

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2002-0036

WASTE DISCHARGE REQUIREMENTS
FOR
THUNDERBOLT WOOD TREATING COMPANY, INC.
LOVALVO, DEVRIES, SEYBOLD FAMILY TRUST
STANISLAUS COUNTY

The California Regional Water Quality Control Board, Central Valley Region (hereafter Board), finds that:

1. Thunderbolt Wood Treating Company, Inc. (hereafter Discharger) submitted a Report of Waste Discharge (RWD) dated 9 November 2001 to update Waste Discharge Requirements for a lined storm water recycle pond and an unlined storm water retention basin.
2. The facility is on Assessor's Parcel Number 132-3911-970 at 3400 Patterson Road in Riverbank, Stanislaus (Section 25, T2S, R9E MDM&M), as shown on Attachment A, which is attached hereto and made part of the Order by reference. The Discharger owns and operates the facility. The land is owned by the Lovalvo, DeVries, Seybold Family Trust.
3. Order No. 96-126, adopted by the Board on 3 May 1996, prescribes requirements for capturing and storing storm water that has contacted active industrial processing areas, wastes, and finished products. This Order is neither adequate nor consistent with the current plans and policies of the Board.

Existing Facility and Discharge

4. The Discharger chemically treats wood to produce lumber and other wood products that are resistant to insects and microbial deterioration. All wood is treated using water-based chemical solutions in pressurized vessels, and four separate chemical processes are used: chromated copper arsenate (CCA), acid copper chromate (ACC), ammonical copper zinc arsenate (ACZA), and copper borate azole (CBA).
5. The facility, in operation since 1978, is comprised of an office building, chemical process areas, paved wood storage areas, and unpaved areas used only for storage of untreated wood and for wood incising. The site plan is depicted on Attachment B which is attached hereto and made part of the Order by reference.
6. The chemical process areas are designed so that all process wastewater is collected in various sumps. About one half of the processing area is roofed to minimize storm water contacting the process areas.

7. The processing area includes several discrete material storage areas where chemicals used in the process are stored and treating solutions are formulated. Secondary containment is provided for all liquid storage tanks, and all storage areas drain to the process sumps.
8. Prior to processing, the untreated wood is incised to enhance solution penetration and is then loaded onto tram cars. The tram cars are loaded into a metal pressure vessel (retort), which is closed and sealed. The treating solution is introduced to the retort and the pressure is increased.
9. After the required treatment time, the residual treating solution is returned to the work tank for recycling. A vacuum is then applied to the retort to remove excess treating solution from the wood. For the ACZA process, vapors are then vented to an air scrubber to control ammonia emissions.
10. For the ACZA process, the treated wood is removed from the retort and placed to dry on a roofed concrete drip pad that drains to the process sump. Treated wood from the ACC and CCA processes is removed and placed on an uncovered drip pad that drains to the process sump. Once quality assurance testing is completed, the treated wood is transferred to the treated wood storage area, which is paved with asphaltic concrete.
11. Below each retort is a concrete retort sump that collects incidental drips and drip pad runoff. These sumps allow for solids settling, and the decant liquid flows into operational sumps, which also receive all process wastewater and storm water that contacts the process area. Water from the process sumps is filtered and stored for recycling in making the wood treating solutions.
12. The process sumps are constructed of reinforced concrete and have several coats of sealer overlain by a geotextile fabric cushion and a geosynthetic liner to minimize potential leakage. Solids are cleaned out annually and the liner system is inspected and repaired as needed at that time. The retort sumps also have leak inspection ports.
13. Solids that accumulate in the retort door sumps, operational sumps, secondary containment areas, and other process areas are periodically cleaned out. Liquids are recycled into the wood treating process according to chemical type, and dry solids are disposed of off-site at an appropriately permitted facility.
14. The uncovered portions of the paved storage area drain to a common sump at the southwestern end of the paved area. An automatically controlled sump pump transfers the storm water to a lined storm water recycling pond. The stored storm water is recycled for use in making the wood treating solutions.
15. The storm water recycle pond is a double-lined surface impoundment approximately 130 by 170 feet and 21.5 feet deep. The double liner system is underlain by native clay soil that was recompacted prior to liner installation. The total storage capacity at two feet of

freeboard is two million gallons, and the upper five feet of the impoundment are constructed above the surrounding grade.

16. In 1983, a compacted clay liner was constructed for the surface impoundment. The geosynthetic liner system was installed in 1984. The outer liner is 50-mil PVC and the inner liner is scrim-reinforced 46-mil Hypalon. The impoundment has a leak detection system consisting of liquid sensors placed between the two liners and observation/cleanout ports. If the inner liner is damaged, the liquid sensors activate a warning light and a pump system automatically pumps the liquid back into the recycle pond. The system functions to minimize hydraulic head on the inner liner until the outer liner can be repaired.
17. The lined storm water recycle pond is designed with sufficient capacity that it will be empty in the late summer months. At that time, accumulated solids are removed for off-site disposal and the outer liner is inspected.
18. Based on the analytical data presented in monitoring reports during 2000 and 2001, the water in the lined storm water recycle pond is characterized as follows:

<u>Parameter</u>	<u>Concentration Range</u>	<u>Water Quality Goal for Groundwater</u>
pH	7.2 to 8.5	6.5 to 8.5
EC	290 to 570 μ mhos/cm	700 μ mhos/cm
Total Kjeldahl Nitrogen	9 to 19 mg/L	None ¹
Arsenic	0.35 to 0.96 mg/L	Background ²
Total Chromium ³	2.9 to 9.2 mg/L	0.021 mg/L
Copper	0.12 to 0.62 mg/L	0.17 mg/L

¹ All of the Total Kjeldahl Nitrogen constituents have the potential to convert to nitrate nitrogen. The applicable water quality goal for nitrate nitrogen is 10 mg/L.

