

July 1, 2004

Mr. Larry Johnson
New Mexico Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

RE: G-Extension-3 020104 {5} Release Site Closure Documentation
Unit P, Section 31, T21S, R36E
Lat: N 32° 26' 38.35" Long: W 103° 18' 57.08"
Duke Energy Field Services, LP
Lea County, NM

Mr. Johnson:

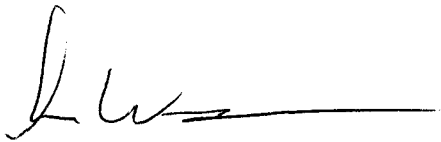
Enclosed please find for your review, one copy of the G-Extension-3 020104 {5} Release Site Closure Report. The closure report summarizes the remedial activities associated with the clean up of the Duke Energy Field Services, LP (DEFS) pipeline leak that was discovered on February 1, 2004.

Based on the information provided in the above referenced closure report, DEFS would like to request no further action for this location.

If you have any questions regarding the information provided in the closure report, please give me a call at 303-605-1718.

Sincerely

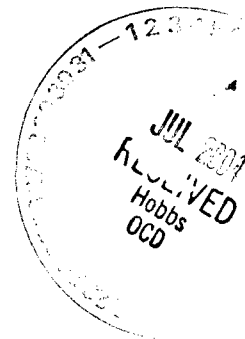
Duke Energy Field Services, LP



Stephen Weathers, PG
Sr. Environmental Specialist

cc: Paul Mulkey, DEFS Linam Ranch
Lynn Ward, DEFS Midland
Environmental Files

Enclosure





**SITE INVESTIGATION,
REMEDATION AND FINAL C-141
CLOSURE DOCUMENTATION**

**G-EXTENSION-3 RELEASE SITE
DEFS REF: G-EXTENSION-3 020104 [5]**

UL-P (SE¼ OF THE SE¼) OF SECTION 30 T21S R36E

~8.2 MILES WEST OF EUNICE

LEA COUNTY, NEW MEXICO

LATITUDE: N 32° 26' 38.85"

LONGITUDE: W 103° 17' 57.08"

JUNE 15, 2004

PREPARED BY:

Environmental Plus, Inc.

2100 Avenue O

P.O. Box 1558

Eunice, NM 88231

Phone: (505)394-3481

FAX: (505)394-2601

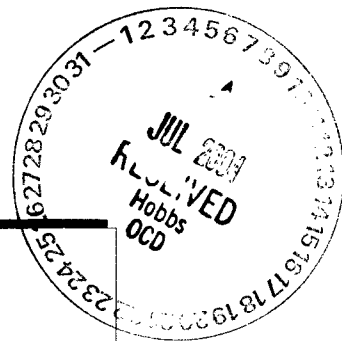
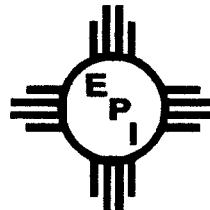


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Appendix II: Project Photographs

Project Summary

Site Specific:

- ◆ **Company Name:** Duke Energy Field Services
- ◆ **Facility Name:** G-Extension Natural Gas Gathering Pipeline
- ◆ **Project Reference** G-Extension [5] 020104
- ◆ **Company Contacts:** Paul Mulkey / Steve Weathers
- ◆ **Site Location:** WGS84 N32° 26' 38.85"; W103° 17' 57.08"
- ◆ **Legal Description:** Unit Letter P, (SE¼ of the SE¼), Section 30, T21S, R36E
- ◆ **General Description:** approximately 8.2-miles west of Eunice, New Mexico
- ◆ **Elevation:** 3,619-ft amsl **Depth to Ground Water:** >220-ft
- ◆ **Land Ownership:** DASCO Cattle Co. (Atlee Snyder)
- ◆ **EPI Personnel:** Technical Manager – Pat McCasland
 Project Consultant – John Good
 Site Foreman – Roger Boone

Release Specific:

