NM1 - 6

GENERAL CORRESPONDENCE

YEAR(S):
2003

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

✓ Telephone ____ Personal Time 3:16 pm Date 11-20-03

Originating Party: Dave Parsons
Other Parties: Martyne

Subject: Hazardous Waste cleanup at CRI by Navajo
Started this morning per message with Dave from 11-19-03 and spoke to Dave at about 9:40 this morning they were all out their but had not yet begun

Discussion: 4 Rolloffs with 17 to 18 Cy each

Charlie Plymel took 5 Samples From the Side walls and bottom.
Paul Skeehan was there and took Photos and observed For Part of the Afternoon

Conclusions or Agreements:

Distribution

Signed Martyne J Kieling

P.O. Box 388
Hobbs, NM 88241-0388
Phone: (505) 393-1079
Fax: (505) 393-3615

Controlled Recovery, Inc.

Fax

To:	Martyne Kieling	From	Ken Marsh
Fax	505-476-3462	Date:	11-18-03
Phone		Pages:	4
Re:			

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

CRI

CONTROLLED RECOVERY INC.

P.O. BOX 388, HOBBS, NM 88241
(505) 393-1079 • FAX (505) 393-3615

November 18, 2003

Martyne Kieling
NMOCD
1220 South St. Francis Drive
Santa Fe, NM 87505

Fax: 505-476-3462

Navajo Refining, Artesia, New Mexico inadvertently shipped 3 loads of material to CRI which they believe may contain a listed hazardous waste.

CRI has reported this to NMOCD Hobbs (message left on Paul Scheely voice mail, no return call has been received, CRI left our phone number on NMOCD emergency pager, no return call, phone call to Martyne Kieling, NMOCD, Santa Fe. CRI reported to NMED Roger Houston, Santa Fe. Phone log attached.

Attached please find work plan for removal of the material. CRI will notify NMOCD by phone for time and date of starting of work plan (possible 11-19-03).

CRI requests a NMOCD representative be present.

Please call if I may provide additional information.

Please advise if further reporting is required.

Sincerely,

Ken Marsh

HAZARDOUS WASTE REMOVAL WORKPLAN
NOVEMBER 18, 2003

On November 17, 2003, Navajo Refining Company (Navajo) discovered that 3 roll-off boxes of mixed Hazardous waste (KO49-Slop Oil Solids, KO50-Heat Exchanger Solids, KO51-API Solids, FO37-Primary Refinery Sludge and FO38-Secondary Refinery Sludge) and non-hazardous waste were inadvertently shipped to the Controlled Recovery, Inc. (CRI) landfill in Lea County. CRI's landfill is an OCD permitted facility for non-hazardous waste. It should be noted that Navajo uses a dedicated cell at this landfill for our non-hazardous waste that **only** Navajo waste is allowed to enter. Upon learning of this situation, Darrell Moore and Charlie Plymale of Navajo made a trip to CRI's facility to assess the situation and produce a plan of action to remove this waste. The following is a work plan to accomplish this.

The 3 roll-off bins contained approximately 30 tons of waste combined and were dumped on the east end of Navajo's cell. Navajo will place empty roll-off bins along this side of the cell and use a front end loader to remove the hazardous waste plus any other waste that has come in contact with the hazardous waste. It is estimated from visual inspection that this will require the removal of 50-80 tons of material including the original waste. These roll-off bins will be tagged with all appropriate hazardous waste labeling

Once the material has been removed, three TCLP samples will be collected, two along the floor of the cell beneath where the hazardous waste was dumped and one in the east sidewall. This sidewall is the wall the waste is contacting presently. This sampling program should give a high level of confidence that the hazardous waste and all its constituents have been removed. If the sampling detects additional hazardous waste, more material will be removed in the area of the detection. Another TCLP sample will be collected. This procedure will be repeated until a non-hazardous sample is obtained.

The removed material will then be shipped to a permitted hazard waste disposal facility. Samples of the waste have already been collected to allow us to profile this waste into one of our approved hazardous waste disposal facilities. Once we have determined where the waste will be shipped, it will be manifested by Navajo personnel and shipped on hazardous waste permitted trucks to the appropriate facility. Copies of all related manifests will be mailed to the appropriate state agencies.

Post-it® Fax Note 7671	Date 11/18/03	# of pages ▶ 1
To Ken Marsh	From Darrell Moore	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # 325 393 3615	Fax # 505 746-3823	

NOVEMBER 17, 2003
PHONE LOG

10:20 A.M.	CRI (Ken Marsh) received call from Navajo (Darrell Moore).
10:36 A.M.	CRI (Ken) left message for Martyne Kieling.
10:39 A.M.	CRI (Ken) left message for Paul Scheely.
10:40 A.M.	CRI (Ken) left phone number on OCD (Hobbs) emergency pager.
11:52 A.M.	Martyne returned CRI call.
2:10 P.M.	CRI left message for Martyne.
2:50 P.M.	Martyne returned CRI call.
12:45 P.M.	CRI (David Parsons, Ken Marsh) met with Navajo (Darrell Moore, Charlie Plymale) at CRI site to inspect site and warning tape barriers installed.

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

✓ Telephone ____ Personal Time 3:00 Date 11/17/03

Originating Party: Darrel Moore

Other Parties: Mutye Kielig

Subject: Hazardous waste sent to CRI By Mistake.

Discussion: Will Submit a. Cleanup Removal & Testing Plan tomorrow. Hope to Start Cleanup on Wed 11/19/03

NMED should take the lead on this. And Must approve the plan. Submit to them as well as OCD.

Wastes were K-049 K-050 K-051
F-037 F-038

It was 2 Rolloff Bins that went in to CRI
Hope to excavate 5-7 Rolloff Bins.

Conclusions or Agreements:

Distribution

Signed Mutye J Kielig

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

✓ Telephone ____ Personal Time ~~2~~ 2:57pm Date 11/17/03

Originating Party Ken Marsh 631-6979 Other Parties Martyne Kieling
Left Message 2:00 pm Returned call at 2:50pm

Subject Hazardous waste at CRI
It looks to be 2 truck loads at 8 to 10 cy of F & K Listed waste. It is Segregated

Discussion CRI & NAVAJO will prepair an Excavation & removal & Testing. Plan For our Review.

This plan Must Be Submitted to Hazardous Waste

Conclusions or Agreements

Distribution Signed

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

✓ Telephone ____ Personal Time 10:50 Date 11/17/03

Originating Party Ken Marsh Other Parties Martyne Kieling
Ed Martin
Jack Ford

10:20 Call From Darrel Moore
Hazardous waste into 3 Shipments to CRI
Truck Driver & Darrel & Charlie.

Subject T Post & Barricade tape
Quarter & Excavate and Remove
2 processing tanks. Shipped as Daff & Chloride Precipitation. Solids.
Paul Sheeley.
C

Discussion NMED - IS Being Notified. by Darrel Moore
on behalf of Navajo & CRI

Conclusions or Agreements

Distribution Signed

CRI

CONTROLLED RECOVERY INC.

P.O. BOX 388, HOBBS, NM 88241
(505) 393-1079 • FAX (505) 393-3615

November 11, 2003

Martyne Kieling
State of New Mexico
Oil Conservation Division
1220 South St Francis Drive
Santa Fe, New Mexico 87505

Dear Ms. Kieling,

We have been contacted by Commercial Exchange to accept *Tailings* from their centrifuge operations. We would like clarification on exempt status of this waste stream as we believe what is currently on location came from the adjacent refinery.

Thank you,

David Parsons

David Parsons.

CRI

CONTROLLED RECOVERY INC.

P.O. BOX 388, HOBBS, NM 88241
(505) 393-1079 • FAX (505) 393-3615

RECEIVED
AUG 25 2003
Environmental Bureau
Oil Conservation Division

August 20, 2003

Martyne Kieling
NMOCD
1220 S. St. Francis Drive
Santa Fe, New Mexico 87505

RE: Controlled Recovery, Inc. facility Lea County, New Mexico S/2 N/2 and N/2 S/2 Section 27, Township 20 South, Range 32 East.

Dear Ms Keiling,

CRI request approval to mix and stabilize liquid waste with soils to be placed in the solids pits. The mixing will take place on a site which is for future solid disposal. Upon excavation of the site any contaminated surface soil will be placed in the solid pit. All stabilized material will pass the paint filter test.

This is the process proposed by Randy Bayliss in his comments on closure costs for CRI.

Please call if I may provide additional information.

Sincerely

Ken Marsh

Photo 1. West entrance sign

Photo 2. Produced water tank area 14 – west skim tank.

Photo 3. Produced water tank area 14 – east skim tank.

Photo 4. Pit 15 – north of produced water off-loading area.

Photo 5. Pit 15 - north of produced water off-loading area

Photo 6. Pit -15 north of produced water off-loading area.

Photo 7. Area 14 Produced water receiving on south side of evaporation pond-13.

Photo 8.

Photo 9. Produced water receiving area-14.

Photo 10. Produced water receiving area-14 windsock.

Photo 11. Produced water pond 13B and 13C.

Photo 12. Produced water evaporation pit 13C and Produced water receiving area-17.

Photo 13. Truck washout area-16 south end.


Photo 14. Truck washout area-16 north end


Photo 15. Solids drying pit area 1,2, and 3. Looking east


Photo 16. Solids Drying pits 4 and 5. Looking north

Photo 17. Solids drying pits 5 and 6. Looking south

Photo 18. Produced water receiving area-17 on the south side of the evaporation pond 13.

Photo 19. Solids evaporation pit-7, 8, and 9. Looking west

Photo 20. Solids evaporation Pit –7 and Pit 9 looking west. Fluids appear to be seeping from the pits.

Photo 22. Solids evaporation pit 7. Looking east

Photo 23. Solids evaporation Pit-10 and Pit-11. looking east

Photo 24. Solids evaporation Pit-12. Looking east.

Photo 25. Evaporation Pond 12 and buffalo wallow with pecan trees.

Photo 26. Buffalo wallow with Pecan Trees.

Photo 27. Treating plant

Photo 28. Treating Plant receiving area has wind sock.

Photo 29. Solids pit.

Photo 30. Solids Pit.

Photo 31. Navajo solids pit-50. Looking east

Photo 32. Navajo solids pit-50 east end.

Photo 33. Navajo solids Pit-50 east end.

Photo 34. Navajo solids Pit-50.

Photo 35. Solids Pit-50.

Photo 36. Solids Pit-50.

Photo 37. Solids Pit-50

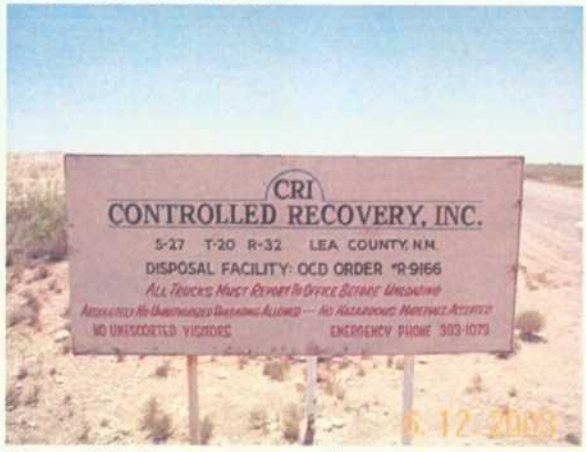

Photo 38. East entrance sign.

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

✓ Telephone ____ Personal Time 11:04 Date ~~6-09~~ 6-9-03

Originating Party: Martyne Kieling OCD

Other Parties: Lindsay Dyer Rhino Manager Diamond Back Disposal Services

Subject: Brewer Oil, Self Serve #1 Cleanup
Truck Loads to Rhino NMED cell #5
Truck Loads to CRI & unknown as to which Facility Permit.

Discussion: Father Steve Dyer is on site at the Brewer oil Self Serve #1 Cleanup. in Carlsbad.
May know where trucks un loaded at CRI.

Conclusions or Agreements

Distribution

Signed Martyne Kieling

Lea Land Inc.

Non-Hazardous Industrial
Waste Only Landfill

Mile Marker 64 U.S. Highway 62/180 East
Carlsbad, New Mexico 88220
Phone: (505) 887-4048 Fax: (505) 885-7640

June 3, 2003

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Martyne J. Kieling
Environmental Geologist
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

RE: Controlled Recovery Inc.
Hobbs, New Mexico

Dear Ms. Kieling:

Yesterday, it was brought to my attention by our Landfill Manager, Kin Slaughter, that a waste hauling truck had arrived at the landfill carrying a load of gasoline-impacted soil from a jobsite (Brewer Oil, Self Serve #1) in Carlsbad, New Mexico. The driver of the truck was carrying a waste manifest that indicated that the material was originating from the Brewer Oil site and was to be disposed at Controlled Recovery Inc.

We are very familiar with this site, since we had bid on the disposal of this material through another consultant who was unsuccessful in being awarded the bid. This is a gasoline station cleanup project through the UST Bureau of the NMED, Roswell, New Mexico. My contact there is Renee Romero (505-524-6046). I have also called Renee to inform her of this fact.

We feel CRI is in violation of their permit and should be held accountable.

If you have any questions, please call me at 713-968-6511. Thanks for your help.

Very truly yours,

Saralyn Hall

Saralyn Hall, P. E.
Environmental Manager

O F F I C E S

5100 Westheimer, #200
Houston, TX 77056
Phone: (713) 968-6511
Fax: (713) 968-6513

6070 Gateway East, #500C
El Paso, TX 79905
Phone: (915) 783-0114
Fax: (915) 775-9899

1300 West Main Street
Oklahoma City, OK 73106
Phone: (405) 236-4257
Fax: (405) 236-4261

STATE OF NEW MEXICO
ENERGY MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

✓ Telephone ____ Personal Time 3:00 Date 6-3-03

Originating Party: Martyne Kieling

Other Parties: Renee Romero 505-624-6123 PSTB Bureau NMED Roswell

Subject: Rhino is Doing the Hauling CDM; contract Truck loads of waste From Brewer oil Self Serve #1 Carlsbad 401 South Canal is going to CRI For LandFarming/Disposal one truck Load to go to Rhino Hobbs

Steve Dyer. Daniel Bordelli.

Discussion: LandFarm.

Renee is checking in to waste documentation with CDM and I will Be Checking CRI waste Manafests Nextweek

I will call Saralyn Hall and let Her know wee are Investigating.

Conclusions or Agreements

Distribution

Signed

Lea Land Inc.

Non-Hazardous Industrial
Waste Only Landfill

Mile Marker 64 U.S. Highway 62/180 East
Carlsbad, New Mexico 88220
Phone: (505) 887-4048 Fax: (505) 885-7640

June 3, 2003

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

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Environmental Geologist
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

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Hobbs, New Mexico

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Very truly yours,

Saralyn Hall

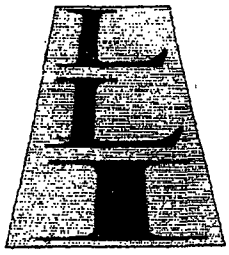
Saralyn Hall, P. E.
Environmental Manager

O F F I C E S

5100 Westheimer, #200
Houston, TX 77056
Phone: (713) 968-6511
Fax: (713) 968-6513

6070 Gateway East, #500C
El Paso, TX 79905
Phone: (915) 783-0114
Fax: (915) 775-9899

1300 West Main Street
Oklahoma City, OK 73106
Phone: (405) 236-4257
Fax: (405) 236-4261



Lea Land Inc.

Mile Marker 64, U.S. 62/180 East
Carlsbad, New Mexico 88220

Non-Hazardous
Industrial Waste Only
Landfill

Main Office: 1300 West Main, Oklahoma City, OK 73106
Phone: (405) 236-4257 - Fax: (405) 236-4261

FAX COVER

DATE: **06/03/03**

To:	Martyne Kieling	Fax:	505-476-3462
Company:	Oil Conservation Division	Phone:	505-476-3440

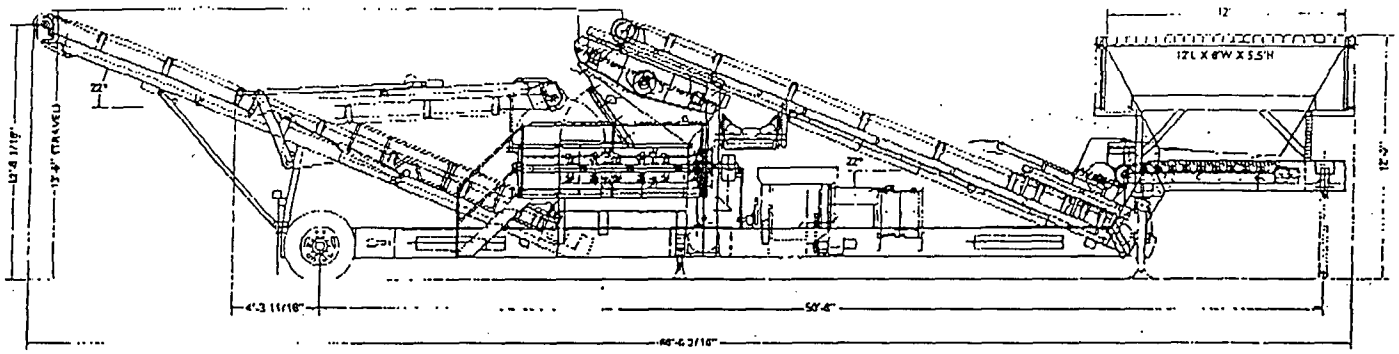
From: Saralyn Hall
713-968-6511
713-968-6513 (fax)

RE: **PROTEST – CONTROLLED RECOVERY INC.**

Total Number of Pages (including cover page): 2

PORTEC™ Construction Equipment Division INTRODUCES...

THE NEW MODEL 55 PUGMILL PLANT!



Patent Pending *Dimensions and Specifications are subject to change without notice.*

DESIGNED FOR:

- SOIL REMEDIATION
- HAZARDOUS WASTE DISPOSAL
- SOIL CEMENT STABILIZATION
- SLUDGE STABILIZATION
- MINING AGGLOMERATION
- CRUSHED STONE STABILIZED BASE

Featuring:

- 9 CUBIC YARD HOPPER
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- "MILL TYPE" SHREDDER
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- VIBRATING SCREEN 4'x8' SINGLE DECK
- PUGMILL 4'x6' TWIN SHAFT
- SIDE DISCHARGE CONVEYOR 24"x7'
- PRODUCT CONVEYOR 30"x25' w/POWERFOLD
- SELF CONTAINED DIESEL POWER

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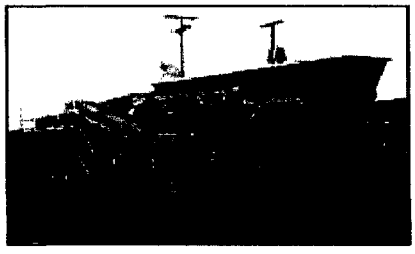


Pugmills are used to blend together one or more dry ingredients and/or liquid ingredients into a homogenous mixture. They were originally developed to mix an aggregate with a liquid bituminous material for a cold mix asphalt. Today they are used for a number of applications, including cold mix asphalt, cement treated base, soil remediation, mixing soil bentonite, etc.

The Kolberg design is a continuous mix pugmill. It includes two shafts, with paddles on each shaft, arranged in a SPIRAL pattern. The shafts are driven by one drive with a set of timing gears between the shafts.

The paddles, arranged in a spiral overlap pattern, enhance the quality of the mix. Kolberg pugmills are unique in that the paddles can be adjusted in/out and 'rotated' at 90 degree increments. This allows the operator to 'dial in' the amount of retention time (one row of paddles at a time) to create the perfect homogenous mix.

Max. feed size to the pugmill is 2". The max. clearance between the Kolberg Series 50 Pugmills can produce up to 650 tph, dependent upon material characteristics, feed rate, retention time in the mixing chamber and the quality of mix required.

