CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2005-0022

WASTE DISCHARGE REQUIREMENTS
FOR
COLLINS & AIKMAN PRODUCTS COMPANY
FORMER WICKES FOREST INDUSTRIES SITE
ENHANCED INSITU REMEDIATION PILOT STUDY
ELMIRA, SOLANO COUNTY

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

1. Collins & Aikman Products Company (hereafter Discharger) submitted a Report of Waste Discharge dated 25 March 2004 and supplemental information on 13 May 2004 completing its application to inject Cascade® into groundwater at the former Wickes Forest Industries site at 6109 A Street at the intersection of Holdener Road in Elmira (hereafter referred to as Site). The address of record at the Solano County Assessor's office for this Site includes 147 A Street and 5358 Holdener Road.

2. The Site comprises Solano County Assessor's Parcel Numbers 142-010-130, 142-010-140, and 142-042-010, which are 4.31, 0.24 and 1.0 acre, respectively. The Site is within T6N, R1E, S19, MDB&M. The general location of the Site is shown on Attachment A, which is attached hereto and made part of these Waste Discharge Requirements, hereafter referred to as Order, by reference.

BACKGROUND

3. Pacific Wood Preserving operated a wood treatment facility at the Site from 1972 until September 1979, and then Wickes Forest Industries, Inc. operated until August 1982. The Discharger acquired the Site in 1980 and in 1997, sold the real property to Jim Dobbas Inc. (Dobbas) of Newcastle.

4. The Regional Board issued two Cleanup and Abatement Orders (CAO) on 6 June 1982 and 4 October 1982. The CAOs were due in part to a known toxic spill on 7 November 1980. The Discharger completed a Remedial Action Plan (RAP) dated 9 September 1983 and on 26 April 1984 entered into a settlement agreement and schedule of compliance with the Regional Board and the Department of Health Services, the predecessor agency to the Department of Toxic Substances Control (DTSC).

5. The DTSC issued an Enforcement Order dated 1 October 1992 for the investigation and remedial actions for the site. A revised RAP dated 25 February 1994 updated the soil remedy for the Site, and in 1995, the Discharger completed soil cleanup by covering the contaminated soil with an engineered asphalt cap, which covers about 5 acres, and installing a storm water collection and diversion system. On 11 March 1996, the DTSC issued a Completion Certification for the soil remedy.

6. On 27 October 1995, two documents were completed and filed with the Solano County Assessor's office to require continued operation and maintenance of the remedial systems and restrict land use. The Discharger and DTSC entered into *An Agreement for Operations and Maintenance of the Groundwater Extraction and Treatment System, Storm Water Control System, and the Asphalt Cap*, and *A Covenant to Restrict Use of Property*.

7. Site investigations revealed that soil and groundwater are polluted with chemicals used in the wood treatment operations including arsenic, hexavalent chromium and copper.

8. Since 1983, the Discharger has operated a groundwater extraction, treatment and disposal system (GWTS). The GWTS includes an electrochemical cell that removes chromium, arsenic and copper from groundwater by co-precipitating the metal ions with ferric hydroxide particles. Waste Discharge Requirements Order No. R5-2004-0066, adopted by the Regional Board on 4 June 2004, contain the National Pollution Discharge Elimination System permit (NPDES Number CA0081531), which currently governs discharge of the treated groundwater. The GWTS is currently operational with a design flow of 15 gallons per minute.

9. The shallow water bearing zone begins at a range of 4 to 10 feet below ground surface (bgs) and is monitored over various depth intervals from about 13 to 64 feet bgs, as required by Monitoring and Reporting Program (MRP) No. R5-2002-0834 issued on 19 November 2002. During the February 2003 sampling event, the highest concentration of hexavalent chromium was detected in groundwater from monitoring well E-6 at 2,800 µg/l and total chromium was detected at 3,200 µg/l. The Site supply well and septic tank were destroyed during the soil remediation activities. The Site and the monitoring well network is shown on Attachment B, which is attached hereto and made part of this Order by reference.

10. United Towing Service leases the Site and filed a Notice of Intent (NOI) to comply with the *General Permit to Discharge Storm Water Associated with Industrial Activity*. The NOI was processed on 14 June 2004.

