DUKE ENERGY FIELD SERVICES

IRP-83
10.11.05

SITE INVESTIGATION, REMEDIATION, AND FINAL C-141 CLOSURE DOCUMENTATION

C EXTENSION-1 RELEASE SITE

DEFS REF: C EXTENSION-1 121202

UL-C (NE¼ OF THE NW¼) OF SECTION 30 T20S R37E

~5.4 MILES SOUTH-SOUTHWEST (BEARING 198.1°) OF MONUMENT

LEA COUNTY, NEW MEXICO

LATITUDE: N32°32'59.95 LONGITUDE: W103°17'38.27"

SEPTEMBER 15, 2003

PREPARED BY: JCG

Environmental Plus, Inc.

2100 Avenue O

P.O. Box 1558

Eunice, NM 88231

Phone: (505)394-3481

FAX: (505)394-2601

Table of Contents

Project Summary

Site Specific:

- **Company Name**: Duke Energy Field Services
- **Facility Name**: C Extension-1 Natural Gas Gathering Pipeline
- **Project Reference** C Extension-1 121202
- **Company Contact**: Paul Mulkey
- **Site Location:** WGS84: N32°32'59.95"; W103°17'38.27"
- **Legal Description**: UL-C (NE¼ OF THE NW¼) OF SECTION 30 T20S R37E
- **General Description**: ~5.4 Miles south-southwest (bearing: 198.1°) of Monument, Lea County, New Mexico
- **Elevation**: 3,548-ft amsl **Depth to Ground Water**: ~35-ft
- **Land Ownership**: State of New Mexico
- **EPI Personnel**: Technical Manager – Pat McCasland
  Project Consultant – John Good
  Site Foreman – Eddie Joe Harper

Release Specific:

- **Product Released**: Natural Gas & NGL
- **Volume Released**: 20 bbl **Volume Recovered**: 15 bbl
- **Time of Occurrence**: 12/12/02 **Time of Discovery**: 12/12/02
- **Release Source**: Steel NG pipeline; integrity lost due to internal corrosion; repaired by clamping.
- **Initial Surface Area Affected**: 3,548-ft^2

Remediation Specific:

- **Final Vertical extent of contamination**: 13-ft bgs; Remaining depth to ground water: 22-ft
- **Water wells within 1000-ft**: 0 **Surface water bodies within 1000-ft**: 0
- **NMOCD Site Ranking Index**: 20 points (<50-ft to top of water table)
- **Remedial goals for Soil 0-35-ft bgs**: TPH – 100 ppm; BTEX – 50 ppm; Benzene – 10 ppm; Chlorides – 250 ppm
- **RCRA Waste Classification**: Exempt
- **Remediation Option Selected**: a) Excavation and disposal of contaminated soil above NMOCD remedial goals; b) analytical confirmation of bottom-hole and sidewall contaminant levels; c) backfill with clean caliche and topsoil.
- **Disposal Facility**: South Monument **Volume disposed of**: 602-yd^3
- **Project Completion Date**: January 24, 2003
- **Additional Commentary**: None

1.0 Introduction & Background

This report addresses the site investigation and remediation of the Duke Energy Field Services (DEFS) "C Extension-1 121202" natural gas gathering line remediation site. On December 12, 2002, Environmental Plus, Inc. (EPI), Eunice-NM, was notified by DEFS regarding a newly discovered natural gas and associated Natural Gas Liquid (NGL) release at this site. The initial C-141 Form submitted to NMOCD (December 19, 2002) reports the release volume (NGL) as 20 bbl with 15 bbl recovered. EPI responded the day of the notification and commenced GPS delineation, photography, flow path containment and characterization of the site. The site consisted of a ~2,050–ft^2 area with pooled NGL at the Point of Release in addition to flow paths extending north and west of the POR *(Plate 3, Attachments)*. Remediation of this release site consisted of excavation and disposal of 602-yd^3 of contaminated soil (South Monument Surface Waste Facility), bottom-hole and sidewall soil analyses, backfill and final contouring of the excavation. Remediation of the site was completed on January 24, 2003.

The site is associated with the DEFS C Extension-1 natural gas gathering pipeline. This release site is located in Unit Letter C, (NE¼ OF THE NW¼)), Section 30, T20S, R37E, N32°32'59.95"; W103°17'38.27". The release site is ~5.4-miles south-southwest (bearing: 198.1°) of Monument, Lea County, New Mexico. The property is owned by State of New Mexico. A site location map, site topographical map and a detailed GPS site diagram are included in the Attachments as *Plates 1, 2 and 3*.

The natural gas and associated NGL release at this site was discovered and reported on December 12, 2002. The Initial NMOCD C-141 Form was submitted on December 19, 2002. The leak was the result of internal pipe corrosion and was repaired by clamping.

2.0 Site Description

2.1 Geological Description

The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and Ground-Water Conditions in Southern Lea County, New Mexico," A. Nicholson and A. Clebsch, 1961, describes the near surface geology of southern Lea County as "an intergrade of the Quaternary Alluvium (QA) sediments, i.e., fine to medium sand, with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick interbed of caliche and generally overlain by sandy soil."

The release site is located in the Laguna Valley physiographic subdivision, described by Nicholson & Clebsch as an area "covered almost entirely by dune sand which is stable or semi-stable over most of the area, but which locally drifts. The surface is very irregular and has no drainage features except at the edges of several playas. The sand is generally underlain by Recent alluvium but in several places the sand forms topographic highs where it is underlain by a caliche surface. The thickness of the sand cover ranges from a few inches to a probable maximum of 20-feet".

2.2 Ecological Description

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (*Querqus harvardi*) interspersed with Honey Mesquite (*Prosopis glandulosa*) along with typical desert grasses, flowering annuals

and flowering perennials. Mammals represented, include Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, Mule Deer, Bobcat, Red Fox and Coyote. Reptiles, Amphibians, and Birds are numerous and typical of area. A survey of Listed, Threatened, or Endangered species was not conducted.

2.3 Area Ground Water

The unconfined ground water aquifer at this site is projected to be ~35-ft bgs based on water depth data obtained from the NM State Engineers Office data base for the nearest water wells located ~1-mile north of the site. Ground water gradient in this area is generally to the east-southeast.

2.4 Area Water Wells

All recorded wells are greater than 1000 horizontal feet from the site.

2.5 Area Surface Water Features

No surface water bodies exist within 1000 horizontal feet of the site.

3.0 NMOCD Site Ranking

Contaminant delineation and remedial work done at this site indicate that the chemical parameters of the soil and the physical parameters of the ground water were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the following New Mexico Oil Conservation Division (NMOCD) publications:

- ***Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)***
- ***Unlined Surface Impoundment Closure Guidelines (February 1993)***

Acceptable thresholds for contaminants/constituents of concern (CoCs), i.e., TPH^{8015m}, Benzene, and the mass sum of Benzene, Toluene, Ethyl Benzene, and total Xylenes (BTEX), was determined based on the NMOCD Ranking Criteria as follows:

- *Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.*
- *Wellhead Protection Area, i.e., distance from fresh water supply wells.*
- *Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.*

Based on the proximity of the site to protectable area water wells, surface water bodies, and depth to ground water from the lower most contamination, the NMOCD ranking score for the site is 20 points with the soil remedial goals highlighted in the Site Ranking table presented on the following page.

