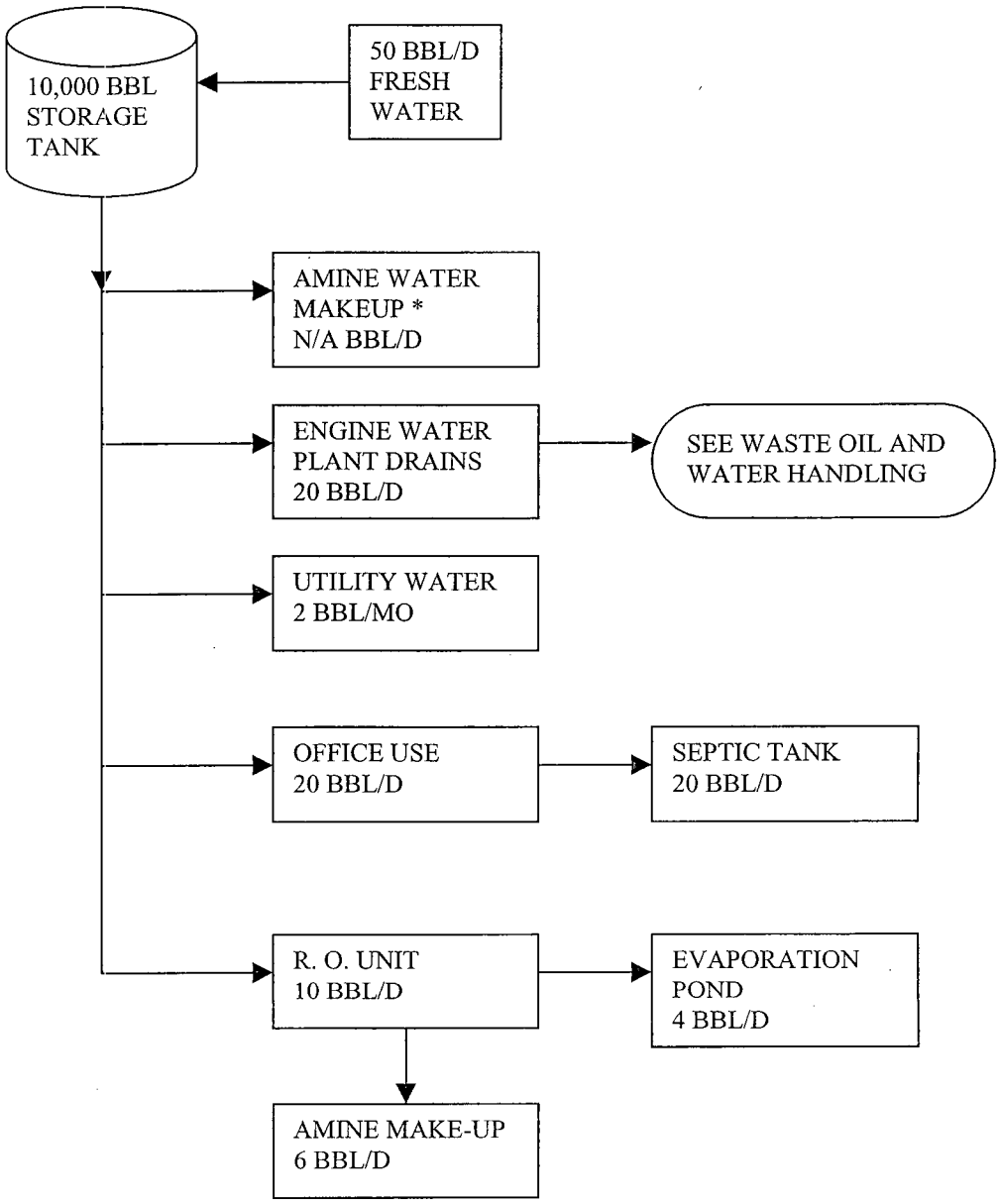
LIQUID WASTE DRAINAGE SYSTEM FLOW DIAGRAM

SCALE: NONE	PLOT SCALE: 1=1
AFE:	LOCATION: MALJAMAR, NM
DWG. NO: NG&GP-MJ-29201	REV. 0

DWG NO. NG&GP-MJ-29201

0025001258 MCGEEPL MJ-29201.DWG

