NM1 - 10B

# INSPECTIONS & DATA

JFJ Landfarm LLC
December 12,2003
Excavation of concrete mixing impoundment

These photos were taken on 12/12/03, note some of the walls disintegrated during excavation, however the west wall was not in good shape before excavation and the entire pad appears to have had a slow leak along the upright and floor joint. The design appears to be flawed in amount and density of re-bar. This pad was constructed without leak detection but had a liner to the edges for leak detection.
Denny Foust, Environmental Engineer

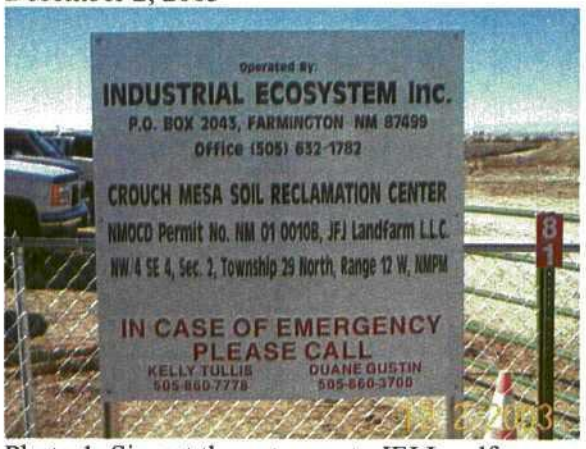

Photo 1. Sign at the entrance to JFJ Landfarm


Photo 2. Fuel / oil is not within an impermeable berm or containment.

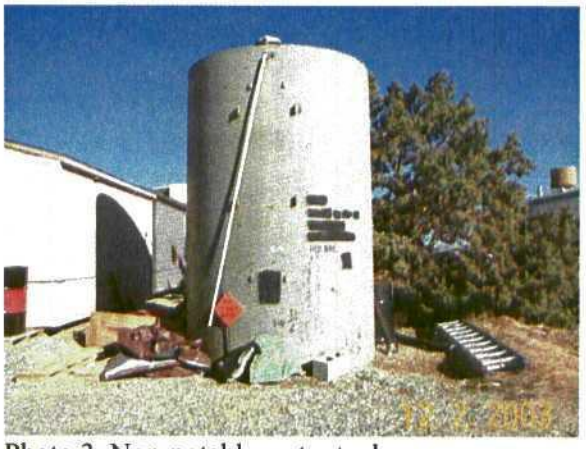
Photo 3. Non-potable water tank.


Photo 4. Fuel saddle tank is within an unlined earthen berm. The refueling hose is extended beyond the berm.


Photo 5. Tank is not labeled as to contents and is not adequately bermed to hold 11/3 the volume of the largest tank.


Photo 6. Concrete mixing containment is has standing liquid. The outside walls are covered and are not accessable for inspections.

Photo 7. Tanks are bermed however the volume of the containment area does not appear to be able to contain 1 1/3 the volume of the largest tank.


Photo 8. Concrete mixing containment has standing fluids. The wall integrity could not be determined due to the excess contaminated soil piled around the outside of the containment.

Photo 9. Straw/woodchip/manure pile used as an additive in the compost pile construction.

Photo 10. Landfarming the soils left from the Tierra operations.

Photo 11. Landfarming the soils left from the Tierra operations.

Photo 12. Storm water containment along the edge of the landfarm contains a drain pipe that releases storm water runoff directly to a natural drainage.


Photo 13. . Drums are stored along a drainage. Drum storage area is not bermed and is not impermeable. Drums are not clearly labeled.

