NM - 2

GENERAL CORRESPONDENCE

YEAR(S): 1997 - 1994

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
ROSWELL DISTRICT OFFICE
2909 W. Second Street
Roswell, New Mexico 88202-1857

IN REPLY REFER TO:
6514 (06010)

OCT 2 2 1997

Dear Committee Member:

Thank you for attending the September 24 meeting of the Southeast New Mexico Playa Lakes Coordinating Committee (SENMPLCC). We can now take positive steps to resolve the issue of waterfowl mortality on the playas.

Toward this end, the Remediation/Mitigation Workgroup will be reassembled. The Workgroup will analyze data collection needs relative to bird use and mortality, as well as climatic conditions and water quality. Various mitigation methods will also be evaluated. These efforts will supplement the information provided in the final investigative report. Once the workgroup has enough information to develop recommendations for long-term management, the full Committee will meet again to hear them and decide how to proceed.

The first meeting of the Workgroup is planned for Thursday, November 6, 1997, at 10:00 AM in the BLM Carlsbad Field Office. The agenda will include discussions of current monitoring efforts, what information is still needed and how to obtain it, and an assignment of responsibilities.

As discussed in the SENMPLCC meeting, the workgroup will have representatives from all agencies and industries wishing to participate. Please submit the name of your organization's participant, or your choice not to participate, as soon as possible.

Thank you for continuing to be a part of this important partnership. If you have any questions or concerns in this regard, please contact me or Jim Schroeder at (505) 627-0242.

Sincerely,

Edwin L Roberson

Edwin L. Roberson
District Manager

Same letter sent to attached list

Fax to Tim Gum

Tim - Would you call and tell them you are the OCD representative to this Committee. Thanks Reed

Mr. Gilbert L. Lucero
Bureau of Land Management
P. O. Box 27115
Santa Fe, NM 87502-0115

Mr. Jerry A. Maracchini
Director, NM Dept. of Game & Fish
P. O. Box 25112
Santa Fe, NM

Ms. Jennifer Fowler-Propst
State Supervisor
NM Ecological Services State Office
2105 Osuna NE
Albuquerque, NM 87113

Mr. Don Purvis
IMC Fertilizer
P. O. Box 71
Carlsbad, NM 88220

Mr. Marvin Watts
Eddy Potash Co.
P. O. Box 31
Carlsbad, NM 88220

Mr. David Deardorff
State Land Office
P. O. Box 1148
Santa Fe,NM 87504-1148

Mr. Mark Weidler, Secretary
NM Environment Dept.
P. O. Box 26110
Santa Fe, NM 87502

Mr. Bill LeMay, Director
Oil Conservation Div.
NM Energy, Minerals &
Natural Resources Dept.
~~P. O. Box 2088~~ 2040 S. Pacheco
Santa Fe, NM 87504

NM Oil & Gas Assoc.
Attn: Frank Yates
Yates Petroleum Corp.
105 S. Fourth St.
Artesia, NM 88210

9:00 B & E 8/26/97

Remediated Land Farm

Martyn Kisling
Ray Smith
Wayne Price

Land Farm closed & Remediated
Tank left For Farmer.
picture Tank and
4 pits plus Land Farm.

Site Closed....

Maintain

Martyn Kisling

Unichem Rattle Snake
2-23-29
Closed 11/93

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

August 26, 1996

Mr. Phil Withrow
B&E, Inc.
P.O. Box 2292
Hobbs, New Mexico 88240

RE: B&E TUZLU KOPEK DISPOSAL FACILITY CLOSURE
EDDY COUNTY, NEW MEXICO

Dear Mr. Withrow:

Enclosed you will find copies of the New Mexico Oil Conservation Division (OCD) water quality analytical results from seep samples downgradient of B&E's former Tuzlu Kopek Disposal Facility on Laguna Quatro in Eddy County, New Mexico.

If you have any questions, please contact me at (505) 827-7154.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc w/enclosure: OCD Artesia District Office
Jim Piatt, NMED Surface Water Bureau Chief
Jack Henry, Attorney At Law
Leslie Cone, BLM Roswell District Manager

BY FAX 505-827-8177

July 26, 1996

Mr. Bill Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505
Re: B&E Tuzlu Kopek Test Results

Dear Mr. Olson:

In accordance with our conversation of this date, I am sending you the test results for the above facility. It is my understanding that you will be speaking with Roger Anderson next week regarding final closure of the facility. As you are aware, we have spent significant time, effort and money in effecting closure of this facility. We appreciate your and Roger's efforts on our behalf and we look forward to final resolution of this matter and return of the cash bond.

As we discussed, I will call you the week of August 5. Again, thank you for your assistance.

Very truly yours,

Jack W. Henry
Attorney at Law
318 Westminster Drive
Houston, TX 77024

Enclosure:

c: Phil Withrow w/o Enc.

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S COMMERCIAL AVE. • FARMINGTON, NM 87401
PHONE (806) 796-2600 • 5262 34th ST. • LUBBOCK, TX 79407

Gail Bilbes

ANALYTICAL RESULTS FOR
B & E INC.
ATTN: PHIL WITHROW
ADDRESS: P. O. BOX 2292
HOBBS, NM 88240
FAX TO: 505-393-3495

Receiving Date 6/20/96
Reporting Date: 06/29/96
Project Number: N/A
Project Name: B&E TUZLU
Project Location: TUZLU KOPEK

Sampling Date: 6/20/96
Sample Type: WATER
Sample Condition: INTACT
Sample Received By: SR
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
H2564					
ANALYSIS DATE		6/20/96	6/20/96	6/20/96	6/20/96
H2564-1	South #1 Seep	19	<1.0	<1.0	<1.0
H2564-2	North #2 Seep	47	<1.0	<1.0	<1.0
Quality Control		100	93	86	285
True Value QC		95	86	87	253
% Accuracy		105	108	98	113
Relative Percent Difference		8.6	4.3	14	1.1

METHOD: EPA SW 846-8020, Gas Chromatography

Chemist

07/09/96
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

ANALYTICAL RESULTS FOR
B & E INC
ATTN: PHIL WITHROW
ADDRESS: P. O. BOX 2292
HOBBS, NM 88240
FAX TO 505-393-4495

Receiving Date: 06/20/96
Reporting Date: 07/09/96
Project Number: N/A
Project Name: B&E TUZLU
Lab Number: H2564-1
Project Location: TUZLU KOPEK

Analysis Date: 06/26/96
Sampling Date: 6/20/96
Sample Type: WATER
Sample Condition: INTACT
Sample Received By: SR
Analyzed By: AK

POLYNUCLEAR AROMATIC HYDROCARBON - 8270 (ppm)	Detection Limit	Sample Result H2564-1	Method Blank	QC	%IA	True Value QC
1 Naphthalene	0.004	<0.005	<0.004	0.116	116	0.100
2 Acenaphthylene	0.004	<0.005	<0.004	0.106	106	0.100
3 Acenaphthene	0.004	<0.005	<0.004	0.105	105	0.100
4 Fluorene	0.004	<0.005	<0.004	0.113	113	0.100
5 Phenanthrene	0.004	<0.005	<0.004	0.102	102	0.100
6 Anthracene	0.004	<0.005	<0.004	0.103	103	0.100
7 Fluoranthene	0.004	<0.005	<0.004	0.110	110	0.100
8 Pyrene	0.004	<0.005	<0.004	0.091	91	0.100
9 Benzo(a)anthracene	0.004	<0.005	<0.004	0.098	98	0.100
10 Chrysene	0.004	<0.005	<0.004	0.109	109	0.100
11 Benzo(b)fluoranthene	0.004	<0.005	<0.004	0.116	116	0.100
12 Benzo(k)fluoranthene	0.004	<0.005	<0.004	0.115	115	0.100
13 Benzo(a)pyrene	0.004	<0.005	<0.004	0.105	105	0.100
14 Indeno(1,2,3-cd)pyrene	0.004	<0.005	<0.004	0.110	110	0.100
15 Dibenzo(a,h,)anthracene	0.004	<0.005	<0.004	0.118	118	0.100
16 benzo(g,h,i)perylene	0.004	<0.005	<0.004	0.090	90	0.100

	% Recovery
17 Nitrobenzene-d5	83
18 2-Fluorobiphenyl	57
19 Terphenyl-d14	69

METHODS: EPA SW 846-8270

Chemist

07/09/96
Date

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

ANALYTICAL RESULTS FOR
B & E INC.
ATTN: PHIL WITHROW
ADDRESS: P. O. BOX 2292
HOBBS, NM 88240
FAX TO: 505-393-4495

Receiving Date: 06/20/96
Reporting Date: 07/09/96
Project Number: N/A
Project Name: B&E TUZLU
Lab Number: H2564-2
Project Location: TUZLU KOPEK

Analysis Date: 06/26/96
Sampling Date: 6/20/96
Sample Type: WATER
Sample Condition: INTACT
Sample Received By: SR
Analyzed By: AK

POLYNUCLEAR AROMATIC HYDROCARBON - 8270 (ppm)	Detection Limit	Sample Result H2564-2	Method Blank	QC	%IA	True Value QC
1 Naphthalene	0.004	<0.005	<0.004	0.116	116	0.100
2 Acenaphthylene	0.004	<0.005	<0.004	0.106	106	0.100
3 Acenaphthene	0.004	<0.005	<0.004	0.105	105	0.100
4 Fluorene	0.004	<0.005	<0.004	0.113	113	0.100
5 Phenanthrene	0.004	<0.005	<0.004	0.102	102	0.100
6 Anthracene	0.004	<0.005	<0.004	0.103	103	0.100
7 Fluoranthene	0.004	<0.005	<0.004	0.110	110	0.100
8 Pyrene	0.004	<0.005	<0.004	0.091	91	0.100
9 Benzo(a)anthracene	0.004	<0.005	<0.004	0.098	98	0.100
10 Chrysene	0.004	<0.005	<0.004	0.109	109	0.100
11 Benzo(b)fluoranthene	0.004	<0.005	<0.004	0.116	116	0.100
12 Benzo(k)fluoranthene	0.004	<0.005	<0.004	0.115	115	0.100
13 Benzo(a)pyrene	0.004	<0.005	<0.004	0.105	105	0.100
14 Indeno(1,2,3-cd)pyrene	0.004	<0.005	<0.004	0.110	110	0.100
15 Dibenzo(a,h,)anthracene	0.004	<0.005	<0.004	0.118	118	0.100
16 benzo(g,h,i)perylene	0.004	<0.005	<0.004	0.090	90	0.100

	% Recovery
17 Nitrobenzene-d5	69
18 2-Fluorobiphenyl	52
19 Terphenyl-d14	77

METHODS: EPA SW 846-8270

Chemist

07/09/96
Date

CARDINAL LABORATORIES
PHONE: (505) 393-2326 · 101 E. MARLAND · HOBBS, NEW MEXICO 88240

H2564

Chain of Custody Record

Project I.D. B & E Tuzco Kopek
Project Location Tuzco Kopek
Sampled By Allen Hodge
Client Name Cardinal Laboratories
Address 101 East Marland/ Hobbs, New Mexico 88240
Telephone (505)-393-2326 or Fax:(505)-393-2476

Sample Number	Date	Time	Composite	Grab	Sample Location	Number of Containers	Analysis Required: PAH	Analysis Required: BTEX	Remarks (Type sample, preservation, etc.)
S64-1	6/20	10:35		X	South Seep @ 1	2	X	X	Glass - Ice - Intact
S64-2	6/20	11:00		X	North Seep @ 2	2	X	X	" " "

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Remarks:	Relinquished:
Bill Witthaus	6/21/96	1350			

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

INVOICE

B & E Inc

CUSTOMER: ~~WESTERN ENVIRONMENTAL CONSULTANTS~~ DATE: ~~07~~/10/96

ADDRESS: ~~1533 CORDOBA~~ PO Box 2292 TAXABLE: N

CITY ST: HOBBS, NM 88240

TERMS - Due upon receipt
Hobbs, Lea Co. NM

LAB NUMBER: H2564

TESTS REQUESTED: PAH, BTEX

CUSTOMER JOB DESCRIPTION: B&E TUZLU KOPEK

WAS CHAIN OF CUSTODY USED (y/n): YES

NUMBER OF SAMPLES: 2

INVOICE #: H2564

P. O. #:

DATE	DESCRIPTION	NUMBER	UNIT COST	EXTENDED COST
06/20/96	PAH	2	$200.00	$400.00
	BTEX	2	$60.00	$120.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
				$0.00
			Sub Total	$520.00
			NM State Tax	$0.00
			Total Due	$520.00

Paid By B&E
Pete Winthrow

NOTE - This is the only invoice you will receive.
Please pay from this invoice.

THANK YOU FOR YOUR BUSINESS!

For Office Use Only
D: A: C: P:

State of New Mexico
ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT
Santa Fe, New Mexico 87505

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

☒ Telephone ☐ Personal	Time 1010 hrs	Date 6/14/96

Originating Party	Other Parties
Bill Olson - Envir. Bureau	Allen Hodge - Safety Envir. Solutions 397-0510

Subject

B+E - Laguna Quatro

Discussion

Arranged to split samples on seeps at facility on June 20, 1996. Will meet at site at 1000 hrs.

Conclusions or Agreements

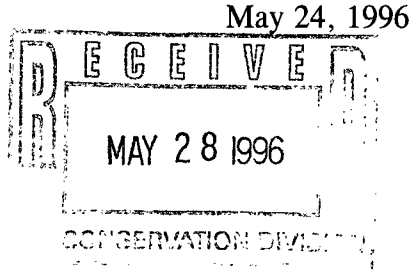
Distribution

Signed Bill Olson

Safety & Environmental Solutions, Inc.

Mr. Roger Anderson
State of New Mexico
Energy, Minerals and Natural Resources Department
Oil Conservation Division
2040 S. Pacheco
Santa Fe, New Mexico 87505

May 24, 1996



Dear Mr. Anderson:

Pursuant to the communication dated March 29, 1996, my services have been enlisted by Mr. Phil Withrow to sample the natural seeps located adjacent to the B & E Tuzlu Kopek Disposal facility property in Carlsbad, New Mexico. Due to the requirement for two week advance notice so that the OCD can be onsite to split samples, and because of conflicting schedules, I would like to request an extension on the May 31 deadline specified in your communication.

I am requesting a 60 day extension on the above specified deadline in order to schedule a convenient time with your office to meet and accomplish the sampling goals outlined in your letter. If this meets with your approval, please let me know. If this is not acceptable to the OCD, please contact me at your earliest convenience to that we may schedule a time to conduct the proposed sampling within the given time frame.