² Background is used in lieu of numeric water quality goals because drinking water criteria are typically much lower than naturally occurring concentrations.

³ Because of the chemicals used in the wood treatment process, all chromium is assumed to be in the form of hexavalent chromium, and the water quality goal for hexavalent chromium is therefore applicable.

19. Untreated “white” wood is stored in one of three unpaved storage areas. Two of these areas drain to individual sumps that transfer storm water runoff to an unlined storm water retention pond at the southern end of the site.
20. The unlined retention pond is in an unpaved area that is topographically higher than the paved treated wood storage area, so contaminated runoff or wastewater cannot drain into the unlined pond. All storm water that originates in this unpaved area drains to the unlined retention pond, where it is allowed to percolate and evaporate.

21. Based on the analytical data presented in monitoring reports during 2000 and 2001, the water in the unlined storm water retention pond is characterized as follows:

Parameter	Concentration Range	Water Quality Goal for Groundwater
pH	5.5 to 7.8	6.5 to 8.5
Total Dissolved Solids	130 to 275 mg/L	450 mg/L
Total Kjeldahl Nitrogen	4.6 to 8.1 mg/L	None ¹
Arsenic	<0.01 mg/L	Background ²
Total Chromium ³	<0.01 mg/L	0.021 mg/L
Copper	<0.01 to 0.08 mg/L	0.17 mg/L
Oil & Grease	<5 mg/L	None

¹ All of the Total Kjeldahl Nitrogen constituents have the potential to convert to nitrate nitrogen. The applicable water quality goal for nitrate nitrogen is 10 mg/L.

² Background is used in lieu of numeric water quality goals because drinking water criteria are typically much lower than naturally occurring concentrations.

³ Because of the chemicals used in the wood treatment process, all chromium is assumed to be in the form of hexavalent chromium, and the water quality goal for hexavalent chromium is therefore applicable.

22. Based on the Discharger's water balance, the lined storm water recycle pond has adequate storage capacity, provided that production rates and water usage rates remain relatively stable. Reduced production or increased use of treating processes with low water demand could potentially create storage capacity problems. However, because of natural variations in precipitation rates that govern the rate of discharge to the lined storm water recycle pond, it is not appropriate to set flow rate limits. Therefore, this Order requires that the Discharger maintain adequate freeboard and complete a yearly water balance prior to the onset of the rainy season to show that adequate capacity is available.
23. Because the unlined storm water retention pond receives runoff from uncontaminated areas only, this Order does not include capacity or freeboard requirements for that pond.

Planned Changes in Discharge

24. Under the previous Order, the Discharger treated wood with a fire retardant solution known as FR-3500. The treating solution contained urea, diammonium phosphate, Melflam, and non-hazardous polymers. The Discharger has discontinued this process and does not intend to use it again.
25. The Discharger began using an additional chemical treatment consisting of copper hydroxide, boric acid and tebuconazole (CBA-A) in September 2001. Wood treated with this process is removed from the retort and placed to dry on the roofed concrete drip pad

that drains to the process sump. Incorporation of this new chemical process did not require construction of new process areas or change the overall production rate at the facility.

26. The Discharger may also use a similar new process called CB-A, which utilizes copper hydroxide and tebuconazole.

Site-Specific Conditions

27. Surrounding land uses are primarily commercial and industrial.
28. The mean annual rainfall for the vicinity of the site is approximately 12 inches, and the water surface evaporation rate for the closest reservoir (Woodward Reservoir) is approximately 30 inches per year.
29. Surface soils are typically silt to silty sand to about 25 feet below the ground surface. This is typically underlain by medium to coarse sand with varying silt content. Groundwater is typically encountered approximately 60 feet below the ground surface at the site.

Groundwater Considerations

30. The Discharger has been monitoring groundwater quality on-site since 1984. At that time, chromium was detected at concentrations up to 228 µg/L in one groundwater monitoring well (MW-4) near the storm water recycle pond, which was unlined at the time. The Discharger extracted groundwater from that area and discharged it to the storm water recycle pond until the chromium concentration declined to below 50 µg/L in March 1986. Groundwater extraction was then discontinued.
31. Following discovery of the groundwater degradation, the Discharger installed the storm water recycle pond liner system and completed other improvements to minimize the potential for groundwater impacts, including paving the areas where treated wood is stored for shipping.
32. There are currently nine groundwater monitoring wells and three vadose zone monitoring wells on-site. This network is adequate to detect a release of waste constituents from the discharge.
33. There is typically very little variation in the elevation of the water table across the site. The direction of the gradient appears to be variable, but is frequently northward towards the river. Monitoring wells MW-0 and MW-9 appear to be most representative of background conditions because they are farthest from all potential points of release. Monitoring wells MW-1, -3, and -4 are positioned adjacent to the lined surface impoundment and therefore should provide the earliest warning of a release from that area.

