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Date: November 4, 1997

Memorandum

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Subject: Environmental Indicators Memorandum: Evaluation of Terra First, Inc.-AL Storage Operations Vernon, Alabama Status Under the RCRIS Corrective Action Environmental Indicator Event Codes (CA725 and CA750)
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I. Purpose of Memo

This memo presents an evaluation of Terra First, Inc.-AL Storage Operations Vernon, Alabama facility status in relation to the following RCRIS corrective action codes:

1. Human Exposure Controlled Release Determination (CA725)
2. Groundwater Releases Controlled Determination (CA750)

The applicability of these event codes adheres to the definitions and guidance provided by the EPA Office of Solid Waste (OSW) in the July 29, 1994 memorandum to the Regional EPA Waste Management Division Directors.

II. Human Exposures Controlled Determination (CA725)

There are three (5) national status codes under CA725. These status codes are:

1. YE - Yes, Applicable as of this date.
2. NA - Previous determination no longer applicable as of this date.
3. NC - No control measures necessary.
4. NO - Facility does not meet definition.
5. IN - More information needed.



Memo (Environmental Indicators)

November 4, 1997

Page 2

The first three (3) status codes listed above were defined in the January 1995 Data Element Dictionary for RCRIS. The last two (2) status codes were defined in the June 1997 Data Element Dictionary.

Note that CA725 is designed to measure human exposures over the entire facility (i.e., the code does not track SWMU specific actions or success.) Every area at the facility must meet the definition before a YE or NC can be entered for CA725. The NO status code should be entered if there are current unacceptable risks to humans due to release of hazardous wastes or hazardous constituents from any SWMU(s) or AOC(s). The IN status code is designed to cover those cases where insufficient information is available to make an informed decision on whether or not human exposures are controlled. If an evaluation determines that there are both unacceptable and uncontrolled current risks to humans at the facility (NO) along with insufficient on contamination or exposures at the facility (IN), then the priority for the EI recommendation is the NO status code.

In EPA Region 4's opinion, the previous relevance of NA as a meaningful status code is eliminated by the June 1997 Data Element Dictionary's inclusion of NO and IN to the existing YE and NC status codes. In other words, YE, NC, NO and IN cover all of the scenarios possible in an evaluation or reevaluation of a facility for CA725. Therefore, it is Region 4's opinion that only YE, NC, NO and IN should be utilized to categorize a facility for CA725. No facility in Region 4 should carry a NA status code.

This particular CA725 evaluation is the **first evaluation** performed by ADEM for Terra First's Vernon facility. Because assumptions have to be made as to whether or not human exposures to current media are plausible and, if plausible, whether or not controls are in place to address these plausible exposures, this memo first examines each environmental media (i.e., soil, groundwater, surface water, and air) at the entire facility including any offsite contamination emanating from the facility rather than from individual areas or releases. After this independent media by media examination is presented, a final recommendation is offered as to the proper CA725 status code for Terra First, Inc.

The discussions, interpretations, and conclusions presented herein regarding contamination and exposures at the facility are based on the following reference documents:

- *Hazardous Waste Facility Permit*, February 1, 1995, Modification 1-March 3, 1995, Modification 2-March 17, 1997
- *RCRA Facility Assessment*, July 31, 1995

III. Facility Summary

The Terra First, Inc. (TFI) facility began operations in 1991 and has since undergone several physical changes. The facility currently occupies about four acres, on which the hazardous waste storage, bulking, and transfer operations are conducted. The facility employs three full-time and two part-time employees.

TFI began operations in November 1985 as a hazardous waste transporter (ALD 981 023 492) and transfer facility headquartered in Vernon, Alabama. On May 7, 1991, TFI relocated the storage portion of the Vernon operation to the present location at mile marker 251 on Alabama Highway 17 North (ALD 983 177 015). Effective June 6, 1991, the operation included transporting and storing of then non-hazardous wastes with waste codes of F032, F034, and F035. The facility gained Interim Status when F032, F034, and F035 became regulated, then expanded to add other waste codes as changes under interim status.

The current facility building was originally owned by the Alabama Farmers Cooperative (Co-op), headquartered in Decatur, Alabama. The Co-op constructed the facility building in the early- to mid-1970's. Immediately Prior to TFI's occupancy, the facility was used as a forklift warehouse. The container storage building was upgraded in 1992 to accommodate storing incompatible wastes. The storage area was provided with secondary containment by a six-inch concrete curb. The floor was divided into two storage

Memo (Environmental Indicators)

November 4, 1997

Page 3

areas by the secondary containment curb, and an impervious protective coating was applied to the concrete. The container storage building includes a loading dock on the south side of the building.

A drummed waste bulking area was constructed on the south side of the container storage building bordering the loading dock. This area consists of a reinforced concrete pad that is covered with a pre-fabricated roof. The pad is sloped to the south (toward the gravel yard). The concrete is covered with an impervious coating.

A roll-off pad was constructed out of reinforced concrete. The pad has a dual slope to provide run-on and run-off control. A six-inch curb surrounds the pad on three sides.

