E. L. Harrod Lease

(Located in Section 5, T16S, R35E of Lea County, NM)

Spill Assessment Work Plan

Presented to:

Nadel & Gussman Permian LLC.

601 North Marienfeld, Suite 508
Midland, Texas 79701

Prepared by:

Phoenix Environmental LLC.

P.O. Box 1856
Hobbs, New Mexico 88240

facility - fPAC0604036924
application - pPAC0604037054

TABLE OF CONTENTS

Item	Pages(s)
Section - I	
Spill Overview	1
Discovery	1-2
Assessment and Conclusions	2-4
Option 1) Clay Subsurface Barrier	3
Option 2) Spray-on Urethane Subsurface Barrier	3
Option 3) Natural Analog System Subsurface Barrier	3
Certification	4
Section - II	
On-Site Soil Analyses	5-6
Third Party Laboratory Analyses	7-27
Laboratory Analyses	7-23
Analytical QC Summary Report	24-25
Chain of Custody	26-27
Section - III	
Site Map/Drawing	28-29
Local TOPO Map	28
On-site Mechanical Drawing	29
Section - IV	
Project Site Photos	30-36

Section I

Spill Overview

The E. L. Harrod Lease spill site will be handled as a release as opposed to a routine drilling pit closure. The drilling fluids were lost when the back of the reserve pit was inadvertently cut and the drilling fluids were released into an old caliche pit next to the reserve pit location. The problem then became an issue of concern in groundwater contamination from hydrocarbons or chlorides from the fluids, which impacted the soils in the caliche pit.

The New Mexico Oil Conservation Division ("NMOCD") inspected the release on October 12, 2001. A letter or Notice of Violation was sent to Nadel & Gussman Permian LLC., in November 2001, detailing requirements for remediating the site.

The NMOCD sent another letter on April 22, 2003, reaffirming the release and requesting compliance with the initial letter. Phoenix submitted a preliminary "Work Plan" on the release on May 1, 2003. Approval for the "Work Plan" was received on May 8, 2003. This "Spill Assessment Work Plan" is an answer or extension to the NMOCD letter dated May 8, 2003, outlining proposed remediation of impacted soils to alleviate any concerns for groundwater chloride contamination exceeding the New Mexico Water Quality Control Commission ("WQCC") groundwater standard of 250 mg/l.

Discovery

The E. L. Harrod Lease site is located in the SW/SW of ~~Sec. 5, T16S, and R35E in~~ Lea County, New Mexico. The initial reserve drilling pit site is 122 feet by 121 feet in area. The caliche pit impacted area is 69 feet by 171 feet. The GPS location of the spill site is 32° – 56' – 45" N and 103° – 29' – 12" W with an elevation of 4042 ASL.

The lands primary use is for the production of oil and gas and domestic pasture for ranching operations. The depth to ground water data available from the State Engineers Office is in the 59 feet range. The elevation at the bottom of the caliche pit is 11 feet lower than that of the reserve drilling pit area. This ultimately drops the depth to groundwater below 50 feet and increasing the ranking criteria for maximum points for the release. It is over one thousand feet to the nearest wellhead (windmill) used for domestic water purposes and the nearest water body is greater than 1,000 feet and is not of concern. Please note from the following field and lab analyses that the main concern is for chlorides and that the hydrocarbon constituents do not pose a problem.

Chloride Analyses: *(Ion Chromatograph Solid – EPA 300.0)*

Sample Point	*Description*	*1 foot*	*2 feet*	*3 Feet*	*4 Feet*	*5 Feet*
Background	*Northwest Corner 32° – 56' – 45" N 103° – 29' – 12" W 4035 ASL*	*ND*				
1 1' Drill Mud	*Southwest Corner 32° – 56' – 45" N 103° – 29' – 14" N 4028 ASL*	*7950 ppm*				*3810 ppm*
2 1' Drill Mud	*Southeast Corner 32° – 56' –45" N 103° – 29' – 13" W 4042 ASL*	*2320 ppm*			*2660 ppm*	
3 1.5' Drill Mud	*Northeast Corner 32° – 56' – 45" N 103° – 29' 12" W 4043 ASL*	*3770 ppm*		*653 ppm*		
4 2.5' Drill Mud	*Northwest Corner 32° – 56' – 46" N 103° – 29' 13" W 4045 ASL*	*5100 ppm*			*4590 ppm*	
5 4' Drill Mud	*Pit Center 32° – 56' – 45" N 103° - 29' 13" W 4044 ASL*	*6260 ppm*		*7460 ppm*		
6 1' Drill Mud	*North End West Spill 32° – 56' – 46" N 103° – 29' 14" W 4040 ASL*	*3620 ppm*		*2500 ppm*		
7 2.75' Drill Mud	*Center West Spill Area 32° – 56' 45" N 103° – 29' 14" W 4041 ASL*	*6560 ppm*		*5500 ppm*		
8 1' Drill Mud	*South End West Spill 32° – 56' – 45" N 103° – 29' 15" W 4038 ASL*		*990 ppm*	*3490 ppm*		

Field TPH Analysis Results *(Please refer to attached field analysis sheets).*

Sample Point	*1 foot*	*Composite – 5 grab samples around spill area (25' radius)*
Reserve Drilling Pit – Center	*37 ppm*	*14 ppm*
Spill – Caliche Pit - Center	*28 ppm*	*10 ppm*

Assessment and Conclusions:

The NMOCD regulates the remediation and disposal of non-domestic wastes resulting from the oil and gas industry. In addition, the NMOCD administers all Water Quality Act regulations pertaining to surface and ground water except sewage for the oil and gas industry. This authority includes the disposition of non-domestic, non-hazardous wastes at oilfield facilities.

To restate the potential of concern, the chloride concentration is the main concern for the remediation of the spill. Utilizing the spill areas listed in the Discovery Section, the

reserve drilling pit site is 122 feet by 121 feet in area and the caliche pit impacted area is 69 feet by 171 feet. Utilizing a composite number of 2 feet of drilling mud over these areas, there would be approximately 1968 cubic yards of drilling mud and cuttings with high chloride concentrations. Extrapolating the depth of the underlying impacted caliche for an overall composite depth of 5 feet, there is another 4919 cubic yards of impacted caliche with mid to high levels of chloride concentrations.

We would propose to transport the combined total of yardage estimated at 6887 cubic yards for disposal at a permitted NMOCD facility. We would then propose to finish the excavation of the caliche pit to make certain that any chloride impacted soils with concentrations above 250 ppm be placed in the excavated reserve drilling pit that has a clay bottom installation. The compacted clay bottom will be 1 foot thick. Following the placement of the impacted soils in a convex lens shape into the reserve drilling pit, an estimated volume of 2,500 to 3,000 cubic yards, we are proposing the completion of the project utilizing one of the following three options:

Option 1) *We would cap the reserve drilling pit impacted soils with 1 foot of compacted clay and finish backfilling from the caliche pit, a minimum of three feet of soil (caliche) and contour in a crown to discourage ponding. The caliche pit would then be contoured and filled from within the pit area.*

Option 2) *We would place the impacted soils in the bottom of the reserve drilling pit, but we would use a spray-on urethane liner over scrim of approximately 30 to 60 mils in thickness to create an impermeable barrier over the impacted soils, then backfill with 1 foot of sand and finish backfilling with caliche. Geomembranes in landfills and subsurface barriers are normally a minimum of 30 mils (0.76 mm) in thickness. We would propose doubling this amount to insure the integrity of the liner.*

Option 3) *We would utilize the same clay bottom listed above and placement of the impacted soils, but as a viable option to the above, Phoenix has a patented technology, called Natural Analog System ("NAS"), that it controls in the Permian Basin. The NAS artificially induces geologic and chemical processes to form natural products with the goal of reducing or eliminating permeability and porosity (natural or artificially created) in host soil and rock. The chemical process utilizes an analog of a natural geologic process by which unconsolidated sediments are gradually converted to rock by cementation and pore filling. In general, the process involves induced precipitation of calcium carbonate (in the form of calcite) in quantities sufficient to fill cracks, fissures or other voids in existing rock or soil layers.*

The technological strategy emphasizes compatibility with natural conditions, and utilizes a natural analog process—thus the results and predicted durability of a treatment can be evaluated by comparison with natural geologic examples. The chemical process stiffens of solidifies soil/rock masses in a way that is analogous to the natural formation of sedimentary rock.

