UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4

100 ALABAMA STREET, SW
ATLANTA, GEORGIA 30303-3104

SEP 23 1996

MEMORANDUM

SUBJ: Evaluation of American Wood's Status under the RCRIS Corrective Action Environmental Indicator Event Codes (CA725 and CA750)
EPA I.D. Number: MSD 021 019 914

FROM: Russ McLean, Environmental Engineer
South RCRA Permitting Section 9/16/96

THRU: Kent Williams, Chief
South RCRA Permitting Section

TO: Kirk Lucius, Acting Chief
RCRA Programs Branch
Concur 9/17/96

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of the American Wood, Inc.,Richton, Mississippi facility's status in relation to the following RCRIS corrective action codes:

1) Human Exposures Controlled Determination (CA725),

2) Groundwater Releases Controlled Determination (CA750).

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

Concurrence by the RCRA Branch Chief is required prior to entering these event codes into RCRIS. Your concurrence with the

interpretations provided in the following paragraphs and the subsequent recommendations is satisfied by dating and signing above.

II. HUMAN EXPOSURES CONTROLLED DETERMINATION (CA725)

There are three (3) 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2) NA Previous determination no longer applicable as of this date.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.

Region 4 has also added a regional status code to CA725 which tracks initial evaluations in which a determination is made that plausible human exposures to current contamination risks are not controlled. This regional status code is listed as "NO, not applicable as of this date." Use of the regional status code is only applicable during the first CA725 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NC) to explain the current status of exposure controls.

Note that the three national status codes for CA725 are based on the entire facility (i.e., the codes are not SWMU specific). Therefore, every area at the facility must meet the definition before a YE, NA or NC status code can be entered for CA725. Similarly, the regional status code, NO, is applicable if plausible human exposures are not controlled in any areas of the facility.

This particular CA725 evaluation is the **first evaluation** performed by EPA for the American Wood, Richton, Mississippi facility. Because assumptions have to be made as to whether or not human exposures to current media contamination 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, 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 American Wood.

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

- RFI Report, April 1994
- Semi-Annual Corrective Action Reports
- Groundwater Quality Assessment, February 1988

III. MEDIA BY MEDIA DISCUSSION OF CONTAMINATION AND THE STATUS OF PLAUSIBLE HUMAN EXPOSURES

Background

American Wood, Division of Powe Timber Company, Inc. operates a wood preserving plant in the town of Richton, Perry County, Mississippi. The plant, built in 1965 and acquired by American Wood in 1980, is on a 26 acre site which bounds the northern corporate limit of the town of Richton. The plant produces treated wood industrial flooring blocks using the preservatives creosote and Bardac. Pentachlorophenol and creosote were in use since 1965, with creosote being the major preservative used and still in use today. Pentachlorophenol use was discontinued in 1987. Bardac, the trade name used by Lonza, Inc. for didecyl dimethyl ammonium chloride solution, was introduced in 1987 and continues to be used today.

American Wood utilized four small unlined surface impoundments to manage waste waters from its operations. These impoundments were closed in accordance with a closure plan approved by the Mississippi Department of Environmental Quality (MDEQ) in 1984. Groundwater investigations, required by the RCRA regulations, detected groundwater contamination in the uppermost aquifer beneath the facility. A Post-Closure permit, issued by MDEQ for post-closure care of the surface impoundments and corrective action to remediate groundwater contamination, was

issued in August 1989. Groundwater remediation, using a pump and treat system, was initiated in March 1992.

The facility received a HSWA permit from EPA in September 1989 based on the findings of a RCRA Facility Assessment conducted in May 1988. The HSWA permit required a RCRA Facility Investigation for seven SWMUs and four AOCs.

Ground Water

Releases from SWMUs have contaminated groundwater at concentrations above relevant action levels. During initial groundwater monitoring, required by 40 CFR §265 Subpart F, the Citronelle/Terrrace aquifer, which is the uppermost aquifer at the site, was found to be contaminated with components of the wood preservative compounds creosote and pentachlorophenol. The primary source of this contamination is identified as four regulated surface impoundments, certified closed in March 1987 under the closure plan approved by the MDEQ. Closure consisted of; the removal of all liquid, sludge and visibly contaminated soils; backfilling with clean soil and; construction of a low permeability cap equipped with a cover layer to support vegetation. These impoundments managed wastewater from wood preserving operations, generating K001 wastes consisting of bottom sediment sludges from wastewaters of the wood preserving process using creosote and pentachlorophenol. The Groundwater Quality Assessment, conducted in 1988, identified three plumes of contamination issuing from the site: a shallow soluble plume, a deep soluble plume, and a DNAPL plume. The migration pathway for the soluble plumes follows the local potentiometric gradient which is to the south/southeast. The deep soluble plume has migrated beyond the facility boundary. The DNAPL plume follows the dip of the low permeability lenses associated with the Miocene Hattiesburg-Citronelle/Terrace contact.