Your authorized dealer can discuss specific application and requirement needs.

The Series 50 Pugmill offers: heavy-duty, quality construction; massive synchronized pugmill shafts mounted in an overlapped spiral curve for maximum mixing action; an optional material "dam gate" to enhance mix quality; an enclosed top to prevent material spillage, control dust and provide operator safety, as well as a hinged top to allow easy service access.

Kolberg pugmills also have a 'drop out' bottom for ease of service and routine maintenance.

Kolberg-Pioneer also offers support equipment including:
* bulk material silos

— Legend —

View Literature

View Multimedia

Click On An Icon Or Tab For More Info About A Subject.

PRODUCT SPECIALISTS

Alan Egge
Kolberg Product Manager
EMail: Alan Egge

Jodi Heirigs
Sales Engineer
EMail: Jodi Heirigs

KEY ENERGY SERVICES, INC.
720 S. TEXACO ROAD
HOBBS, N.M. 88240
PHONE: 505-393-3180
FAX: 505-391-9895

FEBRUARY 11, 2003
CONTROLLED RECOVERY, INC.
HOBBS, NEW MEXICO

ATTN: KEN MARSH

RE: HALFWAY DISPOSAL SITE
S/2 N/2 OF
SEC 27 T-20S R-32E
LEA COUNTY, NEW MEXICO

CLOSURE PLANS:

WE WISH TO SUBMIT OUR BID TO FURNISH EQUIPMENT, LABOR AND MATERIALS TO PERFORM WORK AS FOLLOWS ON SUBJECT LOCATION:

TASK 6: MOVE SUMP MATERIAL, DRILLING MUD, DRILL CUTTINGS, WORK OVER SOLIDS, AND OTHER NON-HAZARDOUS OILFIELD WASTES FROM PITS 2A, B, C, 4, 5, AND 6 TO PIT 3D. SCRAPE RESIDUE FROM FROM PITS 3A, 3B, AND 3C AND HAUL TO PIT 3D. ALL LIQUIDS OR VISCOUS MATERIALS WILL BE MIXED WITH DRY SOLIDS BEFORE HAULING. PITS WILL THEN BE PUSHED IN AND COVERED WITH 12 " CALICHE AND COURSE NATIVE MATERIAL AND CONTOURED TO PREVENT WIND AND WATER EROSION.

BID PRICE (TAX EXCLUDED) $ 10, 231.00

TASK 7: MOVE LINER AND MATERIAL FROM PIT 16 TO PIT 3D, APPROX. 4036 CUBIC YARDS OF SEDIMENT AND PARIFIN.

BID PRICE (TAX EXCLUDED $ 4, 122.80

TASK 8: MOVE LINER AND MATERIALS FROM PITS 1A AND 1B TO PIT 3D.

BID PRICE (TAX EXCLUDED) $ 4, 655.00

TASK 9: MOVE MATERIAL FROM PITS 7, 8, 9, 10, 11, AND 12 CONTAINING SUMP MATERIAL, DRILLING MUD, DRILL CUTTINGS, WORK OVER SOLIDS, AND OTHER NON-HAZARDOUS OILFIELD WASTES TO PIT 3D. ALL LIQUIDS AND VISCOUS MATERIAL WILL BE MIXED WITH DRY SOLIDS BEFORE HAULING.

BID PRICE (TAX INCLUDED) $ 22, 756.00

TASK 10: COVER PIT 3D WITH 12" CALICHE AND NATIVE MATERIALS. CONTOUR AREA TO PREVENT WIND AND WATER EROSION.

BID PRICE (TAX EXCLUDED)	$ 2, 872.55

TASK 11: MOVE MATERIALS, LINER, AND NET FROM PIT 13 TO AREA 15. CAP SOLIDS AREA 15 WITH 12'' CALICHE AND NATIVE MATERIAL. CONTOUR AREA TO PREVENT WIND AND WATER EROSION.

BID PRICE (EXCLUDING TAX)	$ 21, 182.65

BID PRICE FOR ALL TASKS	$ 65, 820.00
TAX	4, 031.48
TOTAL	$ 69, 851.48

SINCERELY,

Bill Dyer

BILL DYER
MANAGER
KEY ENERGY SERVICES, INC.

BD/sp

THANK YOU FOR THE OPPORTUNITY TO BID ON THE ABOVE PROJECT

CRI will close pit #16 (lined storage pit) by October, 2004.

CRI will close storage pond #13 (lined storage pond) by October, 2004.

CRI will explore the introduction of mechanical stabilization of liquids which will reduce if not eliminate the settling and drying ponds now in use. This will further reduce the closure cost.

CRI will provide financial assurance of $50,000.00 by April 15, 2003.

3-6-03 #16

3-6-03 #16

3-6-03 #13

CLOSURE PLAN

CRI
CONTROLLED RECOVERY INC.
P.O. BOX 388, HOBBS, NM 88241 (505) 393-1079

September 1, 2000

Oil Conservation Division
Santa Fe, NM

Re: Controlled Recovery, Inc.
S/2, N/2 and the N/2, S/2 Section 27, Township 20 S, Range 32 E, NMPM,
Lea County, New Mexico

Closure Plan

This plan is submitted for compliance with OCD Rule 711 and Order R9166 to close the facility to protect public health and the environment.

Task 1) Lock gates, post closed, no trespassing signs. No new material will be acceptable.

Task 2) Drain water from produced water receiving tanks, pits 1a and 1b (lined skim pits) to 3a. Remove residue from 3-750 bbl. tanks to 2a and 2b for drying.

Task 3) Remove oil from treating plant to purchaser, drain all lines, remove untreated product to Pit 13.

Task 4) Allow fluids to evaporate and dry.

Task 5) Return unused boiler fuel to supplier.

Task 6) Push pits 2 a, b, c, 4, 5, 6, which have contained sump material, drilling mud, drilling cuttings, work over solids, and other non-hazardous oilfield wastes into 3d. Scrape residue from 3a, 3b, and 3c, which have contained produced water and wash water, and move to 3d. Any liquids or viscous material will be mixed with dry solids. Soil borings will be conducted in pits 3a, 3b, and 3c to determine vertical extent of hydrocarbons.

Task 7) Move liner and material from 1a and 1b to 3d.

Task 8) Move liner and materials from 16, which has contained bottom sediment with paraffin, to 3d.

Task 9) Move 7, 8, 9, 10, 11, and 12, which have contained sump material, drilling mud, drilling cuttings, work over solids, and other non-hazardous oilfield wastes, to 3d. Any liquids or viscous material will be mixed with dry solids.

Task 10) Cover 3d with 12" of caliche and coarse native material, contoured to prevent wind and water erosion.

Task 11) Move material, liner, and nets from 13, which has contained bottom sediment and water, to solids area. Any remaining liquids or viscous material will be mixed with dry solids.
Cap solids area with 12" caliche and coarse native material. Contoured to prevent wind and water erosion.

Task 12) Conduct NORM survey.

Task 13) Record with Lea County clerk a notice that the site has been used as an oilfield disposal and treatment facility.

Task 14) OCD to inspect and release financial assurance obligation within 30 days of inspection.

#1 SWD

#2 Jet Pit

#3 Solids Pit

#4, 5, 6, 7, 8, 9, 10, 11, and 12 Evaporation areas

#13 Storage Pond above ground

#14 Treating Plant (See attachement)

#15 Solids Pit

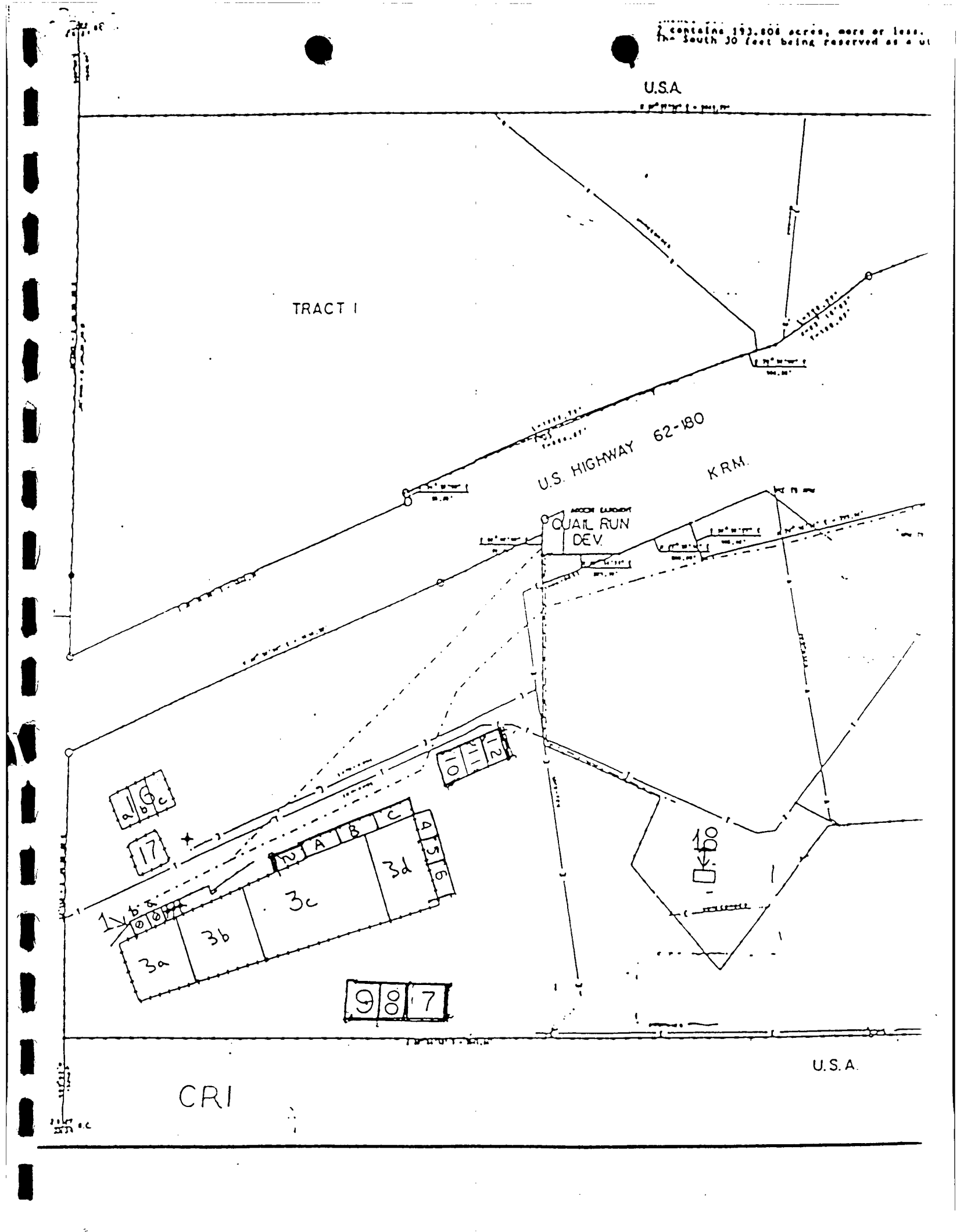
#16 Storage

#17 Storage

#18 Security

#19 Laboratory & Office

#20 Boiler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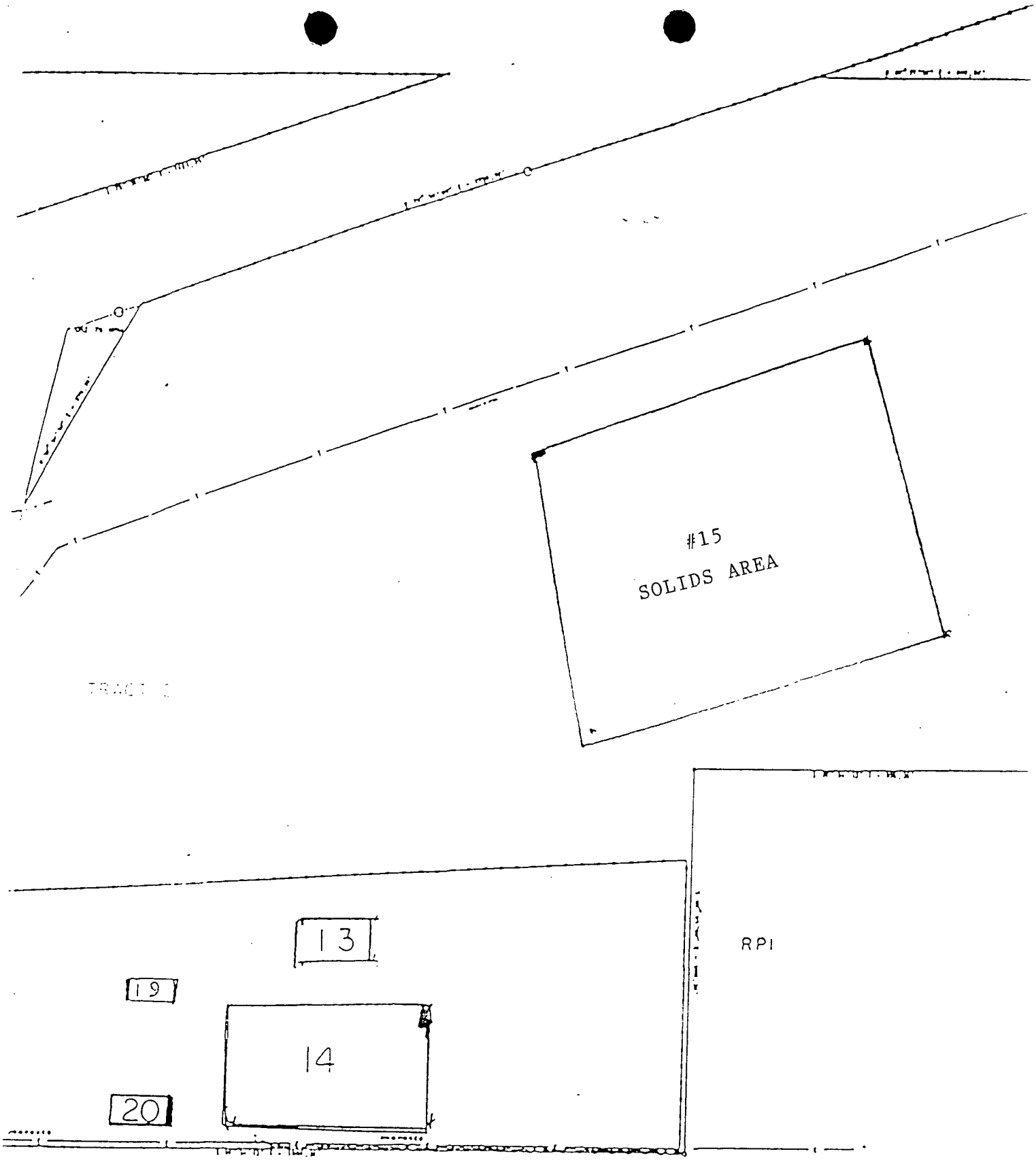
TRACT I
U.S. HIGHWAY 62-180
KRM.
QUAIL RUN DEV.
U.S.A.
CRI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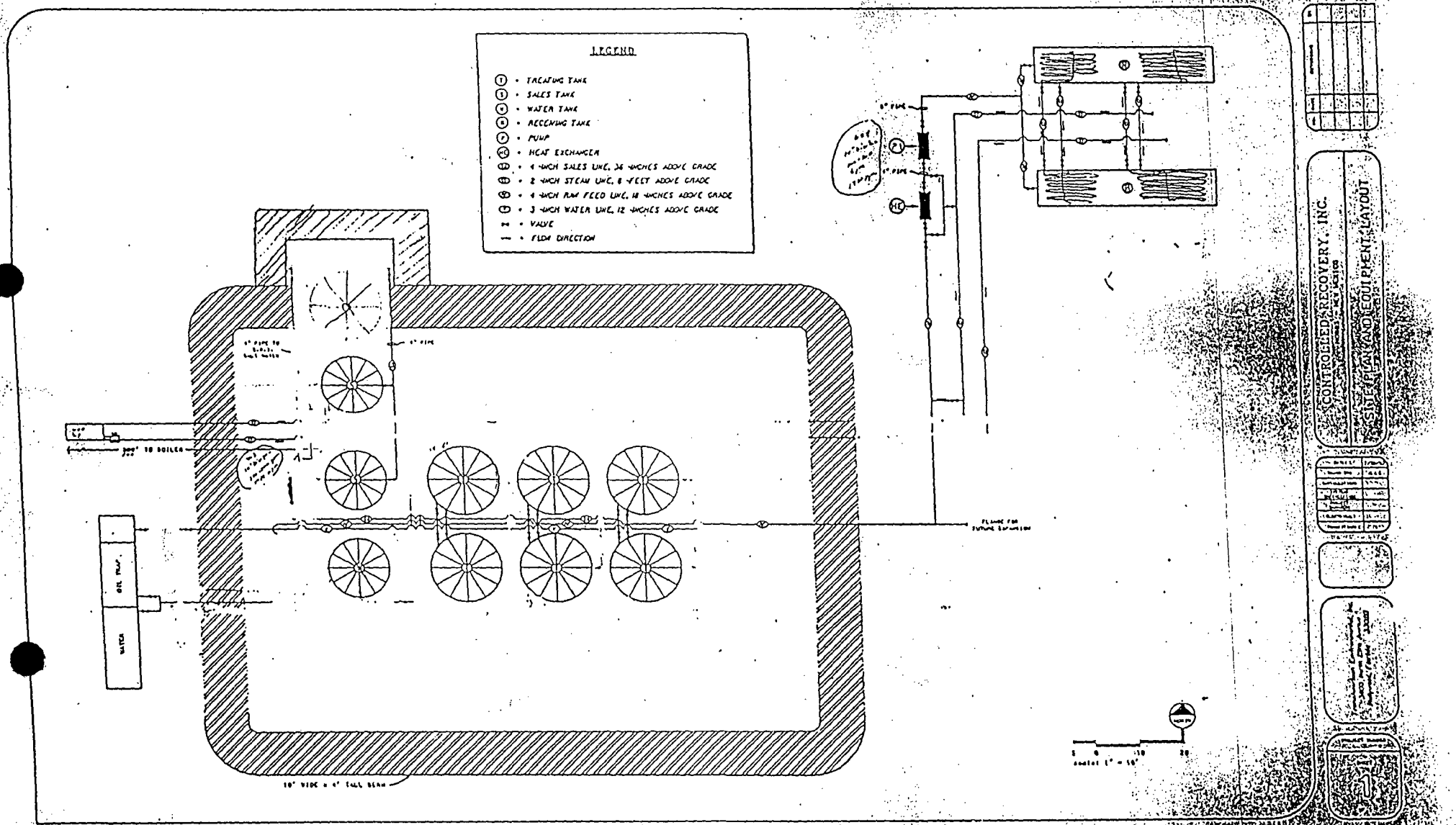

LEGEND
1 • TREATING TANK
2 • SALES TANK
3 • WATER TANK
4 • RECEIVING TANK
5 • PUMP
6 • HEAT EXCHANGER
7 • 4 INCH SALES LINE, 36 INCHES ABOVE GRADE
8 • 2 INCH STEAM LINE, 8 FEET ABOVE GRADE
9 • 4 INCH RAW FEED LINE, 18 INCHES ABOVE GRADE
10 • 3 INCH WATER LINE, 12 INCHES ABOVE GRADE
11 • VALVE
12 • FLOW DIRECTION
4" PIPE
4" PIPE
OIL PUMP
WATER
10' WIDE x 4' TALL BERM
CONTROLLED RECOVERY, INC.
PROCESS PLANT AND EQUIPMENT LAYOUT

P.O. Box 1613
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
505/397-0510
fax 505/393-4388
www.sesi-nm.com

Safety & Environmental Solutions, Inc.