1. Ground Water	2. Wellhead Protection Area	3. Distance to Surface Water
Depth to GW <50 feet: *20 points*	If <1000' from water source, or; <200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
Depth to GW 50 to 99 feet: *10 points*		200-1000 horizontal feet: *10 points*
Depth to GW >100 feet: 0 points	If >1000' from water source, or; >200' from private domestic water source: *0 points*	>1000 horizontal feet: *0 points*
Ground Water Score = 20	Wellhead Protection Score= 0	Surface Water Score= 0
Site Rank (1+2+3) = 20 + 0 + 0 = 20 points (for soil 0-130'bgs)		

Total Site Ranking Score and Acceptable Remedial Goal Concentrations			
Parameter	20 or >	10	0
Benzene[1]	10 ppm	10 ppm	10 ppm
BTEX[1]	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1000 ppm	5000 ppm

4.0 Subsurface Soil Investigation

During the excavation phase of the project the area associated with the POR was excavated to an initial depth of 9-ft bgs and the flow paths west and north of the POR were excavated to a depth of 3-ft. Composite bottom-hole and sidewall samples of this preliminary excavation were taken during the period December 17-20, 2002. Laboratory analyses results of this sampling *(Plates 4-5, Attachments)* indicated hydrocarbon contamination (and sulfates) remained above remedial goals in the center of the excavation nearest the POR (9-ft depth), and in the south and east sidewall areas of the excavation (3-ft depth). BTEX, Benzene and Chloride levels were not a significant issue anywhere in the excavation at these initial depths. The excavation was extended to 13-ft bgs in the center near the POR and laterally 3-ft along the east and south peripheries. These extended areas were composite sampled on January 20, 2003. Analytical results of this sampling *(Plates 4-5, Attachments)* indicated that hydrocarbon, chloride and sulfate contamination was below remedial goals throughout the excavation, and that closure of the site could be justified with the level of contaminant removal obtained.

5.0 Ground Water Investigation

The projected depth to ground water at this site is ~35-ft bgs. Excavation of the site was to a maximum depth of 13-ft. Final CoC levels of the bottom-hole and the sidewalls of the excavation were confirmed to be significantly below remedial goal levels for all Constituents of Concern.

The excavation was backfilled with clean soil obtained from within the pipeline right-of-way. Based on the removal the Constituents of Concern at this site, there will be no need for further ground water investigation at this site.

6.0 Remediation Process

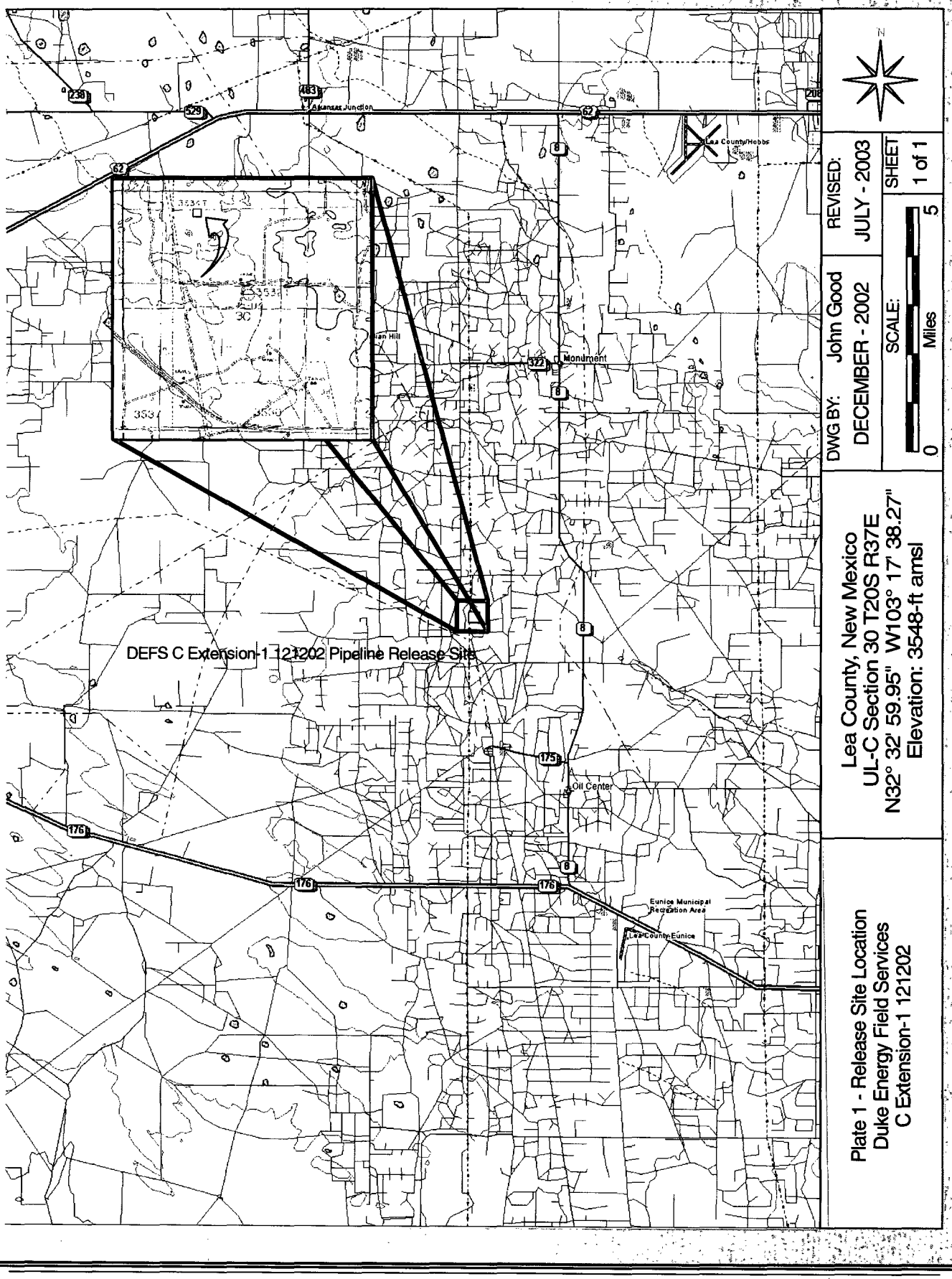
Remediation of the site commenced on December 12, 2002 and continued through January 24, 2003. Remedial activities at the site consisted of excavation and disposal of 602-yd^3 of NGL contaminated soil from the site. All contaminated soil removed from the site was disposed of in the NMOCD approved South Monument Surface Waste Facility. The main excavation was backfilled with clean soil obtained on-site from within the pipeline right-of-way.