Enclosed please find a copy of the OCD letter to Mr. Withrow for your review. You can contact me at:

Safety Environmental Solutions, Inc.
703 E. Clinton
Hobbs, NM 88240
(505) 397-0510

I can also be reached at home at (505) 392-9545.

Thank you for your consideration of this request.

Best Regards,

Allen Hodge, REM

xc: Mr. Jack Henry, Attorney at Law

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 29, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. P-269-269-132

Mr. Phil Withrow
B&E, Inc.
P.O. Box 2292
Hobbs, New Mexico 88240

RE: B&E TUZLU KOPEK DISPOSAL FACILITY CLOSURE
EDDY COUNTY, NEW MEXICO

Dear Mr. Withrow:

The New Mexico Oil Conservation Division (OCD) has completed a review of B & E, Incorporated's January 10, 1996 "B & E, INC. - TUZLU KOPEK PIT CLOSURE" which was submitted to the OCD by Jack W. Henry, Attorney at Law. This document contains the final results of B&E's remedial actions regarding the former B&E Tuzlu Kopek Disposal Facility.

Based upon the information in the above referenced document and the OCD's March 26, 1996 inspection of the facility the remedial actions conducted to date are approved.

Prior to the OCD issuing final closure approval, the OCD requires that B&E sample several of the natural seeps directly adjacent to and along the shores of the playa where the facility is located. The samples will be analyzed for benzene, toluene, ethylbenzene, xylene and polynuclear aromatic hydrocarbons using EPA approved methods. A sampling report containing a description of the sampling activities and the analytical results will be submitted to the OCD by May 31, 1996. Please contact me at least 2 weeks prior to sampling event such that the OCD can split samples during the sampling event.

Please be advised that OCD approval does not relieve B & E of liability should remaining contaminants pose a future threat to ground water, surface water, public health or the environment. In addition, OCD approval does not relieve B & E of responsibility for compliance with any other federal, state or local laws and/or regulations.

If you have any questions, please contact me at (505) 827-5885.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Artesia District Office
Jim Piatt, NMED Surface Water Bureau Chief
Jack Henry, Attorney At Law
Leslie Cone, BLM Roswell District Manager

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

March 29, 1996

CERTIFIED MAIL
RETURN RECEIPT NO. P-269-269-132

Mr. Phil Withrow
B&E, Inc.
P.O. Box 2292
Hobbs, New Mexico 88240

RE: B&E TUZLU KOPEK DISPOSAL FACILITY CLOSURE
EDDY COUNTY, NEW MEXICO

Dear Mr. Withrow:

The New Mexico Oil Conservation Division (OCD) has completed a review of B & E, Incorporated's January 10, 1996 "B & E, INC. - TUZLU KOPEK PIT CLOSURE" which was submitted to the OCD by Jack W. Henry, Attorney at Law. This document contains the final results of B&E's remedial actions regarding the former B&E Tuzlu Kopek Disposal Facility.

Based upon the information in the above referenced document and the OCD's March 26, 1996 inspection of the facility the remedial actions conducted to date are approved.

Prior to the OCD issuing final closure approval, the OCD requires that B&E sample several of the natural seeps directly adjacent to and along the shores of the playa where the facility is located. The samples will be analyzed for benzene, toluene, ethylbenzene, xylene and polynuclear aromatic hydrocarbons using EPA approved methods. A sampling report containing a description of the sampling activities and the analytical results will be submitted to the OCD by May 31, 1996. Please contact me at least 2 weeks prior to sampling event such that the OCD can split samples during the sampling event.

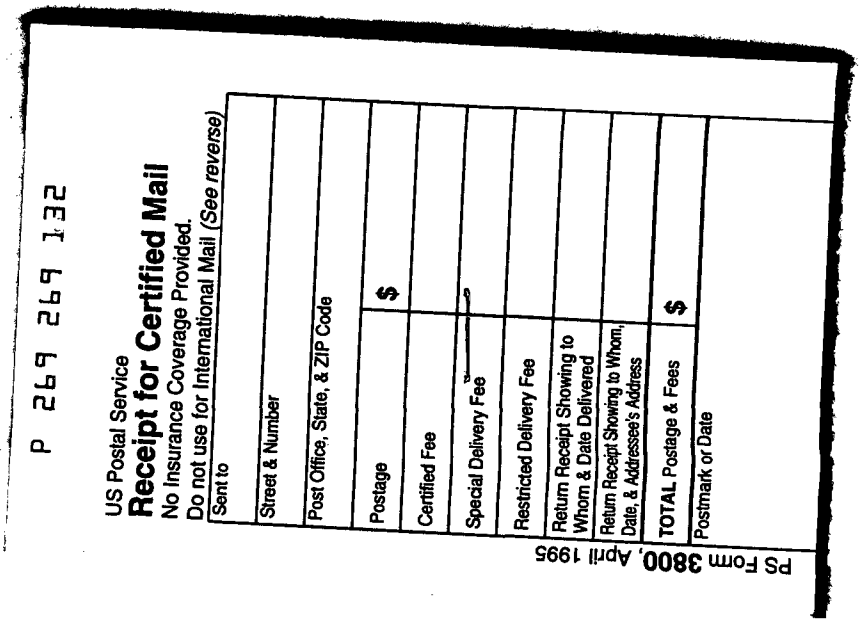
Please be advised that OCD approval does not relieve B & E of liability should remaining contaminants pose a future threat to ground water, surface water, public health or the environment. In addition, OCD approval does not relieve B & E of responsibility for compliance with any other federal, state or local laws and/or regulations.

If you have any questions, please contact me at (505) 827-5885.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: OCD Artesia District Office
Jim Piatt, NMED Surface Water Bureau Chief
Jack Henry, Attorney At Law
Leslie Cone, BLM Roswell District Manager



JACK W. HENRY
SPECIAL COUNSEL
(713) 226-0612

PORTER & HEDGES, L.L.P.
ATTORNEYS AT LAW
700 LOUISIANA, 35th FLOOR
HOUSTON, TEXAS 77002-2764

TELECOPIER (713) 228-1331
TELEPHONE (713) 226-0600

MAILING ADDRESS:
P. O. BOX 4744
HOUSTON, TX 77210-4744

January 10, 1996

Registered Mail - Return Receipt Requested

Mr. Roger Anderson
New Mexico Oil Conservation Division
2040 South Pacheco
Santa Fe, New Mexico 87505

Re: B&E, Inc. - Tuzlu Kopek Pit Closure

Dear Roger:

I have enclosed copies of the Pit Remediation and Closure Reports (the "Reports") for the four pits located at B&E, Inc.'s Tuzlu Kopek Saltwater Disposal Facility. The pits have been closed, and the soil has been remediated in accordance with the April 1994 Work Plan to Conduct Phase III - Site Remediation at the B&E Tuzlu Kopek Disposal Facility and B&E's May 4, 1994 Amendments to Closure Plan for B&E's Tuzlu Kopek Site (hereafter jointly referred to as the "Remediation Plan"). The Remediation Plan was approved by the New Mexico Oil Conservation Division in correspondence dated May 16, 1994.

Final samples of the removed soil were taken on November 3, 1995, and the results indicate that the soil has been remediated beyond the 5000 ppm TPH level required by the Remediation Plan. A copy of the test results is enclosed. Earlier testing on the individual pits indicates that the soil remaining in each pit contained less than 30,000 ppm TPH. Ray Smith of the Artesia office was present during the testing of the pits and was notified in advance of the final sampling that occurred on November 3, 1995.

In accordance with the Remediation Plan, the pits were backfilled and mounded with a mixture of 1 to 2 percent lime and native caleche soil. We are currently investigating seed grass mixtures. When we determine the proper mixture, it will be planted on the mounds as well as the soil that was removed for remediation. The 3000 barrel open top tank has been cleaned, and ownership of the tank was transferred to the property owner.

Finally, during a recent telephone conversation between the undersigned and Bill Olsen, Mr. Olsen requested that to the extent possible, the hay bales be removed from Laguna Quatro. B&E has since complied with that request.

I have enjoyed working with you in this matter and appreciate your professional approach and assistance. Should you have further questions regarding the enclosed Reports, please let me know.

Very truly yours,

PORTER & HEDGES, L.L.P.

Jack W. Henry

Attachments

cc: Phil Withrow (w/att)
Ray Smith
Oil Conservation Division
P.O. Drawer DD
Artesia, New Mexico 88210

JWH/er

Environmental Analytical Services

ARDINAL LABORATORIES

118 S. Commercial Ave.
Farmington, NM 87401
505-326-4669
FAX 505-326-4535

101 E. Marland
Hobbs, NM 88240
505-393-2326
FAX 505-393-2476

Chain of Custody Record

Project I.D. B+E
Project Location HALFWAY N.M.
Sampled By A. Hodges
Client Name ESC
Address P.O. 5890 Hobbs N.M.
Telephone 392-6167 392-5085

Sample Number	Date	Time	Composite	Grab	Sample Location	Number of Containers	Analysis Required: TPH	Analysis Required: BTEX	Remarks (Type sample, preservation, etc.)
1	11-3	10AM	X		B+E Site	1	+	+	#2280

Released by: (Signature) — Date 11-3 — Time 12A — Received by: (Signature)
Released by: (Signature) — Date — Time — Received by: (Signature)

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240
PHONE (505) 326-4669 • 118 S. COMMERCIAL AVE. • FARMINGTON, NM 87401

TPH/BTEX ANALYSIS REPORT

Company: Environmental Spill Control, Inc. Date: 11/10/95
Address: P.O. Box 5890 Lab #: H2280
City, State: Hobbs, NM 88241

Project Name: B&E
Location: Halfway, NM
Sampled by: AH Date: 11/3/95 Time: 1000
Analyzed by: MI Date: 11/8-9/95 Time: various
Sample Type: Soil Sample Condition: Intact Units: ppm

Samp #	Field Code	TRPHC	BENZENE	TOLUENE	ETHYL BENZENE	PARA-XYLENE	META-XYLENE	ORTHO-XYLENE
1	B&E Site	3,246	<0.001	<0.001	<0.001	<0.001	<0.001	0.003
	QC Recovery	427	0.790	0.755	0.919	0.850	0.782	0.783
	QC Spike	415	0.872	0.858	0.856	0.844	0.854	0.844
	Accuracy	102.9%	90.4%	87.9%	107.2%	100.6%	91.5 %	92.7%
	Air Blank	***	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Methods - GAS CHROMOTOGRAPHY; INFRARED SPECTROSCOPY
- EPA SW-846; 8020, 418.1, 3510, 3540 or 3550

Mitch Irvin

11/10/95
Date

District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM 88211
District III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONVERSATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

(Revised 3/9/94)

PIT REMEDIATION AND CLOSURE REPORT

Operator: B&E, Inc. Telephone: 505-393-0762

Address: P.O. Box 2292, Hobbs, New Mexico 88240

Facility Or: Tuzlu Kopek
Well Name

Location: Unit or Qtr/Qtr Sec NE-SE Sec 6 T 22S R 30E County Eddy

Pit Type: Separator _____ Dehydrator _____ Other Disposal

Land Type: BLM _____, State _____, Fee X, Other

Pit Location: (Attach diagram)
Pit dimensions: length 220', width 15', depth 3'6"

Reference: wellhead _____, other Cattleguard at entrance to Property from Highway

Footage from reference: _____

Direction from reference: 180 Degrees _____ East North _____ of _____ West South X

Depth to Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (0 points)	20
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes No	(20 points) (0 points)	0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks irrigation canals and ditches)	Less than 200 feet 200 feet to 1000 feet Greater than 1000 feet	(20 points) (10 points) (0 points)	10
		RANKING SCORE (TOTAL POINTS):	30

Date Remediation Started: May 1994 **Date Completed**: October 15, 1995

Remediation Method: (Check all appropriate sections)
Excavation X Approx. cubic yards 428
Landfarmed ____ Insitu Bioremediation X
Other Bioremediation in conjunction with dilution

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility)
Onsite X Offsite ____

General Description of Remedial Action: Combination insitu bioremediation and onsite dilution

Ground Water Encountered: No X Yes ___ Depth ____

Final Pit:
Closure Sampling:
(if multiple samples, attach sample results and diagram of sample)
Sample location 6 point composite sample
Sample depth 0 - 1'
Sample date November 3, 1995 Sample time 10:00a.m.

Sample Results

Benzene (ppm) ND
Total BTEX (ppm) ND
Field headspace (ppm) ____
TPH 3,246 ppm (Soil)

Ground Water Sample: Yes ____ No X (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE January 10, 1996

SIGNATURE Jack W. Henry PRINTED NAME AND TITLE Jack W. Henry Attorney for B&E, Inc.

District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM 88211
District III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONVERSATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

(Revised 3/9/94)

PIT REMEDIATION AND CLOSURE REPORT

Operator: B&E, Inc. Telephone: 505-393-0762

Address: P.O. Box 2292, Hobbs, New Mexico 88240

Facility Or: Tuzlu Kopek
Well Name

Location: Unit or Qtr/Qtr Sec NE-SE Sec 6 T 22S R 30E County Eddy

Pit Type: Separator _____ Dehydrator _____ Other Disposal

Land Type: BLM _____, State _____, Fee X, Other _____

Pit Location: (Attach diagram)
Pit dimensions: length 135', width 72', depth 3'6"

Reference: wellhead _____, other Cattleguard at entrance to Property from Highway

Footage from reference: _____

Direction from reference: 180 Degrees _____ East North _____ of _____ West South X

Depth to Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (0 points)	20
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes No	(20 points) (0 points)	0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks irrigation canals and ditches)	Less than 200 feet 200 feet to 1000 feet Greater than 1000 feet	(20 points) (10 points) (0 points)	10
	RANKING SCORE (TOTAL POINTS):		30

Date Remediation Started: May 1994 **Date Completed:** October 15, 1995

Remediation Method: (Check all appropriate sections)
Excavation X Approx. cubic yards 1260
Landfarmed ____ Insitu Bioremediation X
Other Bioremediation in conjunction with dilution

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility)
Onsite X Offsite ____

General Description of Remedial Action: Combination insitu bioremediation and onsite dilution

Ground Water Encountered: No X Yes ___ Depth ____

Final Pit:
Closure Sampling: (if multiple samples, attach sample results and diagram of sample)
Sample location 6 point composite sample
Sample depth 0 - 1'
Sample date November 3, 1995 Sample time 10:00a.m.

Sample Results
Benzene (ppm) ND
Total BTEX (ppm) ND
Field headspace (ppm) ____
TPH 3,246 ppm (Soil)

Ground Water Sample: Yes ____ No X (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE January 10, 1996

SIGNATURE Jack W. Henry PRINTED NAME AND TITLE Jack W. Henry Attorney for B&E, Inc.