PROPOSED PILOT STUDY

11. The Discharger proposes to inject calcium polysulfide (brand name: Cascade®) into the groundwater at the Site to reduce dissolved hexavalent chromium to the precipitate, trivalent chromium. The pilot study will be conducted in the vicinity of monitoring well E-6 over an area about 60 feet long by 30 feet wide. The Discharger will install five one-inch diameter injection wells spaced at about 5-feet apart and to a depth of 15 feet bgs to facilitate injecting the calcium polysulfide via a gravity-feed system. The Discharger will install four one-inch diameter monitoring wells to a depth of 15 feet bgs to facilitate assessing transport and effectiveness. Attachment C, which is attached hereto and made part of this Order by reference, shows the location of the nine new wells. The gravity feed system to deliver the material into the groundwater will be designed to minimize any pressure changes of the injected solution over the duration of the pilot test. The Discharger reported the maximum difference in pressure for the delivery of the material would be about 2.0 pounds per square inch (psi). The Discharger reported that a groundwater flow velocity in the area of the pilot study is about 30 feet per year, which correlates with the material reaching well E-27 in about 18 months and the extraction trench in about two years. In addition to influence from the groundwater flow velocity, the injected material will likely induce minor localized mounding. The Discharger proposes a pilot study duration of 18 months, but the study will continue until conditions return to baseline except for hexavalent chromium.

    The manufacturer provides a 29 percent calcium polysulfide solution. The total amount of 29 percent calcium polysulfide solution injected into the groundwater shall be limited by the percent reduction of hexavalent chromium concentrations measured at well E-6: Once the hexavalent chromium concentrations in well E-6 are reduced to one-half of the concentration established as baseline, then injection of the 29 percent solution shall stop. In the event that hexavalent chromium is not reduced to one-half of its baseline concentration in well E-6, and based on calculations using the pore volume of the target soil, the Discharger shall not inject more than 38,000 gallons of the 29 percent solution.

12. Calcium polysulfide reduces hexavalent chromium to trivalent chromium while hydrogen sulfide oxidizes to produce sulfate, increasing the sulfate concentrations in the groundwater. There is also a potential for arsenic and copper to be locally mobilized. Site specific bench-scale studies indicate the concentrations of these metals will not be significant, and the Discharger has included a contingency plan in the pilot study in the event that these pollutants reach monitoring well E-27. The pilot study is necessary to evaluate site specific side reactions, injection spacing and dosing for full-scale implementation.

BASELINE SAMPLING AND CONTINGENCY PLAN

13. The Discharger will collect baseline groundwater samples two to four weeks prior to the injection of calcium polysulfide and at the same time, will conduct the routine groundwater monitoring as required by MRP No. R5-2002-0834. Groundwater samples will be collected from the injection wells IW-1 through 5, monitoring wells PT-1 through 4 and E-5, E-6, E-7, E-15, E-22, E-23, E-26 and E-27, and extraction wells EX and E-34. Sample analyses will include arsenic, total chromium, hexavalent chromium, copper, metals, minerals, general chemistry parameters and reaction byproducts appropriate to the pilot study as listed in Table 1 of the attached MRP No. R5-2005-0022. The Discharger shall determine baseline concentrations for these constituents using EPA and Regional Board staff approved statistical methods to define the 95% upper confidence limit for a specified constituent based on the analytical results from all the samples collected at all the sample locations. Baseline concentrations are defined as those values contained within the 95% confidence interval. Before sampling begins, groundwater elevation levels will be measured at each well location.

14. If hexavalent chromium, sulfate, arsenic or copper increase more than 20% over the baseline concentrations (as described in Finding 13) in monitoring well E-27, the Discharger will implement a contingency plan, which consists of extracting groundwater continuously from the extraction trench EX, treatment and permitted discharge, as described in Finding 8.

REGULATORY CONSIDERATIONS

15. The injection of chemicals into waters of the State is subject to regulation under the California Water Code. This Order authorizes the Discharger to inject calcium polysulfide into groundwater subject to specific discharge requirements.

16. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives (WQOs), contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board (State Board). Pursuant to Section 13263(a) of the California Water Code, waste discharge requirements must implement the Basin Plan.

17. Surface water drains to an on-site storm water collection system, which in turn drains to the roadside drainage channel. If sufficient flow exists in the Holdener

Road drainage channel, the surface water will flow to Ulatis Creek, a water of the United States. The surface water flow joins Ulatis Creek at about 3.5 miles downstream, where it enters the legal boundary of the Sacramento San Joaquin Delta. The beneficial uses of the Sacramento San Joaquin Delta are municipal and domestic supply; agricultural irrigation and stock watering; industrial process and service supply; contact recreation and other non-contact water recreation; warm and cold freshwater habitat, warm and cold water migration of aquatic species; warm spawning of aquatic species; wildlife habitat and navigation.

18. The beneficial uses of underlying groundwater are municipal and domestic supply, agricultural supply, and industrial process and service supply.

19. Surrounding land uses are commercial, agricultural and residential.

20. State Board Resolution No. 92-49 (hereafter Resolution No. 92-49) requires the Regional Board to require actions for cleanup and abatement of discharges that cause or threaten to cause pollution or nuisance to conform to the provisions of State Board Resolution No. 68-16 (hereafter Resolution No. 68-16) and the Basin Plan. Pursuant to Resolution No. 92-49, the Regional Board shall ensure that dischargers are required to clean up and abate the effects of discharges in a manner that promotes attainment of either background water quality, or if background levels of water quality cannot be restored, the best water quality which is reasonable and which complies with the Basin Plan including applicable WQOs.

