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Transmitted Via Federal Express

December 5, 1996

Mr. J. Andrew Fleck
Environmental Engineer
Remedial Section C
Bureau of Western Remedial Action
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, New York 12223-7010

Re: Bausch & Lomb Frame Center Site
Feasibility Study

Dear Mr. Fleck:

This letter presents responses to the New York State Department of Environmental Conservation's (NYSDEC's), the New York State Department of Health's (NYSDOH's), and the Monroe County Health Department's (MCHD's) comments of the draft Feasibility Study (FS) for the above-referenced site. These comments were presented to Bausch & Lomb in a January 17, 1996 letter from the NYSDEC. This letter also incorporates the discussions of these comments during a March 15, 1996 meeting between the NYSDEC, NYSDOH, Bausch & Lomb, and Blasland, Bouck & Lee, Inc. (BBL). A copy of the NYSDEC January 17, 1996 comment letter and meeting minutes from the March 15, 1996 working session meeting are attached.

To address the NYSDEC/MCHD's specific comment #3 (presented below), permission from Conrail was required to access the additional sediment sampling location requested by the NYSDEC. As you are aware, obtaining this permission was a lengthy process resulting in a delay in the project schedule, as well as a delay in submission of this comment/response letter. The requested sediment sampling and analysis activities were recently completed, as discussed herein.

Bausch & Lomb's responses to each of these comments is presented below, including proposed draft revisions to the FS. To facilitate your review of the proposed revisions, they are presented in the enclosed draft revised FS Report. The deletions are shown using strikeout and the additions using shading with the exception of sections of the report that have been substantially revised (e.g., Section 4 - Remedial Action Objectives), where only the proposed revised section is presented.

For ease of presentation and to facilitate your review, each comment is presented below followed by Bausch & Lomb's response.

I. Major Comments

Major Comment #1

The Department does not agree that the recommended remedial alternative "Alternative 2 - Natural Attenuation and Quarterly Groundwater Monitoring" is the best remedial alternative for the remediation of this site. First, the FS offers no proof that natural attenuation is taking place at the site. In order to prove that natural attenuation is taking place, the FS must discuss;

A. Compound disappearance (i.e., mass loss as a function of time, mass loss as a function of distance and could include disappearance of the compound relative to a conservative tracer),

B. Consumption of electron acceptors (i.e., decreased dissolved oxygen in water where natural attenuation is taking place or the increased carbon dioxide in soil gas above the groundwater where the natural attenuation is taking place),

C. The presence of degradation products, and

D. The plume configuration (i.e., is the plume size increasing, decreasing or in steady state conditions).

Second, in most cases, natural attenuation, is a plume remediation method after the source of the contamination has been remediated. At this site, to date, no source has been identified. However, the concentrations present in BL-16S indicate that there is a strong possibility that dense non-aqueous phase liquid (DNAPL) is present at the site. In general, groundwater concentrations at as low as 1% of a compound's solubility may be indicative of the presence of DNAPL. In this case trichloroethene (TCE) is present in BL-16S at a concentration of 62 ppm (the solubility of TCE is 1100 ppm), 5.6% of the solubility of TCE.

Major Response #1

The occurrence of natural attenuation at the site is supported by an evaluation of the presence of reductive dechlorination or abiotic transformation products in the ground-water. Historical ground-water data at the Bausch & Lomb site indicates the presence of dechlorination products or abiotic transformation products. TCE naturally undergoes reductive dechlorination in which 1,2-dichloroethene (1,2-DCE) and vinyl chloride are produced during the reduction process. This reductive dechlorination process of TCE is shown, for example, from ground-water samples collected from monitoring wells BL-6S, BL-9S and BL-13S. Concentrations of TCE have been historically present in monitoring well BL-6S, located within the VOC plume. The degradation products, 1,2-DCE and vinyl chloride have been detected in ground-water samples collected from BL-9S, located downgradient from BL-6S. Vinyl chloride, a degradation product of 1,2-DCE, has been detected in ground-water samples collected from monitoring well BL-13S, located further downgradient from BL-9S. As the dissolved constituents migrate downgradient, reductive dechlorination appears to be occurring as illustrated by the ground-water samples collected from these three monitoring wells.

In addition to the reductive dechlorination of TCE at the Bausch & Lomb site, 1,1,1-trichloroethane (1,1,1-TCA) is undergoing biologically mediated reductive dehalogenation, transforming the parent molecule into 1,1-dichloroethane (1,1-DCA). For example, the presence of 1,1,1-TCA and 1,1-DCA from ground-water samples collected from BL-14S indicates this transformation process is occurring. 1,1,1-TCA will also undergo an elimination reaction to form 1,1-dichloroethene (1,1-DCE) under abiotic, dehydrohalogenation mechanisms. This

elimination reaction is apparent from ground-water samples collected from monitoring well BL-14S in which both 1,1,1-TCA and 1,1-DCE were detected.

Appropriate sections of the FS were revised to incorporate the information provided above regarding the occurrence of natural attenuation at the site. These revisions are presented in the enclosed draft revised FS Report: additions are shown using shading and deletions using strikeout. In particular the detailed analysis of Alternative 2: Natural Attenuation and Ground-Water Monitoring (Section 6.3.2) has been revised. Please note that this alternative has also been revised to include a long-term program to monitor the natural attenuation process. The cost table for this alternative (Table 5) has also been revised.

