ADEM

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September 30, 1999

MEMORANDUM

TO: Stephen A. Cobb, Chief
Hazardous Waste Branch
Land Division

FROM: Charmaine Roche
Industrial Facilities Section
Hazardous Waste Branch
Land Division

SUBJECT: Evaluation of Cooper Industries, Inc., Cooper Tools Division, Nicholson Operations status under the RCRIS Corrective Action Environmental Indicator Event Codes (CA725 and CA750)
EPA I.D. Number: ALD 079 127 635

I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of the status of Cooper Industries, Inc., Cooper Tools Division, Nicholson Operations-Cullman Plant status in relation to the following corrective action event codes defined in the Resource Conservation and Recovery Information System (RCRIS):

1) Current Human Exposures Under Control (CA725),
2) Migration of Contaminated Groundwater Under Control (CA750).

Concurrence by the Hazardous Waste Branch Chief is required prior to entering these event codes into RCRIS. Dating and signing at the appropriate locations within Attachments 1 and 2 satisfies your concurrence with the interpretations provided in the following paragraphs and the subsequent recommendations.

II. HISTORY OF ENVIRONMENTAL INDICATOR EVALUATIONS AT THE FACILITY AND REFERENCE DOCUMENTS

This particular evaluation is the second evaluation for Cooper. The first evaluation was completed in September 1997. A RCRIS code of IN, more information needed, was entered for event codes CA725 (human exposures controlled) and CA750 (groundwater releases controlled) for Copper in the September 1997 Environmental Indicator evaluation. These codes were entered because ADEM did not have the recommended sampling data that was required for SWMU-6 (wastewater treatment units) as a result of the February 1987 RCRA Facility Assessment (RFA). A copy of the earlier evaluation memorandum is attached.

III. FACILITY SUMMARY

Cooper Industries, Inc., Cooper Tools Division, Nicholson Operations (Cooper), is a 40-acre facility that manufactures commercial rasps and files from hot-rolled carbon steel. The facility is located on the west side of US Highway 31 and in the southern corner of the city limits of Cullman, Alabama. The facility property is bounded on the south side by Inland Steel, a fabricator of metal buildings. The west side of the facility is bounded by heavily wooded land. Residences are located within 200 yards north of the facility boundary. Cooper maintains a regulatory status as a permitted treatment, storage, and disposal facility. Cooper's hazardous waste generator status is that of a conditionally exempt small quantity generator. Cooper entered into an agreement with the Cullman County Industrial Development board for use of the plant property in 1975, which culminated in ownership by Cooper Industries in 1986. The previous occupant of the property was National Screw & Manufacturing Company (National Screw), a subsidiary of Monogram Industries, which was purchased by Nortek, Inc. in 1983. National Screw occupied the property from 1965-1974. National Screw was a manufacturer of fasteners and operations may have included metal fabrication, finishing processes, a surface impoundment, and a wastewater treatment operation.

Wastes from the facility operations were disposed in the on-site landfill. The landfill encompasses an area at least 100 ft by 200 ft located immediately north of the waste treatment unit and the inactive surface impoundment. From 1980 to 1983, sludge recovered from the surface impoundment was disposed in the landfill. The sludge reportedly contained cyanide and lead from operations at Nicholson File. Also, it has been reported that National Screw, the previous occupant of the property, conducted zinc-, chromium-, and cadmium-plating operations and waste sludge from these operations was most likely placed in the landfill. No wastes have been placed in the landfill since July 1983. A post-closure permit for the closed landfill was obtained January 24, 1989. Cooper has applied for a permit renewal, which includes continued post-closure care, monitoring, and updates due to applicable regulatory changes. Currently, the draft permit is on public notice.

A groundwater quality assessment plan was completed in 1986, which outlined the monitoring well installation, sampling, collection, and hydrogeologic data collection procedures, which were implemented at the site.