August 31, 2000

Mr. Ken Marsh
Controlled Recovery Inc.
P.O. Box 388
Hobbs, New Mexico 88241

Re: Proposed Revised Closure Plan for CRI Facility at Halfway, NM

At your request, I have reviewed the proposed revised closure plan for your facility located in Section 27, Township 20 South, Range 32 East, NMPM Lea County, N.M. The review was conducted to determine whether the plan will comply with New Mexico Oil Conservation Division (OCD) General Rule 711, specifically Section B (1) (i) which requires a closure plan to close the facility to protect public health and the environment.

Introduction

Before commenting on the specifics of the proposed closure plan for this facility, I want to comment on the purpose of a closure plan. Your facility receives material for treatment and disposal, which may cause damage to health and the environment if not handled and disposed of properly. To ensure that the material does not cause such harm, the OCD has developed a permitting system for disposal. At the conclusion of operations, a closure plan is required to minimize or eliminate releases to the environment of substances, which may have the potential to cause harm to public health and the environment.

Several exposure pathways exist for releases to the environment. These include air, soil, groundwater and surface water. If these pathways are protected from contamination, potential receptors (humans, sensitive habitats, etc.) are not exposed to harmful constituents or elevated levels of such constituents. Following conclusion of operations, the site will not have on-site personnel to monitor any releases so the actions taken via a closure plan will necessarily have to provide the needed protection.

Impact of Site Location on Closure Needs

The location of the permitted facility already minimizes exposure to humans and sensitive receptors, and a properly designed and implemented closure plan will complete such protection.

The facility is located at a site which does not have underlying groundwater of either sufficient quantity or quality to provide water for domestic, industrial, or stock use. This was determined by technical data entered into evidence during the OCD hearing granting the original permit for the facility (Order R-9166, April 27, 1990). Indeed, the nearest body of water, Laguna Toston immediately north of the facility, is a salt-water lake used for brine disposal by a potash mine. Closure needs include evaporation of water from existing disposal ponds and removal of hydrocarbon residue. High summer temperatures, low relative humidity, and an annual rainfall of approximately 9 inches enhance evaporation at the site. The low rainfall, when coupled with the actions to be performed during closure, will effectively prevent leaching and migration of any remaining hydrocarbon material.

The surrounding area is used for ranching and no residences (with the exception of the onsite watchman) or subdivisions are located within several miles of the site. Without any potable groundwater existing in the vicinity of the site, it is very unlikely that any current or future land development will occur. Therefore, exposure to humans, if any, would occur through the occasional visit by a rancher, or by a passerby in a vehicle on the adjacent highway. Closure needs include removal of fluids from the existing pits, and capping of remaining hydrocarbon solids to prevent wind and water erosion with subsequent exposure of the underlying hydrocarbons and airborne migration of the material.

Comments on Plan Specifics

1. The plan should provide an introduction with a general statement of purpose stating what is to be accomplished by the plan, i.e. protection of human health and the environment.

2. The plan should reference the general category of material in the pits, e.g. produced water in pits 3a, 3b; paraffin in pits 16a, 16b; drying pits 2a, 2b containing ???, etc.

3. To prevent material leaching, the deeper excavated pits should be scraped to remove hydrocarbon residue.

4. The vertical extent of remaining hydrocarbons (if any) beneath the excavated pits should be determined to provide legal documentation on the volume and concentration of the hydrocarbon material remaining on site. Performing several soil borings at the time of closure can provide this data. The information will provide regulators and interested members of the public with knowledge regarding the volume and type of material at the site and will deter (hopefully) future investigations and actions by other regulatory agencies.

5. The thickness of native material used as a cap should be sufficient to prevent wind and water erosion. 12 inches may be sufficient if caliche or coarse material is used, but a greater thickness may be necessary if finer-grained material is emplaced or if natural vegetation is to be grown.

Conclusions

With the changes suggested above, the proposed closure plan is expected to provide protection for human health and the environment at the subject site. Movement of hydrocarbon material to air, soil, groundwater or surface water by the usual forces of nature will be prevented by the actions to be taken at the time of closure. However, man-caused intrusions are possible in the future and institutional actions may wish to be considered to minimize such incidents. These could include attaching a covenant to the land deed or providing some other method of notification to future prospective buyers of the property.

If you have any questions regarding this letter, please contact me at address and phone number above.

Sincerely,

David G. Boyer, P.G.
Hydrogeologist

CRI
CONTROLLED RECOVERY INC.
P.O. BOX 388, HOBBS, NM 88241 (505) 393-1079

September 1, 2000

Mr. David Boyer
P.O. Box 1613
Hobbs, New Mexico 88240

Dear Mr. Boyer:

CRI has prepared a revised closure plan for our site in Section 27, Township 20 South, Range 32 East, NMPM Lea County, N.M. to comply with OCD Rule 711.

Attached please find:

1) CRI proposed closure plan
2) Site map
3) OCD Rule 711
4) OCD Order No. R9166
5) Oil and gas act NMSA 1978, Section 70-2-12
6) Report by James I. Wright, February 1990

The average annual rainfall is 9 inches.

CRI requests that you review the materials, visit the site, and conduct any other research necessary to determine if the closure plan will protect public health and the environment as per OCD Rule 711.

Sincerely,

Ken Marsh

P.O. Box 1613
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
505/397-0510
Fax 505/393-4388
www.sesi-nm.com

Safety & Environmental Solutions, Inc.

September 6, 2000

Mr. Ken Marsh
Controlled Recovery Inc.
P.O. Box 388
Hobbs, New Mexico 88241

Re: Proposed Closure Plan for CRI Facility at Halfway, NM

At your request, I have reviewed the proposed revised closure plan for your facility located in Section 27, Township 20 South, Range 32 East, NMPM Lea County, N.M. The review was conducted to determine whether the plan will comply with New Mexico Oil Conservation Division (OCD) General Rule 711, specifically Section B (1) (i) which requires a closure plan to close the facility to protect public health and the environment.

The location of the permitted facility already minimizes exposure to humans and sensitive receptors, and a properly designed and implemented closure plan completes such protection. The facility is located at a site which does not have underlying groundwater of either sufficient quantity or quality to provide water for domestic, industrial, or stock use. This was determined by technical data entered into evidence during the OCD hearing granting the original permit for the facility (Order R-9166, April 27, 1990). Indeed, the nearest body of water, Laguna Toston immediately north of the facility, is a salt-water lake used for brine disposal by a potash mine. Closure needs include evaporation of water from existing disposal ponds and removal of hydrocarbon residue. High summer temperatures, low relative humidity, and an annual rainfall of approximately 9 inches enhance evaporation at the site. The low rainfall, when coupled with the actions to be performed during closure, will effectively prevent leaching and migration of any remaining hydrocarbon material.

The surrounding area is used for ranching and no residences (with the exception of the onsite watchman) or subdivisions are located within several miles of the site. Without any potable groundwater existing in the vicinity of the site, it is unlikely that any current or future land development will occur. Therefore, future exposure, if any, to humans would occur through the occasional visit by a rancher, or by a passerby in a vehicle on the adjacent highway. Closure needs to protect humans and sensitive receptors include removal of fluids from the existing pits, and capping of remaining hydrocarbon solids to prevent wind and water erosion with subsequent exposure of the underlying hydrocarbons and airborne migration of the material.

The proposed closure plan satisfies the criteria discussed in the above paragraphs. Therefore, the proposed closure plan is expected to provide protection for human health and the environment at the subject site. Movement of hydrocarbon material to air, soil, groundwater or surface water by the usual forces of nature will be prevented by the actions to be taken at the time of closure. Additionally, notice of past use as an oilfield treatment and disposal facility will be made to the Lea County Clerk where it will be part of the public record.

If you have any questions regarding this letter, please contact me at address and phone number above.

Sincerely,

David G. Boyer, P.G.
Hydrogeologist

QUALIFICATIONS AND CREDENTIALS
OF
David G. Boyer, P.G.

Qualifications Summary

David G. Boyer is a Professional Geologist specializing in Hydrology and Water Resources with more than 25 years experience working in New Mexico and Arizona.

Mr. Boyer has enjoyed a successful career as a Hydrogeologist, both in the public and private sectors. Mr. Boyer served as a research and teaching assistant and Hydrologist for the University of Arizona for eight years. After completion of his Master's Degree in 1978, Mr. Boyer joined the New Mexico Environment Department as a Water Resources Specialist in Hydrogeology. Mr. Boyer founded the Environmental Bureau of the New Mexico Oil Conservation Division in 1984 and served as Bureau Chief until 1991. Mr. Boyer returned to the private sector in 1991 and has held senior positions with K.W. Brown Environmental Services, RE/SPEC Inc., Los Alamos Technical Associates, Inc., and Covenant Technical Associates, Inc.

Mr. Boyer broadens SESI's areas of expertise to include: Hydrological Investigation and Characterization, Groundwater Quality Monitoring and Evaluation, Permitting and Compliance Actions for State and Federal Groundwater Protection Programs, Regulatory Development, Analysis, and Negotiation, and Expert Witness and Litigation Support in the area of Groundwater and Water Resources.

Education

M.S. in Hydrology and Water Resources (Groundwater), University of Arizona, Tucson, AZ. (1978)
B.S. in Hydrology and Water Resources, University of Arizona, Tucson, AZ. (1965)

Registrations and Affiliations

American Institute of Hydrology (Certification # 85-535)
Association of Groundwater Scientists and Engineers (CGWP #221)
Registered Professional Geologist (Wyoming, PG-2390)
Gas Research Institute, Research Coordination Council: Chairman, Environment & Safety Panel (1994 -99)
Association of Groundwater Scientists and Engineers
New Mexico Oil & Gas Association (1991-97)
Permian Basin Petroleum Association (1991-96)
Texas Independent Producers & Royalty Association (1991-96)
Member, New Mexico Water Quality Control Commission (1986-91)

CRI
CONTROLLED RECOVERY INC.
P.O. BOX 388, HOBBS, NM 88241 (505) 393-1079

September 1, 2000

Mr. James R. Woods
P.O. Box 1417
Socorro, New Mexico 87801

Dear Mr. Woods:

CRI has prepared a revised closure plan for our site in Section 27, Township 20 South, Range 32 East, NMPM Lea County, N.M. to comply with OCD Rule 711.

Attached please find:

1) CRI proposed closure plan
2) Site map
3) OCD Rule 711
4) OCD Order No. R9166
5) Oil and gas act NMSA 1978, Section 70-2-12
6) Report by James I. Wright, February 1990

The average annual rainfall is 9 inches.

CRI requests that you review the materials, visit the site, and conduct any other research necessary to determine if the closure plan will protect public health and the environment as per OCD Rule 711.

Sincerely,

Ken Marsh

NESCO - NEW MEXICO, INC.
ECOLO SOUTHWEST LLC
P.O. Box 1417
Socorro, New Mexico 87801
(505) 835-0377 • 835-0573

Sept 8, 2000

Mr. Ken Marsh
Controlled Recovery Inc.
Box 388
Hobbs. New Mexico 88241

Dear Mr. Marsh,

This letter is in response to your letter of September 1, 2000 where you request that I review your Closure Plan for CRI's oil treating plant located in S/2 and the N/2, S/2 Section 27, Township 20 S, Range 32 E, Lea County. New Mexico.

After reviewing the report by James I. Wright and visiting CRI's Plant Site, I have gleaned the following conclusions.

A) The Triassic and Permian Red Beds, that underlie the shallow Quaternary alluvium, consist predominately of clays and siltstones and would stop any percolation of fluids through these red beds.

B) The ground water movement through alluvium in the area of CRI's Plant is to the northwest towards the playa lake Laguna Toston.

C) Laguna Toston has a surface area of 160 acres and has been used as a disposal pond by a potash company.

D) It has been proven by bailing tests performed on test wells, that the alluvium has very low permeability.

E) Ms. Rozanne Johnson, Bacteriologist, reports that the water analyzed from the alluvium wells was unfit for human or animal consumption. The Plant site does not have underlying ground water of sufficient quantity or quality to provide water for local usage by livestock or humans.

F) The location of the CRI Plant site "speaks for itself" as to exposure to humans and wildlife.

G) Due to the lake of potable drinking water, it is very unlikely to see any future subdivisions for this area.

H) Any seepage from CRI's site will infiltrate the alluvium into the red bed subsurface and then migrate towards Laguna Toston.

CRI

I) Prior to initiations operations the site was inspected by a representative of the OCD to determine that the plant had proper fences, gate and cattleguards, dikes and berms needed to assure safe plant operation.

J) In granting the CRI application, the OCD found that the plant should not endanger fresh water, and would prevent waste by allowing the recovery of otherwise unrecoverable oil.

In my opinion, CRI's "Closure Plan" fulfills all of the requirements of OCD Rule and order R9166 to protect public health and the environment.

James R. Woods
Geological Engineer

NESCO - NEW MEXICO, INC.
ECOLO SOUTHWEST LLC

P.O. Box 1417
Socorro, New Mexico 87801
(505) 835-0377 • 835-0573

RESUME

JAMES R. WOODS
P.O. BOX 1417
SOCORRO, NEW MEXICO 87801

PERSONAL STATISTICS:

Born: San Angelo, Texas 12-10-31
Health: Excellent
Married: Judy Nalda Woods
Children: Three boys, one step daughter, one step son
Military: US Army 1951 to 1955
Born and raised on a sheep and cattle ranch in San Angelo, Texas

EDUCATION:
One year at New Mexico Institute of Mining & Tech.
Four years at the University of New Mexico- B.S. Geological Engineering

PROFESSIONAL EXPERIENCE:

1986 to present: Geo-Hydrological reports, Environmental Assessments Phase I & II. Treating contaminated soil and water. Tracing of hydrocarbon plumes. Design and installation of cathodic protection systems.
Own and operate ranch in Socorro County New Mexico.

1980 to 1986: Engineering design and operation of Red Mountain Oilfield Waterflood in Mckinley County New Mexico.
Own and operate a sheep and cattle ranch in Lincoln County New Mexico.

1980 to 1983: Geological consulting in New Mexico and Utah.
Operation of a cattle ranch in Catron County New Mexico .

1967 to 1983: Started and developed Woods Oil & Propane, Inc., a petroleum marketing company, that employed 65 people. I served as general Manager.
Owned and operated a cattle ranch in Catron County New Mexico.

1962 to 1967: Worked for The Superior Oil Company and Sinclair Oil Company doing geological field work and mapping in New Mexico and Utah.

1956 to 1962: Attended college and helped my father work his cattle ranch in Catron and Valencia Counties New Mexico.

NESCO - NEW MEXICO, INC.

P.O. Box 1417
Socorro, New Mexico 87801
(505) 835-0377 • 835-0573

PROFESSIONAL ASSOCIATIONS

MEMBER NEW MEXICO GEOLOGICAL SOCIETY

MEMBER OF NATIONAL ASSOCIATION OF CORROSION ENGINEERS

NEW MEXICO CONTRACTORS LICENSE # 031572

PETRO-TITE TANK TESTING CERTIFICATE # 314113577

UNDERGROUND TANK INSTALLER CERTIFICATE # 063

MEMBER NATIONAL SOILS ASSOCIATION

CERTIFIED SITE ASSESSOR

NON-PROFESSIONAL ASSOCIATIONS

DEMOCRATIC COUNTY CHAIRMAN

BOARD OF DIRECTORS UNITED NEW MEXICO BANK OF SOCORRO

BOARD OF REGENTS AT NEW MEXICO INSTITUTE OF MINING & TECH

BOARD OF DIRECTORS BELEN SAVINGS AND LOAN

BOARD OF DIRECTORS NEW MEXICO DEPT OF COMMERCE & INDUSTRY

BOARD OF DIRECTORS SOCORRO CHAMBER OF COMMERCE

BOARD OF DIRECTORS SOCORRO PUBLIC LIBARY

ADVISOR TO NEW MEXICO BORDER COMMISSION

CRI
CONTROLLED RECOVERY INC.
P.O. BOX 388, HOBBS, NM 88241 (505) 393-1079

September 1, 2000

Mark Turnbough, PhD
213 South Camino Del Pueblo
Bernalillo, New Mexico 87004

Dear Mr. Turnbough:

CRI has prepared a revised closure plan for our site in Section 27, Township 20 South, Range 32 East, NMPM Lea County, N.M. to comply with OCD Rule 711.

Attached please find:

1) CRI proposed closure plan
2) Site map
3) OCD Rule 711
4) OCD Order No. R9166
5) Oil and gas act NMSA 1978, Section 70-2-12
6) Report by James I. Wright, February 1990

The average annual rainfall is 9 inches.

CRI requests that you review the materials, visit the site, and conduct any other research necessary to determine if the closure plan will protect public health and the environment as per OCD Rule 711.

Sincerely,

Ken Marsh

MARK TURNBOUGH Ph.D.
ENVIROMENTAL COMPLIANCE
213 S. CAMINO DEL PUEBLO
BERNALILLO, NEW MEXICO 87004
505-867-6990
FAX 505-867-6991

September 11, 2000

Mr. Ken Marsh
Controlled Recovery, Inc.
P.O. Box 388
Hobbs, New Mexico 88241

Re: CRI Closure Plan

At your request, I have reviewed the proposed closure plan for the CRI Facility located in Section 27 township 20 south, range 32 east, NMPM (Lea County) New Mexico in order to provide an opinion on compliance with the requirements of OCD Rule 711 and OCD order No. R9166.

In the process of evaluating the CRI closure plan I reviewed the following documents:
1) CRI site map
2) OCD Rule 711
3) OCD Order No. R 9166
4) Section 70-2-12 NMSA 197 (Oil and Gas Act)
5) Climate Data for the region of interest
6) Geohydrology Data used to support the original CRI permit application to OCD

In addition I have inspected the CRI Facility and surrounding area on four separate site visits.

The purpose of this evaluation is to make a determination of whether the proposed closure plan contains measures that are sufficient to protect the public health and the environment pursuant to Rule 711.

Mark Turnbough, PhD
Land Use Assessment
Water Resource Management / Permitting / Planning / Regulatory Compliance

Mr. Turnbough has managed and provided work product on several significant multi-disciplinary site selection, characterization, environmental assessment and permitting tasks and projects. Those projects range from large - scale water resource development and management programs to the permitting and licensing of critical environmental facilities, e.g. nuclear power plants (HL&P South Texas Project and Texas Utilities Comanche Peak), major transmission line rights of way (ROW), hazardous/infectious waste treatment systems, waste disposal facilities and experimental energy storage systems at White Sands Missile Range.

In 1987 he managed the third party environmental assessment that was used by the U.S. Bureau of Reclamation to allow the re-assignment of agricultural water rights in the Rio Grande Valley of El Paso County to municipal and industrial uses. The model he developed for making water resource re-allocation decisions in El Paso County (USBR Rio Grande Project) was subsequently utilized to provide a justification for converting agricultural water diversions from the Lower Rio Grande to municipal use in Starr, Willacy, Cameron and Hidalgo Counties. The value of the approach is that it eliminated the need for lengthy and expensive Environmental Impact Statements (EIS) to re-distribute water appropriations within existing water projects. Ultimately, Mr. Turnbough was asked to describe the approach to the Committee on Energy and Natural Resources of the United States Senate (May 10, 1994).

During the same general time frame (1986 to 1994) he prepared the environmental assessments and environmental information documents required for the opening of the Santa Teresa International Border Crossing (New Mexico / Mexico). Concurrently, he worked with co-owners, Dr. Tim Louis and Mr. Charlie Crowder, to master plan the original Santa Teresa industrial and residential complex (86,000 acres). That process included a preliminary assessment of the nature and extent of the water resources/rights associated with the original project.

On behalf of El Paso and Hudspeth Counties, from 1988 to 1991 he recruited and managed the technical team that evaluated the proposed Texas Low Level Radioactive Waste Disposal site at Ft Hancock, Texas. The results of that evaluation were used in District Court to prevent the state of Texas from designating an unsuitable site.

