



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

March 12, 2010

Robert Wyatt
Allen Matkins Leck Gamble Mallory & Natsis LLP
Three Embarcadero Center, 12th floor
San Francisco, CA 94111-4074

Subject: Final Remedial Investigation Report, submitted pursuant to EPA Administrative Order 2009-01, B.F. Goodrich Superfund Site

Dear Mr. Wyatt:

We have completed our review of the February 2010 *Final Remedial Investigation Report, B.F. Goodrich Site, Rialto, California* ("the Report") submitted by Environ International Corporation ("Environ") on behalf of Emhart Industries, Inc ("Emhart"). The Report, dated February 2010, was submitted pursuant to Section IX of the March 17, 2009, Administrative Settlement Agreement and Order on Consent for Remedial Investigation, CERCLA Docket 2009-01 ("the AOC"), and Section 4.5 of the AOC Statement of Work. The Report describes the approach and rationale for the collection and analysis of soil samples pursuant to the AOC, and the results of the analyses. The primary purpose of the sampling was to investigate the historical activities of West Coast Loading Corporation ("WCLC") in Rialto, CA.

The Report also describes remedial investigation work completed by Environ in April and May 2009, but not required by the AOC. Finally, the Report describes past investigations at the B.F. Goodrich Site by Environ and other parties.

We are satisfied with the scope and quality of the sample collection and analysis activities completed pursuant to the AOC. We disagree, however, with a number of statements made in the Report regarding the interpretation of the results and other matters. In accordance with Section X of the AOC, we approve the submission upon the comments and conditions specified in an enclosure to this letter.

Our review included the main body of the report and selected results in the tables and figures. We did not review the report appendices or statements in the report regarding activities by parties other than WCLC, and did not comprehensively review the sampling results included in the data tables (which summarize the results of approximately 15 studies completed over the last seven years). To aid in the interpretation of the results, we have prepared figures showing

the levels of perchlorate as a function of depth in Study Areas 11, 13, and 37. The figures are included as an enclosure to this letter.

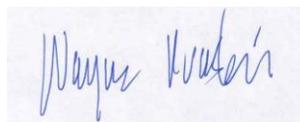
In a February 19, 2010, letter to Kathleen Salyer, you provide a chronology of events that occurred after Environ submitted its draft Remedial Investigation Report in October 2009. We generally agree with the chronology, but should clarify the nature of the discussions that occurred between EPA and Emhart during this period. As described in the letter, EPA met with Emhart on December 1, 2009, and provided a preliminary response to some of the conclusions included in the October 2009 draft report. We did not, however, ask or require Emhart to remove the conclusions from the report. Emhart made the decision to remove the conclusions and submit a revised report.

This letter shall also serve as the Notice of Completion of Work, pursuant to Section XXX of the AOC. This Notice of Completion is subject to Section XIV (Retention of Records) and Section XVIII (Payment of Response Costs). We are not requesting additional work as part of the AOC, but may request that Emhart complete additional work in the future.

Pursuant to Section XVIII, we will separately provide a summary of EPA's oversight costs incurred in connection with the AOC and a bill for payment of those costs.

Please call at (415) 972-3181 or email at praskins.wayne@epa.gov with any questions.

Sincerely,

A handwritten signature in blue ink that reads "Wayne Praskins". The signature is written in a cursive style and is centered on a light blue rectangular background.

Wayne Praskins
EPA Project Manager

cc: Kurt Berchtold, California Regional Water Quality Control Board, Santa Ana

Comments and Conditions Related to Approval of the February 2010 *Final Remedial Investigation Report, B.F. Goodrich Site, Submitted by Environ International Corporation on Behalf Of Emhart Industries, Inc.*