An additional alternative has also been developed and evaluated to address mass reduction of constituents of interest present in the shallow overburden and overburden/bedrock interface ground-water flow zones, followed by natural attenuation. As discussed during the March 15, 1996 working session and based on current site characterization data and the results of the technology screening, this alternative is assumed to consists of the following components:

- Removing ground-water for an estimated 5 year period;
- Treating the ground-water on-site (if necessary); and
- Discharging the ground-water either to the sanitary sewer for off-site treatment at the POTW or to a nearby surface water (e.g., the on-site SSA).

An additional component of this new alternative is the completion of pre-design field characterization activities to further characterize the concentration and distribution of constituents of interest in the shallow overburden and overburden/bedrock interface ground-water flow zones, in attempt to identify a source area(s) that will maximize the effectiveness of this alternative in reducing VOC mass.

Revised draft Sections 5.3 and 6.3 which present the components and detailed analysis of this fourth alternative, respectively, are presented in the enclosed draft revised FS Report. A detailed breakdown of the cost and a list of assumptions for this alternative is provided in Table 7 of the enclosed report. In addition, the comparative analysis of the remedial alternatives (Section 7) has been revised to include Alternative 4 - Mass Reduction and Natural Attenuation.

Major Comment #2

The FS should also include an estimate of how long it will take for the compounds present in the groundwater to naturally attenuate.

Major Response #2

Although the duration of natural attenuation can not be accurately predicted, the estimated time in which the constituents of interest will naturally attenuate to meet New York State Class GA Ground-Water Quality Standards without any mass reduction activities (i.e., Alternatives 1 and 2) is assumed to exceed 30 years. Attaining Class GA standards via natural attenuation after the mass reduction activities described above (i.e., Alternative 4) is assumed to occur within a 10 year period. This assumption is based on a 90 percent reduction of the constituents of interest during the extraction process and first order kinetics with an assumed natural attenuation decay rate of 0.003 per day to achieve ground-water quality standards within a 10 year period after

the ground-water extraction period. Further evaluation of physical/chemical and biological parameters has been included as a component of Alternatives 2 and 4 and this information will facilitate predicting the duration of natural attenuation.

Major Comment #3

The NYSDOH must evaluate the monitoring system to ensure that it is protective of human health. Please include a conceptual model of where the new groundwater monitoring wells will be installed and which present wells will be sampled during the quarterly monitoring.

Major Response #3

During the March 15, 1996 meeting, the NYSDEC and the NYSDOH agreed that the FS must conceptually identify the general location of the ground-water monitoring wells to be used and that it is not practical or necessary to identify the exact locations at this time. Based on the RI and RI Addendum Reports, the general direction of ground-water flow is in the southeast direction towards Black Creek. New ground-water monitoring locations will be installed downgradient of the monitoring well clusters BL-13 and BL-14 (where concentrations of VOCs were detected during the April/May 1995 sampling event) and at least 200 feet upgradient from the southeastern boundary of the site property. The FS Report has been revised accordingly to present this information.

Based on historical data (the number of years since solvents are believed to have been released into the soil/ground-water and the suspected release locations), the rate of migration to the south/southeast for dissolved constituents is estimated to be approximately 10 to 12 feet per year. Thus, placement of the downgradient monitoring wells at a distance of at least 200 feet upgradient of the southeastern property boundary will provide early notice (i.e., greater than 10 years) of constituents of interest potentially approaching the site boundary.

Major Comment #4

If "Alternative 2 - Natural Attenuation and Quarterly Groundwater Monitoring" is chosen as a portion of the remedial alternative for the groundwater contamination at the Frame Center Site the Department and the NYSDOH will require that the property south of Building 40 be deed restricted. The deed restriction must, at a minimum, identify the contamination present and prohibit residential construction in this area.

Major Response #4

Implementation of institutional controls will be evaluated in the future when remediation activities are underway and the effectiveness of such activities can be determined. The detailed analysis of Alternatives 2 and 4 has been developed/evaluated consistent with this approach.

Major Comment #5

The Department believes that at least one additional remedial alternative should be evaluated in the FS. This remedial alternative should evaluate reduction in the most heavily contaminated area. In evaluating this alternative serious consideration should be given to the potential benefit of partially remediating the groundwater. This additional remedial alternative could be either; 1. A dual phase extraction system which deals with both contaminated groundwater and the possible sources, 2. A short term pump and treat system which also includes

additional investigation to try to determine the location of a source area for remediation, or 3. Any additional remedial alternatives which reduce the volume of the contamination present at the site.

Major Response #5

A fourth alternative which provides for mass reduction of the constituents of interest has been developed and evaluated. The appropriate sections of the FS which present a description of the components, the detailed analysis, and costs for this alternative have been revised and are presented in the enclosed draft FS Report.

II. Specific Comments

Specific Comment #1

Please submit all reports that relate to the Frame Center Site. Specifically, the FS references the "Remedial Investigation Addendum Supplemental Report" and the "On-Site SSA Final Engineering Report".

Specific Response #1

As mentioned in the March 1996 meeting minutes letter, the two aforementioned reports were submitted to the NYSDEC on February 2, 1996 and January 30, 1996, respectively. The FS Report has been revised accordingly to present the appropriate status of these reports.