34. The vadose zone wells (MW-2, -5, and -6) have never collected sufficient moisture to allow sampling.
35. Groundwater monitoring data for 2000 and 2001 are summarized below:

Parameter	Range of Analytical Results		Water Quality Goal for Groundwater
	Background Wells (MW-0 & MW-9)	Lined Pond Wells (MW-1, -3, & -4)	
pH	6.7 to 7.8	6.7 to 7.8	6.5 to 8.5
Electrical Conductivity (µmhos/cm)	370 to 680	440 to 690	700
Total Chromium (mg/L)	<0.01	<0.01	0.0025
Nitrate (as nitrate) (mg/L)	23 to 38	28 to 57	45

36. Because of the leak detection system and the Discharger's long history of groundwater monitoring without evidence of degradation, semi-annual groundwater monitoring using the existing well network should be adequate to detect a release provided that the vadose zone wells are monitored and the leak detection system is properly maintained.

Basin Plan, Beneficial Uses, and Regulatory Considerations

37. The Board adopted a Water Quality Control Plan, Fourth Edition, for the Sacramento River and San Joaquin River Basins (hereafter Basin Plan), which defines beneficial uses and water quality objectives for waters of the Basins. These requirements implement the Basin Plan.
38. Surface water drainage is to the Stanislaus River. The beneficial uses of the Stanislaus River are municipal and domestic supply; agricultural irrigation and stock watering; industrial process, service, and power supply; contact, non-contact, and canoeing/rafting recreation; warm and cold fresh water habitat; cold water migration; warm and cold water spawning; and wildlife habitat.
39. The beneficial uses of underlying groundwater are municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply.
40. The Board has considered anti-degradation pursuant to State Board Resolution No. 68-16 and finds that degradation of groundwater by this discharge is not consistent with maximum benefit to the people of the State. The geomembrane liner system should prevent degradation of groundwater from infiltration of waste constituents. If staff determines that the discharge has caused, or has the potential to cause, groundwater degradation, then the Discharger will be required to cease the discharge, change the

method of disposal, and/or take other actions as necessary to comply with Resolution No. 68-16.

41. Federal regulations for storm water discharges promulgated by the U.S. Environmental Protection Agency (40 CFR Parts 122, 123, and 124) require specific categories of facilities which discharge storm water to obtain NPDES permits. Because the system is designed specifically to contain all storm water onsite, the Discharger is exempt from regulation under the State Board's NPDES permit for the discharge of storm water associated with industrial activities.
42. Section 13267(b) of the California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2002-0036" are necessary to assure compliance with these waste discharge requirements. The Discharger operates the facility that discharges the waste subject to this Order.

43. The action to update waste discharge requirements for this facility is exempt from the provisions of the California Environmental Quality (CEQA), in accordance with Title 14, California Code of Regulations (CCR), Section 15301.
44. This discharge is exempt from the requirements of *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste*, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 2005, et seq., (hereafter Title 27). The exemption pursuant to Section 20090(b), is based on the following:
 - a. The Board is issuing waste discharge requirements,
 - b. The discharge complies with the Basin Plan, and
 - c. The wastewater does not need to be managed according to Title 22 CCR, Division 4.5, and Chapter 11, as a hazardous waste.

Public Notice

45. The Board considered all the above and the supplemental information and details in the attached Information Sheet, which is incorporated by reference herein, in establishing the following conditions of discharge.
46. The Board has notified the Discharger, and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
47. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. 96-126 is rescinded and Thunderbolt Wood Treating Company, Inc. and the Lovalvo, DeVries, Seybold Family Trust, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following.

Note: Other prohibitions, conditions, definitions, and methods of determining compliance are contained in the attached "Standard Provisions and Reporting Requirements for Waste Discharge Requirements" dated 1 March 1991.

A. Discharge Prohibitions:

1. Discharge of wastes to surface waters or surface water drainage courses is prohibited.
2. The discharge of treating solution or chemicals used therein onto any surface other than paved areas that drain to the process sumps is prohibited.
3. The discharge of storm water runoff containing treating process chemicals to any location other than the process sumps or the lined storm water recycle pond is prohibited.
4. Placement or storage of treated wood products, debris, or materials that have contacted the treating solutions outside of the designated paved areas is prohibited.
5. Discharge of waste classified as hazardous, as defined in Sections 2521(a) of Title 23, CCR, Section 2510, et seq. is prohibited.

B. Discharge Specifications:

1. The discharge shall not exceed the hydraulic capacity of any wastewater or storm water conveyance or storage systems.
2. The discharge shall not cause a nuisance or condition or pollution as defined by the California Water Code, Section 13050.
3. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or a mass that causes violation of the Groundwater Limitations.
4. The facility shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.
5. A minimum of two feet of freeboard shall be maintained in the lined storm water recycle pond at all times.
6. The lined storm water recycle pond shall have sufficient capacity to accommodate allowable flow volume and design seasonal precipitation with no discharge of storm water runoff to any surface water body or public conveyance system. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with the historical rainfall patterns.
7. On or about 1 October of each year, the available storage capacity of the lined storm water recycle pond shall at least equal the volume necessary to comply with Discharge Specification Nos. 5 and 6.
8. If temporary storm water storage is required, any vessels used shall be specifically designed to contain liquids and shall be placed in paved areas only.
9. The Discharger shall inspect all paved areas and patch, seal, or re-pave as needed to minimize potential percolation through the pavement.
10. The Discharger shall inspect and maintain all sump liners, and shall repair or replace linings as needed to prevent leakage.

