AE Order Number Banner

Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.

App Number: pGRL0902035612

1RP - 2053

CML EXPLORATION, LLC

7/26/2016

February 10, 2009

Revised Investigation & Characterization Plan

Paddy 19 State #3
API # 30-025-38591

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

1 REVISED INVESTIGATION AND CHARACTERIZATION PLAN

1.1 Location – Plate 1

The site is in Unit Letter F Section 19, T17S R 33E. Plate 1 shows the location of the site relative to major roads of the area and Lovington, NM.

1.2 General Setting – Plates 2 and 3

Plate 2 is a topographic map of the site and the nearby environs with the most recent USGS ground water depth to water data available for nearby wells. The geology of the area, which is also displayed on Plate 2, shows that the site is located in Quaternary Pediment deposits west of the Ogallala Aquifer caprock area.

USGS data showing water level elevation data is relatively good despite the fact that there are no recent data points for wells within a mile of the site. Less than 1 mile south of the site is a USGS monitoring well showing a depth to water of 69.14 feet in 1971(surface elevation of 4051.4). About 1.5 miles north of the site is another well completed in the Pediment deposits adjacent to the Ogallala showing a depth to water of 120.13 feet (surface elevation of 4162.4). Examination of historic water levels of other nearby wells (USGS site #325028103441301 and #324753105410201) demonstrate that water levels in this area have changed less than 3-feet over a 30-year period of record (1961-1996).

The surface elevation of the Paddy 19 State #3 well is about 4080 feet above sea level. Examination of surface topography, hydrogeologic setting, and available ground water elevation data allows us to conclude with a reasonable degree of scientific certainty that depth to water at the site is more than 80 and less than 110 feet.

Plate 3 is an aerial photograph of the site showing the land use as oil and gas production and grazing.

1.3 Revised Investigation and Characterization Plan

Use a drill rig to collect samples at four locations: one to evaluate whether impact from the pit has migrated laterally and three placed in the pit to define the vertical extent of impact beneath the former pit liner (Figure 1).

- Collect samples at 2.5 foot intervals
- Evaluate all samples in the field for chloride (titration method) and volatile hydrocarbon vapors (heated headspace method with PID)
- Submit 4 samples to a laboratory to provide verification of field sampling results
- Submit 4 samples to the laboratory for analysis of soil moisture
- Cease vertical delineation when:
    - The deepest two samples show field chloride concentrations less than 250 ppm

- Three consecutive samples show a decline in chloride field concentration and the deepest sample is less than 250 ppm

If the boring to the west of the pit exhibits evidence of impact from the pit, we will install another boring further west of it to define possible horizontal extent of impact. Upon evaluation of the results of this investigation and characterization plan we will propose a remediation plan for the site based on our findings.