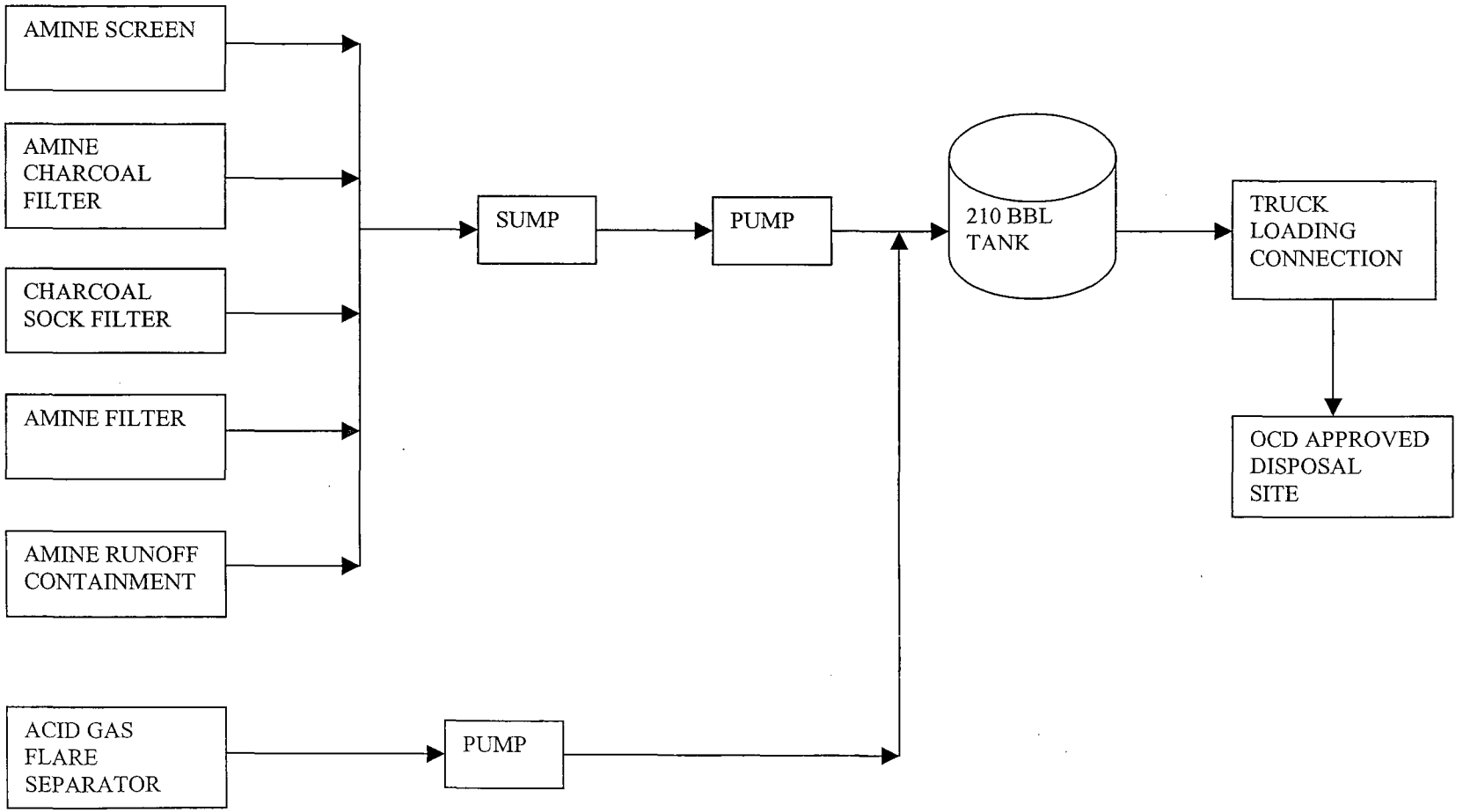
PLANT WATER BALANCE
MALJAMAR GAS PLANT



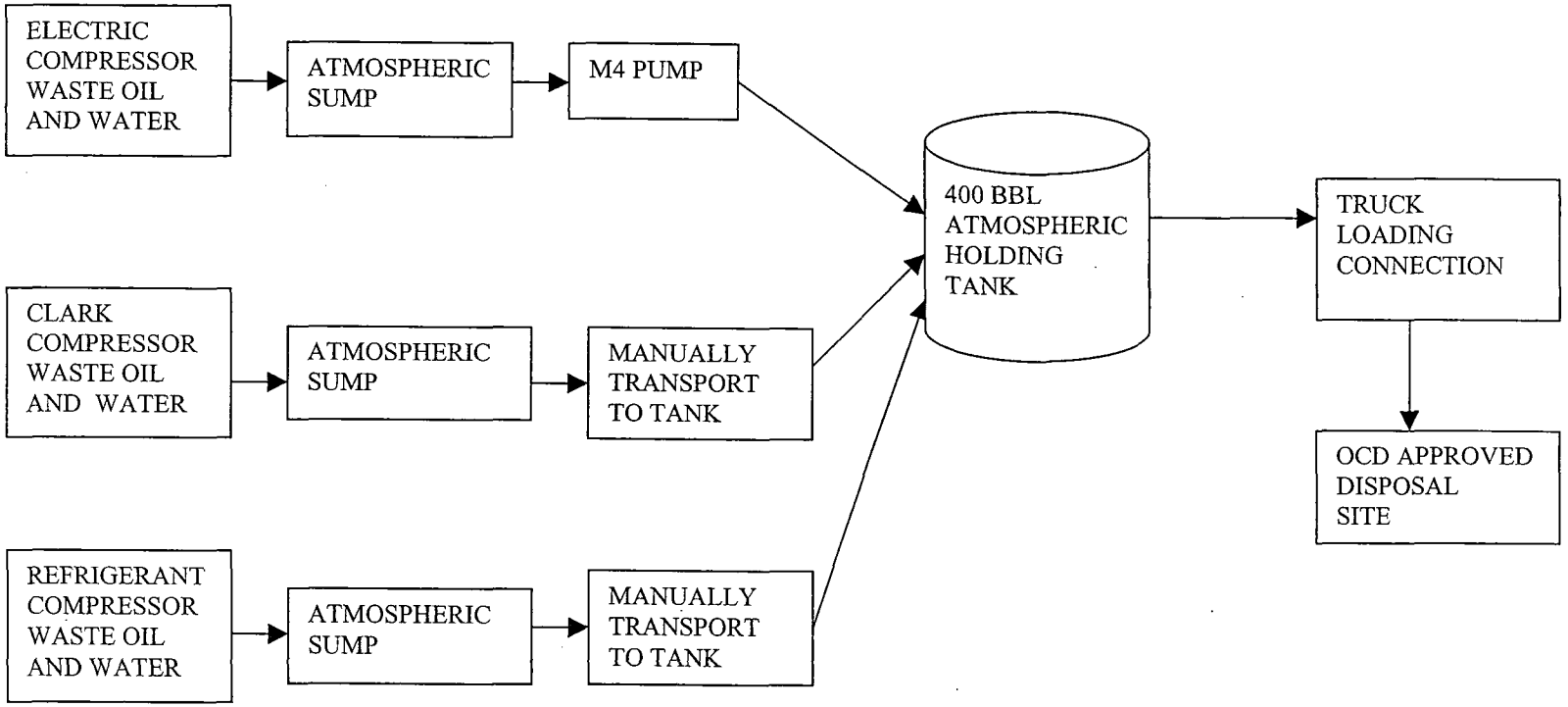
* CLOSED SYSTEM

NG&GP FILE 870299-2

AMINE HANDLING
MALJAMAR GAS PLANT



WASTE OIL AND WATER HANDLING
MALJAMAR GAS PLANT



Rudy Quiroz
Operations Tech III
Natural Gas & Gas Products

Conoco Inc.
P.O. Box 90
Maljamar, NM 88264
505-676-3528

July 13, 2000

Mr. Wayne Price
Oil Conservation Division
Energy and Minerals Department
2040 S. Pacheo
Santa Fe, NM 87505