Cooper generates a limited number of hazardous waste streams at the site. Some of the waste streams are generated on a daily basis, while others are very seldom. Currently, one (1) hazardous waste satellite accumulation area and one (1) hazardous waste and drum storage area are utilized at the facility. The hazardous waste stream generated at the facility is in the form of dipping lacquer and lacquer thinner waste (F003/D001). Less than one percent of the facility's products receive this coating. Lacquering operations are conducted using dip applications inside a fully enclosed room. The hazardous waste satellite accumulation area is located in the lacquer room inside the plant along the north wall. Materials used in lacquering operations include 3-gallon dip tanks each containing the lacquer and lacquer thinner. Bins, totes, and a piping system are utilized in the management of solid wastes.

Numerous non-hazardous wastes are managed at the facility which consists of used steel shot and stone/metal (swarf), waste from shavings, grindings, and shearing of

steel, silicon and glass waste generated from the rasp polishing process, batch neutralization of muriatic acid, wastewater treatment settleable solids including slurried sand blasting agents composed of silica flour and blasting sand, cooling and cutting oils, water soluble coolant from periodic machine maintenance, bismuth/charcoal, spent zinc, wastewater, rinse waters following quenching operations, floor drainage, wash down from the annual clean-out of the grinding pit, spent quenching brine from annual dumping of the brine supply/storage tank, filter cakes, and used oil.

The effluent from the wastewater pre-treatment system is discharged via underground pipeline to the city publicly owned treatment works (POTW). The wastewater pre-treatment system removes settleable solids including slurried sand blasting agents composed of silica flour and blasting sand. The system incorporates a filter system to polish the industrial wastewater and performs pH balancing of all industrial wastewater prior to discharge to the City of Cullman POTW system.

The wastewater recycling operation generates about 55 gallons of used oil (waste cutting oil and kerosene waste) per week which are shipped to Waste Management in Emelle, Alabama, for fuels blending.

In the current process, steel is de-scaled (blast off rust and mill scale from steel coils), annealed, cold rolled, sheared, and polished. Steel coil or rods are placed in natural gas-fired furnaces in order to soften the metal. After cooling, the steel is taken to the steel mill where it is rolled into shape. The steel is then cut to the proper length and put into natural gas-heated forging hammers where the handle of the file is formed. Processes utilized in the production of the commercial rasps and files involve mechanical operations in which the files and rasps are placed in trays and conveyed through the following operations:

- Vapor degreasing of oils and greases using Genesolv (trichloroethylene was used prior to 1985);
- Part wetting with hot water;
- Immersion in a paste slurry containing water, flour, ammonium alum, and charcoal (potassium ferrocyanide was also used prior to September 1985);
- Empty tank drip station;
- Drying tunnel

The trays are then removed from the conveyor and parts are fed manually through

1. Immersion in molten bismuth at 1140 °F for hardening,
2. Water quench (water is re-circulated through a cooling tower for heat removal).

All drains and grated sumps in the floor of the wet areas of the facility discharge to the facility's wastewater treatment system.

A RCRA Facility Assessment (RFA) for the facility was completed February 1987. The RFA identified 7 Solid Waste Management Units (SWMUs). SWMUs 3, 4, and 7, the above ground storage tank (removed 1986), underground storage tank (removed 1985), and waste recycling operations, respectively, required no further action because unit characteristics are expected to prevent release of hazardous constituents. SWMUs 1 and 2, the inactive landfill and the inactive surface impoundment, respectively,

required further information in the form of a RCRA Facility Investigation Workplan (RFI). For SWMU 6, the recommended action required sampling to be done on the sludge and effluent. Filter cake Extraction Procedure (EP) toxicity analysis, August 1986, measured 0.037 mg/l lead, 0.0037 mg/l mercury, 0.080 mg/l chromium, and 0.51 mg/l barium. Semi-annual effluent analyses, November 1986, found 4.0 mg/l suspended solids, 0.24 mg/l cyanide, 0.468 mg/l iron, <0.01 mg/l nickel, and 0.025 mg/l zinc. SWMU 5, is a container storage area in which drums of waste oils and Genesolv are stored prior to being shipped offsite for recycling.

As a result of the most recent RFA, September 1998, four new SWMUs and one new area of concern (AOC) were identified. SWMUs 8, 9, 10, 11, the hazardous waste satellite accumulation area, hazardous waste storage area, finishing department acid/rinse neutralization system and acid scrubber, respectively, required no further action. SWMU 6 (wastewater treatment system) and AOC1 (process muriatic acid tanks) were recommended for confirmatory sampling.