21. Resolution No. 68-16 requires the Board in regulating discharges to maintain high quality waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and potential beneficial uses, and will not result in water quality less than that described in plans and policies (e.g., quality that exceeds WQOs). Temporal degradation of groundwater at this site due to the calcium polysulfide injection may occur. The temporary degradation allowed by this Order is consistent with Resolution No. 68-16 since (1) the purpose is to accelerate and enhance remediation of groundwater pollution and such remediation will benefit the people of the state; (2) the discharge facilitates a pilot project to evaluate the effectiveness of cleanup technology in accord with Resolution No. 92-49; (3) the degradation is limited in scope and duration; (4) best practicable treatment and control, including adequate monitoring and contingency plans to assure protection of water quality, are required; and (5) the discharge will not cause WQOs to be exceeded beyond the treatment area or the duration of the pilot study as described in Finding No. 11.

22. Section 13267(b) of 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 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 the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports 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 MRP No. R5-2005-0022 are necessary to assure compliance with these WDRs. The Discharger owns and operates the facility that discharged the waste subject to this Order.

23. The California Department of Water Resources sets standards for the construction and destruction of groundwater wells, as described in *California Well Standards Bulletin 74-90* (June 1991) and *Water Well Standards: State of California Bulletin 74-81* (December 1981). These standards, and any more stringent standards adopted by the State or Solano County pursuant to California Water Code Section 13801, apply to all monitoring wells.

24. Issuance of this Order is an action to assure the restoration of the environment and is, therefore, exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.), in accordance with Section 15308 and 15330, Title 14, California Code of Regulations (CCR).

25. 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, Section 20005, et seq. (hereafter Title 27). Section 20090(d) allows exemption for a project to clean up a condition of pollution that resulted from an unauthorized release of waste based on the following:

    a. The cleanup and abatement action is under the direction of a public agency;
    b. Wastes removed from the immediate place of release will be discharged according to the Title 27 regulations; and
    c. The remedial actions intended to contain wastes at the place of release shall implement the Title 27 regulations to the extent feasible.

26. Pursuant to California Water Code Section 13263(g), discharge is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

27. All the above and the supplemental data and information and details in the attached Information Sheet, which is incorporated by reference herein, were considered in establishing the following conditions of discharge.

28. The Discharger and interested agencies and persons were notified of intent to prescribe WDRs for this discharge and provided with an opportunity for a public hearing and an opportunity to submit written views and recommendations.

29. In a public meeting, all comments pertaining to the discharge were heard and considered.

IT IS HEREBY ORDERED that pursuant to Sections 13263 and 13267 of the California Water Code, Collins & Aikaman Products Company, its agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following while conducting the above-described pilot study:

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

A. Discharge Prohibitions

1. Discharge of wastes to surface waters or surface water drainage is prohibited.

2. The discharge of other than calcium polysulfide into groundwater is prohibited.

3. Discharge of waste classified as 'hazardous' under Section 2521 of Title 23, CCR, or as 'designated' under Section 13173 of California Water Code is prohibited.

4. Discharge of calcium polysulfide at locations or in a manner different from that described in Finding No. 11 is prohibited.

B. Discharge Specifications

1. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Groundwater Limitations.

2. Discharge of calcium polysulfide shall be limited to the project scope as described in Finding No. 11.

C. Groundwater Limitations

1. During the pilot study, the Discharger shall not cause an increase of hexavalent chromium, sulfate, arsenic and copper to exceed 20% of their respective baseline concentration in monitoring well E-27.

2. When the pilot study is completed, the pollutant breakdown products, amendments and byproducts shall not exceed baseline concentrations within or outside the treatment area.

D. Provisions

1. The Discharger shall notify Regional Board staff a minimum of two weeks prior to conducting baseline sampling, to installing the additional nine wells, and to injecting the calcium polysulfide.

2. The Discharger shall comply with the attached MRP No. R5-2005-0022, which is part of this Order, and any revisions thereto as ordered by the Executive Officer.

3. The Discharger shall comply with the "Standard Provisions and Reporting Requirements for Waste Discharge Requirements," dated 1 March 1991, which are attached hereto and are by reference a part of this Order. This attachment and its individual paragraphs are commonly referenced as "Standard Provision(s)."