In 1997 and 1998 Mr. Turnbough provided consulting expertise to Phillips Petroleum Company in litigation regarding a pipeline leak near Borger, Texas. Phillips was able to negotiate a favorable settlement. Also in 1997 and 1998, he provided expertise to the Richey Oil Company in opposition to a 27,000 acre sludge project adjacent to the historic Eagle Mountain Ranch in Hudspeth County, Texas. The Texas Natural Resources Conservation Commission withdrew its prior approval of the project.

From 1992 through 1999 Mr. Turnbough managed the permitting and re-permitting of the controversial Camino Real Landfill in Sunland Park (the largest facility of its kind in New Mexico). Under Mr. Turnbough's direction, Camino Real ultimately received the Solid Waste Association of North America (SWANA) Landfill Excellence Award for the best landfill in North America (1997).

From 1994 through 1999, Mr. Turnbough also managed the site selection, characterization, design, permitting, construction and regulatory compliance for three additional regional landfills in New Mexico; Sand Point (Carlsbad), Tri-Sect (Valencia

County) and Lea County Regional Landfill. In the process of permitting the Lea County facility, Mr. Turnbough was able to secure a ground water monitoring exemption based on the geologic qualities of the site selected for Lea County. Since 1991, Mr. Turnbough has coordinated the permitting of over half of the total solid waste disposal capacity in the state of New Mexico.

Currently, Mr. Turnbough is a regulatory and environmental consultant to the 16,000 acre Waste Control Specialists facility in Andrews County, Texas. It is the first hazardous (RCRA) / toxic (TSCA) and radioactive waste management facility of its kind in the United States (permitted under post LDR regulations). It was permitted in just under 18 months. He continues to serve as the lead consultant for Camino Real in the development of Title V and NSPS Air Quality permits for the parent company, Waste Connections, Inc. He is also a consultant For Chandler and Associates in the assessment of a large and complex set of oilfield contamination cases in Johnson and Lawrence Counties, Kentucky. Mr. Turnbough was recently retained by the law firm of Kemp-Smith as a water development consultant for projects in the El Paso, Texas region. Mr. Turnbough also has recently provided consulting services to Morrison-Knudsen, Inc. (M-K has changed its name to the Washington Group) in the development of proposal documents to the U.S. Department of Energy (DOE) for the continued operation of the DOE's Waste Isolation Pilot Plant (WIPP) [transuranic disposal facility] in Eddy County, New Mexico. He is, in addition, providing consulting expertise to Controlled Recovery, Inc. (CRI) on oilfield waste containment in the Permian Basin.

Mr. Turnbough was appointed on May 1, 2000 to serve on the New Mexico Environment Department's new Radioactive Materials Advisory Committee which has been tasked to write new radioactive materials license, inspection and administrative fee regulations. Mr. Turnbough participated in the writing of the New Mexico Solid Waste Management Regulations (EPA Sub-title D) and the New Mexico Recycling Rules. During the writing of the Sub-title D regulations Mr. Turnbough provided a direct interface with EPA Region 6 to facilitate changes required for New Mexico to achieve primacy over the program. In addition, he has provided NMED with detailed impact assessments of its proposed rules.

Moreover, he has coordinated the development and passage of several economic development packages in the New Mexico Legislature. In 1998, for example, he coordinated the passage of a $500,000,000.00 incentive package to help recruit uranium enrichment industries to Lea County, New Mexico.

Essentially, Mr. Turnbough provides task definition/management and regulatory/political interface for clients whose projects require multi-disciplinary expertise. The approach is a cost effective alternative to hiring engineering firms to manage activities that typically range well beyond the engineering function. It involves using the appropriate legal and regulatory framework to structure the client's project. That structure includes definition of expertise necessary to comply with state and federal rules. The task definition achieved in this approach tends to reduce scopes of work for contractors / firms to only those areas in which they have demonstrated expertise. Consequently, the client does not end up paying A&E firms to "learn" how to successfully complete the project.

RESUMÉ

MARK W. TURNBOUGH, PhD

FIELDS OF EXPERIENCE:

General Background: Includes multi-disciplinary training and experience in land use planning, environmental policy, technology assessment, impact analysis, causal modeling, statistical research, socioeconomics/demography.

Consulting Experience: Primary areas of activity include regulatory permitting/compliance monitoring, environmental impact assessment, site suitability analysis, site selection, site characterization, analysis of land uses, statistical research and computer applications: Geographic Information Systems and Predictive Models.

Synopsis of Selected Current and Recent Consulting Activity

(For specific dates and locations see Page 5, EXPERIENCE section).

As environmental consultant to CRI, Inc. provides regulatory expertise in opposition to a proposal by the state of New Mexico to co-mingle oilfield wastes with solid waste (sub-title D) in disposal cells permitted for sub-title D wastes (2000-present).

As environmental consultant to Lea County, New Mexico provided interface with U.S. Department of Energy (DOE) in the preliminary development a risk based compensation plan linked to the operation of the DOE Waste Isolation Pilot Plant (WIPP) (1999-2000).

As environmental consultant to Raymond G. Sanchez and Robert Desiderio, attorneys at law, provides project management and coordination for site assessments on Maloof properties in New Mexico (2000-present).

As environmental consultant to the El Paso, Texas based law firm of Kemp-Smith, provides expertise for the selection and development of water resources for use by the City of El Paso (2000-present).

As an environmental / systems consultant to Morrison-Knudsen, Inc., provides regulatory and project development guidance on DOE contracts at Los Alamos National Laboratory and the WIPP site (both located in New Mexico) (2000- present).

As environmental consultant to Chandler and Associates, provides expertise on the assessment of a large and complex oilfield contamination case in Johnson and Lawrence Counties, Kentucky(1999-present).

As lead consultant on the Lea County Landfill project managed site selection studies and permit document preparation for submission to the New Mexico Environment Department (Permit granted

1999).

As environmental consultant to WCS, LLC provides primary point of contact for U.S. Department of Energy (Headquarters). Provides regulatory guidance for the development of permits and licenses for additional waste streams on the facility's New Mexico properties. Also provides systems support and compliance monitoring (1995–present).

As environmental consultant to Harlan Richey, provided expertise and expert testimony in opposition to a proposed 27,000 acre sludge application project adjacent to the historic Eagle Mountain Ranch in Hudspeth County, Texas. The Texas Natural Resources Conservation Commission (TNRCC) subsequently withdrew its prior approval of the project (1997-1998).

As environmental consultant to Phillips Petroleum, Inc., provided expertise and expert witness testimony (deposition only—case was settled in favor of Phillips) on a complex land use/ groundwater contamination case (1997–1998).

As environmental consultant/project manager to Camino Real Environmental Center (CREC), managed the development of 3 solid waste permit applications for boundary modification, recycling center and landfill permit renewal for the solid waste facility at Sunland Park, (Doña Ana County) New Mexico. (Permits granted 1997). Manages Title V and NSPS permitting as well as on going compliance at the all of the company's facilities.

As environmental consultant/project manager for USA/UNITED WASTE, coordinated the rehabilitation of a permit (solid waste) application for Tri-Sect Landfill in Valencia County, New Mexico. (1998)

As environmental consultant/project manager for CREC, managed the acquisition of a discharge permit for a sludge land application site at the CREC Sunland Park, New Mexico site. (1994)

As environmental consultant/project manager for CREC, managed the development of a permit application for the Eddy County, New Mexico regional landfill (Sand Point Regional Landfill). (Permit granted 1994)

As environmental consultant/project manager for Med-Compliance Services (MCS), managed the development of a permit application for a bio medical waste transfer and processing facility in Albuquerque (Bernalillo County) New Mexico. (Permit granted 1994).
Project required the development of a new processing technology that could meet new state standards.

As environmental consultant to Lower Valley Water District (El Paso County), prepared environmental assessments for Las Azaleas constructed wetlands project, 1993.

As permit consultant to R.R.I., acquired landfill and recycling permits for R.R.I. (NUMEX Landfill) facilities at Sunland Park, New Mexico, 1991.

As environmental consultant to Agra Earth & Environmental, Inc., responsibilities included development of multi-disciplinary data bases for large scale site suitability studies, landfill selection and environmental impact modeling, e.g. aquifer protection plans, geographic information systems and solid waste management plans, 1989 – 1994.

As project manager for El Paso County, (El Paso County versus State of Texas), coordinated 4 year review of Ft. Hancock site suitability for radioactive waste disposal. Developed technical case for plaintiffs. Plaintiffs prevailed on all 25 factual issues. District court decision upheld plaintiffs. State did not appeal, 1988 - 1991.

As Director of Special Projects at the Rio Grande Council of Governments, El Paso, Texas responsibilities included development and management of multi-disciplinary projects that focused primarily on land use and site planning issues in the region, e.g., site selection for landfills, industrial parks, energy storage systems, etc., 1989.

As Principal Planner at Sub-Land, Inc. El Paso, Texas responsibilities included management of environmental and economic feasibility studies for large-scale land use projects, 1986–1987.

As a Senior Staff Policy Analyst/Planner at EH & A Environmental Consultants, Austin, Texas was responsible for the design and implementation of land use, environmental economic baseline and impact studies and other assessments. Also was responsible for various types of specialized studies (regulatory, budgeting and forecasting). Developed and managed computer-based models for environmental planning, e.g. riverine flow impacts on bays and estuaries, predictive model of Brown Pelican flights across transmission lines, predictive models for archeological resources in large scale surveys, 1984–1987.

Expert Witness Experience: Federal and State Court. (Primary areas – environmental assessment, land use analysis, solid waste facility regulations, municipal services assessment and redistricting). Expert testimony in Adjudicatory Hearings on land use issues, e.g. landfill permits and water plans.

In the Academic Community: Taught courses in site planning, anthropology, environmental studies, alternative energy resource investigations, organization theory, industrial expansion analysis, policy typology assessment, public budgeting and fiscal planning.

EXPERIENCE

(Note: Several activities have overlapping/ concurring time frames).

Environmental Consultant: **(Regulatory Compliance)**	CRI, Inc. Hobbs, New Mexico January, 2000 to present.
Environmental Consultant: **(Site Assessment)**	Raymond G. Sanchez and Bob Desiderio Attorneys at Law

	Albuquerque, New Mexico February, 2000 to present
Environmental Consultant: **(DOE and N.M. Policy)**	Morrison-Knudsen, Inc. Cleveland, Ohio March, 2000 to present.
Environmental Consultant: **(Water Development Strategy)**	Kemp- Smith Law Firm El Paso, Texas February, 2000 to present.
Environmental Consultant: (DOE Policy)	Lea County, New Mexico 1999- April, 2000
Environmental Consultant: **(Remediation Estimates)**	Chandler and Associates, Lufkin, Texas July, 1998 to Present.
Environmental Consultant **(Land Use)**	Phillips Petroleum Bartlesville, Oklahoma 1997-1998
Environmental Consultant: **(Land Use Protection)** **(Expert Witness)**	Richey Oil Company Tyler, Texas (Project located in Hudspeth Co. Texas) 1997-1998.
Environmental Consultant: (Remediation Estimates) **(Expert Witness)**	Triangl (sic) Equities El Paso, Texas 1997-1998
Environmental Consultant: **(DOE and N.M. Policy)**	Waste Control Specialists, LLC. Pasadena, Texas 1995 to Present
Environmental Consultant: (Land Use Analysis)	Santa Teresa Development, Inc. February, 1986 to 1994
Environmental Consultant: (Landfill Evaluation)	El Paso County Commissioner's Court El Paso, Texas 1989 to 1991
Environmental Permit Consultant: **(Landfill Site Selection, Permitting)**	R.R.I. (Waste Disposal) **Purchased in 1999 by Waste Connections, Inc.**

(Biomedical Waste Technology Development) (Compliance Monitoring)	February, 1991 to Present
Environmental Policy Consultant:	Agra Earth & Environmental, Inc. Phoenix, Arizona August, 1989 to 1994
Environmental Consultant: (Land Use)	Horizon Environmental Services Austin, Texas 1989 to Present
Director, Environmental Projects:	Rio Grande Council of Governments El Paso, Texas March 1987 to July, 1989
Professor:	New Mexico State University Land Use Analysis Las Cruces, New Mexico 1988
Principal Planner/Director of Marketing:	Sub-Land, Inc. El Paso, Texas 1986 to 1987
Senior Policy Analyst / Land Use Analyst:	Espey, Huston & Associates, Inc. Austin, Texas 1984 to 1987
Division Chairman:	Social Sciences Wayland University Plainview, Texas 1983
Lecturer - Budgeting and Forecasting:	MPA Program, Texas Tech University Lubbock, Texas 1985
Research Associate:	Center for Energy Research Texas Tech University Lubbock, Texas 1979
Lecturer - Technology Assessment:	Department of Industrial and Systems Engineering (Doctoral Program) Texas Tech University

	Lubbock, Texas 1979
Assistant Division Chairman:	Public Administration/Systems Wayland University Plainview, Texas 1978 to 1983
Administrative Head/Interim Director:	Computer Services Wayland College Plainview, Texas 1976 to 1978
Instructor - Public Policy:	Department of Political Science Texas Tech University Lubbock, Texas 1976
Assistant to City Manager:	City of Plainview, Texas 1976
Research Assistant, Stochastic Models:	Frederick Hartmann, Alfred Thayer Mahan Professor of Maritime Strategy Naval War College 1975
Chairman - Department of Anthropology:	Department of Anthropology Wayland College Plainview, Texas 1971 - 1974
Research Assistant:	Department of Sociology & Anthropology Texas Tech University Lubbock, Texas 1970 – 1971
Technical Writer:	Litton Industries Lubbock, Texas 1969

EDUCATION (MAJOR FIELDS)

Ph.D.: Systems Theory and Environmental Policy
Dissertation Topic - Policy Typologies &
Case Survey Methodologies
(Environmental Policy Issue—Environmental Resources Management)
Texas Tech University
Lubbock, Texas
August, 1985

M.A.: Anthropology/Sociological Theory/Government
Thesis Topic – Ideal Typology Development
Texas Tech University
Lubbock, Texas
1971

B.A.: Anthropology/Sociology/Journalism
Texas Tech University
Lubbock, Texas
1969

ADVISORY COMMITTEES: (Recent)

New Mexico Environment Department Radioactive Materials Advisory Committee (Waste Management and Disposal Industry Representative), May 1, 2000 to Present

USEPA Environmental Justice Advisory Committee, 1999 to Present

New Mexico Environment Department, Tire Recycling Advisory Committee, 1995-1996

New Mexico Environment Department, Solid Waste Regulations Revision Advisory Committee, August - December, 1993

Rio Grande Council of Governments, Regional Solid Waste Management Plan (Far West Texas Planning Region), 1993

El Paso City/County Consolidated Data Processing Advisory Board - Oversight of mainframe (IBM 3090) operations for consolidated system, 1989 - 1991

AWARDS:

Solid Waste Association of North America (SWANA) Landfill Excellence Award for Best Landfill Operation in North America, 1997

Outstanding Contribution Award - Environmental Design Contest, Waste Education Research Consortium, (Los Alamos National Laboratory, Sandia National Laboratory, University of New Mexico, New Mexico Tech, New Mexico State University and U.S. Department of Energy) May, 1993.

Outstanding Graduate Student Teacher of the Year, Texas Tech University, 1976.

George Mahon Congressional Scholarship Award for Graduate Study of Public Policy, 1974 1975.

Joint Graduate Student/Graduate Faculty Research Grant, "Development of Disaggregative Analysis Software for Decomposition of Large Data Sets", Texas Tech University, 1974.

TECHNICAL REPORTS/PAPERS:

"Revised Cost Estimates for Remediation of Contaminated Sites on Cantrell et al. Properties in Johnson and Lawrence Counties, Kentucky (Martha Oilfield)" prepared for the Chandler Law Offices and Spivey-Ainsworth Law Firm, July 5, 2000.

"Final Site Assessment and [14 Day Report] for Maloof Holdings at 100 Industrial Avenue, Albuquerque, N.M.", prepared for Raymond G. Sanchez and Robert Desiderio. Submitted to the New Mexico Environment Department, UST Bureau, May 19, 2000.

"Disposition of Pre-Subtitle D Landfills", presented at the SWANA Arid Landfill Symposium, Albuquerque, New Mexico, April 12, 2000.

"Preliminary Cost Estimates for Remediation of Contaminated Sites on Cantrell et al. Properties in Johnson and Lawrence Counties, Kentucky (Martha Oilfield)", prepared for the Chandler Law Offices and Spivey-Ainsworth Law Firm, May 25, 1999.

"Permit Application for Lea County Solid Waste Authority Regional Landfill", prepared for Lea County Solid Waste Authority, Lea County , New Mexico, submitted to Solid Waste Bureau, New Mexico Environment Department (NMED), January, 1998 (Permit granted December, 1998).

"Evaluation of Proposed Longo Construction, Inc. Sludge Application Project (27,000 acres) in southern Hudspeth County, Texas", prepared for Harlan Richey, March 1, 1998.

"Permit Application for Camino Real Environmental Center Regional Landfill and Recycling Center, (Sunland Park, New Mexico), prepared for RRI, Inc., El Paso, Texas, submitted to Solid Waste Bureau, New Mexico Environment Department (NMED), Nov. 1996. (Permit granted August 1997).

"Changing Patterns in Regulatory Frameworks for Incinerator Technology", presented to National Solid

Waste Management Association - Colorado/New Mexico Annual Meeting, Telluride, Colorado, October 11 - 12, 1996.

"Regulation of Incinerator Technology in New Mexico" (joint presentation with New Mexico Environment Department) presented to Interim Committee on Radioactive and Hazardous Waste - New Mexico Legislature, Santa Fe, New Mexico, September 12, 1996.

"Environmental Justice and Landfill Siting in New Mexico", Tom Van Zandt co-author -contract research for C.R.E.C., August, 1996.

"Las Azaleas Constructed Wetlands - Environmental Assessment", prepared for El Paso County, Texas Lower Valley Water District Authority. Submitted to Texas Water Development Board, August, 1994.

"U. S. Bureau of Reclamation as Regional Water Manager - Rio Grande Project", written testimony presented to Senate Sub Committee on Natural Resources (Senator Bill Bradley, Chair) U.S. Senate, Washington, D.C., May, 1994.

"Plainview Independent School District (Hale County, Texas) Redistricting Submission", Prepared for Plainview ISD, Board of Trustees, Submitted to U.S. Department of Justice, Voting Rights Section, August 1993. Pre-clearance Granted.

"Permit Application for Carlsbad/Eddy County, New Mexico Regional Landfill", prepared for Carlsbad/Eddy County, submitted to Solid Waste Bureau, New Mexico Environment Department (NMED), July 9,1993. (Permit granted 1994).

Nu-Mex Landfill Supplementary Data Report/Documentation of Compliance, Submitted to U.S. Environmental Protection Agency Region 6, Prepared for JOAB, Inc., Sunland Park, New Mexico, May 28,1993.

"Final Permit Application for Regulated Medical Waste Processing Facility - Albuquerque, New Mexico", prepared for Med Compliance Services, Inc., Submitted to the Solid Waste Bureau, NMED, May 1, 1993. (Permit granted January 1994).

"Brownfield Independent School District (Terry County, Texas) Redistricting Submission", Prepared for Brownfield ISD Board of Trustees, Submitted to U.S. Department of Justice, Voting Rights Section, January 1993. Pre-clearance Granted.

"Floydada Independent School District (Floyd County, Texas) Redistricting Submission", Prepared for Floydada ISD Board of Trustees, Submitted to U.S. Department of Justice, Voting Rights Section, December 1992. Pre-clearance Granted.

"Preliminary Site Selection/Site Characterization of Proposed Carlsbad/Eddy County, New Mexico Regional Landfill", Prepared for City of Carlsbad/Eddy County, New Mexico, Submitted to Solid Waste

Bureau, NMED, August 10, 1992.