Specific Comment #2

Please provide the Department with the most recent ground water contour maps. These maps should include all data from the most recent round of ground water elevations, including the monitoring wells that were installed in 1995.

Specific Response #2

As described in the March 1996 meeting minutes letter, the ground-water contour maps were presented in the "Remedial Investigation Addendum Supplemental Report" which was submitted to the NYSDEC on February 2, 1996.

Specific Comment #3

The Department agrees with the assertion in this report that the on-site SSA has been completely remediated. However, the FS does not address contamination that has been left in the off-site SSA. Contamination in the SSA does not stop at the Frame Centers property line. The off-site SSA sample results from January 1993 revised October 1993 RI Report indicate that sediment beyond the Frame Centers property line is above site specific cleanup objectives. Additional discussion in the FS is necessary which provides the rational for leaving levels which are above cleanup objectives in the off-site SSA. In addition the Department wants an additional sediment sample taken between the end of the excavation and the railroad tracks. This samples's result should be discussed in the FS along with the additional discussion on the off-site contamination.

Specific Response #3

As presented in the March 1996 meeting minutes, prior to receipt of the January 17, 1996 letter, Bausch & Lomb and BBL understood that (1) characterization of the off-site SSA was complete as NYSDEC approved the RI Report and did not request any additional sampling at the time of approval; and (2) NYSDEC would propose no further action as the remedial alternative for the SSA, assuming the IRM constituted complete remediation of the on-site SSA; reference page 4 of an August 9, 1995 letter to Andrew Fleck of the NYSDEC from Frank Chiappone of Bausch & Lomb, as well as page 2 of the NYSDEC approved On-Site SSA IRM Work Plan (September 1995). The request for additional sampling is believed by Bausch & Lomb and BBL to be unwarranted and contradictory to previous agreements.

As discussed in the March 15, 1996 meeting with the NYSDEC and subsequent discussions, Bausch & Lomb; however, agreed to collect the additional sample to facilitate completion of the FS. The details regarding the proposed sample collection procedures and laboratory analytical methods/protocols were presented in a April 24, 1996 letter to the NYSDEC and subsequently approved by the NYSDEC on April 25, 1996. Upon receipt of permission from Conrail to access the NYSDEC-requested sampling location, the sampling activities were conducted on October 29, 1996. These sampling and analysis activities were conducted in accordance with the NYSDEC-approved procedures presented in the April 24, 1996 letter. A description of these activities and a summary of the analytical results were presented in a November 21, 1996 letter to the NYSDEC from Bausch & Lomb. As discussed in that letter, the analytical data for the requested-sediment sample are consistent with previous data used to characterize the off-site SSA in the NYSDEC-approved RI and RI Addendum Reports. The analytical data is presented in the FS Report (Section 1) and is used to support justification of the no-action alternative for the SSA, in accordance with a request from the NYSDEC during the March 1996 meeting.

Specific Comment #4

The Department does not agree with the first RAO stated in the FS. This RAO should state "Attain NYSDEC Class GA Ground-Water Quality Standards for the constituents of interest identified in on-site shallow overburden and overburden/bedrock interface ground-water flow zones." The objective of the Department is to return hazardous waste sites to pre-release conditions to the extent practicable and authorized by law.

Specific Response #4

The RAO stated above is actually a remedial goal. As discussed during the March 15, 1996 meeting, Bausch & Lomb and the NYSDEC agreed that the remedial goal of returning the site to pre-release conditions is unattainable.

RAOs are site specific remedial objectives based on site conditions, available remedial technologies, and technical practicability, as evaluated during the FS in accordance with NYSDEC guidance. The RAOs for the ground-water at the Frame Center Site are to reduce the mass of constituents of interest present in the on-site shallow overburden and overburden/bedrock interface ground-water flow zones and to mitigate the potential for migration of constituents of interest beyond the downgradient property boundary of the Bausch & Lomb Frame Center. Section 4 - Remedial Action Objectives of the FS Report has been revised accordingly.

Specific Comment #5

The Department believes that at a minimum vacuum extraction should be retained. In addition, you may wish to look at ways to augment Alternative - 2 such as in-situ permeable treatment beds or any other in-situ treatment.

Specific Response #5

Vacuum extraction is not believed to be practicable/effective for remediation of the Frame Center Site based on the low permeability of the soils due to the high percentage of fines in the overburden material, and the absence of an observed source area in unsaturated soils. As discussed in the March 1996 meeting with the NYSDEC, vacuum extraction was presented by the NYSDEC as a suggestion, not as a requirement. Table 4 - Preliminary Screening of Ground-Water Remedial Technologies; however, has been revised to provide additional justification for eliminating this technology from further evaluation. In addition, Alternative 4 has been developed which provides for mass reduction of the constituents of interest present in ground-water.

Specific Comment #6

The technical description of this remedy needs to include a contingency plan. This section states that the "implementation of this alternative provides for the institution of hydraulic control or ground-water extraction and treatment technologies if VOCs exceeding New York State Class GA Ground-Water Quality Standards are observed approaching the site boundary". This section needs to specify how far the plume will be allowed to migrate before ground water controls are imposed taking into account that Department does not agree with the RAOs as they are presently stated in the FS (see specific comment #4).

