

3R – 315

2003 AGWMR

08 / 31 / 2004



188 County Road 4900
Bloomfield, NM 87413
(505) 634-4956 Phone
(505) 632-4780 Fax

August 31, 2004

Mr. William Olson
Hydrologist
NM Oil Conservation Division
1220 S. St. Francis Drive
Santa Fe, NM 87505

RE: 2003 GROUND WATER SUMMARY REPORT

Dear Bill:

Enclosed for your review is the Williams 2003 Ground Water Summary Report. The report provides results of ground water monitoring at several sites in the San Juan Basin historically impacted from the use of unlined surface impoundments. The report includes those sites where monitored natural attenuation is ongoing. Work at these sites continues as previously communicated.

Thank you for taking the time to review this report. If you have any questions or need other information, please contact me or Jim Struhs at 505-634-4956.

Respectfully,

A handwritten signature in black ink, appearing to read "Mark Harvey", written over a vertical line.

Mark Harvey
Project Coordinator

Enclosure – 2003 Ground Water Summary Report

Cc: Bill Liess, BLM Farmington Office

Site Summary Report

Site Name: Florance 40

Reporting Period: 2003

Location: Unit G, Sec 21, Twn 30N, Rng 8W
Canyon: Gobernador
Operator: Amoco

Vulnerable Class: original
OCD Ranking: 20
Lead Agency: NMOCD

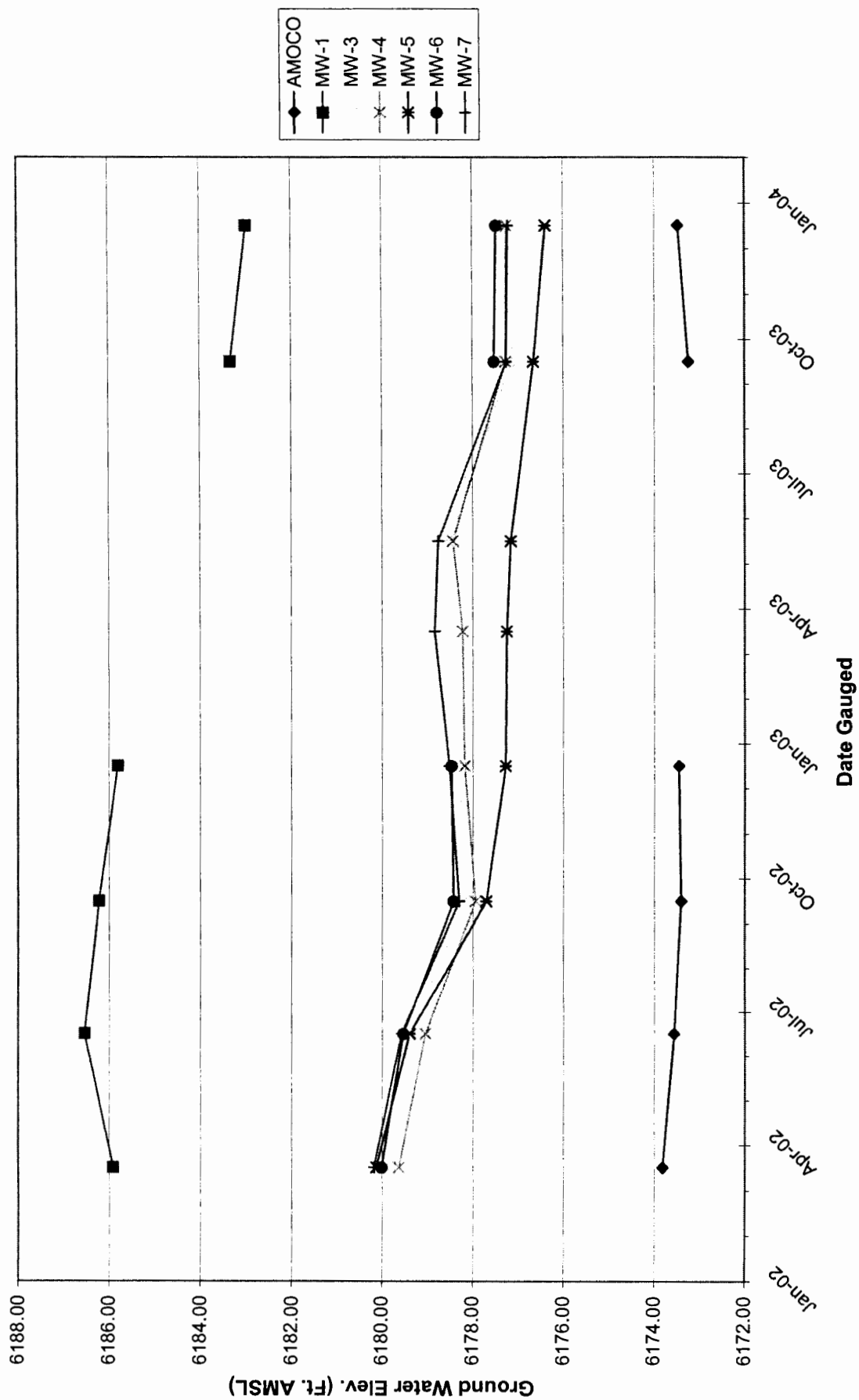
Status Narrative

Responsibility for the remediation of the contaminant plume or plumes has been divided between Amoco Production Company and Williams. In a December 30, 1997 letter to Amoco, the NMOCD required Amoco to address soil and ground water contamination downgradient of Amoco's separator pit, which is located upgradient of the Williams source area. The letter assigned responsibility for ground water contamination downgradient of PNM's former dehydrator pit to PNM (now a Williams' responsibility).