"Draft Permit Application for Bio-Medical Waste Processing Facility - Albuquerque, New Mexico", prepared for Med. Compliance Services, Inc., Submitted to the Solid Waste Bureau, NMED, July 15,1992.

"Documentation in Support of a Bio-Medical Waste Transfer Facility, Las Cruces, New Mexico", Prepared for Med. Compliance Services, Inc., Submitted to NMED and City of Las Cruces, July 1, 1992.

"Transportation Contingency Plan for Bio-Medical Waste Services", Prepared for Med. Compliance Services, Inc., Submitted to the Solid Waste Bureau, NMED, June 15, 1992.

"Documentation in Support of a Proposal to Provide Bio-Medical Waste Services to the New Mexico Hospital Association", Prepared for Med. Compliance Services, Inc., Submitted to Hospital Services Corporation, May 15, 1992.

"Alternative Redistricting Plans for the City of Brownfield, Texas - City Council Precincts", Prepared for the City of Brownfield, Texas, May 15, 1992. Pre-clearance Granted.

"Alternative Redistricting Plans for the Post Independent School District - School Board Trustee Districts", Prepared for the Post Independent School District (Garza County, Texas), June 30, 1992. Pre-clearance Granted.

"Land Use Analysis of Proposed Sunland Park Annexation of Santa Teresa Commercial District" - Expert Testimony Before the New Mexico Boundary Commission, January 25, 26, 1992 for Santa Teresa Community Development, Inc.

"Border Environmental Issues", Prepared Testimony Delivered to the New Mexico Secretaries of Environment and Economic Development on Potential Border Crossings at Santa Teresa and Sunland Park, New Mexico, Las Cruces, New Mexico, January 14, 1992.

"Terry County Commissioner's Precinct Redistricting Submission", Prepared for Terry County, Texas, Submitted to U.S. Department of Justice, Voting Rights Section, January, 1992. Pre-clearance granted.

"Environmental Assessment of Proposed Leviton Site", (Airport Business Park at Santa Teresa, New Mexico), prepared for C. L. Crowder Investment Company, Santa Teresa, New Mexico, September 19, 1991.

"Proposal to Replace MCS Incinerator" (to NMED), Prepared for Med. Compliance, Inc., El Paso, Texas, December, 1991.

"Prepared Testimony on Impacts of Buffer Zones in NMED Proposed Solid Waste Rules", Delivered to New Mexico Environmental Improvement Board - Roswell Hearings, November, 1991.

"Special Use Permit Application for Bio-Medical Waste Processing Facility", submitted to Doña Ana County for Med. Compliance, Inc., El Paso, Texas, September 16, 1991.

Summary of Findings for Nu-Mex Landfill Application Hearing, ("New Mexico Environment Department"), Prepared for JOAB, Inc./Med. Compliance, Inc., El Paso, Texas, August, 1991.

"Compliance Schedule for Bio-Medical Incinerator Pursuant to New Mexico Environment Department Air Quality Control Regulation 2020", Prepared for Med. Compliance, Inc., El Paso, Texas, August 1, 1991.

"Air Quality Permit Application for Proposed Microwave Bio-Medical Waste Processing Facility", Submitted to NMED (Air Quality Control Bureau) for Med. Compliance, Inc. El Paso, Texas, August 1991.

"Who Needs an Assessment?", Presented at National Association of Engineering Geologists Annual Meeting, Chicago, Illinois, October 4, 1991.

"Environmental Assessment of Proposed Belen-Rio Grande Railroad Bridge", prepared for Southern Pacific Transportation Company, San Francisco, California, August, 1991.

"Environmental Assessment of Proposed Sparks Water Delivery System", prepared for El Paso County Lower Valley Water District, El Paso, Texas, June, 1991.

"Environmental Assessment of Proposed Brownsville Channel Dam", Prepared for Brownsville Water Authority, Brownsville, Texas, February, 1991.

"Environmental Information Documents for Santa Teresa International Project", Prepared for Charles Crowder, Santa Teresa, New Mexico, August, 1990.

"Status Report and Proposed Action -- Fabens Landfill", Prepared for El Paso County Commissioner's Court, El Paso, Texas, March 14, 1990.

"Environmental Assessment of Proposed El Paso County River Park", Prepared for El Paso County, Submitted to Texas Parks and Wildlife Department, January 31, 1990.

"Muleshoe Independent School District Redistricting Submission", Prepared for MISD, Submitted to U.S. Department of Justice Voting Rights Section, January, 1990. Pre-clearance Granted.

"An Evaluation of Alternatives for Providing Water Infrastructure to Unplanned Sub Divisions", Prepared for Presentation at the Conference on Sanitation Problems in the Colonias Sponsored by the Institute of Regional Studies, San Diego State University, October 25, 1989, El Paso, Texas.

"Groundwater Discharge Plan/Extension: Mesquite Site, Doña Ana County, New Mexico", Prepared for

Doña Ana County Commissioners, Las Cruces, New Mexico, Submitted to NMED, Santa Fe, New Mexico, August, 1989.

"Testimony Before Special Committee of New Mexico Legislature on Solid Waste Management Problems - Site Selection Criteria on Federal Land", Las Cruces, New Mexico, June, 1989.

"Documentation in Support of Detachment/Annexation of Section 40 from CISD to AISD - Land Use and Socioeconomic Considerations", Prepared for Robert Garrett, Coldwell Banker/Terra Finis, Amarillo, Texas, February, 1989.

"Report of the Special Committee on El Paso City/County Consolidation", Prepared for the El Paso County Commissioner's Court and El Paso City Council, January, 1989.

Written Statement Submitted at Technical Hearings Before the New Mexico Environmental Improvement Division Regarding Proposed New Mexico Solid Waste Management Regulations, Santa Fe, New Mexico, November 17, 1988.

"Mapping Alternatives for Intergovernmental Cooperation in an Environment Characterized by Intergovernmental Conflict", Prepared for Presentation at the American Society for Public Administration, Region VII Conference, El Paso, Texas, November 4, 1988.

"Environmental Information Document (EID) for Water Delivery Plans for the El Paso Lower Valley (Colonias)", Prepared for the El Paso County Lower Valley Water District Authority (1988) for Submission to U.S. Bureau of Reclamation. (EID Approved by Bureau of Reclamation November 4,1988).

"Fiscal and Land Use Impact Assessment of Lubbock-Cooper Independent School District Boundary Modification", Prepared for Lubbock-Cooper ISD (Texas), June, 1988.

"Preliminary Market Analysis for General Dynamics/El Paso Sand Facility", Prepared for El Paso Sand, Inc., El Paso, Texas, 1988.

"Comparative Land Use Analysis: Santa Teresa, New Mexico, (2400 Acres)", Prepared for Wilson & McIlvaine, Chicago, Illinois, 1988.

"Site Suitability Study for Superconducting Magnetic Energy Storage System - ETM", Prepared for El Paso Electric Company, El Paso, Texas, 1988.

"Waste Management Plan for Doña Ana County, New Mexico", prepared for Doña Ana County Commissioners, Las Cruces, New Mexico, 1988.

"Groundwater Discharge Plan: Mesquite Landfill Site, Doña Ana County, New Mexico", Prepared for Doña Any County Commissioners, Las Cruces, New Mexico, Submitted to New Mexico Environmental Improvement Division, Santa Fe, New Mexico, 1988.

"Evaluation of Mesa Verde Apartment Project Proposal", Prepared for Paul Lyle & Associates, Plainview, Texas, 1988.

"Southern New Mexico Superconducting Super Collider Site Proposal", DOE Submission, September 1987.

"Far West Texas (Hudspeth County), Superconducting Super Collider Site Proposal", DOE Submission, September, 1987.

"Redistricting Submission (Single Member Election Precincts), Floydada Independent School District", U.S. Department of Justice, Voting Rights Section, 1987. Pre-clearance Granted.

"Preliminary Feasibility Report on Market Alternatives - ASARCO El Paso Property", Prepared for Nebyn Peterson & Associates, Houston, Texas, 1986.

"Comprehensive Evaluation of Infrastructure: Sunland Park/Santa Teresa, New Mexico", Prepared for Santa Teresa Associates, Santa Teresa, New Mexico, 1986.

"Preliminary Feasibility Analysis of Land Use Alternatives - Hueco Ranch (50,000 Acre Parcel)", Prepared for R.O. Anderson, Diamond A Cattle Company, Roswell, New Mexico, 1986.

"Feasibility Analysis of Knapp Properties Development - Franklin Mountain Parcels", Prepared for Texas State Attorney General, In Re: Knapp vs State of Texas (Parks and Wildlife Department), 1986.

"Highway Diversion Channel Modification Study", Prepared for Duke, Inc., Submitted to Army Corps of Engineers, Ft. Worth, Texas, March, 1986.

"Population Projection Update, South Texas Nuclear Power Plant (STP, ER-OL)", Prepared for Houston Light & Power, EH & A Document No. 85739, 1985.

"Montecello-Winfield Mine Area Cultural Resources Model", Prepared for TUMCO, EH & A document No. 95417, 1985.

"Possum Kingdom Inn and Country Club Feasibility Study", Prepared for Leo Appleby, EH & A Document No. 85549, 1985.

"Environmental Assessment of Osuna Road Extension", Prepared for City of Albuquerque, EH & A document No. 85375, 1985.

"Environmental Assessment of Infrastructure Extension on Sandia Pueblo", Prepared for Bureau of Indian Affairs, EH & A Document No. 85403, 1985.

"Existing Environment of the Region of Interest for LCRA's Proposed Deanville Project", Prepared for

Lower Colorado River Authority, EH & A Document No. 841024, 1985.

"Final Report on Pre-Construction Monitoring of Brown Pelican and Migratory Waterfowl Movements Near CP & L's Proposed Laguna Madre Transmission Line", Prepared for Central Power & Lighting, EH & A Document No. 85431, 1985.

"City of Brownfield City Council Redistricting Submission", Prepared for Mayor and City Council of Brownfield, Texas, Submitted to U.S. Department of Justice, Voting Rights Section, May, 1985. Pre-clearance Granted.

"Existing Environment of the Region of Interest for LCRA's Proposed Round Top Project, Phase II, Volume I & II", Prepared for Lower Colorado River Authority, EH & A Document No. 841023,1985.

"Brownfield Independent School District Redistricting Submission", Prepared for BISD, Submitted to U.S. Department of Justice, Voting Rights Section, May, 1985. Pre-clearance Granted.

"Land Use Assessment for Proposed Comanche Peak Nuclear Power Plant Transmission Lines", Prepared for Texas Power & Light, EH & A Document No. 85090, 1985.

"City of Littlefield City Council Redistricting Submission", Prepared for Mayor and City Council of Littlefield, Texas, Submitted to U.S. Department of Justice, Voting Rights Section, May, 1985. Pre-clearance Granted.

"Littlefield Independent School District Redistricting Submission", Prepared for LISD, Submitted to U.S. Department of Justice Voting Rights Section, February, 1985. Pre-clearance Granted.

"Plainview Independent School District Redistricting Submission", Prepared for PISD, Submitted to U.S. Department of Justice, Voting Rights Section, January, 1985. Pre-clearance Granted.

"Response to the Northwest Area Growth Plan", Prepared for the Austin Chamber of Commerce, EH & A Document No. 84963,1984.

"Capital Recovery Fees and the Problem of Equity", Proceedings, Western Governmental Research Association, Palm Springs, California, November 16 - 19, 1984.

"Exhibit E, Land Management, Economic and Recreation Resources", prepared for Brazos River Authority, Morris Sheppard Hydroelectric Dam F.E.R.C. Permit, EH & A Document No. 84550, August, 1984.

"Environmental Update, South Texas Nuclear Power Plans (31,400 square miles)", Prepared for Houston Light & Power, EH & A Document No. 94691, 1984.

"Typology construction and Case Survey Methodology", Proceedings, Western Social Science Association, San Diego, California, April 27, 1984.

"An Economic and Social Assessment of Industrial Development Potential - Plainview, Texas", Southwest Polimetrics Report, No. 165, April, 1984.

"Market Analysis Inventory - Pioneer Hi-Bred, Intl., Inc.", Southwest Polimetrics Report No. 164, May, 1984.

"Plainview city Council Redistricting Proposal", Southwest Polimetrics Report No. 161, February 1984. Pre-clearance Granted.

"Lamb County Redistricting Submission", Southwest Polimetrics Report No. 160, October, 1983. Pre-clearance Granted.

"Floyd County Redistricting Submission", Southwest Polimetrics Report No. 155, August, 1983. Pre-clearance Granted.

"Swisher County Redistricting Submission", Southwest Polimetrics Report No. 140, June, 1983. Pre-clearance Granted.

"Deaf Smith County Redistricting Submission", Southwest Polimetrics Report. No. 133, April, 1983. Pre-clearance Granted.

"Hale County Redistricting Submission", Southwest Polimetrics Report No. 120, February, 1983. Pre-clearance Granted.

"Terry County Redistricting Submission", Southwest Polimetrics Report No. 101, November, 1982. Pre-clearance Granted.

"Housing Needs in Plainview", HUD Application for Community Development, September, 1982.

"Hale County Redistricting Submission", Prepared for Hale County Commissioner's Court, Submitted to U.S. Department of Justice, Voting Rights Section, November, 1979. Pre-clearance Granted.

"Biomass Transfer Systems", Report to Office of Technology Assessment, August, 1979.

"Rehabilitation Technologies - A Technology Assessment", (Research Associate - Editor), Texas Tech Press, Prepared for U.S. Department of Health, Education and Welfare, November, 1978.

"Solid Waste Collection Optimization - A Critical Path Approach", Prepared for City of Plainview, Texas, 1978.

Summary

CRI Closure Cost Estimate – Revised April/May 2003

Site Changes since July 2002:

Pits 3a and 3d now drained, scraped clean
Pit 16a contents recovered, berms removed, bottom scraped clean
13,000 cy of clean cover material now stockpiled adjacent to pits 3a and 3b
Landfill area now mostly covered and capped
Contents in Pits 13 and 16 have shown appreciable signs of weathering, can be handled as solids rather than being pumped, do not need treatment prior to burial

Modified approach for this cleanup estimate:

BS&W will be mixed with berm material, windrowed, dried, and buried at Area 15 rather than fertilized, blended, and tilled three times in Pit 3ab

1.0	**BS&W** (Pits 13 and 16, tank contents)			
	Pump out treatment and storage tanks, haul to Area 15	1,030 cy	$6,520	
	Clean tanks, 4 crew, 3 days, SCBA	--	$3,500	
	Dig up Pit 13, mix w/ berm mat'l, haul 0.2 mi to Area 15	2,560 cy	$7,040	
	Dig up Pit 16, mix w/ berm mat'l, haul 0.8 mi to Area 15	1,270 cy	$4,560	
	Windrow, dry, bury, and cap at Area 15	4,520 cy	$9,270	
				$30,890
2.0	**Pit 3b, 3c Residue**			
	Scrape 12" from bottoms of pits, load and haul to Pit 3d	2,850 cy	$5,870	
				$5,870
3.0	**Berm Material**			
	Pits 2,4,5,6 bulldozed into Pit 3d by D-6	4,690 cy	$1,200	
	Pits 7-9, 10-12 loaded and trucked 600 ft to Pit 3d	4,140 cy	$11,380	
	Spread out and compact in Pit 3d to 10 ft depth by D-6	11,680 cy	$2,990	
	Cap w/ caliche/red bed, compact (3,600 sq yd)	1,800 cy	$5,440	
				$21,010
4.0	**Landfill**			
	Cap 0.5 acres w/ caliche/red bed, compact (2,420 sq yd)	1,210 cy	$4,500	
	(includes 1 D-6 day for misc fill and compaction of waste)			$4,500
5.0	**Misc**			
	Runon Control (diversion ditches @ Pit 3)		$1,750	
	Site Cleanup, gen'l, D-6, loader, truck (30 hrs)		$2,640	
	Mob/demob, 1 day for dozer, loader, low boys		$2,350	
	Soil samples, 8 ea, report		$4,800	
	Solid waste, liner and net scrap to landfill		$2,500	
	Reports, admin, site specific Health and Safety Plan		$7,020	
				$21,060
	Total			**$83,330**

Assumptions

- BS&W treated on-site: haul to Area 15, windrow for ~10 days, burial
- Caliche and red bed cap material sources ripped on-site at 1,500 cy per D-6 day
- Cap w/ red bed (6") and caliche (12"), no protectable GW
- Use 0.5 acres of landfill to be covered, area found on 4/21/03
- 12 cy trucks @ $60/hr; D-6 @ $96/hr; loader @ $78/hr; vacuum truck @ $70/hr
- No reveg, tanks left clean and in place

The enclosed photographic record of pond 13 (formerly 3) is evidence that there is no migration of fluid through the dikes of the pond or subsurface communications between the liquid management areas.

After closure the dry material in 13d will not leach into the open portion of the pond 13.

13D - 3-6-03

13 D pit 2-19-2003

13 D pit 2-19-2003

13 D JANUARY 2003

13 D JANUARY 2003

13 D AUGUST 2002

13 D AUGUST 2002

13 D MAY 2002

13 D MAY 2002

13 D MAY 2002

13 D APRIL 2002

13 D MARCH 2002

13 D March 2002

13 D FEBRUARY 2002

13 D FEBRUARY 2002

13A 3-6-03

13 A pit 2-19-2003

13 A pit 2-19-2003

13A pit 2-10-2003

13 A JANUARY 2003

13 A JANUARY 2003

13 A OCTOBER 2002

A AUGUST 2002

CRI

CONTROLLED RECOVERY INC.

P.O. BOX 388, HOBBS, NM 88241
(505) 393-1079 • FAX (505) 393-3615

RECEIVED

JAN 16 2003

OIL CONSERVATION DIVISION

January 14, 2003

Lori Wrotenbery
Director
Oil Conservation Division
1220 South St. St. Francis Drive
Santa Fe, New Mexico 87505

FAX: 505-476-3462

Dear Ms. Wrotenbery,

Controlled Recovery, Inc. is requesting a variance from or amendment to Rule 711 to allow the surface waste management facilities to accept for treatment or disposal of non oilfield wastes that are similar in characteristics to oilfield wastes that the facilities are currently accepting.

Thanks for your consideration.

Sincerely,

K Marsh

Ken Marsh

President

CRI

CONTROLLED RECOVERY INC.

P.O. BOX 388, HOBBS, NM 88241
(505) 393-1079 • FAX (505) 393-3615

January 13, 2003

Lori Wrotenbery
Director
Oil Conservation Division
1220 South St. St. Francis Drive
Santa Fe, New Mexico 87505

Fax: 505-476-3462

Dear Ms. Wrotenbery,

The material excavated from the Salado formation in south east New Mexico is stored on the surface and has some rain water runoff from the storage mound.

The excavation is continuing and will increase the volume of the runoff and any problems associated with the runoff.