The facility operations are conducted in three main areas: the container storage building (SWMU 1), the drummed waste bulking area (SWMU 2), and the roll-off pad (SWMU 3).

IV. Media by Media Discussion of Contamination and the Status of Plausible Human Exposures

Groundwater

There are areas of the facility where information on plausible human exposures is insufficient or lacking. These areas of the facility correspond to locations where groundwater contamination could be present given near-by SWMUs.

There is no groundwater monitoring program at the TFI facility. Groundwater could be impacted from potential releases to soil in the gravel yard and in the grubbed area. There are two wells at the TFI facility. The original well has been capped. The new well is completed in the Gordo Formation at 164 feet deep with steel casing. TFI identified 12 residential and 1 commercial wells within a one-mile radius of the facility.

The RFA does not identify any wells within one mile of the facility, but the report does provide a population estimate of 6,465 people using self-supplied domestic wells in Lamar County. In addition, the report estimates 2,400 people in Sulligent and 3,420 people in Vernon use groundwater. The city of Vernon supplies an additional 1,107 people in the county with water from Vernon's wells. Vernon operates two wells. One is 137 feet and completed in the undifferentiated Tuscaloosa Group. The other is 345 feet deep and completed in the Coker Formation. Sulligent operates three wells and one spring for the public water supply. The wells are 80, 120, and 253 feet deep and completed in the undifferentiated Tuscaloosa Group, Coker Formation, and Pottsville Formation, respectively. The spring is developed in the Gordo Formation on the north side of Bogue Creek about three miles north of the TFI facility.

Environmental releases may have occurred to on-site soils as evidenced by discoloration that was observed in the drainage channels. These releases may have originated from SWMU 2, which does not have secondary containment, however, it could not be confirmed during the RFA that the discoloration resulted from the release of hazardous constituents. The potential for releases to impact surface water and groundwater are considered low since the main storage areas have secondary containment. Potential releases to the soil, however, may affect surface water and groundwater. The release potential to the air is considered moderate because roll-off containers with volatile organic compounds are stored outdoors and bulking operations could spread dust depending on the moisture content of the waste.

The closest groundwater users are on-site workers and residents within 200 feet to the north and south of the facility. No information was available concerning the direction of groundwater flow. The potential for release to groundwater is considered to be low because the wastes are stored in areas with secondary

Memo (Environmental Indicators)

November 4, 1997

Page 4

containment. A temporary (ephemeral) stream is located about 1,200 feet south of the facility. There are no threatened or endangered species habitats known within two miles of the facility.

Because of the uncertainty regarding the presence or absence of groundwater contamination at questionable areas of the facility, an opinion on plausible human exposures to groundwater contamination is not possible at this time.

Surface Water

Information on the presence or absence of surface water contamination is insufficient or lacking at certain areas of the facility. These areas of the facility correspond to locations where surface water contamination could be present given near-by SWMUs.

TFI has applied for a storm water permit; however, no permit has been issued. The U.S. Fish and Wildlife Service identifies the nearest wetland as the stream channel located about 1,200 feet south of the facility. This sensitive environment is identified as Palustrine, forested, broad-leaved deciduous, temporary. Several other wetlands are identified within a one-mile radius of the facility.

The RFA investigated reports of (1) a lagoon at the TFI facility outside of the fenced active operation area, and (2) a surface water reservoir being built as a water supply for Lamar County. Pooled water from recent rains was observed in the grubbed area south of the active portion of the facility. However, no lagoon was found on TFI property.

Lamar County Engineer Mr. Jim Smith reported that several sites were being evaluated for a drinking water reservoir, but that the project was in the very early planning and evaluation stages. At the time of the RFA, no site had been selected for the reservoir and no proposal had been made for further study or development.

Potential releases of hazardous constituents to the soil in the grubbed area could impact surface water through run-off during storm events. Storm water run-off may be monitored for an NPDES permit administered by ADEM.

ADEM was contacted to identify surface water users in Lamar County. ADEM reported that there were no municipal users of surface water in Lamar County. Surface water usage in the county was limited to agricultural and industrial uses. Agricultural usage was reported at 0.11 mgd and industrial at 0.02 mgd; however, the withdrawal points were not identified.

Once the results of confirmatory sampling are received the absence or presence of surface water contamination can be determined.

Soil

Information on the presence or absence of soil contamination is insufficient or lacking in certain areas of the facility. These areas of the facility correspond to locations where soil contamination could be present given near-by SWMUs. Soils at the TFI's facility have been tentatively identified as belonging to the Savannah and Iuka series. These soils are generally described as loamy. A compact brittle layer in the subsoil tends to perch water during wet periods. The soil was observed in the grubbed area where vegetation had been removed south of the active area of the facility. The topsoil was yellowish gray silty sand, and the underlying soil a depth of two to three inches was yellowish red sand with some gravel.