Specific Response #6

Although the RAO for the ground-water at the Frame Center Site is to reduce the mass of constituents of interest present in ground-water, downgradient monitoring of the constituents of interest is necessary to ensure that the constituents of interest do not migrate beyond the site boundary. The contingency for plume migration beyond the downgradient boundary will consist of measures such as implementation of ground-water controls or extraction/treatment technologies, if constituents of interest are identified in the proposed monitoring wells located downgradient from the limits of the VOC plume and upgradient from the property boundary. Section 6.3.2 - Alternative 2: Natural Attenuation and Ground-Water Monitoring has been revised accordingly with respect to a contingency plan for plume migration (copy attached). The newly developed fourth alternative also includes this contingency plan.

Specific Comment #7

Please revise this cost estimate. The cost estimate for this alternative includes $22,050/year for the POTW discharge fee. If the treated is discharged to the SSA, Alternative 3's present worth drops from $1,350,000 to $930,000. We are confident that the Department can work with Bausch & Lomb to obtain this potential savings.

Specific Response #7

As agreed upon between Bausch & Lomb and the NYSDEC in the March 15, 1996 meeting, it is not necessary/appropriate to revise the cost estimate as requested. The cost estimate provided for disposal of treated ground-water at a POTW is likely an upperbound cost, but development of a more conservative cost estimate is consistent with FS guidelines. However, based on recent discussions with the Monroe County Pure Waters Gates, Chili, Ogden POTW, the unit cost for the POTW discharge fee used in developing the FS cost estimates has been reduced from $2.1 per 1,000 gallons to $1.8 per 1,000 gallons. This revision is reflected in the costs for Alternative 3 and 4, presented in Tables 6 and 7, respectively of the enclosed FS Report.

Specific Comment #8

The Department does not agree that Alternative - 2 meets the RAOs for the site (see comment #4).

Specific Response #8

As described in specific response #4, the RAOs for the site include mass reduction of the constituents of interest. Alternative 2 has been revised to indicate that although this alternative will attain this RAO, it will not attain (within a 30 year time period) the remedial goal of attaining New York State Class GA Ground-Water Quality Standards for the constituents of interest identified in the on-site shallow overburden and overburden/bedrock interface ground water flow zones (see attached revised sections of the FS Report).

Specific Comment #9

The Department does not agree that Alternative - 2 complies with chemical specific SCGs. Class GA ground water standards apply on-site as well as off-site.

Specific Response #9

See specific comment responses #4 and #8.

Please feel free to contact me if you have any questions or require clarification regarding these responses.

Sincerely,

Bausch & Lomb

Frank Chiappone

Frank Chiappone
Environmental Manager

FC/db
Enclosure
07961462.n

cc: Mr. Todd Caffoe, NYSDEC (Region 8)
Mr. Richard S. Elliott, P.E. Monroe County Health Department
Ms. Lani D. Rafferty, NYSDOH
Ms. Juliana Potter, Bausch & Lomb
Mr. George M. Thomas, BBL

Attachments:

Attachment 1 - The NYSDEC January 17, 1996 Comment Letter
Attachment 2 - Meeting Minutes from the March 15, 1996 Working Session with the NYSDEC
Attachment 3 - Draft Revised FS Report

Attachment 1 - The NYSDEC January 17, 1996 Comment Letter

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

Michael D. Zagata
Commissioner

January 17, 1996

Mr. Frank Chiappone
Bausch & Lomb, Inc.
1 Bausch & Lomb Place
Rochester, NY 14604-2701

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To Frank Chiappone	From J. Andrew Fleck
Co. B+L	Co. NYSDEC
Dept.	Phone # (518) 457-3373
Fax # (716) 338-8859	Fax # (518) 457-3972

Dear Mr. Chiappone:

Re: Bausch & Lomb, Frame Center Site, Site # 8-28-061
Monroe County - Feasibility Study Comments

The New York State Department of Environmental Conservation (the Department), the New York State Department of Health (NYSDOH) and the Monroe County Health Department (MCHD) have reviewed the draft Feasibility Study (FS) for the above referenced site, dated November 1995. The following major comments have been generated as a result of this review.

(Note: Specific comments are contained in the attachment to this letter.)

1. The Department does not agree that the recommended remedial alternative "Alternative 2 - Natural Attenuation and Quarterly Groundwater Monitoring" is the best remedial alternative for the remediation of this site. First, the FS offers no proof that natural attenuation is taking place at the site. In order to prove that natural attenuation is taking place, the FS must discuss;

   A. Compound disappearance (i.e., mass loss as a function of time, mass loss as a function of distance and could include disappearance of the compound relative to a conservative tracer),

   B. Consumption of electron acceptors (i.e., decreased dissolved oxygen in water where natural attenuation is taking place or the increased carbon dioxide in soil gas above the groundwater where the natural attenuation is taking place),

   C. The presence of degradation products, and

   D. The plume configuration (i.e., is the plume size increasing, decreasing or in steady state conditions).

   Second, in most cases, natural attenuation, is a plume remediation method after the source of the contamination has been remediated. At this site, to date, no source has been

identified. However, the concentrations present in BL-16s indicate that there is a strong possibility that dense non-aqueous phase liquid (DNAPL) is present at the site. In general, groundwater concentrations at as low as 1% of a compound's solubility may be indicative of the presence of DNAPL. In this case trichloroethylene (TCE) is present in BL-16s at a concentration of 62 ppm (the solubility of TCE is 1100 ppm) 5.6% of the solubility of TCE.