Enclosure To U.S. EPA Letter dated March 12, 2010

1.	Page ES-1, 1 st paragraph, 1st sentence	<p>The report refers to perchlorate and trichloroethene (TCE) as "...the two constituents of concern based on the groundwater basin's analytical profile."</p> <p>Other volatile organic compounds in addition to TCE have been detected in groundwater at the B.F. Goodrich site, including carbon tetrachloride and methylene chloride.</p>
2.	Page ES-1, 1 st paragraph, 2 nd sentence	<p>The report states that "ENVIRON International Corporation (ENVIRON), working on behalf of Emhart Industries, Inc. (EII) has performed the bulk of the investigation work at the Site..." Environ may have collected and analyzed more soil and soil gas samples than other parties at the site, but other parties, such as EPA and Goodrich Corporation, have installed more groundwater monitoring wells. Installation of wells is generally far more expensive than collection and analysis of soil or soil gas samples.</p>
3.	Page ES-1, 1 st paragraph	<p>The Report states that "The perchlorate detections in these four areas have been bounded by an extended series of consecutive non-detect results (i.e., [Study Areas] 18, 13, 11, and 37)."</p> <p>It is correct that perchlorate was detected in each of these four study areas, and that perchlorate was not detected in the deepest samples collected in each of the four borings. The results do not demonstrate, however, that perchlorate is not present at depths greater than those where perchlorate has been detected (i.e., below 329 feet below ground surface [bgs] in Study Area 11, below 280 feet bgs in Study Area 13, below 100 bgs feet in Study Area 37, and below 30 feet bgs in Study Area 18). Nor do the results demonstrate that perchlorate released by West Coast Loading Corporation (WCLC) has not reached groundwater, or that the extent of perchlorate contamination has been bounded laterally.</p> <p>Our conclusions are based on several considerations. First, a two-inch diameter drive sample (the diameter of the soil samples retrieved from the borings by Environ in 2009) would not intercept contamination that has moved laterally more than a few inches as it meandered downward. Some lateral movement is expected as the perchlorate released by WCLC at ground surface moved downward through hundreds of feet of vadose zone and encountered rocks and soils of varying grain size and permeability. No samples were</p>

		<p>collected or analyzed immediately to the east, west, north, or south of most of the borings where perchlorate was detected at depth.</p> <p>Second, some of the deeper non-detect samples were probably below the water table in the past, allowing perchlorate that may have been present to have been washed away by historically higher groundwater levels. Between July 2006 and August 2009, water levels in two groundwater monitoring wells near the WCLC use areas (CMW-3A and CMW-4A) ranged from 407 to 435 feet bgs. Water levels may have been significantly higher than 407' bgs at times during the 55 years that have elapsed since WCLC is known to have begun use of perchlorate.</p> <p>Third, the deep soil samples collected at depths greater than 100' bgs in Study Areas 11 and 37 (and greater than 75' bgs in Study Area 13) have a higher risk of a false negative (i.e., not detecting perchlorate where it is present) than shallower samples. These deeper samples were beyond the scope of the AOC and were neither anticipated by nor described in the April 7, 2009, Environ Work Plan. Environ collected the deep samples using the Air Rotary Casing Hammer (ARCH) drilling technology, rather than the Hollow Stem Auger (HSA) technology used to collect samples from ground surface to 100' bgs (ground surface to 75' bgs for Study Area 13). Samples collected using the HSA technology were selected from the finest-grained materials present in each ten foot interval; whereas samples collected using the ARCH technology were limited to the finest-grained materials present in only three feet of each ten foot interval. This difference increases the risk that a finer-grained interval more likely to retain perchlorate would be missed during sampling.</p>
4.	Page ES-1, 1st paragraph last sentence	<p>The Report states that there has been no release or threatened release of TCE in the WCLC operations area.</p> <p>We disagree with this conclusion. Although TCE has not been detected in soil gas in study areas with known or suspected WCLC activity, TCE has been repeatedly detected in groundwater from monitoring wells located downgradient of study areas with known or suspected WCLC activity (e.g., wells CMW-3 and CMW-4). See Figure 2b for a graph of TCE concentrations in CMW-3A and CMW-4A between 2006 and 2010. The soil gas samples that have been collected in study areas with known or suspected WCLC activity have been limited in number (on average, four sample locations in each study area tested) and depth (no more than 12 feet bgs), limiting their capability to detect a release of a volatile chemical such as TCE that may have occurred more than 50 years ago.</p>