- ◆ **Product Released:** Natural Gas & NGL
- ◆ **Volume Released:** 3-bbl reported **Volume Recovered:** 0-bbl
- ◆ **Time of Occurrence:** 01-Feb-04 **Time of Discovery:** 01-Feb-04
- ◆ **Release Source:** 12" steel NG pipeline; integrity lost due to internal corrosion; repaired by clamping with ultimate replacement of section.
- ◆ **Initial Surface Area Affected:** 333-ft²

Remediation Specific:

- ◆ **Final Vertical extent of contamination:** 5-ft bgs; Remaining depth to ground water: >200-ft
- ◆ **Water wells within 1,000-ft:** 0 **Surface water bodies within 1,000-ft:** 0
- ◆ **NMOCD Site Ranking Index:** 0 points (>100-ft to top of water table)
- ◆ **Remedial goals for Soil:** TPH – 5,000 mg/kg; BTEX – 50 mg/kg; Benzene – 10 mg/kg; Chlorides – 250 mg/kg; Sulfates – 600 mg/kg
- ◆ **RCRA Waste Classification:** Exempt
- ◆ **Remediation Option Selected:** a) Excavation and disposal of contaminated soil above NMOCD remedial goals; b) field analyses to confirm removal of soil impacted of NMOCD remedial threshold of 100 ppm via PID; c) backfill with clean caliche and topsoil.
- ◆ **Disposal Facility:** South Monument **Volume disposed of:** 318-yd³
- ◆ **Project Completion Date:** February 4, 2004
- ◆ **Additional Commentary:** None

1.0 Introduction & Background

This report addresses the site investigation and remediation of the Duke Energy Field Services (DEFS) "G-Extension-3 [5] 020104" 12-inch natural gas gathering line remediation site. On February 1, 2004, Environmental Plus, Inc. (EPI) was notified by DEFS regarding a recently discovered natural gas and associated natural gas liquid (NGL) release along the G-Extension-3 pipeline. This site is located approximately 0.7 mile north of the southern-most of the sites (#1) and was designated #5 for ease of identification. The initial C-141 Form submitted to the New Mexico Oil Conservation Division (NMOCD) on February 2, 2004, reports the release volume as three-barrels with zero-barrels recovered. EPI performed GPS surveying, photography and characterization of the site on February 1, 2004. The initial site consisted of an approximate 333 square feet (ft²) visibly affected surface area (*Reference Figure 3*). Remediation of this site consisted of excavation and disposal of 318 cubic yards (yds³) of contaminated soil from what was ultimately a 1,720-ft² excavation extending to 5-feet below ground surface (bgs). The contaminated soil was disposed of at the South Monument approved surface waste facility. The excavation bottom(s) and sidewalls were composite sampled on February 3, 2004 and analyzed in the field for the presence of organic vapors utilizing an UltraRae photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp. The construction phase of the site remediation commenced on February 2, 2004 and was completed with backfilling and contouring on February 4, 2004.

The site is associated with the DEFS G-Extension-3 natural gas gathering pipeline. This release site is located in Unit Letter P, (SE¼ of the SE¼), Section 30, T21S, R36E, N32° 26' 38.85" and W103° 17' 57.08". The site is approximately 8.2-miles west of Eunice, New Mexico. The property is owned by Atlee Snyder, d.b.a. DASCO Cattle Company (*reference Figures 1 through 3*).

The natural gas and associated NGL release at this site was discovered on February 1, 2004. The Initial NMOCD C-141 Form was submitted to the Hobbs District Office on February 2, 2004. The release was less than four barrels, and as such, did not qualify as a mandatory reportable release. The Initial NMOCD C-141 Form was submitted for informational purposes only. The leak was the result of internal pipe corrosion. The pipeline was initially repaired with a temporary clamp and eventually replaced with poly pipeline by DEFS personnel.

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 Eunice Plain physiographic subdivision, described by Nicholson & Clebsch as an area "underlain by a hard caliche surface and is almost entirely covered by reddish-brown dune sand". The thickness of the sand cover ranges from 2-5 feet in most areas to as much as 20-30 feet in drift areas.

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 (*Quercus 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 Rats, 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 groundwater aquifer at this site is projected to be >220-ft bgs based on limited water depth data obtained from the New Mexico State Engineers Office data base and information provided by the landowner. Ground water gradient in this area is generally to the east-southeast.