Twenty-five quarters of water quality data have been collected from the seven monitoring wells located at this site. Increased efforts to remove LNAPL accumulations at this site have begun. To date, a total of approximately 3-liters has been removed from the "Amoco" well and wells 1, 3, 4, and 6. Well MW-5, located just upgradient of the Williams area of responsibility and within the downgradient edge of the Amoco area of responsibility had total BTEX concentrations of 136.3 ppb in the first quarter and 1386 ppb in the second quarter. This well was dry in the third and fourth quarters so no sample could be recovered. Well MW-7 continues to show no detectable levels of the BTEX compounds.

Potentiometric surface maps (Figure 2) depict ground water flow generally to the east-southeast at an average hydraulic gradient of 0.05. No significant seasonal variations in flow direction or gradient are evident. The enclosed hydrograph illustrates water-table elevations at the site over the past two years.

Florance #40 Hydrograph



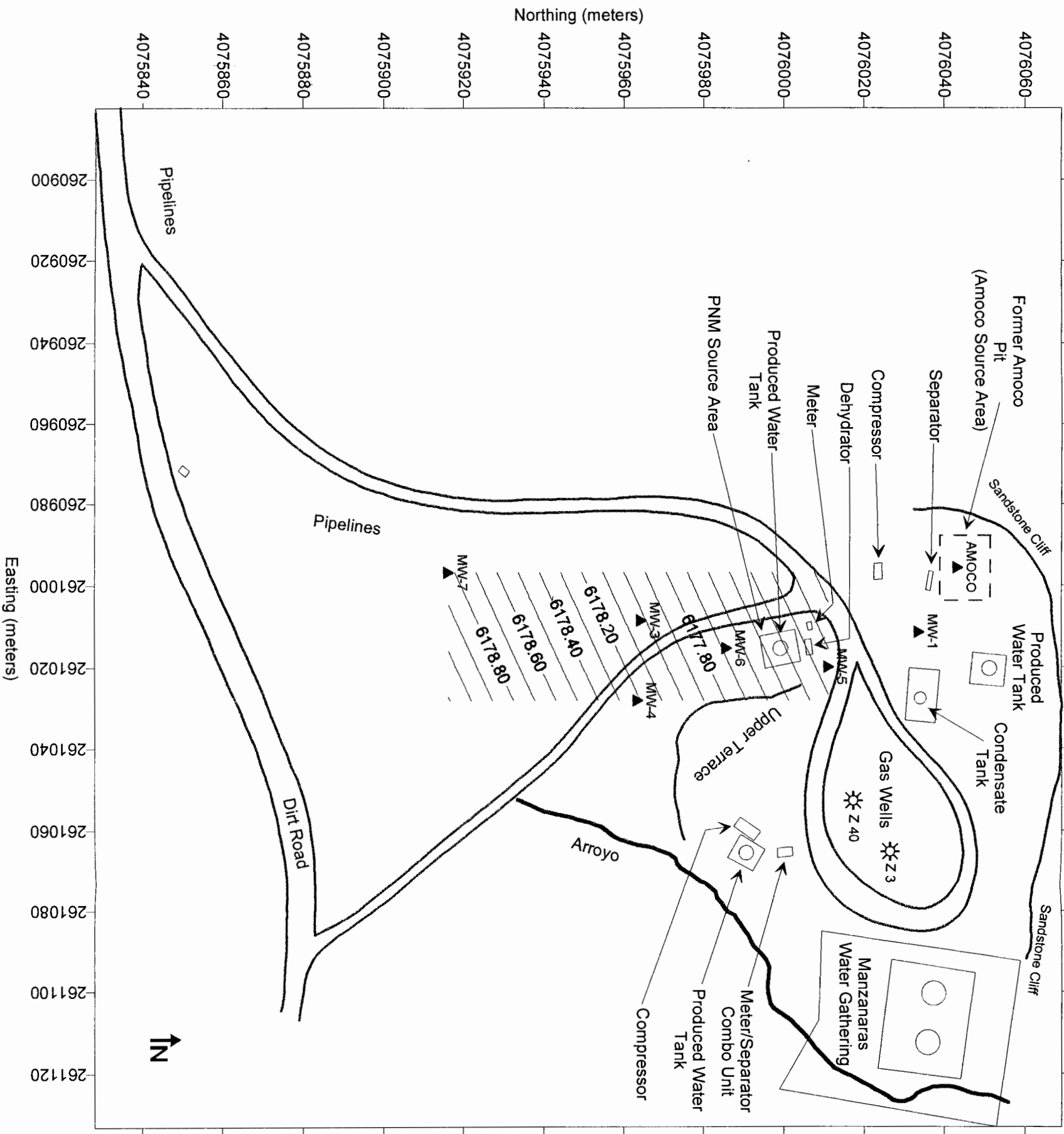


Figure 2
Potentimetric
Surface Map
Florance 40
(March 28, 2003)

LEGEND

- MW-2 ▲ Monitoring Well
- 5585.20 — Ground Water Elevation (ft. AMSL)

