October 13, 2011

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Mr. David Coupe
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Central Valley Regional Water Quality Control Board
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Comments on 2011 Administrative Civil Liability Order R5-2011-XXXX for the City of Colfax

Introduction

I want to thank the Board for the opportunity to comment on draft Administrative Civil Liability Order (ACLO) R5-2011-XXXX for the City of Colfax Waste Water Treatment Plant (treatment plant). My family and I live and farm directly downstream from the outflow of the treatment plant. All of the sewage that discharges, leaks and spills from the plant runs through my farm, past my fields, and past my home. The violations of state and federal water laws at the Colfax treatment plant have a direct impact on my family and my farm.

I reviewed the SMRs for the period of January 2009 through June 2011and found a large number of violations triggering mandatory penalties that are in addition to those identified in the draft ACLO. I have not examined self-monitoring reports for the year 2008. Given the high number of missed violations in that latter period, I ask that Board staff re-examine the 2008 self-monitoring reports for additional violations.

Some of the additional violations identified are effluent violations that were omitted from the list in the draft. Many others are because the City filed incomplete reports in respect to one of the following:

- failed to identify noncompliance (required in Appendix E.X.A.3)
- failed to report monitoring data (specified in Appendix E, table E-3)
- failed to report background groundwater data[1]
- reported monitoring flow data without having a flow meter in place[2]

There is an entire class of report omissions that neither I nor Board staff have identified. Appendix E.X.3 specifies that "If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the discharger will be in compliance." I did

1 The requirements of Limitations and Discharge requirements, section V.B.1,, "Release of waste constituents from any storage, treatment, or disposal components associated with the wastewater treatment plant, in combination with other sources, shall not cause the underlying groundwater to contain constituents in concentrations greater than background water quality." seem to also require that Colfax report groundwater background water quality levels as well as the levels in their primary groundwater sampling wells. Although well MW1 is dry for several months of the year, Colfax also has a water supply well on the plant site. Thus it is unacceptable that Colfax simply avoids reporting background water quality as a means of avoiding the appearance of violation.

2 Colfax constructed their new tertiary treatment plant without an effluent flow meter. According to City staff, that meter was not installed until July of 2010.

not find this information in any of the 30 months of Colfax self-monitoring reports I reviewed. These omissions would amount to an additional number of mandatory penalty violations that is equal to the number of discharge violations ultimately identified in the City's monitoring reports.

The additional violations triggering mandatory penalties that were identified in the City's self-monitoring reports from January 2009 through June 2011 are as follows:

Additional violations

- Violation of January 2009 monthly average effluent Ammonia of 1.17 mg/l (the discharge limit is 0.8 mg/l)
- Violation of January 24, 2009 daily effluent ammonia level of 3.89 mg/l (the daily limit is 2.2 mg/l)
- January 2009: Failed to report receiving water pH monitoring at sites R-001 and R-001 for the week of Jan 4 to Jan 10.
- January 2009: Failed to report receiving water electrical conductivity at sites R-001 and R-002 for the week of January 4 to January 10.
- January 2009: Failed to report receiving water temperature at sites R-001 and R-002 for the week of January 4 to January 10.
- January 2009: Failed to report receiving water chlorine at sites R-001 and R-002 for the week of January 4 to January 10.
- January 2009: Failed to report receiving water dissolved oxygen at sites R-001 and R-002 for the week of January 4 to January 10.
- January 2009: Failed to report receiving water turbidity at sites R-001 and R-002 for the week of January 4 to January 10.
- January 2009: Failed to report receiving water coliform at sites R-001 for the week of January 4 to January 10.
- January 2009: Failed to report receiving water ammonia at site R001 for the week of January 4 to January 10.
- January 2009: Failed to conduct 2 out of the 4 required follow-up chronic toxicity tests.
- January 28, 2009: Failed to report ground water violation of Total dissolved solids (TDS)(the monitoring well showed 280 mg/l while the background well showed 110 mg/l).[3]
- January 28, 2009: Failed to report ground water violation of Electrical Conductivity (EC) (the monitoring well showed 444 umhos/cm while the background well showed 116.7 umhos/cm).
- January 28, 2009: Failed to report ground water violation of dissolved oxygen (DO) (the monitoring well showed 0.57 mg/l while the background well showed 2.89 mg/l).
- January 28, 2009: Failed to report ground water violation of total Kjeldahl Nitrogn (TKN) (the monitoring well showed 2.5 mg/l while the backgroound well showed 0.4 mg/l).
- Reported effluent discharge volume for January 2009 without actually having an effluent flow meter as required by Appendix D, section D.2.a if the 2007 NPDES permit.
- February 2009: Violated monthly average effluent ammonia (The monitoring showed 1.24 while the discharge limit is 0.8 mg/l)
- February 9, 2009: Violated daily effluent ammonia level (the monitoring showed 4.28 mg/l while the daily limit is 2.2 mg/l)

3 The City of Colfax 2007 NPDES permit states in its Limitations and Discharge requirements, section V.B.1,, "Release of waste constituents from any storage, treatment, or disposal components associated with the wastewater treatment plant, in combination with other sources, shall not cause the underlying groundwater to contain constituents in concentrations greater than background water quality."

- February 28, 2009: Violated daily effluent pH (the monitoring showed 1.8 while the minimum limit for pH is 6.5)
- February 28, 2009: Failed to report ground water violation of EC (monitoring well was 362 umhos/cm while the background well was 73.3 umhos/cm).
- February 28, 2009: Failed to report ground water violation of TDS (the monitoring well was 180 mg/l while the background well was 66 mg/l).
- February 28, 2009: Failed to report ground water violation of DO (the monitoring well was 1.16 mg/l while the background well was 6.1 mg/l
- February 28, 2009: Failed to report violation of daily pH limit.
- Reported effluent discharge volume for February 2009 without actually having a effluent flow meter.
- March 20, 2009: violated daily effluent chlorine (The monitoring showed 0.477 mg/l while the one hour average is 0.02 mg/l, and the 4 day average is 0.01 mg/l – both were violated)
- March 2009: failed to report ground water violation of TDS (The monitoring well was 209 mg/l while the background well was 143 mg/l)
- March 2009: failed to report ground water violation of EC (the monitoring well was 352 umhos/cm while the background well was 107.2 umhos/cm)
- March 2009, the week of 3/24 through 3/31: failed to report receiving water pH at sites R-001 and R-002.
- March 2009, the week of 3/24 through 3/31: failed to report receiving water EC at sites R-001 and R-002.
- March 2009, the week of 3/24 through 3/31: failed to report receiving water Temperature at sites R-001 and R-002.
- March 2009, the week of 3/24 through 3/31: failed to report receiving water Chlorine at sites R-001 and R-002.
- March 2009, the week of 3/24 through 3/31: failed to report receiving water DO at sites R-001 and R-002.
- March 2009, the week of 3/24 through 3/31: failed to report receiving water turbidity at sites R-001 and R-002.
- March 2009, the week of 3/24 through 3/31: failed to report receiving water coliform at sites R-001 and R-002.
- March 2009, the week of 3/24 through 3/31: failed to report receiving water Ammonia at sites R-001 and R-002.
- March 20, 2009: failed to report violation of one hour average and 4 day average chlorine limits.
- Reported effluent flow amount for March 2009 without actually having an effluent flow meter.
- April 2009, the week of 4/23 through 4/30: failed to report DO at sites R-001 and R-002.
- April 2009, the week of 4/23 through 4/30: failed to report pH at sites R-001 and R-002.
- April 2009, the week of 4/23 through 4/30: failed to report Turbidity at sites R-001 and R-002.
- April 2009, the week of 4/23 through 4/30: failed to report temperature at sites R-001 and R-002.
- April 2009, the week of 4/23 through 4/30: failed to report EC at sites R-001 and R-002.
- April 2009, the week of 4/23 through 4/30: failed to report Chlorine at sites R-001 and R-002.
- April 2009, the week of 4/23 through 4/30: failed to report Fecal Coliform at sites R-001 and R-002.
- April 2009, the week of 4/23 through 4/30: failed to report Ammonia at sites R-001 and R-002.
- April 14, 2009, failed to report violation of groundwater coliform limit (the monitoring well sample for the month showed 8 MPM/100 ml, permit limit is 2.2 MPM/100 ml over any 7 day period)