RE: Work Plan to Address Materials/Waste Stored in South Plant Area, Including an Investigation of the Vadose Zone Pursuant to Section 14 A. Discharge Plan GW-020 Renewal

Dear Mr. Price:

As a result of your inspection of the facility conducted May 9,2000 a work plan was requested to address the materials and wastes stored in the south plant storage area. This plan was to also consist of a vadose zone investigation of the same area. The Clark compressor sump pits and the underground water discharge line were to be tested to demonstrate mechanical integrity no later than July 15, 2000. The test results must be submitted to the OCD in an annual report on August 15, 2000.

Enclosed is Conoco's work plan to dispose of the waste material in the south area. A cover letter from John Skopak and Maxim Technologies work plan for the investigation of the vadose zone in the south area is also enclosed.

In accordance with New Mexico Water Quality Control Commission Regulations the following actions were performed. The Oil Conservation Division in Hobbs and Santa Fe, New Mexico were contacted on July 6, 2000. The Maljamar Gas Plant was giving its 72 hour notice that on July 11, 2000 we would be testing the underground wastewater line and inspecting the Clark sumps. The Clark sumps and discharge line were inspected July 11 and 12 with no signs of leakage or deterioration. All tests results will be enclosed in the August 15 annual report.

If you have any questions or require additional information, please call me at (505) 676-3528. Thank you for your assistance.

Sincerely,

Rudy Quiroz

CC: Joyce Woodfin
File: 215-5-1

Conoco Maljamar Gas Plant
Scope of Work

Conoco Inc. proposes the following scope of work to clean up the south plant storage area:

1. There is a combined estimated 100 cubic yards of spent molesieve and charcoal in the south area. These materials have been tested and are non-hazardous and have been pre-approved to be disposed at the Lea County Landfill. The OCD will be contacted for approval before disposal.

2. There is an estimated 75 cubic yard pile of soil that has been tested. The pile of soil is non-hazardous and will be disposed at the Lea County Landfill. The OCD will be contacted for approval before disposal.

3. There is another 75 cubic yard pile of dirt that has not been tested. This pile of dirt was derived from a recent soil excavation effort to recover an on-site condensate spill. The soil is stockpiled on plastic and bermed to prevent runoff. We are waiting for the final results of the investigation of the spill before we continue work in this area.

4. There is a pile of construction debris that will be removed to the landfill. The OCD will be contacted for approval before disposal.

5. There are thirty 55-gallon drums, six fiberglass tanks and twenty 5-gallon cans that need to be disposed. Three 55-gallon drums, four fiberglass tanks and four 5-gallon cans have liquid that will be tested. The liquid will be disposed of according to the results of the test. The empty drums and cans will be tripled rinsed and disposed. The liquid from the empty drums, tanks and cans triple rinse will be collected and tested. This liquid will be disposed of according to the test results. The OCD will be contacted for approval before disposal.

6. There are several meter houses and scrap metal that need to be disposed. These materials will be hauled off to a scrap metal facility. There are no hazards involved with the disposal of the meter houses or scrap metal. The OCD will be contacted for approval before disposal.

If this scope of work meets your requirements, please return a letter of approval. Contact me if you have any questions (505-676-3528).

Sincerely,

Rudy Quiroz
Operations Tech III
Conoco Inc.

June 13, 2000

Mr. Wayne Price
Oil Conservation Division, Environmental Bureau
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: Work Plan to Address Materials/Waste Stored in South Storage Area, Including an Investigation of the Vadose Zone
Pursuant to Section 14 A. Discharge Plan GW-020 Renewal
Maljamar Gas Plant, Maljamar, New Mexico

Dear Mr. Price:

Attached for your approval is a copy of the work plan submitted to Conoco by Maxim Technologies to address materials and wastes stored in the south plant storage area of the Maljamar Gas Plant. This plan also consists of a vadose zone investigation of the same area. The subsurface investigation is part of, and being carried out under Conoco's Maljamar Gas Plant Groundwater Discharge Plan GW-020 approved on May 18, 2000 by your office. This investigation specifically addresses the requirements of Section 14 Part A.