In a letter dated June 25, 1999, Cooper notified the Department of the discovery of two-(2) additional AOCs. AOC2, which is approximately 10'x30', may contain industrial waste that would have been disposed prior to April 1980. AOC3 is believed to be construction debris that was disposed in 1976-1977. Cooper has submitted a Confirmatory Sampling and Analysis Workplan that is currently under review by the Department.

IV. CONCLUSION FOR CA725

The appropriate status code to be entered for RCRIS code CA725 (Current Human Exposures Under Control) is "YE." The potential routes of human exposure at the Cooper Industries facility include soil, groundwater, and stormwater. None of the media are suspected to be contaminated above the appropriate protective risk-based levels. Exposures to groundwater could occur by direct access to the aquifer through monitoring wells. All monitoring wells maintained by Cooper-Nicholson File are required to be locked at all times except when being sampled. Constituents of concern in the groundwater are lead, cadmium, total chromium, total cyanide, and hexavalent chromium and there has been no evidence of contamination in any of the wells. The contaminant plume appears to be located entirely on the facility property. In reference to AOC1 and AOC2, these areas of concern do not seem to present a threat to human health and the environment because both areas are buried.

V. CONCLUSION FOR CA750

The appropriate status code to be entered for RCRIS code CA750 (Migration of Groundwater Under Control) is "YE." As part of Cooper's RCRA Part B Permit Renewal Application a groundwater Appendix IX sampling and analysis event was performed to further define the groundwater quality of the closed landfill. Samples were collected from background monitoring well P-2, deep monitoring well TW-1, and shallow monitoring well MW-3. Nine constituents were detected during the sampling of the three groundwater monitoring wells. These constituents were arsenic, barium beryllium, chromium, copper, nickel, sulfide, and zinc. Sulfide was detected in the sampled monitoring wells at concentrations between 5.80 mg/l and 6.40 mg/l. The concentrations detected appear to be typical background concentrations for the

underlying Pottsville Aquifer. Trichloroethylene (TCE) was detected in background well (upgradient well) P-2 at a concentration of 12 ug/l, but not in the downgradient wells. This exceeds the established maximum concentration level of 5.0 ug/l, but appears to be from an upgradient source and not due to activities at Cooper Industries. Detection monitoring will continue to be performed as part of the Post-Closure Permit that is currently being renewed. Based on the information provided in the Confirmation Sampling and Analysis Work Plan, it appears that the contamination, if any, from AOC1 and AOC2, will ultimately be identified by the groundwater monitoring system.

VI. SUMMARY OF FOLLOW-UP ACTIONS

Not applicable.

Attachments:
1. CA725: Current Human Exposures Under Control
2. CA750: Migration of Contaminated Groundwater Under Control

CDR/sem:L:Cooper-EnvIndicator(1999)

File: Nicholson File (Cooper Industries)/Cullman County/Correspondence

ATTACHMENT 1
DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA725)
Current Human Exposures Under Control

Facility Name: Cooper Industries, Inc., Nicholson File
Facility Address: 2125 Second Avenue, S.W. Cullman, AL 35055
Facility EPA ID #: ALD 079 127 635

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   ✓ If yes - check here and continue with #2 below,

   ____ If no - re-evaluate existing data, or

   ____ If data are not available skip to #6 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Control" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives that are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Current Human Exposures

Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall

mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

Media	Yes	No	?	Rationale/Key Contaminants
Groundwater		✓		
Air (indoors)[2]		✓		
Surface Soil (e.g., <2 ft)		✓		
Surface Water		✓		
Sediment		✓		
Subsurface Soil (e.g., >2 ft)		✓		
Air (outdoors)		✓		

✓ If no (for all media) - skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient supporting documentation demonstrating that these "levels" are not exceeded.

____ If yes (for any media) - continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

____ If unknown (for any media) - skip to #6 and enter "IN" status code.

Rationale and Reference(s): Cooper's Semi-Annual Groundwater Reports do not show any statistically significant increase in any of the constituents of concern. None of the maximum contaminant levels (MCLs) have been exceeded.