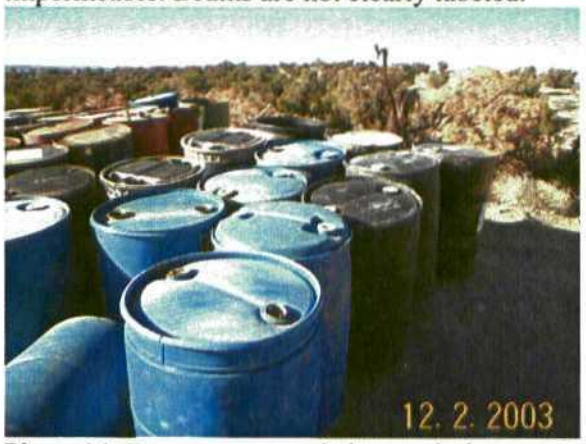


Photo 14. Drums are stored along a drainage. Drums are not labeled and they are not on an impermeable bermed containment. It is not clear which drums are empty and which contain materials.


Photo 15. Drums are stored along a drainage. Drums are not labeled and they are not on an impermeable bermed containment.


Photo 16. Used motor oil is within double containment. The water is rain/snowmelt water within the containment.


Photo 17. Containment is lined and bermed but not currently being used.

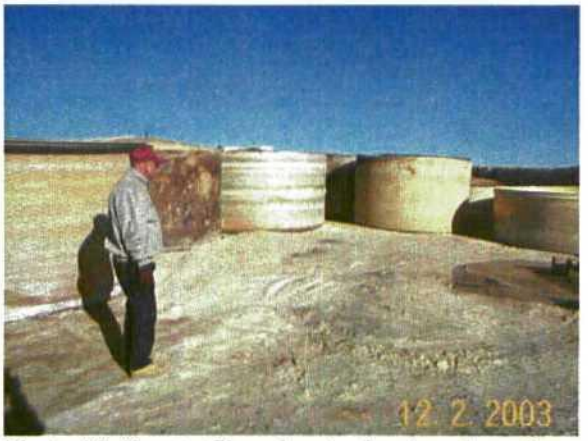


Photo 18. Empty fiberglass tanks stored on site.


Photo 19. Landfarming the soils left from the Tierra operations


Photo 20. Area dedicated for BP Colorado waste.


Photo 21. Compost piles averages 30 feet wide by 15 feet tall.


Photo 22. Compost pile (large pile) waiting to have manure/straw/woodchip mix (small pile) added.


Photo 23. Rain/snowmelt water in the catchment basin.

Photo 24. End sampling point of a compost pile.

Photo 25. Newly constructed compost pile with fresh manure/straw/wood chip mixed in.


Photo 26. Compost pile was split open on top and the interior was very black and heavy with hydrocarbons.


Photo 27. Lower portion of landfarm shows the size and spacing of 7 of the facility's compost piles.


Photo 28. Lower portion of landfarm shows the size and spacing of 5 more of the facility's compost piles.

# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**
Governor
**Joanna Prukop**
Cabinet Secretary

May 20, 2003

**Lori Wrotenbery**
Director
**Oil Conservation Division**

Mr. James Hatcher
JFJ Landfarm L.L.C.
P.O. Box 2043
Farmington, NM 87499

**RE: Surface Waste Management Facility Inspection Report: Permit (NM-01-0010B)**
**JFJ Landfarm L.L.C.**
**NW/4 SE/4, Section 2, Township 29 North, Range 12 West, NMPM,**
**San Juan County, New Mexico**

Dear Mr. Hatcher:

The New Mexico Oil Conservation Division (OCD) inspected the JFJ Landfarm L.L.C. (JFJ) surface waste management facility at the above location on March 6, 2002. The OCD inspection and file review of JFJ did not find any deficiencies. This inspection report is based on a site visit performed on March 6, 2003 and a review of permit NM-01-0010B conditions issued on December 2, 2002. For reference, attachment 2 contains photographs taken during the inspection.

Over all the facility was in good condition and many improvements have been made. JFJ must respond to any inspection notes in attachment 1 by June 20, 2003.

If you have any questions please do not hesitate to contact me at (505) 476-3488.