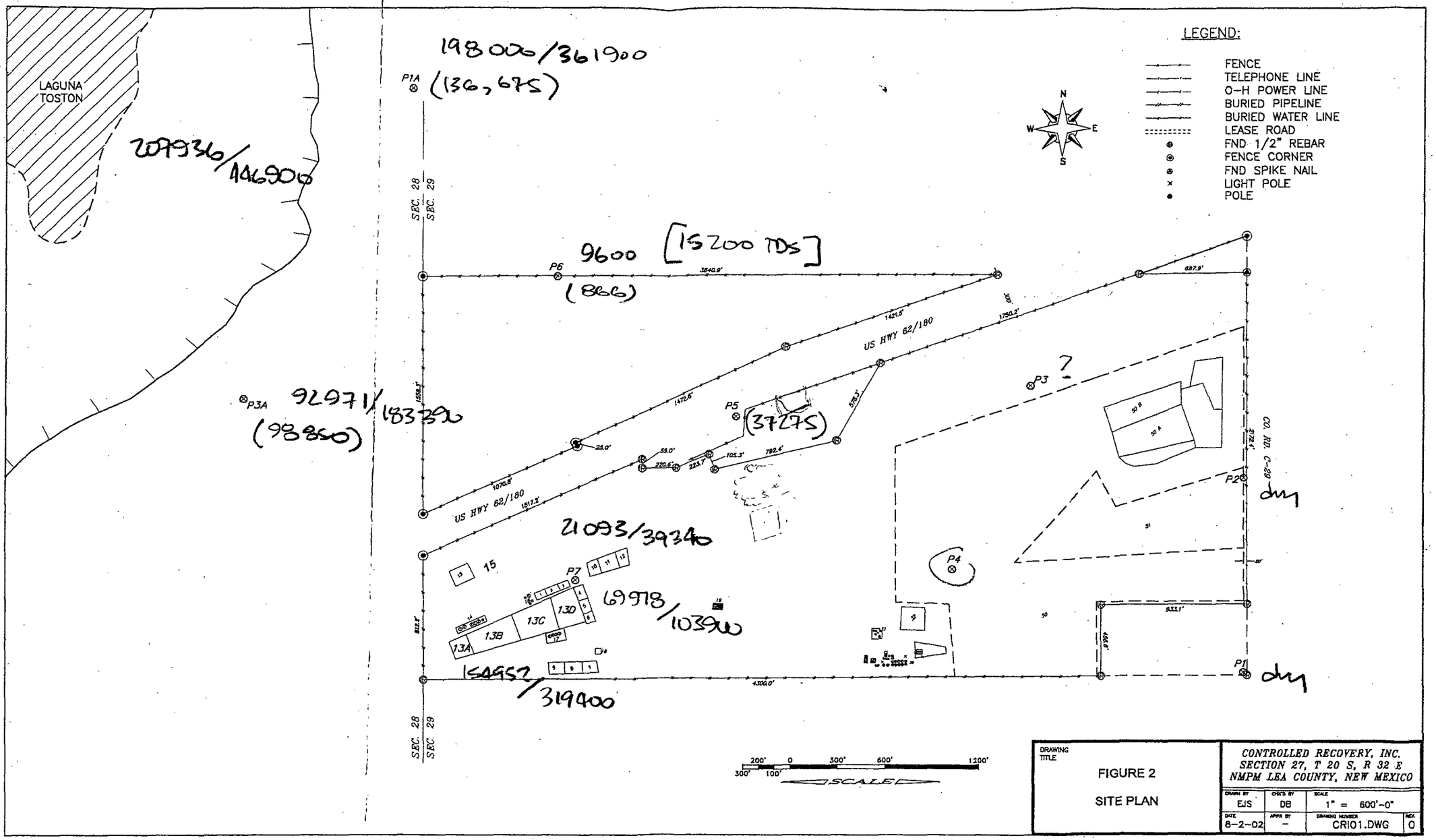
Please call if I may provide additional information.

Sincerely,

Ken Marsh

President

Controlled Recovery, Inc.


LAGUNA TOSTON
198000/361900
P1A (136,675)
209936/146900
SEC. 28
SEC. 29
9600 [15200 TDS]
P6
(866)
US HWY 62/180
P3A 92971/183350
(98850)
P5 (3775)
P3 ?
CO. RD. C-29
21093/39340
15
P7
69978/103900
13A
13B
13C
13D
15A957/319400
P4
P2
P1
LEGEND:
FENCE
TELEPHONE LINE
O-H POWER LINE
BURIED PIPELINE
BURIED WATER LINE
LEASE ROAD
FND 1/2" REBAR
FENCE CORNER
FND SPIKE NAIL
LIGHT POLE
POLE
N
S
E
W
200' 0 300' 600' 1200'
300' 100'
SCALE
DRAWING TITLE
FIGURE 2
SITE PLAN
CONTROLLED RECOVERY, INC.
SECTION 27, T 20 S, R 32 E
NMPM LEA COUNTY, NEW MEXICO
DRAWN BY EJS
CHK'D BY DB
SCALE 1" = 600'-0"
DATE 8-2-02
APPR BY -
DRAWING NUMBER CRI01.DWG
REV. 0

Hydrogeologic Update Report
Controlled Recovery, Inc
Lea County, New Mexico

RECEIVED
JAN 10 2003
Environmental Bureau
Oil Conservation Division

January 9, 2003

Prepared for:

Controlled Recovery, Inc.
P.O. Box 388
Hobbs, New Mexico 88241

By:

Safety & Environmental Solutions, Inc.
703 E. Clinton, Suite 102
Hobbs, New Mexico 88240
(505) 397-0510

Name: WILLIAMS SINK
Date: 8/6/2002
Scale: 1 inch equals 2000 feet

Location: 032° 32' 39.7" N 103° 45' 10.1" W
Caption: Figure 1. Vicinity Map
Controlled Recovery, Inc.
Lea County, New Mexico

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I. Introduction

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In addition to the hydrogeologic review, soil samples were collected from several pit locations following emptying for routine inspection and maintenance. The results of the soil sampling are also presented.

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The geologic work submitted with the application to the NMOCD and other readily available information was reviewed, especially the work of the consulting hydrologist, James Wright. The main purpose for this particular review was to prepare a map of the elevation of the top of the Red Beds, which is the local name for rocks of Triassic and Permian age present beneath the surface alluvium. The Quaternary alluvium in the area of facility ranges in thickness from 0 to about 45 feet. The underlying Red Beds are approximately 800 ft. thick and are predominately composed of clays and siltstones with occasional very fine-grained sandstone. The upper part of these Red Beds is believed to be Chinle Formation and the lower portion Dewey Lake Red Beds. The Red Beds are underlain by the Rustler Formation which about 300 ft. thick under the site area, and consists primarily of anhydride or gypsum with some limestone and clays.

The surface alluvium is generally unsaturated except where water has been introduced due to man's activities. Therefore, in the absence of a pre-existing water table, it is important, to determine the orientation of the Red Beds to determine the direction of likely travel of any ponded water on top of the Red Beds.

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P–3	03/07/02	3,543.4	31.98	3511.4	46.80	14.8
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P–6	03/07/02	3,531.8	18.00	3513.8	50.21	32.2
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P–3A	03/07/02	3,526.1	12.94	3513.2	55.45	42.5

Notes:

a. Water in P-5 is from a nearby water-line leak and a water level was not calculated for use in preparing the map.

b. P-2A is more than a mile north of the main liquids processing area of the facility and the water level was not calculated for use in preparing the map.

The groundwater map shows a groundwater mound in the vicinity of P-7 with decreasing hydraulic head radially outward. Although there is likely some movement to the east, piezometers P-1 and P-2 are dry, and the saturated thickness range in P-3 and P-4 is between 15 and 20 ft. Because the Red Beds dip to the northwest, most movement will be in that direction also and groundwater moving in other directions due to the influence of the groundwater mound will eventually be redirected to move to the northwest, also. The groundwater gradient to the northwest is 0.006 or about 30 ft. per mile.

As the groundwater approaches Laguna Toston, the salt lake, the groundwater contours flatten. The gradient between P-6 and P-1A decreases to 0.002, or about 10 ft. per mile. At some point lateral groundwater movement ceases in the vicinity of the lake and additional groundwater influx causes a rise in groundwater levels around the perimeter of the lake. Given the thin saturated thickness of the sediments, the low volume of recharge to the saturated zone and the slow movement of the groundwater, it is very unlikely that a small increase in groundwater elevation upgradient of the lake will have any type of measurable impact on water levels in the lake.

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The current piezometers were not designed for the collection of water quality samples, and not much information is known about their construction. However they can be sampled and the results can be used to broadly characterize the groundwater in the area.

Samples were collected from several piezometers, Laguna Toston, and a borehole drilled beneath a pit closed for cleaning (Borehole 1, pit "D"). The results are tabulated in Table 2 and shown on Figure 5. The poorest overall water quality is in Laguna Toston which has a chloride concentration of 207,936 mg/L and a total dissolved solids (TDS) concentration of 446,900 mg/L. Samples from P-1A and P-3A show equally poor water quality, with a TDS of well over 100,000 mg/L at both locations. At a TDS of 103,900 mg/L, the borehole beneath pit D has less salt than the Laguna or these two piezometers. Piezometer 7 is located adjacent to pit D, and has a TDS of 39,300 mg/L, which is less than 10% of the TDS found in Laguna Toston. Piezometer P-6 has the "best" water quality. However, with a TDS of 15,200 mg/L, the groundwater at that location exceeds all state and federal standards for any use and is outside classification as an Underground Source of Drinking Water by state and federal water pollution control programs. (To be considered an Underground Source Of Drinking Water, the water must be less than 10,000 mg/L).

Table 2. Results of Water Quality Sampling for Chloride and TDS, Controlled Recovery, Inc., Lea County, New Mexico

Sample Location	Date	Chloride (mg/L)	TDS (mg/L)
"A" Pit	05/08/02	154,952	319,400
Borehole 1	02/22/02	69,978	103,900
P-1A	02/14/02	198,000	361,900
P-3A	05/10/02	92,971	183,390
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Laguna Toston	05/13/02	207,936	446,900

Soil Sampling

Soil samples were collected from several pit locations following emptying of fluids for routine maintenance. The samples were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons (TPH) and, for one sample, chlorides.

The pits sampled are identified on Figure 1 as locations 13A (pit A), 13D (pit D) and 15. Pits A through D receive produced water fluids and are connected in series. Oil in the water is separated prior to water discharge and the main constituent in the pits is chloride (water analyses, Table 2). A small, trailer mounted drill rig was used to collected soil samples at depths of 5 and 10 ft. from Pit D in February 2002. The October 2002 sample from Pit A was a surface soil sample. The results of the sampling are shown in Table 3.

Four small pits that received basic sediment (BS) were present at location 15; these pits have now been closed and the dried sediments moved elsewhere on the facility. A sample was collected from a trench dug beneath pit 4 at that location. The analytical results of the soil sampling also are shown in Table 3.

Table 3. Results of Soil Sampling for BTEX, TPH and Chloride,
Controlled Recovery, Inc., Lea County, New Mexico

Sample ID	Date	GRO (mg/Kg)	DRO (mg/Kg)	TPH (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl-benzene (mg/Kg)	Total Xylenes (mg/Kg)	Chloride (mg/Kg)
Pit D, BH 1, 5 ft.	02/20/02	< 10.0	148	148	<0.005	0.014	0.011	0.091	- -
Pit D, BH 1, 10 ft.	02/20/02	< 10.0	12.6	12.6	<0.005	<0.005	<0.005	<0.015	- -
Location 15 Pit 4, trench at 5 ft.	02/20/02	< 10.0	15.3	15.3	<0.005	<0.005	<0.005	<0.015	- -
Pit A, west side center	10/11/02	- -	- -	4,620	<0.005	<0.005	0.013	0.103	18,000

OCD pit closure guidelines for this location:
Benzene 10 mg/Kg, total BTEX 50 mg/Kg, TPH 5,000 mg/Kg.

OCD guidelines for pit closure are based on proximity to fresh groundwater. Because of the absence of fresh water at the permitted facility, the maximum values for the constituents are used for comparison with the sample analysis results. The results of the sampling and analytical testing show all constituents to be below OCD guidelines.

III. Conclusions

The hydrologic review and update has provided additional site information on groundwater occurrence, groundwater movement, water quality, and soil chemical concentrations in the vicinity of the site. Conclusions of the most recent study are presented below.

1. A contour map constructed on top of the Red Bed surface shows the Red Beds gently sloping to the northwest in the direction of Laguna Toston. This is the direction of surface drainage originally shown in the Wright consulting report.
2. The Red Beds are generally unsaturated or only partially saturated in the area of the facility. Additional saturation may be caused by manmade activities such as leaky water lines or surface seepage. The Red Bed upper surface acts as a boundary to downward movement of moisture. Except as noted below, any groundwater will move downgradient on top of the Red Bed surface, which is northwesterly in the area of the facility.
3. A groundwater mound was observed in the vicinity of piezometer P-7. Groundwater in the vicinity of the mound will move radially outward until the hydraulic head is flattened at which time movement will be redirected downgradient in the direction of Laguna Toston.
4. Although the piezometers were not designed for water quality sampling, water samples from them can be used to characterize groundwater in the area.
5. Groundwater quality, as measured as total dissolved solids (TDS), is considerably poorer in piezometers closest to Laguna Toston. Water in Laguna Toston, a natural salt lake, is essentially brine. Groundwater at those salt concentrations is not considered an "underground source of drinking water" and is not afforded protection by either state or federal groundwater protection regulatory programs.
6. Evaluation of the current information supports a conclusion that the facility is not impacting groundwater offsite or Laguna Toston.
7. Soil sampling at several pit locations has not resulted in soil constituent concentrations above NM Oil Conservation Division guidelines for pit closure.
8. The results of this update support the findings of the original study. The facility is not impacting freshwater supplies, and was located in an appropriate location for its intended purpose.

IV. References

Nicholson, Alexander, Jr., and Clebsch, Alfred, Jr., 1961. Geology and Ground-Water Conditions in Southern Lea County, New Mexico. New Mexico Bureau of Mines and Mineral Resources Ground water Report 6, 123 p.

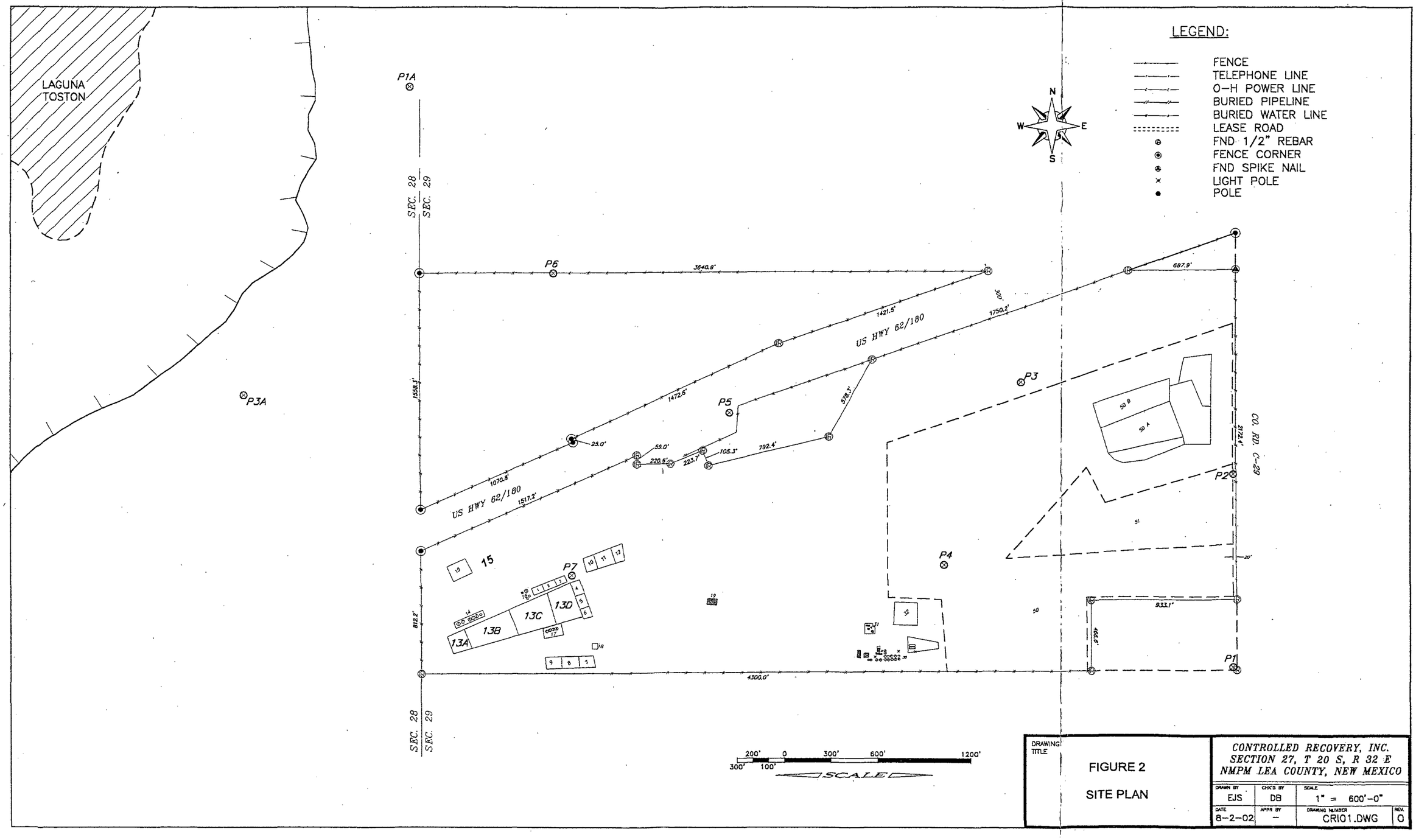
Wright, James I., 1990. Proposal for an Oil Treating Plant Permit and Surface Waste Disposal in Lea, County, New Mexico. Prepared for Controlled Recovery, Inc., February, 8 p., maps, appendix.