[1]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2]Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggests that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

3. Are there **complete pathways** between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table Potential **Human Receptors** (Under Current Conditions)							
"Contaminated" Media	**Residents**	**Workers**	**Day-Care**	**Construction**	**Trespassers**	**Recreation**	**Food**[3]
Groundwater	-	-	-	-	-	-	-
Air (indoors)	-	-	-	-	-	-	-
Soil (surface, e.g., <2 ft)	-	-	-	-	-	-	-
Surface Water	-	-	-	-	-	-	-
Sediment	-	-	-	-	-	-	-
Soil (subsurface, e.g., >2 ft)	-	-	-	-	-	-	-
Air (outdoors)	-	-	-	-	-	-	-

Note: In order to focus the evaluation to the most probable combinations some potential "Contaminated" Media - Human Receptor combinations (Pathways) do not have assigned spaces in the above table. While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

_____ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

_____ If yes (pathways are complete for any "Contaminated" Media - Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "IN" status code

Rationale and Reference(s): _____

_____

_____

[3]Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"**[4] (i.e., potentially "unacceptable" because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) - skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) - continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) - skip to #6 and enter "IN" status code.

Rationale and Reference(s): _____

_____

_____

[4]If there is any question on whether the identified exposures are "significant" (i.e., potentially "unacceptable") consult a human health Risk Assessment specialist with appropriate education, training and experience.

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

✓ YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in this EI Determination, "Current Human Exposures" are expected to be "Under Control" at the Cooper Industries, Inc., Nicholson File facility, EPA ID #ALD 079 127 635, located at 2125 Second Avenue, SW under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

____ NO - "Current Human Exposures" are NOT "Under Control."

____ IN - More information is needed to make a determination.

Completed by Charmaine Roche Date September 30, 1999
Charmaine Roche
Environmental Engineer I

Supervisor Stephen A. Cobb Date 9/30/99 [5]
Stephen A. Cobb, Chief
Hazardous Waste Branch
Alabama Department of Environmental Management

Locations where References may be found:

RCRA Facility Assessment 1998 - ADEM Main Office
Permit Renewal Application (Volume 1-4 and Volume 4 supplement) - ADEM Main Office

Contact telephone and e-mail numbers

(Name) Charmaine Roche
(Phone #) (334) 271-7763

[5] **FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**

ATTACHMENT 2
DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: Cooper Industries, Inc., Nicholson File
Facility Address: 2125 Second Avenue, S.W. Cullman, AL 35055
Facility EPA ID #: ALD 079 127 635

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   ✓ If yes - check here and continue with #2 below,

   ____ If no - re-evaluate existing data, or

   ____ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives, which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be **"contaminated"**[6] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

___ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

_✓_ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

___ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s): Review of the 2nd 1995 Semi-annual Groundwater Monitoring Report shows that lead was detected in all of the monitoring wells, but did not exceed the maximum contaminant level (MCL) of 0.015 mg/l. In the 1st 1997 Semi-annual Report, lead and cadmium were detected in this sampling event. Lead was detected in all of the monitoring wells except MW-1, which was dry and cadmium was detected in TW-3, MW-2, and MW-3. Thereafter, in the 2nd 1997 Semi-annual Groundwater Monitoring Report lead and cadmium were also detected. Lead was present in monitoring wells TW-1 and MW-2 and cadmium was present in monitoring wells TW-1 and TW-3. In both sampling events of 1997, the constituents did not exceed the MCL. Furthermore, review of the Semi-annual Groundwater monitoring reports for 1998 reveal that lead, cadmium, total chromium, and hexavalent chromium were detected in some of the monitoring wells, but none of the concentrations of the constituents exceeded the MCLs.

[6]"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

3. Has the **migration** of contaminated groundwater **stabilized** such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[6] as defined by the monitoring locations designated at the time of this determination?

____ If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[6].

____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[7]) - skip to #8 and enter "NO" status code, after providing an explanation.

____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s): _____

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_____

[7]"existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

_____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s): _____

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[8] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature and number of discharging contaminants, or environmental setting) which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[8] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) providing a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[8] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[8] greater than 100 times their appropriate groundwater "levels," providing the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identifying if there is evidence that the amount of discharging contaminants is increasing.

____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s): _____

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_____

[8]As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented[9])?

