ANNUAL MONITORING REPORT

ANNUAL MONITORING REPORT

RED BYRD # 2

NW ¼ of the SW ¼ of SECTION 31, TOWNSHIP 19 SOUTH, RANGE 37 EAST
LEA COUNTY, NEW MEXICO
LINK ENERGY LEAK NUMBER: 2000-10477
ETGI PROJECT NUMBER: LI2051

PREPARED FOR:

LINK ENERGY
5805 EAST HIGHWAY 80
MIDLAND, TEXAS 79701

PREPARED BY:

ENVIRONMENTAL TECHNOLOGY GROUP, INC.
2540 WEST MARLAND
HOBBS, NEW MEXICO 88240

April 2004

Camille Reynolds
Project Manager

FOR TODD CHOBAN
Todd Choban
Regional Manager

TABLE OF CONTENTS

INTRODUCTION

Environmental Technology Group, Inc. (ETGI), on behalf of Link Energy (Link), has prepared this Annual Monitoring Report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an Annual Monitoring Report by April 1 of each year. This report is intended to be viewed as a complete document with figures, attachments, tables and text. The report presents the results of water sampling conducted on groundwater that had seeped into the excavated area following pipeline excavation activities. No field activities were conducted during calendar year 2003, due to site access restrictions imposed by the landowner. For reference, a Site Location Map and Site Map are provided as Figures 1 and 2, respectively.

There are no groundwater monitor wells currently installed on-site.

FIELD ACTIVITIES

No field activities were conducted during the calendar year 2003, due to site access restrictions imposed by the landowner. As discussed in the *Supplemental Work Plan for Link-Red Byrd #2, Crude Oil Release Site*, (August 2000), soil borings were installed on-site and advanced to a depth of approximately 55 feet below the ground surface. At that point, a dense red clay in the upper portion of the Dockum Formation was encountered and the borings were terminated and backfilled according to NMOCD guidelines. No groundwater was encountered during soil boring activities.

A passive phase separated hydrocarbon (PSH) recovery system was installed during excavation backfilling activities in December 2001. A product recovery manifold consisting of two eight foot horizontal 8-inch diameter 0.020 slotted schedule 40 PVC pipes joined in the middle with an 8-inch PVC tee fitting were mounted to a 5 foot vertically positioned section of 8-inch 0.020 slotted PVC piping and placed into the excavation. The vertical section of the recovery manifold extends a distance of 5 feet above the capillary fringe. The recovery manifold was then attached to an 8-inch PVC coupling adjoining to a 55-foot 8-inch PVC riser pipe, which extends approximately 4 feet above the ground surface (Figure 4). The well is equipped with a 10' X 6" absorbent boom placed in the well on a nylon recovery cord for retrieval. During the 2002 reporting period the amount of PSH observed in the passive recovery system varied from droplets to a heavy sheen. On November 18, 2002 the absorbent boom was removed due to no detectable water or PSH in the passive recovery system and placed into a 55-gallon drum with locking rings on-site.

GROUNDWATER GRADIENT

No groundwater monitor wells have been installed on-site therefore, no site-specific ground water gradient data is available for this site. Regionally, the groundwater gradient varies from southeast to south.

LABORATORY RESULTS

Groundwater samples were collected from the excavation on October 29, 2001 and delivered to AnalySys, Inc., Austin, Texas for analysis of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX), Total Petroleum Hydrocarbons (TPH), Total Dissolved Solids (TDS) and RCRA metals constituent concentrations using the methods described below.

- BTEX analysis in accordance with EPA Method SW846-8260b,
- TPH analysis in accordance with EPA Method SW846-8015M GRO/DRO,
- TDS analysis in accordance with EPA Method SW846-160.1, and
- RCRA Metals analysis in accordance with EPA Method SW846-6010.

Review of laboratory analytical results from the October 29, 2001 sampling event indicate that the benzene concentration in the perched groundwater was above the NMOCD regulatory standard. Review of the results of the TDS analysis indicate that this perched groundwater does not meet the New Mexico Water Quality Control Committee definition of present or foreseeable "beneficial use". Results of the laboratory analysis conducted on the groundwater samples are summarized in Tables 2 and 3 and a copy of the laboratory report is provided as Appendix A.

SUMMARY

This report presents the results of groundwater sampling activities conducted on-site during the annual monitoring period of 2002. Groundwater sampling activities were not conducted during the year 2003 due to site restrictions imposed by the landowner. The PSH detected in the passive recovery system varied from droplets to a heavy sheen during the annual reporting period. No measurable amount of PSH was recovered on-site during this reporting period. On November 18, 2002 no detectable water or PSH was observed in the passive recovery system and the absorbent boom was removed from the system and placed into a 55-gallon drum with a locking ring on-site.

No groundwater monitor wells have been installed on-site therefore, no site-specific ground water gradient data is available for this site.

Review of laboratory analytical results from the October 29, 2001 sampling event indicate that the benzene concentration in the perched groundwater was above the NMOCD regulatory standard. Review of the results of the TDS analysis indicate that this perched groundwater does not meet the New Mexico Water Quality Control Committee definition of present or foreseeable "beneficial use". Link Energy anticipates obtaining access to this site in 2004 and the recovery system will be monitored at that time. Link Energy will provide a written update to the NMOCD at that time.

DISTRIBUTION

Copy 1 & 2: William C. Olson and Ed Martin
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Copy 3: Chris Williams
New Mexico Oil Conservation Division (District 1)
1625 French Drive
Hobbs, New Mexico 88240

Copy 4: Jeff Dann
Link Energy, LLC
2000 West Sam Houston Parkway
Suite 400
Houston, Texas 77042

Copy 5: Jimmy Bryant
Link Energy, LLC
5805 Hwy 80 East
Midland, Texas 79701

Copy 6: Environmental Technology Group, Inc.
4600 West Wall
Midland, Texas 79703

Copy 7: Environmental Technology Group, Inc.
2540 West Marland
Hobbs, New Mexico 88240

Copy Number: _____

Quality Control Review: _____

FIGURES

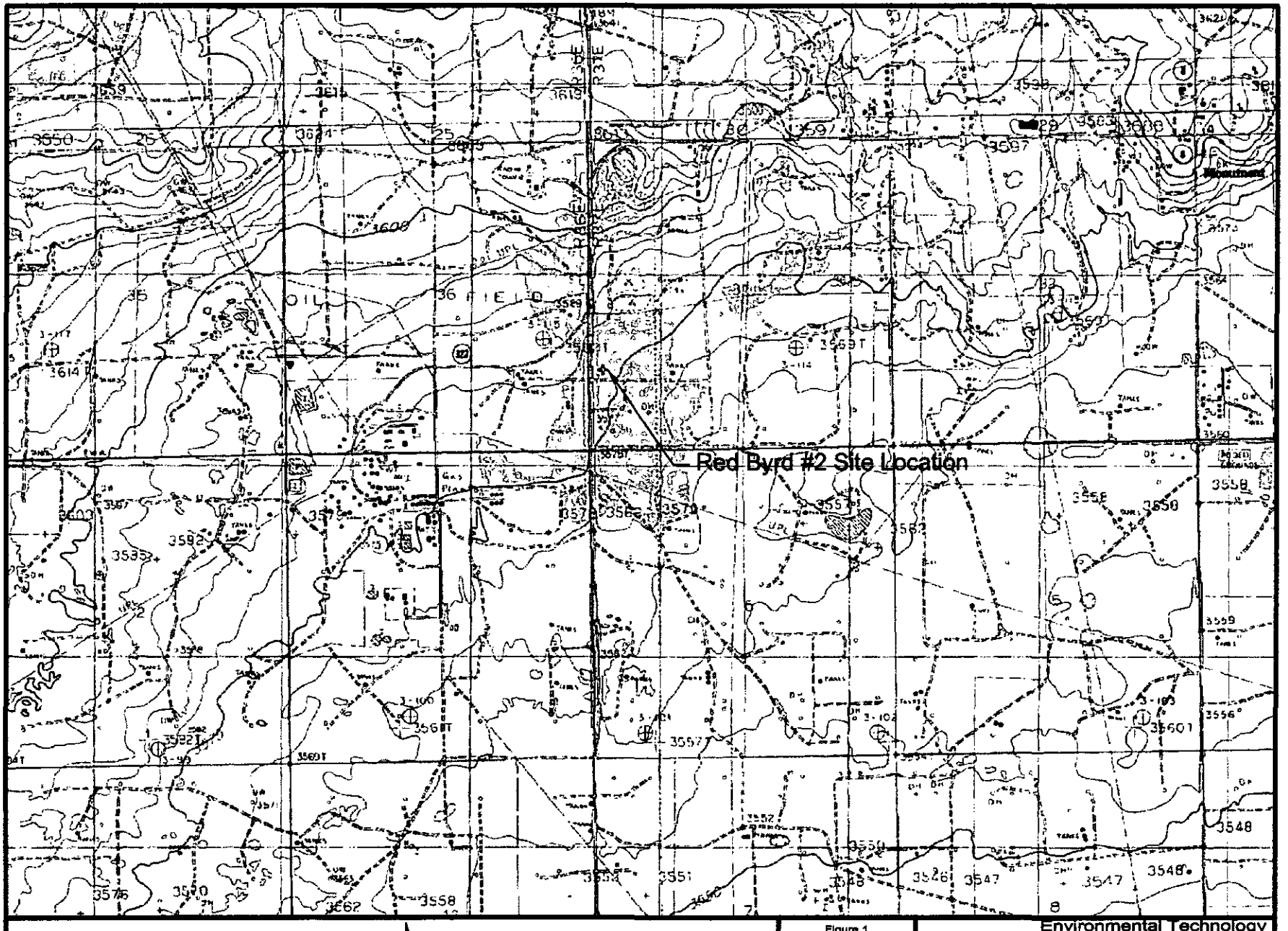

Figure 1
Site Location Map

Link Energy
Red Byrd No. 2
Lea County, NM

Environmental Technology Group, Inc.