It is our intention to initiate the scope of work within 10 working days after receiving your notice of approval. Mr. Clyde Yancey of Maxim Technologies will serve as Project Manager for the investigation while Mr. Craig Maddox of Maxim Technologies will perform the fieldwork. Mr. Rudy Quiroz will be Conoco's onsite representative. If you have any questions, please do not hesitate to call me or Clyde Yancey with Maxim Technologies at 505-281-3403

Sincerely,

John E. Skopak
Senior Project Manager

CC: Joyce Woodfin – Conoco NG&GP
Marshall Honeyman – Conoco Maljamar
Clyde Yancey – Maxim Technologies

MAXIM TECHNOLOGIES INC®

RECEIVED

JUL 11 2000

Remediation
Technology

July 10, 2000

Mr. John E. Skopak, Senior Project Manager
Conoco Inc.
600 North Dairy Ashford
Houston, TX 77079-1175

RE: Maljamar Gas Plant, Maljamar, New Mexico
Work Plan to Address Materials/Waste Stored in South Storage Area, Including an Investigation of the Vadose Zone
Pursuant to Section 14 A., Discharge Plan GW-020 Renewal

Dear John:

Maxim Technologies Inc. (Maxim) is pleased to submit this work plan to address materials and wastes stored in the south plant storage area of the Maljamar Gas Plant, and to conduct a vadose zone investigation of the same area. This plan is in response to the request put forth by the New Mexico Energy, Minerals and Natural Resources Department, Oil Conservation Division (OCD) in the Discharge Plan GW-0202 Renewal document issued by OCD and dated May 18, 2000.

Based on information provided by Conoco Inc. (Conoco) and a site visit by Maxim on June 22, 2000, the specific area of concern encompasses approximately 36,000 square feet as depicted on the attached figure. Conoco historically used this area to store surplus or out-of service equipment. At the time of the site visit, Maxim observed numerous metal meter houses, stockpiled soil and one approximate 200-gallon tank (empty). The stockpiled soil was derived from a recent soil excavation effort to recover an on-site condensate spill. The soil was stockpiled on plastic and bermed to prevent runoff onto the native soils.

During the OCD inspection of the gas plant on May 9, 2000, several 55-gallon drums were present in the area of concern. However, at the time of the Maxim inspection, the drums had been removed to appropriate on-site storage facilities. No soil staining was evident in the area of the former drum storage. In fact, no evidence of any soil staining representative of potential environmental concern was evident in the south plant storage area.

8235 Douglas Avenue, Suite 700 LB44 • Dallas, Texas • (214) 369-4395 • Fax (214) 369-4664

Scope of Work

In order to satisfy the OCD request for a vadose investigation of the south plant storage area, Maxim proposes to implement the following scope of work:

1. Maxim will advance ten (10) soil borings on-site and collect soil samples from the borings to establish current soil conditions with respect to any potential environmental impacts resulting from past storage activities in the south plant storage area. The borings will be advanced adjacent to or within areas of current and historical storage activity. It should be noted that depending on any contaminant distribution encountered, additional borings might be required.

2. The borings will be advanced with a truck-mounted drill rig. The drill rig is equipped with air rotary capabilities if refusal is encountered during split spoon sampling. Based on previous work in the area, it is anticipated that the vadose zone boring depths will likely not exceed 40 feet below ground surface.

3. The borings will be continuously sampled during drilling activities and logged according to the Unified Soil Classification System so that observations concerning soil types, lithologic changes, and the environmental condition of the encountered soils can be noted.

4. The soil samples will be field screened with a photo-ionization detector (PID) to detect the presence of volatile organic vapors.

5. All sampling equipment will be steam cleaned and decontaminated between each boring installation. Decontamination water will be contained and disposed of on site per appropriate regulatory procedures.