- Failed to conduct pH monitoring for pond 1 for the week of April 12 to April 18, 2009.
- Failed to conduct pH monitoring for pond 2 for the week of April 12 to April 18, 2009 .
- Failed to conduct pH monitoring for pond 3 for the week of April 12 to April 18, 2009.
- Failed to conduct DO monitoring for pond 1 for the week of April 12 to April 18, 2009.
- Failed to conduct DO monitoring for pond 1 for the week of April 12 to April 18, 2009.
- Failed to conduct DO monitoring for pond 1 for the week of April 12 to April 18, 2009.
- Failed to report April 2009 groundwater violation of DO (the monitoring well level was 0.75 mg/l while the background well was 2.29)
- Failed to report April 2009 groundwater violation for EC (the monitoring well level was 356 umhos/cm while the background well was 112.3 umhos/cm)
- Failed to report April 2009 groundwater violation for TDS (the monitoring well level was 198 mg/l while the background well was 110mg/l)
- Failed to report April 2009 groundwater violation for TKN (the monitoring well level was 2.0mg/l while the background well was 1.79mg/l
- Failed to report April 2009 groundwater violation for Ammonia (the monitoring well was 1.79 mg/l while the background well was 0.09 mg/l)
- Reported effluent flow amount for April 2009 without actually having an effluent flow meter.
- Failed to report Pond 1 DO for the first week of May, 2009
- Failed to report Pond 1 DO for the second week of May, 2009
- Failed to report Pond 1 DO for the fourth week of May, 2009
- Failed to report Pond 1 pH for the first week of May, 2009
- Failed to report Pond 1 pH for the second week of May 2009
- Failed to report Pond 1 pH for the fourth week of May 2009
- Failed to report Pond 2 DO for the second week of May, 2009
- Failed to report Pond 2 DO for the fourth week of May, 2009
- Failed to report Pond 2 pH for the second week of May, 2009
- Failed to report Pond 2 pH for the fourth week of May, 2009
- Failed to report Pond 3 DO for the first week of May, 2009
- Failed to report Pond 3 DO for the second week of May, 2009
- Failed to report Pond 3 DO for the fourth week of May, 2009
- Failed to report Pond 3 pH for the first week of May, 2009
- Failed to report Pond 3 pH for the second week of May, 2009
- Failed to report Pond 3 pH for the fourth week of May, 2009
- Failed to report May 2009 background monitoring well data for DO
- Failed to report May 2009 background monitoring well data for pH
- Failed to report May 2009 background monitoring well data for EC
- Failed to report May 2009 background monitoring well data for TDS
- Failed to report May 2009 background monitoring well data for Nitrate
- Failed to report May 2009 background monitoring well data for TKN
- Failed to report May 2009 background monitoring well data for Ammonia
- Failed to report May 2009 background monitoring well data for Total Coliform
- Failed to report May 2009 violation for groundwater total coliform (the monitoring well sampled at 17 MPN/100 ml while the limit is 2.2 MPN/100 ml)
- Reported effluent flow amount for May 2009 without actually having an effluent flow meter.
- June 4, 2009, Failed to report effluent chlorine exceedance as a violation (the SMR reported chlorine level of .285mg/l while the one hour average limit is .02mg/l
- Failed to report UV transmission for 6/10/2009 even though the plant discharged 0.46 mg of effluent.
- Failed to report June 2009 background monitoring well data for DO

- Failed to report June 2009 background monitoring well data for pH
- Failed to report June 2009 background monitoring well data for EC
- Failed to report June 2009 background monitoring well data for TDS
- Failed to report June 2009 background monitoring well data for Nitrate
- Failed to report June 2009 background monitoring well data for TKN
- Failed to report June 2009 background monitoring well data for Ammonia
- Failed to report June 2009 background monitoring well data for Total Coliform
- Reported effluent flow amount for June 2009 without actually having an effluent flow meter.
- Failed to report receiving water fecal coliform violation June (no more than 10 % of the samples may exceed 400 mpn/100 ml; but the sample on June 3, which constituted 20 % of the samples for the month, was 500 mpn/100ml)
- Failed to report Pond 2 DO for the first week in June, 2009.
- Failed to report Pond 2 pH for the first week in June, 2009.
- Failed to report pond 2 DO for the first week in July 2009.
- Failed to report pond 2 pH for the first week in July 2009
- Failed to report pond 2 Do for the last week in July 2009
- Failed to report pond 2 pH for the last week in July 2009
- Failed to report pond 3 DO for the first week in July 2009
- Failed to report Pond 3 pH for the first week in July 2009
- Failed to report Pond 3 DO for the last week in July 2009
- Failed to report Pond 3 pH for the last week in July 2009
- Failed to report coliform lab report and coliform violation for 7/29/2009[4]
- Failed to report violation of receiving water fecal coliform for July 8, 2009 (sample measured 500 mpn/100 ml, which was in excess of 400 mpn/100 ml for more than 10% of samples for the month)
- Failed to report violation of receiving water fecal coliform for July 17, 2009 (sample measured 900 mpn/100 ml, which was in excess of 400 mpn/100 ml for more than 10% of samples for the month)
- Failed to report violation of receiving water July 2009 monthly mean for fecal coliform
- Failed to report background groundwater data in July 2009 for DO
- Failed to report background groundwater data in July 2009 for pH
- Failed to report background groundwater data in July 2009 for EC
- Failed to report violation of groundwater coliform in July 2009 (the permit limit is 2.2 MPN/100 ml, while the sample measured 4 MPN/100 ml.
- Reported effluent flow amount for July 2009 without actually having an effluent flow meter.
- Failed to report pond 2 DO for the 3rd week in August, 2009
- Failed to report pond 2 pH for the 3rd week in August, 2009
- Failed to report pond 3 DO for the 3rd week in August, 2009
- Failed to report pond 3 pH for the 3rd week in August 2009
- Failed to report violation of effluent chlorine on 8/14/2009 (the one hour limit is 0.02 mg/l and the monitoring results reported 0.046 mg/l)
- Failed to report receiving water violation for fecal coliform on 8/18/2009 (when the monitoring data showed the level was 900 mpn/100 ml)
- Failed to report receiving water violation for fecal coliform on 8/26/2009 (when the monitoring data showed the level was 1600 mpn/100ml
- Failed to report receiving water violation for monthly mean fecal coliform for August 2009.
- Failed to report groundwater violation for total coliform for August 2009(the limit is 2.2