NW 1/4, SW 1/4, Sec. 31, T19S, R37E		32° 36' 47.4"N 103° 17' 52.3"
Scale: NTS	Prep By: JDJ	Checked By: RE
ETGI Project #: LI 2051	February 19, 2003	

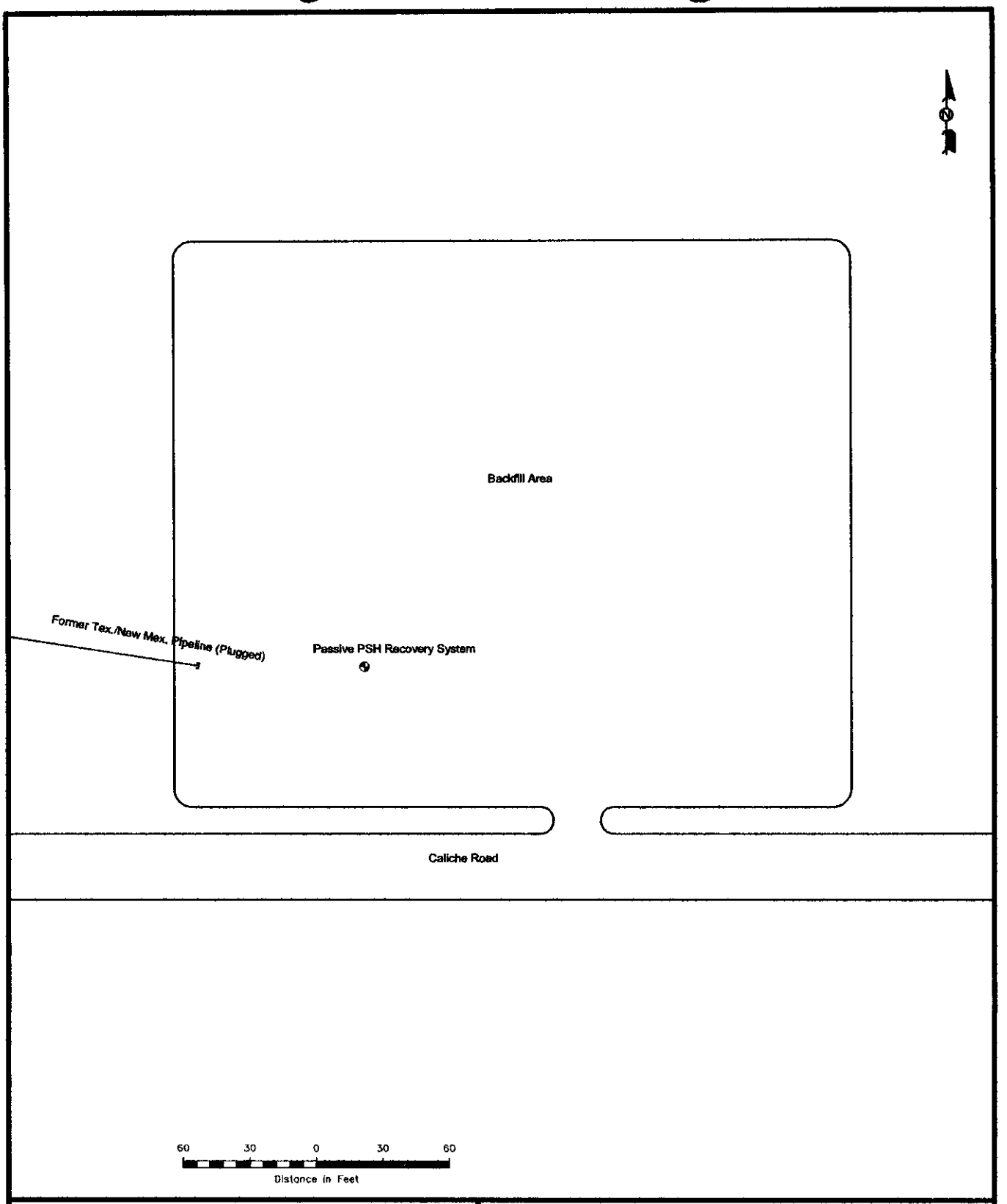

Figure 2
Site Map

Link Energy Red Byrd II
Monument 6" Gathering Line (Abandoned)
Lea County, NM

Environmental Technology Group, Inc.

NW 1/4, SW 1/4, Sec. 31, T19S, R37E		32° 36' 47.4"N 103° 17' 52.3"W
Scale: 1" = 60'	Prep By: JDJ	Checked By: CR
February 19, 2004	ETGI Project # LI 2051	

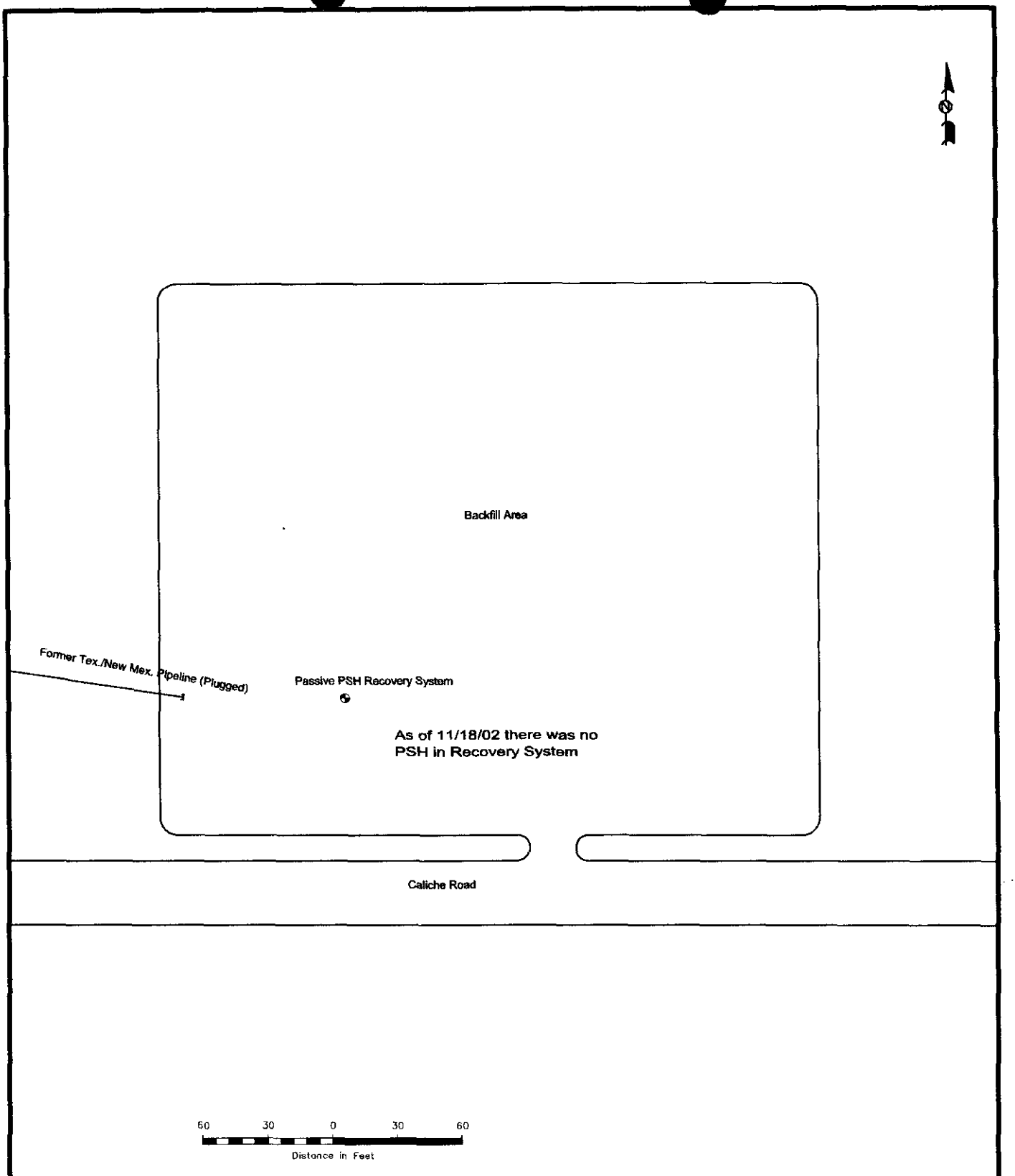

Figure 3
NMOCD Site Map

Link Energy Red Byrd II
Monument 6" Gathering Line (Abandoned)
Lea County, NM

Environmental Technology Group, Inc.