Sincerely,

Martyne J. Kieling
Environmental Geologist

xc with attachments:
Aztec OCD Office

**ATTACHMENT TO OCD 711 PERMIT APPROVAL**
**PERMIT NM-01-0010B**
**JFJ Landfarm L.L.C.**
**NW/4 SE/4, Section 2, Township 29 North, Range 12 West, NMPM,**
**San Juan County, New Mexico**
**(May 20, 2003 )**

This inspection report is based on a site visit performed on March 6, 2003 and a review of permit NM-01-0010B conditions issued in the December 2, 2002.

## LANDFARM OPERATION

1. The facility must be fenced and have a sign at each entrance. The sign must be legible from at least fifty feet and contain the following information: a) name of the facility; b) location by section, township and range; and c) emergency phone number.

   **Sign was in place, legible and contained the OCD permit number in addition to the required information (see photos 1 and 2).**

2. Disposal may occur only when an attendant is on duty. The facility must be secured when no attendant is present.

   **Facility has locking gates.**

3. All contaminated soils received at the facility must be spread and disked within 72 hours of receipt or placed in compost piles. Soils and stabilized tank bottoms, sludges and muds that are landfarmed must be spread on the surface in ten (10) inch lifts or less.

   **At the time of the inspection all soils had been spread. Many of the landfarm cells that were operational by Tierra had contaminated soils spread 2 to 3 feet thick (see photos 14, 15 and 22).**

4. Landfarm soils must be disked a minimum of one time every two weeks (biweekly) to enhance biodegradation of contaminants. Methods suggested by the U.S. Soil Conservation Service should be utilized in the tilling of the soils to reduce the occurrence of natural wind erosion.

   **The OCD understood that JFJ is currently working the landfarm every week. OCD understood that JFJ is currently clearing off some of the Tierra landfarm cells and turning them into compost piles for composting remediation (see photos 14, 15, and 22).**

5. Moisture may be added to contaminated soils received at the facility to (1) prevent emissions of volatile organic compounds, (2) enhance natural and artificial biodegradation, and (3) suppress erosion of contaminated soils from natural wind action.

6. The compost piles will be prepared and mixed at a ratio of one (1) part organic

amendment of straw, wood chips and animal manure to [redacted] (4) parts hydrocarbon contaminated soil. The carbon/nitrogen ratio of the mix will be adjusted to 30:1 by adding organic nitrogen and the moisture content will be adjusted to 25% by adding water. Microbes will be added to the compost pile at a rate of two (2) gallons per cubic yard of material. The temperature of the compost piles will be monitored to prevent over heating and the pile will be turned as needed to provide air/oxygen.

**Several compost piles have been constructed in cells 11 and 12 (see photos 14, 15, 16 and 17). JFJ submitted a notice dated May 19, 2003 that cells 7, 8, and 9 have been cleared of all landfarm soils and that they will begin turning these cells into compost pile areas. The OCD hereby approves the change over.**

7. There may be no ponding, pooling or run-off of water allowed. Any ponding of precipitation must be removed within 72 hours of discovery.

**The facility received a 5-inch wet snowfall on March 5, 2003.**

8. The portion of the facility containing contaminated soils must be bermed to prevent run-off and run-on. A perimeter berm must be constructed and maintained such that it is capable of containing precipitation from a one-hundred year flood for the specific region. Individual cells within the facility must be contained with two (2) foot berms.

**The berms were all in good condition or had been recently rebuilt (Photo 8 and 13).**

9. All above-ground tanks must be bermed to contain one and one-third the volume of the largest tank or all interconnected tanks. All tanks must be labeled as to contents and hazards

**The tank containment area was under construction and contained a 30-mil liner and soil berm (see photos 7 and 8).**

10. All new or replacement above-ground tanks to be used longer than six (6) months containing materials other than fresh water must be placed on an impermeable pad and be bermed so that the containment area will hold one and one-third the volume of the largest tank or all interconnected tanks.

