AP - 32

STAGE 1 & 2 REPORTS

DATE:

JAN. 11, 2001

Tipperary
CORPORATION

633 Seventeenth Street
Suite 1550
Denver, Colorado 80202

January 11, 2001

CERTIFIED MAIL

Mr. William C. Olson
New Mexico Oil Conservation Division
P.O. Box 6429
1220 S. St. Francis Drive
Santa Fe, NM 87504

RE: Collier #1 Pit Closure
Section 9F-T11S-R33E
Lea County, NM

Dear Mr. Olson:

As a follow up to your requirements set forth in your letter of November 22, 2000, please find enclosed the results of our investigation of the previously closed unlined production pit. The pit investigation began on November 27, 2000. We were able to define the lateral extent of the pit, but we were unable to make an accurate determination of the vertical limits. We are proposing to drill an investigation well at the eastern edge of the excavation to define the vertical limit of the pit.

Please advise if this is acceptable, and we will proceed accordingly. If you have any questions, please call me at (303) 293-9379.

Very truly yours,

Larry G. Sugano
Vice President - Engineering

Enclosure

cc: NMOCD Hobbs Office

Executive Summary

Excavation
Whole Earth Environmental, Inc. began the excavation of a previously closed unlined surface impoundment on November 27th, 2000 in accordance with protocol PR-56A (enclosed). The shape and dimensions of the excavation are detailed on the attached plat map.

We were able to define the lateral extent of contamination on all four sides of the site however due to mechanical and safety limitations we were unable to make an accurate determination of the vertical extent of the plume.

Soil Sampling
Each of the four sidewalls were sampled in accordance with PR-56A, and Whole Earth Quality Procedure QP-77 (enclosed). The sample results demonstrate that each sidewall was excavated to a distance necessary to achieve closure standards. The results of the laboratory analysis are included within the Laboratory Analytical section of this report.

Bottom Liner
Prior to backfilling the excavation with remediated soils, a layer of clean topsoil obtained from an uncontaminated portion of the east wall was deposited into the bottom of the hole to serve as a liner preparation. Additionally, the 51' test hole was backfilled to liner depth (approximately 32' below ground level) with fresh soils. A sample of this backfill material was collected and analyzed prior to the liner installation.

Backfill
The site was backfilled with remediated soils and samples were collected at approximate 100 cubic yard intervals. The results of the backfill soil analysis are contained within this report.

Top Liner
A final top liner was installed at a depth of approximately 5' below ground level and covered with clean soils obtained from the uncontaminated eastern wall of the excavation. A composite laboratory analysis was performed on this final top cover and is included within the analytical section of this report.