::ODMA\PCDOCS\DOCS\52172\1

District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM 88211
District III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONVERSATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

(Revised 3/9/94)

PIT REMEDIATION AND CLOSURE REPORT

Operator: B&E, Inc. Telephone: 505-393-0762

Address: P.O. Box 2292, Hobbs, New Mexico 88240

Facility Or: Tuzlu Kopek
Well Name

Location: Unit or Qtr/Qtr Sec NE-SE Sec 6 T 22S R 30E County Eddy

Pit Type: Separator _____ Dehydrator _____ Other Disposal

Land Type: BLM _____, State _____, Fee X, Other _____

Pit Location: (Attach diagram)
Pit dimensions: length 330', width 27', depth 3'6"

Reference: wellhead _____, other Cattleguard at entrance to Property from Highway

Footage from reference: _____

Direction from reference: 180 Degrees _____ East North _____ of _____ West South X

Depth to Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (0 points)	20
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes No	(20 points) (0 points)	0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks irrigation canals and ditches)	Less than 200 feet 200 feet to 1000 feet Greater than 1000 feet	(20 points) (10 points) (0 points)	10
	RANKING SCORE (TOTAL POINTS):		30

::ODMA\PCDOCS\DOCS\52174\1

Date Remediation Started: May 1994 **Date Completed:** October 15, 1995

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 1155

Landfarmed _____ Insitu Bioremediation X

Other Bioremediation in conjunction with dilution

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility) Onsite X Offsite _____

General Description of Remedial Action: Combination insitu bioremediation and onsite dilution

Ground Water Encountered: No X Yes ___ Depth _____

Final Pit:
Closure Sampling:
(if multiple samples, attach sample results and diagram of sample)

Sample location 6 point composite sample

Sample depth 0 - 1'

Sample date November 3, 1995 Sample time 10:00a.m.

Sample Results

Benzene (ppm) ND

Total BTEX (ppm) ND

Field headspace (ppm) _____

TPH 3,246 ppm (Soil)

Ground Water Sample: Yes _____ No X (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE January 10, 1996

SIGNATURE Jack W Henry PRINTED NAME AND TITLE Jack W. Henry, Attorney for B&E, Inc.

::ODMA\PCDOCS\DOCS\52174\1

District I
P.O. Box 1980, Hobbs, NM
District II
P.O. Drawer DD, Artesia, NM 88211
District III
1000 Rio Brazos Rd., Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONVERSATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

SUBMIT 1 COPY TO APPROPRIATE DISTRICT OFFICE AND 1 COPY TO SANTA FE OFFICE

(Revised 3/9/94)

PIT REMEDIATION AND CLOSURE REPORT

Operator: B&E, Inc. Telephone: 505-393-0762

Address: P.O. Box 2292, Hobbs, New Mexico 88240

Facility Or: Tuzlu Kopek
Well Name

Location: Unit or Qtr/Qtr Sec NE-SE Sec 6 T 22S R 30E County Eddy

Pit Type: Separator _____ Dehydrator _____ Other Disposal

Land Type: BLM _____, State _____, Fee X, Other _____

Pit Location: (Attach diagram)
Pit dimensions: length 160', width 18', depth 3'6"

Reference: wellhead _____, other Cattleguard at entrance to Property from Highway

Footage from reference: _____

Direction from reference: 180 Degrees _____ East North _____ of _____ West South X

Depth to Ground Water: (Vertical distance from contaminants to seasonal high water elevation of ground water)	Less than 50 feet 50 feet to 99 feet Greater than 100 feet	(20 points) (10 points) (0 points)	20
Wellhead Protection Area: (Less than 200 feet from a private domestic water source, or; less than 1000 feet from all other water sources)	Yes No	(20 points) (0 points)	0
Distance To Surface Water: (Horizontal distance to perennial lakes, ponds, rivers, streams, creeks irrigation canals and ditches)	Less than 200 feet 200 feet to 1000 feet Greater than 1000 feet	(20 points) (10 points) (0 points)	10
		RANKING SCORE (TOTAL POINTS):	30

Date Remediation Started: May 1994 **Date Completed**: October 15, 1995

Remediation Method: (Check all appropriate sections) Excavation X Approx. cubic yards 373

Landfarmed _____ Insitu Bioremediation X

Other Bioremediation in conjunction with dilution

Remediation Location: (ie. landfarmed onsite, name and location of offsite facility) Onsite X Offsite _____

General Description of Remedial Action: Combination insitu bioremediation and onsite dilution

Ground Water Encountered: No X Yes ___ Depth _____

Final Pit:
Closure Sampling:
(if multiple samples, attach sample results and diagram of sample)

Sample location 6 point composite sample

Sample depth 0 - 1'

Sample date November 3, 1995 Sample time 10:00a.m.

Sample Results

Benzene (ppm) ND

Total BTEX (ppm) ND

Field headspace (ppm) _____

TPH 3,246 ppm (Soil)

Ground Water Sample: Yes _____ No X (If yes, attach sample results)

I HEREBY CERTIFY THAT THE INFORMATION ABOVE IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF

DATE January 10, 1996

SIGNATURE Jack W. Henry PRINTED NAME AND TITLE Jack W. Henry Attorney for B&E, Inc.

::ODMA\PCDOCS\DOCS\52175\1

SUMMARY MINUTES

PLAYA LAKES COORDINATING COMMITTEE MEETING
JUNE 22, 1995

Committee Attendees:

Mark Wilson, F&W/LS
David Deardorff, NM State Land Office
Leslie Cone, BLM
Dale Willhoit, IMC
Bruce Morrison, NMG&F
Marvin Watts, Eddy Potash

Leslie Cone, District Manager, introduced herself and recapped the purpose and functions of the Committee, as well as past decisions and results of these decisions.

She explained that the Committee was formed in 1993 to look at playa lake bird mortality in SE NM. A detailed proposal and action plan were developed and accepted by the Committee, to determine the causes of this bird mortality. The National Biological Service (NBS) was funded to do investigative studies.

The purpose of this meeting was to go over the background and to discuss changes in the on-going study.

Mr. Josh Dein, NBS, presented a slide show which included an overview of the history and a discussion of the literature review, bird use and mortality survey, and experimental studies.

He explained that there were to be two study periods, over a 2-year period, October and March in '94/95 and '95/96 .

The schedule includes a first experimental study in mid-November 1994, an interim written report in July 1995, a bibliography in September 1995, and a final report in September 1996.

Mr. Dein discussed responsibilities and coordination of roles for the project, determination of cause of death, bird usage and mortality surveys.

Mr. Dein discussed the Study Plan Modifications. He explained that in the first field season the observational schedule was altered and additional lakes were added to the schedule. Other playas were observed in addition to Toston and Williams Sink. He explained that most birds were found alive and blood samples were obtained before necropsy.

An attempt to do a carcass disposition study was not completed.

Experimental studies - carcasses were fresh, not frozen. Gravity waters were used, additional chemistries added, feather samples taken and analyzed, and flight testing done.

Mr. Watts asked Mr. Dein if he thought there were major differences in fall and spring observations.

Mr. Dein, replied yes, there were differences and that there is a need to look at at least one fall season. This is planned to be done in fall of 95.

Mr. Watts asked if considerations were being given to amount of fresh water in lakes; that since we are in a dry period, may need to be prepared to determine effects of rainfall.

Mr. Watts stated that as salinity is a factor, there is a question as to what level is toxic. Salinity is slightly less in Williams Sink than Toston.

The Committee then voted to accept modifications as presented.

Mr. Dein explained that they had not received the final report from Hub SeaWorld, as they have not received payment. Looked at eight (8) playas, 1600 birds, most on Toston. Very little usage at Williams Sink by water birds. Found 65 mortalities, on Toston and Uno. Expect more birds in fall than spring. Most of mortality occurred during 4-day cold snap period. Mortality seems to be weather related.

Northern Shovelers constituted 44 percent of mortality; 66 percent of birds observed.

The anticipated date for SeaWorld report is a couple of weeks. This will be incorporated in the interim report which will be distributed.

Mr. Dein showed slides concerning the Literature Review. Document subjects included Hydrological & Geological Use (83); Geographical Review, (38); Historical Land Use, (98); bird usage, (56);, and salt toxicity review (135). These have been reviewed.

Will have synthesis of these topics put together and will be available on disk and hard copy, along with reviews.

Looking for further documents on historical land use. Will discuss with BLM to see if further assistance available.

WATER CHEMISTRY - Mr. Scott Vail, IMC, provided all data for water chemistries. Many problems with water were encountered and assistance was provided by IMC.

Salinity comparisons were given in parts per million. Toston/Williams Sink differences shown. Toston 310,000 ppm, Williams Sink, 290,000 ppm. Discussed makeup of chemistry.

No statistical difference between fall and spring samples of each lake.

In spring, took other water samples from Nash Draw lakes. Pond 19, part of Laguna Uno, lowest total ions (ppm).

EXPERIMENTAL TRIALS:
Viewed 11-minute video showing climatization pens, all birds in non-environment area. Initial sample of feathers taken.
All sampling had to be done within 1/2 hour.
Took infra red pictures. Took temperature readings at various points. Showed significant heat loss, but precise measurements were not possible.

Processed samples on site. Shipped overnight express to lab in Phoenix.

Moved all pens to Toston (on land with lake water to drink.)
Pen in lake, birds released to pens in water.

Took video of each pen hourly.

Salt visible after 3 hours. Activity lessened considerably after 5 hours. After 8 hours, bird doing circling. After 22 hours, dead in pen, encrusted with salt.

Most salt encrustation is post mortem.

Demonstrated flying ability after several hours in water.
Marked differences in ability, over time.

Showed graphics demonstrating differences in death time on Toston and Williams Sink. Toston - 10-20 hours; Williams Sink - 20-35 hours.

Blood analysis graphs shown (9) demonstrating changes, over 48 hours, of sodium levels. Levels in lake birds go up much higher than those with fresh water.

Potassium - No difference, as seen in sodium between lake/fresh water intake.

Chloride similar to sodium graph.

Blood Urea Nitrogen - waste products, low levels unless dehydrated.

Uric Acid - by-product with significant rise in lake birds. Kidneys less functional in lake birds.

Glucose - not much change between drinking/lake water groups. Possibly less stressed by being on land.

Sodium - over 2,000 ppm is toxic.

Duration of time on lakes - greater length of time to absorb. Don't know what level causes death.

Showed more brain chemistry graphs.

Discussed necropsy findings relative to lesions; overall conclusion is that no pathology; only in areas of contact. No evidence of internal disease, etc.

Discussed all "add on's" done, such as body weight. Significant differences between Toston and Williams Sink in the Lake birds re dehydration.

Did not obtain info hoped for from infrared.
Lake birds radiating more heat than other groups.

A feather magnification demonstration was given.
showing species/distribution of Birds at Toston.
Seven (7) species used. Blood analysis for three most significant categories higher for wildbirds in all cases.
Seems that mallards are good testing bird.

Preliminary conclusions:

Comfortable that sodium toxicity and fresh water deprivation is cause of death. Sodium by itself not toxic if water available.

Salinity for both lakes higher than most hypersaline lakes.

Potash brine may not be specific to cause of death.

Cataracts may inhibit flight.

Feather structure altered by crystals.

Possible Future Experimental Studies:

Repeat original study on Toston
Focus on shorter sampling intervals

Repeat study design at natural hypersaline lake(s)

Need guidance from Committee re continuing. Whatever done needs to be management related. Looking for information about what the Committee thinks is appropriate direction.

Ms. Cone asked about the findings of birds coming in and taking off and those coming in and landing, staying. No significant differences to determine.

Bruce Morrison asked if the hypersalinity of lakes is a natural occurring phenomenon that is alleviated by rain when not in drought, or by some other influence? Are records available t see about discharge/independent influences on salinity?

Ms. Cone asked if way to keep Toston at certain salinity rate, is NBS comfortable with toxicity level.

Mr. Dein replied that a correlation between weather /mortality, is a possibility. Drinking may not be significant source of ingested salt. Much salt absorbed through preening.

Mr. Watts stated that he was impressed with the study and its findings. A question not in study is wild bird behavior.

Need to be studies done on time birds spend on Toston. Would like to see historic data on when they died.

It was suggested that possibly Toston is more visible from air to birds. It is also deeper than others.

Ms. Cone asked for timeframe needed for changes made next year. Mr. Dein sated that they have manpower this summer, don't know what budget holds for future. Appear to have money available to continue with discussed plans. Ready to do whatever most useful with whatever happens to budget.

Scott Vail discussed availability of information to be gained from controlled studies in lab using synthetic brine. Discussed using some hypersaline lakes in Texas, with same typical weather pattern. Receive no discharge.

The possibility of the Playa Lakes Joint Venture helping with use of lakes on private land in Texas issue.

Decision made to explore some of these other options for further study while waiting for interim report.

Mr. Dein stated that NBS needed to know whether or not to do additional field work. Staffing/money is available now. Will do graded solution studies as well.

Mr. Frank Gray asked if when looking at natural deaths, (sometimes higher) would it be valuable to kill birds coming in and see if they are bringing in with them.

Ms. Cone and the Committee complimented Mr. Dein and NBS on the presentation and meeting adjourned at 11:30 am.

FAX to Tim = Artesia done

United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Roswell District Office
1717 West Second Street
Roswell, New Mexico 88201-1397

OIL CONSERVATION DIVISION
RECEIVED
'95 JUN 19 AM 8 52

IN REPLY REFER TO:
6514 (06010)

JUN 07 1995

Mr. Bill LeMay, Director
Oil Conservation Division
NM Energy, Minerals and Natural
Resources Department
P. O. Box 2088
Santa Fe, NM 87504

Dear Committee Member:

The next meeting of the Southeast New Mexico Playa Lakes Coordinating Committee has been scheduled for June 22, 1995, at the Bureau of Land Management Carlsbad Resource Area Office, 620 E. Greene, Carlsbad. NM. We will begin at 9:30 am.

The agenda will include presentation of proposed changes to the Playa Lakes Investigation Study Plan by the National Biological Service, National Wildlife Health Center. A progress report of the ongoing study will also be given.

Enclosed is a copy of a letter containing a summary of minor deviations from the original study plan during the first year of field work. If you have any questions, please feel free to contact me.