C. Solids Disposal Specifications

1. The process sumps and the lined storm water recycle pond shall be drained, cleaned, and inspected annually.
2. Collected sludges and other solids shall be disposed of in a manner that is consistent with *Consolidated Regulations for Treatment, Storage, Processing, or Disposal of*

Solid Waste, as set forth in Title 27, CCR, Division 2, Subdivision 1, Section 20005, et seq., and that has been approved by the Executive Officer.

D. Groundwater Limitations:

The discharge, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations statistically greater than background water quality, except for coliform organisms. For coliform, the discharge shall not cause the most probable number of total coliform organisms to exceed 2.2 per 100 ml over any 7-day period.

E. Provisions:

1. By **30 December 2004**, the Discharger shall submit a *Background Groundwater Quality Study Report*. For each groundwater monitoring parameter/constituent identified in the MRP, the report shall present a summary of monitoring data since adoption of this Order and calculation of the concentration in background monitoring wells. Determination of background quality shall be made using the methods described in Title 27, Section 20415(e)(10), and shall be based on data from at least four consecutive semi-annual groundwater monitoring events. For each monitoring parameter/constituent, the report shall compare the calculated background concentration with the applicable water quality goal. Where background concentrations are statistically greater than the water quality goal, the report shall recommend final groundwater limitations which comply with Resolution 68-16 for the waste constituents listed therein. Subsequent use of a concentration as a final groundwater limitation will be subject to the discretion of the Executive Officer.
2. The Discharger shall comply with Monitoring and Reporting Program No. R5-2002-0036, which is a part of this Order, and any revisions thereto as ordered by the Executive Officer.
3. The Discharger shall submit a water balance each year pursuant to the Monitoring and Reporting Program to show that adequate storage capacity is available in the lined storm water recycle pond. The water balance shall be prepared by a California-registered engineer and shall consider the liquid level in the lined storm water recycle pond as of the previous 1 October, projected runoff from all tributary processing and storage areas, anticipated production and recycle rates through the year, and evaporation. Monthly precipitation shall be projected based on the 100-year total annual precipitation distributed monthly in accordance with historical patterns. If the water balance shows that there may not be sufficient storage capacity in the pond for the upcoming winter, then the Discharger shall also describe the temporary measures that will be used to store any excess storm water.

4. If the Discharger detects any condition of waste leakage or impending waste leakage from the process sumps, secondary containment structures, paved areas, the drip pad, or the lined storm water recycle pond, such damage shall be reported to the Board within 7 days. The report shall include a detailed plan for isolating the problem and completing any repairs necessary in a timely fashion. In the interim, the Discharger shall remove all seepage continuously for return to a containment system to minimize hydraulic head on secondary liners and/or the soil.
5. The Discharger shall comply with the “Standard Provisions and Reporting Requirements for Waste Discharge Requirements”, dated 1 March 1991, which are attached hereto and by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as “Standard Provision(s).”
6. At least 90 days prior to termination or expiration of any lease, contract, or agreement involving the disposal field used to justify the capacity authorized herein and assure compliance with this Order, the Discharger shall notify the Board in writing of the situation and of what measures have been taken or are being taken to assure full compliance with this Order.
7. Six months prior to discontinuing the use of this site for waste disposal, the Discharger shall submit a technical report describing the methods and controls to be used to assure protection of the quality of groundwater and surface water during final operations and with any proposed subsequent use of the land. The report shall be prepared by a California registered Professional Engineer or Registered Geologist.
8. The Discharger shall submit to the Board on or before each compliance report due date the specified document, or if appropriate, a written report detailing compliance or noncompliance with the specific schedule date and task. If noncompliance is reported, then the Discharger shall state the reasons for noncompliance and shall provide a schedule to come into compliance.
9. The Discharger shall use the best practicable cost-effective control technique(s) currently available to comply with discharge limits specified in this order.
10. The Discharger shall report promptly to the Board any material change or proposed change in the character, location, or volume of the discharge.
11. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, then the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be forwarded to this office.

12. The Discharger shall comply with all conditions of this Order, including timely submittal of technical and monitoring reports as directed by the Executive Officer. Violations may result in enforcement action, including Regional Board or court orders requiring corrective action or imposing civil monetary liability, or in revision or rescission of this Order.
13. A copy of this Order shall be kept at the discharge facility for reference by operating personnel. Key operating personnel shall be familiar with its contents.
14. The Board will review this Order periodically and may revise requirements when necessary.

I, GARY M. CARLTON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 1 March 2002.

GARY M. CARLTON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2002-0036

FOR
THUNDERBOLT WOOD TREATING COMPANY, INC.
LOVALVO, DEVRIES, SEYBOLD FAMILY TRUST
STANISLAUS COUNTY

This Monitoring and Reporting Program (MRP) describes requirements for monitoring storm water, containment systems and groundwater. This MRP is issued pursuant to Water Code Section 13267. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. Regional Board staff shall approve specific sample station locations prior to implementation of sampling activities.

All samples shall be representative of the volume and nature of the discharge or matrix of material sampled. The time, date, and location of each grab sample shall be recorded on the sample chain of custody form.