NW 1/4, SW 1/4, Sec. 31, T19S, R37E		32° 36' 47.4"N 103° 17' 52.3"W
Scale: 1" = 60'	Prep By: JDJ	Checked By: CR
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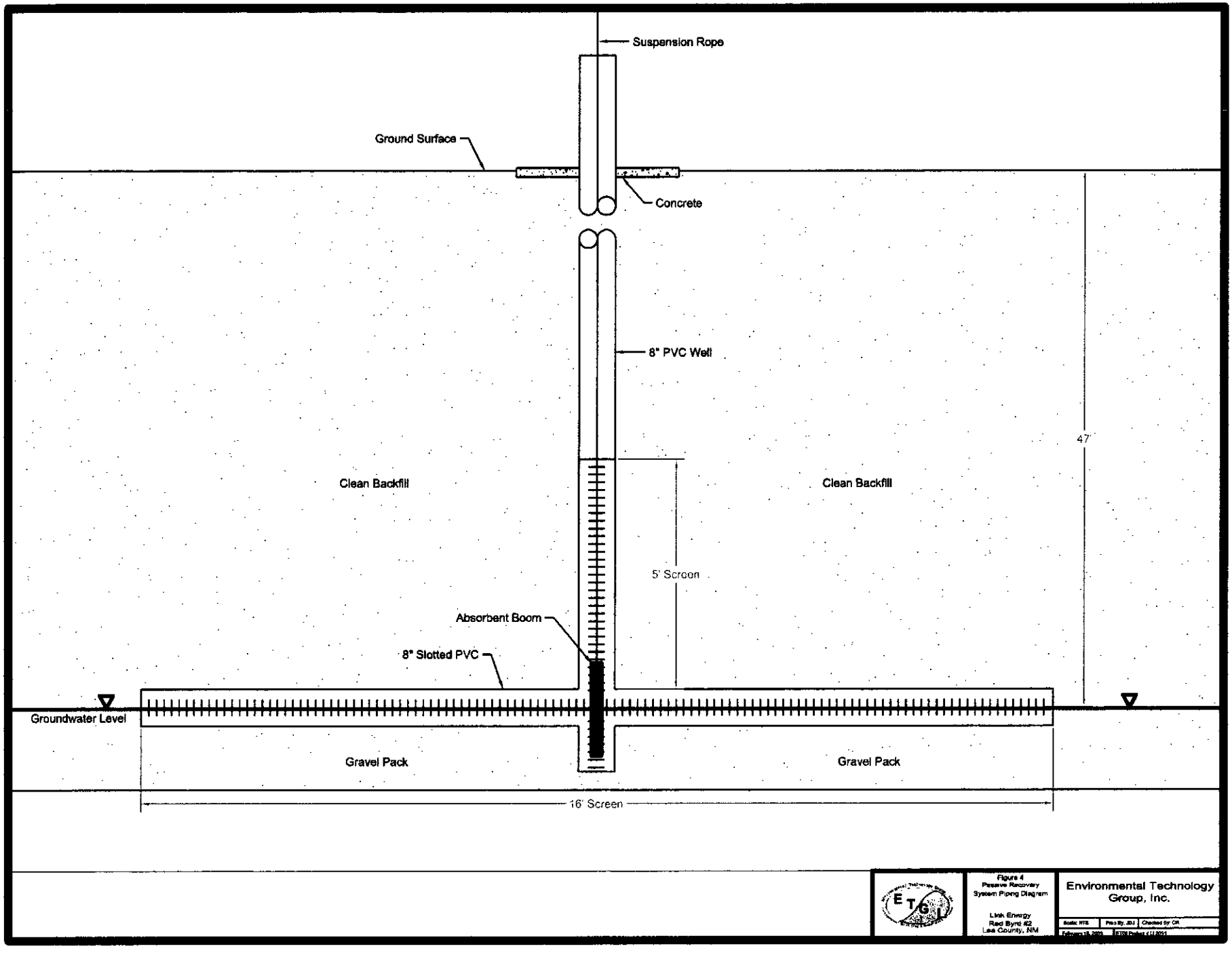
Suspension Rope
Ground Surface
Concrete
8" PVC Well
47'
Clean Backfill
Clean Backfill
5' Screen
Absorbent Boom
8" Slotted PVC
Groundwater Level
Gravel Pack
Gravel Pack
16' Screen
Figure 4
Passive Recovery
System Piping Diagram
Link Energy
Red Byrd #2
Lea County, NM
Environmental Technology
Group, Inc.

TABLES

TABLE 1

GROUNDWATER ELEVATION

RED BYRD II
LINK ENERGY
LEA COUNTY, NEW MEXICO
ETGI PROJECT # LI 2051

WELL NUMBER	DATE MEASURED	CASING WELL ELEVATION	DEPTH TO PRODUCT	DEPTH TO WATER	PSH THICKNESS	CORRECTED GROUNDWATER ELEVATION
PRW -1	02/25/02		48.36	48.36	0.00	
	08/16/02		48.83	48.83	Sheen	
Boom MW	10/29/02		45.97	45.97	0.00	

TABLE 2

GROUNDWATER CHEMISTRY

LINK ENERGY
RED BYRD II
LEA COUNTY, NEW MEXICO
ETGI PROJECT #LI 2051

All concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	Method: SW 846-8260b					Method: 8015, 160.1		
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE	GRO	DRO	TDS
Excavation	10/29/01	0.246	0.452	0.147	0.312	0.119	19.4	62.9	15900

TABLE 3

CONCENTRATIONS OF METALS IN GROUNDWATER

LINK ENERGY
RED BYRD II
LEA COUNTY, NEW MEXICO
ETGI Project #LI 2051

All concentrations are reported in mg/L

SAMPLE LOCATION	SAMPLE DATE	EPA SW846-6010B, 7470																							
		Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Tin	Vanadium	Zinc	Boron	Strontium
GW	10/29/01	1.03	<0.05	0.176	<0.004	<0.005	NA	<0.01	<0.02	<0.02	0.731	<0.02	NA	0.689	<0.0002	<0.02	<0.02	NA	<0.05	<0.002	NA	<0.05	0.0423	0.0229	4.71	19.2

Appendix A

Laboratory Reports

FILE

ANALYSYS INC.

4221 Freidrich Lane, Suite 190, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 444-5896 • FAX (512) 447-4766

Client: Environmental Tech Group
Attn: Ken Dutton
Address: 2540 W. Marland
Hobbs Nm 88240

Phone: 505 397-4882 **FAX:** 505 397-4701

Report#/Lab ID#: 121653 **Report Date:** 11/14/01
Project ID: Red Byrd II EOT 2051C
Sample Name: GW
Sample Matrix: water
Date Received: 10/30/2001 **Time:** 10:48
Date Sampled: 10/29/2001 **Time:** 10:30

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method[6]	Data Qual[7]	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Metals Dig.-Hg	---	---	---	---	11/02/01	7470&245.1	---	---	---	---	---
Metals Dig.-HNO3	---	---	---	---	10/31/01	3015	---	---	---	---	---
Total dissolved solids	15900	mg/L	1	<1	10/30/01	160.1	---	4.45	-NA-	-NA-	-NA-
TPH by GC (as diesel)	62.9	mg/L	0.5	<0.5	11/06/01	8015 mod.	---	19.4	77.5	107.1	110.6
TPH by GC (as diesel-ext)	---	---	---	---	11/01/01	TX 1005	---	---	---	---	---
TPH by GC (as gasoline)	19.4	mg/L	0.5	<0.5	11/06/01	8015 mod.	---	11.2	73.7	102.3	97.8
Aluminum/ICP	1.03	mg/L	0.2	<0.2	11/13/01	6010 & 200.7	---	2.34	96.79	107.81	85.87
Arsenic/ICP	<0.05	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	1.41	116.44	108.5	90.86
Barium/ICP	0.176	mg/L	0.01	<0.01	11/13/01	6010 & 200.7	---	1.87	87.26	97.5	82.21
Beryllium/ICP	<0.004	mg/L	0.004	<0.004	11/13/01	6010 & 200.7	---	1.85	95.85	102.5	87.53
Boron/ICP	4.71	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	0.49	97.08	100.25	88.49
Cadmium/ICP	<0.005	mg/L	0.005	<0.005	11/13/01	6010 & 200.7	---	1.1	90.27	108.25	85.63
Chromium/ICP	<0.01	mg/L	0.01	<0.01	11/13/01	6010 & 200.7	J	1.85	89.91	108.63	86.86
Cobalt/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	J	1.24	89.22	106.13	85.42
Copper/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	1.9	96.2	101.6	85.95
Iron/ICP	0.731	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	0.75	92.05	97.35	87.52
Lead/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	1.53	87.77	105.25	88.42
Manganese/ICP	0.689	mg/L	0.01	<0.01	11/13/01	6010 & 200.7	---	1.22	92.43	108	88.29
Mercury/CVAA	<0.0002	mg/L	0.0002	<0.0002	11/05/01	245.1&7470	---	0.89	114.14	87	107.33
Molybdenum/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	1.93	101.03	105.88	92.04
Nickel/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	J	2.06	87.54	107.63	87.14

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Richard Laster

Richard Laster

1. Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

ANALYSYS INC.

4221 Freidrich Lane, Suite 190, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 444-5896 • FAX (512) 447-4766

Client: Environmental Tech Group
Attn: Ken Dutton

Project ID: Red Byrd II EOT 2051C
Sample Name: GW

Report#/Lab ID#: 121653
Sample Matrix: water

REPORT OF ANALYSIS-cont.

QUALITY ASSURANCE DATA[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method[6]	Data Qual[7]	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Selenium/ICP	<0.05	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	0.13	85.22	106.15	99.01
Silver/GFAA	<0.002	mg/L	0.002	<0.002	11/05/01	272.2&7761	---	2.84	90.83	82.5	82
Strontium/ICP	19.2	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	1.44	89.42	103.73	87.59
Tin/ICP	<0.05	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	4.71	98.19	104	101.22
Vanadium/ICP	0.0423	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	2.9	93.65	103.2	86.89
Zinc/ICP	0.0229	mg/L	0.01	<0.01	11/13/01	6010 & 200.7	---	1.28	91.95	106	86.76
Volatile organics-8260b/BTEX	---		---		11/09/01	8260b	---	---	---	---	---
Benzene	246	µg/L	10	<10	11/09/01	8260b	---	9.5	98.5	98.9	102.4
Ethylbenzene	147	µg/L	10	<10	11/09/01	8260b	---	0.9	90.5	94.9	93.1
m,p-Xylenes	312	µg/L	10	<10	11/09/01	8260b	---	0.7	94.9	98.2	97.2
o-Xylene	119	µg/L	10	<10	11/09/01	8260b	---	0.6	97.7	98.5	98.8
Toluene	452	µg/L	10	<10	11/09/01	8260b	---	5.8	107.7	102.3	110.8

ANALYSYS INC.