4 See attached lab report for July 29, 2009

mpn/100 ml as a 7 day average while the monitoring data showed the level was 17 mpn/100 ml)
- Failed to report groundwater background well data for DO for August 2009
- Failed to report groundwater background well data for pH for August 2009
- Failed to report groundwater background well data for EC for August 2009
- Failed to report background well data for TDS for August 2009
- Reported effluent flow amount for August 2009 without actually having an effluent flow meter.
- The treatment plant violated the permit limit for copper in August 2009 (the monthly average limit was 2.7 ug/l while lab results showed they discharged 4.2 ug/l on August 4, 2009)
- Failed to report effluent pH violation on August 16, 2009 (the lower pH limit is 6.5 while monitoring data showed the effluent pH at 6.18)
- Failed to report violation of the requirements of permit Waste Discharge Requirements, Standard Provision A.2.u for August 2009 (the plant diverted discharge from Smuther's Ravine Creek into pond 3 for the last 3 day in August, which resulted in long stretches of the creek going dry)
- Failed to report September 24 violation of effluent coliform
- Failed to report September 25 violation of effluent coliform
- Failed to report September 26 violation of effluent turbidity
- Failed to report September 28 violation of effluent coliform
- Failed to report September 30 violation of effluent coliform
- Failed to report September 9 violation of receiving water fecal coliform
- Failed to report September 17 violation of receiving water fecal coliform
- Failed to report September 24 violation of receiving water fecal coliform
- Failed to report September 30 violation of receiving water fecal coliform
- Failed to report September 2009 monthly mean violation of receiving water fecal coliform
- Failed to report September 2009 groundwater background well data for DO
- Failed to report September 2009 groundwater background well data for pH
- Failed to report September 2009 groundwater background well data for EC
- Failed to report September 2009 groundwater background well data for TDS
- Reported effluent flow amount for September 2009 without actually having an effluent flow meter.
- Violated instantaneous maximum effluent limit for coliform on October 10, 2009 (the limit is 240 mpn/100ml while the monitoring showed 900 mpn/100 ml)
- Violated instantaneous maximum effluent limit for coliform on October 15, 2009 (the limit is 240 mpn/100 ml while the monitoring showed >1600 mpn/100 ml)
- Violated instantaneous maximum effluent limit for coliform on October 16, 2009 (the limit is 240 mpn/100 ml while the monitoring showed 1600 mpn/100 ml)
- Violated effluent coliform limit during October 2009 of no more than one reading in excess of 23 mpn/100 ml in any 30 day period (there were 3 such readings)
- Violated effluent chlorine limit on October 20, 2009 (the 1 hour limit is 0.02 mg/l while the monitoring showed 0.72 mg/l)
- Violated effluent chlorine limit on October 22, 2009 (the 1 hour limit is 0.02 mg/l while the monitoring showed .352 mg/l)
- Violated effluent chlorine limit on October 23, 2009 (the 1 hour limit is 0.02 mg/l while the monitoring showed .222 mg/l)
- October 14, 2009, failed to report monitoring for effluent BOD on the first day of operation after an intermittent discharge (Appendix E.A.2 of the plant permit)
- October 14, 2009, failed to report monitoring for effluent TSS on the first day of operation after an intermittent discharge (Appendix E.A.2 of the plant permit)
- October 14, 2009, failed to report monitoring for effluent pH on the first day of operation after

an intermittent discharge (Appendix E.A.2 of the plant permit)

- October 22, 2009, failed to report monitoring for effluent BOD on the first day of operation after an intermittent discharge (Appendix E.A.2 of the plant permit)
- October 22, 2009, failed to report monitoring for effluent TSS on the first day of operation after an intermittent discharge (Appendix E.A.2 of the plant permit)
- October 22, 2009, failed to report monitoring for effluent pH on the first day of operation after an intermittent discharge (Appendix E.A.2 of the plant permit)
- Violated the receiving water Coliform limit for October 2009, in which there shall not be more than 10% of samples shall exceed 400 mpn/100 ml during a 30 day period (the reading for October 6 was 500 mpn/100 ml, and for October 16 it was >1600 mpn/100 ml. Note that the limit refers to not less than 5 samples per month – Colfax only collected 4. So either they violated the 10% limit, or they failed to collect sufficient samples.)
- Violated the monthly receiving water coliform limit for October 2009 (the geometric mean was 202 mpn/100ml while the limit was 200)
- Failed to report groundwater background well data for DO for October 2009
- Failed to report groundwater background well data for pH for October 2009
- Failed to report groundwater background well data for EC for October 2009
- Failed to report groundwater background well data for TDS for October 2009
- Failed to report groundwater background well data for Nitrate for October 2009
- Failed to report groundwater background well data for TKN for October 2009
- Failed to report groundwater background well data for Ammonia for October 2009
- Violated permit limit for groundwater Coliform for October 2009 (the limit is 2.2 mpn/100ml while the reading was 1600 mpn/100 ml)
- Reported effluent flow amount for October 2009 without actually having an effluent flow meter.
- Violated the receiving water Coliform limit for November 2009, in which there shall not be more than 10% of samples shall exceed 400 mpn/100 ml during a 30 day period (the reading for November 12 was 500 mpn/100 ml, and for November 20 it was 500 mpn/100 ml. Note that the limit refers to not less than 5 samples per month – Colfax only collected 4. So either they violated the 10% limit, or they failed to collect sufficient samples.)
- Failed to report November 2009 groundwater background well data for DO
- Failed to report November 2009 groundwater background well data for pH
- Failed to report November 2009 groundwater background well data for EC
- Failed to report November 2009 groundwater background well data for TDS
- Reported effluent flow amount for November 2009 without actually having an effluent flow meter.
- Failed to report groundwater violation for Coliform for December 2009
- Failed to report groundwater violation for Ammonia for December 2009
- Failed to report groundwater violation for TKN for December 2009
- Failed to report groundwater violation for EC for December 2009
- Failed to report groundwater violation for DO for December 2009
- Reported effluent flow amount for December 2009 without actually having an effluent flow meter.
- Failed to report groundwater violation for DO for January, 2010
- Failed to report groundwater violation for EC for January 2010
- Failed to report groundwater violation for TDS for January 2010
- Reported effluent flow amount for January 2010 without actually having an effluent flow meter.
- Violated monthly average copper limit for January, 2010 (the limit is 2.7ug/l while the monitoring showed 4.0 ug/l)
- Failed to report groundwater violation for TDS for February 2010

- Reported effluent flow amount for February 2010 without actually having an effluent flow meter.
- Failure to report manganese lab sample collected on Feb 2, 2010 (the sample showed a level of 63 ug/l while the limit is 50 ug/l)[5]
- Failure to report observed foam on creek at R-002 as a permit violation on Feb 5, 2010
- Violated monthly average effluent copper limit for February 2010 (the limit is 2.7 ug/l while the monitoring showed 4.0 ug/l)
- Violated monthly average copper limit for March 2010 (the limit is 2.7 ug/l while the monitoring showed 3.95 ug/l
- Failed to report groundwater violation for Ammonia for March, 2010
- Failed to report groundwater violation for TKN for March, 2010
- Failed to report groundwater violation for EC for March 2010
- Failed to report groundwater violation for DO for March 2010
- Reported effluent flow amount for March 2010 without actually having an effluent flow meter.
- Failed to report groundwater violation for TDS for April, 2010
- Failed to report groundwater violation for EC for April 2010
- Failed to report groundwater violation for DO for April 2010
- Reported effluent flow amount for April 2010 without actually having an effluent flow meter.
- Failed to report groundwater violation for TDS for May, 2010
- Failed to report groundwater violation for EC for May, 2010
- Failed to report groundwater violation for DO for May, 2010
- Reported effluent flow amount for May 2010 without actually having an effluent flow meter.
- Failed to report monitoring results for Settleable solids for June 6, 2010 (as required by Attachment E.III.A.2 of the permit)
- Failed to report monitoring results for BOD for June 6, 2010 (as required by Attachment E.III.A.2 of the permit)
- Failed to report monitoring results for TSS for June 6, 2010 (as required by Attachment E.III.A.2 of the permit)
- Failed to report monitoring background well data for DO in June 2010
- Failed to report monitoring background well data for pH in June 2010
- Failed to report monitoring background well data for EC in June 2010
- Failed to report monitoring background well data for TDS in June 2010
- Failed to report monitoring background well data for Nitrate in June 2010
- Failed to report monitoring background well data for TKN in June 2010
- Failed to report monitoring background well data for Ammonia in June 2010
- Failed to report violation of groundwater coliform in June 2010 (the limit is 2.2 mpn/100mlwhile the monitoring showed 4 mpn/100ml)
- Reported effluent flow amount for June 2010 without actually having an effluent flow meter.
- Failed to report pond 2 DO for the first week in July 2010
- Failed to report pond 2 pH for the first week in July 2010
- Failed to report pond 2 odors for the first week in July 2010
- Failed to report pond 2 freeboard for the first week in July 2010
- Failed to report pond 3 DO for the first week in July 2010
- Failed to report pond 3 pH for the first week in July 2010
- Failed to report pond 3 odors for the first week in July 2010
- Failed to report pond 2 freeboard for the first week in July 2010
- Failed to report pond elevation for the first week in July 2010