LINED STORM WATER RECYCLE POND MONITORING

The lined storm water recycle pond shall be monitored as specified below:

<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Freeboard	0.1 feet	Measurement	Weekly	Quarterly
pH	--	Grab ¹	Quarterly	Quarterly
Specific Conductivity	µmhos/cm	Grab	Quarterly	Quarterly
Total Nitrogen	mg/L	Grab	Quarterly	Quarterly
Arsenic ² (EPA 7062)	µg/L	Grab	Quarterly	Quarterly
Copper ² (EPA 6010B)	µg/L	Grab	Quarterly	Quarterly
Chromium, total ² (EPA 6010B)	µg/L	Grab	Quarterly	Quarterly

¹ A grab sample obtained from the pond shall be considered representative.

² Samples may be filtered prior to preservation. Quantitation limits shall be as close as practicable to the method quantitation limits for the specified method.

UNLINED STORM WATER DETENTION POND MONITORING

The unlined storm water detention pond shall be monitored as specified below:

<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
pH	--	Grab ¹	Quarterly	Quarterly
Specific Conductivity	µmhos/cm	Grab ¹	Quarterly	Quarterly

<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Total Nitrogen	mg/L	Grab	Quarterly	Quarterly
Arsenic ^{2,3} (EPA 7062)	µg/L	Grab	Quarterly	Quarterly
Copper ^{2,3} (EPA 6010B)	µg/L	Grab	Quarterly	Quarterly
Chromium, total ² (EPA 6010B)	µg/L	Grab	Quarterly	Quarterly

- ¹ A grab sample obtained from the pond shall be considered representative.
- ² Samples may be filtered prior to preservation. Quantitation limits shall be as close as practicable to the method quantitation limits for the specified method.
- ³ Required for the initial four monitoring events. After that, if chromium is detected during a monitoring event, then the Discharger shall also analyze the sample for arsenic and copper.

CONTAINMENT AND LEAK DETECTION SYSTEM MONITORING

The Discharger shall periodically inspect and test all containment systems and leak detection systems to ensure proper function as specified below.

A. Weekly Inspections

The Discharger shall perform the following inspections weekly and document the results of the inspection:

1. Inspect all leak detection ports in the process sumps. Note whether liquid is present and report volume.
2. Inspect the leak detection system for the lined storm water recycle pond. Note whether liquid is present and report volume.
3. Inspect exposed portions of the storm water recycle pond liner. Note any evidence of deep scratches, crack, tears, holes or discoloration. If any such evidence is found, specify proposed corrective action measures and schedule for repairs.

B. Annual Cleaning, Inspection, Testing and Repair

The following cleaning, inspection, testing, and repair program shall be completed once per year, and documented in the Annual Monitoring Report.

1. Inspect secondary containment liner systems for tears or other conditions that might allow leakage. Repair as necessary.
2. Inspect the drip pad for cracking or other conditions that might allow leakage. Repair as necessary.
3. Drain all process sumps, remove all accumulated solids and inspect the liner for tears, holes and other conditions that might allow leakage. Repair as necessary.

4. Drain the lined storm water recycle pond, remove all accumulated solids and inspect the liner for tears, holes and other conditions that might allow leakage. Repair as necessary.
5. Inspect and test the lined storm water recycle pond leak detection warning light system. Repair as necessary.
6. Inspect and test the lined storm water recycle pond leak detection pump-out system. Repair as necessary.

GROUNDWATER AND VADOSE ZONE MONITORING

Prior to construction and/or sampling of any groundwater monitoring wells, the Discharger shall submit plans and specifications to the Board for review and approval. Once installed, all new wells shall be added to the MRP and shall be sampled and analyzed according to the schedule below.

Prior to sampling, the groundwater elevations shall be measured and the wells shall be purged at least three well volumes until temperature, pH and electrical conductivity have stabilized. Depth to groundwater shall be measured to the nearest 0.01 feet. Samples shall be collected and analyzed using standard EPA methods. For the vadose zone wells, which are expected to be dry, any liquid should be removed and tested in accordance with this section. The volume of liquid removed from any vadose zone wells shall be reported.

Groundwater and vadose zone monitoring shall include, at a minimum, the following:

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Sampling and Reporting Frequency</u>
Depth to Groundwater	feet	Measurement	Semi-Annually
Groundwater Elevation ¹	feet	Calculated	Semi-Annually
Gradient Magnitude	feet/feet	Calculated	Semi-Annually
Gradient Direction	degrees	Calculated	Semi-Annually
Electrical Conductivity	µmhos/cm	Grab	Semi-Annually
Total Nitrogen	mg/L	Grab	Semi-Annually
pH	pH units	Grab	Semi-Annually
Chromium, total ² (EPA 6010B)	µg/L	Grab	Semi-Annually
Chromium, hexavalent ^{2,3} (EPA 7199)	µg/L	Grab	Semi-Annually
Arsenic ² (EPA 7062)	µg/L	Grab	Semi-Annually
Copper ² (EPA 6010B)	µg/L	Grab	Semi-Annually

¹ Groundwater elevation shall be determined based on depth-to-water measurements using a surveyed measuring point elevation on the well and a surveyed reference elevation.

² Samples may be filtered prior to preservation. Quantitation limits shall be as close as practicable to the method quantitation limits for the specified method.

³ Required for the first four monitoring events to establish background concentrations.