4221 Freidrich Lane,Suite 190, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 7840408
(512) 444-5896 • FAX (512) 447-4766

Client: Environmental Tech Group **Attn:** Ken Dutton	**Project ID:** Red Byrd II EOT 2051C **Sample Name:** GW	**Report#/Lab ID#:** 121653 **Sample Matrix:** water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limit	Data Qualifiers
Nitrobenzene-d5	8015 mod.	148	50-150	---
p-Terphenyl	8015 mod.	114	50-150	---
1,2-Dichloroethane-d4	8260b	104	80-120	---
Toluene-d8	8260b	96.2	88-110	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Exceptions Report:

Report #/Lab ID#: 121653 **Matrix:** water
Client: Environmental Tech Group **Attn:** Ken Dutton
Project ID: Red Byrd II EOT 2051C
Sample Name: GW

Sample Temperature/Condition <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had insufficient time to achieve desired temperatures in the samples (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample Bottles & Preservation

☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
☐ Sample received in appropriate container(s). State of sample preservation unknown.
☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion

A J flag data qualifier indicates (as required under TNRCC-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), though less than the Reported Quantitation Limit (RQL) is greater than the Detection Limit. Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be nothing more than background ion-fragment noise.)

Comments pertaining to Data Qualifiers and QC data:

Parameter	Qualif	Comment
Chromium/ICP	J	See J-flag discussion above.
Cobalt/ICP	J	See J-flag discussion above.
Nickel/ICP	J	See J-flag discussion above.

Notes:

COC: 169

CHAIN-OF-CUSTODY

ANALYSYS INC.
4221 Freidrich Lane, Suite 190, Austin, TX 78744
Phone: (512) 444-5896
Fax: (512) 447-4766

Send Reports To:
Company Name ETGI
Address 2540 W MARLAND
City Hobbs State NM Zip 88240
ATTN: KEN DUTTON
Phone (505) 397-4882 Fax (505) 397-4701

Bill to (if different):
Company Name EOTT
Address
City State Zip
ATTN:
Phone Fax

Rush Status (must be confirmed with lab mgr.):
Project Name/PO#: Red Byrd II Sampler: Sc/mc Marcelo Campos
EOT 2051C

Analyses Requested (1)
Please attach explanatory information as required

Client Sample No. Description/Identification	Date Sampled	Time Sampled	No. of Containers	Soil	Water	Waste	Lab I.D. # (Lab only)	TPH 8015 PRO/GRO	BTEX 8020	Heavy Metals 6010	TDS I.D.!					Comments
GW	10-29-01	1030	7		✓		121653	X	X	X	X					

(1)Unless specifically requested otherwise on this Chain-of-custody and/or attached documentation, all analyses will be conducted using ASI's method of choice and all data will be reported to ASI's normal reporting limits (MDL/PQL). For GC/MS volatiles and extractables, unless specific analytical parameter lists are specified on this chain-of-custody or attached to this chain-of-custody, ASI will default to Priority Pollutants or ASI's HSL list at ASI's option. Specific compound lists must be supplied for all GC procedures.

Sample Relinquished By				Sample Received By			
Name	Affiliation	Date	Time	Name	Affiliation	Date	Time
Marcelo Campos		10-29-01	1230	M. Tan	ASI	10-30-01	10:45

[Tendering of above described samples to AnalySys, Inc. for analytical testing constitutes agreement by buyer/sampler to AnalySys, Inc.'s standard terms.]

0.0°C

March 26, 2003

Mr. Bill Vondrehle
EOTT Energy, LLC
P.O. Box 4666
Houston, Texas 77210-4666

MAR 27 2003

RE: Annual Monitoring Reports
Various New Mexico Sites

Mr. Vondrehle,

Please review the attached Annual Monitoring Reports for submittal to the New Mexico Oil Conservation Division (OCD). Mr. Randy Bayliss of the OCD requested a cover letter be attached to each submittal of reports or each report stating the report was prepared on behalf of EOTT Energy, LLC by Environmental Technology Group, Inc., before it can be reviewed. Upon your review, if no edits are made, please forward these reports to Mr. William C. Olson and Mr. Randy Bayliss at the address provided below. Please notify Britt Byerly or myself of your approval or if any edits need to be made. Upon notification the remaining copies of this report will be edited, if needed, and distributed according to the distribution list included in the report. If edits are required please send a cover letter stating the report was prepared on behalf of EOTT Energy, LLC by Environmental Technology Group, Inc. to be attached to both New Mexico Oil Conservation Division report copies for distribution upon completion of your edits. We regret any inconvenience this causes yourself or EOTT, but the system is imposed by the OCD. If you have any questions, or if additional information is needed, please call.

Respectfully,

Chance I. Johnson
New Mexico Regional Manager
Environmental Technology Group, Inc.
(505) 397-4882

Address for Mr. William C. Olson and Mr. Randy Bayliss:

New Mexico Oil Conservation Division
Environmental Bureau
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

cc: file

EOTT ENERGY LLC

P.O. BOX 4666
HOUSTON, TEXAS 77210-4666

March 31, 2003

Mr. Randolph Bayliss, P.E.
Hydrologist
Oil Conservation Division
State of New Mexico
1220 South St. Francis Drive
Santa Fe NM 87505

Dear Mr. Bayliss;

EOTT Energy, LLC is an Operator of crude oil pipelines and terminal facilities located in the state of New Mexico. EOTT actively monitors certain historical release sites exhibiting groundwater impacts, consistent with assessments and workplans developed in consultation with the New Mexico Oil Conservation Division. Consistent with the rules and regulations of the New Mexico OCD, EOTT hereby submits its annual monitoring reports for the following titled sites:

Red Byrd No. 1	Section 1, Township 20 South, Range 36 East, Lea County NM
Red Byrd No. 2	Section 1, Township 20 South, Range 36 East, Lea County NM
TNM 98-SO1	Section 20, Township 19 South, Range 37 East, Lea County NM
TNM 97-23	Section 14, Township 22 South, Range 37 East, Lea County NM
Monument 18	Section 7, Township 20 South, Range 37 East, Lea County NM
TNM 98-05	Section 26, Township 21 South, Range 37 East, Lea County NM
Lea Station to Monument 6"	Section 5, Township 20 South, Range 37 East, Lea County NM

ETGI prepared these documents and has vouched for their accuracy and completeness, and on behalf of EOTT Energy, I have personally reviewed the documents and interviewed ETGI in order to verify the accuracy and completeness of these documents. It is based upon these inquiries and reviews that EOTT Energy submits these Annual Compliance Monitoring Reports for the above 7 facilities.

I look forward to scheduling a meeting with you in the second or third week of March as you schedule allows, which will allow for an opportunity to review and discuss the results of the monitoring. If you have questions in the interim, please contact me at (713) 993-5047.

Sincerely,

Bill Von Drehle

Bill Von Drehle
Director Environmental
EOTT ENERGY LLC

Cc: Frank Hernandez

rec'd Mar 18 03

ANNUAL MONITORING REPORT

1R 86

PR 5/08/03

EOTT ENERGY, LLC
RED BYRD NO. 2
SE ¼, NE ¼ OF SECTION 1, TOWNSHIP 20 SOUTH, RANGE 36 EAST
LEA COUNTY, NEW MEXICO

PREPARED FOR:

EOTT ENERGY, LLC
5805 EAST HIGHWAY 80
MIDLAND, TEXAS 79701

PREPARED BY:

ENVIRONMENTAL TECHNOLOGY GROUP, INC.
2540 WEST MARLAND
HOBBS, NEW MEXICO 88240

April 2003

Camille Reynolds
Project Manager

Ken Dutton for
Chance I. Johnson
New Mexico Regional Manager

TABLE OF CONTENTS

INTRODUCTION

Environmental Technology Group, Inc. (ETGI), on behalf of EOTT Energy, LLC (EOTT), prepared this Annual Monitoring Report in compliance with the New Mexico Oil Conservation Division (NMOCD) letter of May 1998, requiring submittal of an Annual Monitoring Report by April 1 of each year. This report is intended to be viewed as a complete document with figures, attachments, tables and text. The report presents the results of water sampling conducted on groundwater that had seeped into the excavated area following pipeline excavation activities. For reference, a Site Location Map and Site Map are provided as Figures 1 and 2, respectively.

There are no groundwater monitor wells currently installed on-site.

FIELD ACTIVITIES

As discussed in the *Supplemental Work Plan for EOTT-Red Byrd #2, Crude Oil Release Site*, (August 2000), soil borings were installed on-site and advanced to a depth of approximately 55 feet below the ground surface. At that point, a hard red clay in the upper contact of the Dockum Formation was encountered and the borings were terminated and backfilled according to NMOCD guidelines. No groundwater was encountered during soil boring activities.

A passive phase separated hydrocarbon (PSH) recovery system was installed during excavation backfilling activities in December 2001. A product recovery manifold consisting of two eight foot horizontal 8-inch diameter 0.020 slotted schedule 40 PVC pipes joined in the middle with an 8-inch PVC tee fitting were mounted to a 5 foot vertically positioned section of 8-inch 0.020 slotted PVC piping and placed into the excavation. The vertical section of the recovery manifold extends a distance of 5 feet above the capillary fringe. The recovery manifold was then attached to an 8-inch PVC coupling adjoining to a 55-foot 8-inch PVC riser pipe which extends approximately 4 feet above the ground surface (Figure 4). The well is equipped with a 10' X 6" absorbent boom placed in the well on a nylon recovery cord for retrieval. During this reporting period the amount of PSH observed in the passive recovery system varied from droplets to a heavy sheen. On November 18, 2002 the absorbent boom was removed due to no detectable water or PSH in the passive recovery system and placed into a 55-gallon drum with locking rings on-site.

GROUNDWATER GRADIENT

No groundwater monitor wells have been installed on-site therefore, no site-specific ground water gradient data is available for this site.