The facility currently operates a groudwater remediation system designed to capture and remove contaminated ground water and prevent further migration of the plumes. This system began operations in March 1992 as a condition of the Post-Closure permit issued by MDEQ. This recovery system was designed to capture and remove the soluble contaminant plumes by pumping

groundwater from two recovery wells. In addition, two DNAPL recovery wells are designed for the removal of free phase organic materials. The monitoring system currently contains 33 wells designated as compliance, effectiveness or boundary wells. Analytical results from semi-annual groundwater monitoring indicates low (1-10)ppb contamination of groundwater with polynuclear aromatic hydrocarbon (PAH) and phenolic compounds within the defined area of the plume. No contamination of boundary wells is reported.

No active domestic water supply wells in the Citronelle/Terrace surficial aquifer are reported within a three-mile radius of the facility. The public drinking water well for the city of Richton is located just over 1/2 mile south of the facility and within 600 feet of the leading edge of the contaminant plume. This well is completed in the Miocene aquifer system at a depth approximately 660 feet below land surface. The upper part of the Miocene is composed of a thick clay section with measured permeabilities on the order of 1 x 10^{-8} cm/sec. The aquifers of the Miocene system are under confined conditions, with potentiometric surfaces at higher elevations than those of the corresponding surficial system. This results in a vertical component of groundwater flow upward from the Miocene into the Citronelle/Terrace aquifer. To further evaluate the possible communication of groundwater between the two aquifers, a sustained pump test was conducted in the unused plant well, which is completed in the Miocene. The well was pumped at its maximum yield, 28 gpm, for 24 hours. The monitoring wells in the surficial aquifer in the vicinity of the plant well were used as observation wells. No drawdown was observed in any of the observation wells, including MW-1 located 125 feet from the plant well.

Based on the above discussion, the Groundwater is contaminated and all plausible human exposures are controlled.

Surface Water

The only significant surface waters in the vicinity of the facility are Beaver Dam Creek, which is located about 800 feet from the northern facility boundary and Thompson Creek which is

located about 3000 feet east of the facility. Beaver Dam Creek flows from west to east and joins Thompson Creek. Thompson Creek flows southward about 14 miles joining the Leaf River near Beaumont, Mississippi. Stormwater runoff from the plant is handled by a series of unlined ditches. In the southern and central portions of the facility, which contains the active processing and storage areas, stormwater is collected by a series of underground culverts and open ditches, which meet at an NPDES outfall at the southeastern corner of the facility. Stormwater flows from the outfall eastward to Thompson Creek. Stormwater on the northern portion of the facility flows by sheet flow into a lowland area north of the facility and into Beaver Dam Creek.

Surface water sampling of the ditches in the southern and central portions of the facility indicated levels of several PAH constituents, well below action levels, and levels of pentachlorophenol (PCP) ranging from .01-.04 mg/l (MCL=.001). Evaluation of the PCP contamination, which was detected in ditch samples outside the plant area and adjacent to roadways and an abandoned rail line, indicates the source of this contamination may be from sources other than runoff from the facility. However, soil contamination in the process area of the plant may have contributed to this contamination at the time the samples were taken. Since that time, an order has been issued to the facility by MDEQ under Subpart W, to close this area, install an engineered cap with a surface drainage control system, and construct a newly enclosed process area. The closure of this area was also approved by EPA as Interim Measures, as this area was identified as a SWMU requiring an RFI in the facility's HSWA permit. Closure of the process area will mitigate any source of contaminated runoff from this area. As no downstream drinking water intakes are identified and the levels detected are below the Federal Water Quality Criteria for protection of human health of 1.01 mg/l, human exposures to surface water contamination from this area are controlled.

As no discernable surface water flow paths were identified on the northern portion of the facility, no rainfall runoff samples could be taken. However, surficial soil samples in adjacent SWMU areas were taken at locations where saturated soils were present at the surface, as well as sediment sampling of

Beaver Dam Creek immediately downstream of the facility. None of the samples analyzed contained any constituents of concern.