Sincerely,

Leslie M. Cone

Leslie M. Cone
District Manager

1 Enclosure (2 pp)

United States Department of the Interior

OIL CONSERVATION DIVISION
RECEIVED
'94 AUG 1 AM 8 50

BUREAU OF LAND MANAGEMENT
Roswell District Office
1717 West Second Street
Roswell, New Mexico 88201-2019

IN REPLY REFER TO:
6514 (06016)

July 28, 1994

Mr. Bill LeMay
Director
Oil Conservation Div.
NM. Energy, Minerals
and Nat'l Resources Dept.
P.O. Box 2088
Santa Fe, NM 87504

Dear Committee Member:

As indicated in our letter of July 11, 1994, a copy of the National Biological Survey (NBS) Study Plan is enclosed for your review and comment. Comments should be submitted directly to the NBS office and phone numbers and names have been provided in their cover letter, should you have any questions.

This plan, with any revisions, will be formally presented to the Committee and the public at the upcoming meeting of the SENM Playa Lakes Coordinating Committee on August 24, 1994.

Sincerely,

Leslie M. Cone

Leslie M. Cone
District Manager

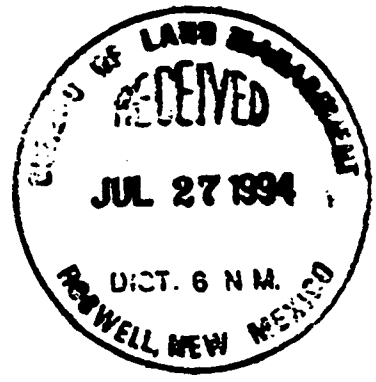
1 Enclosure:
1 - NBS Study Plan (14 pp)

Pete 2nd Playa

United States Department of the Interior

NATIONAL BIOLOGICAL SURVEY
National Wildlife Health Research Center
6006 Schroeder Road
Madison, Wisconsin 53711-6223

July 20, 1994



Ms. Leslie Cone
District Manager; SEMPLCC Chair
Bureau of Land Management
1717 W. Second Street
Roswell, New Mexico 88201-2019

Dear Ms. Cone:

Enclosed is a Study Plan developed by the National Biological Survey (NBS) to investigate mortality and bird use in the playas of southeastern New Mexico (Enc. 1). Guidance for the Study Plan came from Annual Work Plan directives to the NBS National Wildlife Health Center (NWHC) and the Southern Ecological Science Center (SESC; Enc. 2), and involves collaboration between these two Centers and the New Mexico Cooperative Fish and Wildlife Research Unit. Further direction for the Study was obtained from the Investigation/Mitigation Action Plan written by the Southeast New Mexico Playa Lakes Coordinating Committee (SEMPLCC). The Study will focus on obtaining information on bird use and behavior and causes and extent of mortality at two selected playa lakes with different potash discharge histories.

The Study Plan has been tailored to the resources available. During its development, additional study components were considered, but were not included due to funding limitations. Some of these components included examination of additional playas with different discharge histories, surveys of overall bird use and mortality in the Potash Area, detailed analysis of the external effects and sequelae of contact by birds with playa water, and examination of thermoregulatory effects of contact by birds with playa waters.

The Study Plan has been reviewed for scientific merit by staff at the NWHC and SESC, and faculty at the University of Saskatchewan, University of Wyoming, and Texas A&M University. We would appreciate an additional review of this Study Plan by the SEMPLCC members. We especially would appreciate the SEMPLCC members' comments on the research objectives and the potential for answering the questions generated by the Committee. We would like the opportunity to review these comments and potentially revise the plan before its public presentation on August 24. Would you please distribute this document to the Committee and ask that they send written comments to me by August 10, 1994.

I will be on international travel until August 9. If you or the Committee members have any questions that can be answered by telephone, please contact the co-investigators, Clint Jeske (SESC) at 318-266-8652, or Phil Zwank (NMCU) at 505-646-5944; or Christopher Brand at NWHC, 608-271-4640.

Sincerely,

Christopher Brand for

F. Joshua Dein
Project Coordinator

Enclosures

FJD:mb

Scott Vail - IMC

Playa Testing

Sodium toxicity causes death
Rapid salt encrustation within 24 hrs

Probable Scenario — salt encrustation prevents birds from flying - then salt injestion = death

NATIONAL BIOLOGICAL SURVEY

National Wildlife Health Center
Madison, Wisconsin

Southern Ecological Science Center
Lafayette, Louisiana

New Mexico Cooperative Fish and Wildlife Research Unit
Las Cruces, New Mexico

STUDY PLAN

NWHC Work Unit: 00220 - Investigation of avian mortality in the playa lakes of southeastern New Mexico

NWHC Study Plan: 00220.01. Determination of causes of mortality

SESC Work Unit: 00618 - Investigation of avian use and mortality in the playa lakes of southeastern New Mexico

SESC Study Plan: 00618.01. Bird use estimates and mortality surveys

Background and Justification:

Playa lakes are shallow basins found scattered through 140,000 square miles in Texas, New Mexico, Oklahoma, Kansas, and Colorado. They are characterized as water catchments, are most 7often ephemeral, drain internally, accumulate sediment, and serve as recharge points to underground aquifers. An estimated 31% (2,460) of these playas occur in New Mexico. The playas are important wintering areas for many species of waterfowl in the Central Flyway, and provide refuge for many birds along this migratory pathway (Playa Lakes Joint Venture, 1994).

In the early 1990's the deaths of hundreds of migratory birds were recorded along the shorelines of several playas in southeastern New Mexico in an area known as the Secretary's Potash Area. This area, including parts of Lea and Eddy Counties, has been the subject of mining and mineral development for over 60 years. Potash extraction began in the early 1930's following the development of oil and gas resources in the late 1920's, and continues today as a major industry. The playa basins in this area have served as convenient discharge sites for waters produced by mining and refining operations.

The frequency, magnitude, and geographic extent of migratory bird mortality in this region has not been assessed. There have been no extensive surveys of historical and current bird use or wildlife mortality on these playas. Likewise, the cause of death of birds dying during the early 1990's has not

been adequately evaluated. Necropsy of a small number of birds found dead during 1993 suggest that physical and physiological effects of high salt concentrations in certain playas caused or contributed to the bird deaths. Concern has been raised by resource management agencies that constituents of discharge water from potash mining and/or oil and gas development into playas may also be involved in causing mortality. Water quality surveys performed in 1992 on several of the playas experiencing mortality showed that there were significant differences in many chemical and biological properties between playas that have received discharges and those without a similar history (Davis and Hopkins, 1993). Questions also have been raised concerning the hydrologic and geologic relationships amongst the playas involved in avian mortality. Information may exist on many of these issues, but pertinent sources have yet to be collected and analyzed.

In April 1994, the National Wildlife Health Center (NWHC) and the Southern Ecological Science Center (SESC) received directives to initiate a collaborative study investigating bird mortality in the playa lakes of southeastern New Mexico. The NWHC was assigned lead responsibility for the project in cooperation with the SESC and the New Mexico Cooperative Fish and Wildlife Research Unit (NMCFWRU). A literature survey on topics related to historic and current land use, hydrology, geology, water quality, playa ecology, and bird use and mortality were also to be included in the study.

Objectives:

1. Estimate weekly migratory waterfowl use and mean duration of stay on selected playa lakes in the Potash Area,

2. Estimate weekly migratory waterfowl mortality on the selected playas,

3. Determine the cause(s) of death of birds found on and around the selected playas,

4. Determine if the ingestion of waters of selected playa lakes in southwestern New Mexico causes deleterious physiologic changes in mallards, with and without direct contact with the water.

5. Prepare an annotated bibliography of the existing literature on the geology, hydrology, water quality, playa ecology, and historic and current land uses in the Secretary's Potash Region. Information gathered will be reported relative to potential causes or contributing factors of migratory bird mortality and the suitability of playas as wildlife habitat.

Methods and Approach:

General Approach

Two playas, one currently receiving potash mine discharge and known to have experienced mortality, and one without any history of receiving discharge will

be selected in early fall 1994 as study sites on the basis of size, location, and presence of water. These playas will be intensively monitored to determine bird use and mortality rates during October 1994 - March 1995 and October 1995 - March 1996. Blood samples will be taken from clinically ill birds, if possible, and they will be euthanized with carbon dioxide and necropsied to determine cause of morbidity. Carcasses of migratory birds found dead will be necropsied to determine causes of death. In addition, experimental studies involving sentinel mallards will be done during the two fall migrations in 1994 and 1995 to determine the physical and physiological effects of bird exposure to water in the selected playas. A comprehensive collection and annotation of literature related to the geology, hydrology, water quality, playa ecology, and historic and current land uses of the Potash Region will also be conducted.

Methods

a. Bird Use and Mortality

Each playa will be observed for bird use throughout each study season for two morning, two evening and one midday periods each week, one observer per period. Morning observation periods will run 30 minutes prior to sunrise through 3.5 hours after sunrise, and evening observation periods will be from 3.5 hours prior to sunset to 30 minutes past sunset. Evening observations at a playa will be followed by morning observations of the same playa. Mid-day observation periods begin 1.75 hours before noon and end 1.75 hours after noon once a week. Observers will be assigned five periods per week. The observer will be stationed in an elevated blind positioned to allow for the greatest proportion of the lake to be visually accessible. Playa visitation order will be rotated each week. No observations will be made during the periods that the experimental trials (see b.2) are ongoing.

At the beginning of each observation period, and at 15-minute intervals, the playa will be scanned with a 20-60X spotting scope. All migratory birds present will be counted and identified by species, sex, and location on the playa, and subjective assessment of condition (appears healthy, sick or dead) will be noted. Times of arrival and departure of all migratory birds will also be recorded. Relative use by species will be calculated from length of time individual birds are on the playas.

Observers keep track of individual birds?

Environmental parameters (ambient temperature, relative humidity, wind velocity, and wind direction) will be measured automatically each hour. Conductivity and water temperature, sodium (Na), potassium (K) and chloride (Cl) [ion-specific electrodes] will be measured directly at a site 5 m from shore at a depth of 10 cm, at the end of the morning observation period. Triplicate water samples will be collected monthly at the sampling site above and at two additional points. These samples will be analyzed by atomic absorption spectrophotometry for the following elements: silver, aluminum, arsenic, beryllium, calcium, cadmium, cobalt, chromium, copper, iron, mercury, potassium, magnesium, manganese, molybdenum, sodium, nickel, lead, phosphorus, antimony, selenium, silicon, vanadium, and zinc.

Office of Assistant Secretary for Public and Indian Housing

[Docket No. N-94-3763; FR-3876-N-02]

Funding Availability for FY 1994; Invitation for Applications; Public Housing Development: Extension of Application Deadline for Certain Applicants

AGENCY: Office of the Assistant Secretary for Public and Indian Housing, HUD.

ACTION: Notice of extension of application deadline for certain applicants.

SUMMARY: HUD is extending the application deadline for public housing development applications for those applicants who were adversely affected in their application preparation because of flooding in the State of Georgia due to Tropical Store Alberto.

DATES: For qualified applicants, the application deadline is being extended from July 8, 1994 to July 22, 1994.

FOR FURTHER INFORMATION CONTACT: Marie D. Head, Chief of the Housing Programs Branch, Atlanta State Office, Richard D. Russell Federal Building, 75 Spring Street, Atlanta, GA 30303. Telephone (404) 331-6876. (This is not a toll-free number.)

SUPPLEMENTARY INFORMATION: On May 24, 1994 (59 FR 26902), HUD published a Notice of Funding Availability (NOFA) announcing the availability of FY 1994 funds for public housing development (Public Housing Development NOFA).

This notice announces an extension of the application deadline set forth in the May 24, 1994 Public Housing Development NOFA for eligible Public Housing Authorities (PHA) that were adversely affected in the preparation or submission of applications because of flooding in the State of Georgia due to Tropical Storm Alberto. For those applicants who qualify, the application deadline is extended from July 8, 1994 to July 22, 1994.

An applicant may qualify for an extension of the application deadline for public housing development if:

(A) The applicant submits a certification with its application that it was unable to meet the July 8, 1994 deadline and describes the reasons that justify a delayed submission pursuant to this notice; and

(B) HUD determines that the certification adequately demonstrates that the applicant's ability to prepare or submit the public housing development application was substantially impaired as a result of the flooding described in this notice.

If HUD approves the certification, the application will be accepted for review.

An eligible PHA may submit such an application, or may revise and resubmit a previously submitted application, as long as *the application is received by the Atlanta State Office by 4:00 PM on July 22, 1994.* All submission requirements other than the date by which such applications must be received remain unaffected by this notice.

Dated: July 8, 1994.

Janice D. Rattley,

Acting Assistant Secretary for Public and Indian Housing.

[FR Doc. 94-17153 Filed 7-14-94; 8:45 am]

BILLING CODE 4210-33-M

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[AK-963-4230-05]

Notice for Publication F-14891-A; Alaska Native Claims Selection; Alaska

In accordance with Departmental regulation 43 CFR 2650.7(d), notice is hereby given that a decision to issue conveyance under the provisions of Sec. 14(a) of the Alaska Native Claims Settlement Act of December 18, 1971, 43 U.S.C. 1601, 1613(a), will be issued to The Kuskokwim Corporation, for the village of Aniak, for approximately 10,654 acres. The lands involved are in the vicinity of Aniak, Alaska, and are located within Tps. 16 N., Rs. 58 and 59 W., Seward Meridian, Alaska.

A notice of the decision will be published once a week, for four (4) consecutive weeks, in The Tundra Times. Copies of the decision may be obtained by contacting the Alaska State Office of the Bureau of Land Management, 222 West Seventh Avenue, #13, Anchorage, Alaska 99513-7599 ((907) 271-5960).

Any party claiming a property interest which is adversely affected by the decision, an agency of the Federal Government, or regional corporation, shall have until August 15, 1994 to file an appeal. However, parties receiving service by certified mail shall have 30 days from the date of receipt to file an appeal. Appeals must be filed in the Bureau of Land Management at the address identified above, where the requirements for filing an appeal may be obtained. Parties who do not file an appeal in accordance with the requirements of 43 CFR Part 4, Subpart E, shall be deemed to have waived their rights.

Bernice P. Lasinsky,

Land Law Examiner, Branch of Southwest Adjudication.

[FR Doc. 94-17193 Filed 7-14-94; 8:45 am]

BILLING CODE 4310-JA-P

[NM-060-4700-01 (606)]

Southeast New Mexico Playa Lakes Coordinating Committee; Meetings

AGENCY: Bureau of Land Management, Interior.

ACTION: Southeast New Mexico Playa Lakes Coordinating Committee Meeting.

DATES: Wednesday, August 24, 1994, beginning at 9:30 a.m.