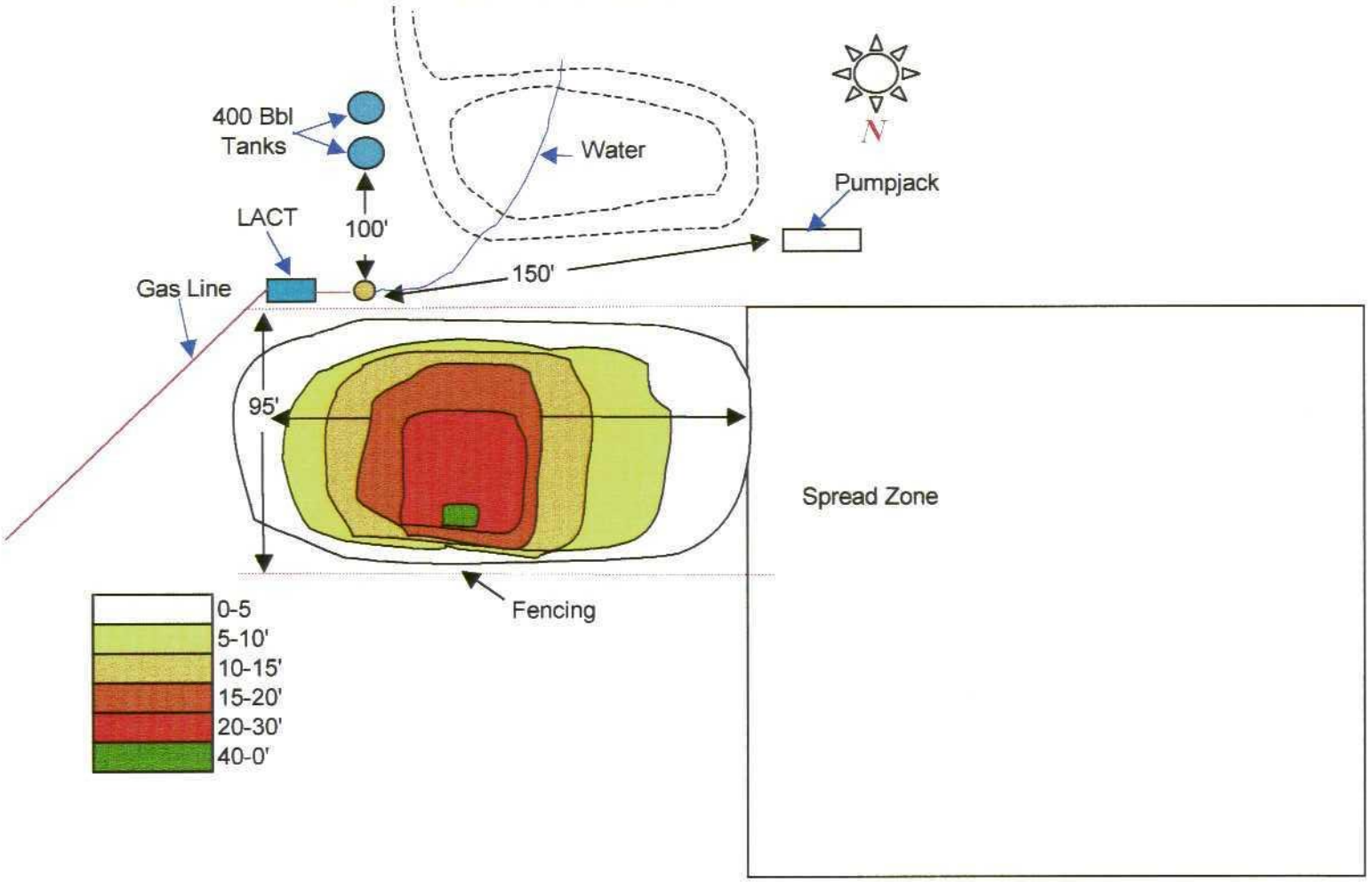
Additional Dileneation

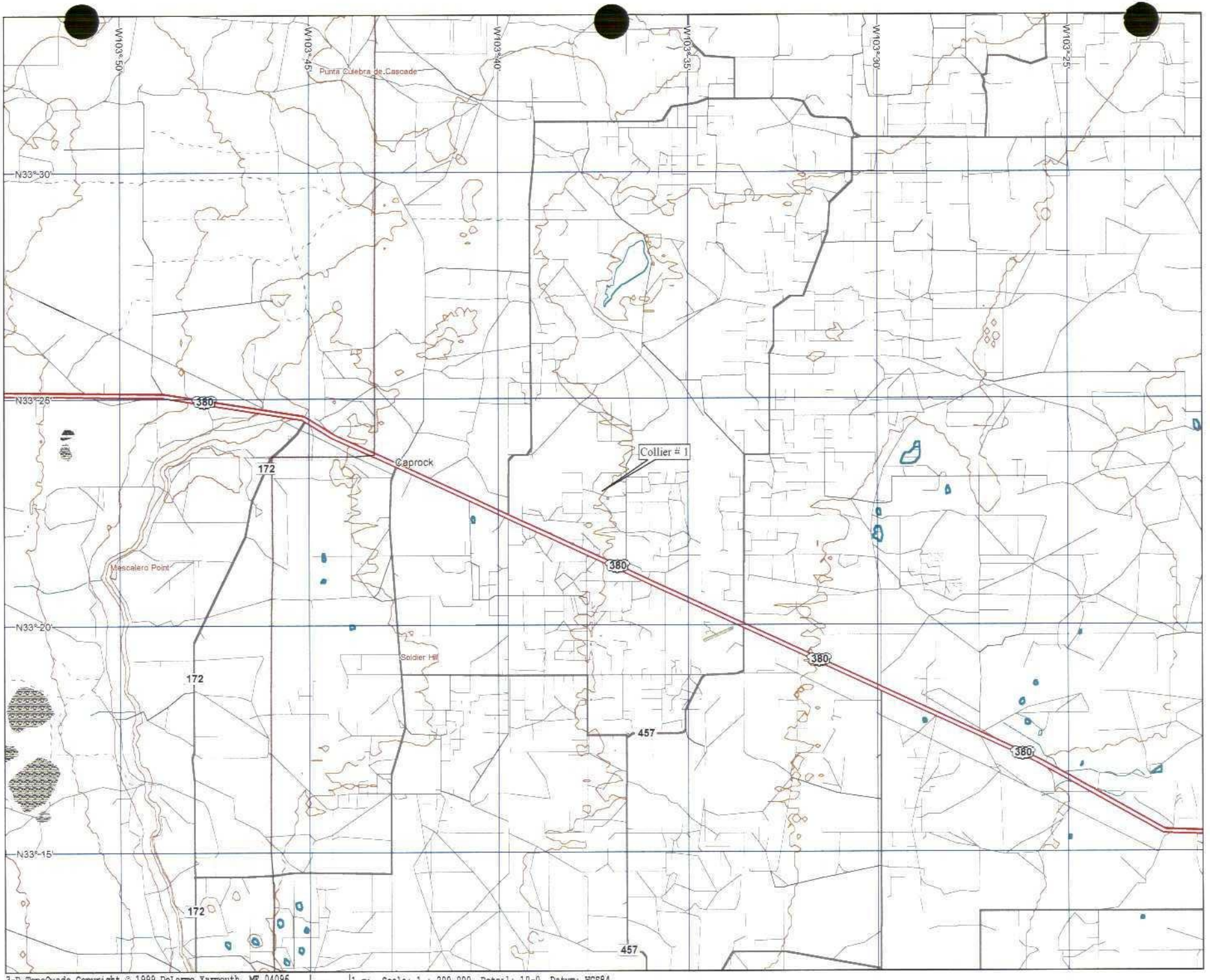
Upon NMOCD approval, Tipperary Corporation proposes to drill, temporarily case and develop an investigation well at the eastern edge of the excavation. The depth of the boring will extend into the water table by a minimum of 10' and be completed in accordance with NMOCD instructions. Water samples will be collected in accordance with QP-76 (enclosed) and submitted to a laboratory for analysis of BTEX and chlorides. Should the concentrations within the test hole exceed NMWQCC standards, a second well will be drilled down-gradient to establish the lateral extent of contamination.

Based upon the results of the test boring(s), Tipperary Corporation will submit either a request for final closure or abatement plan as appropriate.