2.4 Area Water Wells

All recorded wells are greater than 1,000 horizontal feet from the site.

2.5 Area Surface Water Features

No surface water bodies exist within 1,000 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 groundwater 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 (CoC), i.e., TPH^{8015m}, benzene, and the mass sum of benzene, toluene, ethylbenzene, and total xylenes (BTEX), were 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 groundwater from the lower most contamination, the NMOCD ranking score for the site is 0 points with the soil remedial goals highlighted in the Site Ranking table presented below.

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 = 0	Wellhead Protection Score= 0	Surface Water Score= 0	
Site Rank (1+2+3) = 0 + 0 + 0 = 0 points (for soil 0-120'-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

¹ A field soil vapor headspace measurement of 100 ppm may be substituted for a laboratory analysis of the benzene and BTEX concentration limits.

4.0 Subsurface Soil Investigation

The vertical extent of hydrocarbon contamination at the site was determined with a test excavation of the release area associated with the point of release (POR) to a depth of 5-ft bgs on February 2, 2004. The lateral extent of contamination was determined with measurements of organic vapor concentrations as the excavation progressed outwardly from the POR. Organic vapor concentrations were measured in the field utilizing an UltraRae PID equipped with a 10.6 eV lamp.

Upon delineating the extents of impacted soil, composite soil samples were collected from the base and sidewalls of the excavation and analyzed in the field to verify remedial limits had been achieved. Organic vapor concentrations ranged from 17.5 to 52.1 ppm with an average concentration of 26.7 ppm (*reference Table 1*).

5.0 Ground Water Investigation

The projected depth to ground water at this site is >220-ft bgs. Excavation of the site was to a maximum depth of five feet. Final field analyses for soil samples collected from the base of the excavation indicated organic vapor concentrations of <100 ppm (*reference Table 1*).

The excavation was backfilled with clean caliche and topsoil purchased from the property owner. Based on the removal of impacted soil below remedial goal concentrations (i.e., 100 ppm) and adequate depth to ground water, there is no need for further groundwater investigation at this site.