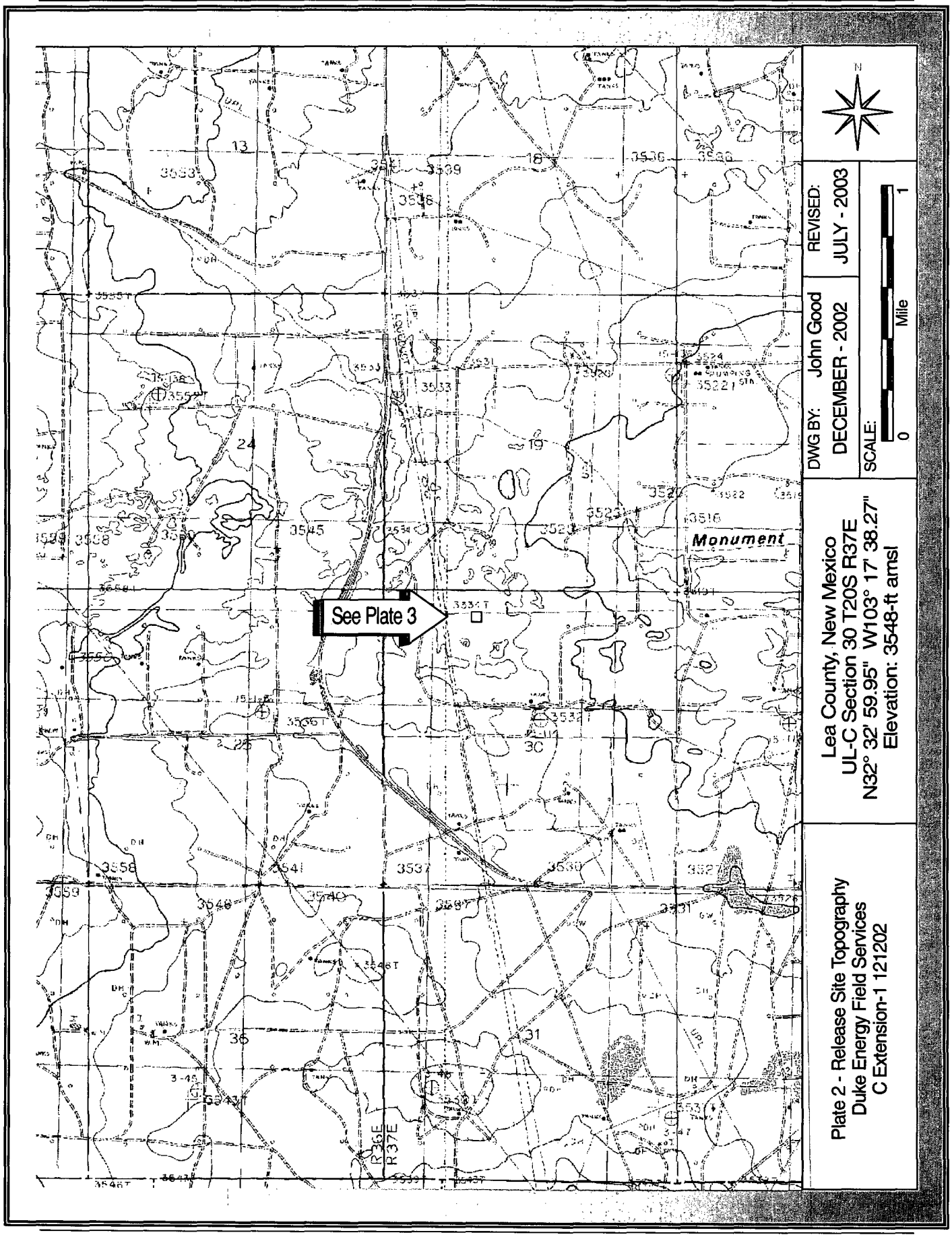
The excavation *(Plate 3, Attachments)* was composite sampled (bottom-hole and sidewalls) on December 17-20, 2002, and again on January 20, 2003 after localized expansion of the excavation to remove "hot spots". Results of the analyses *(Plates 4-5, Attachments)* indicate that remedial goals have been achieved in all areas of the excavation. The excavation will be evaluated periodically for the necessity of re-seeding or erosion control.

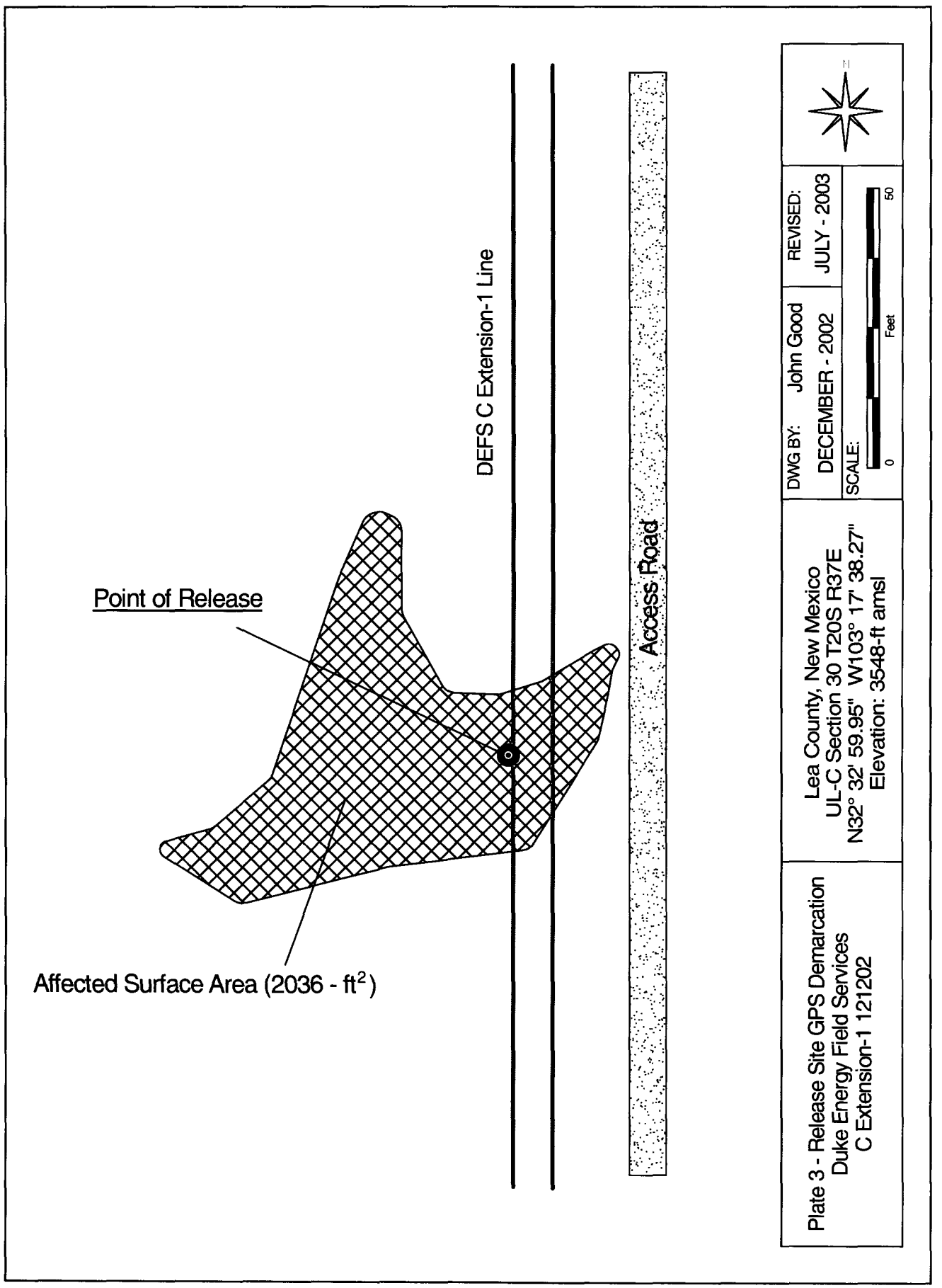
7.0 Closure Justification

This report documents successful implementation of the Remediation Plan approved by NMOCD for this release site. Soil contaminated above acceptable CoC remedial concentrations was excavated and removed from the location. Disposal of RCRA exempt contaminated soils was at the South Monument Surface Waste Facility. The excavation was backfilled with clean soil and properly contoured to provide adequate drainage. Based on the data presented in this report, Environmental Plus, Inc., on behalf of Duke Energy Field Services, requests that the NMOCD require "no further action" at this site.