5 Lab sheet for Feb 3, 2010 manganese sample

- Failed to report effluent BOD on July 28, 2010, the first day after resumption of flow
- Failed to report effluent TSS on July 28, 2010, the first day after resumption of flow
- Failed to report violation of WDR VI.A.2.u for any of the first 27 days of July 2010 (the plant diverted effluent flow from Smuther's Ravine creek to pond, thereby cutting off flow and drying long sections of the creek)
- Failed to report groundwater background well data for July 2010 for DO
- Failed to report groundwater background well data for July 2010 for pH
- Failed to report groundwater background well data for July 2010 for EC
- Failed to report groundwater background well data for July 2010 for TDS
- Violated monthly average limit for copper for July 2010 (the limit is 2.7 ug/l while monitoring reported 5.9 ug/l)
- Violated monthly average effluent limit for copper for August 2010(the limit is 2.7 ug/l while the monitoring reported 3.7 ug/l)
- Violated the receiving water Coliform limit for August 2010, in which there shall not be more than 10% of samples shall exceed 400 mpn/100 ml during a 30 day period (the reading for August 6 was 500 mpn/100ml. Note that the limit refers to not less than 5 samples per month – Colfax only collected 4. So either they violated the 10% limit, or they failed to collect sufficient samples.)
- Failed to report groundwater background well data for August 2010 for DO
- Failed to report groundwater background well data for August 2010 for pH
- Failed to report groundwater background well data for August 2010 for EC
- Failed to report groundwater background well data for August 2010 for TDS
- Violated the September 2010 monthly average effluent limit for copper (the limit is 2.7 ug/l while the monitoring showed 4.1 ug/l)
- Failed to report groundwater background well data for DO for September 2010
- Failed to report groundwater background well data for pH for September 2010
- Failed to report groundwater background well data for EC for September 2010
- Failed to report groundwater background well data for TDS for September 2010
- Failed to report groundwater background well data for Nitrate for September 2010
- Failed to report groundwater background well data for TKN for September 2010
- Failed to report groundwater background well data for Ammonia for September 2010
- Violated permit limit for groundwater Coliform for September 2010 (the limit is 2.2 mpn/100ml while the reading was 4.0 mpn/100 ml)
- Violated the October 2010 monthly average effluent limit for copper (the limit is 2.7 ug/l while the monitoring showed 4.5 ug/l)
- Failed to report groundwater background well data for October 2010 for DO
- Failed to report groundwater background well data for October 2010 for pH
- Failed to report groundwater background well data for October 2010 for EC
- Failed to report groundwater background well data for October 2010 for TDS
- Failed to report groundwater violation for DO in November 2010
- Failed to report groundwater violation for EC in November 2010
- Failed to report groundwater violation for TDS in November 2010
- Failed to report groundwater violation for coliform in December 2010
- Failed to report groundwater violation for ammonia in December 2010
- Failed to report groundwater violation for TKN in December 2010
- Failed to report groundwater violation for TDS in December 2010
- Failed to report groundwater violation for DO in December 2010
- Failed to report groundwater violation for EC in December 2010
- Failed to report on effluent Settleable solids for the second week in January 2011

- Failed to report on effluent BOD for the second week in January 2011
- Failed to report on effluent TSS for the second week in January 2011
- Failed to report on effluent Ammonia for the second week in January 2011
- Failed to report on effluent TDS for the second week in January 2011
- Failed to report groundwater background well data for DO for January 2011
- Failed to report groundwater background well data for EC for January 2011
- Failed to report groundwater background well data for TDS for January 2011
- Failed to report groundwater violation for EC for February 2011
- Failed to report groundwater violation for DO for February 2011
- Failed to report late March 2011 bypass from Pond 3 as a violation of the treatment plant permit
- Failed to report violation of groundwater ammonia for March, 2011
- Failed to report data for groundwater TKN for March 2011
- Failed to report violation of groundwater TDS for March 2011
- Failed to report violation of groundwater EC for March 2011
- Failed to report violation of groundwater DO for March 2011
- Violation of the monthly average effluent copper limit for April, 2011 (the limit is 2.7 ug/l while the monitoring results showed 3.4 ug/l)
- Failed to report early April 2011 bypass from pond 3 as a violation of the treatment plant permit
- Failed to report violation of groundwater coliform limit for April 2011 (the limit is 2.2 mpn/100ml while the monitoring results showed 4 mpn/100ml)

Thank you for the opportunity to comment on this draft ACLO.

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cc Mr. Bruce Kranz, City of Colfax
Mr. Michael Garabedian, Friends of the North Fork
Save the American River Association

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19005

LABORATORY REPORT
BACTERIOLOGICAL EXAMINATION OF WATER

☐ Call with results
☐ Fax results

CUSTOMER INFORMATION:

Name City & Colfax Phone _____ Fax _____

Street or P.O. Box _____

City, State, Zip _____

SAMPLE INFORMATION:

Owner of Source _____ Address of Sampling Point WWTP

Point of Collection WWTP Effluent Collected By Shane Burr Date 7/29/09 Time 1130

Sample Type: ☐ Well ☐ Ditch ☒ Treated ☐ Spring ☐ Sewage ☐ Surface ☐ Other V. V. Light

The above is true and correct: By _____ Requested Analysis (circle): MTF P/A

ANALYSIS WORKSHEET (Lab Use Only)

Sample Received By SB Date 7/29/09 Time 1130 Test Set-up By SB Date 7/29/09 Time 1435

Condition of Sample Upon Receipt cool/Intact HT

Chlorine Test Required: ☒ Yes ☐ No Chlorine Test Results 0 ppm Analyst SB

Analyst 24h SMM Date 07/30/09 28h/48h SMM Date 07/31/09 72h ____ Date ____ 96h ____ Date ____

Time 1240 Time 1045 Time ____ Time ____

Tube No.		P/A	P/A		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Portions (mL)		100	100		10	10	10	10	10	10	10	10	10	10	1	1	1	1	1	.1	.1	.1	.1	.1	.01	.01	.01	.01	.01
Presumptive LTB# 783				24Hr.								+																	
Test SGLT#354				48Hr.								+	+																
Confirmed	24Hr.			24Hr.								++																	
Test BGB #352	28Hr.			48Hr.																									
E. Coli or EC tube #784	24Hr.			24Hr.								⊕+																	
Fecal Coliform	28Hr.																												

TEST RESULTS

MMO-MUG TEST (P/A Per 100ml)

	Present	Absent
Total Coliform	☐	☐
E. coli	☐	☐

MTF TEST (MPN Per 100ml)

Total Coliform 4

Fecal Coliform 4

E. coli 2

☐ No Coliform bacteria were detected in sample.

☑ Coliform bacteria were detected in sample.
- ☐ Total Coliform only. Water source may not be protected from contamination. See enclosed information.
- ☑ Total and fecal Coliform were present. Potentially dangerous contamination. See enclosed information.

