1R - 341

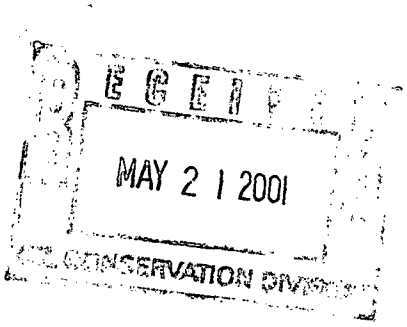
REPORTS

DATE:

2001

IR-341

Larson & Associates, Inc.
Environmental Consultants



May 17, 2001

Mr. William C. Olson
Environmental Bureau
Oil Conservation Division
New Mexico Energy, Minerals and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Emergency Pit Investigation Report, John H. Hendrix Corp., Danglade # 2 Well Location, NE/4, NE/4, 24, Township 22 South, Range 37 East, Lea County, New Mexico

Dear Mr. Olson:
John H. Hendrix Corp. has retained Larson and Associates, Inc. (LA) to investigate a former emergency pit situated west of its Danglade # 2 well (Site) located in the northeast quarter (NE/4) of the northeast quarter (NE/4), Section 24, Township 22 South, Range 37 East, Lea County, New Mexico. The pit was excavated during late 2000 to approximately 30 feet below ground surface (BGS), and soil was transported to a New Mexico Oil Conservation Division (NMOCD) approved commercial landfarm. The excavation measures approximately 65 x 125 feet. Figure 1 presents a location and topographic map.

Setting
The Site is located about 4 miles southeast of Eunice, New Mexico, at an elevation approximately 3327 feet above mean sea level (AMSL). Monument Draw is located approximately 1,200 feet west of the Site. A thin veneer of wind deposited sand covers the area, and overlies the Tertiary-age Ogallala formation. The Ogallala formation is comprised of poorly to well-cemented sand and sandstone, interbedded with caliche, clay, silt and gravel. The Triassic-age Chinle formation (commonly referred to as "red bed") is present beneath the Ogallala formation, and consists of interbedded units of mudstone, shale, siltstone and sandstone. Red bed was encountered between 29 and 35 feet BGS in four borings drilled at the Site in April 2001. Red bed was also encountered in the excavation at approximately 30 feet BGS.

Information obtained from the State of New Mexico, Office of the State Engineer identified a water well in the SW/4, NW/4, Section 24, Township 22 South and Range 37 East. The well is located west of Monument Draw, and was drilled to approximately 96 feet BGS, and reported groundwater at approximately 60 feet BGS. According to the driller's log yellow clay was encountered at approximately 95 feet BGS. This data suggests that groundwater is not present in the Ogallala formation beneath the Site since red bed was encountered between 29 and 35 feet BGS. Published information (Nicholson and Clebsch, 1960) indicates that groundwater occurs from approximately 150 to 200 feet

BGS in wells located east of Monument Draw. The wells were drilled to as much as 400 feet BGS. Groundwater was not observed in the borings drilled at the Site, or the excavation. Appendix A presents a copy of the well record.

Current Investigation

On April 17, 2001, LA personnel supervised installation of four (4) borings (BH-1 through BH-4). The borings were drilled adjacent to the north, south, east and west sides, and soil samples were collected to assess the extent of the impact from the former pit. Scarborough Drilling, Inc. drilled the borings that were drilled to approximately thirty-five (35) feet BGS using a truck-mounted air-rotary drilling rig. A core sampler was used to collect a soil sample approximately every 10 feet (i.e., 10', 20', 30', etc.) until red bed was encountered. The soil samples were placed in glass sample jars, labeled, chilled in an ice chest, and hand delivered under chain-of-custody control to Environmental Lab of Texas, Inc., located in Odessa, Texas. A portion of each sample was placed in a glass sample jar for headspace analysis. The headspace jars were filled approximately ¾ full, and covered with a layer of aluminum foil before replacing the cap. The headspace samples were set aside and allowed to warm up to ambient temperature before a RAE Instruments, Model 2000 photoionization detector (PID) was used to measure the concentration of organic vapors in the sample headspace. The PID probe was inserted into the headspace of the sample jars (through the aluminum foil), and the concentration of organic vapors was measured, and displayed in parts per million (ppm). The headspace measurements were recorded on boring logs, and are summarized in Table 1. The boring locations are presented on Figure 2. Appendix B presents the boring logs.

All down-hole drilling equipment (i.e., drill bits, rods, etc.) was thoroughly washed between locations using high-pressure hot water. All sampling equipment (i.e., core sampler, hand auger, hand trowels etc.) was thoroughly washed between sample events using laboratory-grade detergent, and rinsed with distilled water. Air was not circulated into the boring while samples were collected. The borings were plugged with cement grout upon completion of the project.

The laboratory analyzed the soil samples for total petroleum hydrocarbons (TPH) using EPA test method SW-846-8015 for gasoline-range organics (GRO) and diesel-range organics (DRO), and chloride. The NMOCD allows a field soil vapor headspace measurement to substitute a laboratory analysis for benzene and total BTEX (sum of benzene, toluene, ethylbenzene and xylenes) if the headspace reading is less than 100 parts per million (ppm). No samples from the rotary-drilled boring reported field headspace readings above 100 ppm, therefore, benzene and total BTEX analysis were required. Table 1 presents a summary of the laboratory analyses. Appendix C presents the laboratory report.