ATTACHMENTS


DEFS C Extension-1 121202 Pipeline Release Site
Arkansas Junction
Lea County/Hobbs
Monument
Oil Center
Eunice Municipal Recreation Area
Lea County-Eunice
Plate 1 - Release Site Location
Duke Energy Field Services
C Extension-1 121202
Lea County, New Mexico
UL-C Section 30 T20S R37E
N32° 32' 59.95" W103° 17' 38.27"
Elevation: 3548-ft amsl
DWG BY: John Good
DECEMBER - 2002
REVISED:
JULY - 2003
SCALE:
0
5
Miles
SHEET
1 of 1


See Plate 3
Monument
R36E
R37E
Plate 2 - Release Site Topography
Duke Energy Field Services
C Extension-1 121202
Lea County, New Mexico
UL-C Section 30 T20S R37E
N32° 32' 59.95" W103° 17' 38.27"
Elevation: 3548-ft amsl
DWG BY: John Good
DECEMBER - 2002
REVISED:
JULY - 2003
SCALE:
0
1
Mile
N


DEFS C Extension-1 Line
Access Road
Point of Release
Affected Surface Area (2036 - ft²)
N
DWG BY: John Good
DECEMBER - 2002
REVISED:
JULY - 2003
SCALE:
0
50
Feet
Lea County, New Mexico
UL-C Section 30 T20S R37E
N32° 32' 59.95" W103° 17' 38.27"
Elevation: 3548-ft amsl
Plate 3 - Release Site GPS Demarcation
Duke Energy Field Services
C Extension-1 121202

Duke Energy Field Services - C Extenstion-1 - Excavation Sampling Results

Bold highlighted cells indicate values in excess of the NMOCD remedial action guideline thresholds: TPH = 100 mg/Kg; Benzene = 10 mg/Kg; BTEX = 50 mg/Kg; Cl = 250 ppm; SO4 = 600 ppm

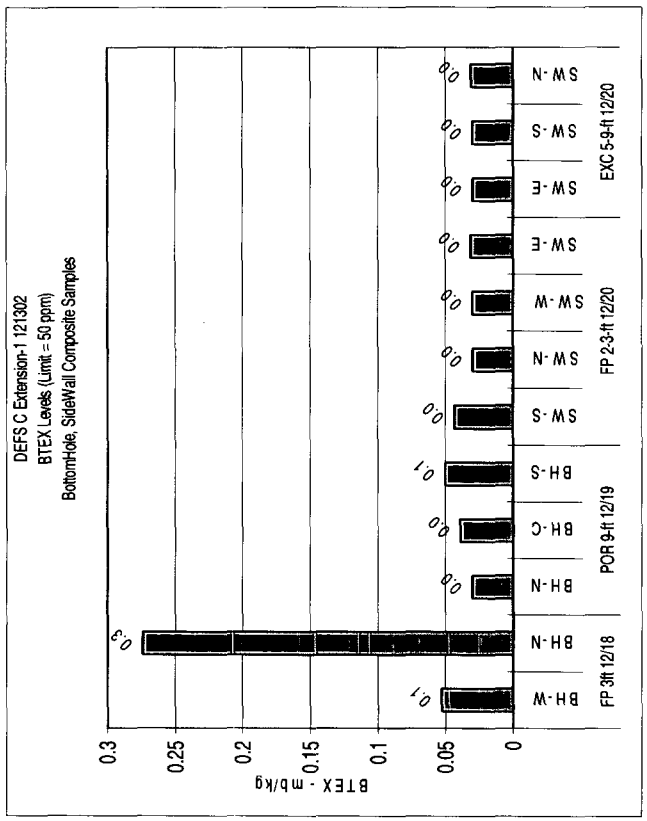
Sample Date	Excavation Sampling Area	Depth (ft - bgs[1])	SAMPLE ID#	GRO[3] mg/Kg	DRO[4] mg/Kg	TPH[5] mg/Kg	BTEX[6] mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethyl Benzene mg/Kg	Total Xylenes mg/Kg	Cl^- mg/Kg	SO_4 mg/Kg	pH
17-Dec	BottomHole - West FP	3-ft	SDCE1122002WFPBHC-3	10	18	28	0.053	0.005	0.009	0.026	0.013	112	496.0	6.76
18-Dec	BottomHole - North FP	3-ft	SDCE1122002NFPBHC-3	10	12	22	0.274	0.005	0.042	0.038	0.189	160	21.2	6.90
19-Dec	BottomHole - North POR	9-ft	SDCE1122002NBHC-9	10	10	20	0.030	0.005	0.005	0.005	0.015	96	83.7	7.58
19-Dec	BottomHole - Middle POR	9-ft	SDCE1122002MBHC-9	10	**229**	**239**	0.039	0.005	0.005	0.006	0.023	144	**856.0**	7.40
19-Dec	BottomHole - South POR	9-ft	SDCE1122002SBHC-9	10	55	65	0.050	0.005	0.005	0.007	0.033	128	86.6	7.74
20-Dec	FlowPath - SSW	2-3-ft	SDCE1122002FPSSW-C	10	**962**	**972**	0.043	0.005	0.005	0.005	0.028			
20-Dec	FlowPath - NSW	2-3-ft	SDCE1122002FPNSW-C	10	10	20	0.030	0.005	0.005	0.005	0.015			
20-Dec	FlowPath - WSW	2-3-ft	SDCE1122002FPWSW-C	10	75	85	0.030	0.005	0.005	0.005	0.015			
20-Dec	FlowPath - ESW	2-3-ft	SDCE1122002FPESW-C	10	10	20	0.031	0.005	0.006	0.005	0.015			
20-Dec	POR - ESW	5-9-ft	SDCE1122002PORESW-C	10	**425**	**435**	0.030	0.005	0.005	0.005	0.015			
20-Dec	POR - SSW	5-9-ft	SDCE1122002PORSSW-C	10	98	**108**	0.030	0.005	0.005	0.005	0.015			
20-Dec	POR - NSW	5-9-ft	SDCE1122002PORNSW-C	10	11	21	0.031	0.005	0.005	0.006	0.015			
20-Jan	BottomHole - Middle POR	13-ft	SDCE1012003BHC-13	10	10	20							76.0	
20-Jan	Excavation SSW	3-9-ft	SDCE1012003SSW-C	10	10	20								
20-Jan	Excavation ESW	3-9-ft	SDCE1012003ESW-C	10	10	20								

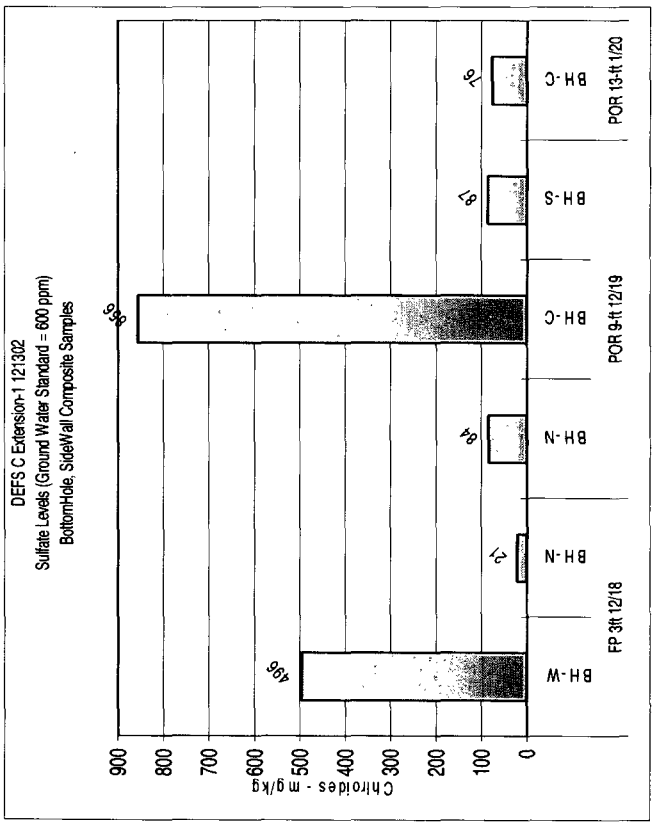
[1] bgs = below ground surface [3] GRO - Gasoline Range Organics (Detection Limit = 10 mg/Kg) [4] DRO - Diesel Range Organics (Detection Limit = 10 mg/Kg)