FOR FURTHER INFORMATION CONTACT: Leslie M. Cone, District Manager, Bureau of Land Management, 1717 West 2nd Street, Roswell, NM 88201, (505) 627-0272.

SUPPLEMENTARY INFORMATION: The agenda will include presentation of a Research Proposal by the National Biological Survey (NBS) to the Southeast New Mexico Playa Lakes Coordinating Committee, for approval. The meeting will be held at the Carlsbad Resource Area Office, 620 E. Greene, Carlsbad, New Mexico. Summary minutes will be maintained in the Roswell District Office and will be available for public inspection during regular business hours (7:45 a.m.-4:30 p.m.) within 30 days following the meeting. Copies will be available for the cost of duplication.

Dated: July 7, 1994.

Leslie M. Cone,

District Manager.

[FR Doc. 94-17229 Filed 7-14-94; 8:45 am]

BILLING CODE 4310-FB-M

[NM-940-04-4730-12]

Notice of Filing of Plats of Surveys; New Mexico

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice.

SUMMARY: The plats of survey described below are scheduled to be officially filed in the New Mexico State Office, Bureau of Land Management, Santa Fe, New Mexico, on August 9, 1994.

New Mexico Principal Meridian, New Mexico

T. 27 N., R. 14 W., Accepted June 16, 1994, for Group 870 NM.

If a protest against a survey, as shown on any of the above plats is received

SOUTHEAST NEW MEXICO PLAYA LAKE COORDINATING COMMITTEE MAILING LIST

Ms. Jami Bailly
Deputy Director
Oil, Gas, & Minerals Division
State Land Office
P. O. Box 1148
Santa Fe, NM 87504-1148
Phone: 827-5760, FAX: 827-5766

Ms. Judith Espinosa
Secretary
New Mexico Environment Department
P. O. Box 26110
Santa Fe, NM 87502
Phone: 827-2850, FAX: 827-2836

Mr. Bill LeMay
Director
Oil Conservation Division
New Mexico Energy, Minerals,
and Natural Resources Dept.
P. O. Box 2088
Santa Fe, NM 87504
Phone: 827-5802, FAX: 827-5741

Mr. Bill Montoya
Director
New Mexico Game and Fish Department
P. O. Box 25112
Santa Fe, NM 87504
Phone: 827-7899, FAX: 827-7915

Ms. Jennifer Fowler-Propst
Field Supervisor
NM Ecological Services Field Office
U.S. Fish and Wildlife Service
3530 Pan American Highway NE
Suite D
Albuquerque, NM 87107
Phone: 883-7877, FAX: 883-7876

Mr. Walt Thayer
IMC Fertilizer
P. O. Box 712
Carlsbad, NM 88220
Phone: 887-2871, FAX: 887-0589

Mr. Marvin Watts
Eddy Potash Company
P. O. Box 31
Carlsbad, NM 88220
Phone: 887-2844, FAX: 885-0374

New Mexico Oil and Gas Association
Attention: Mr. Frank Yates
Yates Petroleum Corporation
105 S. Fourth St.
Artesia, NM 88210
Phone: 748-1471, FAX: 746-2604

STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

BRUCE KING
GOVERNOR

ANITA LOCKWOOD
CABINET SECRETARY

May 16, 1994

POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87504
(505) 827-5800

CERTIFIED MAIL
RETURN RECEIPT NO. P-111-334-099

Mr. Phil Withrow
B&E, Inc.
P.O. Box 2292
Hobbs, New Mexico 88240

RE: PHASE III SITE REMEDIATION WORK PLAN
B&E TUZLU KOPEK DISPOSAL FACILITY
EDDY COUNTY, NEW MEXICO

Dear Mr. Withrow:

The New Mexico Oil Conservation Division (OCD) has completed a review of B & E, Incorporated's April 1994 "WORK PLAN TO CONDUCT PHASE III - SITE REMEDIATION AT THE B & E TUZLU KOPEK DISPOSAL FACILITY", and B & E's May 4, 1994 "AMENDMENTS TO CLOSURE PLAN FOR B & E, INC'S TUZLU KOPEK SITE". These documents contain B&E's proposal for remediation and final closure of the B&E Tuzlu Kopek Disposal Facility.

The proposed remedial actions contained in the above referenced documents are approved with the following conditions:

1. B & E will notify the OCD at least 72 hours in advance or all scheduled activities such that the OCD may have the opportunity to witness the events and/or split samples.

2. A final closure report will be submitted to the OCD within 60 days of completion of all remedial activities. The final report will contain a description and the results of all closure activities including a completed OCD "PIT REMEDIATION AND CLOSURE REPORT" form (attached) for each pit closed.

NOTE: Please do not report the results of the closure activities on an OCD C-103 form as proposed in the April 1994 work plan. The C-103 form is for "SUNDRY NOTICES AND REPORTS ON WELLS". Since there are no wells associated with the site, use of this form is inappropriate.

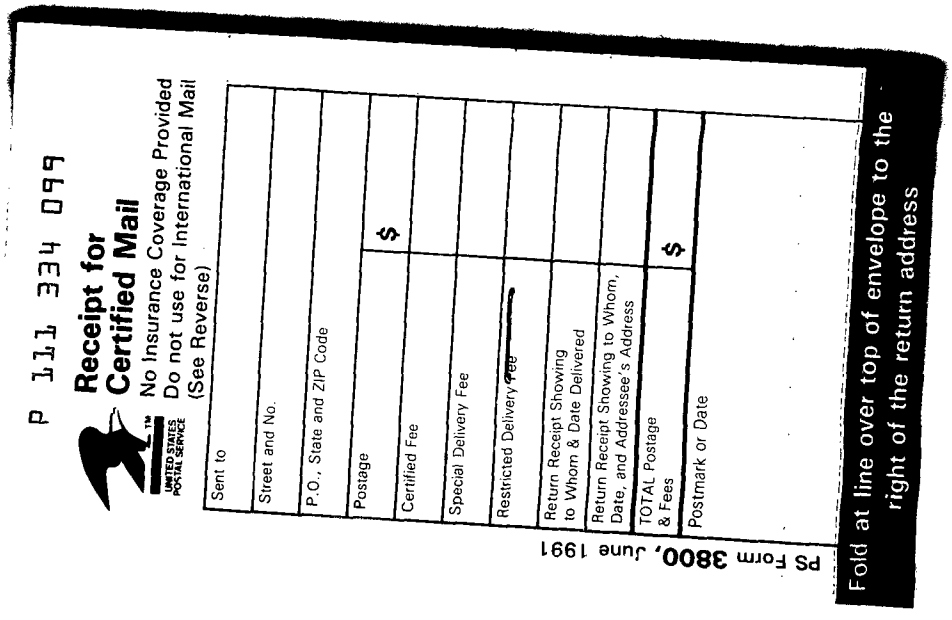
Please be advised that OCD approval does not relieve B & E of liability should remaining contaminants pose a threat to public health or the environment or; should residual contaminants result in actual pollution of surface waters or ground waters. In addition, OCD approval does not relieve B & E of responsibility for compliance with any other federal, state or local laws and/or regulations.

If you have any questions, please contact me at (505) 827-5885.

Sincerely,

William C. Olson
Hydrogeologist
Environmental Bureau

xc: Jim Morrow, OCD Artesia District Office
Jim Piatt, NMED Surface Water Bureau Chief
Jack Henry, Johnson & Gibbs
Eddie Slavens, Environmental Spill Control, Inc.
Leslie Cone, BLM Roswell District Manager



JOHNSON & GIBBS

A Professional Corporation
ATTORNEYS AND COUNSELORS

1001 Fannin Street
Suite 1200
Houston, Texas 77002
713/752-3300

Other Locations:
Austin, Texas
Dallas, Texas
Washington D.C.

Fax: 713/752-3788

Writer's Direct Dial Number

713/752-3394

May 4, 1994

BY TELECOPY

Mr. Roger Anderson
The State of New Mexico
Oil Conservation Division
P.O. Box 2088
Land Office Building
Santa Fe, NM 87504-2088

Re: **Amendments to Closure Plan for B & E, Inc.'s Tuzlu Kopek Site**

Dear Roger:

Thank you for meeting with myself and Eddie Slavens on April 29, 1994 regarding the above closure plan. As we discussed, I am writing to confirm the agreed upon amendments to the site closure plan.

Based on the Qualitative Human Health and Ecological Risk Assessment Evaluations completed for the Tuzlu Kopek site in January 1993, the clean-up levels set forth below were agreed upon. A copy of the Risk assessment was provided to you as part of the earlier closure activities, however, should you require an additional copy, please let me know.

The heavily contaminated soil in the four pits, *i.e.* the soil above 30,000 parts per million (ppm) Total Petroleum Hydrocarbon (TPH), will be removed for on-site bioremediation and will be remediated to a level of 5000 ppm. Testing will be conducted after soil removal to insure that the levels remaining in the pits do not exceed 30,000 ppm TPH.

The pits will then be closed by adding a mixture of 1 to 2 percent lime and native caliche soil to stabilize the remaining wastes. Adequate soils will be added to the pits to insure that there is some mounding, thereby facilitating the natural runoff of rainwater. In addition, a range mixture of grasses will be planted on each mound. Likewise, when the soil that has been removed for bioremediation reaches a level of 5000 ppm TPH, it will also be seeded with the range mixture.

Finally, B & E, Inc. will insure that no hydrocarbon contaminated residue remains in the existing water tank since it will be left in place.

We appreciate your verbal approval to procede and will notify Mr. Jim Morrow prior to initiation of the on-site activities.

Very truly yours,

JOHNSON & GIBBS
A Professional Corporation

Jack W. Henry

JWH:cmc

cc: Mr. Philip B. Withrow - **By Telecopy**
President
B & E, Inc.
P.O. Box 2292
Hobbs, NM 88240

Mr. Jim Morrow - **By Telecopy**
Chief Petroleum Engineer
State of New Mexico
Oil Conservation Division
P.O. Drawer DD
Artesia, NM 88110

Mr. Eddie Slavens - **By Telecopy**
Environmental Spill Control, Inc.
P.O. Box 5890
Hobbs, New Mexico

WORK PLAN TO CONDUCT PHASE III - SITE REMEDIATION AT THE B & E TUZLU KOPEK DISPOSAL FACILITY

Prepared for:

B & E, Incorporated
700 North Shipp
Hobbs, New Mexico

Prepared by:

Environmental Spill Control, Inc.
P.O. Box 5890
Hobbs, New Mexico

ESC Project No: 394-2

April 1994

TABLE OF CONTENTS

1.0 - INTRODUCTION

This document is a Work Plan to conduct a Phase III - Site Remediation and Closure at the B & E, Incorporated ("B & E"), Tuzlu Kopek disposal facility at E/W NESE Section 6, Township 22 South, Range 30 East, Eddy County, New Mexico.

1.1 BACKGROUND

The site is a former salt water disposal facility. The site was operated by B & E from 1982 until 1989. As part of a prior pit closure, B & E completed a thorough assessment of the site, including a risk analysis of the closure project. Based on the site assessment, three pits located on the Bureau of Land Management ("BLM") land were closed in 1993.

This Work Plan addresses the site remediation and closure for the remaining pits located on B & E property. There are four (4) remaining oil residue pits, herein referred to as "disposal pits". These earthen pits were used for the disposal of residues generated from the cleanout of frac tanks at the B & E site (Figure 1.2). Pit # 1 measures approximately 220 feet by 15 feet in area. Pit # 2 measures approximately 160 feet by 18 feet. Pit # 3 measures approximately (averaged) 135 feet by 72 feet. Pit # 4 measures 330 feet by 27 feet. The depth of all pits is approximately 2 to 7 feet (3 1/2 used as average). Groundwater at the site is at or near the bottom of the four pits. The groundwater level has been artificially elevated by long-term discharges from local potash mining operations. The groundwater exceeds 10,000 milligrams per liter total dissolved solids and this will not serve any reasonably foreseeable beneficial use. As indicated by the prior site assessment, local hydrological site conditions serve to limit migration outside the immediate pit areas.

1.2 WORK PLAN OBJECTIVES

This Work Plan will address the site remediation and pit closure under OCD Guidelines for the facility and will provide a project schedule for such remediation and restoration.

1.3 WORK PLAN ORGANIZATION

This Work Plan is organized into five sections. Section 1.0 is the Introduction. Section 2.0 (Approach) describes our recommended site remediation for closing the disposal pits. Section 3.0 presents the project schedule and drawings. Section 4.0 contains the most recent field analyses. Section 5.0 contains the Oil Conservation Division Guidelines For Surface Impoundment Closures.

2.0 APPROACH

Our approach consists of a site remediation and closure strategy which will address appropriate state and/or federal guidelines particularly those of the Oil Conservation Division. Alternative remedial technologies are discussed and excavation and bioremediation are recommended to that of off-site disposal. The site investigation previously conducted, including the risk assessment, support this recommendation.

2.1 SCOPE OF PROJECT

There are four (4) blowdown pits located at the Tuzlu Kopek Water Station, none of which are currently in use. The pits are in-ground and unlined and have varying stages of hydrocarbon contamination. The pits are dry except for occasional rainwater. There is a combined total of approximately 2,400 cubic yards of elevated hydrocarbon contaminated soil in the four pits. The project will remediate the contaminated soil to the appropriate level as required by OCD.

2.2 REMEDIATION OPTIONS

There are several methods were reviewed for the disposal or remediation of the non-hazardous oilfield pit soil contamination.

1. OFF-SITE by transporting the contaminated material to an approved and licensed commercial disposal facility; or
2. ON-SITE by means of one of the following methods:
    i) Land Treatment
    ii) Soil Reclamation (Washing and Separation)

2.3 OFF-SITE

Contaminated soil may be disposed of by transport to a permitted commercial facility for disposal. All of the material for disposal is manifested as Non-Hazardous Oilfield Waste (NOW) waste and the safe transport of the material is the responsibility of the generator. It should be noted that the liability for the NOW waste is not transferred to the disposal facility once it has been delivered, the ultimate liability still rests with the generator.

We would recommend on-site treatment to off-site treatment due to <u>future liability</u> and the potential for further removal or remediation at some future point in time..

2.4 ON-SITE

Utilizing the land treatment methods, there are several techniques for remediating hydrocarbon contaminated soils. The most effective methods are landfarming, vertical mixing (dilution), and stabilization. Of these three listed techniques, landfarming is the one most commonly associated with land treatment. The contaminated organics (oil, grease, aromatics) are used as food by soil microbes, particularly certain strains of thermophilic aerobic bacteria. The organic waste is broken down into carbon dioxide and water. Metals are diluted and absorbed by clay particles in the soil, immobilizing them and reducing their availability for migration into ground or surface water, for plant uptake. Salts and pH are adjusted by soil amendments.