REPORTING

In reporting monitoring data, the District shall arrange the data in tabular form so that the date, sample type (e.g., effluent, pond, etc.), and reported analytical result for each sample are readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with waste discharge requirements and spatial or temporal trends, as applicable. The results of any monitoring done more frequently than required at the locations specified in the Monitoring and Reporting Program shall be reported to the Regional Board.

As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all Groundwater Monitoring Reports shall be prepared under the direct supervision of a Registered Engineer or Geologist and signed by the registered professional.

A. Quarterly Monitoring Reports

Weekly and monthly monitoring data shall be reported in Quarterly Monitoring Reports. Quarterly reports shall be submitted to the Regional Board on the **1st day of the second month following sampling** (i.e. the January-March Report is due by 1 May). At a minimum, the reports shall include:

- a. Results of water quality monitoring for the lined and unlined storm water ponds;
- b. Results of weekly inspections and documentation of any repairs to liners and containment systems.
- c. A comparison of monitoring data to the discharge specifications and an explanation of any violation of those requirements. Data shall be presented in tabular format;
- d. If requested by staff, copies of laboratory analytical report(s); and
- e. A calibration log verifying calibration of all hand-held monitoring instruments and devices used to comply with the prescribed monitoring program.

B. Semi-Annual Monitoring Reports

The Discharger shall establish a semi-annual sampling schedule for groundwater monitoring such that samples are obtained approximately every six months. Semi-Annual Monitoring Reports shall be submitted to the Board by the **1st day of the second month after the quarter** (i.e. the January-June semi-annual report is due by August 1st) and may be combined with the quarterly report. The Semi-Annual Monitoring Report shall include the following:

1. Results of groundwater and vadose zone monitoring;
2. A narrative description of all preparatory, monitoring, sampling, and analytical testing activities for the groundwater monitoring. The narrative shall be sufficiently detailed to

verify compliance with the WDR, this MRP, and the Standard Provisions and Reporting Requirements. The narrative shall be supported by field logs for each well documenting depth to groundwater; parameters measured before, during, and after purging; method of purging; calculation of casing volume; and total volume of water purged;

3. Calculation of groundwater elevations, an assessment of groundwater flow direction and gradient on the date of measurement, comparison of previous flow direction and gradient data, and discussion of seasonal trends if any;
4. A narrative discussion of the analytical results for all groundwater locations monitored including spatial and temporal trends, with reference to summary data tables, graphs, and appended analytical reports (as applicable);
5. A comparison of monitoring data to the groundwater limitations and an explanation of any violation of those requirements;
6. Summary data tables of historical and current water table elevations and analytical results;
7. A scaled map showing relevant structures and features of the facility, the locations of monitoring wells and any other sampling stations, and groundwater elevation contours referenced to mean sea level datum;
8. Copies of laboratory analytical report(s) for groundwater monitoring.

C. Annual Report

An Annual Report shall be prepared as the third quarterly monitoring report. The Annual Report shall include all monitoring data required in the quarterly schedule. The Annual Report shall be submitted to the Regional Board by **1 November** each year. In addition to the data normally presented, the Annual Report shall include the following:

1. The contents of the regular third quarter monitoring report;
2. If requested by staff, tabular and graphical summaries of all data collected during the year;
3. An evaluation of the groundwater quality beneath the facility;
4. Documentation of all inspections and repairs to pavement, liners, and containment systems undertaken during the previous calendar year pursuant to this MRP.
5. A discussion of compliance and the corrective actions taken, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements;
6. A discussion of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program;
7. Summary of information on the disposal of sludge and/or solid waste;
8. The results from any sludge monitoring required by the disposal facility; and

9. The water balance prepared pursuant to Provision E.2. The water balance shall be prepared and signed by a California-registered engineer. If the water balance indicates there will not be sufficient storm water storage capacity during the upcoming rainy season, then the Annual Monitoring Report shall also contain a contingency plan for temporary storage or other means of containing all storm water from the process areas.

A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions General Reporting Requirements Section B.3.

The Discharger shall implement the above monitoring program on the first day of the month following adoption of this Order.

Ordered by:

GARY M. CARLTON, Executive Officer

1 March 2002

(Date)

ALO:18-May-06

INFORMATION SHEET

ORDER NO. R5-2002-0036
THUNDERBOLT WOOD TREATING COMPANY, INC.
LOVALVO, DEVRIES, SEYBOLD FAMILY TRUST
STANISLAUS COUNTY

The Discharger chemically treats wood to produce lumber and other wood products that are resistant to insects and microbial deterioration. All wood is treated using water-based chemical solutions in pressurized vessels, and the following chemical processes will be used: chromated copper arsenate (CCA), acid copper chromate (ACC), ammonical copper zinc arsenate (ACZA), copper hydroxide/boric acid/tebuconazole (CBA-A), and copper borate azole (CBA).

The chemical process areas are designed so that all process wastewater is collected in various sumps. About one half of the processing area is roofed to minimize storm water contacting the process areas. Secondary containment is provided for all liquid storage tanks, and all storage areas drain to lined process sumps.

After processing, the wood is placed to dry on drip pads that drain to the process sump. Once quality assurance testing is completed, the treated wood is transferred to the treated wood storage area, which is paved with asphaltic concrete. Solids that accumulate in the various lined sumps are periodically cleaned out. Liquids are recycled into the wood treating process according to chemical type, and dry solids are disposed of off-site at an appropriately permitted facility.