The above options leave a portion of the impacted soils that will be entombed on-site instead of hauling off-site for disposal. The drilling mud and cuttings that are normally exempted, since they are extremely high in chloride concentrations, would be hauled along with a large portion of the impacted soils. The remainder of the impacted soils would be entombed in the reserve-drilling pit on-site.

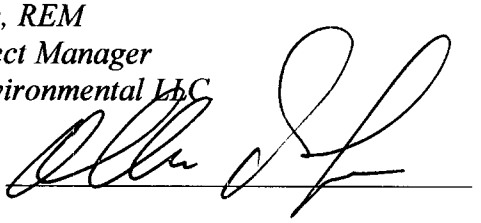
Any one of these technologies could be used throughout the Permian Basin to control the possible contamination of ground water due to chlorides or hydrocarbons. All are designed to shed any water from entering the entombed impacted soils around the subsurface barrier. The Natural Analog Systems could provide a technology for chloride contamination by the conversion of the soils on-site, especially caliche, into calcite and avoid contaminating precious groundwater.

We feel that anyone of the above approaches would alleviate any future potential for groundwater contamination from the release. Once all the concerns of the NMOCD have been addressed, a final site closure report will be prepared to include a summary; third party laboratory analyses; and site maps and site photos.

Certification:

The following Phoenix Environmental personnel have reviewed this report and verified that to the best of their knowledge the contents are true and correct.

Allen Hodge, REM
Senior Project Manager
Phoenix Environmental LLC

Signature: 

Registered Environmental Manager #7096
National Registry of Environmental Professionals

Charles E. Slavens, REM
Senior Project Manager
Phoenix Environmental LLC.

Signature: 

Registered Environmental Manager #7093
National Registry of Environmental Professionals

Section II

Phoenix Environmental, LLC.
P.O. Box 1856 – 2113 French Drive
Hobbs, New Mexico 88241
505.391.9685 – FAX: 505.391.9687

SOIL ANALYSIS REPORT

Date: May 22, 2003
Client: Nadel & Gussman Permian LLC.
Supervisor: Allen Hodge
Sample Matrix: Soil

Facility: E. L. Harrod Lease
Test Method: EPA 418.1
Order No.:
Sample Received: Intact on site

Sample	TPH		CL		Depth	Location
#1	37	ppm		ppm	1 foot	Reserve Drilling Pit - Center
#2	14	ppm		ppm	1 foot	Composite – Drilling Pit
#3		ppm		ppm		
#4		ppm		ppm		
#5		ppm		ppm		
#6		ppm		ppm		
#7		ppm		ppm		
#8		ppm		ppm		
#9		ppm		ppm		
#10		ppm		ppm		

COMMENTS: Samples do not appear to pose a problem for spill remediation.

Phoenix Environmental, LLC.
P.O. Box 1856 - 2113 French Drive
Hobbs, New Mexico 88241
505.391.9685 - FAX: 505.391.9687

SOIL ANALYSIS REPORT

Date: May 22, 2003
Client: Nadel & Gussman Permian LLC.
Supervisor: Allen Hodge
Sample Matrix: Soil

Facility: E. L. Harrod Lease
Test Method: EPA 418.1
Order No.:
Sample Received: Intact on site

Sample	TPH		CL		Depth	Location
#1	28	ppm		ppm	1 foot	Caliche Pit - Center
#2	10	ppm		ppm	1 foot	Composite – Caliche Pit
#3		ppm		ppm		
#4		ppm		ppm		
#5		ppm		ppm		
#6		ppm		ppm		
#7		ppm		ppm		
#8		ppm		ppm		
#9		ppm		ppm		
#10		ppm		ppm		

COMMENTS: Samples do not appear to pose a problem for spill remediation.

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #1@-1ft SWC
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-01A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						**Analyst: KAH**
Chloride	7950	800		mg/Kg	1	6/6/2003

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #1@-5ft SWC
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-02A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: KAH
Chloride	3810	800		mg/Kg	1	6/6/2003

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #2@-1ft SEC
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-03A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: **KAH**
Chloride	2320	800		mg/Kg	1	6/6/2003

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #2@-4ft SEC
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-04A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: **KAH**
Chloride	2660	800		mg/Kg	1	6/6/2003

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #3@-1ft NEC
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-05A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: KAH
Chloride	3770	800		mg/Kg	1	6/6/2003

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #3@-3ft NEC
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-06A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: **KAH**
Chloride	653	80.0		mg/Kg	1	6/6/2003

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #4@-1ft NWC
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-07A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: KAH
Chloride	5100	800		mg/Kg	1	6/6/2003

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #4@-4ft NWC
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-08A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: **KAH**
Chloride	4580	800		mg/Kg	1	6/6/2003

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #5@-1ft Center
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-09A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: **KAH**
Chloride	6260	800		mg/Kg	1	6/6/2003

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #5@-3ft Center
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-10A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: KAH
Chloride	7460	800		mg/Kg	1	6/6/2003

Qualifiers:				
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #6@-1ft WSA-N
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-11A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: KAH
Chloride	3620	800		mg/Kg	1	6/6/2003

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #6@-3ft WSA-N
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-12A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: **KAH**
Chloride	2500	80.0		mg/Kg	1	6/6/2003

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #7@-1ft WSA-C
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-13A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: KAH
Chloride	6560	600		mg/Kg	1	6/6/2003

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #7@-3ft WSA-C
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-14A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: **KAH**
Chloride	5500	80.0		mg/Kg	1	6/6/2003

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #8@-2ft WSA-S
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-15A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: KAH
Chloride	990	60.0		mg/Kg	1	6/6/2003

Qualifiers:	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
	S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Test Hole #8@-4ft WSA-S
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-16A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: **KAH**
Chloride	3490	80.0		mg/Kg	1	6/6/2003

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT:	Phoenix Env. LLC	**Client Sample ID:**	Background@-1ft NWC-Pit
Lab Order:	0306026	**Location:**	E.L. Harrod Lease, Lea Co., NM
Project:	Nadel & Gussman	**Collection Date:**	6/2/2003
Lab ID:	0306026-17A	**Matrix:**	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ION CHROMATOGRAPH SOLID (EPA 300.0)						Analyst: **KAH**
Chloride	ND	8.00		mg/Kg	1	6/6/2003

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
S	Spike Recovery outside accepted recovery limits		

Anachem, Inc.