Vertical mixing is a variation of dilution burial. The heavily contaminated material located on top of a pit or spill is mixed with the soil beneath the contamination in order to achieve acceptable contamination levels. Due to the confined space, vertical mixing of the entire pit contents would be difficult in this instance. Since the contamination covers several locations with limited bottom soil, a variation of dilution using outside soil (*e.g.*, soil from the berms) would be the preferred solution.

The last listed technique of land treatment is stabilization. In stabilization, the waste material is mixed with other ingredients (*e.g.*, lime) that encapsulate the contaminants and bind them in a non-toxic matrix that prevents their escape into the environment.

There is ample land at the facility for land treatment. The land that would be used for lift placement is completely inside the fence associated with the facility. Although the contaminated soils contain elevated Total Petroleum Hydrocarbons (TPH), the majority of the BTEX has weathered off.

2.5 RECOMMENDED REMEDIATION RESPONSE

We recommend remediation of the most heavily hydrocarbon contaminated soil by landfarming with microorganisms. Environmental Spill Control has the exclusive distributorship for a complete bioremediation process called *MICRO-BLAZE OUT*. The wastes located at the sides and bottom of the pits will be remediated to an acceptable level using stabilization and/or soil mixing.

MICRO-BLAZE OUT is an enhanced applied microbial bioremediation product designed to clean, add a combination of naturally occurring microbes to assure optimum strains and numbers, and speed the natural microbial degradation process that already exists in hydrocarbon contaminated locations. No matter where, naturally occurring resident microorganisms will attack hydrocarbons soon after the oil and oil by-products become available. *MICRO-BLAZE OUT* can dramatically increase the completeness of cleaning and the speed of bioremediation.

Bioremediation is a process that uses microorganisms to transform harmful substances into non-toxic compounds. Bioremediation utilizes ecological management by naturally occurring microorganisms to degrade target organic pollutants for the purpose of restoring environments.

Microbial degradation of hydrocarbons can occur in the presence of air (aerobic) or without air (anaerobic). Aerobic degradation is usually faster and more complete. The biocatalyst component of the *MICRO-BLAZE OUT* liquid makes oxygen readily available to the microbes when they are added to the liquid.

A water-oil-microbe interface is required so the enzymes secreted by the microbes will be able to break down the hydrocarbons in close association with the cell wall. As degradation progresses, certain compounds are absorbed by the microbe. The intermediate by-product of degradation, in order, are alkanes, then alcohols, then aldehydes, followed by organic acids. Fatty acids are rapidly used or degraded in nature.

If oxygen and water are added to an alkane inside the microbe in the presence of enzymes, the product is an alcohol. If oxygen is added to an alcohol, then an aldehyde is the product. This is rapidly changed to an organic acid. These fatty acids can be readily used in the Beta Oxidation Cycle to build ADP and ATP - the primary sources of energy in the living.

The heavy hydrocarbon contaminated soil located in the pits will be removed and taken to the staging area for bioremediation. The elevated hydrocarbon contaminated soil located under the heavy contamination will be mixed with fresh fill for dilution to insure that the resulting material conforms with the OCD approval for TPH limits for closure of the pits. We would further request that the TPH limits be no lower than 1,000 parts per million (ppm), due to the fact that the rise in the water table and the playa lakes is artificial due to brine water discharge for the potash mining operations. Another reason we would request a minimum limit of 1,000 ppm is due to the quality of water in the subsurface waters and playa lake. The quality of the spring and lakes in the area exceed 200,000 mg/l (milligrams per liter) of dissolved solids, similar to that found in produced oil-field waters.

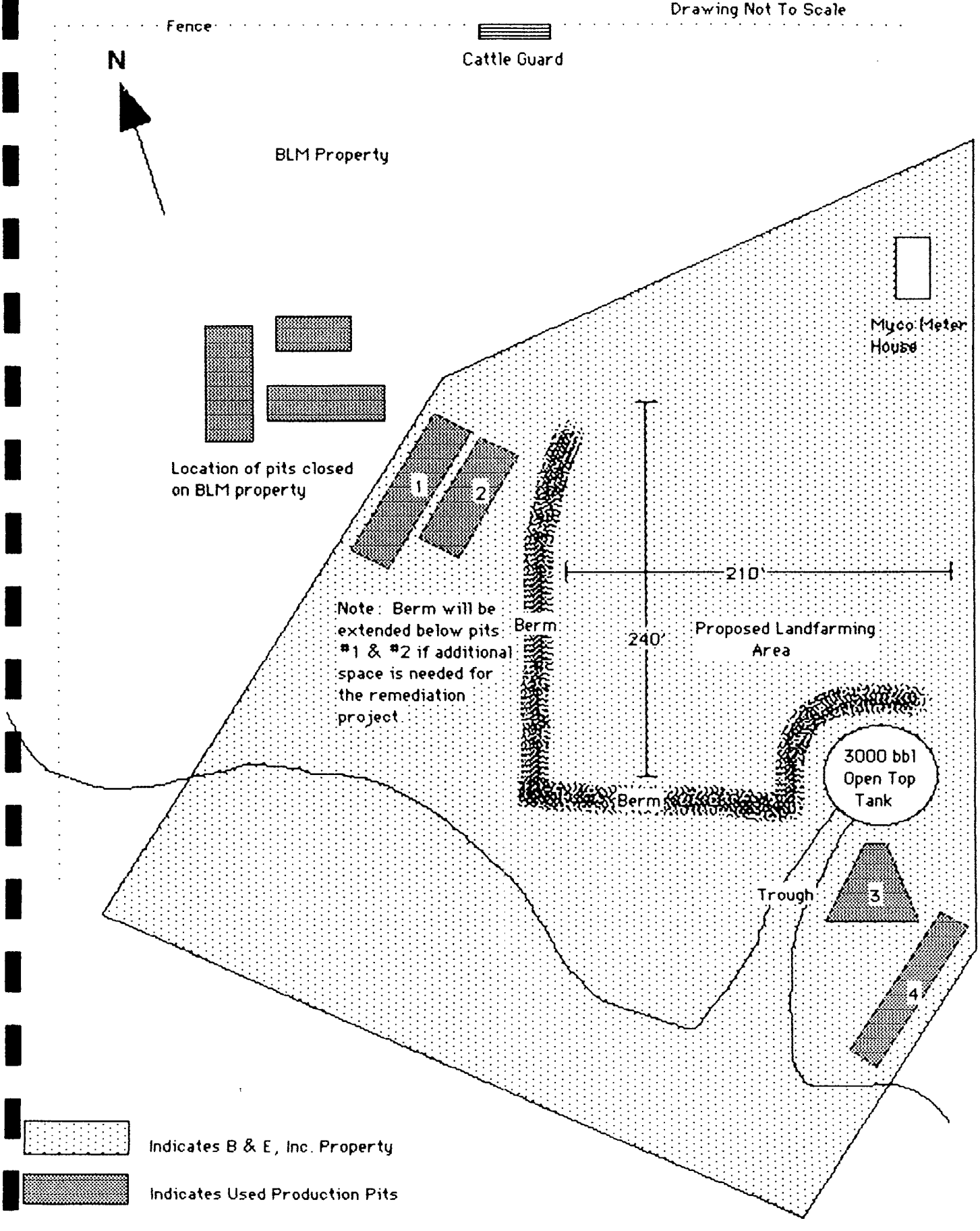
The pad (please refer to attached drawing) or cleared staging area inside the fence at the facility will be modified with berms to contain the remediation project. The dimensions of the cleared area will be approximately 210 feet by 240 feet. We will extend the 240 feet length up the hill toward the paved road to lower the depth of the lift of the contaminated material. A twelve (12) inch lift will be laid down evenly on the cleared area and the area to the north of the road.

A sprinkler system will be installed to adequately supply water to the project to control the oxygen to the microbes. There will be three (3) applications of *MICRO-BLAZE OUT* applied to the lift on the cleared area at several remediation intervals. One (1) in the beginning of the project with extra nutrients and bio-catalysts and disked with a tractor and plow, then another with extra nutrients and bio-catalysts approximately two to three weeks later. The final

application will follow approximately two weeks after the last application. Additional disking will be done on an as needed basis prior to revegetaion with a range blend for ground cover.

The project will be monitored by random sampling on-site for TPH, nutrients, pH, and appropriate parameters on a regular basis; once the target TPH has been accomplished, an analysis will be provided to OCD along with Form C-103 in order to effect a final closure.

Drawing Not To Scale



3.2 Project Closure Schedule

Preferred Work Schedule: 10 hour days 6 days per week
Monday thru Saturday (Sunday off - unless critical)

TIME LINE SCHEDULE

PROJECT: B & E TUZLU KOPEK

ACTIVITY	Month 1 30 Days	Month 2, 3, 4 90 Days
TASK ONE		
(1) Closure and work plan preparation	2 DAYS	
(2) C-103 and OCD Review for approval (Includes other agencies from state or BLM)	2 DAYS	
(3) Health and Safety Plan Preparation	2 DAYS	
(4) Monthly project update	* (at	end of each month)
TASK TWO		
(1) Removal of netting and fences	2 DAYS	
(2) Pit preparation & excavation (Four pits)	<------> 7 DAYS	
(3) Dilution (Including any outside soil source hauling)	<--> 3 DAYS	
(4) Pit backfill and site backfill (Four pits)	<-->	3 DAYS
(5) Bioremediation (Includes installing sprinkler system and applications)	<--------	-------> 90-120 DAYS
(6) Reseeding		1 DAY
(7) Final C-103		1 DAY
111-141 Days total project time including administration time to field implementation and completion.		

INDIVIDUAL PIT COMPOSITE SAMPLES - B & E PROPERTY

Parameter (mg/kg)	Pit #1 Composite	Pit #2 Composite	Pit #3 Composite	Pit #4 Composite
Total Petroleum Hydrocarbons (TPH)	58,250	91,450	99,550	33,750
Volatiles				
Benzene	1.5	2.9	6.5	1.1
Tolluene	0.5	1.2	0.5	0.1
Ethylbenzene	0.5	3.1	5.2	0.1
Xylene	1.6	6.9	8.6	2.3
Total	4.1	14.1	20.8	3.6
pH	8.6	8.8	8.9	8.2

UNLINED

SURFACE IMPOUNDMENT

CLOSURE

GUIDELINES

(February 1993)

New Mexico Oil Conservation Division
State Land Office Building
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

TABLE OF CONTENTS

PREFACE

The following document does not require that currently operating or permitted unlined surface impoundments be closed. This document is to be used only as a guide when closing unlined surface impoundments used for the containment of exploration, production, processing and storage wastes regulated by the New Mexico Oil Conservation Division (OCD).

OCD requires submission and approval of plans and procedures for closure prior to the actual closure of any unlined surface impoundment. Procedures may deviate from the following guidelines if it can be shown that the proposed procedures will remove or isolate contaminants in such a manner that fresh waters, public health and the environment will not be impacted by remaining contaminants. Specific constituents and/or requirements for soil and ground water analysis and/or remediation may vary depending on site specific conditions.

If a number of unlined impoundments are to be closed by a single company, the company may submit one area-wide plan stating the specific location of each unlined impoundment to be closed, along with the procedures to be used during closure. Deviations from approved plans will require OCD notification and approval.

INTRODUCTION

These guidelines are intended to provide guidance for closure of unlined surface impoundments in a manner that assures protection of fresh waters, public health and the environment.

The New Mexico State Engineer has designated fresh waters as all surface waters and ground waters of the state containing 10,000 milligrams per liter or less of total dissolved solids (TDS) for which there is a present or reasonably foreseeable beneficial use. As stated in New Mexico Oil Conservation Commission (OCC) Order No. R-3221-D, "reasonably foreseeable" generally has been taken to mean a time period of not less than 200 years into the future. An unlined surface impoundment is defined as any unlined below grade feature which receives anything other than fresh water. The term "unlined surface impoundment" includes but is not limited to the following types of unlined features: produced water pits, dehydrator pits, blowdown pits, tank drain pits, pipeline drip collector pits, compressor scrubber pits, flare pits, and all other unlined pits which receive exploration, production and processing wastes regulated by the OCD. Excluded from this definition are pits constructed exclusively for drill cuttings and drilling fluids which are regulated under OCD Rule 105.

Prior to commencing closure of an unlined surface impoundment, a closure plan must be submitted to and approved by OCD. A closure plan may apply to more than one unlined impoundment. At a minimum, a closure plan should include the following elements:

1. The locations of all pits to be closed by township, range, section, unit letter and footages or other OCD methods.

2. The procedures which will be used to conduct the soil and ground water assessments and the circumstances under which an assessment of ground water will be conducted.

3. The procedures which will be used to manage, remediate, or dispose of contaminated soil and ground water.

I. SITE ASSESSMENT

Prior to final closure (Section VI), the party responsible for an unlined surface impoundment should perform an assessment to determine the extent to which soils and/or ground water may have been impacted by the operation of the impoundment. Assessment results will form the basis of any required remediation. The sites will be assessed for the severity of contamination and potential environmental and public health threats using a risk based ranking system.

The following characteristics must be determined in order to evaluate a sites potential risks, the need for remedial action and, if necessary, the level of cleanup required at the site:

A. GENERAL SITE CHARACTERISTICS

1. Depth to Ground Water

The operator should determine the depth to ground water at each site. The depth to ground water is defined as the vertical distance from the lowermost contaminants to the seasonal high water elevation of the ground water. If the exact depth to ground water is unknown, the ground water depth can be estimated using either local water well information, published regional ground water information, data on file with the New Mexico State Engineer Office or the vertical distance from adjacent ground water or surface water.

2. Wellhead Protection Area

The operator should determine the horizontal distance from all water sources and private, domestic water sources. A water source shall mean wells, springs or other sources of fresh water extraction. Private, domestic water sources shall mean those water sources used by less than five households for domestic or stock purposes.

3. Distance to Nearest Surface Water Body

The operator should determine the horizontal distance to all downgradient surface water bodies. Surface water bodies are defined as perennial rivers, streams, creeks, irrigation canals and ditches, lakes and ponds.

B. SOIL/WASTE CHARACTERISTICS

Soils/wastes within and beneath the unlined surface impoundment should be evaluated to determine the type and extent of contamination at the site. In order to assess the level of contamination at the unlined impoundment, observations should be made of the soils at the surface and a sample of the potentially impacted soils should be taken from the interval at least 3 feet into the undisturbed native soils beneath the bottom of the pit. Samples should be obtained according to the sampling procedures in Sections III.A. and III.B. This may be accomplished using a backhoe, drill rig, hand auger, shovel or other means.