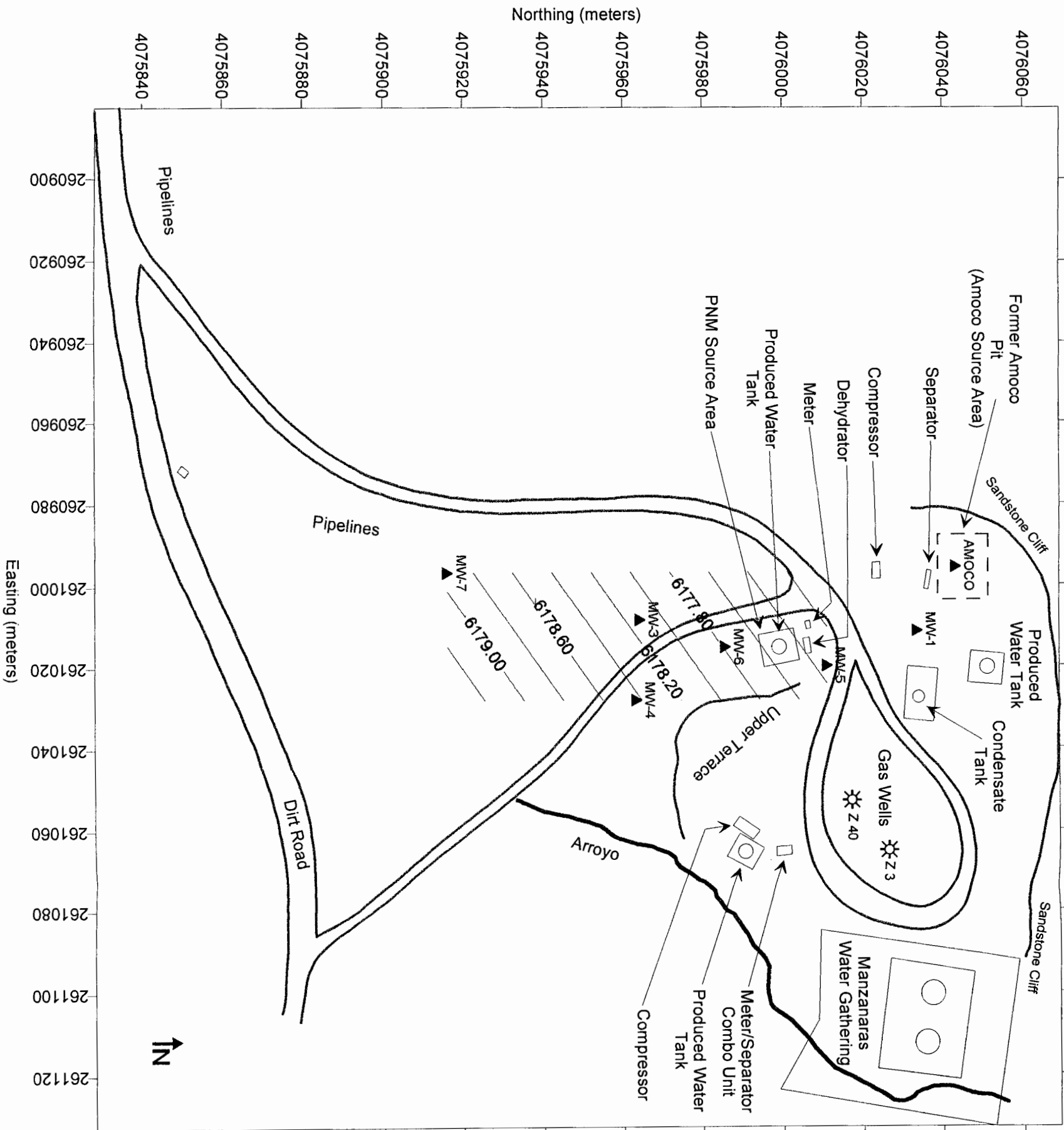


Figure 2
Potentiometric
Surface Map
Florance 40
(May 29, 2003)

LEGEND

- MW-2 ▲ Monitoring Well
- 5585.20 — Ground Water Elevation (ft. AMSL)

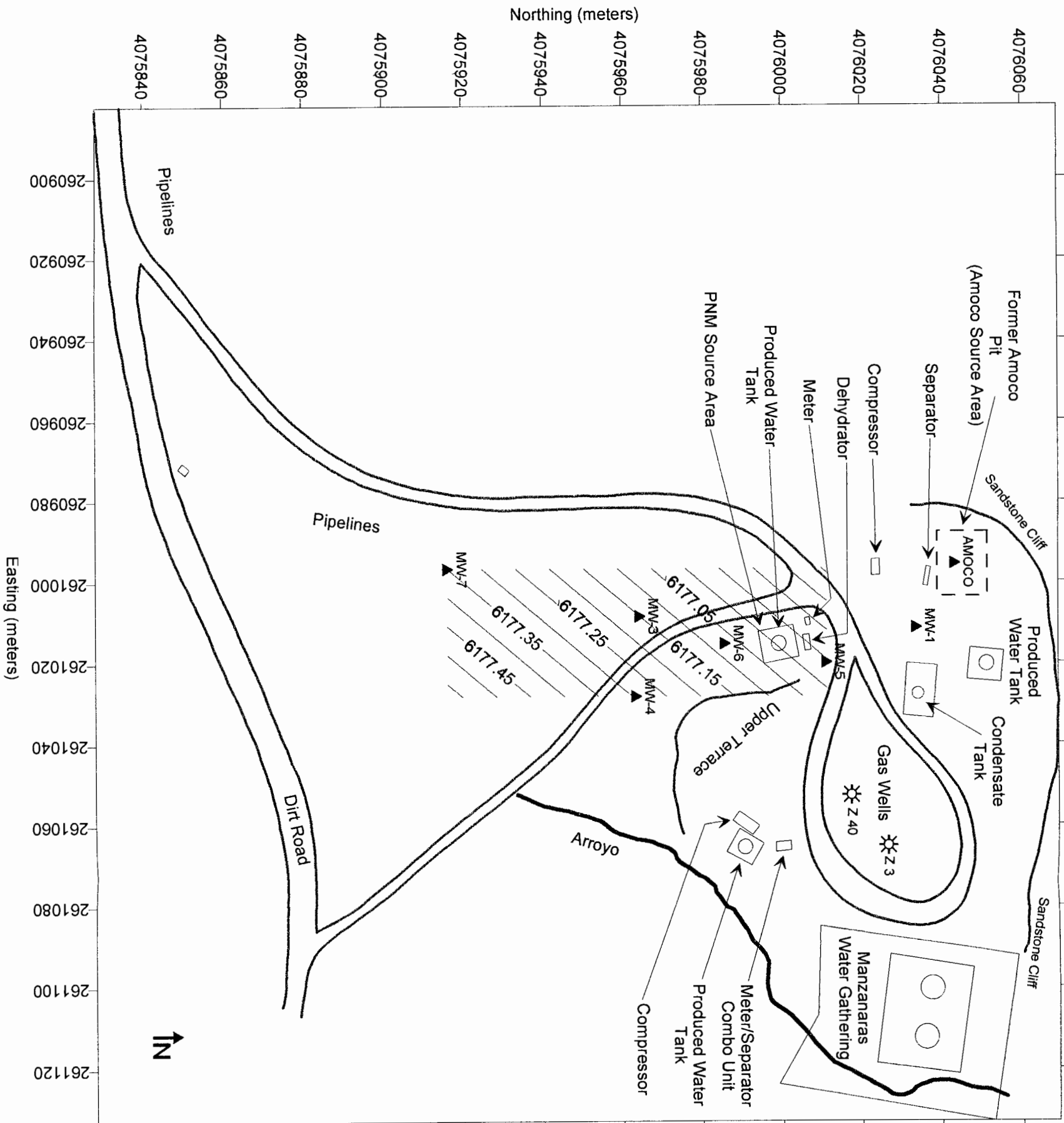
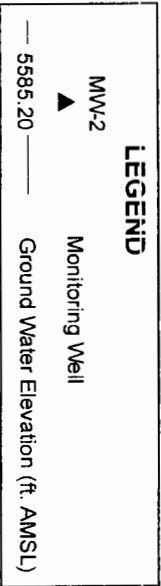