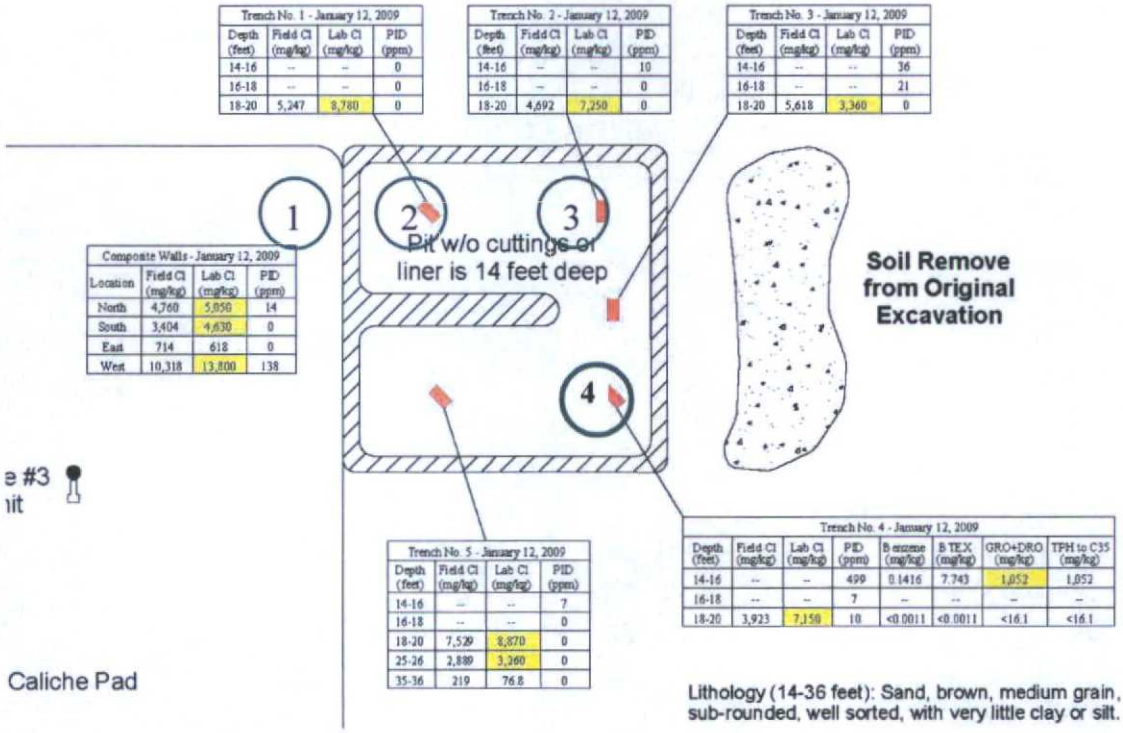
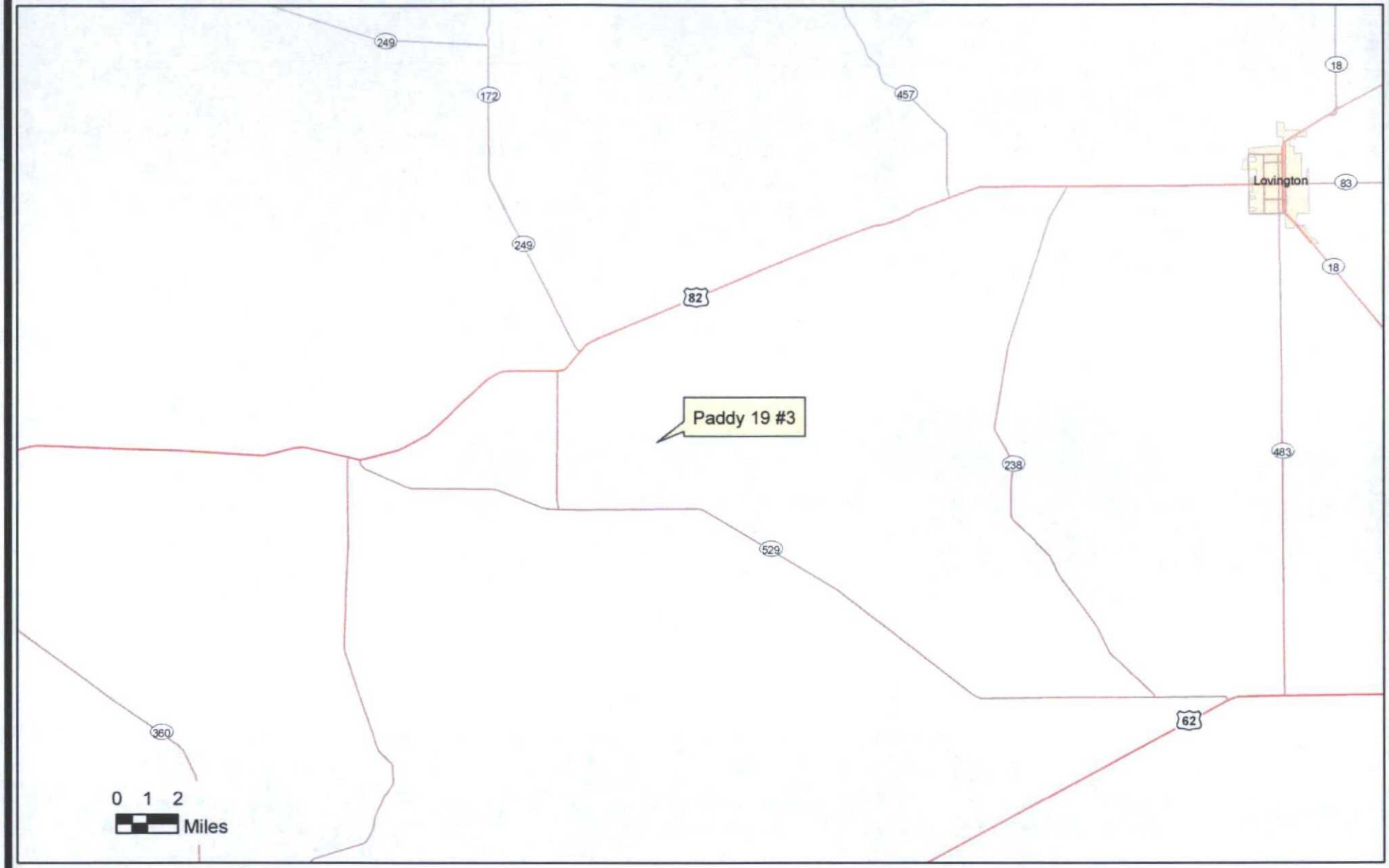