**The tank containment area was under construction and contained a 30-mil liner soil berm (see photos 7 and 8).**

11. All temporary frac tanks installed at the facility for less than six (6) months containing materials other than fresh water must be bermed so that the containment area will hold one and one-third the volume of the largest tank or all interconnected tanks.

**At the time of the inspection there were no temporary tanks at the facility.**

12. The OCD Santa Fe and Aztec District office must be notified within 24 hours of discovery of a spill or leak.

**There were no spills or leaks evident at the time of the inspection.**

13. Exempt contaminated soils must be placed in the facility so that they are physically separate (*i.e.,* bermed) from non-exempt contaminated soils. There may be no mixing of exempt and non-exempt contaminated soils.

14. In the landfarm, successive lifts of contaminated soils or stabilized material may not be spread until a laboratory measurement of total petroleum hydrocarbons (TPH) in the previous lift is less than 100 parts per million (ppm), the sum of all aromatic hydrocarbons (BTEX) is less than 50 ppm, and benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations must be maintained at the facility. Authorization from the OCD must be obtained prior to application of successive lifts and/or removal or reuse of the remediated soils.

**A file review shows that the OCD has not received any requests from JFJ for application of successive lifts and/or removal or reuse of remediated soils.**

**15.** Compost piles may not be dismantled until a laboratory measurement of total petroleum hydrocarbons (TPH) in the compost pile is less than 100 parts per million (ppm), the sum of all aromatic hydrocarbons (BTEX) is less than 50 ppm, and benzene is less than 10 ppm. Comprehensive records of the laboratory analyses and the sampling locations must be maintained at the facility. Authorization from the OCD must be obtained prior to dismantling of the compost pile and/or removal or reuse of the remediated soils.

**A file review shows that the OCD has not received any requests from JFJ regarding dismantling compost piles and/or removal or reuse of the remediated soils.**

16. Any enhanced bioremediation through the application of microbes (bugs) and/or fertilizers in addition to what is described herein is permitted only after prior approval from the OCD. Requests for application of microbes or fertilizers must include the location of the area designated for the program, the composition of additives, and the method, amount and frequency of application.

**The OCD has not received any alternate bioremediation requests.**

17. Contaminated soils may not be placed within twenty (20) feet of any pipeline crossing the facility. In addition, no equipment may be operated within ten (10) feet of a pipeline. All pipelines crossing the facility must have surface markers identifying the location of the pipelines.

**Pipeline set backs are observed.**

18. Any design changes to the landfarm/compost piles and bottoms/sludges/muds holding and treatment area must submitted to the OCD Santa Fe office for approval and a copy must be sent to the Aztec District office.

**The OCD received one request from JFJ dated May 19, 2003 regarding changing cells 7, 8 and 9 from landfarming status to composting as authorized in the permit NM-01-0010B dated December 2, 2003. The OCD hereby approves of this change.**

19. Facility inspection and maintenance must be conducted on at least a daily basis and immediately following each consequential rainstorm or windstorm. The OCD Santa Fe and Aztec District office must be notified within 48 hours if any defect is noted. Repairs must be made as soon as possible. If the defect will jeopardize the integrity of the landfarm or compost piles, additional wastes may not be placed into the facility until repairs have been completed.

**Inspection and maintenance schedules were discussed at the time of the inspection it was noted that tilling of the landfarm is occurring on a weekly basis. Tilling and inspection records were not reviewed at this time. Overall maintenance looked to be good there was minimal plastic in the farm and no plastic or trash seen in the fence or vegetation within the interior of the farm.**

20. To protect migratory birds, all tanks exceeding 16 feet in diameter and exposed pits, ponds or lagoons must be screened, netted, covered or otherwise rendered nonhazardous to migratory birds.