4. All of the following reports shall be submitted pursuant to Section 13267 of the California Water Code. All technical reports required herein that involve planning, investigation, evaluation, or design, or other work requiring interpretation and proper application of engineering or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to California Business and Professions Code sections 6735, 7835, and 7835.1. To demonstrate compliance with sections 415 and 3065 of Title 16, CCR, all technical reports must contain a statement of the qualifications of the responsible registered professional(s). As required by these laws, completed technical reports must bear

the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.

a. The Discharger shall submit a Baseline Summary Report due no later than **30 days** after collection of baseline samples to propose baseline values for hexavalent chromium, sulfate, arsenic and copper in E-27. The report shall include a discussion of the proposed statistical method to calculate baseline concentrations. The Discharger shall not begin injection until receiving written approval of baseline concentrations.

b. The Discharger shall submit a Pilot Study Implementation Report due no later than **90 days** after beginning to inject the calcium polysulfide that shall include a well installation report, a description of field activities, quantities and locations of calcium polysulfide injected, and results of the first month of monitoring.

c. The Discharger shall submit a Pilot Study Evaluation Report no later than **20 months** after beginning to inject the calcium polysulfide that shall include a summary of analytical results and an evaluation of the effectiveness of the injections.

5. In the event that hexavalent chromium, sulfate, arsenic or copper is detected more than 20% above baseline concentrations in monitoring well E-27, the Discharger shall immediately notify Regional Board staff of the exceedance(s) and obtain a confirmation sample within **7 days** of receiving the results. Within **48 hours** of receiving the confirmation sample results, the Discharger shall notify Regional Board staff of the results followed by written notification within **7 days**.

6. **Within 15 days** of confirming an exceedance as described in Provision D.5, the Discharger shall implement the groundwater extraction contingency plan as described in Finding No. 14, and submit a Contingency Plan Implementation Report **45 days** thereafter.

7. 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 order requiring corrective action or imposing civil monetary liability, or in a revision or rescission of this Order.

8. The Discharger shall maintain records of all monitoring information, including all calibration and maintenance records, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of three years from the date of the sample, measurement, or report. This period may be extended during the course of any

unresolved litigation regarding this discharge or when requested by the Executive Officer.

9. The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control that are installed or used by the Discharger to achieve compliance with this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems, which are to be installed by the Discharger only when necessary to achieve compliance with the conditions of this Order.

10. The Discharger shall report any non-compliance, and/or accidental spill or release of liquid or material verbally to the Regional Board within 24 hours of the spill or release, and follow-up the verbal notification with written documentation of the spill or release within 14 calendar days of the incident.

11. 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.

12. As described in the Standard Provisions, the Discharger shall report promptly to the Regional Board any material change or proposed change in the character, location, or volume of the discharge.

13. While this Order is in effect, and prior to any change in ownership of the Site or management of this operation, the Discharger shall transmit a copy of this Order to the succeeding Owner/Operator, and forward a copy of the transmittal letter and proof of transmittal to the Regional Board. Transfer of privileges granted under this Order are subject to the discretion of the Executive Officer.

14. The Regional Board will review this Order periodically and will revise requirements when necessary.

I, THOMAS R. PINKOS, 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 27 January 2005.

Original signed by

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THOMAS R. PINKOS, Executive Officer

Attachments

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2005-0022
FOR
COLLINS & AIKMAN PRODUCTS COMPANY
FORMER WICKES FOREST INDUSTRIES SITE
ENHANCED INSITU REMEDIATION PILOT STUDY
ELMIRA, SOLANO COUNTY

This Monitoring and Reporting Program (MRP) incorporates requirements for monitoring the progress of the enhanced remediation pilot study. This MRP is issued pursuant to California Water Code Section 13267. Collins & Aikman Products Company (hereafter Discharger) is required to comply with this MRP. The Discharger shall not implement any changes to this MRP unless and until a revised MRP is issued by the Executive Officer. Groundwater monitoring and reporting specified in MRP No. R5-2002-0834 is still required.

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

ENHANCED INSITU REMEDIATION PILOT STUDY MONITORING

As shown on Attachment B, there are 54 monitoring wells, four domestic wells and 10 groundwater extraction wells associated with this site. In addition as part of the pilot study, and as shown on Attachment C, five injection wells (IW-1 through 5) and four monitoring wells (PT-1 through 4) will be installed. Table 1 lists the monitoring program. Baseline groundwater monitoring applies to IW-1 through 5, PT-1 through 4 and E-5, E-6, E-7, E-15, E-22, E-23, E-26 and E-27, and extraction wells EX and E-34 only. Pilot study groundwater monitoring applies to wells PT-1 through 4, and E-5, E-6, E-15, E-23, E-26, E-27, EX and E-34 only. Once injection of the calcium polysulfide begins, sample collection frequency shall be weekly for four weeks, monthly for five months, and then quarterly thereafter. Sample collection and analysis shall follow standard EPA protocol, and analyses shall be completed by a California State certified laboratory. Monitoring well samples shall be analyzed for the constituents and parameters specified and follow the schedule in Table 1 below.