Results may be invalid due to: ☐ Sampling in a non-Laboratory container ☐ Presence of chlorine in sample ☐ Sample received past hold time

reported 07/31/09 Analyst Sharon M. Meyer

State Certified Laboratory #2113

(Testing Information on Reverse)

WATER LABORATORY

Report of Analysis

Customer Name: City of Colfax
Sample Location: Waste Water Treatment Plant
Collected By: Shane Burr
Collection Date: 02/03/2010
Point of Collection: WWTP Effluent

Sample Results

IN-3959

Analyte	Results	Units	Date Analyzed	Date Prepared	MDL	RL	Method
Metals – Total							
Aluminum	26.6	ug/l	02/09/10	02/05/10	0.5	5.0	EPA 200.8
Copper	4.0	ug/l	02/09/10	02/05/10	0.1	0.5	EPA 200.8
Iron	41	ug/l	02/09/10	02/05/10	3	10	EPA 200.8
Manganese	63.9	ug/l	02/09/10	02/05/10	0.1	0.5	EPA 200.8
Mercury	ND	ug/l	02/05/10	02/05/10	0.07	0.2	EPA 245.1

ND = Not Detected
MDL = Method Detection Limit
RL = Reporting Limit

Signature of Laboratory Director _____ Date: 3/4/10
Shane Burr

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October 13, 2011

Mr. Kenneth Landau
Mr. David Coupe
Ms Wendy Wyels
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Comments on the draft Cease and Desist order NO. R5-2011-xxxx for the City of Colfax Wastewater Treatment Plant. (Submitted by Allen Edwards)

Introduction:

I want to thank the Board for the opportunity to comment on draft Cease and Desist Order (CDO) R5-2011-xxxx for the City of Colfax Waste Water Treatment Plant (treatment plant). My family and I live and farm directly downstream from the outflow of the treatment plant. All of the sewage that discharges, leaks and spills from the plant runs through my farm, past my fields, and past my home. Over the entire history of this plant, with its thousands of violations of the Clean Water Act, hundreds of millions of gallons of polluted water have flowed through my farm.

The Colfax treatment plant has been out of compliance since it began operations in 1979. In response, the Board has issued a series of clean-up and abatement orders, permits, and CDOs intended to stop pond leakage. In addition, in 2001 and again in 2007 the Board ordered the City to build a plant that will treat sewage to title 22 tertiary standards, and has the capacity to accommodate 100 year rainfall seasons. The City has failed to comply with these orders.

The new draft CDO is intended to bring the City into compliance with the Clean Water Act, specifically in relation to its capacity and pond leakage problems. Unfortunately, the CDO is flawed. Immediately below I have provided a summary of problems with the CDO, and my recommendations on changes to that document. Further down, I present detailed comments on the draft CDO, with supporting material provided in the attachments.

Summary of problems with the CDO

1. **Overall the draft CDO fails to order actual compliance with the Colfax NPDES permit and the Federal Clean Water act.**
   (a) The draft does not order the City to comply with the requirements for treatment capacity.
   (b) The draft does not order the City to comply with the prohibition against leaking from the storage ponds.
2. **The draft CDO substantially underestimates the treatment capacity the Colfax plant**

needs to comply with its permit.

The plant needs at least 0.723 mgd additional capacity in order to meet permit requirements. The alternatives for increasing capacity proposed in the draft would only provide 0.016 up to an optimistic max of 0.34 mgd in additional capacity.

3. **The draft CDO fails to recognize serious problems with the measures it orders for dewatering pond 3 and increasing overall treatment capacity.**
4. **The pond 3 liner ordered in the draft CDO has serious design problems.**
5. **The draft CDO would allow unreasonable rain-related delays in fixing the leaking pond.**
6. **The draft CDO would allow the City to avoid necessary I&I improvement work.**
7. **The draft CDO would allow unrestricted sewage hookup additions – even while the plant fails to comply with treatment capacity requirements in the permit.**

Bringing the Colfax treatment plant into compliance will require the Board and its staff to recognize the severity of the situation at Colfax, and to order measures that fully correct problems under a tightly defined and accelerated schedule. My recommendations for a revised CDO are as follows:

Proposed changes to the draft CDO

A. The CDO should clearly identify the compliance problems and history at the Colfax treatment plant.

B. The CDO must require the City's explicit compliance with its permit requirements, by a specific date in the near future.

i. Undercapacity of the treatment plant

a) The CDO needs to recognize that the plant needs to be more than double its current capacity.

b) The CDO needs an explicit plan and timeline, that begins immediately, which orders the City to do the following:

- analyze the feasibility of all reasonable alternatives for pond 3 dewatering and for the treatment plant to come into compliance with its treatment capacity needs, as required in Permit Sections III.C.4.B.vi and v, including at least the following alternatives:
  - feasible and permittable capacity enhancements of the current tertiary treatment plant,
  - Installing a mobile supplemental tertiary treatment system for pond 3 seepage, pond 3 dewatering, and treating excess wet-season inflows,
  - Treating excess wet-season inflows to title 22 disinfected secondary, level, then piping the effluent to Bunch creek for dilution (in excess of 20 to 1)
  - Full upgrade of the current tertiary treatment plant.
- This feasibility analysis needs to take into account the longstanding operational problems at the current plant.
- With public input and Board approval, choose an alternative or complimentary set of alternatives that will increase the City's sewage

treatment capacity to at least 1.25 mgd.

- Finance, design and build the alternatives approved by the Board, with a date-certain completion time and automatic penalties for failure.

ii. Pond leakage

a) Given the many issues associated with the City's current plans for lining pond 3, this CDO should order the City to do the following:

- analyze alternatives for fixing the pond leaks and complying with Discharge Prohibition III.A., including at least the following alternatives:
  - lining pond 3 with a system that is viable for the life of the treatment plant, and under all anticipated conditions
  - increasing total treatment capacity so that all inflows, including both sewage and wet-season inflows, are treated as they enter the plant -- using pond 1 and/or pond 2 for short-term equalization – thus eliminating the need for pond 3 storage.
- With public input and Board approval, choose an alternative that is technically and financially feasible, that will stop all leaks and groundwater percolation.
- if the chosen alternative is a pond liner, the City needs to redesign the liner in such a way that addresses each of the major problems identified in the City's preliminary design report, including at least the following:
  - underliner inflow seepage
  - exposure of the liner fabric to UV radiation on the pond's sideslopes
  - animal damage
  - wind-lift and associated stresses
- finance, design and build that alternative, with a date-certain completion time and automatic penalties for failure.

iii. **The draft CDO should require a moratorium on additional sewage hookups.** The justification for this action is as follows:

a) The treatment plant currently has substantially less capacity than it needs. And yet the current draft order would allow the City to add essentially unlimited sewage hookups, each of which adds an estimated 200 gallons/day (73,000 gallons per year) to the City's treatment needs.

b) This draft CDO would lift the dry season flow limit from 0.275 mgd to 0.8 mgd -- in order to help dewater pond 3 and to help the City address its undercapacity problem. Unfortunately, lifting this limit would also allow the City to add hookups that could quadruple its population. If the dry season flow limit is lifted, a moratorium on hookups until the City is in compliance is all the more necessary.

c) During the 2010 hearing on Colfax's current CDO, the Board directed staff to bring the issue of a hookup moratorium to the Board during a Spring or early Summer 2010 meeting. That did not happen. If, despite evidence to the contrary, the Board

now believes that the City is actually close to full compliance with its permit, then the CDO should require full compliance in the very near future – for example, within 6 months. Otherwise, this CDO needs to include a moratorium that will stay in place until the City comes into complete compliance.

iv. The CDO should prohibit the City from spending money on either capacity increases or dewatering and lining the pond until it has completed the above evaluations of alternatives for increasing treatment capacity and fixing pond leakage.

Detailed comments on the draft CDO

Items I through IX are specific comments on the draft orders. These comments are organized by issue, rather than according to the order that material is presented in the draft. However, these comments clearly refer to the relevant portions of the draft CDO.