Date: *09-Jun-03*

CLIENT: Phoenix Env. LLC
Work Order: 0306026
Project: Nadel & Gussman

ANALYTICAL QC SUMMARY REPORT

BatchID: R24051

Sample ID MB-R24051	SampType: MBLK	TestCode: Ic_S	Units: mg/Kg	Prep Date:	RunNo: 24051
Client ID:	Batch ID: R24051	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258780

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	8.00									

Sample ID LCS	SampType: LCS	TestCode: Ic_S	Units: mg/Kg	Prep Date:	RunNo: 24051
Client ID:	Batch ID: R24051	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258794

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	5.200	1.00	5	0	104	80	120	0	0		

Sample ID LCSD	SampType: LCSD	TestCode: Ic_S	Units: mg/Kg	Prep Date:	RunNo: 24051
Client ID:	Batch ID: R24051	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258795

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.800	1.00	5	0	96	80	120	5.2	8.00	15	

Sample ID 0306026-01AMS	SampType: MS	TestCode: Ic_S	Units: mg/Kg	Prep Date:	RunNo: 24051
Client ID: Test Hole #1@-1ft S	Batch ID: R24051	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258783

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	12400	800	5000	7950	89	80	120	0	0		

Sample ID 0306026-01AMSD	SampType: MSD	TestCode: Ic_S	Units: mg/Kg	Prep Date:	RunNo: 24051
Client ID: Test Hole #1@-1ft S	Batch ID: R24051	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258784

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	12800	800	5000	7950	97	80	120	12400	3.17	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Phoenix Env. LLC
Work Order: 0306026
Project: Nadel & Gussman

ANALYTICAL QC SUMMARY REPORT

BatchID: R24052

Sample ID MB-R24052	SampType: MBLK	TestCode: ic_S	Units: mg/Kg	Prep Date:	RunNo: 24052
Client ID:	Batch ID: R24052	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258796

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	8.00									

Sample ID LCS	SampType: LCS	TestCode: ic_S	Units: mg/Kg	Prep Date:	RunNo: 24052
Client ID:	Batch ID: R24052	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258808

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.800	1.00	5	0	96	80	120	0	0		

Sample ID LCSD	SampType: LCSD	TestCode: ic_S	Units: mg/Kg	Prep Date:	RunNo: 24052
Client ID:	Batch ID: R24052	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258809

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	4.800	1.00	5	0	96	80	120	4.8	0	15	

Sample ID 0306026-11AMS	SampType: MS	TestCode: ic_S	Units: mg/Kg	Prep Date:	RunNo: 24052
Client ID: Test Hole #6@-1ft	Batch ID: R24052	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258799

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	9140	800	5000	3620	110	80	120	0	0		

Sample ID 0306026-11AMSD	SampType: MSD	TestCode: ic_S	Units: mg/Kg	Prep Date:	RunNo: 24052
Client ID: Test Hole #6@-1ft	Batch ID: R24052	TestNo: E300.0		Analysis Date: 6/6/2003	SeqNo: 258800

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	8470	800	5000	3620	97	80	120	9140	7.61	20	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Purchase Order/Chain Of Custody

Page____of____

Anachem, Inc. 8 Prestige Circle, Suite 104, Allen, TX 75002 Phone: 972-727-9003 Fax: 972-727-9686

Report To: ALLEN Hodge / Ed. & Steve	Bill To: (Buyer) PHOENIX
Company: PHOENIX ENVIRONMENTAL LLC	Purchase Order #:
Address: P.O. BOX 1856	Address: SAME
City, State, Zip: Hobbs, NM 88240	City, State, Zip:
Phone: 391-9685 Fax: 391-9687	Phone: — Fax: —
Project Name: NADEL + GUSSMAN	Quote #:
Project Location: E. L. HARROD LEASE City, State: LEA CO. NM	
Date Due: ASAP Rush: 0% 25% 50% 100% Sampled By: ALLEN Hodge	

Lab#	Client Sample ID	Matrix	Date/Time	Sample Notes	Analysis: CL chlorides
0306026-01	1. TEST Hole #1 @ -1' SWC	Soil	6203	ICE	X
-02	2. TEST Hole #1 @ -5' SWC		6203		X
-03	3. TEST Hole #2 @ -1' SEC		6203		X
-04	4. TEST Hole #2 @ -4' SEC		6203		X
-05	5. TEST Hole #3 @ -1' NEC		6203		X
-06	6. TEST Hole #3 @ -3' NEC		6203		X
-07	7. TEST Hole #4 @ -1' NWC		6203		X
-08	8. TEST Hole #4 @ -4' NWC		6203		X
-09	9. TEST Hole #5 @ -1' CENTER		6203		X
-10	10. TEST Hole #5 @ -3' CENTER		6203		X

Relinquished By	Date	Time	Received By	Date	Time
	6303	1200		6/4/03	10:05AM

3°C

In the event that Anachem determines that a sample is hazardous; the client agrees to:
Pay For Sample Disposal____
Accept Returned Sample____ FedEx

Work Order #: 0306026

010 REV 1/00 Sample information is vital for proper login and reporting. This is a contract subject to the terms and conditions on the reverse side.

Purchase Order/Chain Of Custody

Page____of____

Anachem, Inc. 8 Prestige Circle, Suite 104, Allen, TX 75002 Phone: 972-727-9003 Fax: 972-727-9686

Report To: Allen Hodge/Eddie Slaughter	Bill To: (Buyer) Phoenix
Company: Phoenix Environmental LLC	Purchase Order #:
Address: P.O. Box 1856	Address: Same
City, State, Zip: Hobbs, NM 88240	City, State, Zip:
Phone: 391-9685 Fax: 391-9687	Phone: Fax:
Project Name: Nadel & Gossman	Quote #:
Project Location: EL Harrod Lease	City, State: Lea Co. NM
Date Due: ASAP Rush: 0% 25% 50% 100%	Sampled By: Allen Hodge

Lab#	Client Sample ID	Matrix	Date/Time	Sample Notes	Analysis: Cl chlorides
0306026-11	1. Test hole #6 @ -1' WSA-N	Soil	6203	Ice	X
-12	2. Test hole #6 @ -3' WSA-N		6203		X
-13	3. Test hole #7 @ -1' WSA-C		6203		X
-14	4. Test hole #7 @ -3' WSA-C		6203		X
-15	5. Test hole #8 @ -2' WSA-S		6203		X
-16	6. Test hole #8 @ -4' WSA-S		6203		X
-17	7. Background @ -1' NWC-Pit		6203		X
	8.				
	9.				
	10.				