2. The FS should also include an estimate of how long it will take for the compounds present in the groundwater to naturally attenuate.

3. The NYSDOH must evaluate the monitoring system to ensure that it is protective of human health. Please include a conceptual model of where the new the groundwater monitoring wells will be installed and which present wells will be sampled during the quarterly monitoring.

4. If "Alternative 2 - Natural Attenuation and Quarterly Groundwater Monitoring" is chosen as a portion of the remedial alternative for the groundwater contamination at the Frame Center Site the Department and the NYSDOH will require that the property south of Building 40 be deed restricted. The deed restriction must, at a minimum, identify the contamination present and prohibit residential construction in this area.

5. The Department believes that at least one additional remedial alternative should be evaluated in the FS. This remedial alternative should evaluate contaminant reduction in the most heavily contaminated area. In evaluating this alternative serious consideration should be given to the potential benefit of partially remediating the groundwater. This additional remedial alternative could be either; 1. A dual phase extraction system which deals with both contaminated groundwater and the possible sources, 2. A short term pump and treat system which also includes additional investigation to try to determine the location of a source area for remediation, or 3. Any additional remedial alternatives which reduce the volume of the contamination present at the site.

As soon as you have reviewed this letter, please call me, at (518) 457-3373, so that we can schedule a meeting to discuss the issues raised in this letter and the attachment.

Sincerely,

J. Andrew Fleck
Environmental Engineer
Remedial Section C
Bureau of Western Remedial Action
Division of Hazardous Waste Remediation

cc: J. Potter B & L
L. Rafferty, NYSDOH
R. Elliot, MCHD

Attachment

1. *Section 1.1 - Preface* Please submit all reports that relate to the Frame Center Site. Specifically, the FS references the "Remedial Investigation Addendum Supplement Report" and the "On-site SSA Final Engineering Report".

2. *Section 1.4.1- Physical Characteristics: Geology and Hydrogeology* Please provide the Department with the most recent groundwater contour maps. These maps should include all data from the most recent round of groundwater elevations, including the monitoring wells that were installed in 1995.

3. *Section 2.0 - Interim Remedial Measure* The Department agrees with the assertion in this report that the on-site SSA has been completely remediated. However, the FS does not address residual contamination that has been left in the off-site SSA. Contamination in the SSA does not stop at the Frame Centers property line. The off-site SSA sample results from January 1993 revised October 1993 RI Report indicate that sediment beyond the Frame Centers property line is above site specific cleanup objectives. Additional discussion in the FS is necessary which provides the rational for leaving levels which are above cleanup objectives in the off-site SSA. In addition the Department wants an additional sediment sample taken between the end of the excavation and the railroad tracks. This samples's result should be discussed in the FS along with the additional discussion on the off-site contamination.

4. *Section 4.0 - Remedial Action Objectives* The Department does not agree with the first RAO stated in the FS. This RAO should state "Attain NYSDEC Class GA ground-water standards for the constituents of interest identified in on-site shallow overburden and overburden/bedrock interface ground-water flow zones.". The objective of the Department is to return hazardous waste sites to pre-release conditions to the extent practicable and authorized by law.

5. *Section 5.2 - Summary of Identified Remedial Technologies* The Department believes that at a minimum vacuum extraction should be retained. In addition, you may wish to look at ways to augment Alternative - 2 such as in-situ permeable treatment beds or any other in-situ treatment.

6. *Section 6.3.2 - Alternative 2: Natural Attenuation and Quarterly Ground-Water Monitoring* The technical description of this remedy needs to include a contingency plan. This section states that the "implementation of this alternative provides for the institution of hydraulic control or ground water extraction and treatment technologies if VOCs exceeding Class GA standards are observed approaching the site boundary". This section needs to specify how far the plume will be allowed to migrate before ground water controls are imposed taking into account that the Department does not agree with the RAOs as they are presently stated in the FS (see comment #4).

7. *Section 6.3.3 - Alternative 3: Ground-Water Removal and Treatment* Please revise this cost estimate. The cost estimate for this alternative includes $22,050/year for the POTW discharge fee. If the treated water is discharged to the SSA, Alternative 3's present worth

drops from $1,350,000 to $930,000. We are confident that the Department can work with Bausch & Lomb to obtain this potential cost savings.

8. *Section 8.0 - Comparative Analysis of Remedial Alternatives* The Department does not agree that Alternative -2 meets the RAOs for the site (see comment #4).

9. *Section 8.0 - Comparative Analysis of Remedial Alternatives* The Department does not agree that Alternative - 2 complies with chemical specific SCGs. Class GA groundwater standards apply on-site as well as off-site.