6.0 Remediation Process

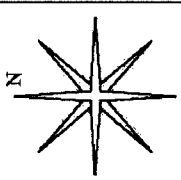
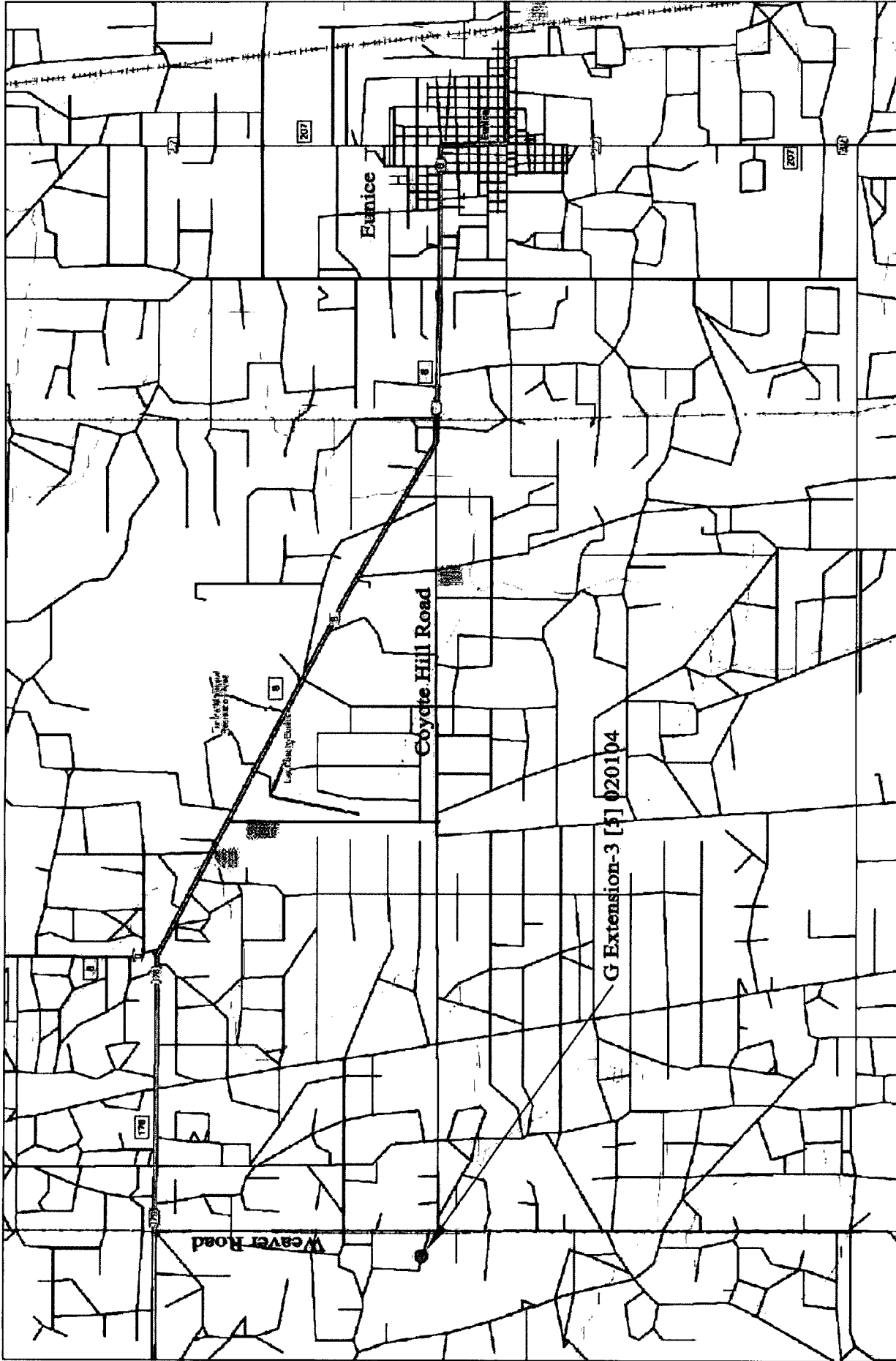
Remediation of the site commenced on February 2, 2004 and continued through February 4, 2004. Remedial activities at the site consisted of excavation and disposal of 318 yd³ of NGL contaminated soil from the site. All contaminated soil removed from the site was disposed of in the NMOCD

approved South Monument land farm located south of Monument, New Mexico. After field analyses of soil samples indicated remedial goals had been achieved (i.e., <100 ppm utilizing PID field analyses), the excavation was backfilled with clean caliche and topsoil purchased from the property owner. The backfilling and contouring of the site was completed on February 4, 2004.

7.0 Closure Justification

This report documents successful removal of impacted soil above the remedial threshold of 100 ppm for field vapor analyses for this release site. The impacted soil was excavated and removed from the location. Disposal of RCRA exempt contaminated soils was at the South Monument approved land farm. The excavation was backfilled with clean caliche and topsoil 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 and issue a *Site Closure Letter*.

FIGURES



REVISED:	DWG By: Iain Olness	
	June 2004	
	0 1.0 2.0	SHEET 1 of 1
	Miles	

Lea County, New Mexico
 NE 1/4 of the NE 1/4, Sec. 31, T21S, R36E
 N 32° 26' 38.9" W 103° 17' 57.1"
 Elevation: 3,619 feet amsl