On April 20, 2001, a soil sample was collected near the each corner of the excavation (HA-1 through HA-4), and from the north end of the excavation (HA-5) using a stainless

steel hand auger. The samples were collected from approximately 2 feet below the bottom of the excavation. A composite sample consisting of four to five grab samples was also collected from each side of the excavation using a stainless steel sample trowel. The grab samples were collected to a height of approximately 6 feet above the bottom of the excavation due to the near vertical slopes. All samples were placed in glass sample jars, labeled, chilled in an ice chest, and hand delivered under chain-of-custody control to Environmental Lab of Texas, Inc. A portion of each sample was retained in a glass sample jar for headspace analysis using the procedure described earlier. The bottom samples collected at locations HA-2, HA-3 and HA-4 recorded PID readings in excess of 100 ppm, and were analyzed for BTEX using EPA test method SW-846-8021B. The PID readings of the side samples were less than 100 ppm, and no BTEX analysis were required. The bottom and side samples were analyzed for TPH (GRO and DRO), and chloride. Table 1 presents a summary of the laboratory analyses. Appendix C presents the laboratory report. Appendix D presents photographs.

The NMOCD has established recommended remediation action levels (RRALs) for benzene, total BTEX and TPH in soil from unlined surface impoundments ("Unlined Surface Impoundment Closure Guidelines, February 13, 1993"). Remediation levels for benzene, total BTEX and TPH were calculated using the following NMOCD criteria:

Criteria	Result	Ranking Score
Depth-to-Groundwater	>100	0
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Feet	0
		Total: 0

The following RRALs have been assigned based on NMOCD criteria:

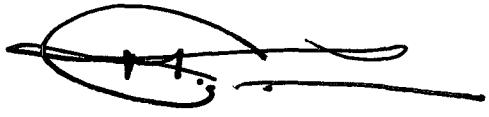
Benzene	**10 mg/kg**
Total BTEX	**50 mg/kg**
TPH	**5000 mg/kg**

Referring to Table 1, samples from the bottom of the excavation at locations HA-2, HA-3 and HA-4 did not report benzene above the test method detection limit of 0.025 milligrams per kilogram (mg/kg). Total BTEX was reported at 3.766 mg/kg, 7.231 mg/kg and 1.905 mg/kg in samples from the bottom of the excavation at locations HA-2, HA-3 and HA-4, respectively. The total BTEX concentrations were well below the NMOCD RRAL of 50 mg/kg. TPH was not reported at concentrations above the limit of

practical quantification in samples from borings BH-1 through BH-4, and the samples from hand-auger locations HA-1 and HA-5. Concentrations of TPH were reported above the test method detection limit in samples from the bottom of the excavation at locations HA-2, HA-3, HA-4, and the composite samples from the north, south, east and west sides of the excavation. The concentrations of TPH were below the RRAL, and ranged from 407 mg/kg to 4753mg/kg. Chloride was reported from 71 mg/kg in the sample from boring BH-1, 2 feet BGS to 12408 mg/kg in the composite sample from the west side of the excavation. The NMOCD does not have a RRAL for chloride.

Laboratory analysis of the soil samples conclude that impacts from the pit have not migrated much beyond the current boundaries of the excavation. The findings also indicate that residual hydrocarbons are present in red bed. However, groundwater is not present in the Ogallala formation, and occurs between 150 and 200 feet BGS, based on the published information. Based ion these findings, John H. Hendrix Corp. requests permission to fill the excavation with clean soil to approximately 5 feet BGS. A layer of clay approximately 2 feet thick will be placed over the clean soil, and compacted to 95% proctor density to limit infiltration from precipitation. A layer of topsoil, approximately 3 feet thick, will be placed over the clay, and seeded to grass. A final report will be submitted to the NMOCD following closure of the excavation. Please call Mr. Ron Westbrook with John H. Hendrix Corp. at (915) 688-2971, or myself at (915) 687-0901 if you have questions.

Sincerely,
Larson and Associates, Inc.



Mark J. Larson, CPG, CGWP
President

Encl.

cc: Mr. Ron Westbrook - John H. Hendrix Corp.
Mr. Chris Williams – NMOCD District I