Initial assessment of soil contaminant levels is not required if an operator proposes to determine the final soil contaminant concentrations after a soil removal or remediation pursuant to section IV.A.

Varying degrees of contamination described below may co-exist at an individual site. The following sections describe the degrees of contamination that should be documented during the assessment of the level of soil contamination:

1. Highly Contaminated/Saturated Soils

Highly contaminated/saturated soils are defined as those soils which contain a free liquid hydrocarbon phase or exhibits gross hydrocarbon staining.

2. Unsaturated Contaminated Soils

Unsaturated contaminated soils are those soils which are not highly contaminated or saturated, as described above, but contain measurable concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons (TPH). Sampling and analytical methods for determining contaminant concentrations are described in detail in Section III.A. and III.B.

(NOTE: The above definitions apply only to oilfield contaminated soils which are exempt from federal RCRA Subtitle C hazardous waste provisions. Unlined impoundments receiving non-exempt wastes are subject to evaluation for RCRA hazardous waste characteristics.)

C. GROUND WATER QUALITY

If ground water is encountered during the soil/waste characterization of the impacted soils, a sample should be obtained to assess potential impacts on ground water quality. Ground water samples should be obtained using the sampling procedures in Section III.C. If there is a reasonable probability of ground water contamination based upon the level of contaminants in the soils directly beneath the pit or the extent of soil contamination defined during remedial activities, monitor wells may be required to assess potential impacts on ground water and the extent of ground water contamination.

II. SOIL AND WATER REMEDIATION LEVELS

A. SOILS

1. Highly Contaminated/Saturated Soils

Highly contaminated /saturated soils should be remediated insitu or excavated to the maximum extent practicable and remediated using techniques described in Section IV.A.

2. Unsaturated Contaminated Soils

The general site characteristics obtained during the site assessment (Section I.A.) will be used to determine the appropriate soil remediation levels using a risk based approach. Soils which are contaminated by petroleum constituents will be scored according to the ranking criteria below to determine their relative threat to public health, fresh waters and the environment.

a. Ranking Criteria

Depth to Ground Water	Ranking Score
< 50 feet	20
50 - 99	10
> 100	0

Wellhead Protection Area

< 1000 feet from a water source, or; < 200 feet from private domestic water source	
Yes	20
No	0

Distance to Surface Water Body

< 200 horizontal feet	20
200 - 1000 horizontal feet	10
> 1000 horizontal feet	0

b. Recommended Remediation Level

The total ranking score determines the level of remediation that may be required at any given site. The total ranking score is the sum of all four individual ranking criteria listed in Section II.A.2.a. The table below lists the remediation level that may be required for the appropriate total ranking score. **(NOTE: The OCD retains the right to require remediation to more stringent levels than those proposed below if warranted by site specific conditions (ie. native soil type, location relative to population centers and future use of the site or other appropriate site specific conditions.)**

	Total Ranking Score		
	≥ 19	10 - 19	0 - 9
Benzene (ppm)*	10	10	10
BTEX(ppm)*	50	50	50
TPH(ppm)**	100	1000	5000

* A field vapor headspace measurement (Section III.B.1) of 100 ppm may be substituted for a laboratory analysis of the Benzene and BTEX concentration limits.

** The contaminant concentration for TPH is the concentration above background levels.

B. GROUND WATER

Contaminated ground water is fresh ground water which contains free phase products, measurable concentrations of dissolved phase volatile organic constituents or other dissolved constituents in excess of the natural background water quality. Ground water contaminated in excess of the New Mexico Water Quality Control Commission (WQCC) ground water standards or natural background water quality will require remediation.

III. SOIL AND WATER SAMPLING PROCEDURES

Below are the sampling procedures for soil and ground water contaminant investigations of *unlined surface impoundments* that have received RCRA Subtitle C exempt oil field exploration and production wastes. Unlined surface impoundments that have received non-exempt RCRA wastes are not characteristically hazardous according to RCRA regulations.

A. HIGHLY CONTAMINATED OR SATURATED SOILS

The following method is used to determine if soils are highly contaminated or saturated:

1. Physical Observations

Study a representative sample of the soil for observable free petroleum hydrocarbons or immiscible phases and gross staining. The immiscible phase may range from a free hydrocarbon to a sheen on any associated aqueous phase. A soil exhibiting any of these characteristics is considered highly contaminated or saturated.

B. UNSATURATED CONTAMINATED SOILS

The following methods may be used for determining the magnitude of contamination in unsaturated soils:

1. Soil Sampling Procedures for Headspace Analysis

A headspace analysis may be used to determine the total volatile organic vapor concentrations in soils (ie. in lieu of a laboratory analysis for benzene and BTEX but not in lieu of a TPH analysis). Headspace analysis procedures should be conducted according to OCD approved industry standards or other OCD-approved procedures. Accepted OCD procedures are as follows:

a) Fill a 0.5 liter or larger jar half full of sample and seal the top tightly with aluminum foil or fill a one quart zip-lock bag one-half full of sample and seal the top of the bag leaving the remainder of the bag filled with air.

b) Ensure that the sample temperature is between 15 to 25 degrees Celsius (59-77 degrees Fahrenheit).

c) Allow aromatic hydrocarbon vapors to develop within the headspace of the sample jar or bag for 5 to 10 minutes. During this period, the sample jar should be shaken vigorously for 1 minute or the contents of the bag should be gently massaged to break up soil clods.

d) If using a jar, pierce the aluminum foil seal with the probe of either a PID or FID organic vapor meter (OVM), and then record the highest (peak) measurement. If using a bag, carefully open one end of the bag and insert the probe of the OVM into the bag and re-seal the bag around the probe as much as possible to prevent vapors from escaping. Record the peak measurement. The OVM must be calibrated to assume a benzene response factor.

2. Soil Sampling Procedures For Laboratory Analysis

a. Sampling Procedures

Soil sampling for laboratory analysis should be conducted according to OCD approved industry standards or other OCD approved procedures. Information on specific industry standards may be obtained from the OCD. Accepted OCD soil sampling procedures and laboratory analytical methods are as follows:

i) Collect samples in clean, air-tight glass jars supplied by the laboratory which will conduct the analysis or from a reliable laboratory equipment supplier.
ii) Label the samples with a unique code for each sample.
iii) Cool and store samples with cold packs or on ice.
iv) Promptly ship sample to the lab for analysis following chain of custody procedures.
v) All samples must be analyzed within the holding time for the laboratory analytical method specified by EPA.

b. Analytical Methods

All soil samples must be analyzed using EPA methods, or by other OCD approved methods and must be analyzed within the holding time specified by the method. Below are laboratory analytical methods commonly accepted by OCD for analysis of soil samples analyzed for petroleum related constituents. Additional analyses may be required if the impoundment has been used for anything other than petroleum based fluids or produced water.

i) Benzene, toluene, ethylbenzene and xylene
EPA Method 602/8020
ii) Total Petroleum Hydrocarbons
EPA Method 418.1, or;
EPA Method Modified 8015

C. GROUND WATER SAMPLING

If an investigation of ground water quality is deemed necessary, it should be conducted according to OCD approved industry standards or other OCD-approved procedures. Information concerning specific industry standards may be obtained from the OCD. The following methods are standard accepted OCD methods which can be used to sample and analyze ground water at RCRA exempt sites (Note: The installation of monitor wells is not required if the OCD approves of an alternate ground water investigation or sampling technique):

1. Monitor Well Installation/Location

One monitor well should be installed adjacent to and hydrologically down-gradient from the unlined surface impoundment to determine if protectable fresh water has been impacted by the disposal activities. Additional monitor wells, located up-gradient and down-gradient of the impoundment, may be required to delineate the full extent of ground water contamination if ground water near the pit has been found to be contaminated.

2. Monitor Well Construction

a) Monitor well construction materials should be:
i) Selected according to industry standards;

ii) Chemically resistant to the contaminants to be monitored; and
iii) Able to be installed without the use of glues or adhesives.

b) Monitor wells should be constructed according to OCD approved industry standards to prevent migration of contaminants along the well casing, and with a minumun of five feet of well screen above the water table to accommodate seasonal fluctuations in the static water table.

3. Monitor Well Development

When ground water is collected for analysis from monitoring wells, the wells should be developed prior to sampling. The objective of monitor well development is to repair damage done to the formation by the drilling operation so that the natural hydraulic properties of the formation are restored and to remove any fluids introduced into the formation that could compromise the integrity of the sample. Monitoring well development is accomplished by purging fluid from the well until the pH and specific conductivity have stabilized and turbidity has been reduced to the greatest extent possible.

4. Sampling Procedures

Ground water should be sampled according to OCD accepted standards or other OCD approved methods. Samples should be collected in clean containers supplied by the laboratory which will conduct the analysis or from a reliable laboratory equipment supplier. Samples for different analyses require specific types of containers. The OCD or the laboratory can provide information on the types of containers required for sample collection. The following procedures are accepted by OCD as standard sampling procedures:

(a) Monitor wells should be purged of a minimum of three well volumes of ground water using a clean bailer prior to sampling to ensure that the sample represents the quality of the ground water in the formation and not stagnant water in the well bore.

(b) Collect samples in appropriate sample containers containing the appropriate preservative for the analysis required. No bubbles or headspace should remain in the sample container.

(c) Label the sample containers with a unique code for each sample.

(d) Cool and store samples with cold packs or on ice.

(e) Promptly ship sample to the lab for analysis following chain of custody procedures.

(f) All samples must be analyzed within the holding times for the laboratory analytical method specified by EPA.

5. Ground Water Laboratory Analysis

Samples should be analyzed for potential ground water contaminants contained in the waste stream, as defined by the New Mexico Water Quality Control Commission (WQCC). All ground water samples must be analyzed using EPA methods, or by other OCD approved methods and must be analyzed within the holding time specified by the method. Below are OCD accepted laboratory analytical methods for analysis of ground water samples analyzed for petroleum related constituents. Additional analyses may be required if the impoundment has been used for anything other than petroleum based fluids or produced water.

a. Analytical Methods

i.) Benzene, Toluene, Ethylbenzene and Xylene
- EPA Method 602/8020

ii) Major Cations and Anions
- Various EPA or standard methods

iii.) Heavy Metals
- EPA Method 6010, or;
- Various EPA 7000 series methods

iv.) Polynuclear Aromatic Hydrocarbons
- EPA Method 8100

IV. REMEDIATION

The following discussion summarizes alternatives for remediation of contaminated soil and ground water as defined in Section II.A. and II.B. All procedures used are to be approved by OCD prior to commencement of remediation activities. Separate OCD-approval for remediation is not required if OCD has approved a closure plan which includes the site remediation technique for a particular site. All procedures which deviate from the closure plan, however, must be approved by OCD prior to commencement of remediation activities.

In lieu of remediation, OCD may accept an evaluation of risk which demonstrates that the remaining contaminants will not pose a threat to present or foreseeable beneficial use of fresh waters, public health and the environment.

1. Contaminated Soils

Highly contaminated/saturated soils and unsaturated contaminated soils exceeding the standards described in Section II.A.2.b. should be either:

(a) Excavated from the ground until a representative sample from the walls and bottom of the excavation is below the contaminant specific remediation level listed in Section II.A.2.b or an alternate OCD approved remediation level, or;

(b) Excavated to the maximum depth and horizontal extent practicable. Upon reaching this limit a sample should be taken from the walls and bottom of the excavation to determine the remaining levels of soil contaminants, or;

(c) Treated in place, as described in Section IV.A.2.b.ii. - Treatment of Soil in Place, until a representative sample is below the contaminant specific remediation level listed in Section II.A.2.b, or an alternate OCD approved remediation level, or;

(d) Managed according to an OCD-approved alternate method.

2. Soil Management Options

All soil management options must be submitted to and approved by OCD prior to commencement of remediation activities. The following is a list of options for either on-site treatment and off-site treatment and/or disposal of contaminated soils:

a. Disposal

Excavated soils may be disposed of at an off-site OCD approved facility.

b. Soil Treatment and Remediation Techniques

i. Landfarming

Onetime applications of contaminated soils may be landfarmed on location by spreading the soil in an approximate six inch lift within a bermed area. Only soils which do not contain free liquids can be landfarmed. The soils should be disked regularly to enhance biodegradation of the contaminants. If necessary, upon approval by OCD, moisture and nutrients may be added to the soil to enhance aerobic biodegradation.

In some high risk areas an impermeable liner may be required to prevent leaching of contaminants into the underlying soil.

Landfarming sites that will receive soils from more than one location are considered centralized sites and must be approved separately by OCD prior to operation.

ii. Insitu Soil Treatment

Insitu treatment may be accomplished using vapor venting, bioremediation or other OCD approved treatment systems.

iii. Alternate Methods

The OCD encourages alternate methods of soil remediation including, but not limited to, active soil aeration, composting, bioremediation, solidification, and thermal treatment. Use of alternate methods must be approved by OCD prior to implementation.

B. GROUND WATER REMEDIATION

1. Remediation Requirements

Ground water remediation activities will be reviewed and approved by OCD on a case by case basis prior to commencement of remedial activities. When contaminated ground water exceeds WQCC ground water standards, it should be remediated according to the criteria described below.

a. Free Phase Contamination

Free phase floating product should be removed from ground water through the use of skimming devices, total-fluid type pumps, or other OCD-approved methods.

b. Dissolved Phase Contamination

Ground water contaminated with dissolved phase constituents in excess of WQCC ground water standards can be remediated by either removing and treating the ground water, or treating the ground water in place. If treated waters are to be disposed of onto or below the ground surface, a discharge plan must be submitted and approved by OCD.

c. Alternate Methods

The OCD encourages other methods of ground water remediation including, but not limited to, air sparging and bioremediation. Use of alternate methods must be approved by OCD prior to implementation.

V. TERMINATION OF REMEDIAL ACTION

Remedial action may be terminated when the criteria described below have been met:

A. SOIL

Contaminated soils requiring remediation should be remediated so that residual contaminant concentrations meet the recommended soil remediation level for a particular site as specified II.A.2.b. Termination of remedial action will be approved by OCD upon a demonstration of completion of remediation as described above.

B. GROUND WATER

A ground water remedial action may be terminated if all recoverable free phase product has been removed, and the concentration of the remaining dissolved phase contaminants in the ground water does not exceed New Mexico WQCC water quality standards or background levels. Termination of remedial action will be approved by OCD upon a demonstration of completion of remediation as described in above.