Figure 1: Proposed location of vertical delineation samples

Plates

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

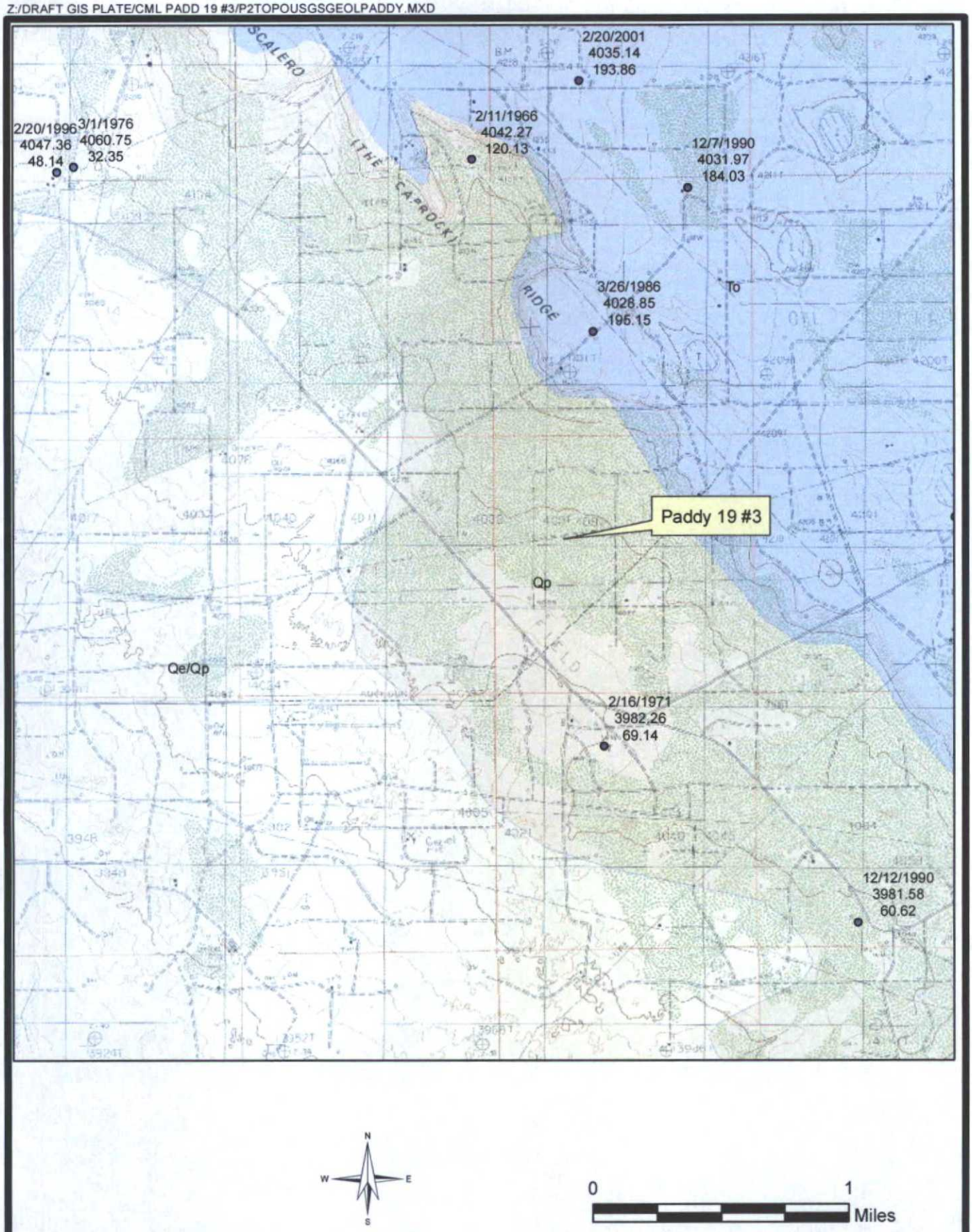


Z:/DRAFT GIS PLATE/CML PADD 19 #3/LOCATIONPADDY&JFC.MXD