LABORATORY RESULTS

Groundwater samples were collected from the excavation on October 29, 2001 and shipped to AnalySys, Inc. in Austin, Texas for analyses of Benzene, Toluene, Ethylbenzene, and Xylene (BTEX), Total Petroleum Hydrocarbons (TPH), Total Dissolved Solids (TDS) and RCRA metals constituent concentrations using the methods described below.

- BTEX analysis in accordance with EPA Method SW846-8260b,
- TPH analysis in accordance with EPA Method SW846-8015M GRO/DRO,
- TDS analysis in accordance with EPA Method SW846-160.1, and
- RCRA Metals analysis in accordance with EPA Method SW846-6010.

Laboratory results from the October 29, 2001 sampling event indicate that the benzene concentration in the perched groundwater was above NMOCD regulatory standards. Review of the results of the TDS analysis indicate that this perched groundwater does not meet the New Mexico Water Quality Control Committee definition of present or foreseeable "beneficial use". Results of the laboratory analysis conducted on the groundwater samples are summarized in Table 1 and the laboratory report is provided as Appendix A.

SUMMARY

This report presents the results of groundwater sampling activities conducted on-site during the annual monitoring period of calendar year 2002. The PSH detected in the passive recovery system varied from droplets to a heavy sheen during the annual reporting period. No measurable amount of PSH was recovered on-site during this reporting period. On November 18, 2002 no detectable water or PSH was observed in the passive recovery system and the absorbent boom was removed from the system and placed into a 55-gallon drum with a locking ring on-site.

No groundwater monitor wells have been installed on-site therefore, no site-specific ground water gradient data is available for this site.

Laboratory results from the October 29, 2001 sampling event indicate that the benzene concentration in the perched groundwater was above NMOCD regulatory standards. Review of the results of the TDS analysis indicate that this perched groundwater does not meet the New Mexico Water Quality Control Committee definition of present or foreseeable "beneficial use".

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Midland, Texas 79703

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2540 West Marland
Hobbs, New Mexico 88240

Copy Number 1

Quality Control Review

FIGURES

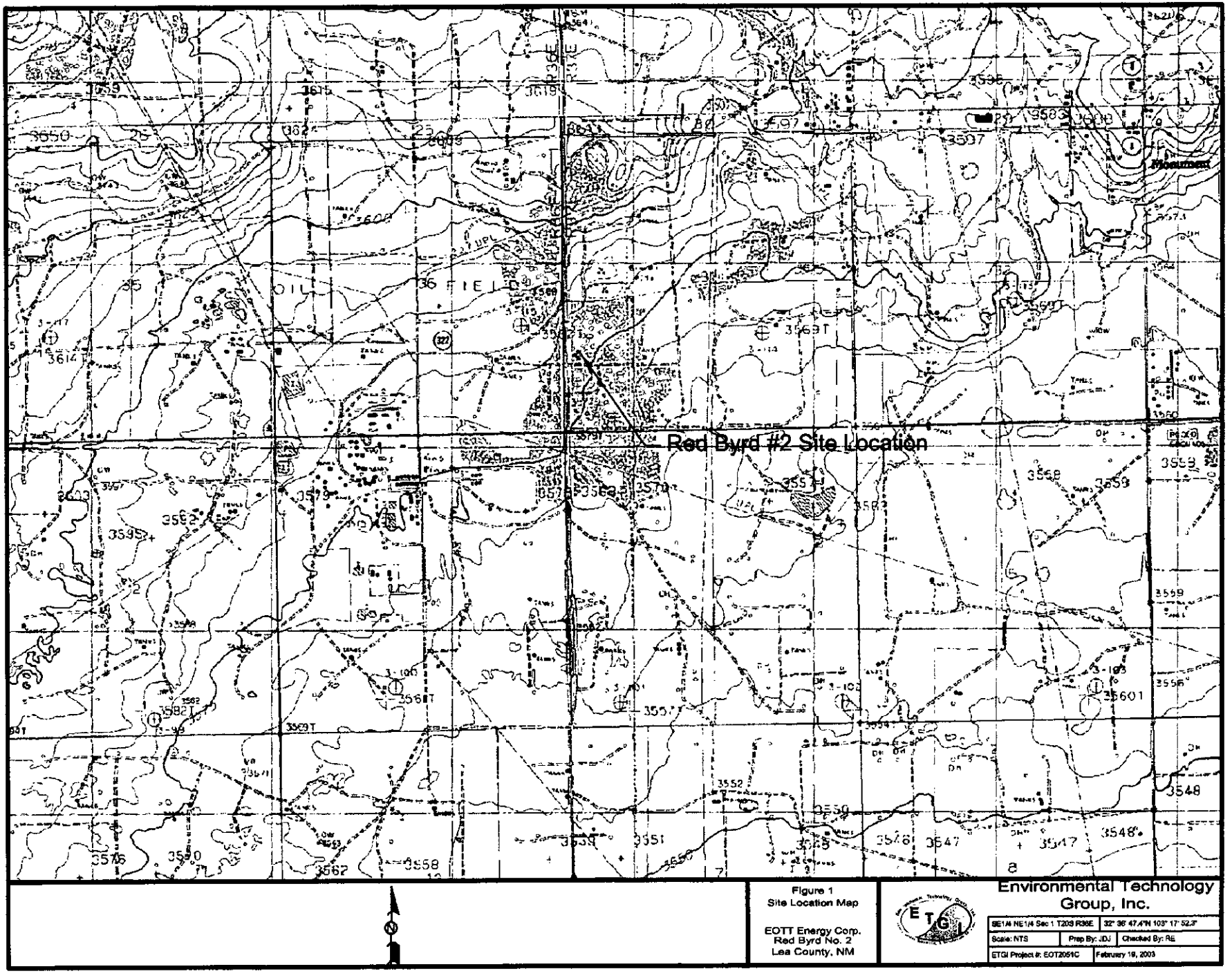


Figure 1
Site Location Map

EOTT Energy Corp.
Red Byrd No. 2
Lea County, NM

Environmental Technology Group, Inc.

SE1/4 NE1/4 Sec 1 T20S R36E		32° 36' 47.4"N 103° 17' 52.3"
Scale: NTS	Prep By: JDJ	Checked By: RE
ETGI Project #: EOT2051C	February 19, 2003	

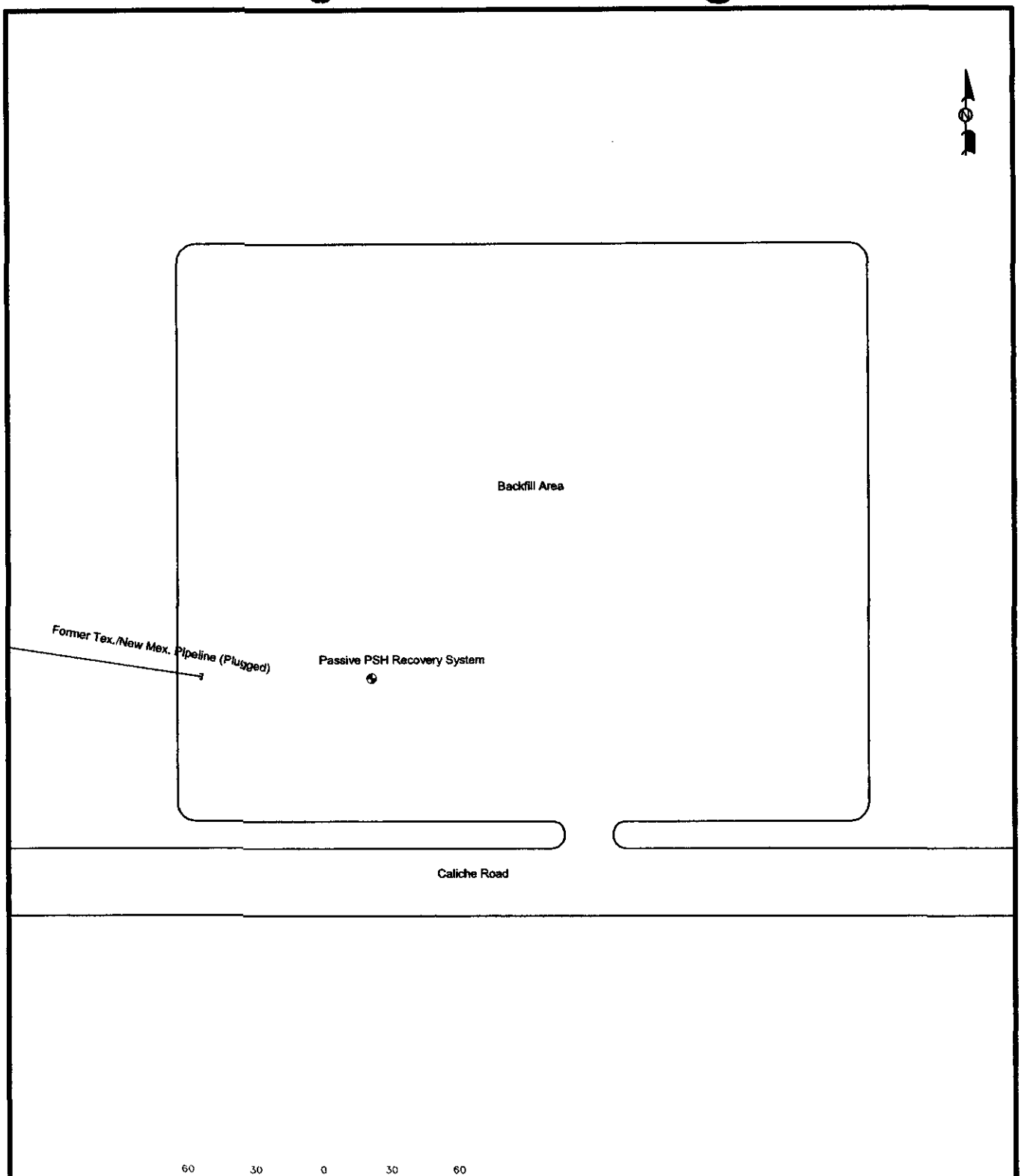


Figure 2
Site Map

Eott Energy Corp. Red Byrd II
Monument 6" Gathering Line (Abandoned)
Lea County, NM

Environmental Technology Group, Inc.