V. Report Figures

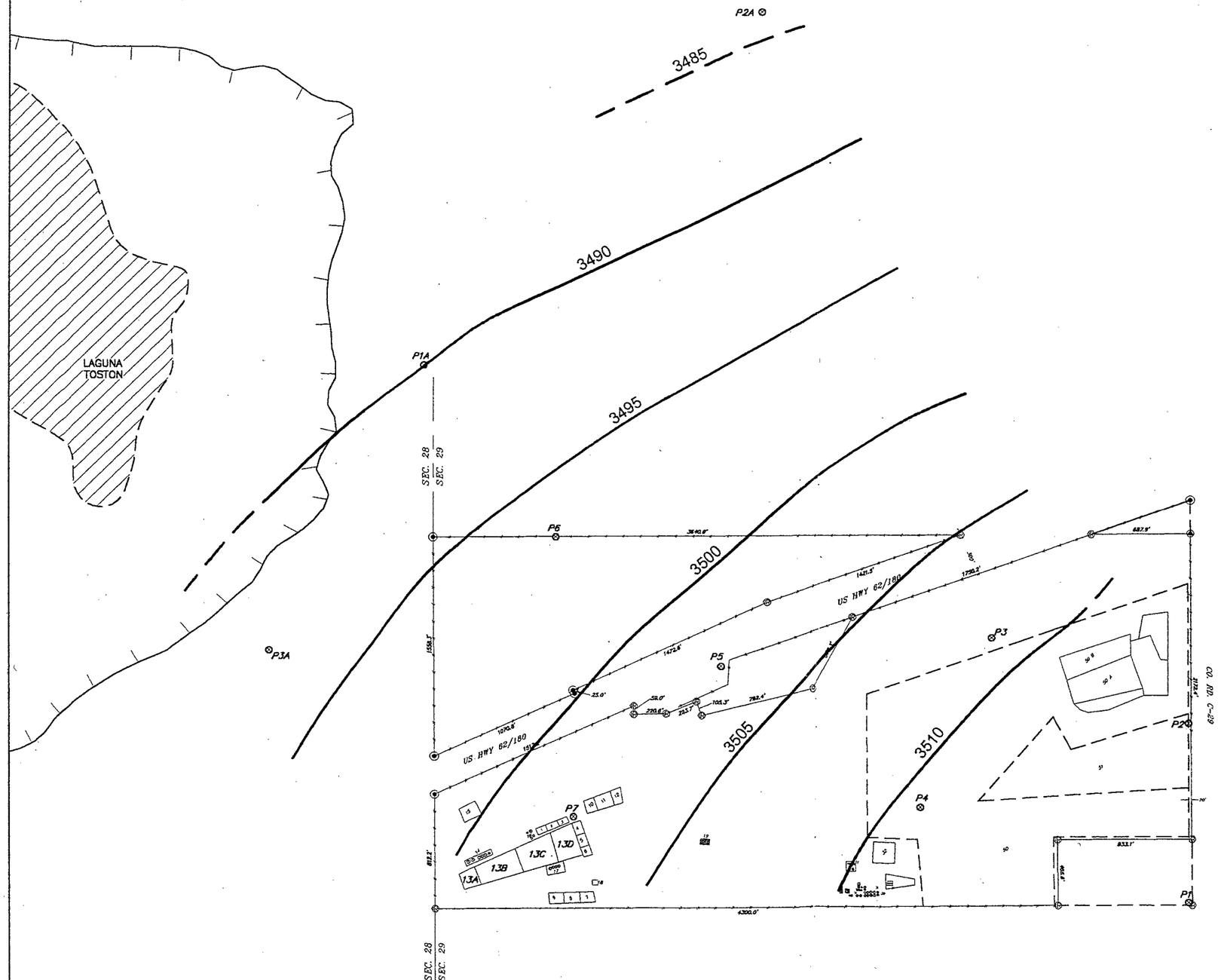
Figure 1. Vicinity Map

Name: WILLIAMS SINK
Date: 8/6/2002
Scale: 1 inch equals 2000 feet

Location: 032° 32' 39.7" N 103° 45' 10.1" W
Caption: Figure 1. Vicinity Map
Controlled Recovery, Inc.
Lea County, New Mexico



DRAWING TITLE	FIGURE 2 SITE PLAN	*CONTROLLED RECOVERY, INC.* *SECTION 27, T 20 S, R 32 E* *NMPM LEA COUNTY, NEW MEXICO*	
		DRAWN BY: EJS	CHK'D BY: DB
		SCALE: 1" = 600'-0"	
		DATE: 8-2-02	APPR BY: –
		DRAWING NUMBER: CRI01.DWG	REV: 0



LEGEND:

- FENCE
- TELEPHONE LINE
- O–H POWER LINE
- BURIED PIPELINE
- BURIED WATER LINE
- LEASE ROAD
- FND 1/2" REBAR
- FENCE CORNER
- FND SPIKE NAIL
- LIGHT POLE
- POLE
- 3490 REDBED ELEVATION (FT.) CONTOUR INTERVAL 5.0 FT. (DASHED WHERE APPROXIMATE)

N W E S

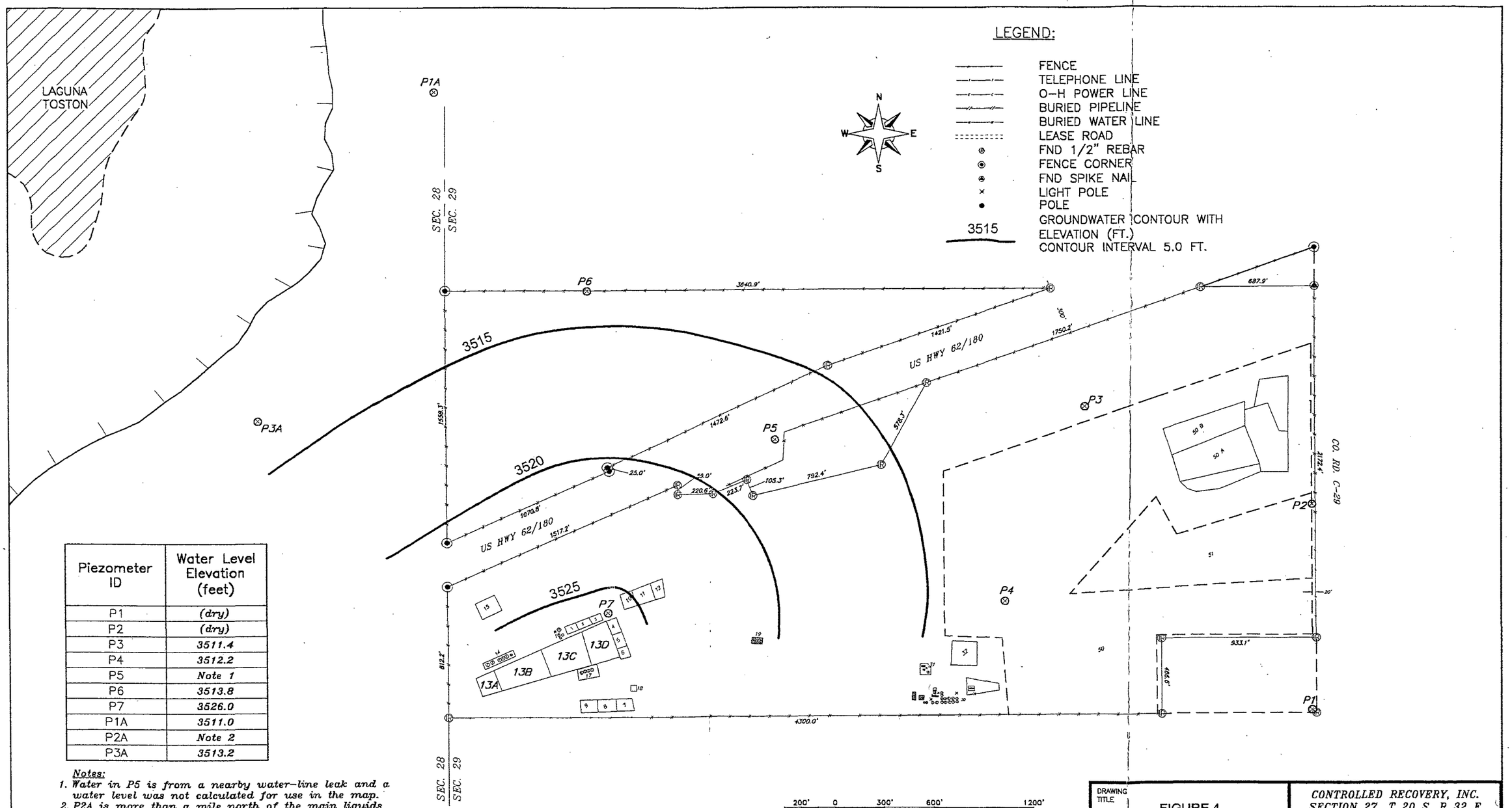
A B C 400' 800' 1600'
SCALE

DRAWING TITLE

FIGURE 3
ELEVATION OF THE TOP OF THE REDBEDS

CONTROLLED RECOVERY, INC.
SECTION 27, T 20 S, R 32 E
NMPM LEA COUNTY, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
EJS	DB	1" = 800'-0"	
DATE	APPR BY	DRAWING NUMBER	REV.
8-2-02	–	CRI01.DWG	0



Piezometer ID	Water Level Elevation (feet)
P1	*(dry)*
P2	*(dry)*
P3	*3511.4*
P4	*3512.2*
P5	*Note 1*
P6	*3513.8*
P7	*3526.0*
P1A	*3511.0*
P2A	*Note 2*
P3A	*3513.2*

Notes:
1. *Water in P5 is from a nearby water–line leak and a water level was not calculated for use in the map.*
2. *P2A is more than a mile north of the main liquids processing area of the facility and the water level was not calculated for use in the map.*

DRAWING TITLE		
FIGURE 4 GROUNDWATER ELEVATION CONTOUR MAP	*CONTROLLED RECOVERY, INC. SECTION 27, T 20 S, R 32 E NMPM LEA COUNTY, NEW MEXICO*	
	DRAWN BY: EJS	CHK'D BY: DB
	SCALE: 1" = 600'–0"	
	DATE: 8–2–02	APPR BY: –
	DRAWING NUMBER: CRI01.DWG	REV.: 0

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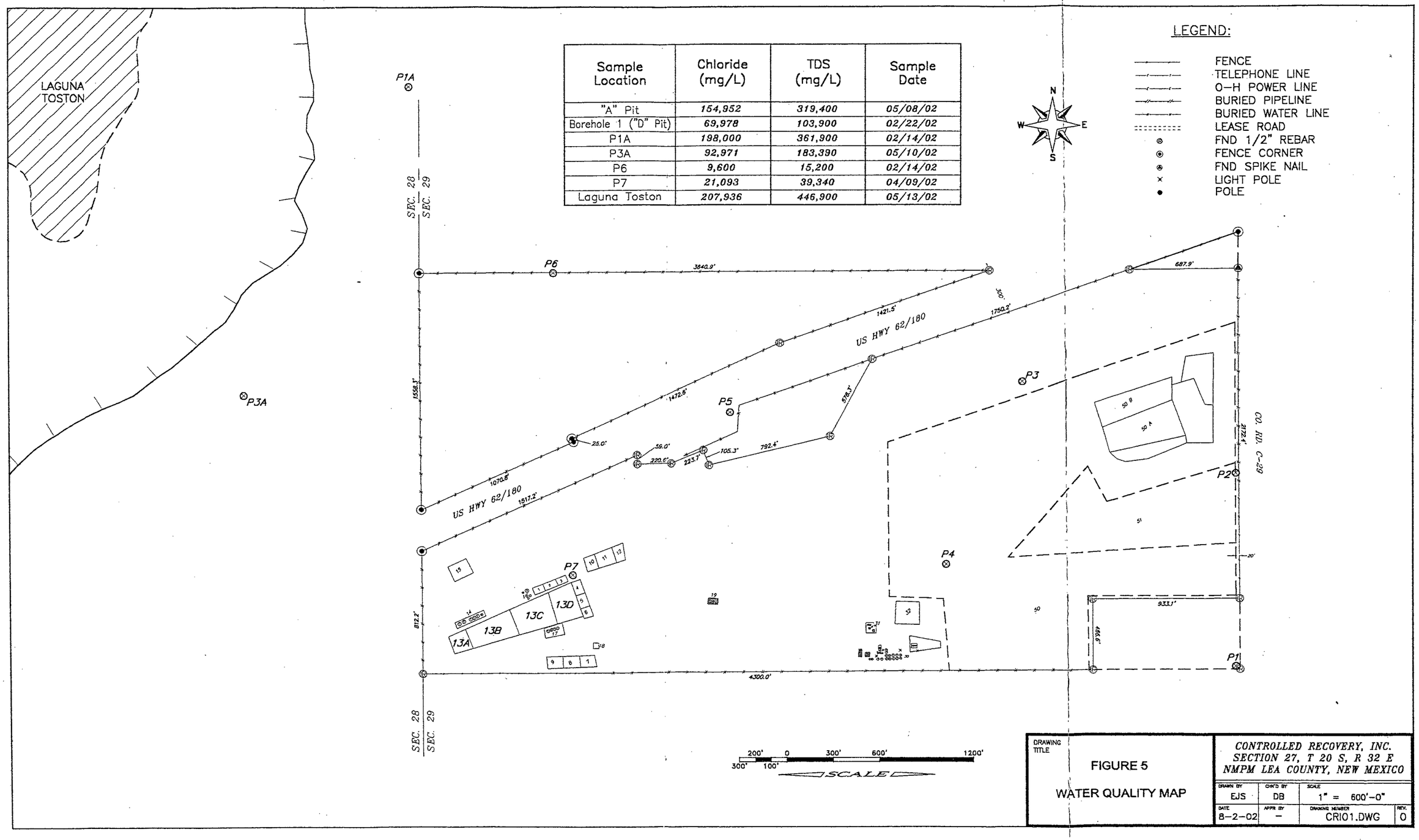


DRAWING TITLE		CONTROLLED RECOVERY, INC. SECTION 27, T 20 S, R 32 E NMPM LEA COUNTY, NEW MEXICO			
FIGURE 5		DRAWN BY: EJS	CHK'D BY: DB	SCALE: 1" = 600'-0"	
WATER QUALITY MAP		DATE: 8-2-02	APPR BY: -	DRAWING NUMBER: CRI01.DWG	REV. 0

PLOT MAP LEGEND

1 thru 12. Drying ponds

13. A thru D: Evaporation Pond

14. SWD

15. Storage

16. Wash out

17. Fluid Separation

18. Diesel Storage

19. Security

30. Treating Plant

31. Office Complex

32. Storage

50. Landfill Area
    a. Active
    b. Navajo

51. Land Farm Area

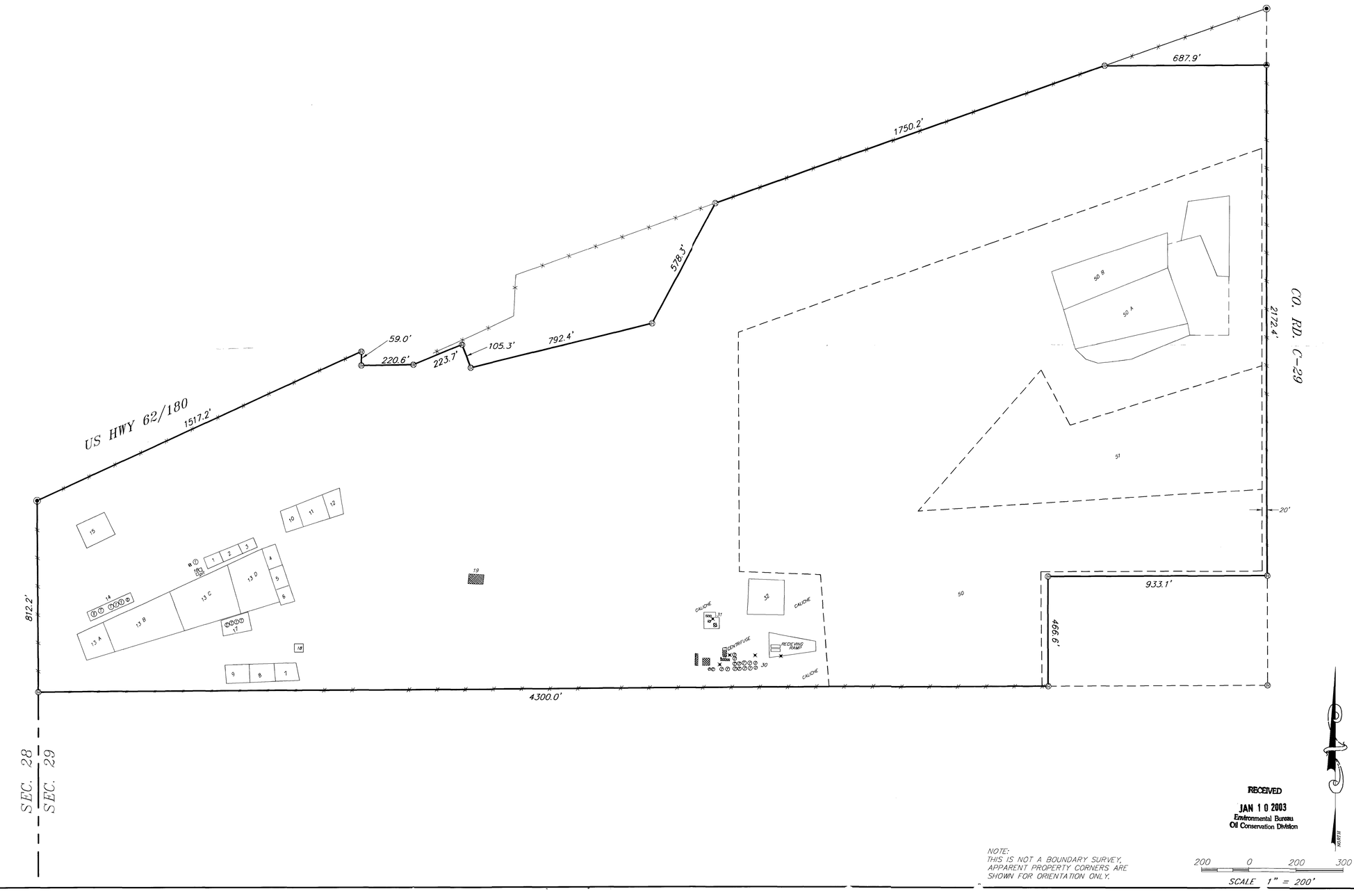
RECEIVED

JAN 10 2003
Environmental Bureau
Oil Conservation Division

NMED LAND FARM

TOPOGRAPHIC SURVEY

SECTION 27, TOWNSHIP 20 SOUTH, RANGE 32 EAST, N.M.P.M., LEA COUNTY, NEW MEXICO



RECEIVED
JAN 10 2003
Environmental Bureau
Oil Conservation Division

NOTE:
THIS IS NOT A BOUNDARY SURVEY.
APPARENT PROPERTY CORNERS ARE SHOWN FOR ORIENTATION ONLY.

CONTROLLED RECOVERY, INC.

FND 1/2" REBAR
FENCE CORNER
FND SPIKE NAIL
LIGHT POLE
POLE
FENCE
TELEPHONE LINE
O-H POWER LINE
BURIED PIPELINE
BURIED WATER LINE
LEASE ROAD

BASIN SURVEYS
1120 N. WEST COUNTY ROAD - Hobbs, New Mexico

Drawn By: K.GOAD	File Name: HALFWAYCR.DWG	Checked By: G.L.J.	
Survey Date: Varies	Date: 05-24-2002	Sheet 2 of 2 Sheets	
W.O. No.	Disk No.: KJG #7	Last Rev. Date:	

Hydrogeologic Update Report
Controlled Recovery, Inc
Lea County, New Mexico

January 9, 2003

Prepared for:

Controlled Recovery, Inc.
P.O. Box 388
Hobbs, New Mexico 88241

By:

Safety & Environmental Solutions, Inc.
703 E. Clinton, Suite 102
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(505) 397-0510

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Prepared by:

David G. Boyer, P.G.
PROJECT MANAGER

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Table 3. Results of Soil Sampling for BTEX, TPH and Chloride,
Controlled Recovery, Inc., Lea County, New Mexico

Sample ID	Sample Date	GRO (mg/Kg)	DRO (mg/Kg)	TPH (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethyl-benzene (mg/Kg)	Total Xylenes (mg/Kg)	Chloride (mg/Kg)
Pit D, BH 1, 5 ft.	02/20/02	< 10.0	148	148	<0.005	0.014	0.011	0.091	- -
Pit D, BH 1, 10 ft.	02/20/02	< 10.0	12.6	12.6	<0.005	<0.005	<0.005	<0.015	- -
Location 15 Pit 4, trench at 5 ft.	02/20/02	< 10.0	15.3	15.3	<0.005	<0.005	<0.005	<0.015	- -
Pit A, west side center	10/11/02	- -	- -	4,620	<0.005	<0.005	0.013	0.103	18,000

OCD pit closure guidelines for this location:
Benzene 10 mg/Kg, total BTEX 50 mg/Kg, TPH 5,000 mg/Kg.

OCD guidelines for pit closure are based on proximity to fresh groundwater. Because of the absence of fresh water at the permitted facility, the maximum values for the constituents are used for comparison with the sample analysis results. The results of the sampling and analytical testing show all constituents to be below OCD guidelines.

III. Conclusions

The hydrologic review and update has provided additional site information on groundwater occurrence, groundwater movement, water quality, and soil chemical concentrations in the vicinity of the site. Conclusions of the most recent study are presented below.

1. A contour map constructed on top of the Red Bed surface shows the Red Beds gently sloping to the northwest in the direction of Laguna Toston. This is the direction of surface drainage originally shown in the Wright consulting report.
2. The Red Beds are generally unsaturated or only partially saturated in the area of the facility. Additional saturation may be caused by manmade activities such as leaky water lines or surface seepage. The Red Bed upper surface acts as a boundary to downward movement of moisture. Except as noted below, any groundwater will move downgradient on top of the Red Bed surface, which is northwesterly in the area of the facility.
3. A groundwater mound was observed in the vicinity of piezometer P-7. Groundwater in the vicinity of the mound will move radially outward until the hydraulic head is flattened at which time movement will be redirected downgradient in the direction of Laguna Toston.
4. Although the piezometers were not designed for water quality sampling, water samples from them can be used to characterize groundwater in the area.
5. Groundwater quality, as measured as total dissolved solids (TDS), is considerably poorer in piezometers closest to Laguna Toston. Water in Laguna Toston, a natural salt lake, is essentially brine. Groundwater at those salt concentrations is not considered an "underground source of drinking water" and is not afforded protection by either state or federal groundwater protection regulatory programs.
6. Evaluation of the current information supports a conclusion that the facility is not impacting groundwater offsite or Laguna Toston.
7. Soil sampling at several pit locations has not resulted in soil constituent concentrations above NM Oil Conservation Division guidelines for pit closure.
8. The results of this update support the findings of the original study. The facility is not impacting freshwater supplies, and was located in an appropriate location for its intended purpose.