Tables

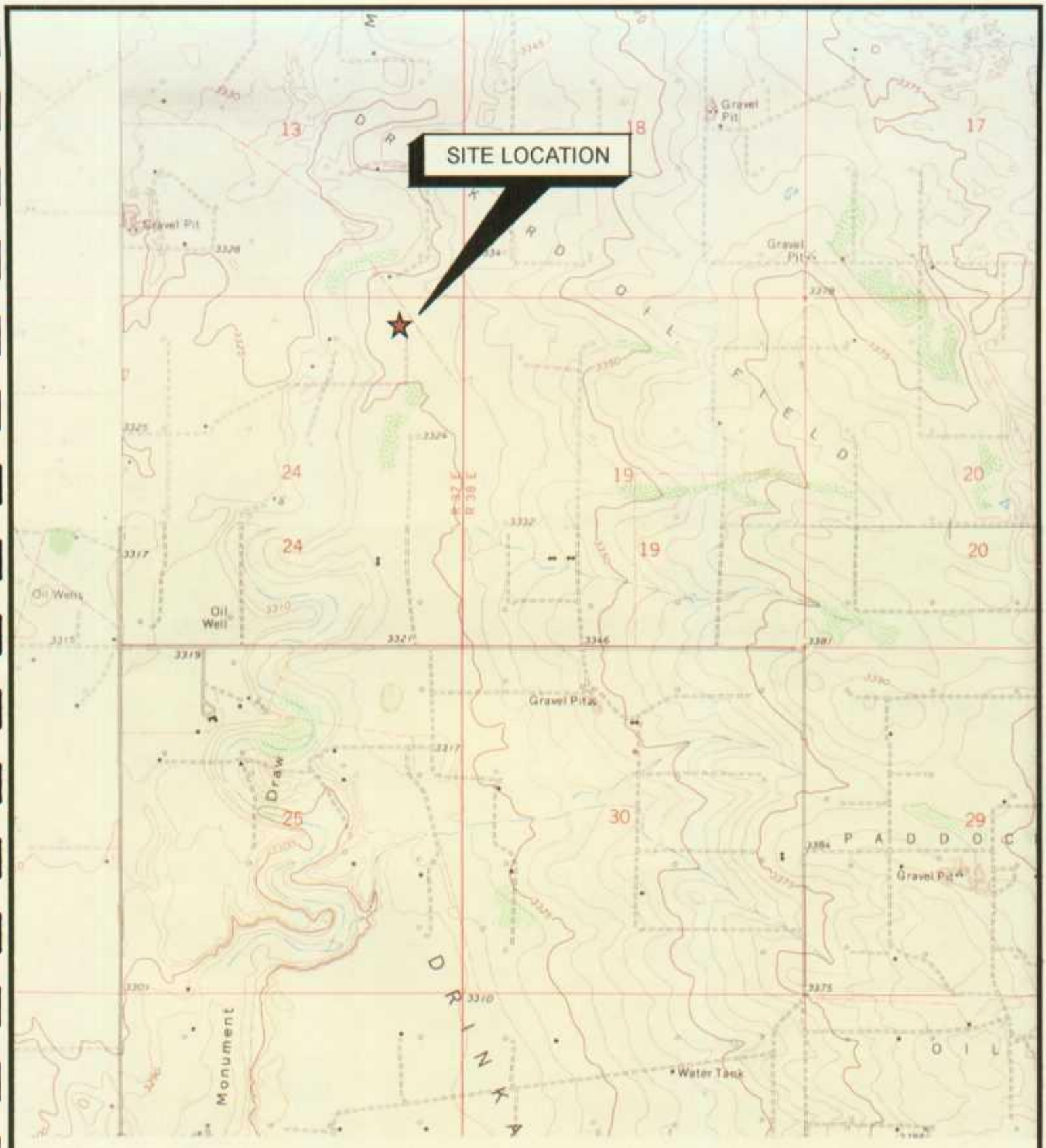
Table 1: Summary of Headspace and Laboratory Analyses of Soil Samples
John H. Hendrix Corp., Danglade # 2 Well Location Emergency Pit
NE/4, NE/4, Section 24, Township 22 South, Range 37 East
Lea County, New Mexico

Date	Sample	Depth Feet (BGS)	PID (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	GRO C6 - C10 (mg/kg)	DRO >C10 - C28 (mg/kg)	TPH C6 - C28 (mg/kg)	Chloride (mg/kg)
17-Apr-01	BH-1	10	1.3	--	--	--	--	--	<10	<10	<20	71
		20	3.2	--	--	--	--	--	<10	<10	<20	177
		30	3.6	--	--	--	--	--	<10	<10	<20	1994
		35	4.0	--	--	--	--	--	--	--	--	--
17-Apr-01	BH-2	10	0.5	--	--	--	--	--	<10	<10	<20	1276
		20	1.2	--	--	--	--	--	<10	<10	<20	177
		30	1.9	--	--	--	--	--	<10	<10	<20	142
		35	2.1	--	--	--	--	--	--	--	--	--
17-Apr-01	BH-3	10	0.7	--	--	--	--	--	<10	<10	<20	142
		20	2.9	--	--	--	--	--	<10	<10	<20	222
		30	2.5	--	--	--	--	--	<10	<10	<20	1453
		35	2.5	--	--	--	--	--	--	--	--	--
17-Apr-01	BH-4	10	1.1	--	--	--	--	--	<10	<10	<20	106
		20	3.5	--	--	--	--	--	<10	<10	<20	638
		30	4.5	--	--	--	--	--	<10	<10	<20	7799
		35	4.1	--	--	--	--	--	--	--	--	--
20-Apr-01	HA-1	2	19.8	--	--	--	--	--	<10	<10	<20	6026
20-Apr-01	HA-2	2	270.3	<0.025	1.340	0.347	2.079	3.766	434	2612	3046	248
20-Apr-01	HA-3	2	289.0	<0.025	2.990	0.611	3.63	7.231	1324	3429	4753	124
20-Apr-01	HA-4	2	240.6	<0.025	0.371	0.218	1.316	1.905	141	1146	1287	4307
20-Apr-01	HA-5	2	3.2	--	--	--	--	--	<10	<10	<20	35
20-Apr-01	North	*	39.3	--	--	--	--	--	<50	1233	1233	8505
20-Apr-01	South	*	2.4	--	--	--	--	--	<10	407	407	6647
20-Apr-01	East	*	40.2	--	--	--	--	--	72	1275	1347	7356
20-Apr-01	West	*	23.9	--	--	--	--	--	17	670	687	12408

Notes: Analysis performed by Environmental Lab of Texas, Inc., Odessa, Texas

1. BGS: Sample depth in feet below ground surface
2. ppm: Parts per million
3. GRO Gasoline range organics
4. DRO: Diesel range organics
5. TPH: Total petroleum hydrocarbons (Sum of DRO + GRO)
6. mg/kg: Milligrams per kilogram
7. --: No data available
8. <: Less than the test method detection limit
9. *: Composite sample from side of excavation

Figures



TAKEN FROM U.S.G.S.
EUNICE, NEW MEXICO, 1979
EUNICE NE, NEW MEXICO, 1969
EUNICE SE, NEW MEXICO, 1969
RATTLESNAKE CANYON, NEW MEXICO, 1969
7.5' QUADRANGLES