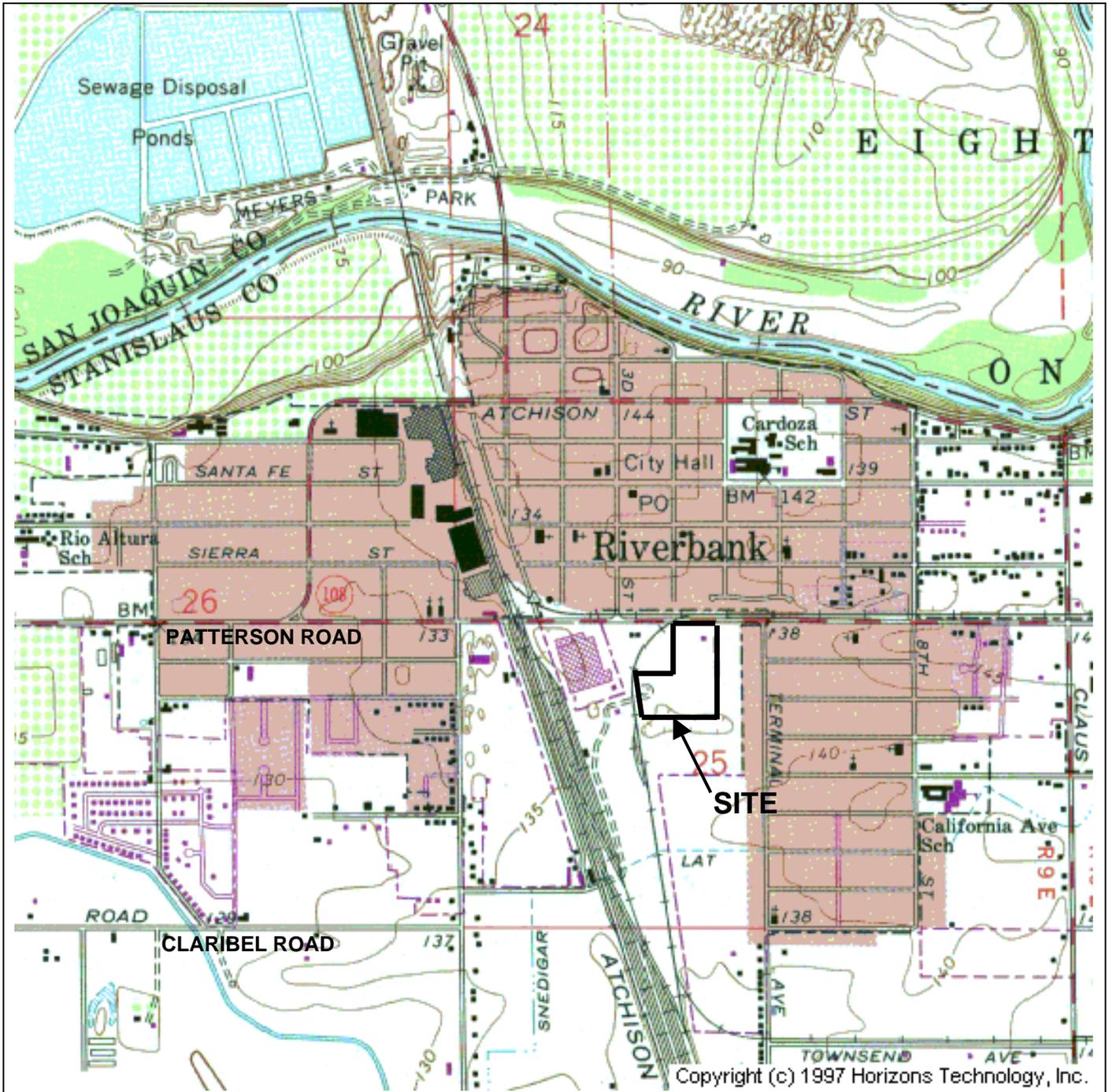
The uncovered portions of the paved storage area drain to a common sump at the southwestern end of the paved area. An automatically controlled sump pump transfers the storm water to a double-lined storm water recycling pond. The stored storm water is recycled for use in making the wood treating solutions. The impoundment has leak detection system consisting of liquid sensors that activate a warning light and a pump system that automatically pumps the liquid back into the recycle pond.

The lined storm water recycle pond is designed with sufficient capacity so that it will usually be empty in the late summer months. Based on the Discharger's water balance, the lined storm water recycle pond has adequate storage capacity, provided that production rates and water usage rates remain relatively stable. Reduced production or increased use of treating processes with low water demand could potentially create storage capacity problems. However, because of natural variations in precipitation rates that govern the rate of discharge to the lined storm water recycle pond, it is not appropriate to set flow rate limits. Therefore, this Order requires that the Discharger maintain adequate freeboard and complete a yearly water balance prior to the onset of the rainy season to show that adequate capacity is available.

The Discharger has been monitoring groundwater quality on-site since 1984, prior to installation of the lined storm water pond and extensive paved areas for treated wood processing and storage. At that time, chromium was detected at concentrations up to 228 µg/L in one groundwater monitoring well near the storm water recycle pond (MW-4). The Discharger extracted groundwater from that area and discharged it to the storm water recycle pond until the chromium concentration declined to below 50 µg/L in March 1986. Groundwater extraction was then discontinued.