____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR
2) providing or referencing an interim-assessment,[10] appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

____ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

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_____

[9]Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[10]The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

____ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

____ If no - enter "NO" status code in #8.

____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s): _____

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

__✓__ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Cooper Industries, Inc., Nicholson File facility, EPA ID # ALD 079 127 635, located at 2125 Second Avenue, SW. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

____ IN - More information is needed to make a determination.

Completed by Charmaine Roche Date September 30, 1999
Charmaine Roche
Environmental Engineer I

Supervisor Stephen A. Cobb Date 9/30/99 [11]
Stephen A. Cobb, Chief
Hazardous Waste Branch
Alabama Department of Environmental Management

Locations where References may be found:

RCRA Facility Assessment 1998 - ADEM Main Office
Permit Renewal Application (Volume 1-4 and Volume 4 supplement) - ADEM Main Office

Contact telephone and e-mail numbers

(Name) Charmaine Roche
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[11] **FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.**

ADEM

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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September 30, 1997

MEMORANDUM

TO: Wm. Gerald Hardy, Chief
Hazardous Waste Branch
Land Division

THROUGH: Stephen A. Cobb, Chief
Industrial Facilities Section
Hazardous Waste Branch
Land Division

FROM: Charmaine Roche
Industrial Facilities Section
Hazardous Waste Branch
Land Division

RE: Evaluation of status under the
RCRIS Corrective Action Environmental Indicator Event Codes
Cooper Industries, Nicholson Operations-Cullman Plant
EPA ID No. ALD 079 127 635

The Hazardous Waste Branch has conducted an evaluation of the Cooper Industries (Cooper), Cullman, Alabama, facility 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 EPA Office of Solid Waste (OSW) in the July 29, 1994, memorandum to the Regional Waste Management Division Directors.

Region 4 has also added a regional status code to CA725 and CA750, which tracks initial evaluations in which a determination is made that plausible human exposure to current contamination risks and 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 during the first evaluation. Evaluations subsequent to the first evaluation will use the national status codes to explain the current status of exposure controls.

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Background

Nicholson File facility, a division of Cooper Industries, is a 40-acre facility that manufactures commercial rasps and files from hot-rolled carbon steel. Cooper Industries entered into an agreement with the Cullman County Industrial Development board for use of the plant property in 1975, which culminated in ownership by Cooper Industries in 1986. National Screw & Manufacturing Company (National Screw), a subsidiary of Monogram Industries which was purchased by Nortek, INC. in 1983, was the previous occupant of the property.

Processes utilized in the production of the commercial rasps and files involve mechanical operations in which the files and rasps are placed in trays and conveyed through the following operations:

- Vapor degreasing of oils and greases using Genesolv (trichloroethylene was used prior to 1985);
- Part wetting with hot water;
- Immersion in a paste slurry containing water, flour, ammonium alum, and charcoal (potassium ferrocyanide was also used prior to September 1985);
- Empty tank drip station;
- Drying tunnel

The trays are then removed from the conveyor and parts are fed manually through

1. Immersion in molten bismuth at 1140 °F for hardening,
2. Water quench (water is recirculated through a cooling tower for heat removal).

A groundwater quality assessment plan was completed in 1986, which outlined the monitoring well installation, sampling, collection, and hydrogeologic data collection procedures, which were implemented at the site.

Wastes from the facility operations were disposed in the on-site landfill. The landfill encompasses an area at least 100 ft by 200 ft located immediately north of the waste Treatment Unit and the inactive Surface Impoundment. From 1980 to 1983, sludge recovered from the surface impoundment was disposed in the landfill. The sludge reportedly contained cyanide and lead from operations at Nicholson File. Also, it has been reported that National Screw, the previous occupant of the property, conducted zinc-, chromium-, and cadmium-plating operations and that waste sludge from these operations was most likely placed in the landfill. No wastes have been placed in the landfill since July 1983. A post-closure permit for the closed landfill was obtained January 24, 1989.