R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

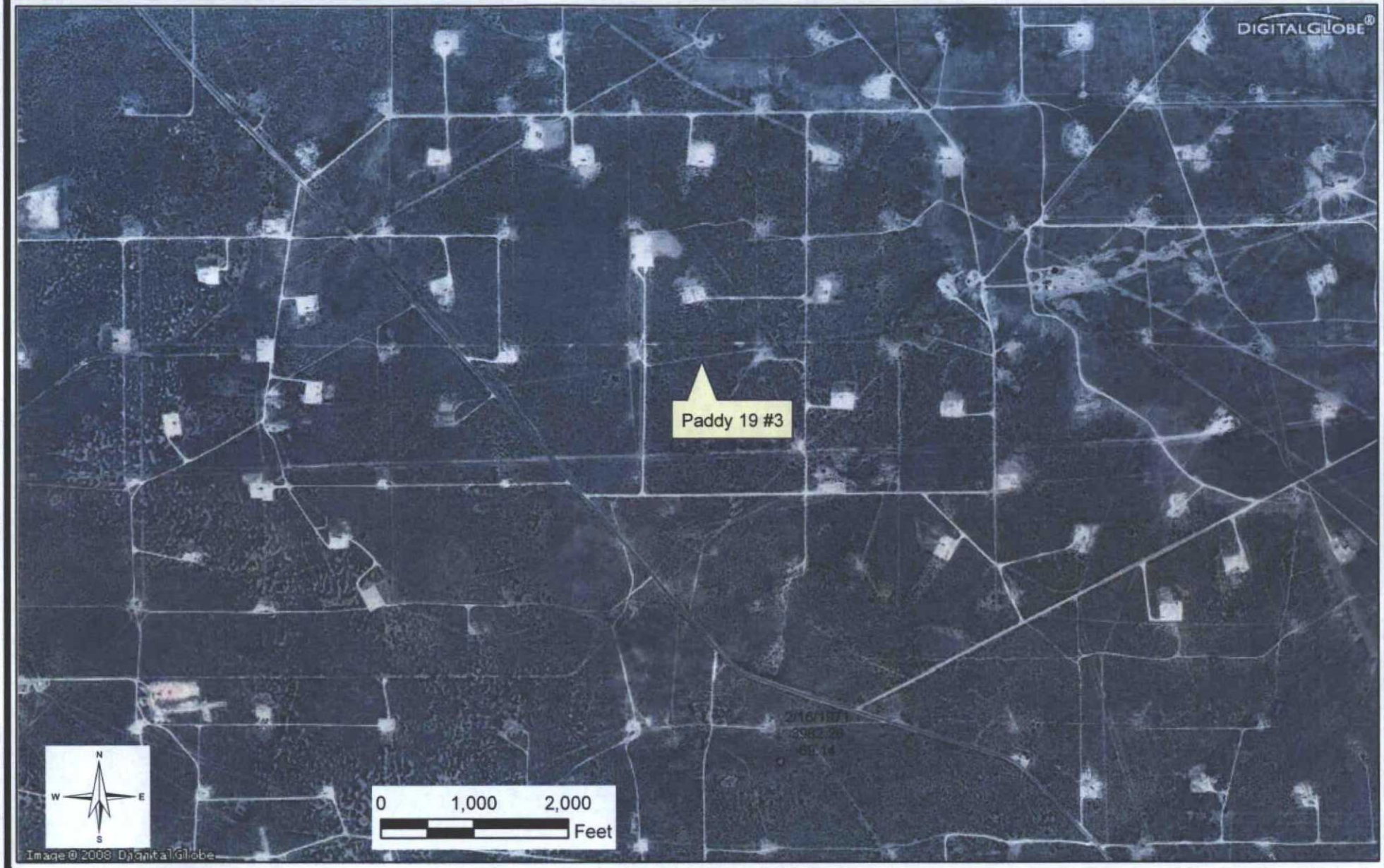
Location Relative to Major Roads	Plate 1
CML Exploration - Paddy 19 #3	Dec 2008