Tipperary

Collier # 1
SE/NW Sec. 9 T11S R33E





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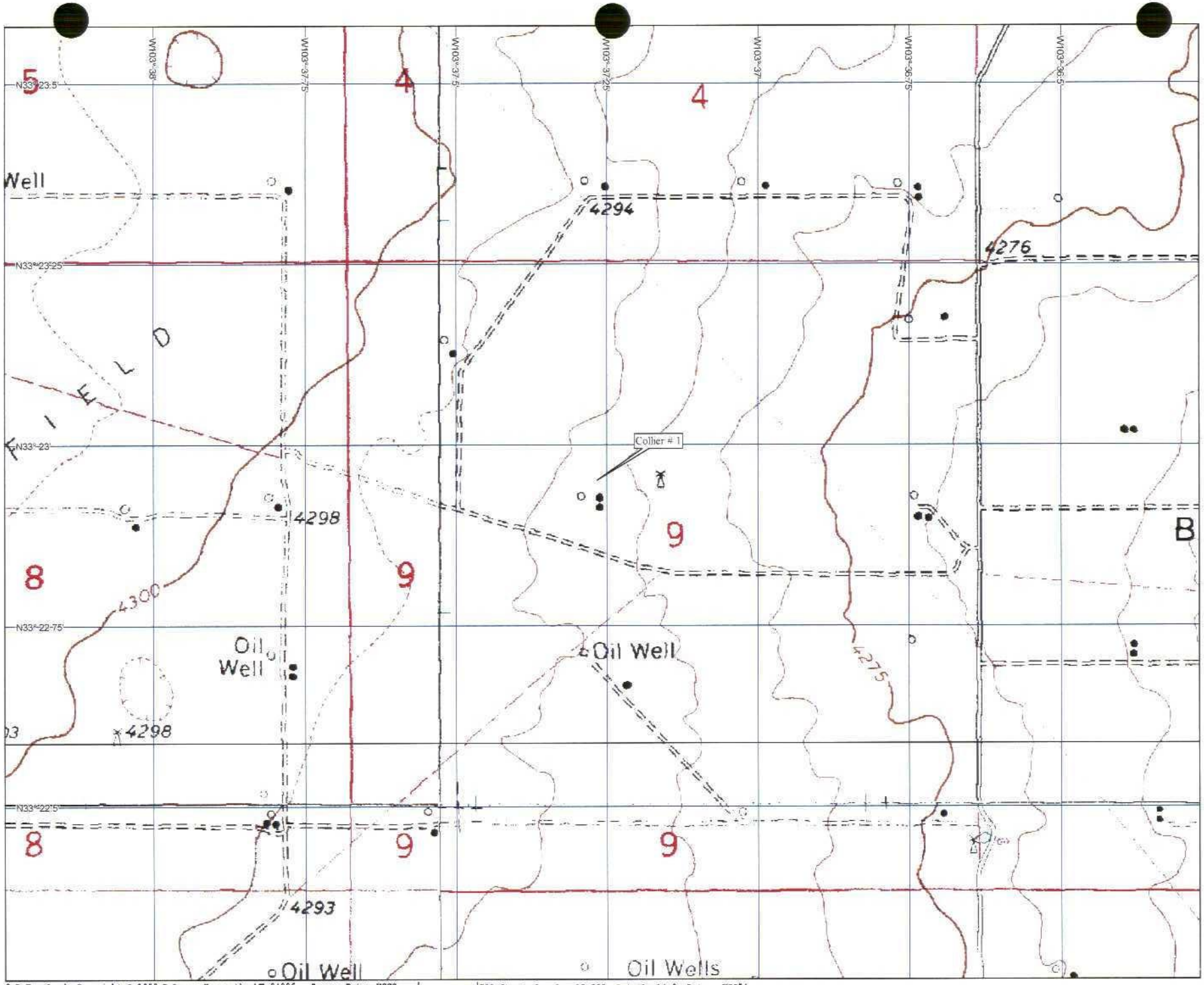
W103°38'
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4294
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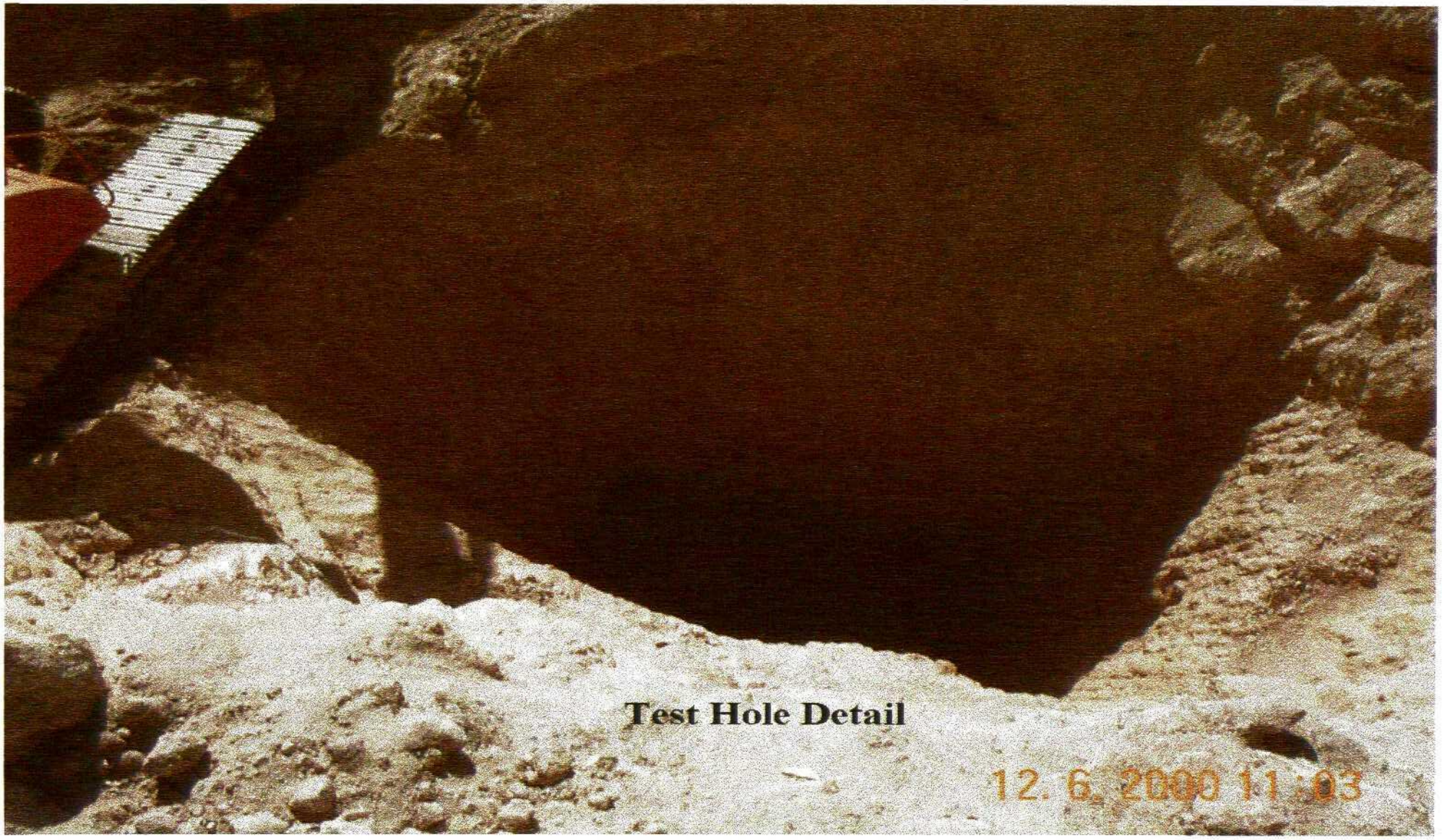
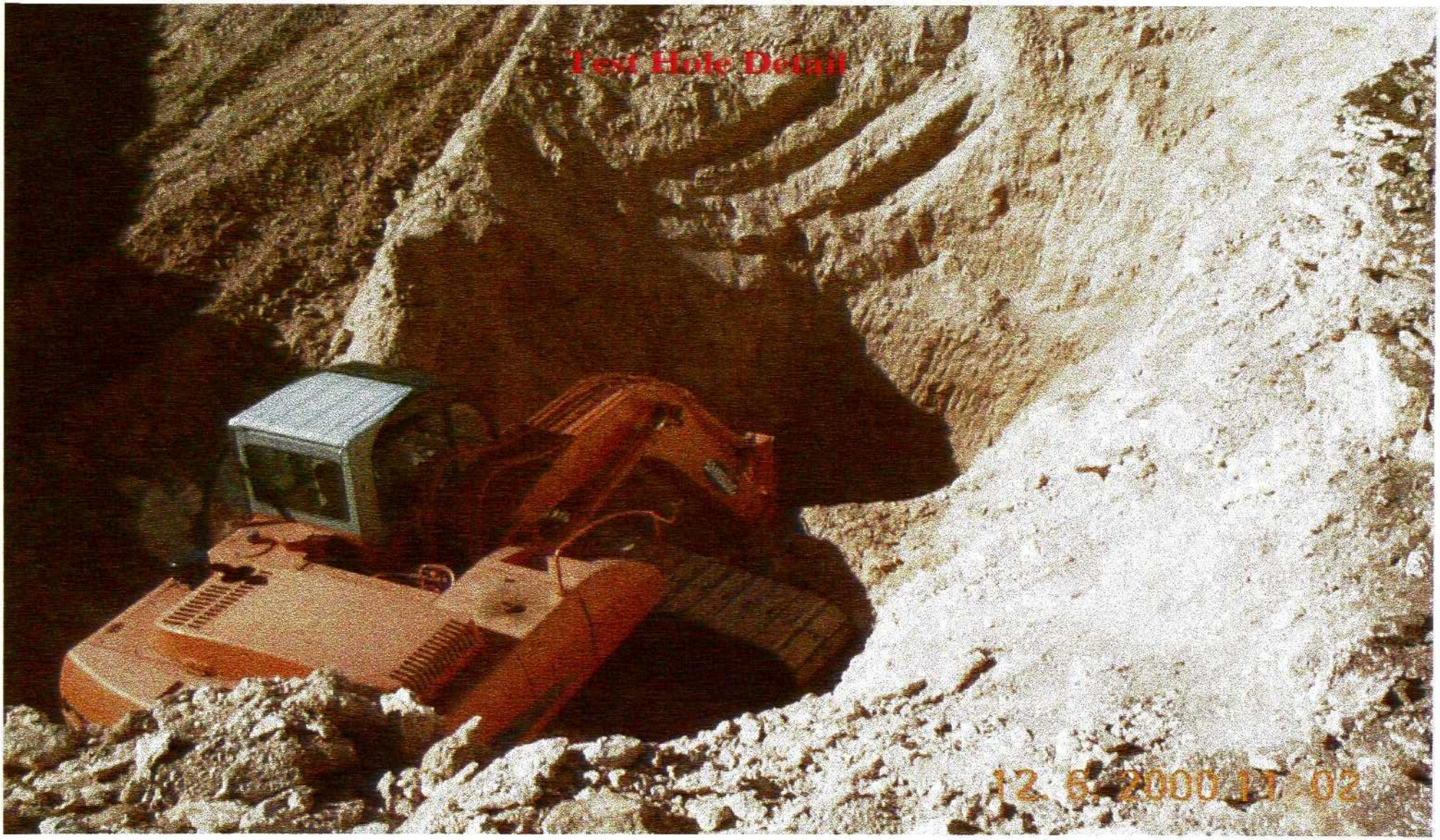
3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS
500 ft Scale: 1 : 12,800 Detail: 14-0 Datum: WGS84