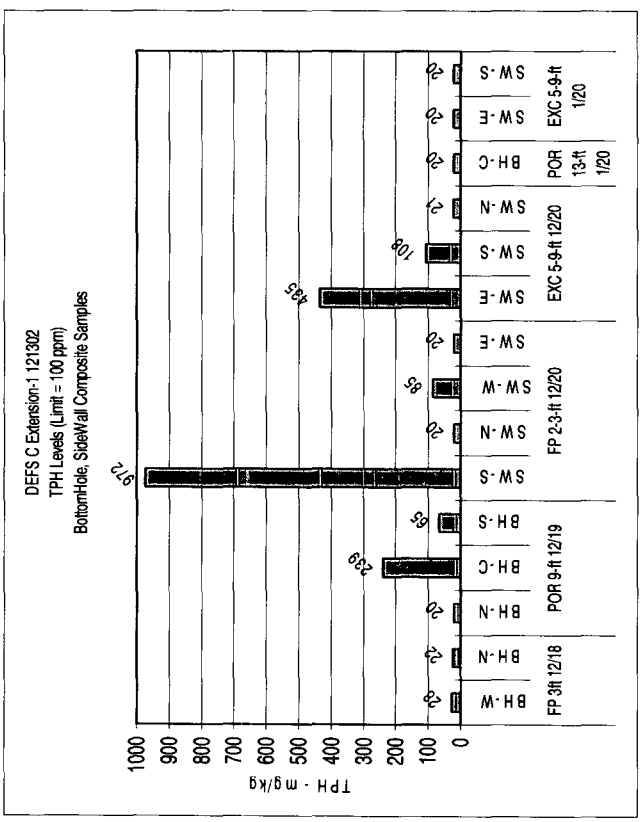
[5] TPH - Total Petroleum Hydrocarbon (GRO+DRO) [6] BTEX = Sum of CoC's (Detection Limits = 0.005 mg/Kg; 0.015 mg/Kg)

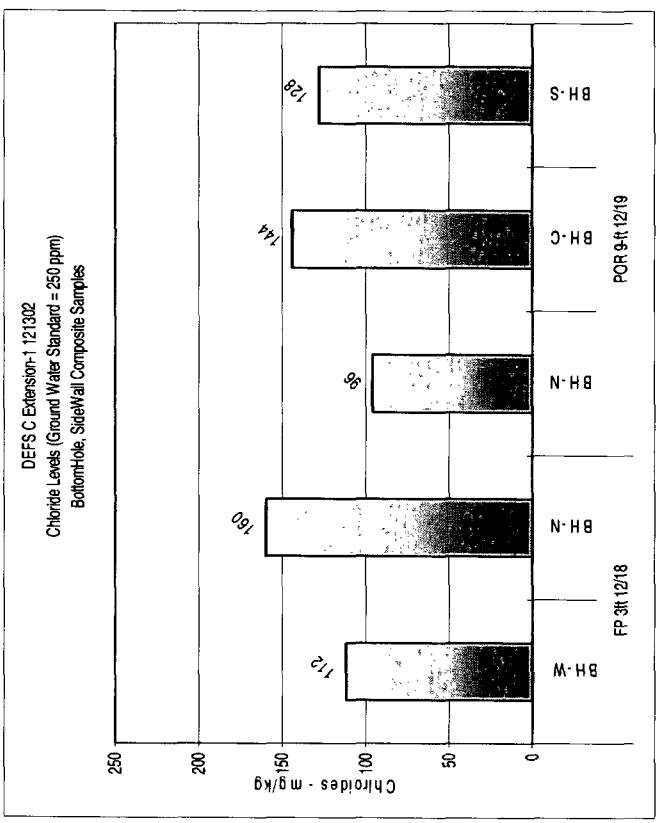
Note: Reported detection limits are considered "de minimus" values and are included in the TPH and BTEX summations.

Plate 5: Soil Analytical Data Charts









Laboratory Analyses

CARDINAL LABORATORIES

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: JOHN GOOD
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 12/20/02
Reporting Date: 12/26/02
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: C EXTENSION-1 121202
Project Location: UL-C SECTION 30 T20S R37E

Sampling Date: 12/17 through 12/20/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO.	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		12/23/02	12/23/02	12/23/02	12/23/02	12/23/02	12/23/02
H7350-1	SDCE1122002NFPBHC-3	<10.0	12.0	<0.005	0.042	0.038	0.189
H7350-2	SDCE1122002WFPBHC-3	<10.0	17.8	<0.005	0.009	0.026	0.127
H7350-3	SDCE1122002NBHC-9	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7350-4	SDCE1122002MBHC-9	<10.0	229	<0.005	<0.005	0.006	0.023
H7350-5	SDCE1122002SBHC-9	<10.0	54.9	<0.005	<0.005	0.007	0.033
H7350-6	SDCE1122002FPSSW-C	<10.0	962	<0.005	<0.005	<0.005	0.028
H7350-7	SDCE1122002FPNSW-C	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7350-8	SDCE1122002FPWSW-C	<10.0	74.9	<0.005	<0.005	<0.005	<0.015
H7350-9	SDCE1122002FPESW-C	<10.0	<10.0	<0.005	0.006	<0.005	<0.015
H7350-10	SDCE1122002PORESW-C	<10.0	425	<0.005	<0.005	<0.005	<0.015
H7350-11	SDCE1122002PORSSW-C	<10.0	97.9	<0.005	<0.005	<0.005	<0.015
H7350-12	SDCE1122002PORNSW-C	<10.0	11.2	<0.005	<0.005	0.006	0.015
Quality Control		759	625	0.108	0.100	0.104	0.308
True Value QC		800	800	0.100	0.100	0.100	0.300
% Recovery		94.9	103	108	100	104	
Relative Percent Difference		3.1	1.3	8.1	1.9	5.5	

Burgess J.A. Cooke, Ph. D

12/26/02
Date

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: JOHN GOOD
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 12/20/02
Reporting Date: 12/27/02
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: C EXTENSION-1 121202
Project Location: UL-C SEC30 T20S R37E

Sampling Date: 12/17-12/19/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl (mg/Kg)	SO_4 (mg/Kg)	pH (s.u.)
ANALYSIS DATE		12/26/02	12/26/02	12/26/02
H7350-1**	SDCE1122002NFPBHC-3	160	21.2	6.90
H7350-2**	SDCE1122002WFPBHC-3	112	496	6.76
H7350-3	SDCE1122002NBHC-9	96	83.7	7.58
H7350-4**	SDCE1122002MBHC-9	144	856	7.40
H7350-5	SDCE1122002SBHC-9	128	86.6	7.74
Quality Control		1000	50.20	6.75
True Value QC		1000	50.00	7.00
% Recovery		100.0	100	96.4
Relative Percent Difference		3.9	0.7	0.1
METHODS: 600/4-79-020		4500-ClB*	375.4	150.1

*Standard Methods
Note: Analyses performed on 1:4 w:v aqueous extracts.
** Matrix interferenece (color) observed.

Amy Hill
Chemist

12-27-02
Date

Cardina Laboratories Inc.