Based on the above discussion, plausible human exposures surface water contamination are controlled.

Soil

Releases from SWMUs and AOCs have contaminated soil at the facility above relevant action levels. The majority of this contamination is located within the former process area which is currently undergoing closure as discussed previously. The newly enclosed process area is currently operational so there is limited exposure of site personnel. Other areas of the facility which contain contaminated soils, include the trash dump area, the drainage ditch running adjacent to and outside of the southeastern property boundary and the former empty basket/treated pole storage area. The trash dump area is a SWMU which underwent soil sampling during the RFI. This area is located in the northwestern corner of the facility. This SWMU received soils excavated as a result of a spill of used preservative in 1978. This 'spill dirt' was place in two separate piles in the dump area. Analyses of samples collected from these piles indicated total PAH concentrations between 10 and 50 mg/kg. Sampling was also conducted on the native soils directly beneath the piles and throughout the dump area. Results of this investigation indicated no constituents of concern in the native soils beneath the piles and only one sample out of eleven in the dump area with constituent cotamination above action levels. This sample contained only one constituent, Benzo[b]pyrene at .52mg/kg, which was above the action level of .39 mg/kg for industrial sites. This area is not frequented by workers at the site, as the dump is no longer used, and has access controls to prevent outside persons from coming in contact with the soils in this area. The empty basket/treated pole storage area is now occupied by the new enclosed process area. Visibly contaminated soils were removed from this area and a concrete base for the new treating area now covers the area. The remaining area containing soils impacted by operations at the facility is a stormwater ditch which recives runoff from the former process area. This ditch runs along and outside of the

southeastern boundary of the facility. During the RFI, carcinogenic PAH constituents were detected in sediment samples taken from the ditch. Concentrations of these constituents were in the range of 1-3 mg/kg, exceeding individual action levels at the 10^{-6} risk level by a factor of 1 or 2. The cummulative concentration of all carcinogenic PAH constituents in the most contaminated sample from the ditch does not exceed a cancer risk of 10^{-5}. The ditch receives runoff from the former process area which is currently undergoing closure. No additional sediment loading of this ditch from the old process area will occur once the cap is in place and runoff controls are installed. As the constituent levels in the ditch are low, and should attenuate naturally, human exposure has been controlled.

Based on the above discussion human exposures to contamminated soil are controlled.

Air

Releases to air from soil, groundwater and/or surface water contaminated by SWMUs and AOCs at the facility is not known to be occurring above relevent action levels. The constituents of concern at the facility are semi-volatile organics which exhibit low vapor pressures and are at such low concentrations that vapor emissions should be insignificant. Additionally, the oily, viscous nature of the constituents tends to bond soil particles, decreasing the potential for dust formation. This coupled with the fact that this area of Southern Mississippi receives a substantial amount of annual rainfall, further reduces the generation of fugitive dust emmissions. **Therefore, there is no human exposure to contamination via an air route.**

IV. STATUS CODE RECOMMENDATION FOR CA725:

As discussed in Section III, Post-Closure corrective action of the ground water along with Interim Measures/Stabilization of contaminated soils are controlling human exposures to all environmental media of concern at the American Wood, Richton, MS facility. Based on the information presented, it is recommended that CA275 **YE** be entered into RCRIS.

V. GROUNDWATER RELEASES CONTROLLED DETERMINATION (CA750)

There are three (3) 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.

Region 4 has also added an additional status code which tracks the initial evaluations in which a determination is made that groundwater releases are not controlled. This regional status code is listed as "NO, not applicable as of this date." Use of the regional status code is only applicable in the first CA750 evaluation. Evaluations subsequent to the first evaluation will use the national status codes (i.e., YE, NA and NR) to explain the current status of groundwater control.

Note that the three national status codes for CA750 are designed to measure the adequacy of actively or passively (i.e., natural attenuation) controlling the physical movement of groundwater contaminated with hazardous constituents above relevant action levels. The designated boundary (e.g., facility boundary, a line upgradient of receptors, the leading edge of the plume as defined by levels above action levels or media cleanup standards, etc.) is the point where the success or failure of controlling the migration of hazardous constituents is measured. 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. Similarly, the regional status code is applicable if contaminated groundwater is not controlled in any area(s) of the facility.

This evaluation for CA750 is the first formal evaluation performed for the American Wood, Richton, Mississippi facility. Please note that CA750 is based on the adequate control of all contaminated groundwater at the facility.