5.	Page ES-1, 2nd paragraph 3rd sentence	The Report states that contamination in downgradient monitoring wells demonstrates that non-WCLC sources have impacted groundwater. We agree with this statement, but also note there is groundwater contamination present in monitoring wells located downgradient of the WCLC borings where perchlorate was detected at depths as great as 329 feet below ground. See Figure 2a for a graph of perchlorate concentrations in groundwater monitoring wells CMW-3A and CMW-4A between 2006 and 2010.
6.	Page 1, Section 1.2.2, last sentence	The report claims that 14 listed fireworks companies "...used and disposed of perchlorate during their respective tenures at the Site." We are not aware of information that supports this broad generalization that all of the listed fireworks companies used and disposed of perchlorate.
7.	Page 1, Section 1.2.1	The definition of the B.F. Goodrich site in the Report is incorrect. The site includes the 160-acre area described in the Report, as well as downgradient areas of groundwater contamination.
8.	Page 7, 3 rd paragraph, 3 rd sentence	<p>The Report states that "...draft versions of the 2006 and 2009 Work Plans were submitted to the Regional Board and the USEPA for comments prior to being finalized, to allow interested parties the opportunity to raise questions regarding its content..."</p> <p>EPA provided limited input into the 2006 investigation, but did not review the Work Plan in detail. The 2006 investigation was directed and overseen by the California Regional Water Quality Control Board, Santa Ana (Regional Board).</p>
9.	Page 7, 2 nd to last paragraph, last sentence	<p>The Report states that "During the 2009 RI, at three boring locations in Study Areas 11, 13, and 37, Environ extended the sampling depth beyond what was specified in the 2009 Work Plan in order to bound the extent of the encountered contamination."</p> <p>As stated in comment # 3 above, we do not believe that the deeper samples that Emhart collected beyond the scope of the 2009 Work Plan demonstrate that perchlorate released by WCLC has not reached groundwater.</p>
10.	Page 9, Section 3.5	<p>The Report states that the RI work completed by GeoSyntec in 2004 was completed at the request of the USEPA and the Regional Board.</p> <p>The work was completed in response to a Unilateral Administrative Order issued by EPA to Goodrich and Emhart.</p>