6. It is anticipated that one soil sample from each boring will be retained and submitted to the laboratory for analyses (more may be required depending on contaminant or lithologic heterogeneity's). The objective of the soil analytical program will be to profile any contaminant distribution with depth, and if required, provide data for determining acceptable risk based closure levels. If in the unlikely case groundwater is encountered prior to reaching unimpacted soil conditions, a soil sample will also be collected from immediately above the groundwater interface. The soil samples will be placed into 4-oz. glass sample jars, sealed with Teflon-lined lids, and placed on ice for transportation to an analytical laboratory where they will be analyzed for total petroleum hydrocarbons (TPH) (USEPA Method 8015), and benzene, toluene, ethyl-benzene, and total xylenes (BTEX) (USEPA Method 8260).

7. If groundwater is encountered, samples will be collected through a temporary monitor well, and analyzed by the methods defined above.

8. Soil cuttings generated by soil boring activities will be spread within the south plant storage area, adjacent to the borings until such time a decision is made regarding additional remediation measures, including but not limited to additional excavation or in-situ methods.

Project Schedule

Maxim is prepared to commence work on this project within tens days following receipt of your notification to proceed.

Project Approach

Mr. Clyde L. Yancey will serve as the Project Manager and will have the authority to commit whatever resources are necessary to support the project team. It will be his responsibility to assure that the Clients needs are met in terms of scope of work and schedule. Mr. Craig Maddox, Environmental Scientist, will perform the fieldwork.

If this Scope of Work and Cost Estimate meet with your approval, please return a signed copy of the attached Project Work Authorization Form as Maxim's authorization to proceed. Please contact Clyde Yancey (214-369-4395) if you have any questions or require additional information.

Sincerely,
MAXIM TECHNOLOGIES, INC.