Table 1. Baseline and Pilot Study Groundwater Monitoring Schedule[1]

Constituents	EPA Method	Maximum Quantitation Limit[2]
Depth to Groundwater	Field Meter	0.01 ft
pH	Field Meter	0.1 units
Temperature	Field Meter	0°C
Dissolved Oxygen	Field Meter	0.2 mg/l
Oxidation Reduction Potential	Field Meter	±300 mV
Electrical Conductivity	Field Meter	50 µS/cm²
Turbidity	180.1	0.05 NTU
Alkalinity	310.1	1 mg/l
Arsenic	6020A	2 µg/l
Bromide	300.0	0.2 mg/l
Chloride	300.0	0.2 mg/l
Nitrate (as NO_3)	353.2	2 µg/l
Sulfate	300.0	500 µg/l
Sulfide	376.2	40 µg/l
Calcium	200.7/6010B	500 µg/l
Copper	6010B	10 µg/l
Iron	6010B	100 µg/l
Manganese	6010B	10 µg/l
Potassium	200.7/6010B	500 µg/l
Sodium	200.7/6010B	500 µg/l
Hexavalent Chromium	7196A	1 µg/l
Total Chromium	6020A	2.5 µg/l

[1] Baseline samples shall be collected a minimum of two weeks and a maximum of six weeks before calcium polysulfide injection.

[2] For nondetectable results.

Field testing instruments (such as those used to test oxidation-reduction potential and dissolved oxygen) may be used provided that:

1. The operator is trained in proper use and maintenance of the instruments;
2. The instruments are field calibrated prior to each monitoring event;
3. Instruments are serviced and/or calibrated by the manufacturer at the recommended frequency; and
4. Field calibration reports are provided with the appropriate monitoring report.

REPORTING

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the date, sample type, 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 MRP shall also 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.

Quarterly reports shall be submitted to the Board **by 1 February, 1 May, 1 August, and 1 November** of each year. At a minimum, the reports shall include:

1. Tabulated results of groundwater 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 or lack thereof with the waste discharge requirements, 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; calculation of casing volume; total volume of water purged, etc.;
3. Copies of all laboratory analytical report(s);
4. Cumulative data tables containing the water quality analytical results and depth to groundwater;
5. Calculation(s) of groundwater elevations and figures showing the groundwater gradient and narrative discussion of fluctuations, if any;
6. An 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);
7. A scaled map showing the final injection grid labeled with dose amounts per injection site, groundwater elevation contours and groundwater gradient and flow velocity in the pilot study area;
8. An evaluation of the performance of the pilot study including an analysis of its effectiveness in destroying the pollutants, and a discussion of the potential for field scale application;

9. A discussion of compliance and the corrective action taken, if any, as well as any planned or proposed actions needed to bring the discharge into full compliance with the waste discharge requirements; and
10. A discussion of any data gaps, potential deficiencies/redundancies in the monitoring system or reporting program and the anticipated date for an effectiveness evaluation of the pilot study.

A letter transmitting the 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 as of the date of the Order.

Ordered by: Original signed by
THOMAS R. PINKOS, Executive Officer
27 January 2005
(Date)

INFORMATION SHEET

ORDER NO. R5-2005-0022
COLLINS & AIKMAN PRODUCTS COMPANY
FORMER WICKES FOREST INDUSTRIES SITE
ENHANCED INSITU REMEDIATION PILOT STUDY
ELMIRA, SOLANO COUNTY

Collins & Aikman Products Company (hereafter Discharger) at one time owned the Wickes Forest Industries site at 6109 A Street at the intersection of Holdener Road in Elmira (hereafter referred to as Site). Pacific Wood Preserving operated a wood treatment facility at the Site from 1972 until September 1979, and then Wickes Forest Industries, Inc. operated until August 1982. The Discharger acquired the Site in 1980 and in 1997, sold the real property to Jim Dobbas Inc. of Newcastle. The Regional Board issued two Cleanup and Abatement Orders (CAO) on 6 June 1982 and 4 October 1982. The CAOs were due in part to a known toxic spill on 7 November 1980. Site investigations revealed that soil and groundwater are polluted with chemicals used in the wood treatment operations including, arsenic, hexavalent chromium and copper. On 26 April 1984, the Discharger entered into a settlement agreement and schedule of compliance with the Regional Board and the Department of Health Services, the predecessor agency to the Department of Toxic Substances Control (DTSC).

DTSC issued an Enforcement Order dated 1 October 1992 for the investigation and remedial actions for the site. A revised RAP dated 25 February 1994 updated the soil remedy for the Site, and in 1995, the Discharger completed soil cleanup by covering the contaminated soil with an engineered asphalt cap, which covers about 5 acres, and installing a storm water collection and diversion system. On 11 March 1996, the DTSC issued a Completion Certification for the soil remedy

The groundwater remedy includes groundwater extraction and treatment, and since 1983, the Discharger has operated a groundwater extraction, treatment and disposal system (GWTS). The GWTS includes an electrochemical cell that removes chromium, arsenic and copper from groundwater by co-precipitating the metal ions with ferric hydroxide particles. Waste Discharge Requirements Order No. R5-2004-0066 adopted by the Regional Board on 4 June 2004, contains the National Pollution Discharge Elimination System (NPDES Number CA0081531) permit to discharge, which currently governs discharge of the treated groundwater. The GWTS is currently operational and design flow is 15 gallons per minute.