Detail of Lateral Extent of Excavation


Test Hole Detail


Test Hole Detail
12. 6. 2000 11:03


Test Hole Detail
12 6 2000 11 02


12-13-2000 12:02

Detail of Lower Liner Installation

12. 21. 2000 08:07


12. 21. 2000 08:08

Protocol

This section contains copies of the approved remediation protocol employed on this project.

PR-56A

Remediation Protocol
Tipperary Corporation
Collier # 1

1.0 Purpose

This protocol is to provide a detailed outline of the steps to be employed in the remediation of a spill area located west of Tatum, New Mexico.

2.0 Scope

This protocol is site specific for the Tipperary remediation project.

3.0 Preliminary

Prior to any field operations, Whole Earth Environmental shall conduct the following activities:

3.1 Client Review

3.1.1 Whole Earth shall meet with cognizant personnel within Tipperary to review this protocol and make any requested modifications or alterations.

3.1.2 Changes to this protocol will be documented and submitted for final review by Tipperary prior to the initiation of actual field work.

4.0 Safety

4.1 Prior to work on the site, Whole Earth shall obtain the location and phone numbers of the nearest emergency medical treatment facility. We will review all safety related issues with the appropriate Tipperary personnel, sub-contractors and exchange phone numbers.

4.2 A tailgate safety meeting shall be held and documented each day. All sub-contractors must attend and sign the daily log-in sheet.

4.3 Anyone allowed on to location must be wearing sleeved shirts, steel toed boots, and long pants. Each vehicle must be equipped with two way communication capabilities.

4.4 Prior to any excavation, New Mexico One Call will be notified. The One Call notification number will be included within the closure report. If lines are discovered within the area to be excavated they shall be marked with pin flags on either side of the line at maximum five foot intervals.

5.0 Remediation Procedure

5.1 All soils containing a TPH concentration >100 ppm, and all soils containing a benzene concentration >10ppm or a total BTEX concentration >50ppm will be excavated and placed immediately adjacent to the excavation. The side walls and bottom of the excavation will be field tested for TPH and BTEX concentrations in accordance with WEQP-06 and WEQP-19.

5.2 The Hobbs branch of the OCD will be notified to witness the final confirmation sampling of the side walls and bottom of the excavation. Samples will be collected in accordance with WEQP-77 and analyzed for TPH and BTEX.