**At the time of the inspection there were no open top tanks, pits, pond or lagoons at the facility.**

## CONCRETE MIXING IMPOUNDMENT CONSTRUCTION AND MAINTANANCE

1. Two (2) concrete mixing impoundments must be constructed of reinforced concrete with a 30 mm plastic secondary liner. The seams on the concrete impoundment will be sealed. The impoundments must be maintained in accordance with the as-built designs previously submitted. Spills and slop-over that occur outside the impoundments must be cleaned up on a regular basis and placed into a landfarm or compost cell.

**The concrete mixing impoundment was not inspected at this time.**

## TANK BOTTOM & SLUDGE ACCEPTANCE

**This section was not reviewed at this time.**

## DRILLING MUD ACCEPTANCE

**This section was not reviewed at this time.**

## TREATMENT ZONE MONITORING

1. A treatment zone not to exceed three (3) feet beneath the landfarm and compost pile native ground surface must be monitored. A minimum of one random soil sample must be taken from each individual cell, with no cell being larger than five (5) acres, six (6) months after the first contaminated soils are received in the cell and then quarterly thereafter. The sample must be taken at two (2) to three (3) feet below the native ground surface.

**A file review shows that quarterly treatment zone monitoring results dated January 3, 2003 and April 22, 2003 have been received. The results show that there has been**

**no subsurface migration of contaminants in any of the active cells (Cells 2,3,4,7,8,9,11,12 and 13).**

2. The soil samples must be analyzed quarterly for total petroleum hydrocarbons (TPH) using an OCD-approved field method. If TPH is detected, then a laboratory analysis must be conducted for TPH and volatile aromatic organics (BTEX) using EPA-approved methods.

   **The quarterly results dated January 3, 2003 and April 22, 2003 were analyzed for these constituents.**

3. The soil samples must be analyzed annually using EPA-approved methods for total petroleum hydrocarbons (TPH), volatile aromatic organics (BTEX), major cations/anions and Water Quality Control Commission Regulations (WQCC) NMAC 20.6.2.3103 metals.

4. After obtaining the soil samples the boreholes must be filled with an impermeable material such as cement or bentonite.

   **The quarterly reports note that the test holes are filled with powered bentonite.**

## WASTE ACCEPTANCE CRITERIA

1. The facility is authorized to accept only:

   a. Oilfield wastes that are exempt from RCRA Subtitle C regulations and that do not contain Naturally Occurring Radioactive Material (NORM) regulated pursuant to 20 NMAC 3.1 Subpart 1403. All loads of these wastes received at the facility must be accompanied by a "Generator Certificate of Waste Status" signed by the generator.

   **At the time of the inspection OCD and JFJ performed an audit on all the waste tracking documentation.**

   b. "Non-hazardous" non-exempt oilfield wastes that do not contain NORM. These wastes may be accepted on a case-by-case basis after a hazardous waste determination is made. Samples, if required, must be obtained from the wastes prior to removal from the generator's facility and without dilution in accordance with EPA SW-846 sampling procedures. All "non-hazardous" non-exempt wastes received at the facility must be accompanied by:

      i. An approved OCD Form C-138 "Request For Approval To Accept Solid Waste."

      ii. A "Generator Certificate of Waste Status" signed by the generator.

      iii. A verification of waste status issued by the appropriate agency, for wastes generated outside OCD jurisdiction. The agency verification is based on

specific information on the subject waste submitted by the generator and demonstrating the non-hazardous classification of the waste.

c. Non-oilfield wastes that are non-hazardous if ordered by the Department of Public Safety in a public health emergency. OCD approval must be obtained prior to accepting the wastes.

**A file review shows that the OCD has received only two C-138 requests for acceptance of non-exempt waste for the year 2003. Both C-138 requests were approved on April 21, 2003.**

2. At no time may any OCD-permitted surface waste management facility accept wastes that are determined to be RCRA Subtitle C hazardous wastes by either listing or characteristic testing.