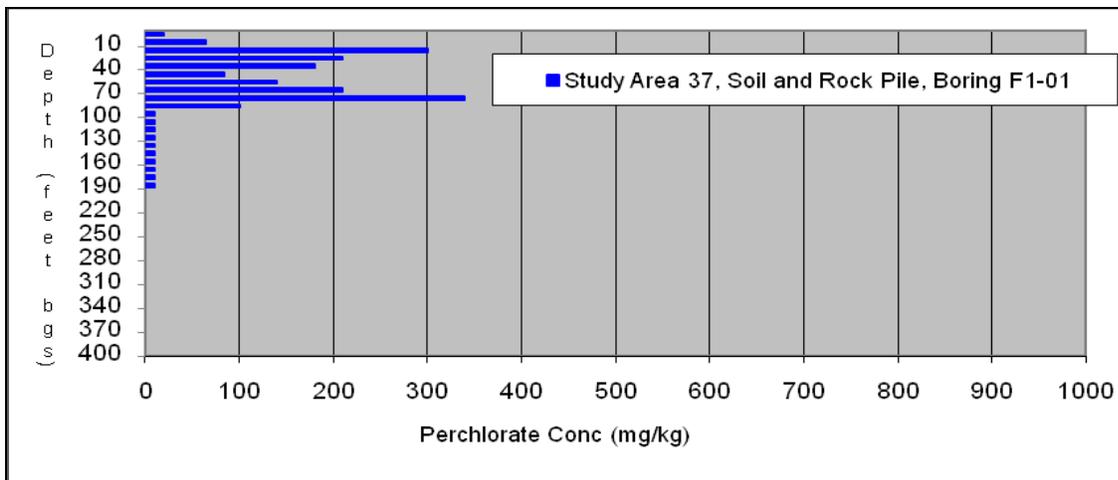
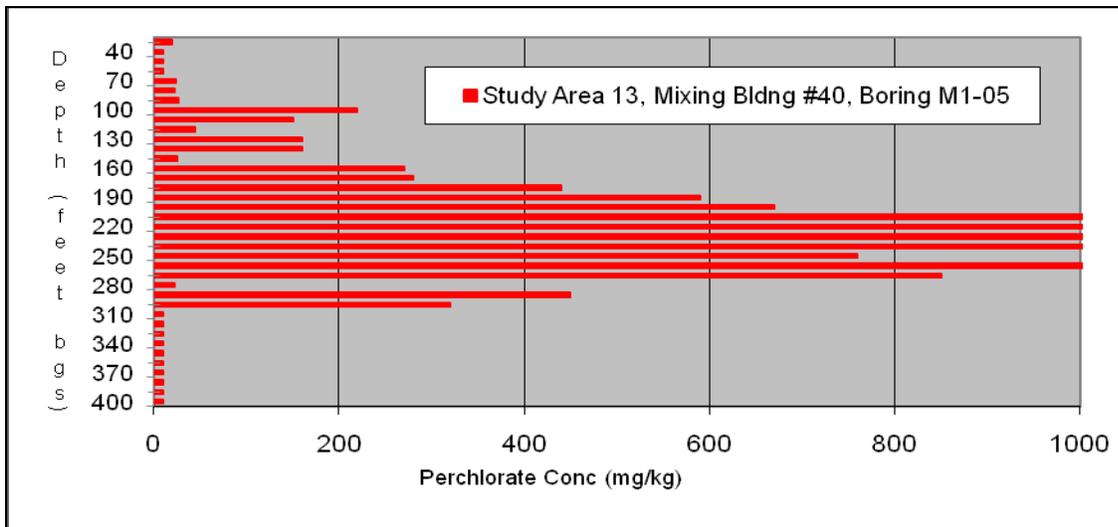
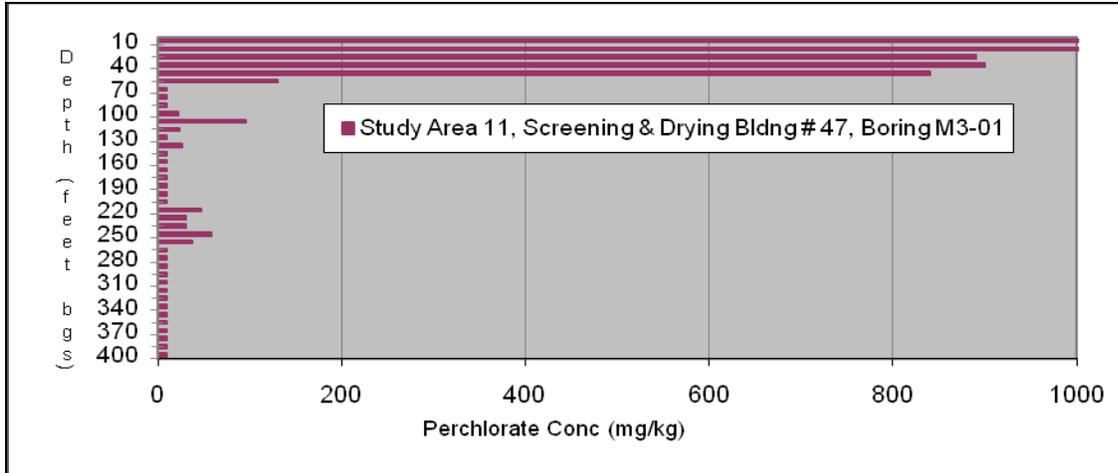
11.	Page 12, footnote 5	<p>The Report states that "The only constituent of concern, in ENVIRON's opinion, of which the use by WCLC is reasonably well established, is perchlorate. There is no plausible evidence that WCLC used TCE at the Site."</p> <p>We disagree with the statement that "there is no plausible evidence that WCLC used TCE at the site." Several former WCLC employees, including Frank Gardner, John Allegranza, and Raymond Davis, testified under oath that TCE was used at the site. Some of the relevant testimony is cited elsewhere in the Report.</p>
12.	Page 12, Section 4.1	<p>The Report lists 28 study areas where Environ believes that WCLC is known or suspected to have used perchlorate and/or TCE. Study Area 6 is not included in the list. Based on the testimony of former WCLC employees and historical WCLC documents (e.g., WCLC Standard Operating Procedures [SOP] I-4), we consider Study Area 6 to be an area with known or suspected WCLC activity. A December 11, 2009, letter from Robert Wyatt to Wayne Praskins confirms that perchlorate-containing materials were present in the study area during WCLC's tenure.</p> <p>Hence, the testing results for samples collected from Study Area 6 should be included in Section 4 of the Report ("Study Areas with Known or Suspected WCLC Activity") rather than Section 5 ("Other Study Areas").</p> <p>The report states that WCLC is only one of several parties known to have operated in some of the study areas, including Study Area 6. We agree with this statement. Conversely, the absence of specific information on chemical usage in the study areas listed in Section 5 ("Other Study Areas") does not preclude WCLC activity in those areas.</p>
13.	Page 14, Section 4.2.4, 2 nd sentence	<p>The Report states that "...there is no known WCLC activity associated with this area... [a soil and rock pile visible within the WCLC facility in a 1953 aerial photo]"</p> <p>The specific activity that generated the soil and rock pile is unknown, but this feature is clearly present in aerial photos taken during WCLC's occupancy of the site.</p>
14.	Page 24, 2 nd full sentence	<p>The Report states that "Although WCLC originally built and occupied this building [building 20], there is no evidence that it used perchlorate at this location."</p> <p>There is evidence that WCLC used perchlorate (and other chemicals) at building 20 (Study Area 6), as stated in comment #12 above.</p>