SCALE: 1"=2000'

FIGURE #1

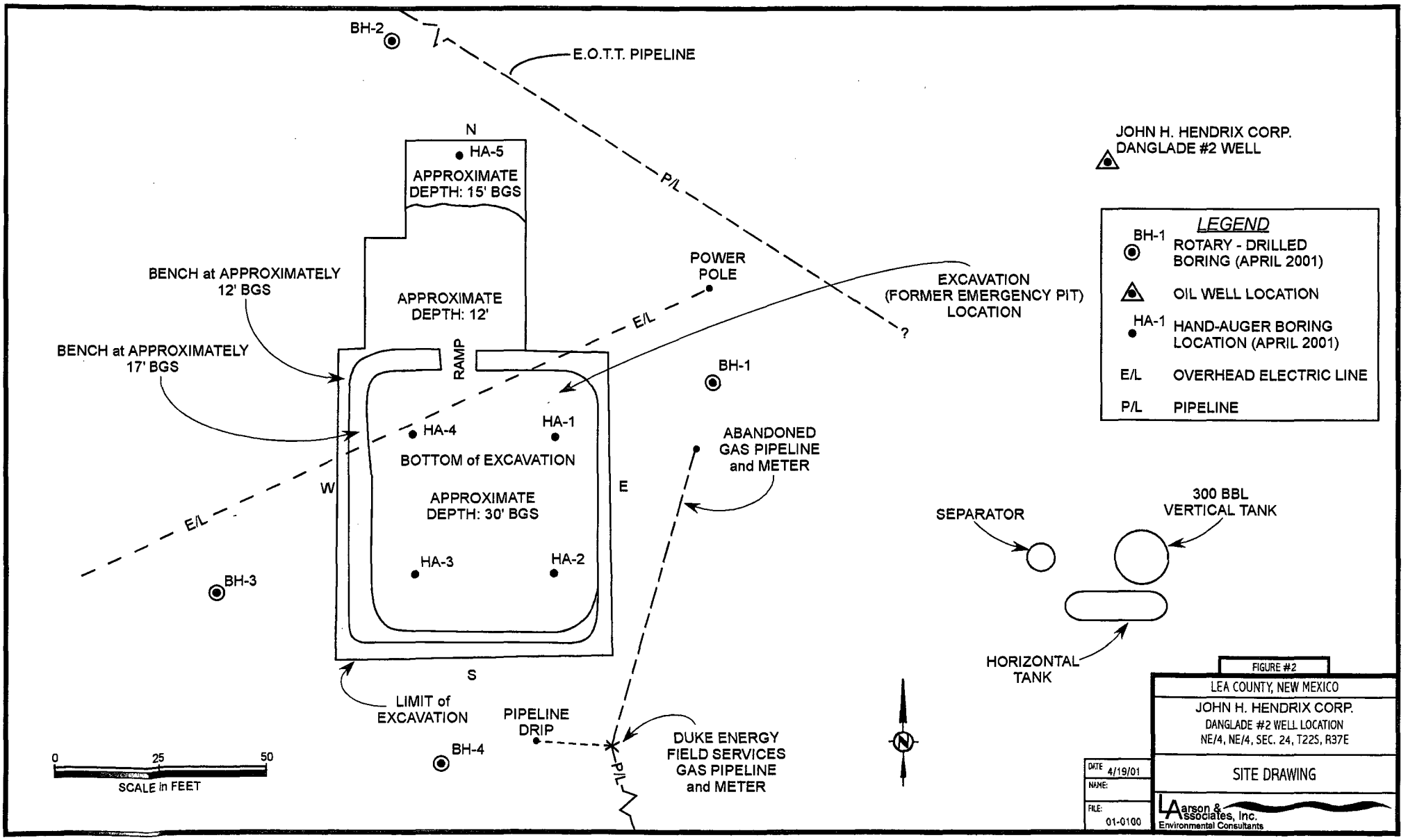
LEA COUNTY, NEW MEXICO

JOHN H. HENDRIX CORP.
NE/4, NE/4, SEC. 24, T22S, R37E

TOPOGRAPHIC MAP

DATE: 4/20/01
NAME:
FILE: 01-0100

Larson & Associates, Inc.
Environmental Consultants


BH-2
E.O.T.T. PIPELINE
P/L
N
HA-5
APPROXIMATE DEPTH: 15' BGS
JOHN H. HENDRIX CORP.
DANGLADE #2 WELL
LEGEND
BH-1 ROTARY - DRILLED BORING (APRIL 2001)
OIL WELL LOCATION
HA-1 HAND-AUGER BORING LOCATION (APRIL 2001)
E/L OVERHEAD ELECTRIC LINE
P/L PIPELINE
BENCH at APPROXIMATELY 12' BGS
APPROXIMATE DEPTH: 12'
POWER POLE
EXCAVATION (FORMER EMERGENCY PIT) LOCATION
BENCH at APPROXIMATELY 17' BGS
RAMP
E/L
BH-1
HA-4
HA-1
BOTTOM of EXCAVATION
ABANDONED GAS PIPELINE and METER
W
E
APPROXIMATE DEPTH: 30' BGS
SEPARATOR
300 BBL VERTICAL TANK
BH-3
HA-3
HA-2
HORIZONTAL TANK
S
LIMIT of EXCAVATION
PIPELINE DRIP
DUKE ENERGY FIELD SERVICES GAS PIPELINE and METER
BH-4
P/L
0 25 50
SCALE in FEET
FIGURE #2
LEA COUNTY, NEW MEXICO
JOHN H. HENDRIX CORP.
DANGLADE #2 WELL LOCATION
NE/4, NE/4, SEC. 24, T22S, R37E
SITE DRAWING
DATE 4/19/01
NAME:
FILE: 01-0100
Larson & Associates, Inc.
Environmental Consultants