If the water quality standards cannot practicable be attained, an evaluation of risk may be performed and provided to OCD for approval showing that the remaining contaminants will not pose a threat to present or foreseeable beneficial use of fresh waters, human health and the environment.

VI. FINAL CLOSURE

Upon termination of any required soil remedial actions (Section V.) an unlined surface impoundment may be closed by backfilling, contouring to provide drainage away from the site and revegetating the site.

VII. CLOSURE REPORTS

Closure plans should provide a schedule for reporting the results of all closure activities.

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Roswell District Office
1717 West Second Street
Roswell, New Mexico 88201-2019

IN REPLY
REFER TO:

6514 (06016)

March 8, 1994

Dear Committee Member:

Attached are the summary minutes of the December 10, 1993, meeting of the Southeast New Mexico Playa Lakes Coordinating Committee and a copy of the approved Work Statement concerning analysis of literature and research data.

Since that time several changes have occurred and it now appears that the Service Center will be unable to fund this project. However, the Bureau is continuing to seek other avenues to assist with funding and we will advise you as soon as we know something further.

The U.S. Fish & Wildlife Service has received approval to proceed with a caged-mallard study on Laguna Toston. As referenced in their memorandum of February 28, 1994, copy attached, a summary report of findings will be made available to all members of the Committee upon completion.

We will keep you apprised of any information regarding the literature search/review as it is available.

Sincerely,

Leslie M. Cone

Leslie M. Cone
District Manager

3 Attachments:
1 - Summary Minutes (6 pp)
2 - Work Statement (2 pp)
3 - Memorandum (1 p)

SUMMARY MINUTES
SOUTHEAST NEW MEXICO PLAYA COORDINATING COMMITTEE
DECEMBER 10, 1993

Leslie Cone, Roswell District Manager, opened the meeting and explained that she would be representing Acting State Director in the role of Chairman of the Committee and that Tim Kreager would represent her as the Planning Group presenter. All Committee members introduced themselves for the benefit of the audience (see attached list).

Ms Cone explained that this meeting would address the Draft Work Statement and its two primary objectives, and discuss the U.S. Fish & Wildlife Service (USFWS) Overview on Pathological Assistance and Procedures. Mr. Walt Case would also discuss an appeal received concerning the moist soil water issue.

Ms. Cone explained that an implementation plan had been developed, that funding had been requested, and that the Fish and Wildlife Service had been asked to do some necropsies.

Linda Glazer from the Wildlife Health Center gave a presentation and slideshow about the Center to the Committee. She explained that the National Wildlife Health Research Center, which was part of Region 8 of the Fish & Wildlife Service, moved to the National Biological Survey on 10/1/93. The Center's mission until that time had been to deal with species under USFWS stewardship, migratory and endangered species.

The National Wildlife Health Research Center is located in Madison, Wisconsin. It served USFWS by flyways and assignments with field personnel. With National Biological Survey (NBS), "clients" have expanded, now the whole Department of Interior (DOI). The Center is in a transition phase, trying to provide past services as well as learn its expansion role.

Ms. Glazer further explained that the Center is divided into Research, Disease ID and Control (diagnostic) and Training. Field Investigation groups coordinate disease monitoring, and control. Specimens are necropsied by four pathologists. There are legal cases as well as routine diagnostics. The Center is unable to do compound analyses but can do heavy metals, and many chemical tests.

The Center has computer data bases that record information from the diagnostic facility which are available to other entities.

Ms. Glazer asked if there were any questions from the audience.

Ms. Cone asked about protocol required; if there was an outline showing chain of custody that could be provided to other sources if used for comparisons?

Ms. Glazer explained that the legal protocols were available and that they had developed protocol of procedures done on carcasses received from this area in looking for salt toxicosis in wildlife. Will work with other labs if requested.

It was asked if within the current level of funding is the Center able to do a specific number of necropsies.

Ms. Glazer explained that she could not give a specific number, that there was a limit on funding and time involvement at this time. If additional funding were provided, additional work could be done.

Mr. Piatt - Are you capable of providing description of collection techniques so that local entities could collect specimen in the same manner so that results could be viewed with specificity/validity.

Glazer - Outline is available, bottom line is get to laboratory in best possible condition as soon as found.

Mr. Piatt then asked if the Center is capable of doing VOC analyses and Ms. Glazer replied that they were not, that possibly Pawtuxent could accommodate. If using other Laboratories should check with their procedures as well.

Marvin Watts asked how many other labs there were nationwide for necropsies.

Ms. Glazer stated that most State diagnostic facilities would probably accept samples and did not know about the capabilities of labs or focus of mission at other State facilities.

There are other facilities with expertise, but not all have diagnostic capabilities.

Mr. Watt stated that he felt it would be good/necessary to have two analyses from the same carcass. Ms. Glazer explained that this was not possible to do. Must split group of samples prior to necropsy in order to secure integrity of carcass.

Mr. Watt stated that he felt controls were needed to provide assurance that findings are alike with duplicate sampling.

To the question as to whether any carcasses from this area had been done in this Center, Ms. Glazer responded that there was a legal case pending which she was not at liberty to discuss.

Mr. Watts - asked if there didn't have to be a baseline within the live birds, (levels of salt) and Ms. Glazer stated that there were not a great deal of controls available/known on individual areas.

Mr. Watts asked if the affect of chloride on birds is known. He explained that any salt is not pure; that there is more than one type of salts. Also have potassium chloride in this area. Brine in this area is going to contain both potassium and sodium chloride. There will be a variation in lakes, some have primarily potassium, some primarily sodium chloride . Important to find out what tolerances of potassium and chlorides as well as other variables. We have to know what baseline tolerances of particular birds are; feels it varies substantially. Must have controls for brine in specific areas.

Ms. Glazer stated that a research study would need to be done. Research Center can tell primary cause of mortality in particular bird.

Mr. Asa Rogers asked if the Center can differentiate between deaths in/out water?

Ms. Glazer replied that it must be absorbed into blood from digestive system. Possibly through the feathers/lungs. If died out of brine, might have different levels of salt. If salt encrusted, may get salt in brain. Feels that lungs should be tested.

It was asked if the necropsy could distinguish between hydration/ingestion/osmosis? Ms. glazer stated that they document dehydration and depending on collection, may be able to distinguish.

Mr. Yates stated that perhaps a bird with another disease might survive on lake but die from salt toxicosis due to exposure.

Ms. Glazer replied that a combination of factors will need to be considered. Possible if sick, bird may not be able to leave area.

Mr. Yates asked about other labs/info sharing and was told that they had worked with other labs in other areas, but not on this specific necropsy.

Mr. Thayer asked if they would do split samples? Response was yes, base data is needed from healthy birds.

Ms. Glazer explained that she had visited Toston, Gatuna, Lane Salt Lake and one below the IMC mine. Only carcasses found were at least a year old.

Ms. Glazer clarified that diagnostics would not be involved in predisposition. This must be done in separate research division.

Mr. Piatt mentioned that there was much concern re control. As part of protocol would there be a report on quality control assurance.

Ms. Glazer stated that they did not routinely supply this info in a diagnostic report.

Ms. Cone asked what action the Committee would like to take regarding using the Fish & Wildlife Service's existing capabilities/funding.

Motion was made to pursue this avenue and to continue further with additional funding from other sources if/when available. The motion was seconded and passed by acclamation.

Mr. Tim Kreager then discussed the Statement of Work (SOW) which was discussed in the previously approved Action Plan.

He explained that a SOW had been prepared for the literature review. It includes the approximate funding felt necessary to encompass the SE NM playa area.

As SOW developed, worked through Denver Service Center. The Service Center may have funding and if approved will do the work. Mr. Kreager asked if there were any comments on this Statement of Work.

Mr. Piatt suggested that on first page, #2, subparagraph b., remove the word "spatial".

Under Background, - 1st sentence, change to "oil & gas", rather than "fluid mineral".

Page 2, first paragraph, remove "saline" and substitute "mineralized".

Mr. Yates asked who SC was and Ms. Cone explained that it was the BLM Denver Service Center.

It was asked who is "a contractor", and it was explained that there is a contractor on call to work for the Service Center.

Motion made and seconded to accept the Statement of Work with above changes.

It was asked if the identity of the Contractor was known and response was Dynamac.

It was stated that the Prospectus was available.

It was asked if other literature was available to be added and Mr. Kreager explained that BLM would incorporate any sent. The SC had previewed our request and estimated 600 hours of research, with the final product to be ready sometime in 1995.

There were no further comments and the motion to accept the Statement of Work carried.

Mr. Walt Case, vice-president of the industry group participating, addressed the Committee and explained that they had experienced problems and would like to present same and obtain resolutions.

He explained it was necessary to obtain water rights to establish moist soil project. They have filed a request for diversion. A protest was filed with State Engineer's office and have received directive to negotiate with protesting party for agreeable solution for three parties involved. Met with protestors and found that the protest was based on factors that have nothing to do with this effort.

Other motivation is concern that this is not beneficial use. Protest appropriately filed. Two options available, one is a hearing at State Engineer's office. If goes this route, New Mexico Potash has carried monetary burden and wants support from Committee re funding.

The have discussed negotiations and want stipulations as follows:

Maximum of 5 years or less for testing only.
Re-authorization after 5 years.
8 acre-feet per year

This in no way reduces protestants right to further protest on future diversion of water rights (non-beneficial use).

Recommend being authorized to work with State Engineer for quick resolution and appoint someone to advise Lea County political arena of happenings.

Mr.Watts - since wanting to determine success of research, should agree to go for five year period at 8-acre feet of water; should have indication of whether workable or not. If need to continue this project, would then go back and ask for authorization of what needed to do this project. At this time agree to five years and should end this protest and proceed.

Mr. Morrison made the motion to accept recommendation to proceed with negations. Motion seconded by Mr. Piatt and carried by acclamation.

Ms Fowler-Propst reported on USFWS's commitment for migratory bird permit - Permit package had been sent out. Mr.Rogers stated that the permit had not yet been received, that were still waiting on the State. Mr. Morrison stated that he would check on this.

Ms. Cone stated that if going to use other carcasses must also have permit.

Mr. Yates asked who were the parties for handling and was told this would be worked out between BLM/FWS.

Mr. Rogers stated that the hover craft was working well.

Ms. Cone stated that a future meeting would be scheduled if/when necessary and Committee members notified.

Mr. Yates - Would committee entertain proposal from Industry to collect birds and participate at another facility and was told yes.

WORK STATEMENT **As Accepted: 12/10/94**

PURPOSE

The purpose of this contract is to obtain the services of a contractor experienced in review and analysis of existing literature and research data. A summary and analysis of existing historical information on natural and human influences on the ecology of playa lakes in the Potash Enclave District of Eddy and Lea Counties, New Mexico, is the required final product.

OBJECTIVES

The objectives of this contract are to:

(1) Prepare a bibliography and summary of the existing literature on the geology, hydrology, water quality, playa ecology, and historic and current land uses in the potash region as related to the suitability of playas as wildlife habitat.

(2) Analyze existing information to:

A. define long-term trends in factors affecting playas as wildlife habitat:

i. hydrologic regime (e.g. ground-water levels, ground-water movement, extent of perennial surface water, ground-water recharge and discharge zones, etc.).
ii. water quality.
iii. climate.
iv. playa ecology (e.g. soil development, vegetation succession, etc.).

B. Define the variability among playas in the region in terms of their suitability as wildlife habitat (see factors in A above).

C. Describe seasonal and diurnal variability in hydrologic regime and water quality.

D. Identify possible causes for observed trends, especially the impacts of human activities versus natural conditions.

BACKGROUND

Intensive potash mining and oil and gas development have taken place for over 60 years in the Potash Enclave of southeast New Mexico. The area covers approximately 366,000 acres in the playa lake region of Eddy and Lea Counties. Approximately 1,700 playa lakes in this semi-arid environment provide important habitat for numerous wildlife species. Recently, representatives of state and federal agencies and the potash industry, have become increasingly concerned about the environmental effects of past and present uses of playas in the region.

Some playa lakes are naturally mineralized due to geologic sources of dissolved salts. Mineral development results in additional inputs of salts and other substances. Human use has affected the hydrologic regime of the playas, although natural flucuations also occur.

Waterfowl mortality in certain playa lakes in this region has become increasingly apparent in recent years. The question is whether the mortality is a result of environmental contamination of the playas, or is a naturally occurring event during annual migration.

A large volume of existing information is available from the BLM and other sources which address the geology, hydrology, water quality, playa ecology, climatic influences, and environmental impacts by industry in the Potash Enclave. Existing information could provide a historic perspective of conditions that directly or indirectly affect the suitability of the playas as wildlife habitat.

GOVERNMENT-FURNISHED PROPERTY

(1) Documents relevant to the subject which are available from BLM and cooperating agencies. A bibliography of these sources has been prepared.

(2) Relevant maps, data, and other unpublished information available from BLM and cooperating agencies.

DELIVERABLES

Draft Report Due Date: 30 SEP 94

Review Period: 90 days

Final Report Due Date: 30 MAR 95

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Suite D, 3530 Pan American Highway, NE
Albuquerque, New Mexico 87107

February 28, 1994

Memorandum

To: District Manager, U.S. Bureau of Land Management, Roswell District Office, Roswell, New Mexico

From: State Supervisor, U.S. Fish and Wildlife Service, New Mexico Ecological Services State Office, Albuquerque, New Mexico

Subject: Notification of Upcoming Study on Laguna Toston

As we spoke about during our telephone conversation of January 5, 1994, the U.S. Fish and Wildlife Service (Service) is committed to answering questions concerning the mortality of migratory birds at Laguna Toston. Although I think we agree on the necessity of continuing to pursue funding for the much more extensive investigations considered by the Southeastern New Mexico Playa Lakes Coordinating Committee, the immediate questions at Laguna Toston should be answered. To that end, and as we discussed on January 5, 1994, this office will fund and participate in a caged-mallard study on Laguna Toston. The study will be performed over one 24-hour period and is tentatively scheduled to begin on Thursday March 3, 1994. The purpose of the study is to determine the cause(s) of mortality of migratory waterfowl at Laguna Toston. The study will be conducted by researchers from the National Biological Survey's National Wetlands Research Center in Lafayette, Louisiana. A summary report of the study's findings will be completed by August 1994, and will be made available to all members of the Southeast New Mexico Playa Lakes Coordinating Committee.

We are notifying you at this late date because we received final approval to fund this study only today. If you or others wish to come by and observe, please be aware that the number of observers should be kept at a minimum so as to not compromise the outcome of the research in progress. If you should have any questions regarding this research effort, please contact me at (505) 883-7877.

Jennifer Fowler-Propst