Figure 2
Potentiometric
Surface Map
Florance 40
(September 14, 2003)



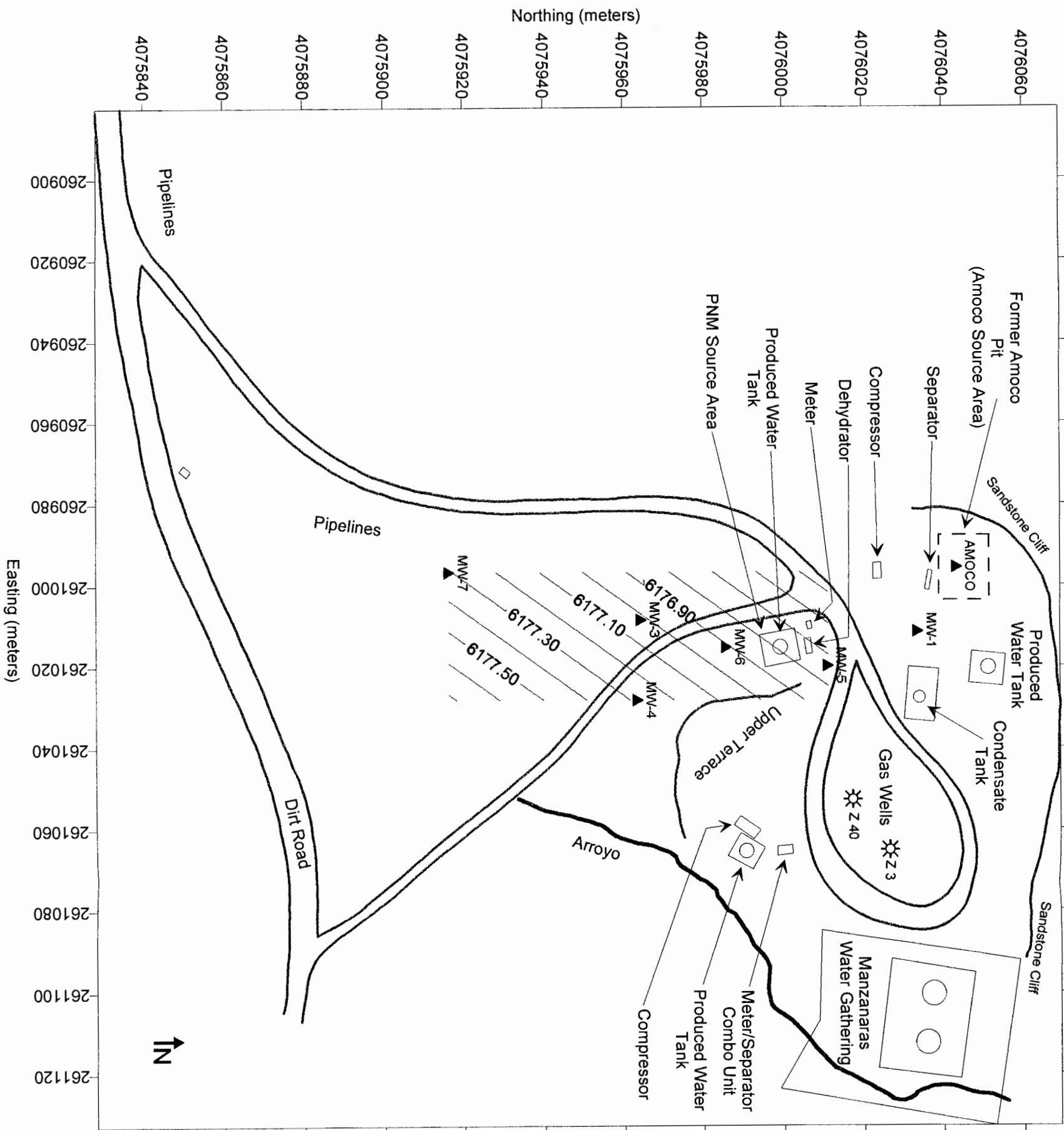


Figure 2
Potentiometric
Surface Map
Florance 40
(December 3, 2003)