Because of the liner with leak detection system, extensive paving of areas likely to contact processing liquids, and the Discharger's long history of groundwater monitoring without evidence of degradation, semi-annual groundwater monitoring using the existing well network is adequate to detect a release.

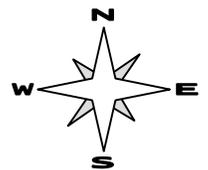
ATTACHMENT A



Drawing Reference:
 U.S.G.S TOPOGRAPHIC MAP
 RIVERBANK
 7.5 MINUTE QUADRANGLE
 Photorevised 1987

SITE LOCATION MAP
 THUNDERBOLT WOOD TREATING
 COMPANY, INC.
 RIVERBANK
 STANISLAUS COUNTY

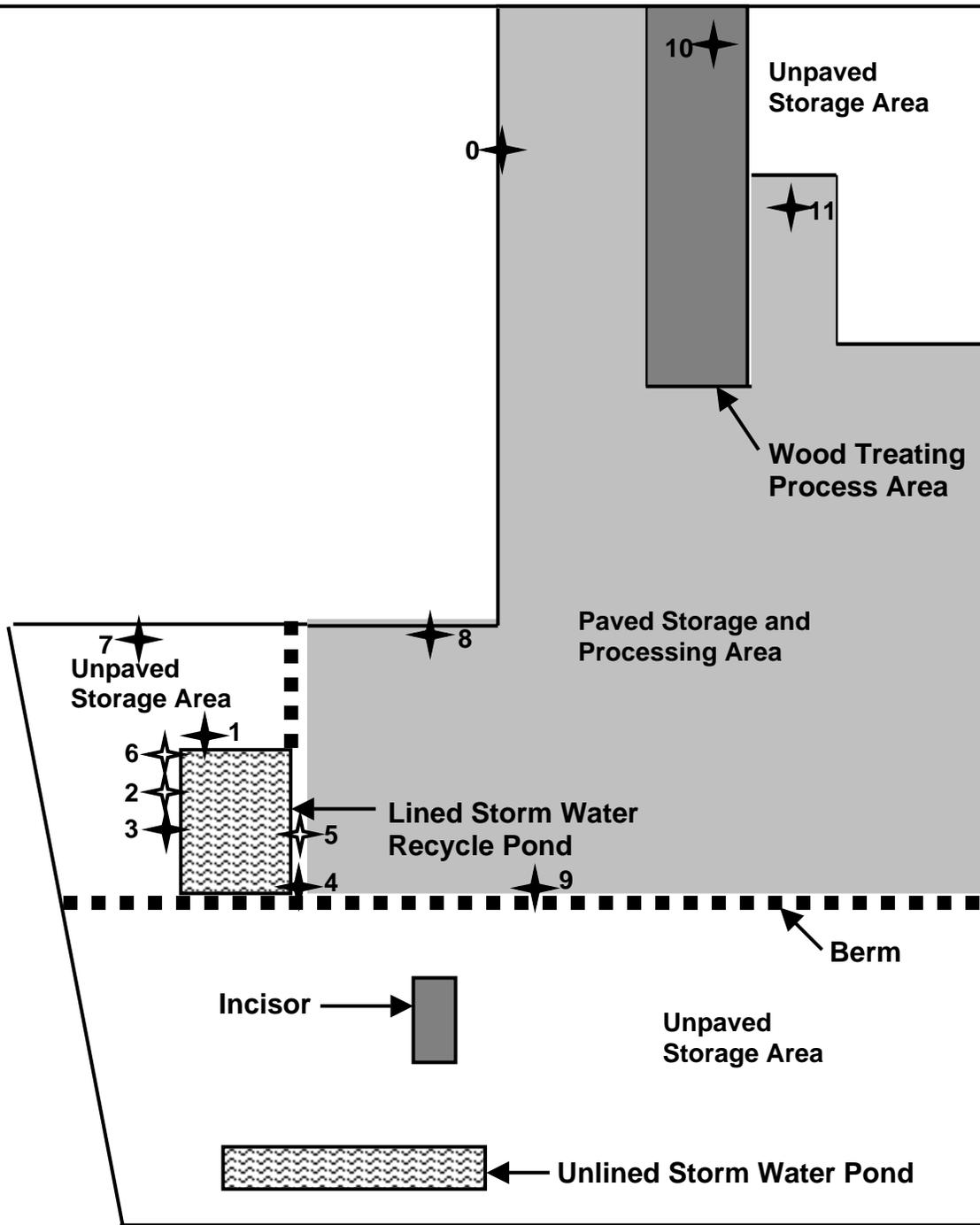
ORDER NO. R5-2002-0036



approx. scale
 1 in. = 2,200 ft.

ATTACHMENT B

Patterson Road

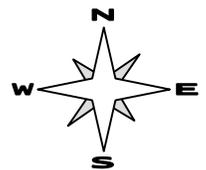


LEGEND

- ◆ 8 Groundwater Monitoring Well
- ◆ 6 Vadose Zone Monitoring Well
- ■ ■ ■ Runoff Control Berm

FACILITY SITE PLAN
 THUNDERBOLT WOOD TREATING
 COMPANY, INC.
 RIVERBANK
 STANISLAUS COUNTY

ORDER NO. R5-2002-0036



approx. scale
 1 in. = 200 ft.