APPENDIX A

Water Well Record

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well Ellie Spear Owner's Well No. _____
Street or Post Office Address P.O. Drawer 309
City and State Hobbs, New Mexico 88240

Well was drilled under Permit No. CP-706 and is located in the:

a. _____ ¼ SW ¼ ~~NW~~ SW½ ¼ ~~SW~~ NW¼ ¼ of Section 24 Township 22S Range 37E N.M.P.M.

b. Tract No. _____ of Map No. _____ of the _____

c. Lot No. _____ of Block No. _____ of the _____
Subdivision, recorded in Lea County.

d. X= _____ feet, Y= _____ feet, N.M. Coordinate System _____ Zone in the _____ Grant.

(B) Drilling Contractor Abbott Bros. Drilling License No. WD-46

Address P.O. Box 637, Hobbs, New Mexico 88240

Drilling Began 12/29/86 Completed 12/31/86 Type tools Cable Size of hole 8 in.

Elevation of land surface or _____ at well is _____ ft. Total depth of well 96 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 60 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
78	92	14	Sand and gravel	

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
7	15	Welded	0	96	96	None	76	96

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement

Section 5. PLUGGING RECORD

Plugging Contractor _____
Address _____
Plugging Method _____
Date Well Plugged _____
Plugging approved by:
_____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received January 12, 1987

Quad _____ FWL _____ FSL _____

File No. CP-706 Use DOMESTIC Location No. 22.37.24.13341

Section 6. LOG OF HOLE

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	2	2	Surface Soil
2	19	17	Caliche
19	56	37	Sand-tight
56	78	22	Sandy clay
78	92	14	Sand and gravel-water
92	95	3	Sandy clay
95	96	1	Clay-yellow

Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Murrell Abbott N.B.
Driller

INSTRUCTIONS: This for[illegible]ld be executed in triplicate, preferably typewritten, and submitt[illegible] appropriate district offi[illegible]

APPENDIX B

Borings Logs

Client: John H. Hendrix Corp.

Project: Danglade # 2 Emergency Pit

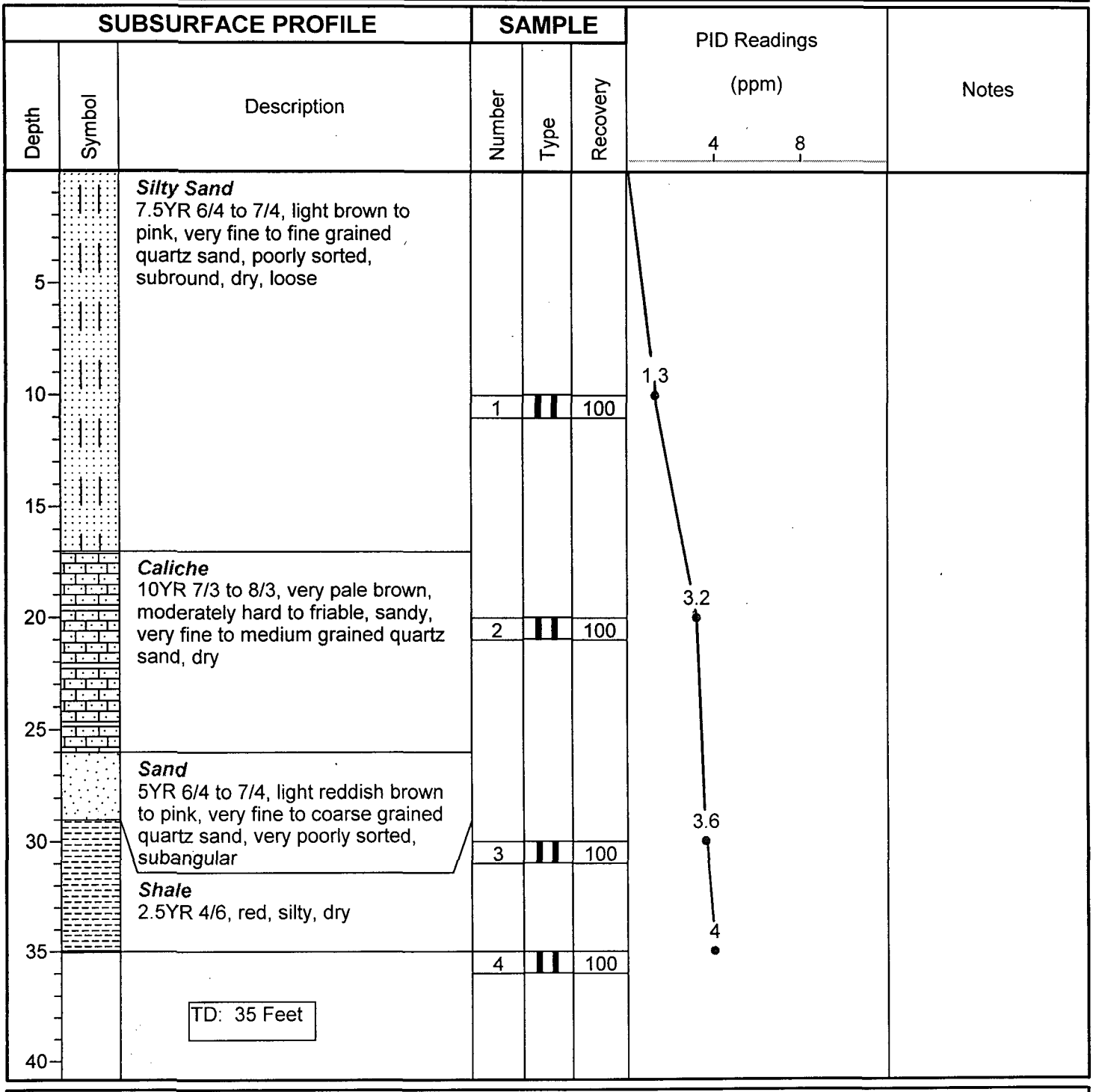
Site:

Project No: # 01-0100

Log: BH-1

Geologist: M. J. Larson

Page: 1 of 1



Drilling Method: Rotary (air)

Date Drilled: 17 - April - 01

Hole Diameter: 5"

Larson and Associates, Inc.
507 N. Marienfeld St., Suite 202
Midland, Texas 70701
(915) 687-0901

Datum: Ground Surface

Checked by: MJL

Drilled by: Scarborough

Client: John H. Hendrix Corp.

Project: Danglade # 2 Emergency Pit

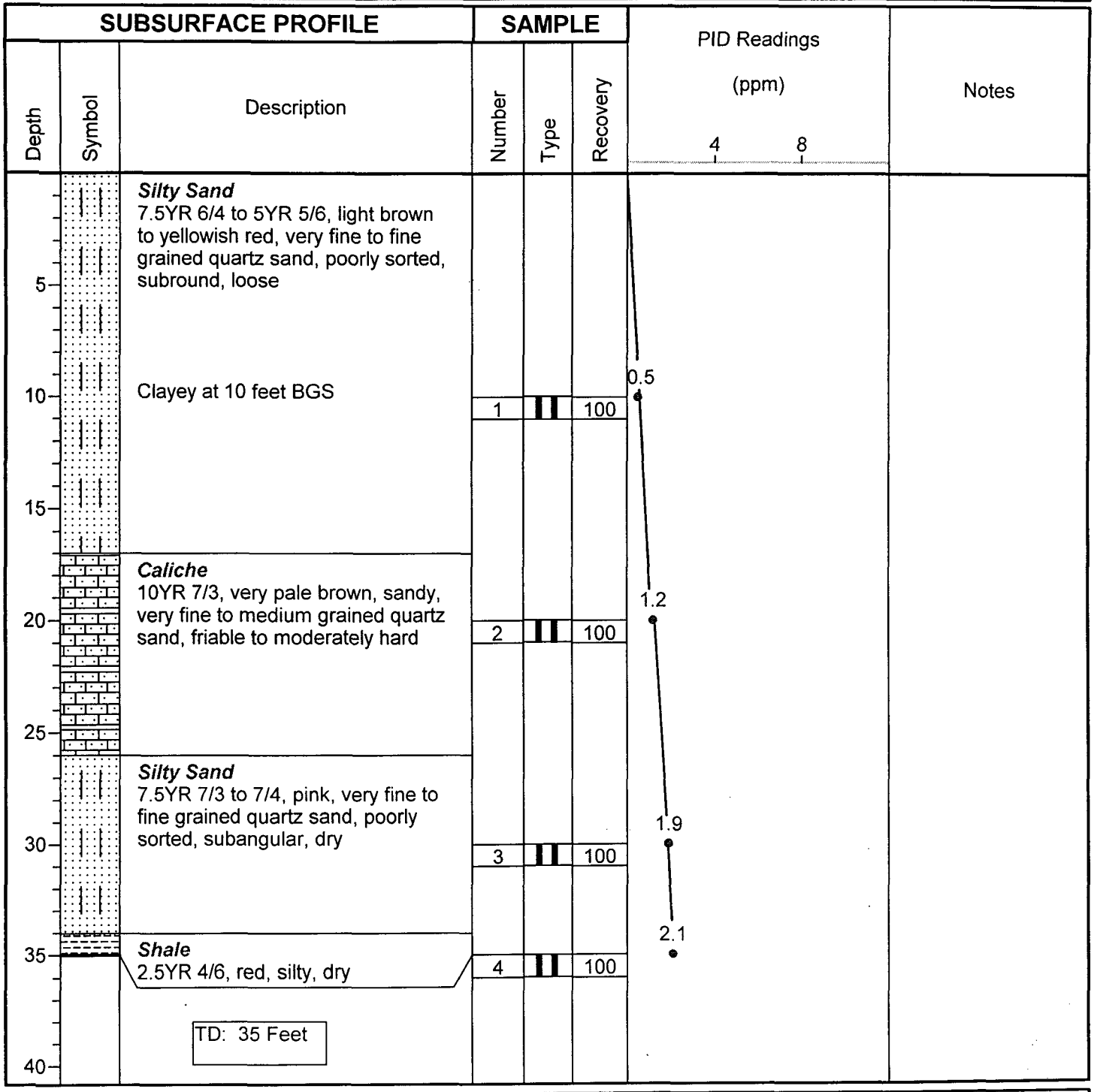
Site:

Project No: # 01-0100

Log: BH-2

Geologist: M. J. Larson

Page: 1 of 1



Drilling Method: Rotary (air)

Date Drilled: 17 - April - 01

Hole Diameter: 5"

Larson and Associates, Inc.
507 N. Marienfeld St., Suite 202
Midland, Texas 70701
(915) 687-0901

Datum: Ground Surface

Checked by: MJL

Drilled by: Scarborough

Client: John H. Hendrix Corp.