LEGEND

- MW-2 ▲ Monitoring Well
- 5585.20 --- Ground Water Elevation (ft. AMSL)

Analytical Data Summary

Site Name:

Florance 40

Reporting Period:

1/1/03 To 12/31/03

Well ID	Sample Date	Sample ID	Benzene ug/l	Toluene ug/l	Ethylbenzene ug/l	Xylene (Total) ug/l
MW-3						
	5/23/03	101723MAY03	96.	17.	63.	190
	12/3/03	125403DEC03	440	ND	760	8600
MW-4						
	3/28/03	100528MAR03	300	100	380	2100
	5/23/03	103423MAY03	400	180	620	3600
MW-5						
	3/28/03	095228MAR03	58.	ND	7.3	71.
	5/23/03	102723MAY03	150	26.	110	1100
MW-7						
	3/28/03	095928MAR03	ND	ND	ND	ND
	5/23/03	104523MAY03	ND	ND	ND	ND
	9/14/03	130714SEP03	ND	ND	ND	ND
	12/3/03	122003DEC03	ND	ND	ND	ND



Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

April 09, 2003

Mr. Jim Struhs
MILE HIGH ENVIRONMENTAL
188 C.R. 4900
Bloomfield, NM 87413

RE: Lab Project Number: 6069056
Client Project ID: SJB-GW/FLRN40

Dear Mr. Struhs:

Enclosed are the analytical results for sample(s) received by the laboratory on April 2, 2003. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Mary Jane Walls
mjwalls@pacelabs.com
Project Manager

Kansas/NELAP Certification Number E-10116

Enclosures

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Services, Inc.

TESTED IN ACCORDANCE

SAMPLE SUMMARY

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6069056
Client Project ID: SJB-GW/FLRN40

Project	Sample				
<u>Sample Number</u>	<u>Number</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
6069056-001	605957596	100528MAR03	Water	03/28/03 10:05	04/02/03 09:30
6069056-002	605957604	095228MAR03	Water	03/28/03 09:52	04/02/03 09:30
6069056-003	605957612	095928MAR03	Water	03/28/03 09:59	04/02/03 09:30

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6069056
Client Project ID: SJB-GW/FLRN40

Lab Sample No: 605957596 Project Sample Number: 6069056-001 Date Collected: 03/28/03 10:05
Client Sample ID: 100528MAR03 Matrix: Water Date Received: 04/02/03 09:30

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
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GC Volatiles

Aromatic Volatile Organics	Method: EPA 8021								
Benzene	300	ug/l	4.0	2.0	04/07/03 23:52 SHF	71-43-2			
Ethylbenzene	380	ug/l	4.0	2.0	04/07/03 23:52 SHF	100-41-4			
Toluene	100	ug/l	4.0	2.0	04/07/03 23:52 SHF	108-88-3			
Xylene (Total)	2100	ug/l	50.	10.0	04/08/03 07:56 SHF	1330-20-7			
a,a,a-Trifluorotoluene (S)	94	%		1.0	04/07/03 23:52 SHF	98-08-8			

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6069056
Client Project ID: SJB-GW/FLRN40

Lab Sample No: 605957604 Project Sample Number: 6069056-002 Date Collected: 03/28/03 09:52
Client Sample ID: 095228MAR03 Matrix: Water Date Received: 04/02/03 09:30

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	58.	ug/l	2.0	1.0	04/08/03 07:28 SHF		71-43-2		
Ethylbenzene	7.3	ug/l	2.0	1.0	04/08/03 07:28 SHF		100-41-4		
Toluene	ND	ug/l	2.0	1.0	04/08/03 07:28 SHF		108-88-3		
Xylene (Total)	71.	ug/l	5.0	1.0	04/08/03 07:28 SHF		1330-20-7		
a,a,a-Trifluorotoluene (S)	109	%		1.0	04/08/03 07:28 SHF		98-08-8		

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Lab Project Number: 6069056
Client Project ID: SJB-GW/FLRN40

Lab Sample No: 605957612 Project Sample Number: 6069056-003 Date Collected: 03/28/03 09:59
Client Sample ID: 095928MAR03 Matrix: Water Date Received: 04/02/03 09:30

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	04/08/03 01:46 SHF		71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	04/08/03 01:46 SHF		100-41-4		
Toluene	ND	ug/l	2.0	1.0	04/08/03 01:46 SHF		108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	04/08/03 01:46 SHF		1330-20-7		
a,a,a-Trifluorotoluene (S)	96	%		1.0	04/08/03 01:46 SHF		98-08-8		

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PARAMETER FOOTNOTES

Dilution factor shown represents the factor applied to the reported result and reporting limit due to changes in sample preparation, dilution of the extract, or moisture content

ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL Adjusted Method Detection Limit
(S) Surrogate

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6069056
Client Project ID: SJB-GW/FLRN40

QC Batch: 142326 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: Aromatic Volatile Organics
Associated Lab Samples: 605957596 605957604 605957612

METHOD BLANK: 605965789
Associated Lab Samples: 605957596 605957604 605957612

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/l	ND	2.0	
Ethylbenzene	ug/l	ND	2.0	
Toluene	ug/l	ND	2.0	
Xylene (Total)	ug/l	ND	5.0	
a,a,a-Trifluorotoluene (S)	%	91		