3. The transporter of any wastes to the facility must supply a certification that wastes delivered are those wastes received from the generator and that no additional materials have been added.

## REPORTING AND RECORD KEEPING

1. Results of the daily inspections of the facility and weekly inspections of the concrete mixing impoundment must be recorded and maintained for OCD review. The OCD Santa Fe and Aztec District office must be notified **within 48 hours** if any defect is noted.

**Inspection records were not reviewed at this time.**

2. Analytical results from the quarterly treatment zone monitoring must be submitted to the OCD Santa Fe office **within 30 days** of receipt from the laboratory or within 30 days of the field testing. A sample location map must be included with the analysis report.

**A file review shows that quarterly treatment zone monitoring results dated January 3, 2003 and April 22, 2003 have been received. The results show that there has been no subsurface migration of contaminants in any of the active cells (Cells 2,3,4,7,8,9,11,12 and 13).**

3. Analytical results regarding remediated soil must be submitted to the OCD Santa Fe office with a copy to the Aztec District office, along with any request to close the cell, dismantle a compost pile, apply successive lifts or remove the remediated material.

**A file review shows that no requests to close a cell, dismantle a compost pile, apply successive lifts or remove the remediated material have been received.**

4. Landfarm and compost pile monitoring and maintenance must be recorded and maintained for OCD review.

**Monitoring and maintenance records were not reviewed at this time**

5. Results of screening for free water from tank bottoms or sludges must be recorded and maintained for OCD review.

**Free water screening results were not reviewed at this time.**

6. JFJ Landfarm L.L.C. must notify the **OCD Aztec District office within 24 hours** of any fire, break, leak, spill, blowout or any other circumstance that could constitute a hazard or contamination in accordance with OCD Rule 116.

**A file review shows that there have been no emergency type actions at the facility.**

7. The OCD must be notified prior to the installation of any pipelines or wells or other structures within the boundaries of the facility.

8. Comprehensive records of all material disposed of at the facility must be maintained at the facility. The records for each load must include: 1) generator; 2) origin; 3) date received; 4) quantity; 5) certification of waste status as exempt or non-exempt with any necessary supporting documentation to certify non-hazardous status for non-exempt waste; 6) NORM status declaration; 7) transporter; 8) exact cell location; and 9) any addition of microbes, moisture, fertilizers, *etc.*

9. All records of testing and monitoring must be retained for a period of five (5) years.

## FINANCIAL ASSURANCE

1. Financial assurance in the amount of **$25,000** in the form of a cash bond has been received and approved by the Division,

**A file review shows that the $25,000 financial assurance is current and active.**

2. The facility is subject to periodic inspections by the OCD. The conditions of this permit and the facility will be reviewed by the OCD no later than five (5) years from the date of this approval. In addition the closure cost estimate will be reviewed according to prices and remedial work estimates at the time of review. The financial assurance may be adjusted to incorporate any closure cost changes.

## CLOSURE

**This section was not reviewed at this time.**

OCD Inspection March 6, 2003

Site conditions: 1 day after 5 inch wet snowfall.


Photo 1: Entrance sign.


Photo 2: Temporary office location and entrance


Photo 3: Internal entrance sign and warning.
JFJ landfarm on the left side of the fence.
Tierra landfarm on the right side of the fence.


Photo 4: Pile of clean soil used to solidify sludge.


Photo 5: Pile of clean soil used to solidify sludge.


Photo 6: Topographic change along the west fence line.


Photo 7: Construction of new tank receiving area with 30-mil liner.

Photo 10: Landfarm cells.

Photo 8: Construction of new tank receiving area with 30-mil liner.

Photo 11: Landfarm cells remaining from Tierra's use: Note thickness of contaminated material.

Photo 9: Landfarm cells.


Photo 12: Landfarm cells.


Photo13: Landfarm cell cleared for create a new composting area in the Southwest corner of the facility.