East Marland Hobbs, NM 88240
505-393-2326 Fax 505-393-2476

21 Beechwood Abilene TX 79603
915-673-7001 Fax 915-673-7020

Company Name	Environmental Plus, Inc.
Project Manager	John Good
Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
Phone#/Fax#	505-394-3481 / 505-394-2601
Project #/Owner	Duke Energy Field Services
Project Name	C Extension-1 121202
Project Location	UL-C Section 30 T20S R37E
Sampler Name	Eddie Harper; John Good

Bill To

ANALYSIS REQUEST

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl)	SULFATES (SO_4)	pH
H18501 1	SDCE1122002NFPBHC-3	C	1			X					X		16-Dec	2:45	X	X	X	X	X
-2 2	SDCE1122002WFPBHC-3	C	1			X					X		17-Dec	2:30	X	X	X	X	X
-3 3	SDCE1122002NBHC-9	C	1			X					X		19-Dec	10:00	X	X	X	X	X
-4 4	SDCE1122002MBHC-9	C	1			X					X		18-Dec	8:40	X	X	X	X	X
-5 5	SDCE1122002SBHC-9	C	1			X					X		19-Dec	11:15	X	X	X	X	X
-6 6	SDCE1122002FPSSW-C	C	1			X					X		20-Dec	1:00	X	X			
-7 7	SDCE1122002FPNSW-C	C	1			X					X		20-Dec	1:10	X	X			
-8 8	SDCE1122002FPWSW-C	C	1			X					X		20-Dec	1:20	X	X			
-9 9	SDCE1122002FPESW-C	C	1			X					X		20-Dec	1:30	X	X			
-10 10	SDCE1122002PORESW-C	C	1			X					X		20-Dec	1:40	X	X			
-11 11	SDCE1122002PORSSW-C	C	1			X					X		20-Dec	1:50	X	X			
-12 12	SDCE1122002PORNSW-C	C	1			X					X		20-Dec	2:00	X	X			
13																			
14																			

Sampler Relinquished: John Good	Date 12-20 Time 1:45	Received By:	Fax Results To John Good 505-394-2601
Relinquished by:	Date / Time	Received By: (lab staff)	REMARKS:
Delivered by:	Sample Cool & Intact: Yes / No	Checked By:	

CARDINAL LABORATORIES

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

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: JOHN GOOD
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 01/21/03
Reporting Date: 01/22/03
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: C EXTENSION-1 121202
Project Location: UL-C SECTION 30 T20S R37E

Sampling Date: 01/20/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)
ANALYSIS DATE:		01/21/03	01/21/03
H7418-1	SDCE1012003BHC-13	<10.0	<10.0
H7418-2	SDCE1012003SSWC	<10.0	<10.0
H7418-3	SDCE1012003ESWC	<10.0	<10.0
Quality Control		772	783
True Value QC			800
% Recovery			97.9
Relative Percent Difference			0.6

METHOD: SW-846 8015 M

Chemist

1/22/02
Date

H7418A.XLS

CARDINAL LABORATORIES

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ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: JOHN GOOD
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 01/21/03
Reporting Date: 01/22/03
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: C EXTENSION-1 121202
Project Location: UL-C SEC 30 T20S R37E

Analysis Date: 01/22/03
Sampling Date: 01/20/03
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	SO_4 (mg/Kg)
H7418-1	SDCE1012003BHC-13	76.0
Quality Control		50.2
True Value QC		50.0
% Recovery		100
Relative Percent Difference		0.7
METHOD: EPA 600/4-79-020		375.4

Note: Analysis performed on a 1:4 w:v aqueous extract.

Amy Hill
Chemist

1-22-03
Date

Cardinal Laboratories Inc.

101 East Marland, Hobbs, NM 88240
505-393-2326 Fax 505-393-2476

2111 Beechwood, Abilene, TX 79603
915-673-7001 Fax 915-673-7020

Company Name	Environmental Plus, Inc.
Project Manager	John Good
Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
Phone#/Fax#	505-394-3481 / 505-394-2601
Project #/Owner	Duke Energy Field Services
Project Name	C Extension-1 121202
Project Location	UL-C Section 30 T20S R37E
Sampler Name	Bill Trull

Bill To

ANALYSIS REQUEST

LAB I.D.		SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl)	SULFATES (SO_4^{-})	pH
H7448-1	1	SDCE1012003BHC-13	C	1			X					X		20-Jan	1:40		X		X	
2	2	SDCE1012003SSWC	C	1			X					X		20-Jan	1:45		X			
3	3	SDCE1012003ESWC	C	1			X					X		20-Jan	1:50		X			
	4																			
	5																			
	6																			
	7																			
	8																			
	9																			
	10																			

Sampler Relinquished: [signature]
Date: 1-20-03 Time: 4:15
Received By: [signature]

Relinquished by: [signature]
Date: 1-21-03 Time: 4:40
Received By: (lab staff) [signature]

Delivered by:

Sample Cool & Intact: Yes / No

Checked By:

Fax Results To John Good 505-394-2601

REMARKS:

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised June 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☑ Final Report

Name of Company	DUKE ENERGY FIELD SERVICES	Contact	Paul Mulkey
Address	11525 W. Carlsbad Hwy. Hobbs, NM 88240	Telephone No.	505-397-5716
Facility Name	C Extension-1	Facility Type	Natural Gas Gathering Pipeline

Surface Owner	State of New Mexico	Mineral Owner	NA	Lease No.	NA

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from South Line	Feet from West Line	Longitude	Latitude	County:
C	30	20S	37E	4796	1674	W103° 17' 38.27"	N32° 32' 59.95"	Lea

NATURE OF RELEASE

Type of Release Natural Gas release and associated NGL's	Volume of Release 20 bbl	Volume Recovered 15 bbl
Source of Release Steel Natural Gas Pipeline	Date and Hour of Occurrence 12/12/2002	Date and Hour of Discovery 12/12/02
Was Immediate Notice Given? ☑ Yes ☐ No ☐ Not Required	If YES, To Whom? Johnny Robinson NMOCD-Hobbs	
By Whom? Stan Shaver - DEFS	Date and Hour 12/12/02 6:00 PM	
Was a Watercourse Reached? ☐ Yes ☑ No	If YES, Volume Impacting the Watercourse. NA	

If a Watercourse was Impacted, Describe Fully.*

NA

Describe Cause of Problem and Remedial Action Taken.*

Internally Corroded pipeline, repaired by clamping leak

Describe Area Affected and Cleanup Action Taken.*

2036-ft2 surface spill area affected. 602-yd3 of RCRA Exempt Non-hazardous contaminated soil excavated and disposed of by EPI. Backfilled with clean on-site soil.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Paul Mulkey		OIL CONSERVATION DIVISION	
Printed Name:	Paul Mulkey	Approved by District Supervisor:	
Title:	Construction/Maintenance Superintendent	Approval Date:	Expiration Date:
E-mail Address:	pdmulkey@duke-energy.com	Conditions of Approval:	☐ Attached .
Date: 9/15/03	Phone: 505-397-5716		

Duke Energy Field Services

Incident Date and NMOCD Notified?