Clyde L. Yancey, P.G.
Senior Project Manager

Copy to Ashley M. Finnan
Joyce Woodfin
Rudy Quiroz

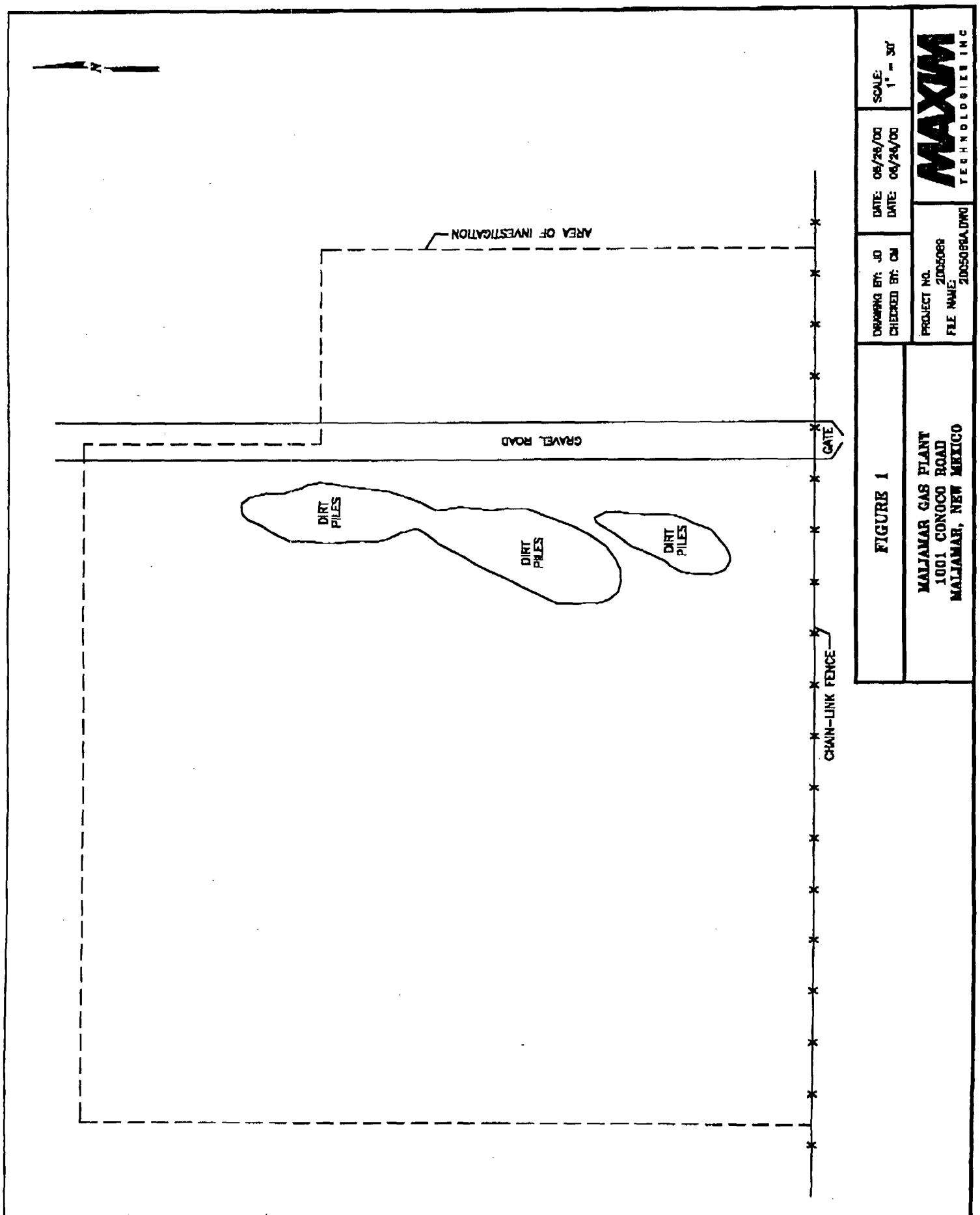


FIGURE 1

MAJAMAR GAS PLANT
1001 CONOCO ROAD
MAJAMAR, NEW MEXICO

DRAWING BY: JD
CHECKED BY: CM

DATE: 05/26/00
DATE: 06/24/00

SCALE: 1" = 30'

PROJECT NO. 20050698
FILE NAME: 20050698A.DWG

MAXIM TECHNOLOGIES INC

John E. Skopak
Senior Project Manager
Remediation Technology
Room PO3054
281-293-5584
Fax: 240-359-4098

Conoco Inc.
P. O. Box 2197
Houston TX 77252-2197

June 14, 2000

Mr. Wayne Price
Oil Conservation Division, Environmental Bureau
2040 S. Pacheco
Santa Fe, New Mexico 87505

RE: Subsurface Investigation, Maljamar Gas Plant
Maljamar, New Mexico

Dear Mr. Price:

I appreciated the opportunity to meet with you in Santa Fe last Monday, June 12, 2000, to discuss the ongoing subsurface investigation at Conoco's Maljamar Gas Plant. The subsurface investigation is part of, and being carried out under Conoco's Maljamar Gas Plant Groundwater Discharge Permit approved on May 18, 2000 by your office.

Pursuant to our referenced meeting, we are presenting you with the attached scope of work for your approval. The purpose of this scope of work is two-fold: (1) continue subsurface delineation efforts related to the horizontal impacts resulting from a historical hydrocarbon release, and (2) demonstrate that existing soil impacts do not threaten groundwater resources. The results derived from the implementation of this work plan will satisfy Section 14B of our Discharge Plan Approval Conditions and will support risk based site closure.

It is our desire to initiate the scope of work as soon as possible, in order to meet the schedule contained within the above referenced Groundwater Discharge Permit. We are planning on starting the work June 21, 2000, and would therefore appreciate your expedited review of the attached document. If you have any questions, please do not hesitate to call me or Clyde Yancey with Maxim Technologies at 214-369-4395.

Sincerely,

John E. Skopak
Senior Project Manager

cc: Joyce Woodfin – Conoco NG&GP
Marshall Honeyman – Conoco Maljamar
Clyde Yancey – Maxim Technologies

MAXIM TECHNOLOGIES INC

June 13, 2000

Mr. John E. Skopak, Senior Project Manager
Conoco Inc.
600 North Dairy Ashford
Houston, TX 77079-1175

RE: Maljamar Gas Plant, Maljamar, New Mexico
Work Plan for the Second Phase Subsurface Investigation
Maxim Proposal Number 2000-069

Dear John:

Maxim Technologies, Inc. (Maxim) is pleased to submit this work plan to conduct the second phase subsurface investigation at the Maljamar Gas Plant located at Maljamar, New Mexico.