Project: Danglade # 2 Emergency Pit

Site:

Project No: # 01-0100

Log: BH-3

Geologist: M. J. Larson

SUBSURFACE PROFILE			SAMPLE			PID Readings (ppm)	
Depth	Symbol	Description	Number	Type	Recovery	4 8	Notes
5		***Silty Sand*** 7.5YR 6/4 to 5YR 5/6, light brown to yellowish red, very fine to fine grained quartz sand, poorly sorted, subround, loose, dry					
10			1		100	0.7	
15							
20		***Caliche*** 10YR 7/3, very pale brown, sandy, very fine to medium grained quartz sand, soft to moderately hard, friable	2		100	2.9	
25		***Sand*** 5YR6/4 to 7/4, light reddish brown to pink, very fine to coarse grained quartz sand, poorly sorted, subangular, dry				2.5	
30		***Shale*** 2.5YR 4/6, red, silty, dry	3		100	2.5	
35		TD: 35 Feet	4		100		
40							

Drilling Method: Rotary (air)

Date Drilled: 17 - April - 01

Hole Diameter: 5"

Larson and Associates, Inc.
507 N. Marienfeld St., Suite 202
Midland, Texas 70701
(915) 687-0901

Datum: Ground Surface

Checked by: MJL

Drilled by: Scarborough

Client: John H. Hendrix Corp.

Project: Danglade # 2 Emergency Pit

Site:

Project No: # 01-0100

Log: BH-4

Geologist: M. J. Larson

SUBSURFACE PROFILE			SAMPLE			PID Readings (ppm)	
Depth	Symbol	Description	Number	Type	Recovery	4 8	Notes
0		***Silty Sand*** 7.5YR 6/4 to 5YR 5/6, light brown to yellowish red, very fine to fine grained quartz sand, poorly sorted, subround, loose, dry				1.1	
10		Hard below 8 feet BGS	1		100		
15		***Caliche*** 10YR 7/4, very pale brown, sandy, very fine to medium grained quartz sand, soft to moderately hard, friable				3.5	
20			2		100		
25		***Silty Sand*** 7.5YR 7/3 to 7/4, pink, very fine to medium grained quartz sand, poorly sorted, subangular, dry				4.5	
30		***Shale*** 2.5YR 4/6, red, silty, dry	3		100		
35		TD: 35 Feet	4		100	6.1	
40							

Drilling Method: Rotary (air)

Date Drilled: 17 - April - 01

Hole Diameter: 5"

Larson and Associates, Inc.
507 N. Marienfeld St., Suite 202
Midland, Texas 70701
(915) 687-0901

Datum: Ground Surface

Checked by: MJL

Drilled by: Scarborough

APPENDIX C

Laboratory Reports

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

LARSON & ASSOCIATES, INC.
ATTN: MR. MARK LARSON
P.O. BOX 50685
MIDLAND, TEXAS 79710-0685
FAX: 687-0456

Sample Type: Soil
Sample Condition: Intact/ Iced/ 4.0 deg C
Project #: 01-0100
Project Name: John H. Hendrix Corp.
Project Location: Lea County, N.M.

Sampling Date: 04/20/01
Receiving Date: 04/23/01
Analysis Date: 04/24/01

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg
39523	HA-2, 2'	<0.025	1.34	0.347	1.17	0.909
39524	HA-3, 2'	<0.025	2.99	0.611	2.02	1.61
39525	HA-4, 2'	<0.025	0.371	0.218	0.754	0.562
	%IA	92	93	95	103	95
	%EA	89	90	91	99	92
	BLANK	<0.025	<0.025	<0.025	<0.025	<0.025

METHODS: EPA SW 846-8021B ,5030

Raland K. Tuttle

4-30-01
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

LARSON & ASSOCIATES, INC.
ATTN: MR. MARK LARSON
P.O. BOX 50685
MIDLAND, TEXAS 79710-0685
FAX: 687-0456

Sample Type: Soil
Sample Condition: Intact/ Iced/ 4.0 deg C
Project #: 01-0100
Project Name: John H. Hendrix Corp.
Project Location: Lea County, N.M.

Sampling Date: 04/20/01
Receiving Date: 04/23/01
Analysis Date: 04/27/01

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C28 mg/kg
39522	HA-1, 2'	<10	<10
39523	HA-2, 2'	434	2612
39524	HA-3, 2'	1324	3429
39525	HA-4, 2'	141	1146
39526	HA-5, 2'	<10	<10
39527	North	<50	1233
39528	East	72	1275
39529	South	<10	407
39530	West	17	670
	% IA	88	102
	%EA	101	100
	BLANK	<10	<10

Methods: EPA SW 846-8015M GRO/DRO

Raland K. Tuttle

4-30-01
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

LARSON AND ASSOCIATES, INC.
ATTN: MR. MARK LARSON
P.O. BOX 50685
MIDLAND, TEXAS 79710-0685
FAX: 687-0456

Sample Type: Soil
Sample Condition: Intact/Iced/ 3.5 deg C
Project #: 01-0100
Project Name: John H. Hendrix-Danglade #2
Project Location: Lea County, N.M.

Sampling Date: 04/17/01
Receiving Date: 04/18/01
Analysis Date: 04/20/01

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C28 mg/kg
39288	BH-1, 10'	<10	<10
39289	BH-1, 20'	<10	<10
39290	BH-1, 30'	<10	<10
39292	BH-2, 10'	<10	<10
39293	BH-2, 20'	<10	<10
39294	BH-2, 30'	<10	<10
39296	BH-3, 10'	<10	<10
39297	BH-3, 20'	<10	<10
39298	BH-3, 30'	<10	<10
39300	BH-4, 10'	<10	<10
	% IA	87	107
	%EA	112	107
	BLANK	<10	<10

Methods: EPA SW 846-8015M GRO/DRO

Raland K. Tuttle

4-23-01
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

LARSON AND ASSOCIATES, INC.
ATTN: MR. MARK LARSON
P.O. BOX 50685
MIDLAND, TEXAS 79710-0685
FAX: 687-0456

Sample Type: Soil
Sample Condition: Intact/Iced/ 3.5 deg C
Project #: 01-0100
Project Name: John H. Hendrix-Danglade #2
Project Location: Lea County, N.M.