SWMUs 2 and 3 have a moderate potential for release to soil, and SWMU 1 has a low potential for release. SWMU 2 slopes south toward the gravel yard and does not have containment along the southern

edge of the pad. Hazardous wastes could be released from the edge of the pad into the gravel yard. Drainage in the area of the gravel yard is directed to the drain in the truck well of SWMU 1. A discolored area was noted along this drainage path. The discolored area appeared moist to dry, but it did not have an oily sheen. There is no vegetation near SWMU 2. The truck well drain joins one of the drains SWMU 3. Rain that falls within SWMU 3 drains into the grubbed area south of the active area of the facility. Discolored areas were noted around the drain discharge points. The vegetation around the drains was mostly dormant, but appeared slightly stressed. The discolored material appeared dry. The discolored areas at SWMUs 2 and 3 were both dark gray.

Confirmatory sampling will be conducted for SWMUs 2 and 3 to address potential soil contamination. These investigations should include the gravel yard and the grubbed area south of the active portion of the facility. An accurate and effective evaluation of soil contamination cannot be currently made until the results of the confirmatory sampling are received.

Air

TFI does not generate point-source air emissions. The facility does not have any air permits. However, SWMUs 2 and 3 have moderate release potentials and SWMU 1 has a low release potential to the air. An odor was noted during the RFA emanating from roll-offs containing VOCs in SWMU 3. Such fugitive emissions would be expected to increase in the summer heat.

Fugitive emissions from SWMU 2 are expected to be low, but may range to moderate depending on the moisture content of the material being bulked. The consistency of material that has been bulked is similar to soil or sawdust. Bulking of dry material could produce fugitive dust. Most material bulked has not contained VOCs; however, bulking of material VOCs could produce additional VOC emissions.

V. Status Code Recommendation for CA725

As explained in Section IV, offsite human exposure to contamination is not completely defined for groundwater and surface water. Also, it would appear that onsite human exposure to contamination is not completely defined for soil. Thus, it is recommended that CA725 IN be entered into RCRIS.

VI. Groundwater Releases Controlled Determination (CA750)

There are three (5) status codes listed under CA750:

1. YE - Yes, applicable as of this date.
2. NA - Previous determination no longer applicable as of this date.
3. NR - No releases to groundwater.
4. NO - Facility does not meet definition.
5. IN - More information needed.

The first three (3) status codes listed above were defined in January 1995 Data Element Dictionary for RCRIS. The last two (2) status codes were defined in June 1997 Data Element Dictionary.

The status codes for CA750 are designed to measure the adequacy of actively (e.g., pump and treat) or passively (e.g., natural attenuation) controlling the physical movement of groundwater contaminated with hazardous constituents above relevant action levels. The designated boundary (e.g., the facility boundary, a line upgradient of receptors, the leading edge of the plume as defined by levels or cleanup standards, etc.) is the point where the success or failure of controlling the migration of hazardous constituents is measured for active control systems. Every contaminated area at the facility must be evaluated and found to have the migration of contaminated groundwater controlled before a "YE" status code can be entered.

If contaminated groundwater is not controlled in any area(s) of the facility, the NO status code should be entered. If there is not enough information at certain areas to make an informed decision as to whether groundwater releases are controlled, then the IN status code should be entered. If an evaluation determines that there are both uncontrolled groundwater releases for certain units/areas (NO) and insufficient information at certain units/areas of groundwater contamination (IN), then the priority for the EI recommendation should be the NO status code.

In region 4's opinion, the previous relevance of NA as a meaningful status code is eliminated by the June 1997 Data Element Dictionary's inclusion of NO and IN to the existing YE and NR status codes. In other words, YE, NR, NO and IN cover all of the scenarios possible in an evaluation or reevaluation of a facility for CA750. Therefore, it is Region 4's opinion that only YE, NR, NO and IN should be utilized to categorize a facility for CA725. No facility in Region 4 should carry a NA status code.

This evaluation for CA750 is the **first formal evaluation** performed for Terra First, Inc., Vernon, AL. Please note that CA750 is based on the adequate control of **all** contaminated groundwater at the facility.

The following discussions, interpretations and conclusions on contaminated groundwater at the facility are based on the following reference documents:

- *Hazardous Waste Facility Permit*, February 1, 1995, Modification 1-March 3, 1995, Modification 2-March 17, 1997
- *RCRA Facility Assessment*, July 31, 1995

VII. Status Code Recommendation for CA750

Based on data contained in the documents referenced in Section VI and summarized in the groundwater portion of Section IV, releases from SWMUs and/or AOCs have not been confirmed to be present. In addition, some of these areas of potential groundwater and soil contamination do not have enough monitoring data for vigorous interpretations to be made as to the effectiveness of the active or passive groundwater system at controlling the physical migration of contaminants. Because of the insufficient information on the effectiveness of the active or passive groundwater system at this facility and because no data on possible soil contamination exists, it is recommended that **CA750 IN** be entered into RCRIS.

VIII. Summary of Follow-up Actions

The insufficient information demonstrated in previous sections for the Terra First, Inc. site located at Vernon, Alabama should be addressed when the results of confirmatory sampling on soil and groundwater are received.

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File: Terra First, Inc./Vernon/TSD

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