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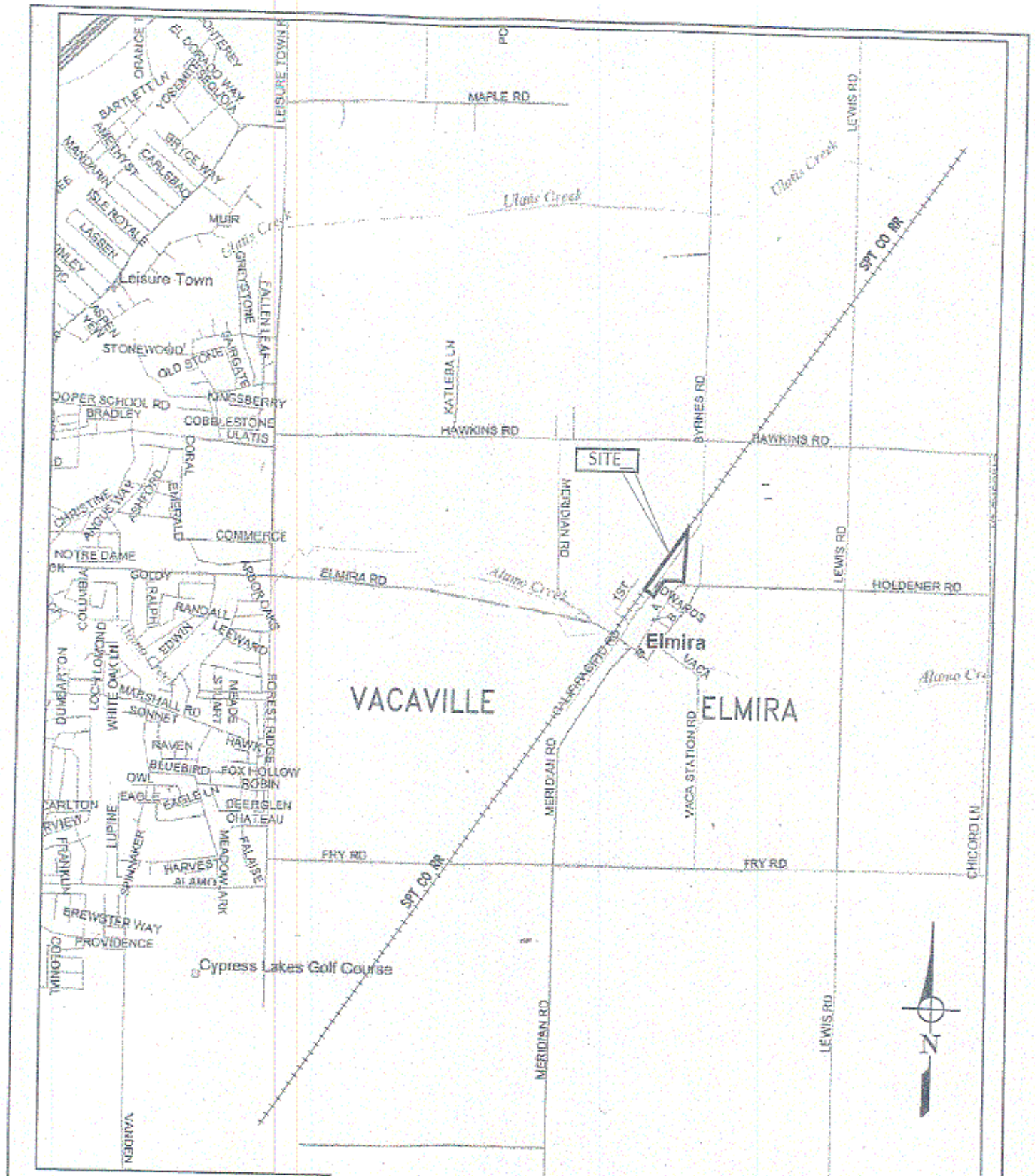
The Discharger proposes to inject a 29 percent calcium polysulfide solution into the groundwater at the Site to reduce dissolved hexavalent chromium to the precipitate, trivalent chromium. The pilot study will be conducted in the vicinity of monitoring well E-6 over an area about 60 feet long by 30 feet wide. The Discharger will install five one-inch diameter injection wells spaced at about 5 feet apart and to a depth of 15 feet bgs to facilitate injecting the calcium polysulfide via a gravity-feed system. The Discharger will install four one-inch diameter monitoring wells to a depth of 15 feet bgs to facilitate assessing transport and effectiveness. The Discharger reported that a groundwater flow velocity at the area of the pilot study is about 30 feet per year, which correlates with the material reaching well E-27 in about 18 months and the extraction trench in about 2 years.