5.3 The excavated soils will be mixed and blended with sub-strait materials to achieve a maximum concentration of 1,000 ppm TPH, 10 ppm benzene and 50 ppm total BTEX concentration. A confirmation composite sample will be collected and analyzed in accordance with 7.1 of this protocol.

6.0 Liner

6.1 Upon approval by the NMOCD, Whole Earth will install a 20 mil polyethylene liner within the excavation. The liner will extend up the side walls to a point within 5' of the ground surface. The excavated soils will be replaced within the liner at concentrations not to exceed those described in paragraph 7.3 of this protocol.

6.2 An additional polyethylene top cover will be erected atop the excavation and overlapped with the bowl liner to insure that no surface water will infiltrate the main plume area. The top liner should be slightly domed to accommodate subsidence and to direct a drainage path away from the main plume. The top of the liner shall be at least 3' below ground level.

7.0 Closure Report

7.1 At the conclusion of the project, Whole Earth shall prepare a closure report which contains the following minimum information:

- Photographs of the location prior to remediation
- Photographs of the location at time of final closure

- Plat map showing sampling locations
- All pre-closure contaminant concentrations
- Contaminant concentrations at the conclusion of the project
- Copies of this protocol and all testing procedures
- Copies of each days tailgate safety meeting
- Copies of daily calibration logs for each instrument
- Independent split sample laboratory analyses
- MSDS sheets of the liner
- A hydrogeological survey map indicating the depth and direction of the groundwater and locations of the recovery and monitor wells

Procedures

This section contains copies of the detailed sample collection and field testing procedures used on this project.

QP-06 Rev. C

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Conducting Field TPH Analysis

Completed By:	Approved By:	Effective Date: 02/15/97

1.0 Purpose

To define the procedure to be used in conducting total percentage hydrocarbon testing in accordance with EPA Method 418.1 (modified) using the "MEGA" TPH Analyzer.

2.0 Scope

This procedure is to be used for field testing and on site remediation information.

3.0 Procedure

3.1 The G.A.C. "MEGA" TPH analyzer is an instrument that measures concentrations of aliphatic hydrocarbons by means of infra-red spectrometry. It is manufactured to our specifications and can accurately measure concentrations from two parts per million through 100,000 parts per million. The unit is factory calibrated however minor calibration adjustments may be made in the field. Quality Procedure 25 defines the field calibration methods to be employed.

3.2 Prior to taking the machine into the field, insert a 500 ppm and 5,000 ppm calibration standard into the sample port of the machine. Zero out the Range dial until the instrument records the exact standard reading.

3.3 Once in the field, insert a large and small cuvette filled with clean Freon 113 into the sample port of the machine. Use the range dial to zero in the reading. If the machine does not zero, do not attempt to adjust the span dial. Immediately implement Quality Procedure 25.

3.4 Place a 100 g. weight standard on the field scale to insure accuracy. Zero out the scale as necessary.

3.5 Tare a clean 100 ml. sample vial with the Teflon cap removed. Add 10 g. (+/- .01 g), of sample soil into the vial taking care to remove rocks or vegetable matter from the sample to be tested. If the sample is wet, add up to 5 g. silica gel or anhydrous sodium sulfate to the sample after weighing.

3.6 Dispense 10 ml. Freon 113 into the sample vial.

3.7 Cap the vial and shake for five minutes.

3.8 Carefully decant the liquid contents of the vial into a filter/desiccant cartridge and affix the cartridge cap. Recap the sample vial and set aside.

3.9 Insert the metal tip of the pressure syringe into the cap opening and slowly pressurize. **WARNING: APPLY ONLY ENOUGH PRESSURE ON THE SYRINGE TO EFFECT FLOW THROUGH THE FILTERS. TOO MUCH PRESSURE MAY CAUSE THE CAP TO SEPARATE FROM THE BODY OF THE CARTRIDGE.** Once flow is established through the cartridge direct the flow into the 5 cm. cuvette until the cuvette is full. Reverse the pressure on the syringe and remove the syringe tip from the cartridge cap. Set the cartridge aside in vertical position.

3.10 The cuvette has two clear and two frosted sides. Hold the cuvette by the frosted sides and carefully insert into the sample port of the machine. Read the right hand digital read-out of the instrument. If the reading is less than 1,000 ppm. the results shall be recorded in the field Soil Analysis Report. If the result is higher than 1,000 ppm, continue with the dilution procedure.

4.0 Dilution Procedure

4.1 When initial readings are greater than 1,000 ppm using the 5 cm. cuvette, pour the contents of the 5 cm. cuvette into a 1 cm. cuvette. Insert the 1. cm cuvette into the metal holder and insert into the test port of the instrument.

4.1 Read the left hand digital read-out of the machine. If the results are less than 10,000 ppm, record the results into the field Soil Analysis Report. If greater than 10,000 ppm, continue the dilution process. **Concentrations >10,000 ppm are to be used for field screen purposes only.**

4.2 Pour the contents of the small cuvette into a graduated glass pipette. Add 10 ml. pure Freon 113 into the pipette. Shake the contents and pour into the 1cm. cuvette. Repeat step 4.2. adding two zeros to the end of the displayed number. If the reported result is greater than 100,000 ppm. the accuracy of further readings through additional dilutions is extremely questionable. **Do not use for reporting purposes.**

4.4 **Pour all sample Freon into the recycling container.**

5.0 Split Samples

5.1 Each tenth test sample shall be a split sample. Decant approximately one half of the extraction solvent through a filter cartridge and insert into the instrument to obtain a concentration reading. Clean and rinse the cuvette and decant the remainder of the fluid to obtain a second concentration reading from the same sample. If the second reading varies by more than 1% from the original, it will be necessary to completely recalibrate the instrument.

QP-76 (Rev. A)

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Obtaining Water Samples (Cased Wells) Using One Liter Bailer

Completed By: Approved By: Effective Date: / /

1.0 Purpose

This procedure outlines the methods to be employed in obtaining water samples from cased monitoring wells.

2.0 Scope

This procedure shall be used for developed, cased water monitoring wells. It is not to be used for standing water samples such as ponds or streams.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the water. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 The following table shall be used to select the appropriate sampling container, preservative method and holding times for the various elements and compounds to be analyzed.