I. **The draft CDO does not provide Board members with a clear description of the ongoing compliance problems at the Colfax treatment plant.** Those major compliance problems include the following:
   A. **Failure to comply with Permit Provisions C.4.b.iv and v** – that require the plant to have the combined treatment and storage capacity to accommodate 100 year annual rainfall events. A provision addressing this issue was was ordered in the following: the 1990 permit, the 2001 permit and CDO, and the 2007 permit and CDO. And yet the 2006 spill and the 2011 bypass, along with the City's June 2011 flow analysis clearly demonstrate that the City has not complied with this requirement.
   B. **Failure to comply with Prohibition III.A of the Permit's WDRs –** that there shall be no leaks, bypass, spillage from the storage reservoir. The treatment plant has been leaking from the reservoir since it began operations in the late 1970s. The Board ordered the City to cease the leaks in the following: the 1979 clean-up and abatement order, the 2001 permit and CDO, the 2007 and CDO, the 2010 CDO. And still the leaks continue.

II. **The draft CDO does not actually require that Colfax come into compliance with Permit Sections III.C.4.B.vi and v regarding treatment capacity.**
   i. Order # 18 of this draft CDO requires the City to submit by May 2014 an analysis of whether the City is meeting its treatment plant capacity requirements. The City is required to propose additional improvements if warranted, but the draft CDO does not contain a requirement or deadline for implementation of those improvements. Therefore the draft CDO does not require the City to comply with the permit.
   ii. Furthermore, this draft would have the City and the downstream users wait almost 3 years for an analysis of compliance alternatives. That analysis should begin immediately, with results required within 6 months, and implementation as soon as possible thereafter, with set completion dates.

III. **The draft CDO uses a flawed pond water balance model, and thus substantially underestimates capacity needs for the Colfax treatment plant.** Board staff and the City recognize that the current treatment plant, with 0.5 mgd capacity, is inadequate. In finding # 37, the draft order estimates additional needed treatment capacity using a modification of a model

presented in the City's final pond water flow analysis.[1] In this "predictive model" the draft CDO assumes that all seepage inflows to pond 3 cease (are presumably are cut off by the pond liner). Using this predictive model, the CDO concludes that the City can meet its permit requirements with a plant capacity of 0.75 mgd, rather than the current 0.5 mgd, or the 1.0 mgd indicated by the City's calibrated model[2]. Unfortunately, the predictive model is substantially flawed, and as such, underestimates plant capacity needs. The problems with the CDO's predictive model are as follows:

A. **The model's assumptions ignore evidence that water is leaking out of pond 3 as well as flowing in**. The model explicitly assumes that, presumably because there is expected to be a pond liner, no seepage will enter pond 3. It is silent on water leaking out. But there is significant evidence, as shown below, that water is leaking out of the pond as well as into it, and that at least some of that out-flowing water is not currently captured by the seepage collection and pump-back system. That out-flowing water to pond 3 increases the need for treatment capacity.

- The Waste Discharge Requirements Order No. 5-01-180, Attachment B acknowledges a seepage into the side-stream to the south of pond 3. Since 2009, the City and the Edwards family have been collecting duplicate samples at this location 3 times per year under a requirement of a 2008 federal court settlement agreement. Like the seepage from the base of the Dam, the volume of this seepage dramatically increases as the pond level increases, indicating that it is connected to the pond. This side-stream leakage is not currently collected and pumped back to the ponds.
- The Waste Discharge Requirements Order No. 5-01-180, Attachment C demonstrates a deep percolation from bottom of the pond 3 of 0.12 mgd.
- "Wastewater Treatment Plant Storage Pond Water Balance, August 1, 2011", page 19 indicates that the ponds, on average, lose 0.25 mg per month. Thus the balance of seepage in and out of the ponds leads to a net loss of 3 million gallons per year. Since the City already acknowledges that seepage inflows are significant (see attachment 12), this leads to the conclusion that seepage outflows are even more significant. If the pond liner cuts off the inflows, it would also cut off the outflows, and based on the numbers in the City's analysis, leave 3 mg/year additional water in the pond which must be treated.
- The period of time in 2008 when the City had cut off all discharge (in order to construct the new treatment plant) provided a unique opportunity to examine net, warm season flows in pond 3. During this period, the City SMRs recorded flows of influent and water levels in all three ponds. The pond seepage from the base of pond 3 was being pumped back into the pond. There was no recorded discharge from pond 3. The calculations in attachment 1 show that during June and July, 2008, the unaccounted and presumably leaked/percolated water was over 1.5 million gallons each month.[3] This confirms that there is substantial

1 Wastewater Treatment Plant Storage Pond Water Balance, Revised Final, August 1, 2011,
2 Wastewater Treatment Plant Storage Pond Water Balance, Revised Final, August 1, 2011, Table A4.
3 Attachment 1, calculations of June and July 2008 water balances.

leakage out of pond 3, which is ignored in staff's "predictive model" flow analysis in the draft CDO.

- The liner may not cut off seepage inflows to pond 3. The Preliminary Design Report for Pond No 3, Liner Retrofit, City of Colfax Wastewater Treatment Plant, 2008, raises the issue of groundwater seepage under the liner. It recommends an underliner drain system that would either drain to surface water, or to the pond through one-way valves.[4] If the one-way valves (which are currently used in the pond 2 liner) are the most feasible way of confronting the seepage-in problem, the ground water seepage would enter the pond. The seepage out of the pond would, however, be cut off. Overall the one way valves, which may be necessary for the viability of the pond liner, could substantially add to the treatment capacity problems. Thus, the seepage into and out of the pond must be considered in flow analysis.

B. **The City's Revised Water Balance analysis demonstrates that Colfax needs at least double its current treatment plant capacity**. In response to the illegal bypass in March/April of 2011[5] , Regional Board staff directed the City to reanalyze the plant's sewage flows[6]. That study (the "calibrated model" which is discussed in finding #36 of the draft order) concluded that, in order to meet the requirements of the permit, including the pond freeboard limit, the pond pond volume would need to be 135 million gallons rather than the current 64 million.[7] Conversely, if the volume of the pond can not be increased (which appears to be the case), the analysis indicates that plant capacity must be raised from the current 0.5 million gallons per day (mgd) to 1.0 mgd.[8]

a) Even this model seems to underestimate the treatment plant's capacity needs in the following ways:

- The pond may be smaller than currently estimated. The City has indicated that pond 3 has a smaller volume than their flow analysis assumed.[9] In addition, installing the pond liner will, according to the preliminary design, require a substantial amount of ballast and possibly underliner material be added to the pond – further displacing volume. Any decrease in pond volume must be compensated by an increase in treatment capacity.
- The City has been unable to operate the treatment plant at the high rates assumed in the flow analysis. The City's engineers have assumed in all their

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4 Attachment 2, Preliminary Design Report for Pond No 3, Liner Retrofit, City of Colfax Wastewater Treatment Plant, 2008

5 Under Standard Provision G.3 of the City's NPDES permit: a bypass is prohibited unless, "Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage". That was not the situation at Colfax in March/April, 2011. Further, in a March 29, 2011 meeting with Board staff, Wendy Wyels acknowledged that the bypass was a permit violation.

6 Wastewater Treatment Plant Storage Pond Water Balance, Revised Final, August 1, 2011.

7 Wastewater Treatment Plant Storage Pond Water Balance, Revised Final, August 1, 2011, page 23 and Table A4.

8 Wastewater Treatment Plant Storage Pond Water Balance, Revised Final, August 1, 2011. including page 23 of the narrative, and Tables A3 and A4.