Relinquished By	Date	Time	Received By	Date	Time
	6303	1700		6/4/03	10:05 AM

2°C

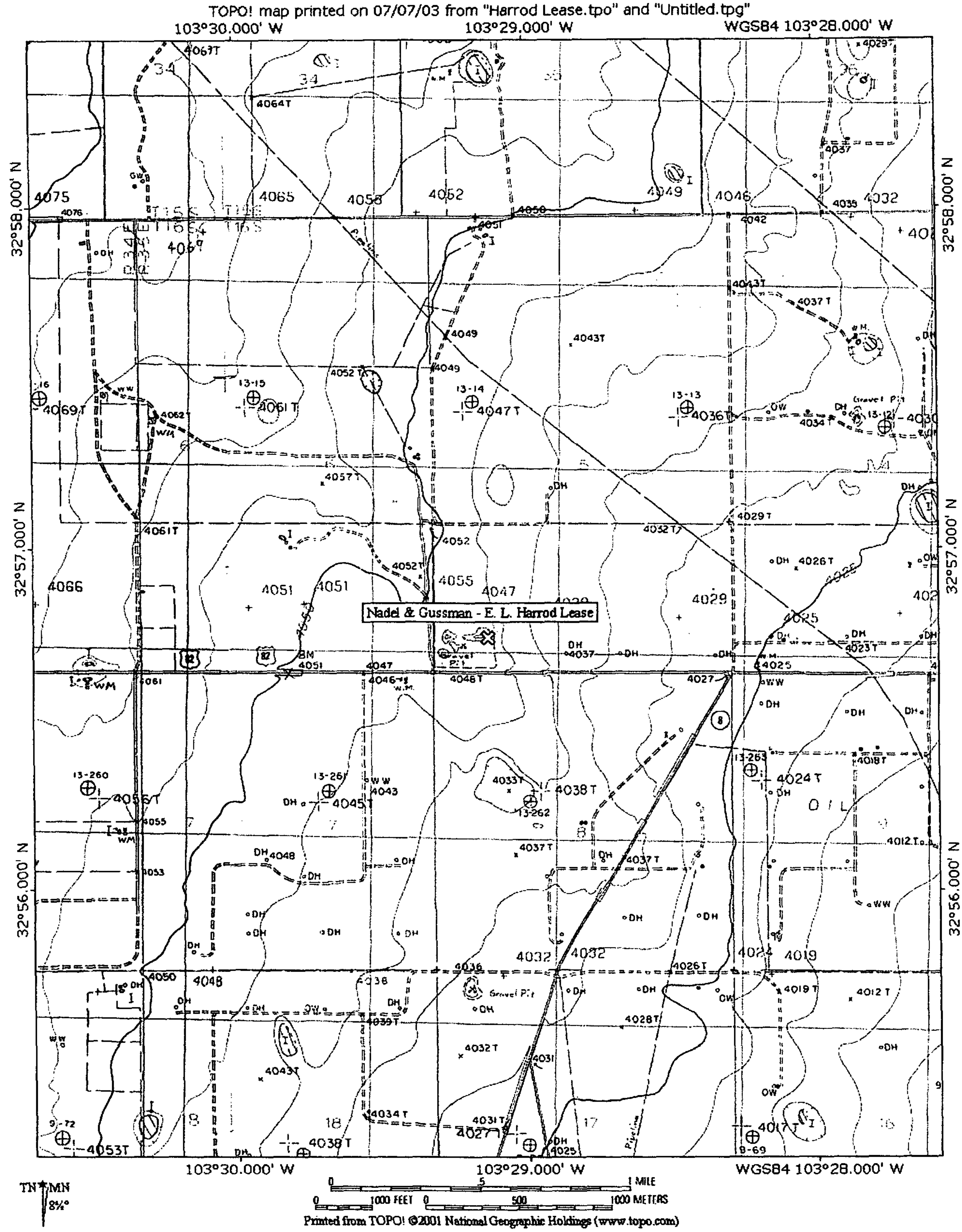
In the event that Anachem determines that a sample is hazardous; the client agrees to:
Pay For Sample Disposal____ Fed Ex
Accept Returned Sample____

Work Order #: 0306026

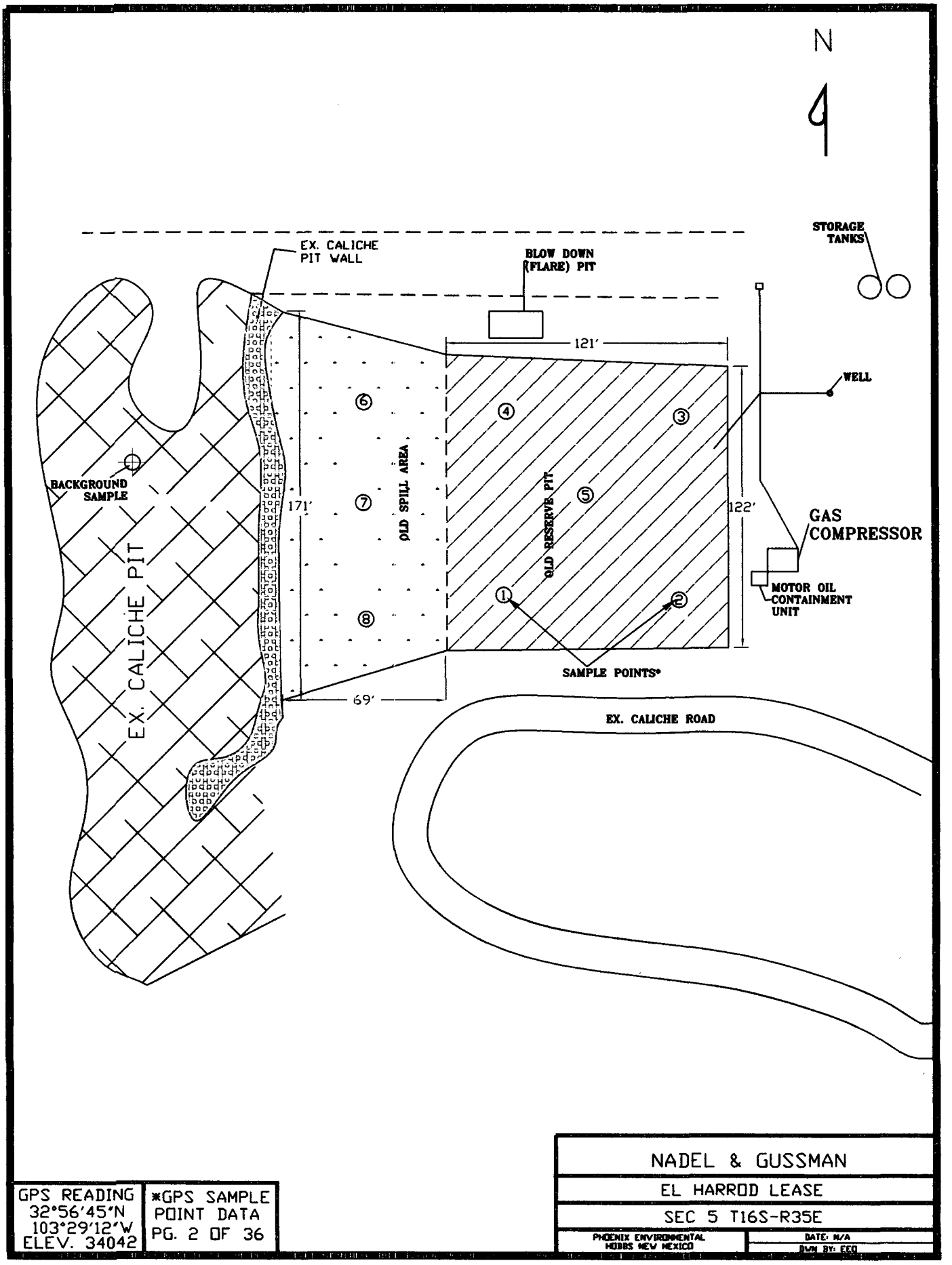
010 REV 1/00 Sample information is vital for proper login and reporting. This is a contract subject to the terms and conditions on the reverse side.