Compound to be Analyzed	Sample Container Size	Sample Container Description	Cap Requirements	Preservative	Maximum Hold Time
BTEX	40 ml.	VOA Container	Teflon Lined	HCl	7 days
TPH	1 liter	clear glass	Teflon Lined	HCl	28 days
PAH	1 liter	clear glass	Teflon Lined	Ice	7 days
Cation / Anion	1 liter	clear glass	Teflon Lined	None	48 Hrs.
Metals	1 liter	HD polyethylene	Any Plastic	Ice / HNO_3	28 Days
TDS	300 ml.	clear glass	Any Plastic	Ice	7 Days

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the well identification and the individual tests to be performed at that location. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

5.0 Bailing Procedure

5.1 Identify the well from the site schematics. Place pre-labeled jar(s) next to the well. Remove the bolts from the well cover and place the cover with the bolts nearby. Remove the plastic cap from the well bore by first lifting the metal lever and then unscrewing the entire assembly.

5.2 The well may be equipped with an individual 1 liter bailing tube. If so, use the tube to bail a volume of water from the well bore equal to 10 liters for each 5' of well bore in the water table. (This assumes a 2" dia. well bore).

5.3 Take care to insure that the bailing device and string do not become cross-contaminated. A clean pair of rubber gloves should be used when handling either the retrieval string or bailer. The retrieval string should not be allowed to come into contact with the ground.

6.0 Sampling Procedure

6.1 Once the well has been bailed in accordance with 5.2 of this procedure, a sample may be decanted into the appropriate sample collection jar directly from the bailer. The collection jar should be filled to the brim. Once the jar is sealed, turn the jar over to detect any bubbles that may be present. Add additional water to remove all bubbles from the sample container.

6.2 Note the time of collection on the sample collection jar with a fine Sharpie.

6.3 Place the sample directly on ice for transport to the laboratory. The preceding table shows the maximum hold times between collection and testing for the various analyses.

6.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

7.0 Documentation

7.1 The testing laboratory shall provide the following minimum information:

A. Client, Project and sample name.
B. Signed copy of the original Chain of Custody Form including data on the time the sample was received by the lab.
C. Results of the requested analyses
D. Test Methods employed
E. Quality Control methods and results

QP-77

WHOLE EARTH ENVIRONMENTAL
QUALITY PROCEDURE

Procedure for Obtaining Soil Samples for Transportation to a Laboratory

Completed By: Approved By: Effective Date: / /

1.0 Purpose

This procedure outlines the methods to be employed when obtaining soil samples to be taken to a laboratory for analysis.

2.0 Scope

This procedure is to be used when collecting soil samples intended for ultimate transfer to a testing laboratory.

3.0 Preliminary

3.1 Obtain sterile sampling containers from the testing laboratory designated to conduct analyses of the soil. The shipment should include a Certificate of Compliance from the manufacturer of the collection bottle or vial and a Serial Number for the lot of containers. Retain this Certificate for future documentation purposes.

3.2 If collecting TPH, BTEX, RCRA 8 metals, cation / anions or O&G, the sample jar may be a clear 4 oz. container with Teflon lid. If collecting PAH's, use an amber 4 oz. container with Teflon lid.

4.0 Chain of Custody

4.1 Prepare a Sample Plan. The plan will list the number, location and designation of each planned sample and the individual tests to be performed on the sample. The sampler will check the list against the available inventory of appropriate sample collection bottles to insure against shortage.

4.2 Transfer the data to the Laboratory Chain of Custody Form. Complete all sections of the form except those that relate to the time of delivery of the samples to the laboratory.

4.3 Pre-label the sample collection jars. Include all requested information except time of collection. (Use a fine point Sharpie to insure that the ink remains on the label). Affix the labels to the jars.

5.0 Sampling Procedure

5.1 Go to the sampling point with the sample container. If not analyzing for ions or metals, use a trowel to obtain the soil. Do not touch the soil with your bare hands. Use new latex gloves with each sample to help minimize any cross-contamination.

5.2 Pack the soil tightly into the container leaving the top slightly domed. Screw the lid down tightly. Enter the time of collection onto the sample collection jar label.

5.3 Place the sample directly on ice for transport to the laboratory.

5.4 Complete the Chain of Custody form to include the collection times for each sample. Deliver all samples to the laboratory.

6.0 Documentation

6.1 The testing laboratory shall provide the following minimum information:

A. Client, Project and sample name.
B. Signed copy of the original Chain of Custody Form including data on the time the sample was received by the lab.
C. Results of the requested analyses
D. Test Methods employed
E. Quality Control methods and results

Laboratory Analytical Results

This section contains copies of the laboratory analytical results and associated chain of custody documentation for this project.

ENVIRONMENTAL
LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ -0.5 deg. C
Project #: Collier #1
Project Name: Tipperary
Project Location: Tatum, N.M.

Sampling Date: See Below
Receiving Date: 12/21/00
Analysis Date: 12/26/00

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg	SAMPLE DATE
35519	S. Wall	<0.025	<0.025	<0.025	<0.025	<0.025	12/12/00
35520	N. Wall	<0.025	<0.025	0.031	0.053	<0.025	12/12/00
35521	W. Wall	<0.025	<0.025	<0.025	<0.025	<0.025	12/12/00
35522	Top Cover	<0.025	<0.025	<0.025	<0.025	<0.025	12/20/00
35523	Bottom	<0.025	<0.025	<0.025	<0.025	<0.025	12/11/00
35524	Lift #1	<0.025	0.067	0.134	0.632	0.396	12/13/00
35525	Lift #2	<0.025	0.058	0.128	0.567	0.389	12/13/00
35526	Lift #3	<0.025	0.039	0.084	0.390	0.272	12/14/00
%IA		107	109	112	114	112	
%EA		90	93	94	99	97	
BLANK		<0.025	<0.025	<0.025	<0.025	<0.025	

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

12-29-00
Date

ENVIRONMENTAL
LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ -0.5 deg. C
Project #: Collier #1
Project Name: Tipperary
Project Location: Tatum, N.M.

Sampling Date: 12/12/00
Receiving Date: 12/21/00
Analysis Date: 12/26/00

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg
35518	East Wall	<0.025	0.050	<0.025	0.074	<0.025
%IA		94	91	90	90	89
%EA		90	89	87	88	88
BLANK		<0.025	<0.025	<0.025	<0.025	<0.025

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

12-29-00
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ -0.5 deg. C
Project #: Collier #1
Project Name: Tipperary
Project Location: Tatum, N.M.