Figure 1
Area Map
 Duke Energy Field Services, LP
 G Extension-3 [5] 020104

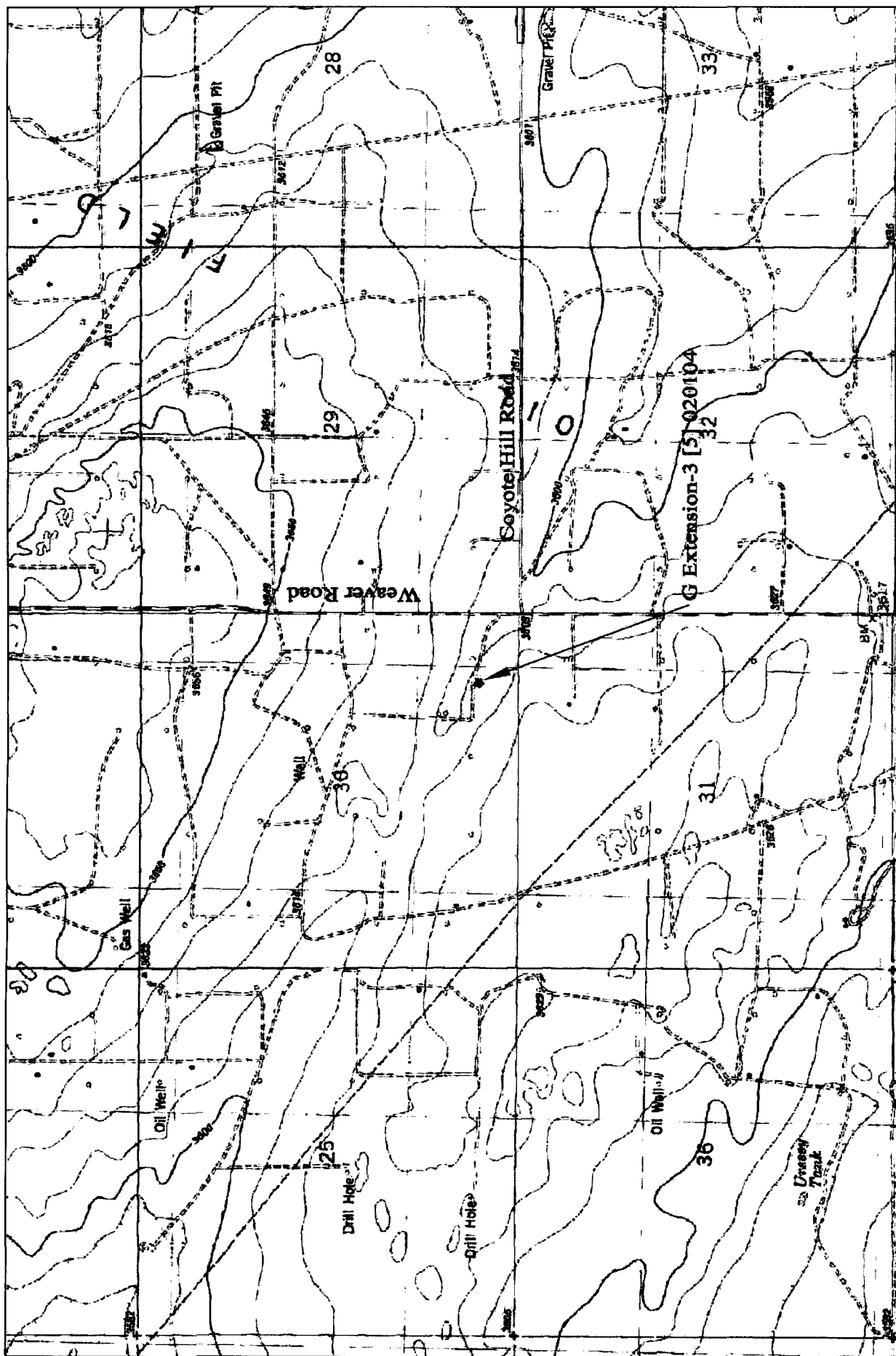


Figure 2

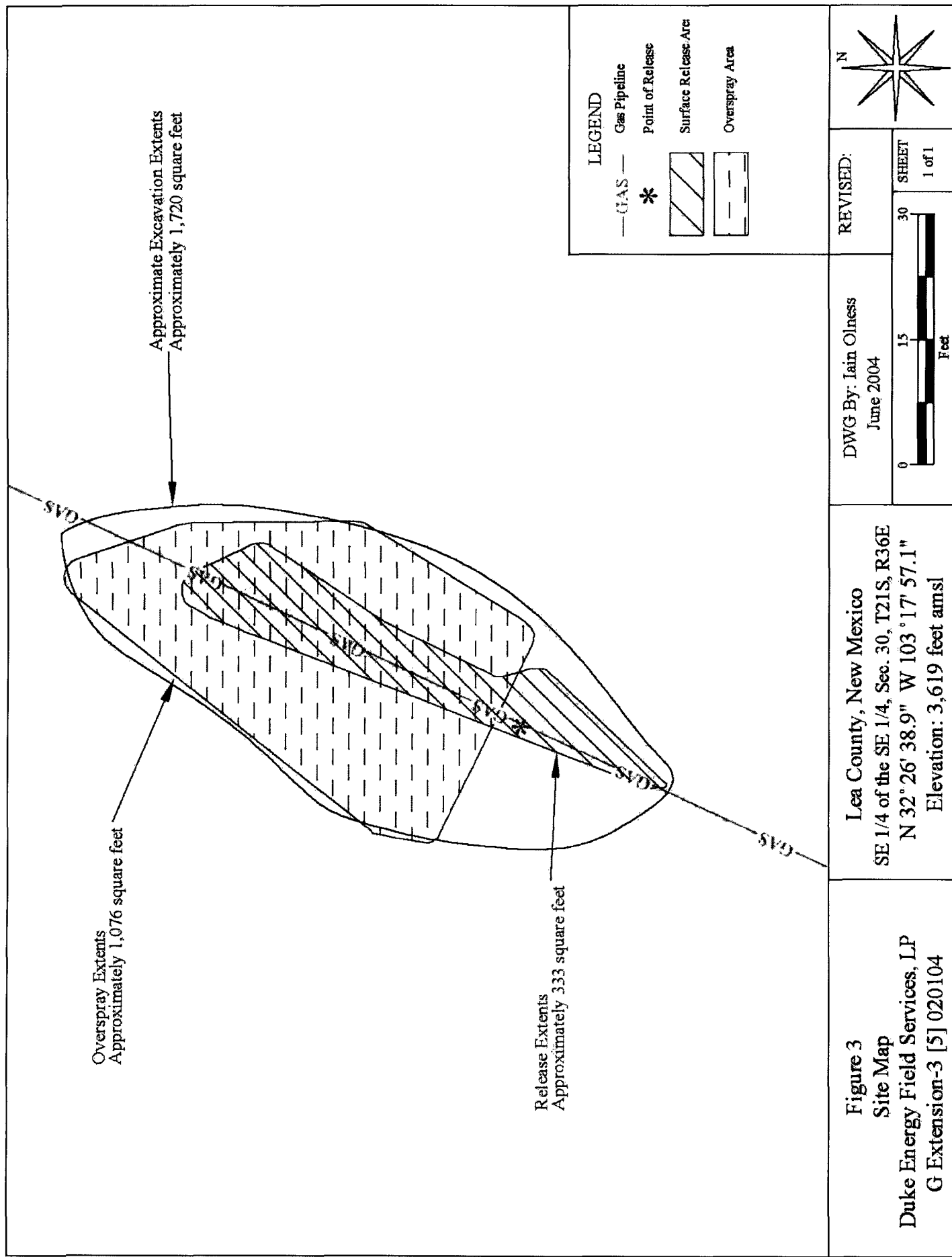
Site Location Map
Duke Energy Field Services, LP
G Extension-3 [5] 020104

Lea County, New Mexico
NE 1/4 of the NE 1/4, Sec. 31, T21S, R36E
N 32° 26' 38.9" W 103° 17' 57.1"
Elevation: 3,619 feet amsl

DWG By: Iain Olness
June 2004

REVISED:

0 2,000 4,000 Feet
SHEET 1 of 1



TABLES

TABLE 1

Summary of Excavation Analytical Results**G Extension-3 [5] - Ref #020104**

Sample ID	Sample Date	Sample Location	Field Analysis (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	GRO (C6-C10) (mg/kg)	DRO (>C10-C28) (mg/kg)	TPH (mg/kg)
SIDGE020304WBHC	3-Feb-04	Bottom -5'	52.1	NA	NA	NA	NA	NA	NA	NA	NA
SIDGE020304EBHC	3-Feb-04	Bottom - 5'	29.2	NA	NA	NA	NA	NA	NA	NA	NA
SIDGE020304SSWC	3-Feb-04	South Sidewall	20.0	NA	NA	NA	NA	NA	NA	NA	NA
SIDGE020304NSWC	3-Feb-04	North Sidewall	17.5	NA	NA	NA	NA	NA	NA	NA	NA
SIDGE020304ESWC	3-Feb-04	East Sidewall	21.6	NA	NA	NA	NA	NA	NA	NA	NA
SIDGE020304WSWC	3-Feb-04	West Sidewall	19.6	NA	NA	NA	NA	NA	NA	NA	NA
NMOC Remedial Thresholds				10				50			5,000

BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

TPH = Total Petroleum Hydrocarbons

APPENDIX I

FINAL NMOCD C-141 FORM

AND

SITE INFORMATION AND METRICS FORM

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

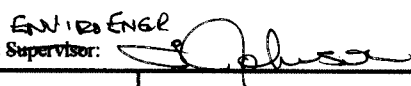
Submit 2 Copies to appropriate
 District Office in accordance
 with Rule 116 on back
 side of form

Release Notification and Corrective Action - INFORMATIONAL ONLY

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				G-Extension-3				Facility Type		Natural Gas Gathering Pipeline	
Surface Owner				DASCO Cattle Co.				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:			
P	30	21S	36E	530	3964	W103° 17' 57.08"	N32° 26' 38.85"	Lea			
NATURE OF RELEASE											
Type of Release						Volume of Release		Volume Recovered			
Natural Gas release and associated NGL's						3 bbl		0 bbl			
Source of Release						Date and Hour of Occurrence		Date and Hour of Discovery			
12" Steel Pipeline						1-Feb-04		1-Feb-04			
Was Immediate Notice Given?						If YES, To Whom?					
<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required						NA					
By Whom?						Date and Hour					
NA						NA					
Was a Watercourse Reached?						If YES, Volume Impacting the Watercourse.					
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						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.*											
~333-ft ² surface spill area affected; 0-bbl of NGL recovered from 3-bbl release. RCRA Exempt Non-hazardous contaminated soil above remedial goals was excavated and disposed of at the South Monument Land Farm.											
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:						OIL CONSERVATION DIVISION					
Printed Name:						Approved by District Supervisor:					
Steve Weathers											
Title:						Approval Date:					
Environmental Specialist						6.22.07					
E-mail Address:						Expiration Date:					
swwathers@Duke-Energy.com											
Date:						Conditions of Approval:					
						<input type="checkbox"/> Attached					
Phone:											
(303) 605 1718											

* Attach Additional Sheets If Necessary

RPT#435

Duke Energy Field Services

Incident Date and NMOCD Notified?

2/1/04

NA

SITE: G-Extension-3		Assigned Site Reference: 020104 [Site 5]	
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): 3		Recovered (bbls): 0	
>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: 020104 [Site 5]			
Source of contamination: 12" Steel Pipeline			
Land Owner, i.e., BLM, ST, Fee, Other: DASCOT Cattle Co. 225 E. Bender, Suite 150, Hobbs, NM 88240			
LSP Dimensions: (GPS Site Diagram attached)			
LSP Area: 333 -ft ²			
Location of Reference Point (RP):			
Location distance and direction from RP:			
Latitude: N32° 26' 38.85"			
Longitude: W103° 17' 57.08"			
Elevation above mean sea level: 3619 -ft amsl			
Feet from South Section Line: 530			
Feet from West Section Line: 3964			
Location - Unit and 1/4 1/4: UL- P SE 1/4 of SE 1/4			
Location - Section: 30			
Location - Township: 21S			
Location - Range: 36E			
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): 220			
Depth (ft) of contamination (DC): 10			
Depth (ft) to ground water (DG - DC = DtGW): 210			
1. Ground Water		2. Wellhead Protection Area	
If Depth to GW <50 feet: 20 points		If <1000' from water source, or, <200' from private domestic water source: 20 points	
If Depth to GW 50 to 99 feet: 10 points		If >1000' from water source, or, >200' from private domestic water source: 0 points	
If Depth to GW >100 feet: 0 points			
Ground water Score: 0		Wellhead Protection Area Score: 0	
Site Rank (1+2+3) = 0		Surface Water Score: 0	
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

¹100 ppm field VOC headspace measurement may be substituted for lab analysis

APPENDIX II

PROJECT PHOTOGRAPHS

Duke Energy Field Services
G-Extension-3 020104 [5]
UL P Section 31 T21S R36E



Photo #1: Release area, looking southwest.