9 Attachment 3, July 15, 2011 memo from Bruce Kranz to Spencer Joplin regarding correction to pond 3 volume. This memo showed a flaw in the previous assumptions regarding only one of several of the pond's side slopes. This flaw appeared to decrease the estimated volume by approximately 1 million gallons. If there are flaws in other pond dimensions, the pond volume could change accordingly .

analysis scenarios that the treatment plant will operate at an average of 93.5% capacity. But the City's SMR records show that, after allowing a generous 1 year shakedown period, and allowing for the dry-season limit on discharges, the plant has actually operated at only 74.2 % capacity.[10]

- To date, the City's efforts to repair the collection system have not shown meaningful reduction in I&I inflows. The draft CDO states (section 14 in the findings) that the City's repairs to its sewage collection system have " shown an overall decrease in the inflow per inch of precipitation since it began rehabilitation work." It goes on to say that, as a result, it expects this ongoing work to reduce peak treatment capacity requirements at the plant. Unfortunately, based on current information, the conclusion about the reduction of I&I inflow per inch of participation appears to be in error. The City started the analysis using one rain gage, and then shifted to another gage that, according to their engineers, shows 35% more rainfall than reported using the first gage.[11] Since the amount of I&I is measured by inflows to the plant (independent of rainfall), ***simply shifting to the new gage has significantly lowered the ratio of I&I flows per inch of measured rainfall, giving the appearance of improvement without the reality***. The City's own engineering analysis seems to substantiate that there has been, to date, no clear reduction in I&I inflows[12]. Future collection system repairs may reduce I&I, but there is no way to predict the amount, or when it will be forthcoming.
- If the City installs one-way valves to handle under-liner seepage, the plant will then need to treat all the pond seepage inflows
- **The City needs a plant with a capacity of at least 1.23 mgd** Given the factors discussed above, unless the City can operate its plant close to its rated capacity (and still comply with the permit limits) it will need considerably more than the 1.0 mgd capacity predicted by the City's analysis. If they continue operating at 76% rather than 93.5% they will need a plant that is 93.5/76 X 1 million gallon = 1.23 mgd capacity. If the City is correct and the pond is smaller than previously thought, and if the City installs one-way valves in the pond liner the capacity need increases further.

  Note: It is unfortunate that the City's flow analysis only includes flow and pond data from 2007 through to the present. In doing so, it avoids using data from high winter flow years in 2005/6, and in the early 2000s and 1990s & 1980s. Analysis of these years might provide more insights on how the Colfax sewage system responds to high precipitation years.[13]

IV. **There are serious problems with the pond dewatering alternatives ordered in the Draft CDO.** Problems with the alternatives (presented in finding # 42 of the draft order) are discussed below:

10 Effluent discharge data from the Colfax Self Monitoring reports, January 2010 through July 2011.

11 Wastewater Treatment Plant Storage Pond Water Balance, Revised Final, August 1, 2011

12 Wastewater Treatment Plant Storage Pond Water Balance, Revised Final, August 1, 2011, Figure 2.

13 See sewage flow and pond information from the City's self-monitoring reports 1979 through 2006 (available at Central Valley Regional Water Quality Control Board).

A. Evaluation of the CDO's "Alternative 1": Optimize performance of the wastewater treatment plant – At present, this is not a reliable alternative for dewatering.

i. Alternative 1 would optimize performance of the existing wastewater treatment plant. The City has proposed that it be allowed to increase the throughput of its existing tertiary treatment plant to 0.8 mgd (the current plant has a rated capacity of 0.5 mgd). This could theoretically give the plant 0.3 mgd more treatment capacity than it now has. While the financial and technical feasibility of this alternative should be explored, the alternative has the following problems:

a) The City has not been able to consistently run the current plant at or near its 0.5 mgd rated capacity without significant problems. Operational problems with the current plant, principally cool season ammonia and warm season algae/turbidity have restricted average plant throughput to 74% of rated capacity. The City should not increase the throughput at the plant until they have fixed current plant problems, and verified the effectiveness of the fixes.

b) Downstream smell and foam problems – The creek downstream from the plant has had frequent smell and foam problems since the plant began operations in early 2009. For example, from the January of this year until the middle of this July (at which point the City substantially reduced discharge flows), there were at least 69 days where there was sewage smell and/or foam along Smuther's Ravine creek – often more than a mile downstream from the plant. The smells and foam were essentially absent after the discharge flows were reduced, but when the City substantially increased the discharge flows in early September, the smells and foam returned.[14] I was told by the City's previous engineers that this plant suffers from a design weakness that is leading to ammonia and nitrate problems – most severely during the cool season.[15] I am aware that the City has worked to correct this problem, but the continuing smell and foam violations this year are evidence that the problems persist despite their efforts.[16]

c) Warm season turbidity problems at the plant – Since this treatment plant began operation in 2009, the plant has had turbidity problems that have caused frequent diversions of effluent to the storage ponds. I was told by the City's previous engineers that the treatment system suffers from a design weakness that is leading to warm season turbidity problems (high algae in the ponds).[17] I am aware that the City is using agricultural filters from the old interim treatment plant in order to prefilter the pond water before treatment. But the warm season turbidity problems persist, as evidenced by the fact that the plant operator reported the discharge was cut-off due to high turbidity on September 14, October 1, and October 6, 2011. The low flows from mid July to the end of August, when the plant should have been operating at a high rate to dewater the pond, may also point to ongoing problems.

d) Warm season algae blooms immediately downstream from the plant outfall -- On July 11 of this year, I noticed a significant algae bloom approximately ½ mile downstream from the treatment plant. In subsequent days, I observed significant

14 Attachment 4, pictures of foam in creek, September, 2011.

15 June 1, 2009 Treatment Plant tour and conversation with Richard Stowell and David Price of EcoLogic, and Joan Phillipe, City manager.

16 Attachment 4 and 5, pictures of foam on the creek in Spring and Fall of 2011.

17 June 1, 2009 Treatment Plant tour and conversation with Richard Stowell and David Price of EcoLogic, and Joan Phillipe, City manager.

algae in the creek from the treatment plant's receiving water collection point (R-2) to points downstream more than a mile below the plant. This algae persisted until late September when, because the City cut off discharges, most of the creek went completely dry.[18]

e) The City's proposed "stress test" may not produce representative results -- The City is proposing to conduct a 16 day "Stress Test", running the existing treatment plant at 0.8 mgd (rather than the rated 0.5 mgd) "to determine whether the treatment process can operate as assumed". The City is proposing to run this test in the Fall of 2011. The City's proposal for this test raises several problems:
   - Turbidity-induced treatment problems immediately before the test As described above, the City diverted the discharge flows from the creek to the ponds starting on September 14, October 1, and again on October 6 due to turbidity problems. The discharge flows have remained off for at least 22 days since the September 14 cut-off. It would be inappropriate for the City to argue that the stress test is representative if, immediately prior to the test, they had repeatedly diverted discharge to avoid turbidity-induced upsets.
   - A Stress Test in the Fall will not be representative. The City is proposing to conduct their stress test during the Fall to determine if flow rates can be increased year-round without violating permit limits. Given the seasonal nature of problems at the treatment plant (cool season ammonia/nitrate problems and the warm season algae-induced turbidity and downstream algae problems), the stress test during the fall, will not be representative of the plant's ability to comply at other times of the year. In all fairness, the stress test should be conducted in mid winter and again in mid summer before the Board allows the City to increase the throughput at its existing plant.

f) Increasing the amount of discharge for the stress test and the dewatering facilities will require CEQA analysis The draft CDO contains provisions that significantly modify the City's operation of the WWTP. As these modifications constitute substantial changes in the project and were not analyzed in the previous EIR, the Regional Board must comply with the requirements of the California Environmental Quality Act governing the preparation of a subsequent or supplemental environmental impact report. (See Pub. Resources Code, § 21166(a); CEQA Guidelines, §§ 15162 and 15163.) The draft CDO would allow the City to increase discharge flows to as much as 0.8 mgd and under-dam seepage of an additional 0.2 mgd, for a total of 1.0 mgd. But the CEQA analysis for the 2009 treatment plant upgrade only analyzed long-term flows up to 0.5 mgd (and short term flows of 0.65 mgd for the interim plant until the new upgrade was functional).[19] CEQA requires a supplemental EIR that analyzes the significant increase in flows. Furthermore, the supplemental EIR must also look at the impacts of the City's frequent cutoff of discharge flows to Smuther's ravine creek. The 2004 EIR analyzed impacts assuming continuous flows from the plant into the creek (at that time, the City had no means to cut off leakage flows from Pond 3). However, with the seepage