LABORATORY CONTROL SAMPLE: 605965797

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Footnotes
Benzene	ug/l	20.00	21.62	108	85-120	
Ethylbenzene	ug/l	20.00	20.87	104	87-114	
Toluene	ug/l	20.00	20.30	101	87-114	
Xylene (Total)	ug/l	60.00	63.11	105	88-115	
a,a,a-Trifluorotoluene (S)				99	86-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 605967553 605967561

Parameter	Units	605958057 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Footnotes
Benzene	ug/l	0.9553	20.00	21.70	20.99	104	100	82-121	3	16	
Ethylbenzene	ug/l	0.1301	20.00	20.99	21.08	104	105	84-114	0	14	
Toluene	ug/l	0.3187	20.00	20.19	20.05	99	99	85-112	1	18	
Xylene (Total)	ug/l	0.5420	60.00	62.95	61.91	104	102	83-115	2	16	
a,a,a-Trifluorotoluene (S)						97	96	86-115			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D) Laboratory Control Sample (Duplicate)
MS(D) Matrix Spike (Duplicate)
DUP Sample Duplicate
ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL Adjusted Method Detection Limit
RPD Relative Percent Difference
(S) Surrogate

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

June 03, 2003

Mr. Jim Struhs
MILE HIGH ENVIRONMENTAL
188 C.R. 4900
Bloomfield, NM 87413

RE: Lab Project Number: 6070864
Client Project ID: SJBGW-FLRN40

Dear Mr. Struhs:

Enclosed are the analytical results for sample(s) received by the laboratory on May 28, 2003. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Mary Jane Walls
mjwalls@pacelabs.com
Project Manager

Kansas/NELAP Certification Number E-10116

Enclosures

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6070864
Client Project ID: SJBGW-FLRN40

Project	Sample				
<u>Sample Number</u>	<u>Number</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
6070864-001	606105930	101723MAY03	Water	05/23/03 10:17	05/28/03 08:40
6070864-002	606105948	102723MAY03	Water	05/23/03 10:27	05/28/03 08:40
6070864-003	606105955	103423MAY03	Water	05/23/03 10:34	05/28/03 08:40
6070864-004	606105963	104523MAY03	Water	05/23/03 10:45	05/28/03 08:40

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6070864
Client Project ID: SJBGW-FLRN40

Lab Sample No: 606105930
Client Sample ID: 101723MAY03

Project Sample Number: 6070864-001
Matrix: Water

Date Collected: 05/23/03 10:17
Date Received: 05/28/03 08:40

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	96.	ug/l	2.0	1.0	06/02/03 16:33 SHF		71-43-2		
Ethylbenzene	63.	ug/l	2.0	1.0	06/02/03 16:33 SHF		100-41-4		
Toluene	17.	ug/l	2.0	1.0	06/02/03 16:33 SHF		108-88-3		
Xylene (Total)	190	ug/l	5.0	1.0	06/02/03 16:33 SHF		1330-20-7		
a,a,a-Trifluorotoluene (S)	101	%		1.0	06/02/03 16:33 SHF		98-08-8		

Amoco

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6070864
Client Project ID: SJBGW-FLRN40

Lab Sample No: 606105948 Project Sample Number: 6070864-002 Date Collected: 05/23/03 10:27
Client Sample ID: 102723MAY03 Matrix: Water Date Received: 05/28/03 08:40

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	150	ug/l	5.0	2.5	06/02/03 17:02 SHF		71-43-2		
Ethylbenzene	110	ug/l	5.0	2.5	06/02/03 17:02 SHF		100-41-4		
Toluene	26.	ug/l	5.0	2.5	06/02/03 17:02 SHF		108-88-3		
Xylene (Total)	1100	ug/l	12.	2.5	06/02/03 17:02 SHF		1330-20-7		
a,a,a-Trifluorotoluene (S)	93	%		1.0	06/02/03 17:02 SHF		98-08-8		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6070864

Client Project ID: SJBGW-FLRN40

Lab Sample No: 606105955
Client Sample ID: 103423MAY03

Project Sample Number: 6070864-003
Matrix: Water

Date Collected: 05/23/03 10:34
Date Received: 05/28/03 08:40

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
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GC Volatiles

Aromatic Volatile Organics

Method: EPA 8021

Benzene	400	ug/l	20.	10.0	06/03/03 08:52		71-43-2		
Ethylbenzene	620	ug/l	20.	10.0	06/03/03 08:52		100-41-4		
Toluene	180	ug/l	20.	10.0	06/03/03 08:52		108-88-3		
Xylene (Total)	3600	ug/l	50.	10.0	06/03/03 08:52		1330-20-7		
a,a,a-Trifluorotoluene (S)	108	%		1.0	06/03/03 08:52		98-08-8		

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6070864
Client Project ID: SJBGW-FLRN40

Lab Sample No: 606105963 Project Sample Number: 6070864-004 Date Collected: 05/23/03 10:45
Client Sample ID: 104523MAY03 Matrix: Water Date Received: 05/28/03 08:40

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	06/02/03 17:59		71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	06/02/03 17:59		100-41-4		
Toluene	ND	ug/l	2.0	1.0	06/02/03 17:59		108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	06/02/03 17:59		1330-20-7		
a,a,a-Trifluorotoluene (S)	93	%		1.0	06/02/03 17:59		98-08-8		

?

mw-7

REPORT OF LABORATORY ANALYSIS

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PARAMETER FOOTNOTES

Dilution factor shown represents the factor applied to the reported result and reporting limit due to changes in sample preparation, dilution of the extract, or moisture content

ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
(S)	Surrogate

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Lab Project Number: 6070864
Client Project ID: SJBGW-FLRN40

QC Batch: 146032 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: Aromatic Volatile Organics
Associated Lab Samples: 606105930 606105948 606105955 606105963