The second phase plan will tier off of the work performed during the initial field investigation of April 27 and 28, 2000. The purpose of the second phase is two-fold: (1) continue delineation efforts related to the horizontal impacts resulting from the historical release, and (2) demonstrate that existing soil impacts do not threaten groundwater resources. The results of the second phase investigation will be used to support in-place site closure.

Scope of Work

Based upon the information generated to date, Maxim proposes to provide the following:

1. Maxim anticipates it will advance approximately six (6) soil borings on-site and collect soil samples from the borings to establish current soil conditions with respect to potential hydrocarbon contamination. The borings will tier off of boring B-2 in the northeast corner of the "bermed" area. One boring will initially be installed thirty feet to the east and one thirty feet to the north of boring B-2. Subsequent borings will be installed based on results obtained from the first two borings. It should be noted that depending on boring results, additional borings (more than six) might be required.

2. Following delineation of the historical impacts, one boring will be drilled to a depth of 200 feet below ground surface (bgs) or to the Triassic red beds, which ever is encountered first. This boring will be drilled in an area determined to be free from hydrocarbon impacts so that drilling will not "pull down" any historical contamination. If groundwater is encountered prior to reaching a depth of 200 feet bgs, a temporary monitor well will be installed to determine if the groundwater is under perched conditions, or truly representative of an aquifer. If no groundwater is encountered at 200 feet bgs, a temporary well will be set in the 200-foot boring and left overnight to see if groundwater collects in the boring.

3. The borings will be advanced with a truck-mounted drill rig. The drill rig is equipped with air rotary capabilities if refusal is encountered during split spoon sampling.

4. The borings will be continuously sampled during drilling activities and logged according to the Unified Soil Classification System so that observations concerning soil types, lithologic changes, and the environmental condition of the encountered soil can be noted.

5. The soil samples will be field screened with a photo-ionization detector (PID) to detect the presence of volatile organic vapors.

6. All sampling equipment will be steam cleaned and decontaminated between each boring installation. Decontamination water will be contained and disposed of on site per appropriated regulatory procedures.

7. A minimum of two soil samples from each boring will be retained and submitted to the laboratory for analyses. The objective of the soil analytical program will be to profile the contaminant distribution with depth, and if required, provide data for determining acceptable risk based closure levels. The samples will be placed into 4-oz. Glass sample jars, sealed with Teflon-lined lids, and placed on ice for transportation to an analytical laboratory where they will be analyzed for total petroleum hydrocarbons (TPH) (USEPA Method 8015), and benzene, toluene, ethyl-benzene and total xylenes (BTEX) (USEPA Method 8260).

8. If groundwater is encountered in the 200-foot boring, samples will be collected through a temporary monitor will and analyzed by the methods defined above, as well as for chloride.

9. Soil cuttings generated by soil boring activities will be spread within the bermed area until such time a decision is made regarding additional remediation measures, including but not limited to additional excavation or in-situ methods.

Project Schedule

Maxim is prepared to commence work on this project immediately following receipt of your notification to proceed. Tentatively we are scheduled to initiate the work commencing on June 21, 2000 at the Maljamar facility.

Project Approach

Mr. Clyde L. Yancey will serve as the Project Manager and will have the authority to commit whatever resources are necessary to support the project team. It will be his responsibility to assure that Conoco's needs are met in terms of scope of work and schedule. Mr. Craig Maddox, Environmental Scientist, will perform the fieldwork.

If this scope of work meets with your approval, please return a signed copy of the attached Project Work Authorization Form as Maxim" authorization to proceed. Please contact Clyde Yancey (214-369-4395 or 214-632-6138) if you have any questions or require additional information.

Sincerely,
MAXIM TECHNOLOGIES, INC.

for Clyde L. Yancey, P.G.
Senior Project Manager

Copy to: Ashley M. Finnan
Joyce Woodfin