Attachment 2 - Meeting Minutes from the March 15, 1996 Working Session

One Bausch & Lomb Place
Rochester NY 14604-2701
716 338 6000

March 27, 1996

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Mr. J. Andrew Fleck
Environmental Engineer
Remedial Section C
Bureau of Western Remedial Action
Division of Hazardous Waste Remediation
New York State Department of Environmental Conservation
50 Wolf Road
Albany, NY 12223-7010

Re: Meeting Minutes - March 15, 1996 Working Session
Bausch & Lomb Inc. - Frame Center Site

Dear Mr. Fleck:

Enclosed please find the meeting minutes summarizing the topics discussed during the March 15, 1996 working session held at the New York State Department of Environmental Conservation's (NYSDEC's) headquarters in Albany, New York to resolve issues associated with the draft Feasibility Study for the Frame Center Site. Upon review of the enclosed meeting minutes, please notify me if you believe that any portion of this summary does not accurately reflect issues discussed/resolved during the working session, or if additional items should be recorded in this summary. If notification of any required additions or modifications to this summary is not received by April 5, 1996, Bausch & Lomb will assume that NYSDEC substantially agrees with the summary as submitted.

Sincerely,

Frank Chiappone

Frank Chiappone
Environmental Manager
fc6-0326

Encs.

cc: J. Potter (Bausch & Lomb)
W. Ramsey (Bausch & Lomb)
B. Sumpter (Bausch & Lomb)

G. Thomas (Blasland Bouck & Lee)
C. Geraci (Blasland Bouck & Lee)

MEMORANDUM

BBL
BLASLAND, BOUCK & LEE, INC.
engineers & scientists

To: Juliana Potter, Bausch & Lomb Incorporated
Frank Chiappone, Bausch & Lomb, Incorporated

Date: 3/22/96

cc: M. Cathy Geraci, Blasland, Bouck & Lee

From: George M. Thomas GMT

Re: Meeting Minutes
March 15, 1996 Working Session
Bausch & Lomb, Incorporated Frame Center Site

On March 15, 1996 a working session meeting was held for the Bausch & Lomb, Incorporated (Bausch & Lomb) Frame Center Site located in Chili, New York. The meeting was held in Albany, New York at the New York State Department of Environmental Conservation's (NYSDEC's) headquarters. The purpose of this meeting was to resolve issues regarding the NYSDEC's and the New York State Department of Health's (NYSDOH's) comments on the November 1995 draft Feasibility Study for the Frame Center site. The agencies' comments were presented in a January 17, 1996 letter from J. Andrew Fleck of the NYSDEC to Frank Chiappone of Bausch & Lomb. A copy of this letter and the agenda for the working session meeting are attached.

The following individuals participated in this meeting:

- Juliana Potter, Bausch & Lomb
- Frank Chiappone, Bausch & Lomb
- Joseph White, NYSDEC
- J. Andrew Fleck, NYSDEC
- Gardner Cross, NYSDEC
- Loni Rafferty, NYSDOH
- George M. Thomas, BBL
- M. Cathy Geraci, BBL

For ease of presenting the topics discussed during the meeting, each of the comments presented in the January 17, 1996 letter is paraphrased below followed by a summary of the related topics discussed. Other topics, not directly related to the January 17, 1996 comment letter, are presented following discussion of the comment letter.

I. Major Comments (January 17, 1996 letter)

Major Comment 1

The Department does not agree that the recommended remedial alternative "Alternative 2 - Natural Attenuation and Quarterly Ground Water Monitoring" is the best remedial alternative for remediation of ground water immediately south of Building 41.

Related Topics Discussed:

a. The NYSDEC's objective for remediation of the site is contaminant mass reduction at a reasonable cost. Natural attenuation, alone, does not meet this objective. Specifically, NYSDEC

requested a reduction in the mass of constituents of interest observed to be present in the ground water at monitoring well locations BL-9S, BL-16S, and BL-11D.

b. The FS text must present a discussion supporting the occurrence of natural attenuation at the site. The discussion does not have to specifically address each of the four components identified in NYSDEC's January 17, 1996 letter. NYSDEC agrees that natural attenuation is not solely a biological process. Rather, natural attenuation also relies on natural chemical and physical processes (e.g., adsorption, dispersion, diffusion, etc.) to reduce concentrations of constituents of interest present in ground water.

Major Comment 2

The FS should also include an estimate of how long it will take for the compounds present in the ground water to naturally attenuate.

Related Topics Discussed:

An estimated time frame for occurrence of natural attenuation in the ground water will be presented in the FS.

Major Comment 3

The NYSDOH must evaluate the monitoring system to ensure that it is protective of human health. Please include a conceptual model of where the new ground water monitoring wells will be installed and which existing wells will be sampled during the quarterly monitoring.

Related Topics Discussed:

The NYSDEC and the NYSDOH agreed that the FS must conceptually identify the general location of the ground water monitoring wells to be used and that it is not practical or necessary to identify the exact locations at this time. Therefore, the FS will provide a discussion regarding the general location of monitoring wells to be used during a remedial program. A figure showing the proposed location of monitoring wells could be utilized, but is not required.

Major Comment 4

If "Alternative 2 - Natural Attenuation and Quarterly Ground Water Monitoring" is chosen as a portion of the remedial alternative for the ground water contamination at the Frame Center Site, the NYSDEC and the NYSDOH will require that the property south of building 40 be deed restricted.