METHOD BLANK: 606118321
Associated Lab Samples: 606105930 606105948 606105955 606105963

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/l	ND	2.0	
Ethylbenzene	ug/l	ND	2.0	
Toluene	ug/l	ND	2.0	
Xylene (Total)	ug/l	ND	5.0	
a,a,a-Trifluorotoluene (S)	%	103		

LABORATORY CONTROL SAMPLE: 606118339

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Footnotes
Benzene	ug/l	20.00	23.27	116	85-120	
Ethylbenzene	ug/l	20.00	21.51	108	87-114	
Toluene	ug/l	20.00	21.67	108	87-114	
Xylene (Total)	ug/l	60.00	65.62	109	88-115	
a,a,a-Trifluorotoluene (S)				102	86-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606118651 606118669

Parameter	Units	606117372 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Footnotes
Benzene	ug/l	0.2287	20.00	22.78	22.68	113	112	82-121	0	16	
Ethylbenzene	ug/l	0.3835	20.00	21.09	21.21	104	104	84-114	1	14	
Toluene	ug/l	0.6984	20.00	21.47	21.55	104	104	85-112	0	18	
Xylene (Total)	ug/l	1.152	60.00	63.68	63.64	104	104	83-115	0	16	
a,a,a-Trifluorotoluene (S)						102	99	86-115			

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D) Laboratory Control Sample (Duplicate)
MS(D) Matrix Spike (Duplicate)
DUP Sample Duplicate
ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL Adjusted Method Detection Limit
RPD Relative Percent Difference
(S) Surrogate

REPORT OF LABORATORY ANALYSIS

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September 26, 2003

Mr. Jim Struhs
MILE HIGH ENVIRONMENTAL
188 C.R. 4900
Bloomfield, NM 87413

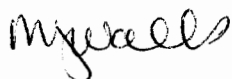
RE: Lab Project Number: 6074787
Client Project ID: FLR40

Dear Mr. Struhs:

Enclosed are the analytical results for sample(s) received by the laboratory on September 19, 2003. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,



Mary Jane Walls
mjwalls@pacelabs.com
Project Manager

Kansas/NELAP Certification Number E-10116

Enclosures

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6074787
Client Project ID: FLR40

Project	Sample				
<u>Sample Number</u>	<u>Number</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
6074787-001	606436376	130714SEP03	Water	09/14/03 13:07	09/19/03 08:30

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6074787

Client Project ID: FLR40

Project			Analysis		Analytes
<u>Sample Number</u>	<u>Sample No</u>	<u>Client Sample ID</u>	<u>Code</u>	<u>Analysis Description</u>	<u>Reported</u>
6074787-001	606436376	130714SEP03	8020 WPAC	Aromatic Volatile Organics	5

REPORT OF LABORATORY ANALYSIS

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Lab Project Number: 6074787
Client Project ID: FLR40

Lab Sample No: 606436376 Project Sample Number: 6074787-001 Date Collected: 09/14/03 13:07
Client Sample ID: 130714SEP03 Matrix: Water Date Received: 09/19/03 08:30

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
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GC Volatiles

Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	09/22/03 16:25 SHF	71-43-2			
Ethylbenzene	ND	ug/l	2.0	1.0	09/22/03 16:25 SHF	100-41-4			
Toluene	ND	ug/l	2.0	1.0	09/22/03 16:25 SHF	108-88-3			
Xylene (Total)	ND	ug/l	5.0	1.0	09/22/03 16:25 SHF	1330-20-7			
a,a,a-Trifluorotoluene (S)	100	%		1.0	09/22/03 16:25 SHF	98-08-8			

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PARAMETER FOOTNOTES

Dilution factor shown represents the factor applied to the reported result and reporting limit due to changes in sample preparation, dilution of the extract, or moisture content

ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL Adjusted Method Detection Limit
(S) Surrogate

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QUALITY CONTROL DATA

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6074787
Client Project ID: FLR40

QC Batch: 153543 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: Aromatic Volatile Organics
Associated Lab Samples: 606436376

METHOD BLANK: 606440816
Associated Lab Samples: 606436376

Parameter	Units	Blank	Reporting	Footnotes
		Result	Limit	
Benzene	ug/l	ND	2.0	
Ethylbenzene	ug/l	ND	2.0	
Toluene	ug/l	ND	2.0	
Xylene (Total)	ug/l	ND	5.0	
a,a,a-Trifluorotoluene (S)	%	101		

LABORATORY CONTROL SAMPLE: 606440824

Parameter	Units	Spike	LCS	LCS	% Rec	Footnotes
		Conc.	Result	% Rec	Limits	
Benzene	ug/l	20.00	20.35	102	85-120	
Ethylbenzene	ug/l	20.00	19.89	99	87-114	
Toluene	ug/l	20.00	19.79	99	87-114	
Xylene (Total)	ug/l	60.00	60.79	101	88-115	
a,a,a-Trifluorotoluene (S)				96	86-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606442028 606442036

Parameter	Units	606436095	Spike	MS	MSD	MS	MSD	% Rec	Max	Footnotes
		Result	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Benzene	ug/l	0.1547	20.00	19.67	19.48	98	97	82-121	1	16
Ethylbenzene	ug/l	0.2368	20.00	20.23	19.90	100	98	84-114	2	14
Toluene	ug/l	0	20.00	19.87	19.42	99	97	85-112	2	18
Xylene (Total)	ug/l	0.1032	60.00	61.51	60.78	102	101	83-115	1	16
a,a,a-Trifluorotoluene (S)						99	97	86-115		

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QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D) Laboratory Control Sample (Duplicate)
MS(D) Matrix Spike (Duplicate)
DUP Sample Duplicate
ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL Adjusted Method Detection Limit
RPD Relative Percent Difference
(S) Surrogate