SE 1/4 NE 1/4 Sec 1 T20S R36E		32° 36' 47.4"N 103° 17' 52.3"W
Scale: 1" = 60'	Prep By: JDJ	Checked By: KD
February 19, 2003	ETGI Project # EOT2051C	

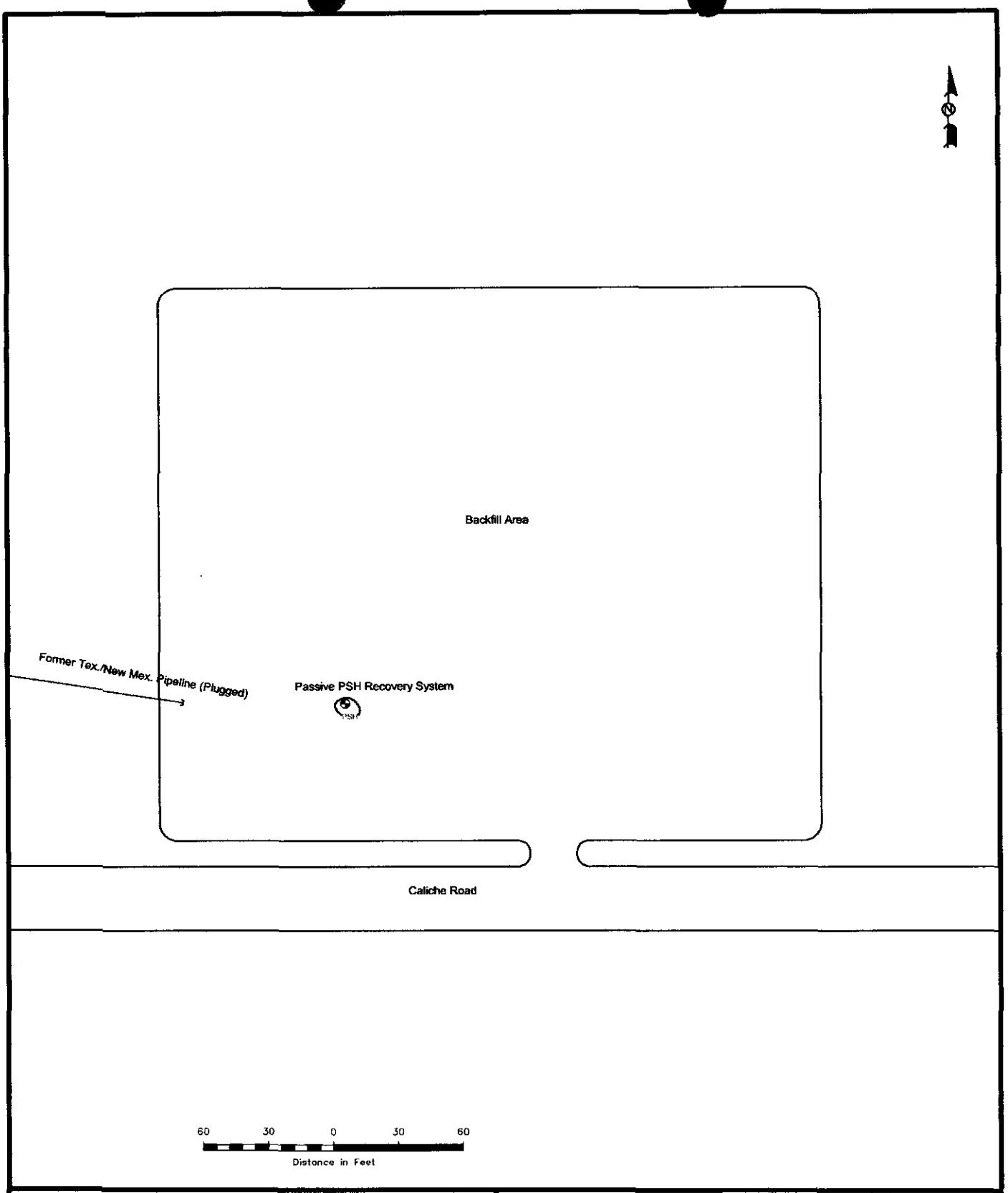
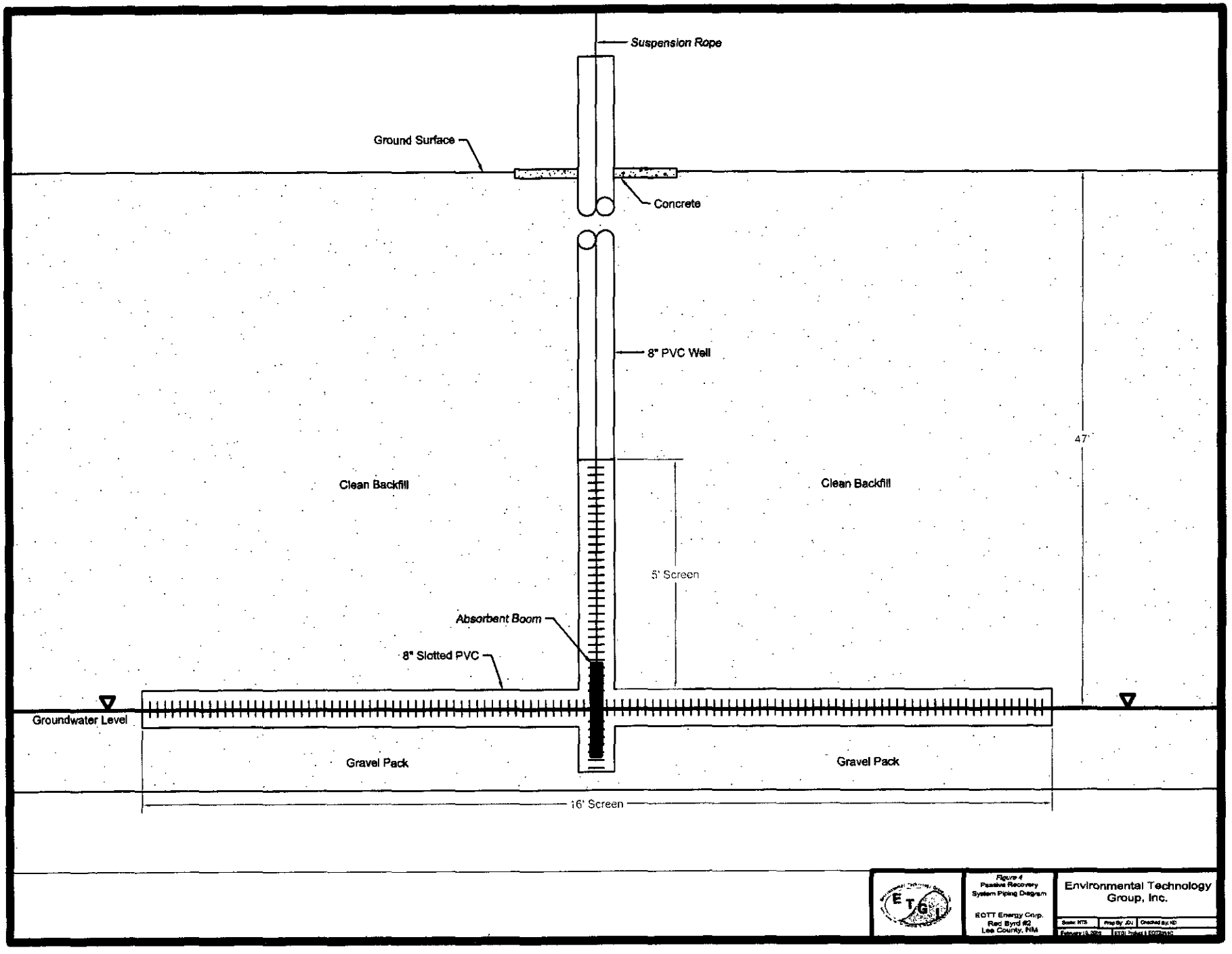


Figure 3
NMOCD Site Map

Eott Energy Corp. Red Byrd II
Monument 6" Gathering Line (Abandoned)
Lea County, NM

Environmental Technology Group, Inc.

SE 1/4 NE 1/4 Sec 1 T20S R36E		32° 36' 47.4"N 103° 17' 52.3"W
Scale: 1" = 60'	Prep By: JDJ	Checked By: KD
February 19, 2003	ETGI Project # EOT2051C	


Suspension Rope
Ground Surface
Concrete
8" PVC Well
47'
Clean Backfill
Clean Backfill
5' Screen
Absorbent Boom
8" Slotted PVC
Groundwater Level
Gravel Pack
Gravel Pack
16' Screen
Figure 4
Passive Recovery
System Piping Diagram
EOTT Energy Corp.
Red Byrd #2
Lea County, NM
Environmental Technology
Group, Inc.