Related Topics Discussed:

a. Bausch & Lomb would be responsible for developing and obtaining deed restrictions (if necessary).

b. The purpose of the deed restriction(s) would be to meet the requirements of protection of human health and the environment.

c. If the site remains on the NYSDEC's Registry of Inactive Hazardous Waste Sites, a deed restriction may not be necessary because change of property use at an inactive hazardous waste site require notification to the NYSDEC/NYSDOH.

d. The NYSDOH, not the NYSDEC, would be the agency that may require a deed restriction(s) for the Frame Center site (if necessary).

e. The NYSDOH (Loni Rafferty) stated that implementation of deed restrictions should be evaluated in the future when remediation activities are underway and the effectiveness of such activities can be determined. The NYSDOH is aware of Records of Decisions which have been issued with similar wording. However, the NYSDEC is not sure that deed restriction will not be a requirement incorporated into the Record of Decision (when issued) for the Frame Center site.

f. NYSDEC stated that Bausch & Lomb, pursuant to the regulations presented under 6NYCRR Part 370, can present a proposal to NYSDEC to redefine the boundaries of the site.

Major Comment 5

The Department believes that at least one additional remedial alternative should be evaluated in the FS.

Related Topics Discussed:

a. The additional remedial alternative should include a means for mass removal of ground water constituents of interests observed at monitoring well locations BL-9S, BL-16S, and BL-11D. NYSDEC is open as to the specific means for accomplishing mass removal but provided several suggestions including, but not limited to, the following: reaction walls (iron filings), augmentation of the biodegradation that is occurring at the site, vacuum extraction, and ground water pumping.

b. NYSDEC is not requiring/requesting any additional investigation activities to try to determine the location of a source area. The reference in the January 17, 1996 letter regarding additional source investigation activities was presented only for Bausch & Lomb's consideration.

II. Specific Comments (Attachment to the January 17, 1996 letter)

Specific Comment 1

Please submit the "Remedial Investigation Addendum Supplement Report" and the "On-Site SSA Final Engineering Report".

Related Topics Discussed:

The two aforementioned reports were submitted to the NYSDEC on February 2, 1996 and January 30, 1996, respectively.

Specific Comment 2

Please provide the NYSDEC with the most recent ground water contour map.

Related Topics Discussed:

The requested ground water contour maps were presented in the "Remedial Investigation Addendum Supplement Report" which was submitted to the NYSDEC on February 2, 1996.

Specific Comment 3

The Department agrees with the assertion in this report that the on-site SSA has been completely remediated. The Department requests that an additional sediment sample be collected between the end of the excavation and the railroad tracks. The results of this sample should be discussed in the FS, along with additional discussion regarding the rational for no action in the off-site SSA.

Related Topics Discussed:

a. Prior to receipt of the January 17, 1996 letter, Bausch & Lomb and BBL understood that (1) characterization of the off site SSA was complete (NYSDEC approved the RI Report and did not request any additional sampling at the time of approval) and (2) NYSDEC would propose no further action as the remedial alternative for the SSA, assuming the IRM constituted complete remediation of the on-site SSA [reference page 4 of an August 9, 1995 letter to Andrew Fleck of the NYSDEC from Frank Chiappone of Bausch & Lomb, as well as page 2 of the NYSDEC approved on-site SSA IRM Work Plan (September 1995)]. The request for additional sampling at this time is believed by Bausch & Lomb and BBL to be unwarranted and contradictory to previous agreements.

b. The NYSDEC does not believe that this is a new issue. The NYSDEC recalls a letter to Bausch & Lomb requesting that remediation of the on-site SSA continue to the railroad tracks.

c. Bausch & Lomb understood that the intent of this request was to include the sediments within the "pool" area downstream of the perimeter fence. Later field observations indicated that the pool area was downstream of the fence but upstream of the property line; therefore, this area would be included in the IRM.

d. Because the limits of the on-site SSA (as presented on page 18 of the NYSDEC-approved IRM Work Plan) were defined by the headwall to the northeast and the property line approximately 720 feet down stream of the headwall, the on-site SSA remediation activities stopped less than 50 feet from the railroad tracks.

e. The NYSDEC needs the data to justify/support that the mass of constituents of interest, within the limits between the excavation and the railroad tracks, is insignificant relative to the mass removed as part of the on-site SSA remediation activities.

f. Bausch & Lomb and BBL believe that the previous NYSDEC-approved characterization data for either the on-site SSA or the off-site SSA could be used to determine the mass of constituents of interests within the subject area.

g. NYSDEC wants a sample collected between the down stream limit of the on-site SSA excavation and the railroad tracks. If Bausch & Lomb does not want to collect this sample, NYSDEC has no objections to collecting the sample.

h. A potential issue with collection of the sample is obtaining permission from Conrail. NYSDEC offered to provide assistance or to secure the required approvals/access. Everyone agreed that this may be a lengthy process and therefore should be started as soon as possible.

i. Bausch & Lomb requested an opportunity to discuss issues regarding the collection of the sample with upper Bausch & Lomb management, before deciding whether or not to collect the sample. NYSDEC agreed and Juliana Potter is to coordinate with Andrew Fleck regarding the status /outcome of such discussions. At a minimum, Juliana Potter will contact Andrew Fleck by March 29, 1996 with an update.

j. NYSDEC stated that it was unnecessary to present the analytical results for this additional sample in the FS. However, NYSDEC does need the data for presentation in the proposed remedial action plan (PRAP). NYSDEC also stated that they have internally scheduled a July, 1996 ROD for the Frame Center; therefore, the FS must be completed by the end of May 1996.

k. The NYSDEC has indicated that the results of the sample (to be collected between the excavation and the railroad tracks) must be evaluated before no-action can be justified. Bausch & Lomb and BBL believe that this data must be presented in the FS because the results may affect the proposed remedy.