15.	Page 24, 1 st full paragraph and footnote 9	The Report indicates that two of the samples collected at Study Area 6 were located at the outlet of a buried cesspool (samples SB-P5-06 and SB-P5-07). Exploratory activities completed by Environ in 2009 indicated that the cesspool was not connected to the building #20 sewer line. Hence the absence of perchlorate in these samples does not provide evidence that WCLC or other parties did not release perchlorate or other contaminants in Study Area 6.
16.	Page 29, Section 6	Many of these sections make reference to the southeast, central, or other portion of the site. It appears that the reference is to the 160-acre area, not the B.F. Goodrich site. As noted in comment #7, the B.F. Goodrich site includes the 160-acre area and downgradient areas of groundwater contamination.
17.	Page 32, Section 7	<p>As noted in comment #3, we do not agree that the sampling efforts have delineated the full extent of contamination in the WCLC Operation Areas.</p> <p>We agree that some non-WCLC use areas have not been adequately characterized, but note that there are also WCLC use areas where only minimal testing has occurred.</p>
18.	Page 33, Section 8.1, 2 nd paragraph	As noted in comment #12, Study Area 6 should be included as an area where WCLC is known or suspected of having used perchlorate, bringing the total to 29.
19.	Page 33, Section 8.1, 2 nd paragraph	As noted in comment #3, we do not agree that the sampling effort has delineated the vertical and lateral extent of perchlorate contamination, or demonstrated that that perchlorate released by WCLC has not reached groundwater.
20.	Page 33, Section 8.2, 1 st paragraph	<p>As noted in comment #3, we do not agree that the nature and extent of contamination in the WCLC operations areas has been fully determined.</p> <p>As noted in comment #4, we do not agree with the statement made in the Report that "there is no indication of a release or threatened release of TCE in the WCLC use areas."</p>

Figures 1a, 1b, 1c. Results for Perchlorate in Soil, Environ Remedial Investigation, April and May 2009

Non-detect results shown as 10 mg/kg (half of the typical reporting limit)

If more than one sample was analyzed in a 10' interval, the maximum concentration is shown.



Figures 2a, 2b. Perchlorate and Trichloroethene (TCE) Concentrations in Groundwater Monitoring Wells CMW3a and CMW4a

Non-detect results shown as half the reporting limit

Field duplicates shown as average