Sampling Date: See Below
Receiving Date: 12/21/00
Analysis Date: 12/27/00

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg	SAMPLE DATE
35527	Lift #4	<0.025	0.038	0.109	0.593	0.432	12/14/00
35528	Lift #5	<0.025	0.032	0.099	0.504	0.338	12/14/00
35529	Lift #6	<0.025	0.207	0.273	1.20	0.806	12/14/00
35530	Lift #7	<0.025	0.054	0.066	0.256	0.195	12/14/00
35531	Lift #8	<0.025	0.034	0.065	0.264	0.210	12/14/00
35532	Lift #9	<0.025	<0.025	0.051	0.265	0.208	12/14/00
35533	Lift #10	<0.025	0.040	0.055	0.187	0.152	12/14/00
35534	Lift #11	<0.025	0.034	0.053	0.232	0.182	12/15/00
35535	Lift #12	<0.025	0.032	0.069	0.282	0.222	12/16/00
35536	Lift #13	<0.025	<0.025	<0.025	0.097	0.078	12/18/00
35537	Lift #14	<0.025	0.038	0.054	0.211	0.178	12/18/00
35538	Lift #15	<0.025	0.036	0.054	0.212	0.176	12/18/00
35539	Lift #16	<0.025	0.035	0.051	0.175	0.143	12/18/00
35540	Lift #17	<0.025	<0.025	<0.025	0.073	0.060	12/18/00
35541	Lift #18	<0.025	0.044	0.053	0.231	0.160	12/18/00
35542	Lift #19	<0.025	<0.025	0.027	0.076	0.073	12/19/00
35543	Lift #20	<0.025	<0.025	<0.025	0.078	0.060	12/19/00
35544	Lift #21	<0.025	0.034	<0.025	0.071	0.044	12/20/00
35545	Lift #22	<0.025	0.482	0.554	2.44	1.47	12/20/00
	%IA	99	99	105	104	99	
	%EA	107	114	107	115	114	
	BLANK	<0.025	<0.025	<0.025	<0.025	<0.025	

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

12-29-00
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

SampleType: Soil
Sample Condition: Intact/ Iced/ -0.5 deg. C
Project #: Collier #1
Project Name: Tipperary
Project Location: Tatum, N.M.

Sampling Date: See Below
Receiving Date: 12/21/00
Analysis Date: 12/21/00

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C28 mg/kg	SAMPLE DATE
35518	East Wall	<10	53	12/12/00
35519	S. Wall	<10	69	12/12/00
35520	N. Wall	<10	58	12/12/00
35521	W. Wall	<10	54	12/12/00
35522	Top Cover	<10	<10	12/20/00
35523	Bottom	<10	25	12/11/00
35524	Lift #1	67	200	12/13/00
35525	Lift #2	83	311	12/13/00
35526	Lift #3	98	343	12/14/00
35527	Lift #4	63	241	12/14/00
35528	Lift #5	76	255	12/14/00
35529	Lift #6	118	307	12/14/00
35530	Lift #7	67	258	12/14/00
35531	Lift #8	45	188	12/14/00
35532	Lift #9	53	217	12/14/00
35533	Lift #10	51	224	12/14/00
35534	Lift #11	41	185	12/15/00
35535	Lift #12	55	220	12/16/00
35536	Lift #13	62	268	12/18/00
35537	Lift #14	55	224	12/18/00
35538	Lift #15	53	214	12/18/00
35539	Lift #16	33	147	12/18/00
35540	Lift #17	36	175	12/18/00
35541	Lift #18	35	169	12/18/00
35542	Lift #19	17	93	12/19/00
35543	Lift #20	16	105	12/19/00
35544	Lift #21	15	111	12/20/00
35545	Lift #22	87	225	12/20/00
	% IA	95	101	
	% EA	87	100	
	BLANK	<10	<10	

METHODS: SW 846-8015M GRO/DRO

Raland K. Tuttle

12-29-00
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

SampleType: Soil
Sample Condition: Intact/ Iced/ -0.5 deg. C
Project #: Collier #1
Project Name: Tipperary
Project Location: Tatum, N.M.

Sampling Date: See Below
Receiving Date: 12/21/00
Analysis Date: 12/22/00

ELT#	FIELD CODE	Chloride mg/kg	SAMPLE DATE
35518	East Wall	118	12/12/00
35519	S. Wall	187	12/12/00
35520	N. Wall	187	12/12/00
35521	W. Wall	168	12/12/00
35522	Top Cover	<10	12/20/00
35523	Bottom	177	12/11/00
35524	Lift #1	35	12/13/00
35525	Lift #2	27	12/13/00
35526	Lift #3	20	12/14/00
35527	Lift #4	18	12/14/00
35528	Lift #5	18	12/14/00
35529	Lift #6	18	12/14/00
35530	Lift #7	18	12/14/00
35531	Lift #8	27	12/14/00
35532	Lift #9	27	12/14/00
35533	Lift #10	18	12/14/00
35534	Lift #11	10	12/15/00
35535	Lift #12	20	12/16/00
35536	Lift #13	20	12/18/00
35537	Lift #14	10	12/18/00
35538	Lift #15	20	12/18/00
35539	Lift #16	<10	12/18/00
35540	Lift #17	<10	12/18/00
35541	Lift #18	18	12/18/00
35542	Lift #19	<10	12/19/00
35543	Lift #20	18	12/19/00
35544	Lift #21	18	12/20/00
35545	Lift #22	18	12/20/00
	QUALITY CONTROL	5051	
	TRUE VALUE	5000	
	% INSTRUMENT ACCURACY	101	
	BLANK	<10	

METHODS: SW 846-9253

Raland K. Tuttle

12-29-00
Date

?iror ?ntal Lab of Texas, Inc.

est I-20 East
Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

Pg 1

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Bill To:

Project Manager: M. Griffin
Company Name: Whole Earth Environ.
Company Address: 19606 San Gabriel
City/State/Zip: Houston, Tx 77084
Telephone No: (800) 854-4358 Fax No: (281) 646-8996
Sampler Signature: M. Griffin

Project Name: Tipperary
Project #: Collier #1
Project Loc: Tatum, NM
PO #:

Lab (use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl	NaOH	H2SO4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TCLP/TOTAL: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	Chlorides	RUSH TAT (Pre-Schedule)	Standard TAT
S18	East Wall	12-12-00	3:15p	1	1									✓					✓				✓	✓		
S19	S. Wall	↓	3:05p																							
S20	N. Wall		3:00p																							
S21	W. Wall	↓	3:10p																							
S22	Top Cover	12-20	1:30p																							
S23	Bottom	12-11	3:00p																							
S24	Lift #1	12-13	10:00																							
S25	#2	↓	11:05																							
S26	#3	12-14-00	9:00																							
S27	#4	↓	9:30	✓	✓									✓					✓				✓	✓		

Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: -0.5 °C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
M. Griffin	12-21-00	0900			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			[illegible]	12-21-00	0900

ˈiror ntal Lab of Texas, Inc.

est I-20 East
Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Pg 2 of 3

Project Manager: M. Griffin
Company Name: Whole Earth
Company Address: 19606 San Gabriel
City/State/Zip: Houston, TX 77084
Telephone No: 800-854-4358 Fax No: 281-646-8996
Sampler Signature:

Project Name: Tippens
Project #: Collins #1
Project Loc: Tatum, NM
PO #:

Lab I.D. use only	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl	NaOH	H2SO4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify):	Analyze For: TCLP: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	Cl	RUSH TAT (Pre-Schedule)	Standard TAT
S528	Lift #5	12-14-00	10:30	1	✓									✓					✓				✓	✓		
S529	6		12:00																							
S530	7		12:30																							
S531	8		13:30																							
S532	9		14:30																							
S533	10	↓	15:00																							
S534	11	12-15-00	9:00																							
S535	12	12-16-00	11:00																							
S536	13	12-18-00	8:30																							
S537	14	↓	9:30	↓	↓									↓					↓				↓	↓		

Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: ~0.5 °C
Laboratory Comments:

shed by:	Date	Time	Received by:	Date	Time
	12-21-00	0900			
shed by:	Date	Time	Received by ELOT:	Date	Time
			Jeane Mennenoh	12-21-00	0900

ʼiror ntal Lab of Texas, Inc.

est I-20 East
Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

pg 3 of

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: M. Griffin
Company Name: Mole Earth
Company Address: 19606 San Gabriel
City/State/Zip: Houston TX 77084
Telephone No: 800-954-4358 Fax No: 281-646-8996
Sampler Signature:

Project Name: Tippman
Project #: Collier #1
Project Loc: Tatum, NM
PO #:

lab use only	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO3	HCl	NaOH	H2SO4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)	Analyze For: TCLP: TDS / CL / SAR / EC	TPH 418.1	TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	Cl-	RUSH TAT (Pre-Schedule)	Standard TAT
538	Lift #15	12-18-00	10:00	1	✓									✓					✓				✓	✓		
539	16	↓	11:30	↓	↓									↓					↓				↓	↓		
540	17		13:00																							
541	18	↓	14:00																							
542	19	12-19-00	8:00																							
543	20	↓	9:30																							
544	21	12-20-00	8:00																							
545	22	↓	9:15	↓	↓									↓					↓				↓	↓		

Instructions:

Sample Containers Intact? Y N
Temperature Upon Receipt: -0.5 °C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
M. Griffin	12-21-00	0900			
Relinquished by:	Date	Time	Received by ELOT: Jeanne McMurrey	Date: 12-21-00	Time: 0900

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

SampleType: Soil
Sample Condition: Intact/ Iced/ 4 deg. C
Project #: None Given
Project Name: Collier #1
Project Location: Tatum, N.M.

Sampling Date: 12/06/00
Receiving Date: 12/09/00
Analysis Date: 12/11/00

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C28 mg/kg
35142	Backfill 50' Hole	<10	<10
	% IA	88	95
	% EA	88	92
	BLANK	<10	<10

METHODS: SW 846-8015M GRO/DRO

Raland K. Tuttle

12-13-00
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

Sample Type: Soil
Sample Condition: Intact/ Iced/ 4 deg. C
Project #: None Given
Project Name: Collier #1
Project Location: Tatum, N.M.

Sampling Date: 12/06/00
Receiving Date: 12/09/00
Analysis Date: 12/12/00

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg
35142	Backfill 50' Hole	<0.025	<0.025	<0.025	<0.025	<0.025
%IA		109	99	101	108	103
%EA		102	92	90	96	96
BLANK		<0.025	<0.025	<0.025	<0.025	<0.025

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

12-13-00
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

WHOLE EARTH ENVIRONMENTAL
ATTN: MR. MIKE GRIFFIN
19606 SAN GABRIEL
HOUSTON, TEXAS 77084
FAX: 281-646-8996

SampleType: Soil
Sample Condition: Intact/ Iced/ 4 deg. C
Project #: None Given
Project Name: Collier #1
Project Location: Tatum, N.M.

Sampling Date: 12/06/00
Receiving Date: 12/09/00
Analysis Date: 12/12/00

ELT#	FIELD CODE	Chloride mg/kg
35142	Backfill 50' Hole	48

QUALITY CONTROL	5318
TRUE VALUE	5000
% INSTRUMENT ACCURACY	106
BLANK	<10

METHODS: SW 846-9253

Raland K. Tuttle

12-13-00
Date

nvir[illegible]ental Lab of Texas, Inc.

)0 West I-20 East
ssa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: M. Griffin
Company Name: Whole Earth Environmental
Company Address:
City/State/Zip:
Telephone No: (800) 854-4358 Fax No: 281·646·8996
Sampler Signature: M. Griffin

Project Name: Callies #1
Project #:
Project Loc: Tatum, NM
PO #:

Lab # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify)	Analyze For: TCLP: TDS / CL / SAR / EC	TCLP: TPH 418.1	TOTAL: TPH TX 1005/1006	TOTAL: TPH 8015M GRO/DRO	TOTAL: Metals: As Ag Ba Cd Cr Pb Hg Se	TOTAL: Volatiles	TOTAL: Semivolatiles	TOTAL: BTEX 8021B/5030	TOTAL: Chlorides	RUSH TAT (Pre-Schedule)	Standard TAT
51472	Backfill 50' hole	12-6-00	4:05	1	✓									✓				✓	✓				✓	✓		

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: Rec. 4°C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
M. Griffin	12-9-00	12:30			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			[illegible]	12/8/00	1230