Specific Comment 4

The Department does not agree with the first Remedial Action Objective (RAO) stated in the FS. This RAO should state "attain NYSDEC Class GA ground water standards for the constituents of interest identified in on-site shallow overburden and overburden/bedrock interface ground-water flow zones".

Related Topics Discussed:

a. The RAO stated above is actually a remedial goal. The NYSDEC's remedial goal for ground water is to return the site to pre-release conditions to the extent practicable and authorized by law. NYSDEC understands/concurs that this goal is unattainable.

b. RAOs are site specific objectives based on site conditions, available remedial technologies, and costs. The RAO for the ground water at the Frame Center Site is to reduce the mass of constituents of interest present in ground water at a reasonable cost.

Specific Comment 5

The Department believes that at a minimum vacuum extraction should be retained.

Related Topics Discussed:

a. The NYSDEC requested that an additional alternative be developed which provides for the reduction of mass of the constituents of interest present in ground water.

b. NYSDEC presented vacuum extraction as a suggestion, not as a requirement. Vacuum extraction is not believed to be practicable/effective for remediation of the Frame Center Site due to the low permeability of the soils, the absence of a source area in unsaturated soils, and the large percentage of fines in the overburden materials.

Specific Comment 6

The FS needs to specify how far the plume will be allowed to migrate before ground water controls are implemented (Alternative 2: Natural Attenuation and Quarterly Ground Water Monitoring).

Related Topics Discussed:

a. See Related Topics Discussed for Major Comment 3 and Specific Comment 4.

b. The FS will be revised accordingly.

Specific Comment 7

Please revise the cost estimate for Alternative 3 such that it does not include the $22,050/year cost for the POTW discharge fee. NYSDEC is confident that Bausch & Lomb can obtain this savings by discharging the water to the SSA instead of the POTW.

Related Topics Discussed:

a. The cost estimate provided for disposal of treated ground water at a POTW is likely an upperbound cost, but development of a more conservative cost estimate is consistent with FS guidelines.

b. Discharge of treated water to the SSA would be dictated by the requirements of a SPDES discharge. At this time such requirements are not known; however, the requirements may create the need for treatment which is more expensive than discharge/disposal at the POTW.

c. NYSDEC agreed that it was not necessary/appropriate to revise the cost estimate as requested.

Specific Comments 8 and 9

Comments regarding the RAOs and goals for the site.

Related Topics Discussed:

See topics provided above for specific comment 4.

Other Topics

During discussion of potential ground water treatment alternatives, Frank Chiappone had questions regarding how an additional potential air discharge at the facility would impact the Tier V regulations. Andrew Fleck is to provide supporting information to Frank by March 29, 1996.

As previously indicated, the NYSDEC has internally submitted a July 1996 ROD for the site. To meet this schedule, a PRAP would need to be completed and submitted by early June 1996, and a FS in place by the end of May 1996. To facilitate concurrence on the remaining outstanding FS issues, Bausch & Lomb will submit only the selected suggested wording changes to the NYSDEC in letter format. Once the wording has been agreed to, a full final copy of the FS will be submitted to the NYSDEC for inclusion in the Document Repositories.

GMT/dmb
Attachments

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February 20, 1996

Mr. J. Andrew Fleck
New York State Dept of Environmental
Conservation
20 Wolf Road
Albany, NY 12233

Dear Mr. Fleck:

This letter is to confirm our meeting on March 8, 1996 at 12:30 pm in your Albany office regarding comments received on the Frame Center Site Feasibility Study. Since this is probably the third or fourth time we have scheduled this meeting, I am hopeful it will not change.

Attached is the proposed agenda for the meeting as you requested.

Sincerely,

Frank Chiappone

Frank Chiappone
Environmental Manager
fcs-0220

enc.

AGENDA

MARCH 8, 1996

WORKING SESSION
FEASIBILITY STUDY

BAUSCH & LOMB - FRAME CENTER
CHILI, NY

NEW YORK STATE DEPT OF ENVIRONMENTAL CONSERVATION
50 WOLF RD. ALBANY, NY

- **OBJECTIVE OF MEETING**
  Resolve issues in NYSDEC Letter of January 17, 1996
- **OFF-SITE SSA**
  Review off-site sampling requirement rational
  (Clean up levels were site specific for on-site SSA, not SSA as a whole)
  What is the NYSDEC's objective for off-site SSA
- **GROUND WATER AREA**
  RAO for Ground water - no alternative will meet RAO as written as by NYSDEC
  Discussion of Natural Attenuation
    Definition
    Evidence that natural attenuation is occurring at the site
    Source of dissolved VOCs
      Implications of lack of defined source on remedial alternative
  Potential for incorporation of additional Mass-Removal Alternative
    Dual phase
    Short duration pump and treat
  Institutional Controls
    Site wide
    Plume
- **MEETING MINUTES**
- **SCHEDULE**

Attachment 3 - Draft Revised Feasibilty Study Report
(provided under separate cover)