Section III

TOPO! map printed on 07/07/03 from "Harrod Lease.tpo" and "Untitled.tpg"



Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)



GPS READING 32°56'45"N 103°29'12"W ELEV. 34042	*GPS SAMPLE POINT DATA PG. 2 OF 36

NADEL & GUSSMAN

EL HARROD LEASE

SEC 5 T16S-R35E

PHOENIX ENVIRONMENTAL HOBBS NEW MEXICO

DATE: N/A

DWN BY: ECO

Section IV

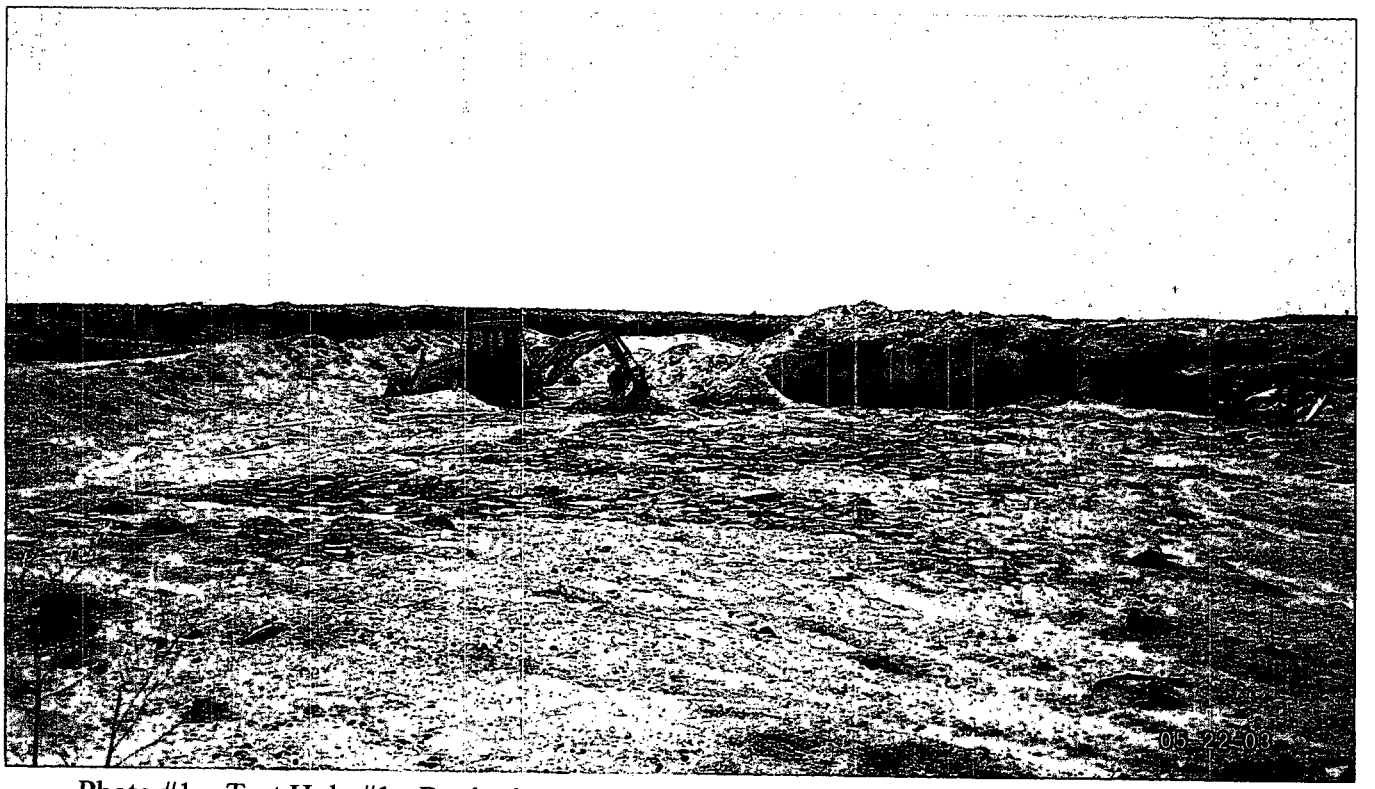


Photo #1 – Test Hole #1 - Beginning Photo of Sampling On-site - May 22, 2003.

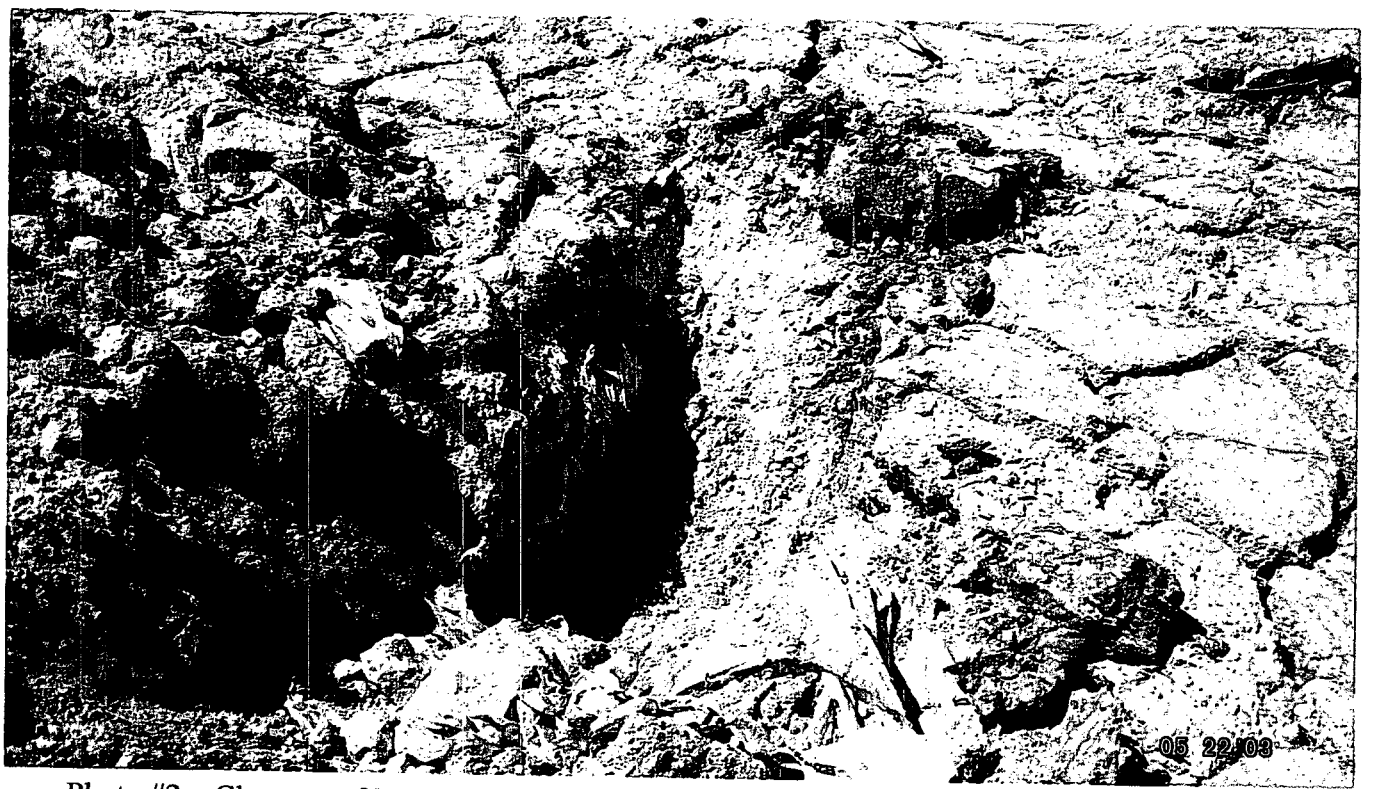


Photo #2 – Close-up of Test Hole #1 - May 22, 2003.