A RCRA Facility Assessment (RFA) for the facility was completed February 1987. The RFA identified 7 Solid Waste Management Units (SWMUs). SWMUs 3, 4, and 7, the above ground storage tank (removed 1986), underground storage tank (removed 1985), and waste recycling operations, respectively, required no further action because unit characteristics are expected to prevent release of hazardous constituents. SWMUs 1 and 2, the inactive landfill and the inactive surface impoundment, respectively, required further information in the form of a RCRA Facility Investigation Workplan (RFI). For SWMU6, the recommended action required sampling to be done on the sludge and effluent. Filter cake Extraction Procedure (EP) toxicity analysis, August 1986,

measured 0.037 mg/l lead, 0.0037-mg/l mercury, 0.080-mg/l chromium, and 0.51 mg/l barium. Semi-annual effluent analyses, November 1986, found 4.0 mg/l suspended solids, 0.24 mg/l cyanide, 0.468 mg/l iron, <0.01 mg/l nickel, and 0.025 mg/l zinc. SWMU 5, is a container storage area in which drums of waste oils and Genesolv are stored prior to being shipped offsite for recycling.

Human Exposures Controlled Determination (CA725)

The potential routes of human exposure at the Cooper Industries facility include soil, groundwater, and stormwater. Exposures to groundwater could occur by direct access to the aquifer through monitoring wells. All monitoring wells maintained by Cooper-Nicholson File are required to be locked at all times except when being sampled. Constituents of concern in the groundwater are lead, cadmium, total cadmium, total cyanide, and hexavalent chromium. The contaminant plume appears to be located entirely on the facility property.

The landfill, not used since 1983, is generally believed to be the source of the contamination detected in the groundwater. During operation, it was estimated that the landfill received about 625 tons of sludge, including dredged F012 sludge from the adjacent surface impoundment, per year. The landfill sampling by USEPA Environmental Services Division (ESD) in November 1984 indicated the landfill contains concentrations of cyanide, lead, cadmium, total chromium, and hexavalent chromium. The cyanide and lead were placed in the landfill by Nicholson file through the dredged sludge from the equalization surface impoundment. No information is available on the manner in which the previous owner, National Screw, disposed of wastes containing cadmium, total chromium, and hexavalent chromium.

The Human Exposure Controlled RCRIS code applies to the entire site, not specific SWMUs. The available status codes are:

1) YE Yes, applicable as of this date (indicating human exposures controlled).
2) NO No, not applicable as of this date (indicating human exposures uncontrolled).
3) NA Previous determination no longer applicable as of this date.
4) NC No control measures necessary.
5) IN More information needed.

There is a presence of hazardous waste constituents in the groundwater, but there is no indication that contaminated groundwater has migrated offsite. There appears to be no record of the additional sampling required for SWMU 6. Therefore, there are information gaps that need to be resolved. Without the additional data, the human exposure risk cannot be determined.

Groundwater Releases Controlled Determination (CA750)

A groundwater quality assessment was completed at Cooper Industries-Nicholson File in October 1986. Because the landfill is documented to contain hazardous wastes and there are no liners or leachate controls, groundwater contamination was expected and confirmed by the assessment. A groundwater monitoring program has detected the presence of elevated concentrations of constituents.

The Groundwater Releases Controlled RCRIS code applies to the entire site, not specific SWMUs. The available status codes are:

1) YE Yes, applicable as of this date (indicating groundwater releases controlled).
2) NO No, not applicable as of this date (indicating groundwater releases uncontrolled).
3) NA Previous determination no longer applicable as of this date.
4) NR No releases to groundwater.
5) IN More information needed.

Although a Groundwater Monitoring Program has been implemented, all groundwater contamination at the facility is not controlled. Also, further sampling was required for SWMU 6 and there appears to be no record of additional sampling. Therefore, more information is needed at this time.

CONCLUSIONS

1) Human Exposures Controlled RCRIS Event Code (CA725)

Soil and groundwater contamination is known to exist at the facility, but the additional sampling data for SWMU 6 is needed to make a final determination of whether human exposures are being controlled. Therefore, it would appear that the appropriate status code for RCRIS code CA725 would be IN, indicating more information is needed.

2) Groundwater Releases Controlled Determination (CA750)

Although there is a Groundwater Monitoring Plan implemented, ADEM does not have the additional sampling data that was required for SWMU 6. Therefore more information is needed at this time and IN (more information needed) is the appropriate status code for RCRIS code CA750.

File: Cooper Industries/Cullman County/TSD