TABLES

TABLE 1

GROUNDWATER CHEMISTRY

EOTT ENERGY, LLC
RED BYRD II
LEA COUNTY, NEW MEXICO
ETGI PROJECT # EO 2051

All concentrations are in mg/L

SAMPLE LOCATION	SAMPLE DATE	SW 846-8260b				Method: 8015, 160.1		
		BENZENE	TOLUENE	ETHYL-BENZENE	TOTAL XYLENES	GRO	DRO	TPH
Excavation	10/29/01	0.246	0.452	0.147	0.431	19.4	62.9	15900

TABLE 1 (CONTINUED)

CONCENTRATIONS OF METALS IN SOIL AND GROUNDWATER

EOTT ENERGY, LLC
RED BYRD II
LEA COUNTY, NEW MEXICO
ETGI Project # EO 2051

All concentrations are in mg/L

SAMPLE LOCATION	SAMPLE DATE	SAMPLE TYPE	EPA SW846-6010B, 7470																								
			Aluminum	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Molybdenum	Nickel	Potassium	Selenium	Silver	Sodium	Tin	Vanadium	Zinc	Boron	Strontium
GW	10/29/2001	WATER	1.03	<0.05	0.176	<0.004	<0.005	NA	<0.01	<0.02	<0.02	0.731	<0.02	NA	0.689	<0.0002	<0.02	<0.02	NA	<0.05	<0.002	NA	<0.05	0.042	0.0229	4.71	19.2

Appendix A

Laboratory Reports

ANALYSYS INC.

4221 Freidrich Lane, Suite 190, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 444-5896 • FAX (512) 447-4766

Client: Environmental Tech Group
Attn: Ken Dutton
Address: 2540 W. Marland
Hobbs Nm 88240

Phone: 505 397-4882 **FAX:** 505 397-4701

Report#/Lab ID#: 121653 **Report Date:** 11/14/01
Project ID: Red Byrd II EOT 2051C
Sample Name: GW
Sample Matrix: water
Date Received: 10/30/2001 **Time:** 10:48
Date Sampled: 10/29/2001 **Time:** 10:30

REPORT OF ANALYSIS

QUALITY ASSURANCE DATA[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method[6]	Data Qual[7]	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Metals Dig.-Hg	---	---	---	---	11/02/01	7470&245.1	---	---	---	---	---
Metals Dig.-HNO3	---	---	---	---	10/31/01	3015	---	---	---	---	---
Total dissolved solids	15900	mg/L	1	<1	10/30/01	160.1	---	4.45	-NA-	-NA-	-NA-
TPH by GC (as diesel)	62.9	mg/L	0.5	<0.5	11/06/01	8015 mod.	---	19.4	77.5	107.1	110.6
TPH by GC (as diesel-ext)	---	---	---	---	11/01/01	TX 1005	---	---	---	---	---
TPH by GC (as gasoline)	19.4	mg/L	0.5	<0.5	11/06/01	8015 mod.	---	11.2	73.7	102.3	97.8
Aluminum/ICP	1.03	mg/L	0.2	<0.2	11/13/01	6010 & 200.7	---	2.34	96.79	107.81	85.87
Arsenic/ICP	<0.05	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	1.41	116.44	108.5	90.86
Barium/ICP	0.176	mg/L	0.01	<0.01	11/13/01	6010 & 200.7	---	1.87	87.26	97.5	82.21
Beryllium/ICP	<0.004	mg/L	0.004	<0.004	11/13/01	6010 & 200.7	---	1.85	95.85	102.5	87.53
Boron/ICP	4.71	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	0.49	97.08	100.25	88.49
Cadmium/ICP	<0.005	mg/L	0.005	<0.005	11/13/01	6010 & 200.7	---	1.1	90.27	108.25	85.63
Chromium/ICP	<0.01	mg/L	0.01	<0.01	11/13/01	6010 & 200.7	J	1.85	89.91	108.63	86.86
Cobalt/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	J	1.24	89.22	106.13	85.42
Copper/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	1.9	96.2	101.6	85.95
Iron/ICP	0.731	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	0.75	92.05	97.35	87.52
Lead/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	1.53	87.77	105.25	88.42
Manganese/ICP	0.689	mg/L	0.01	<0.01	11/13/01	6010 & 200.7	---	1.22	92.43	108	88.29
Mercury/CVAA	<0.0002	mg/L	0.0002	<0.0002	11/05/01	245.1&7470	---	0.89	114.14	87	107.33
Molybdenum/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	1.93	101.03	105.88	92.04
Nickel/ICP	<0.02	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	J	2.06	87.54	107.63	87.14

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program.

Respectfully Submitted,

Richard Laster

Richard Laster

1. *Quality assurance data is for the sample batch which included this sample.* 2. Precision (PREC) is the absolute value of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte recovered from a spiked sample. 4. Calibration Verification (CCV) and *Laboratory Control Sample* (LCS) results are *expressed as the percent* (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers typically denote USEPA procedures. Less than ("<") *values reflect nominal quantitation limits* adjusted for any required *dilutions.* 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in associated method blank(s). S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) recovery exceeds advisory limit. S3 =MS and/or MSD and PDS *recoveries exceed* advisory limits. P =Precision higher than advisory limit. M =Matrix interference.

ANALYSYS INC.

4221 Freidrich Lane, Suite 190, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 78408
(512) 444-5896 • FAX (512) 447-4766

Client: Environmental Tech Group
Attn: Ken Dutton

Project ID: Red Byrd II EOT 2051C
Sample Name: GW

Report#/Lab ID#: 121653
Sample Matrix: water

REPORT OF ANALYSIS-cont.

QUALITY ASSURANCE DATA[1]

Parameter	Result	Units	RQL[5]	Blank	Date	Method[6]	Data Qual[7]	Prec.[2]	Recov.[3]	CCV[4]	LCS[4]
Selenium/ICP	<0.05	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	0.13	85.22	106.15	99.01
Silver/GFAA	<0.002	mg/L	0.002	<0.002	11/05/01	272.2&7761	---	2.84	90.83	82.5	82
Strontium/ICP	19.2	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	1.44	89.42	103.73	87.59
Tin/ICP	<0.05	mg/L	0.05	<0.05	11/13/01	6010 & 200.7	---	4.71	98.19	104	101.22
Vanadium/ICP	0.0423	mg/L	0.02	<0.02	11/13/01	6010 & 200.7	---	2.9	93.65	103.2	86.89
Zinc/ICP	0.0229	mg/L	0.01	<0.01	11/13/01	6010 & 200.7	---	1.28	91.95	106	86.76
Volatile organics-8260b/BTEX	---		---		11/09/01	8260b	---	---	---	---	---
Benzene	246	µg/L	10	<10	11/09/01	8260b	---	9.5	98.5	98.9	102.4
Ethylbenzene	147	µg/L	10	<10	11/09/01	8260b	---	0.9	90.5	94.9	93.1
m,p-Xylenes	312	µg/L	10	<10	11/09/01	8260b	---	0.7	94.9	98.2	97.2
o-Xylene	119	µg/L	10	<10	11/09/01	8260b	---	0.6	97.7	98.5	98.8
Toluene	452	µg/L	10	<10	11/09/01	8260b	---	5.8	107.7	102.3	110.8

ANALYSYS INC.
4221 Freidrich Lane,Suite 190, Austin, TX 78744 &
2209 N. Padre Island Dr., Corpus Christi, TX 7840408
(512) 444-5896 • FAX (512) 447-4766

Client: Environmental Tech Group **Attn:** Ken Dutton	**Project ID:** Red Byrd II EOT 2051C **Sample Name:** GW	**Report#/Lab ID#:** 121653 **Sample Matrix:** water

REPORT OF SURROGATE RECOVERY

Surrogate Compound	Method	Recovery	Recovery Limit	Data Qualifiers
Nitrobenzene-d5	8015 mod.	148	50-150	---
p-Terphenyl	8015 mod.	114	50-150	---
1,2-Dichloroethane-d4	8260b	104	80-120	---
Toluene-d8	8260b	96.2	88-110	---

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.

Exceptions Report:

Report #/Lab ID#: 121653 **Matrix:** water
Client: Environmental Tech Group **Attn:** Ken Dutton
Project ID: *Red Byrd II EOT 2051C*
Sample Name: GW

Sample Temperature/Condition <=6°C

The typical sample temperature criteria (except for metals by ICP, GFAA and AA and a very few other tests) is <= 6°C. Possible exceptions include samples submitted to laboratory within such a short time after sampling that cooling measures used in the field and during transport had *insufficient time to achieve desired temperatures in the samples* (see sample collection and sample receipt times) and samples where the temperature could not be measured due to sample submission in a manner precluding temperature measurement without impacting sample integrity (ex. in a bottle with no cooler).

Sample *Bottles & Preservation*

- ☒ Sample received in appropriate container(s) and appear to be appropriately preserved.
- ☐ Sample received in appropriate container(s). State of sample *preservation unknown.*
- ☐ Sample received in inappropriate container(s) and/or with unknown state of preservation.

J flag Discussion

A J flag data qualifier indicates (as required under TNRCC-TRRP reporting requirements) that the raw calculated analyte concentration in the sample (uncorrected for background levels/blanks and other potential sources of sampling and analytical contamination), *though less than the Reported* Quantitation Limit (RQL) is greater than the *Detection Limit.* Because the reported result is below the quantitation limit for this project/sample (or test procedure), GC/MS organics results may or MAY NOT have been verified as to the presence and relative ratio of target ions (eg. the material causing the J flag "hit" in such situations may be *nothing more than* background ion-fragment noise.)

Comments *pertaining to Data Qualifiers and* QC data:

Parameter	Qualif	Comment
Chromium/ICP	J	See J-flag discussion above.
Cobalt/ICP	J	See J-flag discussion above.
Nickel/ICP	J	See J-flag discussion above.