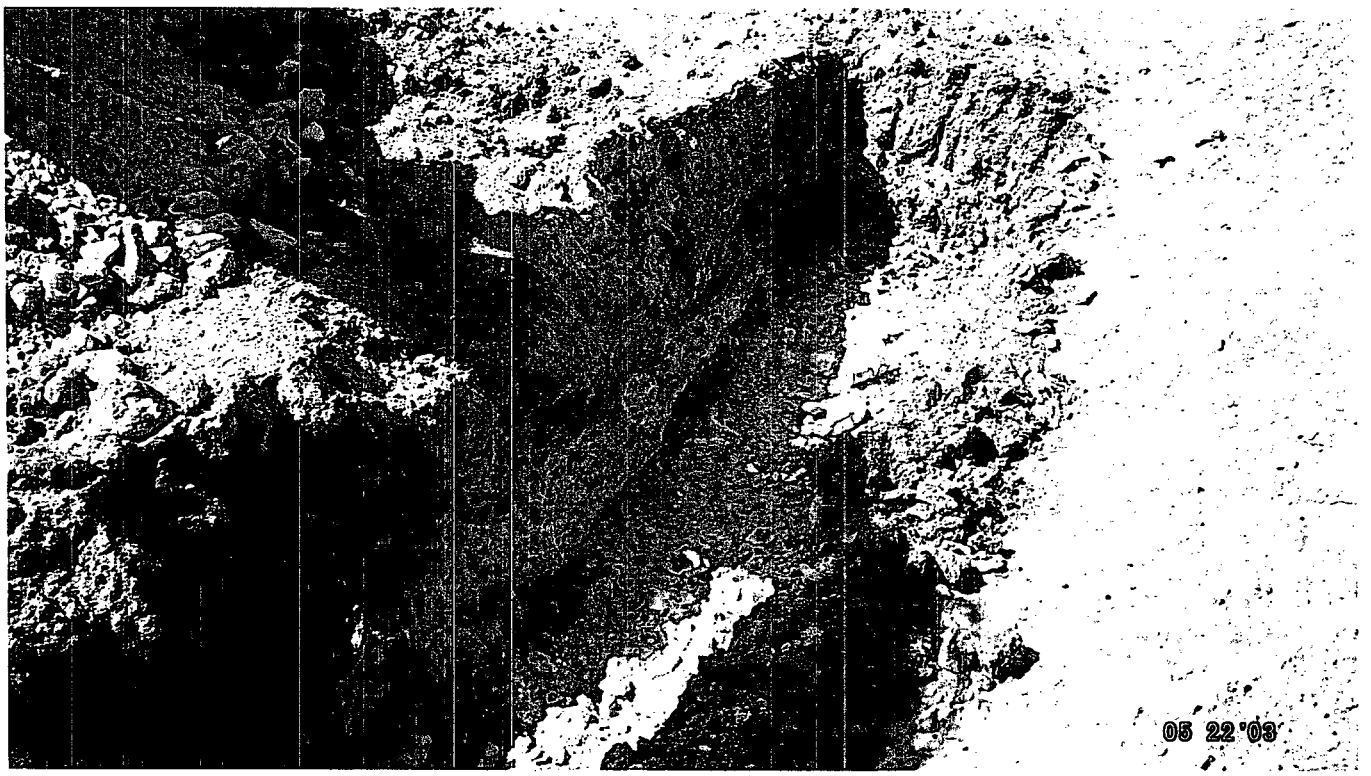


Photo #3 – Test Hole #2 - May 22, 2003.

Photo #4 – Area Between Test Hole #2 & #3 - May 22, 2003.

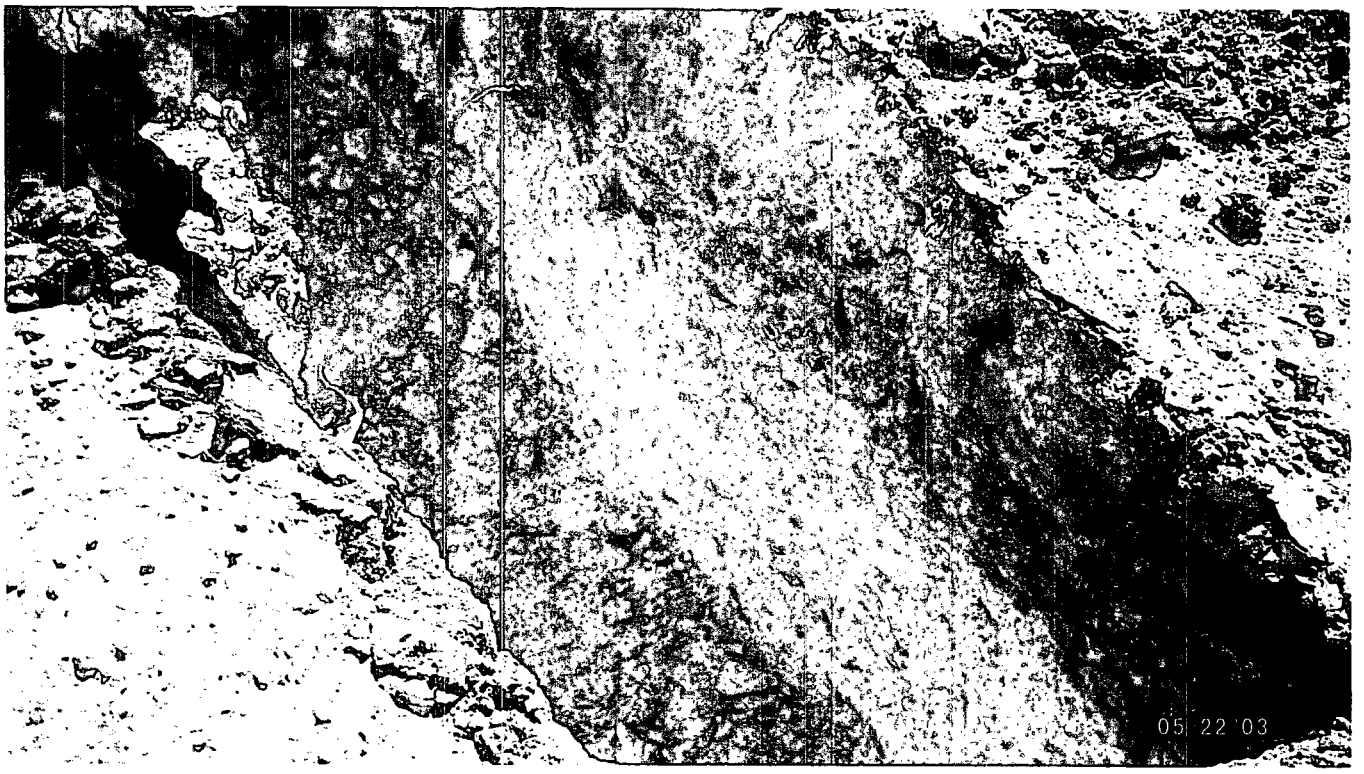


Photo #5 – Test Hole #3 - May 22, 2003.