12/12/02 12/12/02 6:00 PM

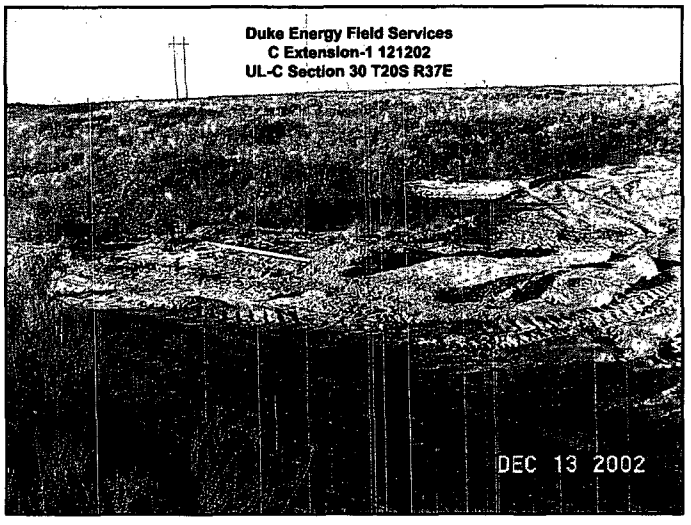
SITE: C Extension-1		Assigned Site Reference # 121202
Company:	DUKE ENERGY FIELD SERVICES	
Street Address:	5805 East Highway 80	
Mailing Address:	11525 W. Carlsbad Hwy.	
City, State, Zip:	Hobbs, NM 88240	
Representative:	Paul Mulkey	
Representative Telephone:	505-397-5716	
Telephone:		
Fluid volume released (bbls):	20	Recovered (bbls): 15
>25 bbls: Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days.		
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)		
Leak, Spill, or Pit (LSP) Name:	# 121202	
Source of contamination:	Steel Natural Gas Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other:	State of New Mexico State Land Office - Santa Fe, NM	
LSP Dimensions:	(GPS Site Diagram attached)	
LSP Area:	~2050 -ft^2	
Location of Reference Point (RP):		
Location distance and direction from RP:		
Latitude:	N32° 32' 59.95"	
Longitude:	W103° 17' 38.27"	
Elevation above mean sea level:	3548 -ft amsl	
Feet from South Section Line:	4796	
Feet from West Section Line:	1674	
Location - Unit and 1/4 1/4:	UL- C NE 1/4 of NW 1/4	
Location - Section:	30	
Location - Township:	20S	
Location - Range:	37E	
Surface water body within 1000' radius of Site:	0	
Surface water body within 1000' radius of Site:	0	
Domestic water wells within 1000' radius of Site:	0	
Domestic water wells within 1000' radius of Site:	0	
Agricultural water wells within 1000' radius of Site:	0	
Agricultural water wells within 1000' radius of Site:	0	
Public water supply wells within 1000' radius of Site:	0	
Public water supply wells within 1000' radius of Site:	0	
Depth (ft) from land surface to ground water (DG):	35	
Depth (ft) of contamination (DC):	13	
Depth (ft) to ground water (DG - DC = DtGW):	22	

1. Ground Water	2. Wellhead Protection Area	3. Distance to Surface Water Body
If Depth to GW <50 feet: *20 points*	If <1000' from water source, or, <200' from private domestic water source: *20 points*	<200 horizontal feet: 20 points
If Depth to GW 50 to 99 feet: *10 points*		200-100 horizontal feet: 10 points
If Depth to GW >100 feet: *0 points*	If >1000' from water source, or, >200' from private domestic water source: *0 points*	>1000 horizontal feet: 0 points
Ground water Score: 20	*Wellhead Protection Area Scor 0*	*Surface Water Score: 0*
Site Rank (1+2+3) = 20		

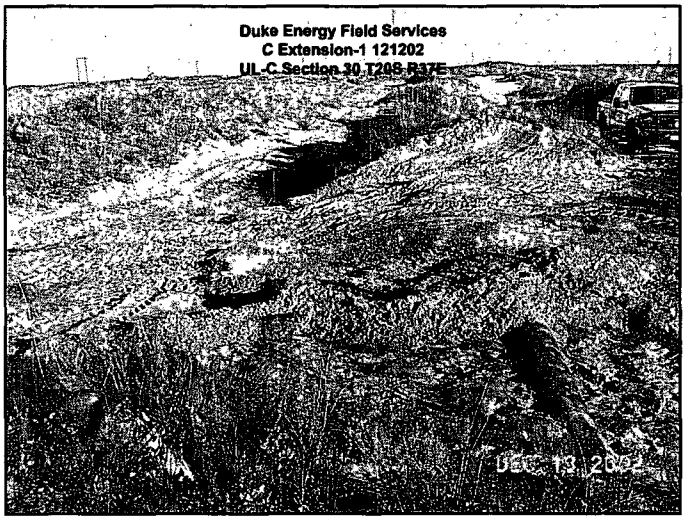
Total Site Ranking Score and Acceptable Concentrations

Parameter	**20 or >**	10	0
Benzene[1]	**10 ppm**	10 ppm	10 ppm
BTEX[1]	**50 ppm**	50 ppm	50 ppm
TPH	**100 ppm**	1000 ppm	5000 ppm

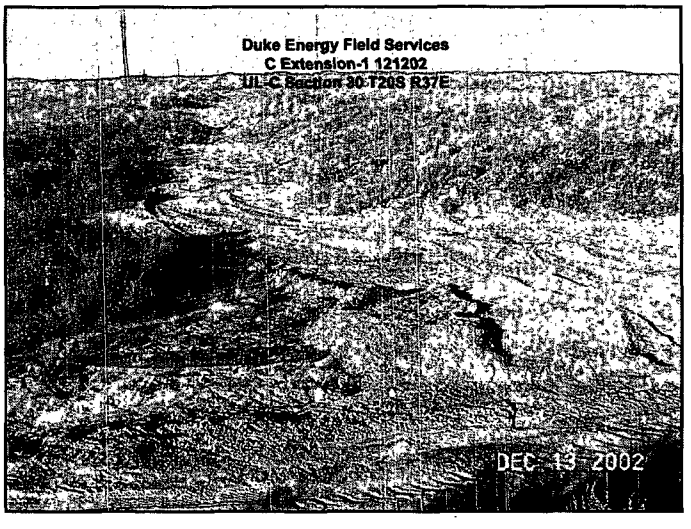
[1]100 ppm field VOC headspace measurement may be substituted for lab analysis