The Discharger will sample groundwater before the calcium polysulfide injection and submit a Baseline Summary Report that establishes baseline concentrations for many constituents, but particularly hexavalent chromium, sulfate, arsenic, and copper. In the event that these constituents are detected more than 20% over the baseline concentrations in monitoring well E-27, the Discharger will implement a contingency plan, which consists of extracting groundwater from the extraction trench EX, treatment with an electrochemical co-precipitation system, and permitted discharge. The pilot study will continue until groundwater conditions return to those found during baseline sampling. The Discharger shall submit a Pilot Study Evaluation Report 20 months after the calcium polysulfide injection.

The Site has been leased to United Towing Service and it filed a Notice of Intent (NOI) to comply with the *General Permit to Discharge Storm Water Associated with Industrial Activity*. The NOI was processed on 14 June 2004.



0 1/4 1/2 Mile

SOURCE: DeLORME STREET ATLAS USA VERSION 6.0

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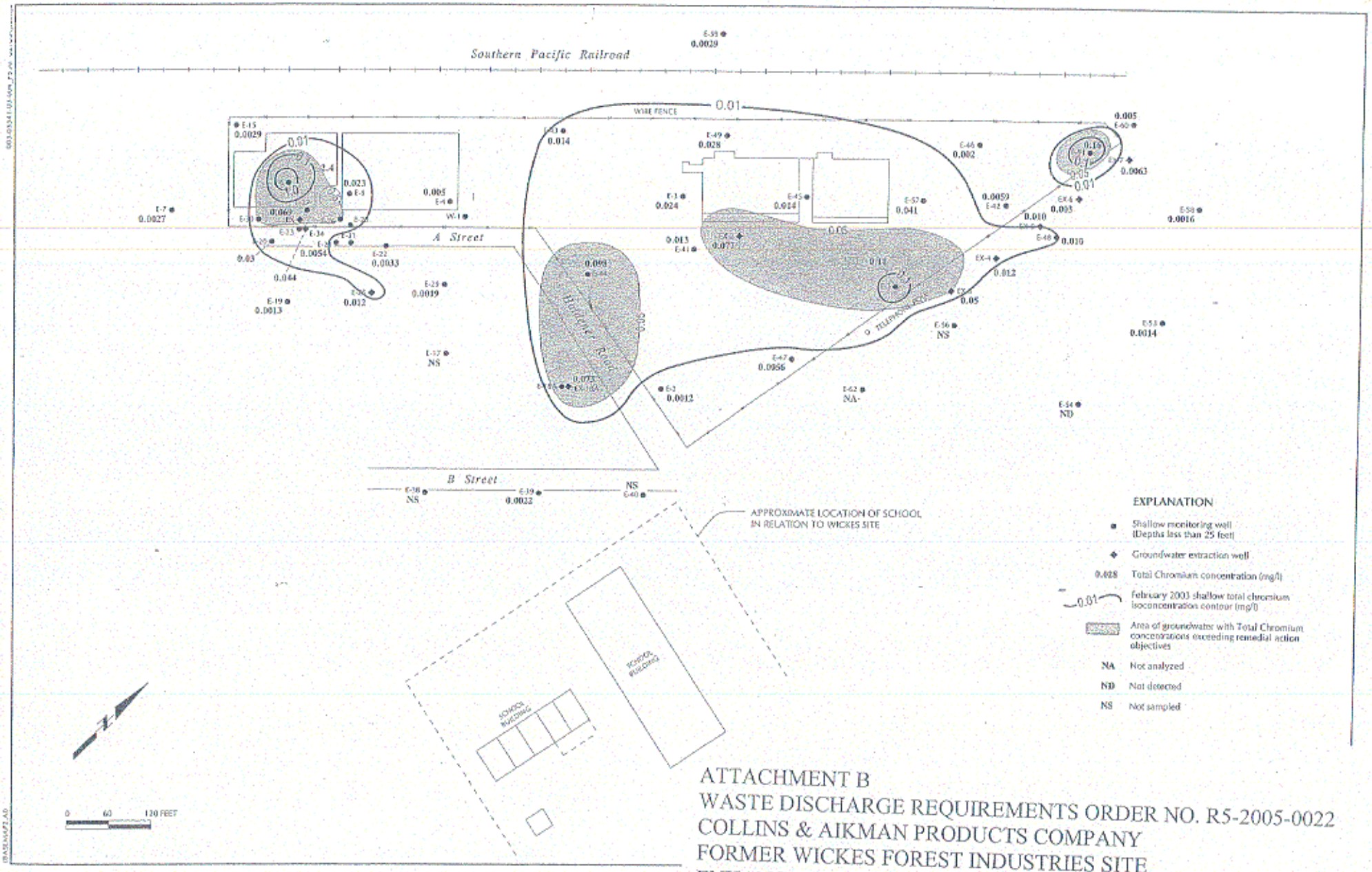
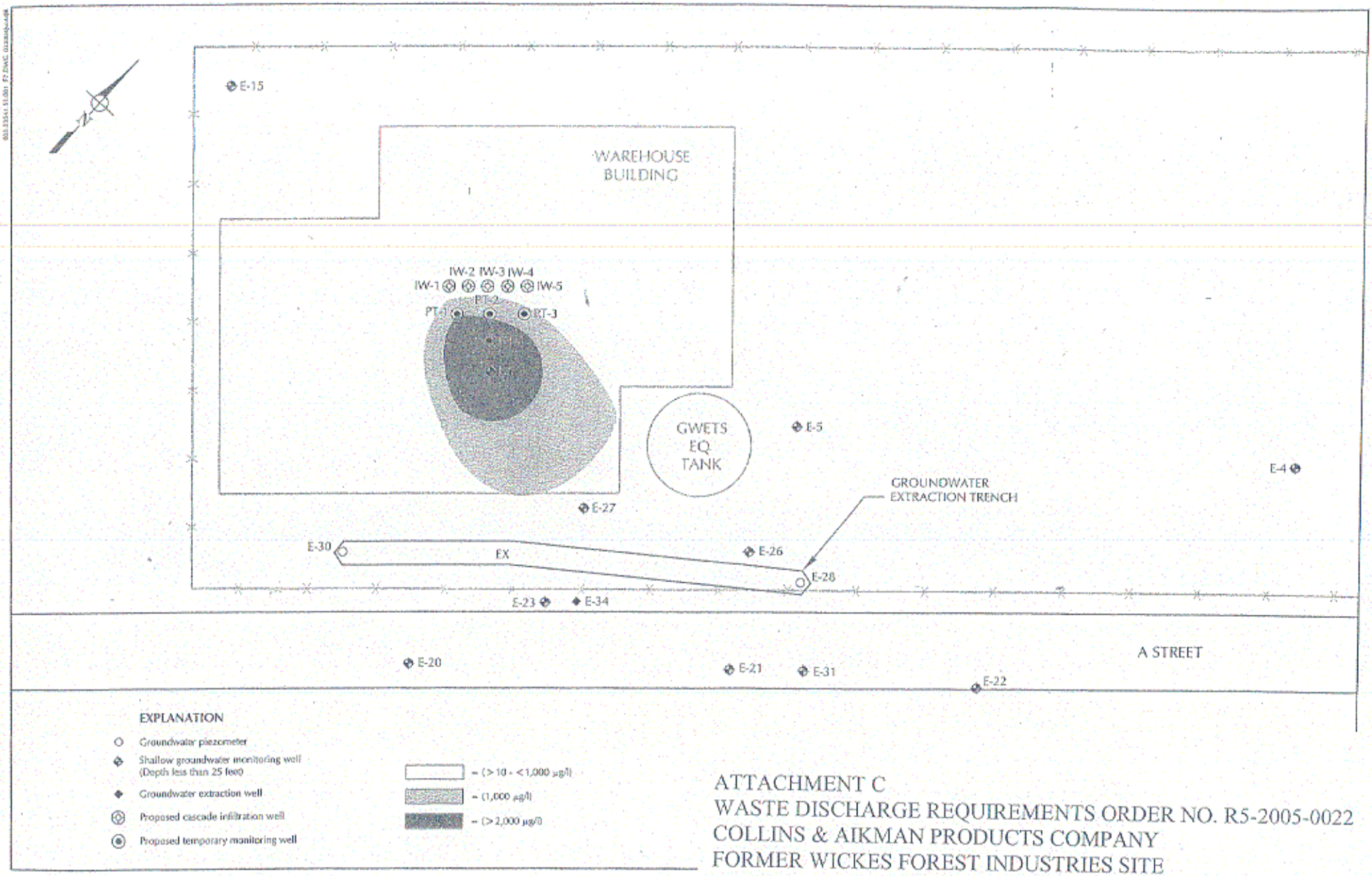
ENHANCED INSITU REMEDIATION PILOT STUDY
ELMIRA, SOLANO COUNTY



ATTACHMENT B
WASTE DISCHARGE REQUIREMENTS ORDER NO. R5-2005-0022
COLLINS & AIKMAN PRODUCTS COMPANY
FORMER WICKES FOREST INDUSTRIES SITE
ENHANCED INSITU REMEDIATION PILOT STUDY
ELMIRA, SOLANO COUNTY



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