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

December 15, 2003

Mr. Jim Struhs
MILE HIGH ENVIRONMENTAL
188 C.R. 4900
Bloomfield, NM 87413

RE: Lab Project Number: 6077256
Client Project ID: SJB-GW

FLR 40

Dear Mr. Struhs:

Enclosed are the analytical results for sample(s) received by the laboratory on December 5, 2003. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Mary Jane Walls
Mary Jane.Walls@pacelabs.com
Project Manager

Kansas/NELAP Certification Number E-10116

Enclosures

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6077256

Client Project ID: SJB-GW **FLR 40**

Project	Sample				
<u>Sample Number</u>	<u>Number</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Date Collected</u>	<u>Date Received</u>
6077256-001	606655801	122003DEC03	Water	12/03/03 12:20	12/05/03 09:20
6077256-002	606655819	125403DEC03	Water	12/03/03 12:54	12/05/03 09:20

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Lab Project Number: 6077256
Client Project ID: SJB-GW **FLR40**

Project			Analysis		Analytes	
<u>Sample Number</u>	<u>Sample No</u>	<u>Client Sample ID</u>	<u>Code</u>	<u>Analysis Description</u>	<u>Reported</u>	
6077256-001	606655801	122003DEC03	8020 WPAC	Aromatic Volatile Organics	5	
6077256-002	606655819	125403DEC03	8020 WPAC	Aromatic Volatile Organics	5	

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Lab Project Number: 6077256

Client Project ID: SJB-GW **FLR40**

Lab Sample No: 606655801
Client Sample ID: 122003DEC03

Project Sample Number: 6077256-001

Matrix: Water

Date Collected: 12/03/03 12:20

Date Received: 12/05/03 09:20

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	ND	ug/l	2.0	1.0	12/09/03 17:47		71-43-2		
Ethylbenzene	ND	ug/l	2.0	1.0	12/09/03 17:47		100-41-4		
Toluene	ND	ug/l	2.0	1.0	12/09/03 17:47		108-88-3		
Xylene (Total)	ND	ug/l	5.0	1.0	12/09/03 17:47		1330-20-7		
a,a,a-Trifluorotoluene (S)	104	%		1.0	12/09/03 17:47		98-08-8		

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Lab Project Number: 6077256

Client Project ID: SJB-GW *FLR40*

Lab Sample No: 606655819
Client Sample ID: 125403DEC03

Project Sample Number: 6077256-002
Matrix: Water

Date Collected: 12/03/03 12:54
Date Received: 12/05/03 09:20

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	ReqLmt
GC Volatiles									
Aromatic Volatile Organics	Method: EPA 8021								
Benzene	440	ug/l	100	50.0	12/09/03 18:14		71-43-2		
Ethylbenzene	760	ug/l	100	50.0	12/09/03 18:14		100-41-4		
Toluene	ND	ug/l	100	50.0	12/09/03 18:14		108-88-3		
Xylene (Total)	8600	ug/l	250	50.0	12/09/03 18:14		1330-20-7		
a,a,a-Trifluorotoluene (S)	103	%		1.0	12/09/03 18:14		98-08-8		

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PARAMETER FOOTNOTES

Dilution factor shown represents the factor applied to the reported result and reporting limit due to changes in sample preparation, dilution of the extract, or moisture content

ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
(S)	Surrogate

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QUALITY CONTROL DATA

Pace Analytical Services, Inc.
9608 Loiret Blvd.
Lenexa, KS 66219
Phone: 913.599.5665
Fax: 913.599.1759

Lab Project Number: 6077256
Client Project ID: SJB-GW

QC Batch: 158731 Analysis Method: EPA 8021
QC Batch Method: EPA 8021 Analysis Description: Aromatic Volatile Organics
Associated Lab Samples: 606655801 606655819

METHOD BLANK: 606665461
Associated Lab Samples: 606655801 606655819

Parameter	Units	Blank	Reporting	Footnotes
		Result	Limit	
Benzene	ug/l	ND	2.0	
Ethylbenzene	ug/l	ND	2.0	
Toluene	ug/l	ND	2.0	
Xylene (Total)	ug/l	ND	5.0	
a,a,a-Trifluorotoluene (S)	%	99		

LABORATORY CONTROL SAMPLE: 606665479

Parameter	Units	Spike	LCS	LCS	% Rec	Footnotes
		Conc.	Result	% Rec	Limits	
Benzene	ug/l	20.00	19.42	97	85-120	
Ethylbenzene	ug/l	20.00	19.37	97	87-114	
Toluene	ug/l	20.00	19.45	97	87-114	
Xylene (Total)	ug/l	60.00	59.39	99	88-115	
a,a,a-Trifluorotoluene (S)				102	86-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 606665636 606665644

Parameter	Units	606658334	Spike	MS	MSD	MS	MSD	% Rec	Max	Footnotes
		Result	Conc.	Result	Result	% Rec	% Rec	Limits	RPD	
Benzene	ug/l	0.2181	20.00	18.13	19.42	90	96	82-121	7	16
Ethylbenzene	ug/l	0	20.00	18.97	19.64	95	98	84-114	3	14
Toluene	ug/l	0.1334	20.00	18.09	19.08	90	95	85-112	5	18
Xylene (Total)	ug/l	0.09121	60.00	57.49	59.53	96	99	83-115	3	16
a,a,a-Trifluorotoluene (S)						91	100	86-115		

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QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D) Laboratory Control Sample (Duplicate)
MS(D) Matrix Spike (Duplicate)
DUP Sample Duplicate
ND Not detected at or above adjusted reporting limit
NC Not Calculable
J Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL Adjusted Method Detection Limit
RPD Relative Percent Difference
(S) Surrogate

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