Photo 14: Landfarm cell cleared on the right. Note the thickness (2 to 3 feet deep) of the contaminated material that was in the cells operated by Tierra.

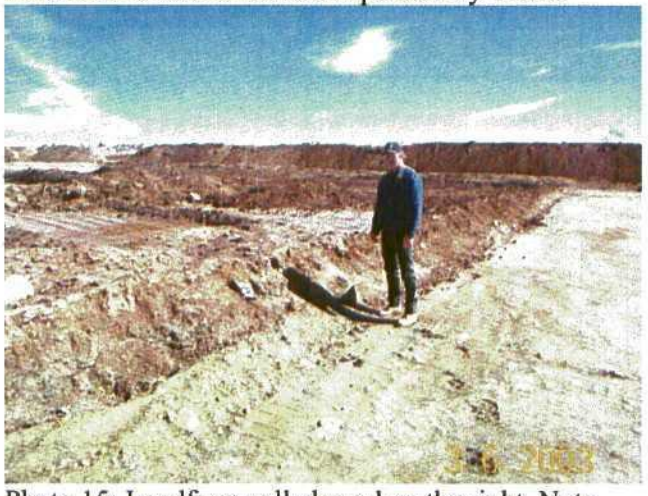

Photo 15: Landfarm cell cleared on the right. Note the thickness (2 to 3 feet deep) of the contaminated material that was in the cells operated by Tierra.


Photo 16: Newly constructed compost piles. Piles are numbered and bermed.


Photo 17: Newly constructed compost piles. Piles are numbered and bermed.


Photo 18: Landfarm looking northwest from southeast corner of the facility.

Photo 19: Landfarm looking west from the southeast corner of the facility.

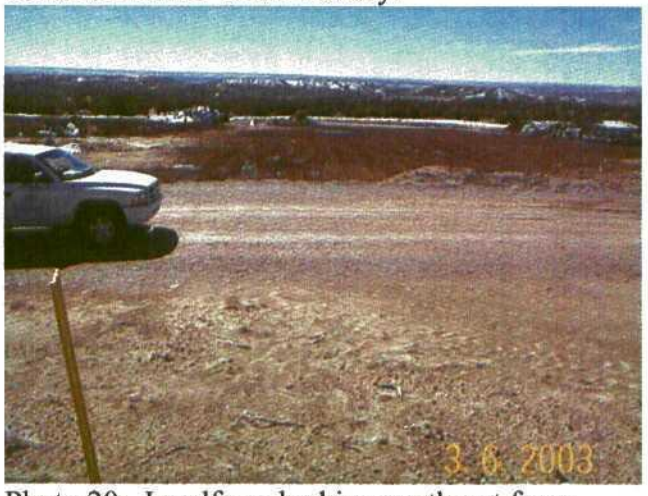

Photo 20: Landfarm looking southeast from southeast corner of the facility.

Photo 21: Landfarm looking east from southeast corner. Lower entrance road.

Photo 22: Landfarm cell cleared on the right. Note the thickness (2 to 3 feet deep) of the contaminated material that was in the cells operated by Tierra.

**Industrial Ecosystems Inc.**
**P.O. Box 2043**
**Farmington N.M. 87499**
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**(505) 632-1876 Fax**

**landfarm@cyberport.com**

**"This is bioremediation at its best; fast, effective, and cost efficient"**

# FACSIMILE TRANSMITTAL SHEET



**To:** State of New Mexico Oil Conversation Division

**From:** Aaron J. Maurer

**Attn:** Martyne Kieling

**Fax:** (505) 476-3462

**Date:** 5/19/2003

**NUMBER OF PAGES (INCLUDING COVER SHEET): 4**

Martyne,

Attached is our proposal for 3 additional cells needing verbal approval to use beginning of May 27th, 2003.

I e-mailed these to you but there were returned for some unknown reason. I will be sending them priority mail.

Thanks in advance.....Aaron J. Maurer