Notes:

COC: 169

CHAIN-OF-CUSTODY

ANALYSYS INC.
4221 Freidrich Lane, Suite 190, Austin, TX 78744
Phone: (512) 444-5896
Fax: (512) 447-4766

Send Reports To:
Company Name ETGI
Address 2540 W MARLAND
City HOBBS State NM Zip 88240
ATTN: KEN DUTTON
Phone (505) 397-4182 Fax (505) 397-4701

Bill to (if different):
Company Name EOTT
Address
City State Zip
ATTN:
Phone Fax

Rush Status (must be confirmed with lab mgr.):
Project Name/PO#: Red Byrd II EOT 2051C Sampler: SC/mc Marcelo Campos

Analyses Requested (1)
Please attach explanatory information as required

Client Sample No. Description/Identification	Date Sampled	Time Sampled	No. of Containers	Soil	Water	Waste	Lab I.D. # (Lab only)	TPH 8015 PRO/GRO	BTEX 8021B	Heavy Metals 6010	TDS 160.1	Comments
GW	10-29-01	1030	7		✓		121653	X	X	X	X	

(Unless specifically requested otherwise on this Chain-of-custody and/or attached documentation, all analyses will be conducted using ASI's method of choice and all data will be reported to ASI's normal reporting limits (MDL/PQL). For GC/MS volatiles and extractables, unless specific analytical parameter lists are specified on this chain-of-custody or attached to this chain-of-custody, ASI will default to Priority Pollutants or ASI's HSL list at ASI's option. Specific compound lists must be supplied for all GC procedures.

Sample Relinquished By				Sample Received By			
Name	Affiliation	Date	Time	Name	Affiliation	Date	Time
Marcelo Campos		10-29-01	1239	M. Hun	ASI	10-30-01	10:45

[Tendering of above described samples to AnalySys, Inc. for analytical testing constitutes agreement by buyer/sampler to AnalySys, Inc.'s standard terms.]

0.0°C

ADDENDUM TO THE SUPPLEMENTAL WORK PLAN
EOTT - RED BYRD #2
CRUDE OIL RELEASE SITE
LEA COUNTY, NEW MEXICO

RECEIVED

NOV 0 6 2001

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Prepared for:

EOTT ENERGY PIPELINE LIMITED PARTNERSHIP
Midland, Texas

Prepared by:

ETGI
2540 West Marland
Hobbs, New Mexico 88240

Project No. EOT2051C

November 2001

Table of Contents

ADDENDUM TO THE SUPPLEMENTAL WORK PLAN
EOTT Crude Oil Pipeline Release Site

Red Byrd Ranch (Red Byrd #2 Site)
Lea County, New Mexico

November 5, 2001

Prepared By:
ETGI

1.0 Introduction

EOTT Energy Pipeline Limited Partnership (EOTT) is submitting this Addendum to the Supplemental Work Plan pertaining to activities to be performed at the Red Byrd Ranch (Red Byrd #2 Site) in Lea County, New Mexico in the SE ¼ of Section 31, Township 19 South, Range 37 East. These activities are designed to recover the limited volume of crude oil documented at the site during our subsurface investigation in June 2000. These activities will be completed after work plan approval is granted by New Mexico Oil Conservation Division (NMOCD).

2.0 Background

Crude oil leaking from an EOTT pipeline was initially discovered on the Red Byrd Ranch in November 1999. The release site was designated Red Byrd #2 Site by EOTT, and is shown in Figure 1. The release resulted in a relatively small surface stain measuring approximately 20 feet in length by 5 feet in width. As required by the NMOCD's *Guidelines for Remediation of Leaks, Spills and Releases,* dated August 1993 (NMOCD, 1993), EOTT conducted initial response actions and site assessment activities as discussed in Section 3.0 of this Addendum.

As NMOCD is aware, EOTT is addressing a number of crude oil release sites along its pipeline system in southeast New Mexico. In order to ensure protection of human health and the environment and compliance with NMOCD regulations, EOTT prepared a risk-based General Remediation Work Plan for Remediation of EOTT Pipeline Spills, Leaks and Releases in New Mexico, document dated July 2000. Such a plan was developed to ensure consistency of response and closure at all of the release sites. The details of the general remediation work plan were discussed with NMOCD officials in Santa Fe on July 18, 2000. Based on NMOCD's verbal approval of the plan concepts, copies of the plan document were submitted for NMOCD's official approval. EOTT is currently awaiting official NMOCD's written approval of the general remediation work plan.

Based on NMOCD's verbal approval, EOTT is submitting this site-specific Addendum to the Supplemental Work Plan to cover item 6 of the Work Plan Supplement submitted by Entrix, Inc. on behalf of EOTT in July 2000, for design, installation and operation of a passive product recovery system. The overall closure strategy for this release site will be consistent with that discussed in the July 2000 general remediation work plan currently under review by NMOCD.

3.0 Initial Inspection/Investigation

Upon discovery of the release and completion of initial response actions that included repair of the leaking pipeline in early 2000, an attempt was made to excavate the area of the surface stain with a backhoe to determine the lateral and vertical extent of contamination. A trench, approximately 40 feet long, was extended along and below the area of the pipeline release. One additional trench, approximately 20 feet long, was placed perpendicular to the release. The depth of the excavation beneath the release point was approximately 10 feet. Following this work, it was determined that contamination extended beyond the depth of the excavations and that a subsurface investigation would be needed. The trenches were then backfilled with the excavated soil.

A Geoprobe ® unit was mobilized to the site in April 2000, to advance 14 soil borings in the area adjacent to and surrounding the release area to a maximum depth of approximately 22 feet, which was the point of refusal. Intervals of each boring were screened with a photoionization detector (PID) and samples were collected for laboratory analysis for benzene, toluene, ethylbenzene, and total xylenes (BTEX) as well as total petroleum hydrocarbons – gasoline range organics/diesel range organics (TPH-GRO/DRO) by EPA SW 846 Methods 8021B and 8015B respectively. Based on these activities, it was determined that visible contamination still existed at a depth of 22 feet in the area beneath the release point, although volatile organic concentrations appeared to be decreasing with depth based on PID readings. Volume of impacted soil was estimated to be 800 cubic yards.

Based on landowner requests, excavation of the area commenced in May 2000 to a depth of approximately 55 feet where visible contamination was still present. A decision was then made in June 2000 to extend deep borings around the excavated pit to determine if groundwater was impacted and if contamination extended beyond the perimeter. The outer dimensions of the excavation that is currently present at the site are approximately 70 feet by 40 feet.

A deep rotary drill rig was then mobilized by ETGI (EOTT's contractor) to place six borings adjacent to and around the leak on a perimeter beyond that of the original Geoprobe ® investigation. Soil samples were screened with a PID and samples were also analyzed for BTEX and TPH GRO/DRO by EPA SW 846 Methods 8021B and 8015B respectively. While an attempt was made to extend each boring to groundwater, the borings were stopped once "red bed" clay was encountered, so as not to penetrate this natural barrier. This occurred at a depth of approximately 55 feet.

4.0 Purpose

The purpose of the proposed passive product recovery system installation is to capture and remove the limited volume of crude oil existing on the site. Groundwater that has entered the excavation does not appear to possess the characteristics to yield beneficial quantities of water that would be necessary to be utilized for human or agricultural consumption. Based on the fact that groundwater was not encountered in any of the deep soil borings located on the perimeter of the excavation, the source of this groundwater is estimated to be of a limited nature. A pilot test will be conducted to determine if a well completed in this source would yield sufficient quantities of water from this perched aquifer to be considered of beneficial usage.

The site action levels will be used in conjunction with risk assessment/exposure assessment techniques to demonstrate to NMOCD that human health and the environment are adequately protected at the site. Regulatory closure will be sought based on such a demonstration.

5.0 PSH Recovery System Installation

The proposed passive product recovery system will be installed on-site utilizing the following methodology:

1. Excavated areas, which were not affected by PSH, will be backfilled with on-site soils. A product recovery system (discussed in step 2) will be placed into the excavation during backfilling activities.

2. The proposed PSH recovery system will consist of a 1/8" – 3/8" pea-gravel pack, overlain by a 2- foot thick clay cap, surrounding slotted PVC piping. A product recovery manifold consisting of two horizontal 8-inch 0.020 slotted PVC pipes joined in the middle with an 8-inch PVC tee fitting mounted to a 5 foot vertical section of 8-inch 0.020 slotted PVC piping will be placed into the excavation. The vertical section of the recovery manifold will extend a distance of 5 feet above the capillary fringe. The recovery manifold will then be attached with an 8-inch PVC coupling adjoining to a total of 55 feet of 8-inch PVC riser piping which will extend approximately 4 feet above the ground surface (Figure 2). The upper limit of the gravel pack will extend to an elevation five feet above the highest level of observed fluid. The PVC riser pipe will be cemented in place at the surface. An 8-inch slip-type end cap will be affixed to the top of the riser piping.

3. The PSH recovery system will be covered with on-site soil to the current grade surface utilizing 12-inch lifts. Installation of a 4 inch thick, 36" X 36", concrete slab surrounding the recovery system 8-inch riser pipe will complete construction activity associated with system installation.

4. The well will be equipped with a 10' X 6" absorbent boom, placed in the well on a nylon recovery cord for retrieval. An ETGI field technician will visit the site on a bi-weekly basis to remove the boom, gauge the well, and record product thickness and water elevation. Following gauging a new absorbent boom will be placed in the well to insure continued product recovery. The used booms and related product collected will be transferred to 55-gallon drums and temporarily stored on-site. The drums will be appropriately labeled as to their contents and the dates of gauging events. Due to the fact that the extent and amount of PSH on-site is minimal, waste disposal will occur on an as-needed basis to be determined by the ETGI project manager.

In addition, the PVC riser pipe and slip-cap assemblage will accommodate periodic usage of a 2-inch Grunfos pump to expedite PSH recovery activities, if required. The remaining excavation will be backfilled to grade with previously discussed on-site soil. Schematics and details of installation of the system and results of the pilot testing will be provided in the subsurface investigation report.

ETGI will provide project oversight and management during all system installation, backfilling, and disposal activities described above. Sampling and analysis of ground water will be conducted quarterly and an annual ground water monitoring report submitted as per NMOCD requirements.

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Quality Control Review

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