Duke Energy Field Services
G-Extension-3 020104 [5]
UL P Section 31 T21S R36E

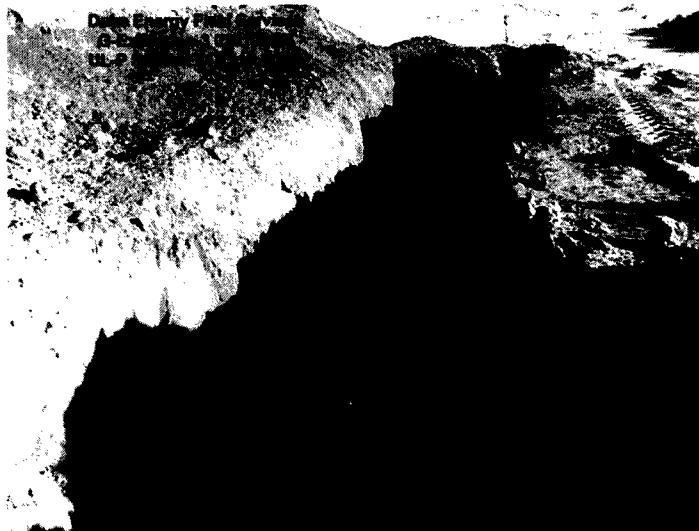


Photo #2: Initial excavation, looking northeast.

Duke Energy Field Services
G-Extension-3 020104 [5]
UL P Section 31 T21S R36E

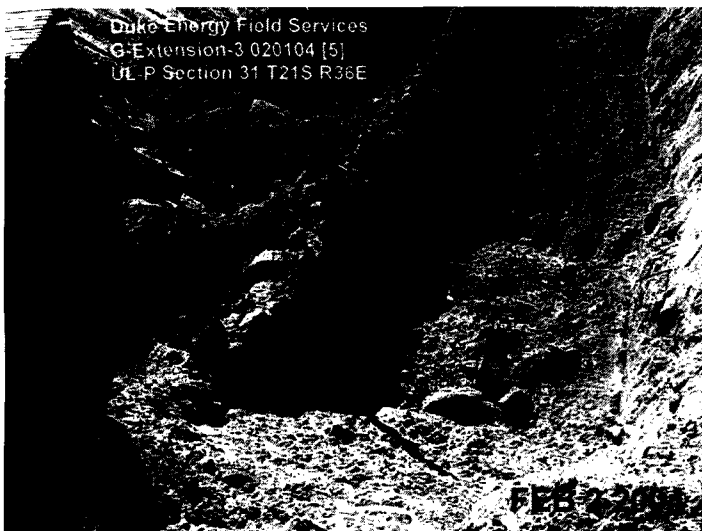


Photo #3: Excavation, looking southerly.

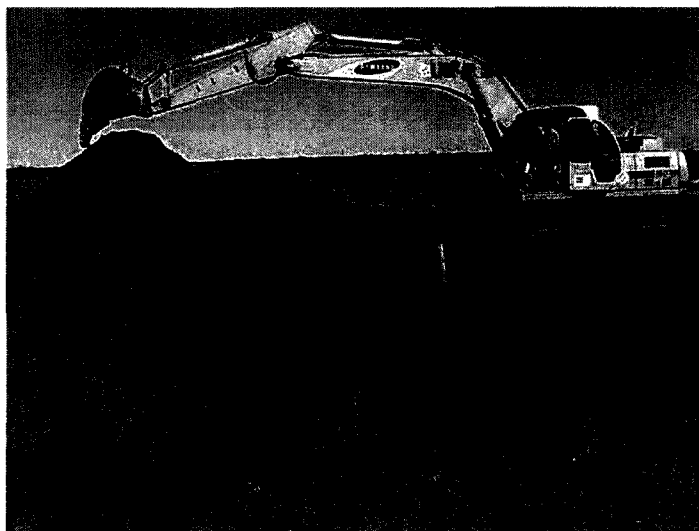


Photo #4: Excavation, looking northerly.



Photo #5: Site graded and contoured, looking northerly.



Photo #6: Site graded and contoured, looking southerly.