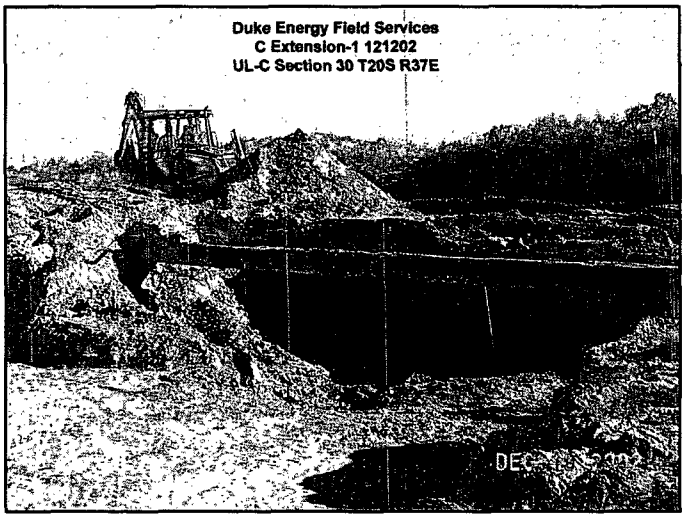
Initial Response: NE looking SW



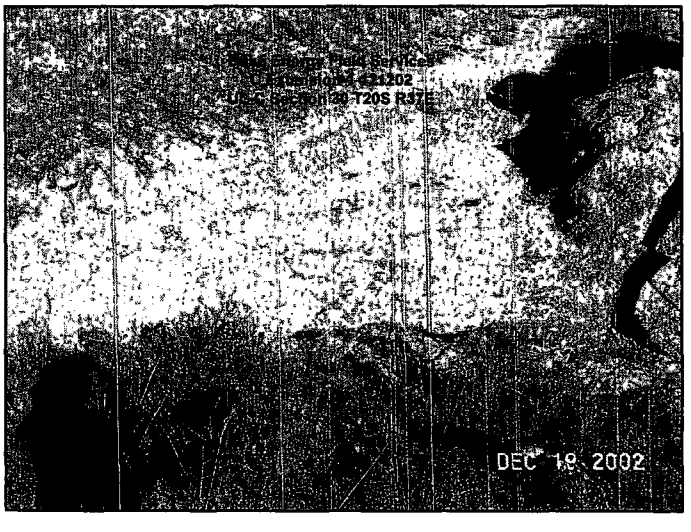
Initial Response: South looking North



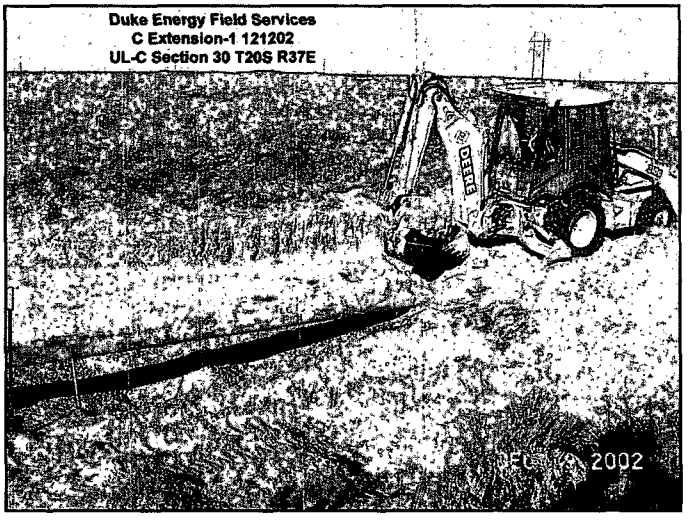
Initial Response: East looking West



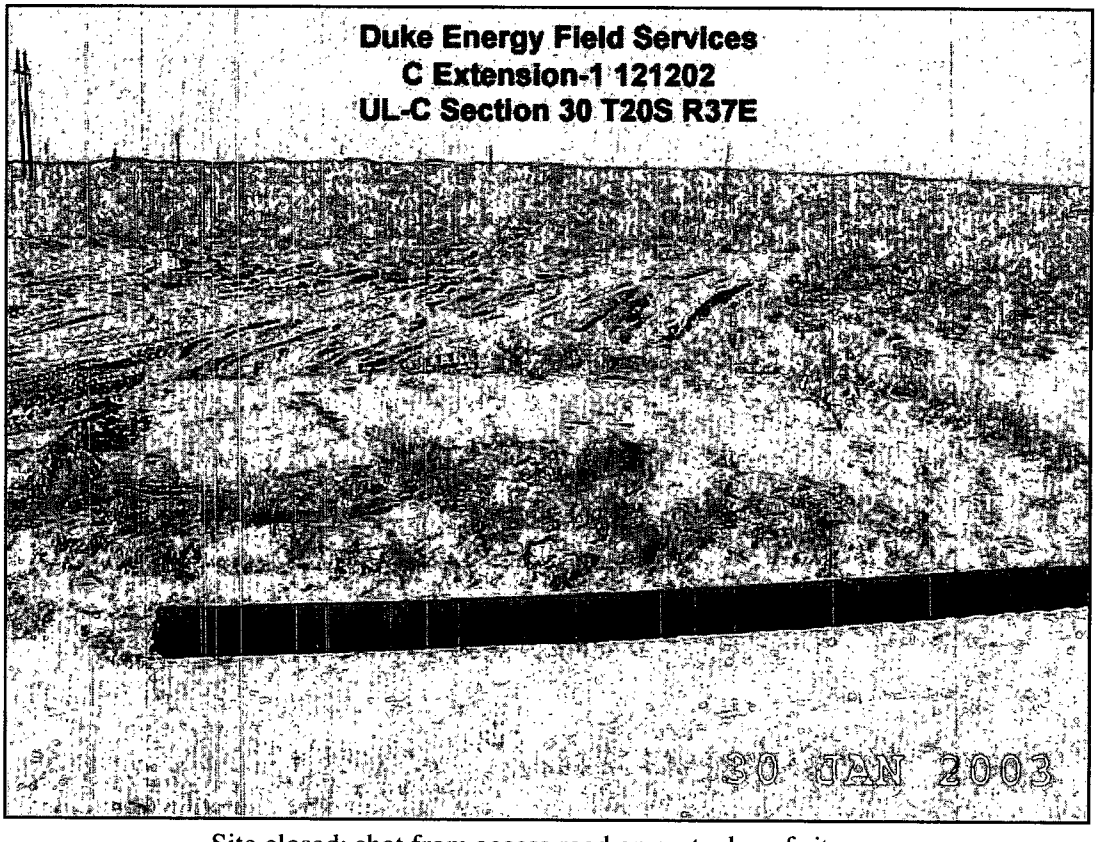
Day 7 – C Extension-1 exposed, 9-ft bgs @ POR



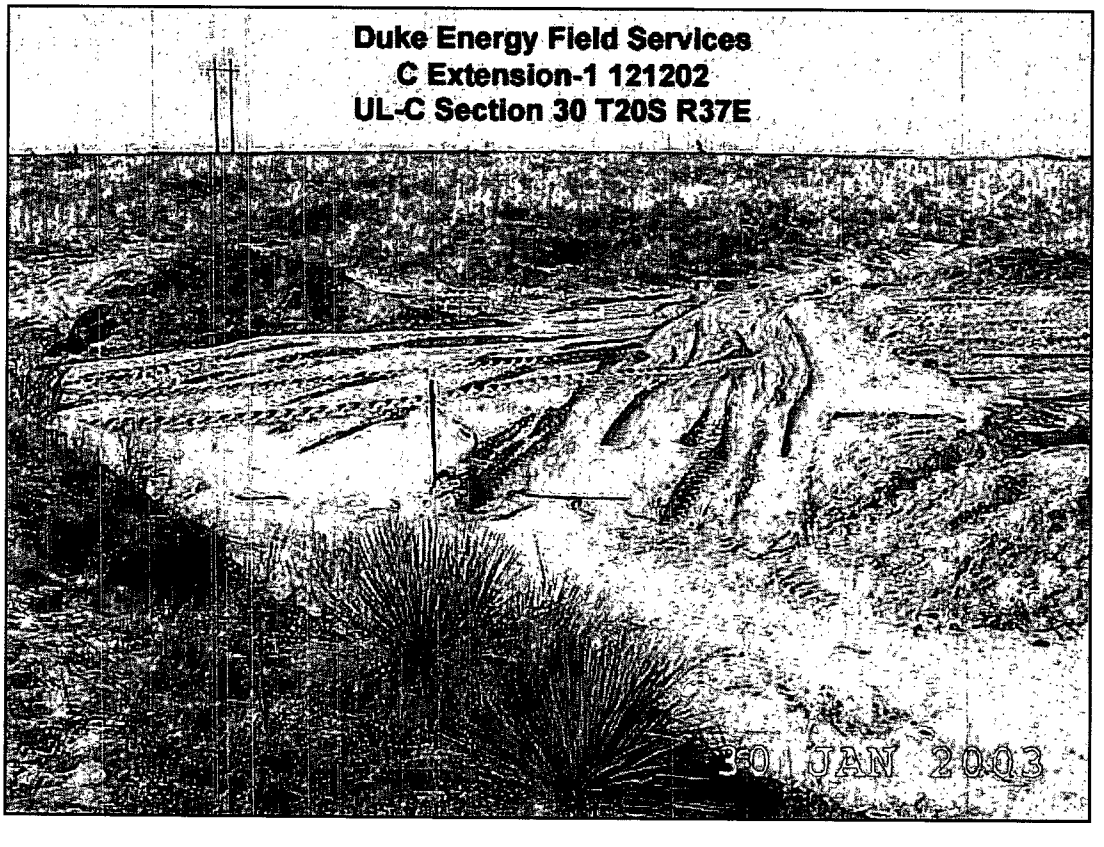
Day 7 – Flow path, pooling area excavated



Day 7- Excavation looking from SE to NW



Site closed: shot from access road on east edge of site.



Site closed: shot from sandy knoll east edge of site.