IV. References

Nicholson, Alexander, Jr., and Clebsch, Alfred, Jr., 1961. Geology and Ground-Water Conditions in Southern Lea County, New Mexico. New Mexico Bureau of Mines and Mineral Resources Ground water Report 6, 123 p.

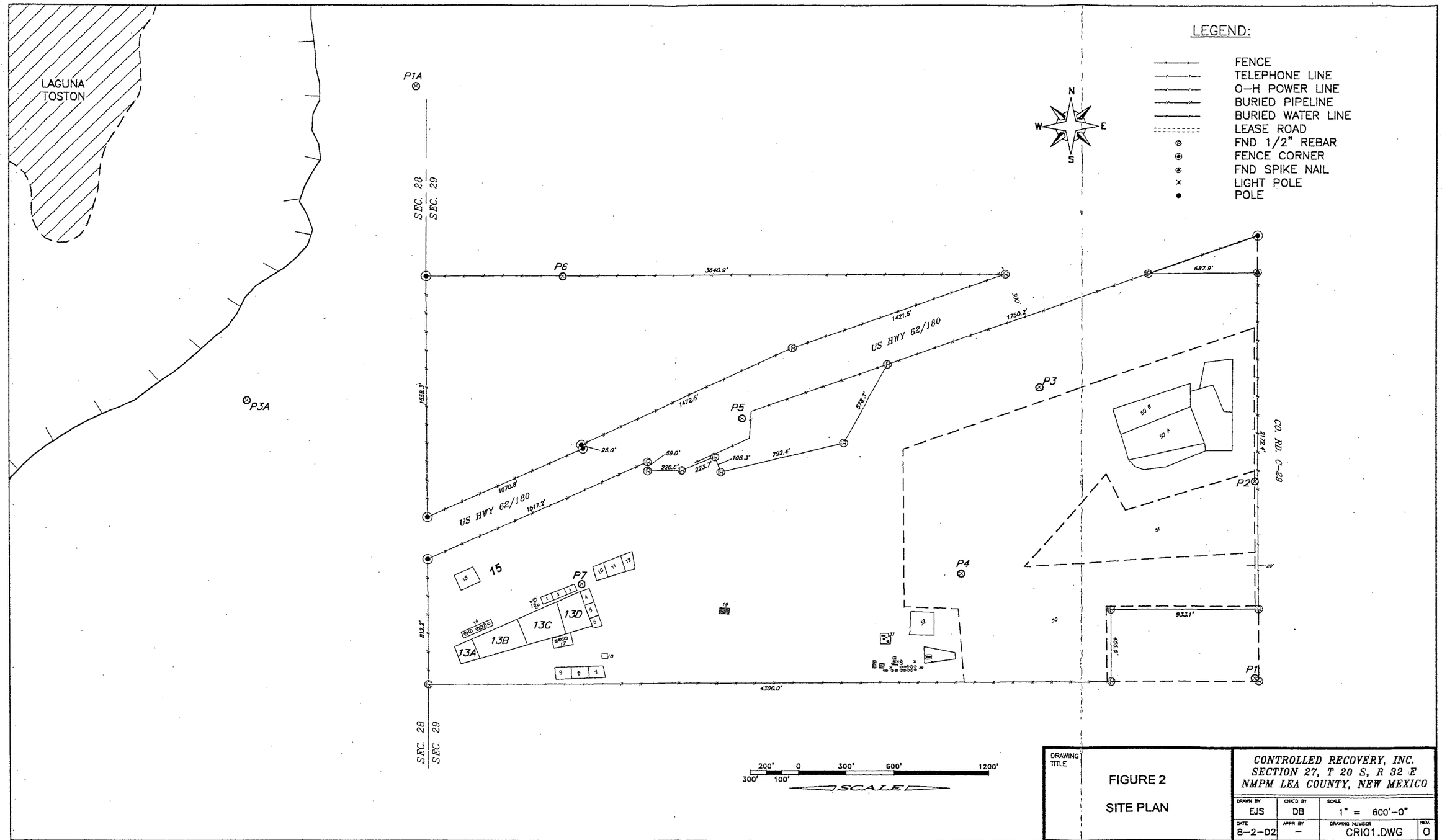
Wright, James I., 1990. Proposal for an Oil Treating Plant Permit and Surface Waste Disposal in Lea, County, New Mexico. Prepared for Controlled Recovery, Inc., February, 8 p., maps, appendix.

V. Report Figures

Figure 1. Vicinity Map

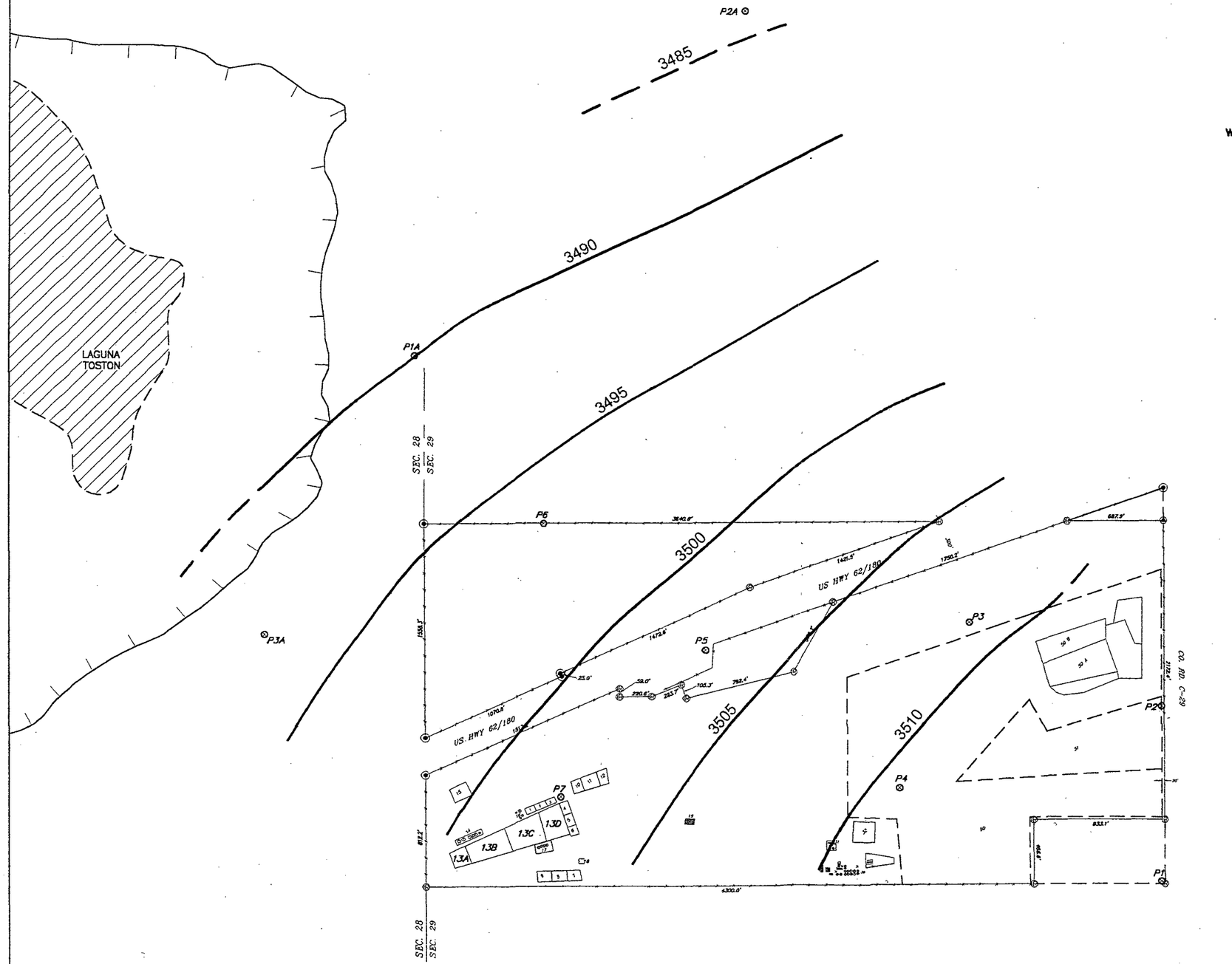
Name: WILLIAMS SINK
Date: 8/6/2002
Scale: 1 inch equals 2000 feet

Location: 032° 32' 39.7" N 103° 45' 10.1" W
Caption: Figure 1. Vicinity Map
Controlled Recovery, Inc.
Lea County, New Mexico



DRAWING TITLE	FIGURE 2 SITE PLAN	*CONTROLLED RECOVERY, INC.* *SECTION 27, T 20 S, R 32 E* *NMPM LEA COUNTY, NEW MEXICO*

DRAWN BY	CHK'D BY	SCALE	
EJS	DB	1" = 600'-0"	
DATE	APPR BY	DRAWING NUMBER	REV.
8-2-02	–	CRI01.DWG	0



LEGEND:

- FENCE
- TELEPHONE LINE
- O–H POWER LINE
- BURIED PIPELINE
- BURIED WATER LINE
- LEASE ROAD
- FND 1/2" REBAR
- FENCE CORNER
- FND SPIKE NAIL
- LIGHT POLE
- POLE
- 3490 REDBED ELEVATION (FT.) CONTOUR INTERVAL 5.0 FT. (DASHED WHERE APPROXIMATE)

N W E S

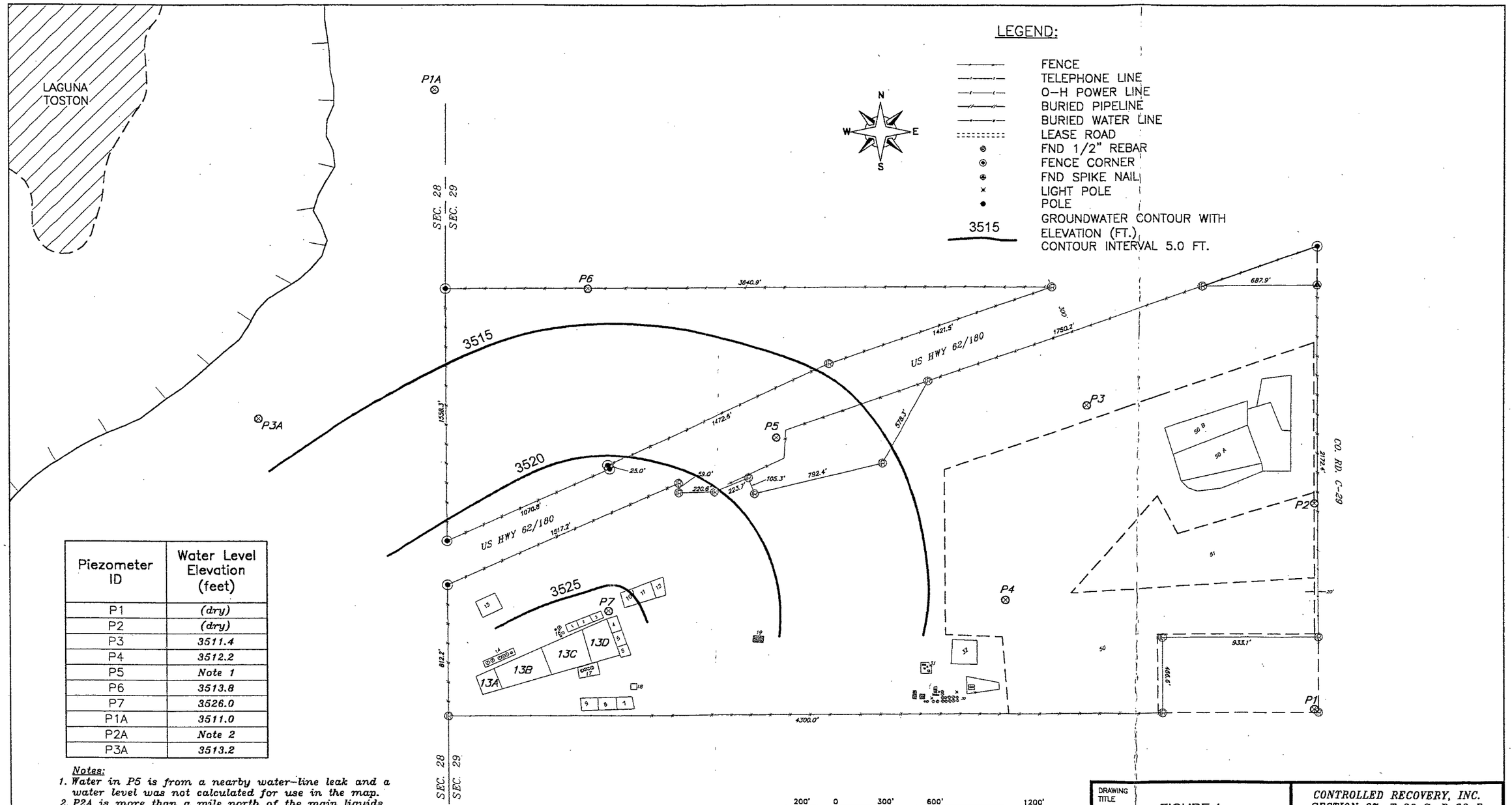
0 400' 800' 1600'
SCALE

DRAWING TITLE

FIGURE 3
ELEVATION OF THE TOP OF THE REDBEDS

CONTROLLED RECOVERY, INC.
SECTION 27, T 20 S, R 32 E
NMPM LEA COUNTY, NEW MEXICO

DRAWN BY	CHK'D BY	SCALE	
EJS	DB	1" = 800'–0"	
DATE	APPR BY	DRAWING NUMBER	REV.
8–2–02	–	CRI01.DWG	0

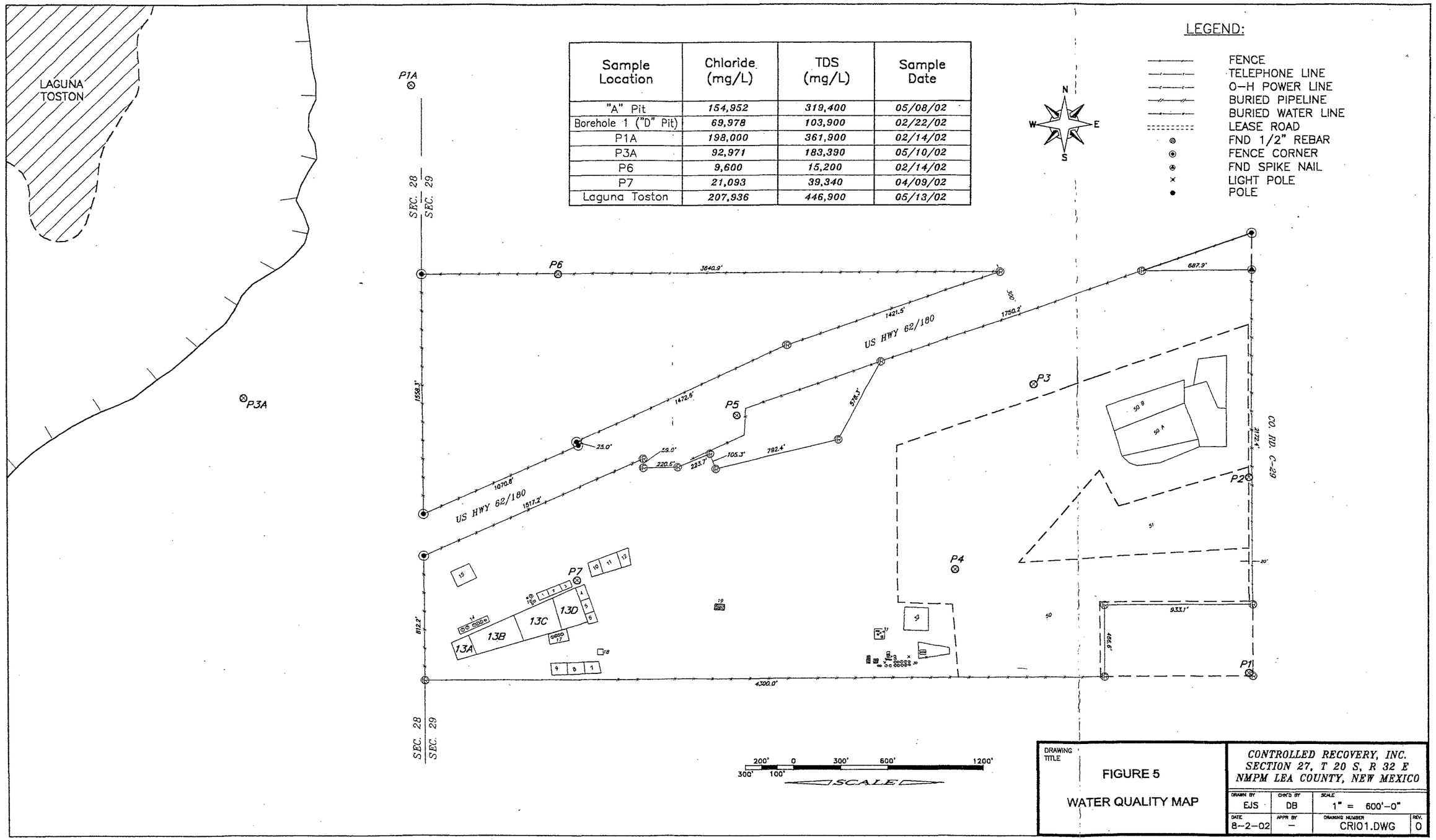


Piezometer ID	Water Level Elevation (feet)
P1	*(dry)*
P2	*(dry)*
P3	*3511.4*
P4	*3512.2*
P5	*Note 1*
P6	*3513.8*
P7	*3526.0*
P1A	*3511.0*
P2A	*Note 2*
P3A	*3513.2*

Notes:
1. *Water in P5 is from a nearby water–line leak and a water level was not calculated for use in the map.*
2. *P2A is more than a mile north of the main liquids processing area of the facility and the water level was not calculated for use in the map.*

DRAWING TITLE		
FIGURE 4 GROUNDWATER ELEVATION CONTOUR MAP	*CONTROLLED RECOVERY, INC. SECTION 27, T 20 S, R 32 E NMPM LEA COUNTY, NEW MEXICO*	
	DRAWN BY: EJS	CHK'D BY: DB
	SCALE: 1" = 600'–0"	
	DATE: 8–2–02	APPR BY: –
	DRAWING NUMBER: CRI01.DWG	REV.: 0

Sample Location	Chloride (mg/L)	TDS (mg/L)	Sample Date
"A" Pit	154,952	319,400	05/08/02
Borehole 1 ("D" Pit)	69,978	103,900	02/22/02
P1A	198,000	361,900	02/14/02
P3A	92,971	183,390	05/10/02
P6	9,600	15,200	02/14/02
P7	21,093	39,340	04/09/02
Laguna Toston	207,936	446,900	05/13/02



DRAWING TITLE		CONTROLLED RECOVERY, INC. SECTION 27, T 20 S, R 32 E NMPM LEA COUNTY, NEW MEXICO			
FIGURE 5		DRAWN BY: EJS	CHK'D BY: DB	SCALE: 1" = 600'-0"	
WATER QUALITY MAP		DATE: 8-2-02	APPR BY: —	DRAWING NUMBER: CRIO1.DWG	REV: 0