Z:/DRAFT GIS PLATE/CML PADD 19 #3/P2TOPOUSGSGEOLPADDY.MXD



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Topographic Map, Geology and USGS Data	Plate 2
	CML Exploration	Jan 09

May 2008



R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Areal Image Showing Land Use and USGS Data	Plate 3
	CML Exploration - Paddy 19 State #3	Dec 2008

Z:\DRAFT GIS PLATE\CML PADD 19 #3\P3AERIALOSE-JFC.MXD

7/18/2008

Plate 4
Soil Sample Results
CML Exploration
Paddy 19 State No. 3
Sec. 19, T-17-S, R-33-E
Lea County, New Mexico
API 30-25-38591

Composite of all Trenches - January 12, 2009

Depth (feet)	Field Cl (mg/kg)	Lab Cl (mg/kg)	PID (ppm)	Benzene (mg/kg)	BTEX (mg/kg)	GRO+DRO (mg/kg)	TPH to C35 (mg/kg)
14-16	8,809	9,760	0	<0.0539	0.4642	41.4	41.4

Trench No. 1 - January 12, 2009

Depth (feet)	Field Cl (mg/kg)	Lab Cl (mg/kg)	PID (ppm)
14-16	--	--	0
16-18	--	--	0
18-20	5,247	8,780	0

Trench No. 2 - January 12, 2009

Depth (feet)	Field Cl (mg/kg)	Lab Cl (mg/kg)	PID (ppm)
14-16	--	--	10
16-18	--	--	0
18-20	4,692	7,250	0

Trench No. 3 - January 12, 2009

Depth (feet)	Field Cl (mg/kg)	Lab Cl (mg/kg)	PID (ppm)
14-16	--	--	36
16-18	--	--	21
18-20	5,618	3,360	0

Composite Walls - January 12, 2009

Location	Field Cl (mg/kg)	Lab Cl (mg/kg)	PID (ppm)
North	4,760	5,050	14
South	3,404	4,630	0
East	714	618	0
West	10,318	13,800	138

Pit w/o cuttings or liner is 14 feet deep

Soil Remove from Original Excavation

Paddy 19 State #3 Pumping Unit

Caliche Pad

Trench No. 5 - January 12, 2009

Depth (feet)	Field Cl (mg/kg)	Lab Cl (mg/kg)	PID (ppm)
14-16	--	--	7
16-18	--	--	0
18-20	7,529	8,870	0
25-26	2,889	3,260	0
35-36	219	76.8	0

Trench No. 4 - January 12, 2009

Depth (feet)	Field Cl (mg/kg)	Lab Cl (mg/kg)	PID (ppm)	Benzene (mg/kg)	BTEX (mg/kg)	GRO+DRO (mg/kg)	TPH to C35 (mg/kg)
14-16	--	--	499	0.1416	7.743	1,052	1,052
16-18	--	--	7	--	--	--	--
18-20	3,923	7,150	10	<0.0011	<0.0011	<16.1	<16.1

Lithology (14-36 feet): Sand, brown, medium grain, sub-rounded, well sorted, with very little clay or silt.

0 50 100

FEET

Caliche Road

Lab Concentrations Exceeds Regulatory Protection Levels


CML EXPLORATION, LLC
PADDY 19 STATE NO. 3
UNIT F, SEC. 19, T-17-S, R-33-E
API #30-025-38591
21 11:38PM