Sampling Date: 04/17/01
Receiving Date: 04/18/01
Analysis Date: 04/21/01

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C28 mg/kg
39301	BH-4, 20'	<10	<10
39302	BH-4, 30'	<10	<10
	% IA	93	86
	%EA	107	110
	BLANK	<10	<10

Methods: EPA SW 846-8015M GRO/DRO

Raland K. Tuttle

4-23-01
Date

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Mark Larson
Company Name: Larson and Associates, Inc.
Company Address: P.O. Box 50685
City/State/Zip: Midland, Texas 79710-0685
Telephone No: (915) 687-0901 Fax No: (915) 687-0456
Sampler Signature:

Project Name: John H. Hendrix Co
Project #: 01-0100
Project Loc: Lea County, 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: 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	RUSH TAT (Pre-Schedule)	Standard TAT
39522	HA-1, 2'	4/20/01	13:25	1	✓								✓						✓						
39523	HA-2, 2'	"	13:35	1	✓								✓						✓						
39524	HA-3, 2'	"	13:40	1	✓								✓						✓						
39525	HA-4, 2'	"	13:45	1	✓								✓						✓						
39526	HA-5, 2'	"	14:35	1	✓								✓						✓						
39527	North	"	13:55	1	✓								✓						✓						
39528	East	"	14:10	1	✓								✓						✓						
39529	South	"	14:15	1	✓								✓						✓						
39530	West	"	14:20	1	✓								✓						✓						
		"																							

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 4.0 °C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
	4/23/01	14:40			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				4-23-01	1440

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Mark Larson
Company Name: Larson and Associates Inc.
Company Address: P.O. Box 50685
City/State/Zip: Midland, Texas 79710-0685
Telephone No: (915) 687-0901 Fax No: (915) 687-0456
Sampler Signature:

Project Name: John H. Hendrix - Pangea
Project #: 01-0100
Project Loc: Lea County, NM
PO #:

LAB # (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	TOTAL: Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	Hold	RUSH TAT (Pre-Schedule)	Standard TAT
39288	BH-1, 10'	4/17/01	10:50	1	✓								✓					✓	✓							
39289	" 20'		10:59	1	✓								✓					✓	✓							
39290	" 30'		11:10	1	✓								✓					✓	✓							
39291	" 35'		11:20	1	✓								✓										✓			
39292	BH-2, 10'		12:25	1	✓								✓					✓	✓							
39293	" 20'		12:40	1	✓								✓					✓	✓							
39294	" 30'		12:47	1	✓								✓					✓	✓							
39295	" 35'		12:55	1	✓								✓										✓			
39296	BH-3, 10'		13:28	1	✓								✓					✓	✓							
39297	" 20'	↓	13:35	1	✓								✓				-	✓	✓							

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 3.5°C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
	4/18/01	16:15			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Joanne McMurrey	4-18-01	1615

Environmental Lab of Texas, Inc.

12600 West I-20 East
Odessa, Texas 79763
Phone: 915-563-1800
Fax: 915-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Mark Larson
Company Name: Larson and Associates, Inc.
Company Address: P.O. Box 50685
City/State/Zip: Midland, Texas 79710-0685
Telephone No: (915) 687-0901 Fax No: (915) 687-0456
Sampler Signature:

Project Name: John H. Hendrix - Dorfman
Project #: 01-0105
Project Loc: Lea County, NM
PO #:
Page 2 of 2

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)	Analyze For: TCLP: TDS / CL / SAR / EC	TPH 418.1	TOTAL: TPH TX 1005/1006	TPH 8015M GRO/DRO	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030	Hold	RUSH TAT (Pre-Schedule)	Standard TAT
39298	Bit - 3, 30'	4/17/01	13:43	1	✓								✓					✓	✓							
39299	" 35'		13:47	1	✓								✓										✓			
39300	Bit - 4, 10'		14:20	1	✓								✓					✓	✓							
39301	" 20'		14:30	1	✓								✓					✓	✓							
39302	" 30'		14:40	1	✓								✓					✓	✓							
39303	" 35'	↓	14:45	1	✓								✓										✓			
	No Samples Follow																									

Special Instructions:

Sample Containers Intact? (Y) N
Temperature Upon Receipt: 3.5 °C
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
	4/18/01	14:50			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Joanne McMurrey	4-18-01	1615

APPENDIX D

Photographs

JOHN H. HENDRIX CORP.
DANGLADE #2 EMERGENCY PIT INVESTIGATION
PHOTOGRAPHS

Well Sign

Emergency Pit Excavation and Well Location (Looking East)

JOHN H. HENDRIX CORP.
DANGLADE # 2 EMERGENCY PIT INVESTIGATION
PHOTOGRAPHS

Emergency Pit Excavation and Well Location (Looking Northeast)

Emergency Pit Excavation (Looking Southwest)

JOHN H. HENDRIX CORP.
DANGLADE # 2 EMERGENCY PIT INVESTIGATION
PHOTOGRAPHS

Emergency Pit Excavation (Looking North)

Emergency Pit Excavation (Looking South)