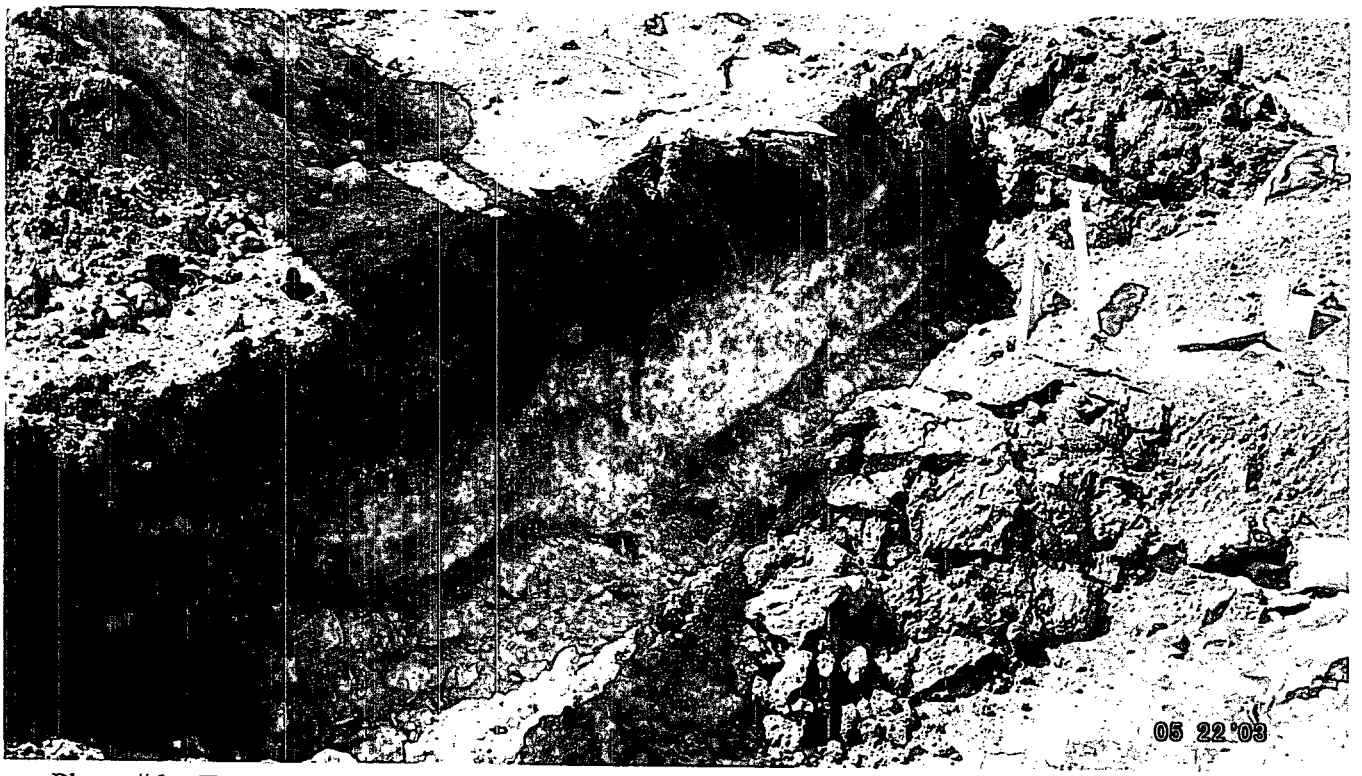


Photo #6 – Test Hole #4 - May 22, 2003.

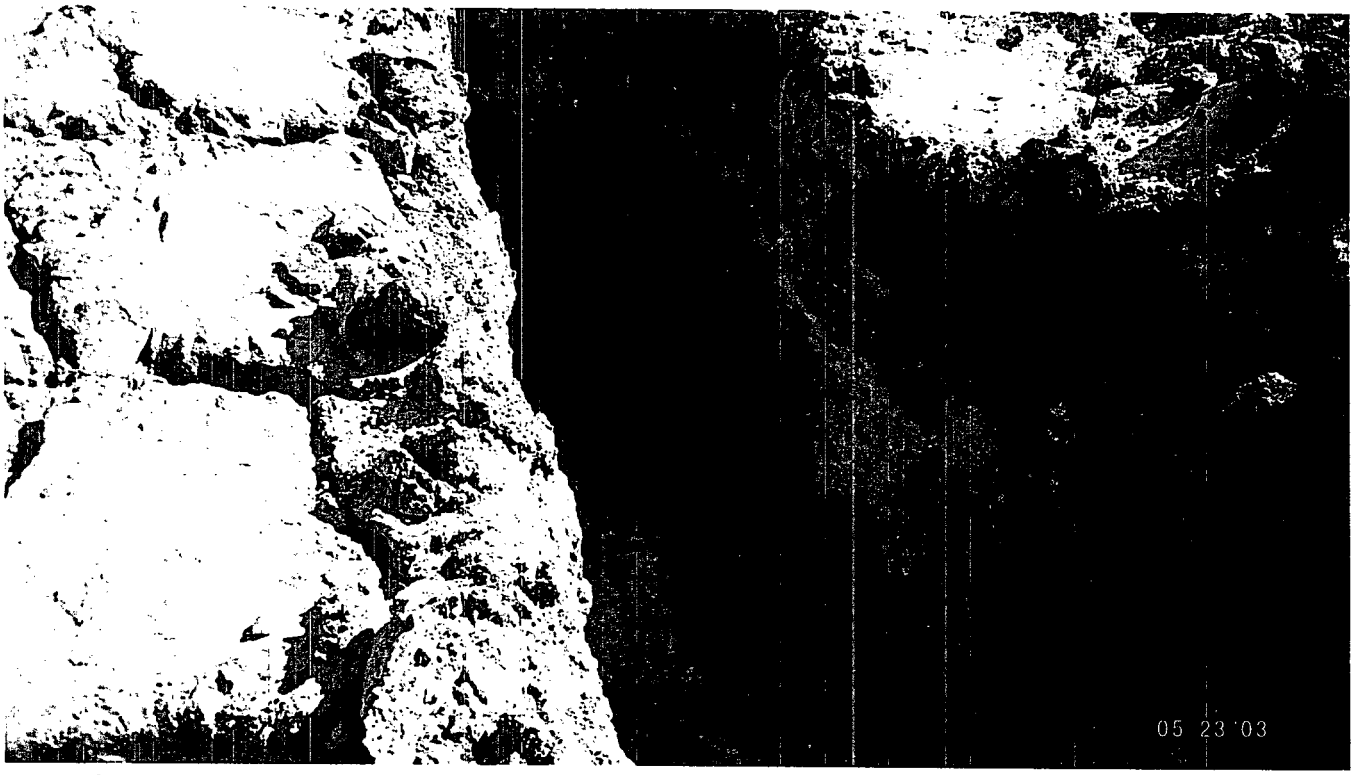


Photo #7 – Test Hole #5 - Center of Pit - May 23, 2003.

Photo #8 – Test Hole #6 - West Spill Area - May 23, 2003.

Photo #9 – Test Hole #6 - North End of West Spill Area - May 23, 2003.

Photo #10 – Test Hole #7 - West Spill Area Center - May 23, 2003.

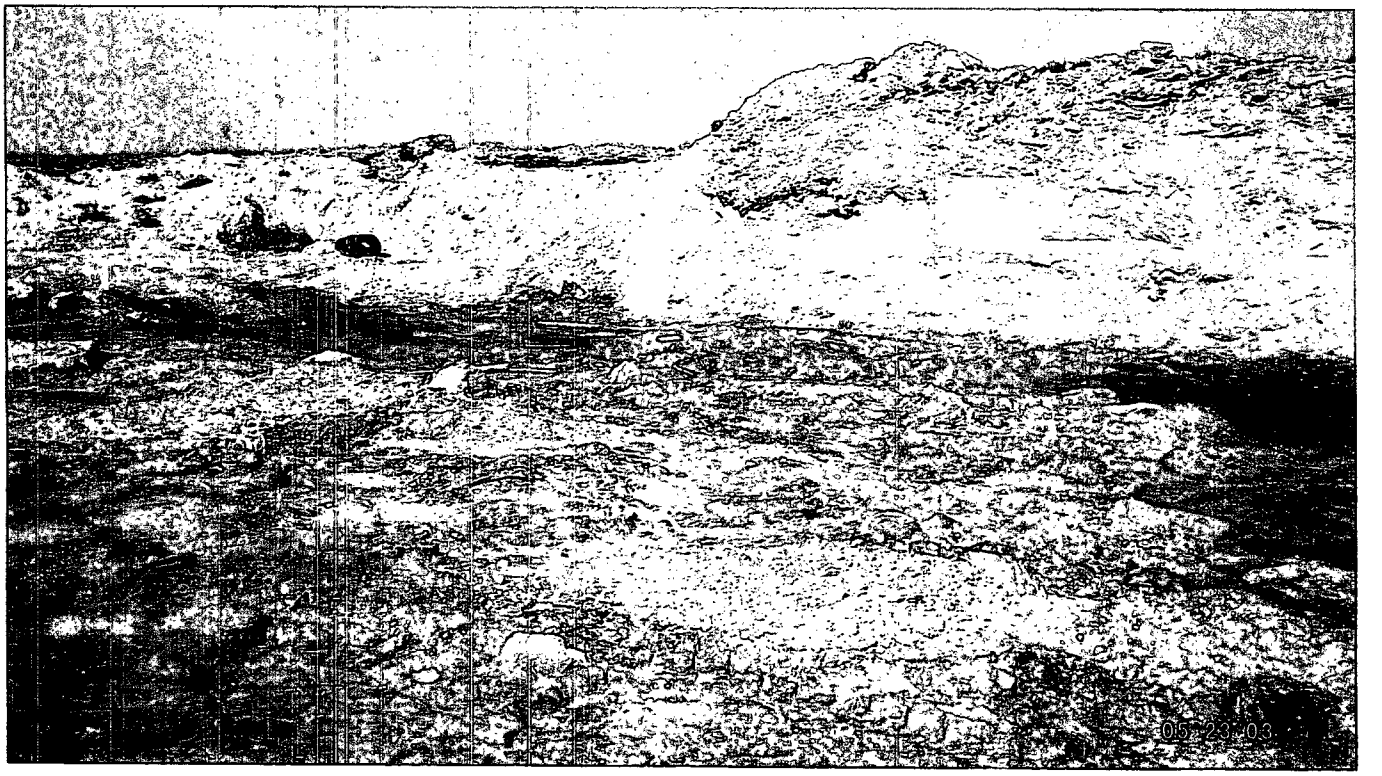


Photo #11 – West Spill Area View on May 23, 2003.

Photo #12 – West Spill Area View on May 23, 2003.

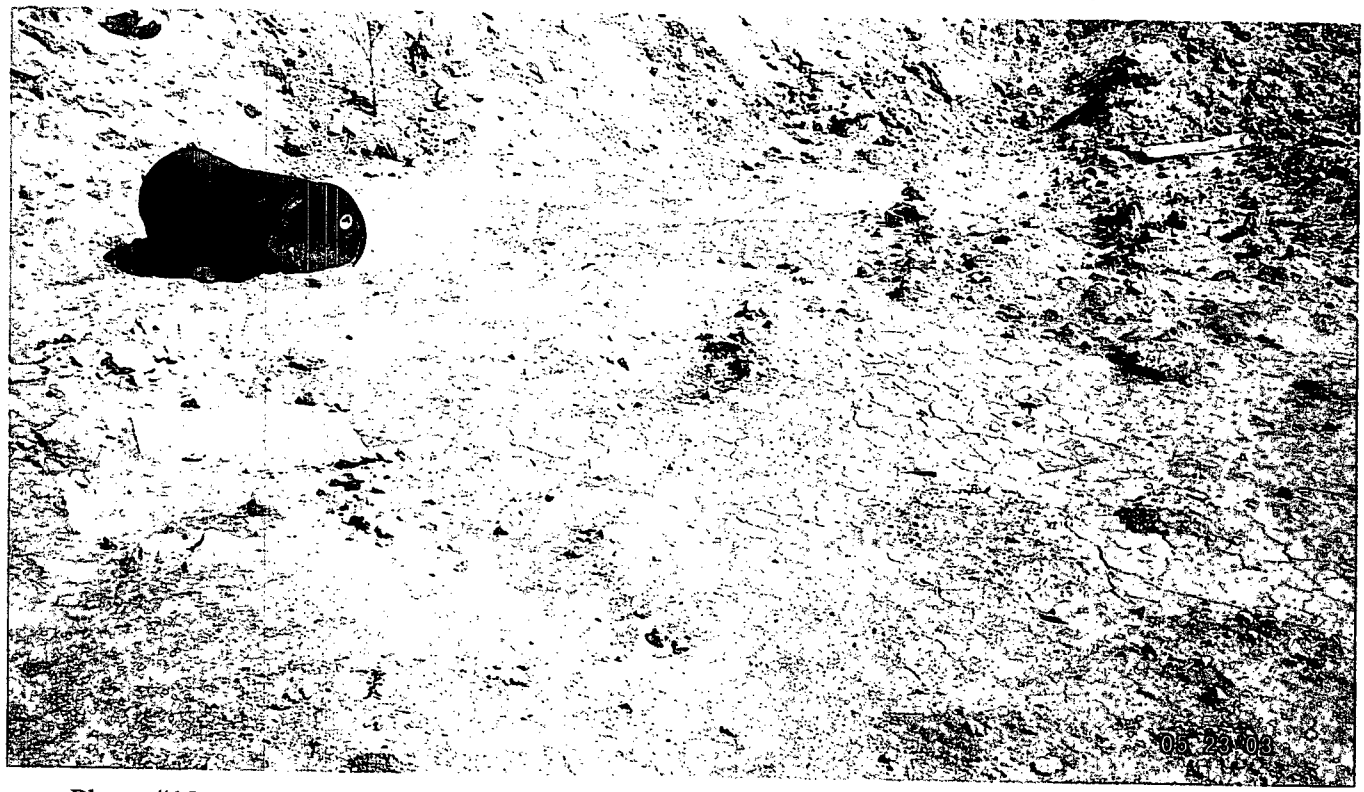


Photo #13 – Test Hole #8 – South End of West Spill Area on May 23, 2003.

Photo #14 – Test Hole #8 – South End of West Spill Area on May 23, 2003.