18 See pictures of algae in the creek in Attachment 6

19 City of Colfax Wastewater Treatment Plant Improvement Project, Draft Environmental Impact Report, July 16, 2004, pages 3-19 and 3-29

pumpback system and new plant, the City is able to divert discharge from the creek to the ponds, which over the past 3 years it has frequently done. Often these diversions have, according to notifications from the plant operators, occurred due to algae related turbidity problems at the plant. When they occurred during the dry season long portions of Smuther's Ravine downstream from the plant have gone completely dry, killing all water-dependent biota, and many of the riparian trees and as well as other stream-side plants.[20] Since the proposed higher levels of throughput are likely to increase the stress on plant operation, they may lead to even more frequent effluent diversions. The Regional Board and/or the City must comply with CEQA and analyze and review the potentially significant impacts associated with the significant increase in flows.

B. Evaluation of Alternative 3: Increase Effective Evaporation Rate – this alternative will not substantially reduce pond levels, and may cause odor problems.

i. This alternative orders the City to install and operate a sprinkler system or industrial evaporator over Pond 3 to increase evaporation rate and reduce the volume of water in pond 3. While this alternative may help reduce the need for additional treatment capacity, it has potential problems.

a) <u>This alternative may cause significant odor problems</u> Into the early 2000s, the City pumped water from pond 3 to a sprinkler system installed on the surrounding hills. That pumping process evaporated pond water, much like what is proposed in this alternative, and in doing this also caused significant odor problems in the area. Ultimately the Placer County Air Pollution Control District required substantial curtailment of the sprinkling in order to control the odors[21]. As a result of this history, the CDO should require a CEQA analysis of odor issues before the evaporation alternative is implemented. The CDO should also require the City to curtail this alternative if there are odor complaints from the public.

C. Evaluation of Alternative 5: Install a separate treatment system for dam seepage water – This alternative, as described, would violate the current plant permit and the Federal Court settlement agreement, and back-slides from previous permits.

The CDO is confusing in regard to this alternative. In finding # 42 it states that this alternative would use the "formerly retired" chlorine contact chamber and pressure sand filters to treat the dam seepage water. Those structures are in place on the dam that forms Pond 2 (approximately 2 thousand feet upstream from the base of pond 3). But Order # 13, speaks about installation of the temporary treatment system, including the "formerly retired" chlorine contact chamber and sand meters, at the base of the dam on Pond 3. The sand filters weigh thousands of pounds each, and the contact chamber (reinforced concrete) weighs hundreds of tons. Neither is portable. So if the treatment is to occur at the base of the dam, this must mean it is an entirely new system which should be described in the CDO. For the purposes of these comments, I have assumed that the draft CDO intended that the pond seepage would be pumped to the contact chamber at its existing location.

i. <u>There are insurmountable problems with this alternative</u>. This option is a violation of the plant's existing NPDES permit and a huge step backwards in the effort to bring the treatment plant into compliance with the water laws.

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20 Attachment 7, Pictures of dry creek bed after effluent cut-off in September of 2011

21 On June 22, 2004, John Mahoney of the Placer Air Pollution Control District came to the treatment plant and ultimately directed the City to curtail the use of their sprinkler system during certain times of the day.

a) This alternative is not tertiary treatment, and so is inconsistent with the plant's permit. The treatment plant's 2007 NPDES permit requires the wastewater be "oxidized, coagulated, filtered, and adequately disinfected".[22] The water in pond 3 has not been treated to this standard, and the proposed alternative would not treat to this standard. Department of Health Services found that the interim treatment plan failed to treat to tertiary standards, and, because of the order of operations, protected pathogens from disinfection as they passed through the treatment train.[23] Thus Alternative 1 is inconsistent with Discharge Prohibition III.A.

b) This alternative would violate the City's categorical CEQA exclusion for the pond liner project. The City's categorical exclusion for the pond liner states that the water from dewatering pond 3 will be treated using filtration, coagulation/flocculation, chlorination, dechlorination, and pH control[24]. The draft CDO would only order the City to disinfect and roughly filter this water.

c) This alternative is inconsistent with the Board's previous compliance efforts. The Board issued a Permit and CDO in 2001 requiring the City to upgrade its treatment plant. That order was justified, in part, because of the inadequacy of the City's system of disinfecting the seepage from the base of Pond 3.[25] In addition, in 2004, when board staff authorized the operation of the temporary dewatering treatment system, it was clearly the City's and Board's intent that the dewatering system would need to
treat pond water to tertiary standards.[26] But the current draft CDO would require the City to go back to old concept of handling seepage – simply disinfecting and discharging the seepage from the base of pond 3.

d) There is no evidence that dam seepage receives treatment from the soil Finding # 42 of the draft CDO states "Wastewater seeping from the base of the pond will receive some treatment from the soil prior to treatment in the temporary system." Staff does not provide evidence to support this statement. Furthermore, the City's self-monitoring reports from 2002 through mid 2005 show that dam seepage frequently violated ammonia limits, and sometimes violated BOD, TSS and Coliform limits, even after disinfection.[27]

e) The chlorine disinfection system proposed for Alternative 5 had numerous chlorine violations in the past. The Chlorine disinfection system proposed for this alternative 5, using the "formerly retired" chlorine disinfection system, had dozens if not hundreds of chlorine effluent violations during its operation from 2003 through 2008.[28] This is at least part of the reason why the City constructed a UV disinfection system in its 2009 plant upgrade. The operation of this system, according to staff

22 2007 NPDES permit for the City of Colfax WWTP, Limitations and Discharge requirements, Standard Provisions, section 7.a.i.

23 Attachment 8, December 2006 letter from DHS to Regional Board staff

24 See Attachment 9 for text of the Categorical exclusion

25 Central Valley Regional Water Quality Control Board, Orders NO. 5-01-180, and NO. 5-01-181

26 Attachment 10, Letters from Bob Perrault, Colfax City Manager, and Ken Landau, Assistant Executive Director of the Regional Water Quality Control Board dated March 15, 2004 and May 10, 2004 regarding the Waste Discharge Requirements and the Cease and Desist.

27 City of Colfax Wastewater Treatment Plant self-monitoring reports from 1979 through 2006.

28 Self monitoring reports for the City of Colfax WWTP from Jan 2003 through December 2008, located at Central Valley Regional Water Quality Control Board.

from Department of Fish and Game, led to the essential destruction of the macro-invertebrates in the upper reaches of Smuther's Ravine creek.[29] It seems ill-advised, in the extreme, to go back to this troubled system.

f) Based on past history at the treatment plant, once in place, Alternative 5 may continue operation indefinitely, despite the fact it is not tertiary treatment. The City has a long history of delaying compliance projects. For example, in 2004, the City requested, and Board staff granted permission to operate a temporary treatment system solely for the purpose of dewatering pond 3. That system was only intended to operate until pond 3 was dewatered and lined – which the Board had ordered completed by June of 2006. The temporary dewatering system went into operation in the summer of 2005. But by June of 2006, the City had yet to even design the plant upgrade and pond liner. By late 2006, the City and Board staff were referring to the dewatering plant as the "interim tertiary treatment facility". Board staff, without formal approval of the Board, allowed the City to use this facility as its main treatment plant until the upgrade came on line in January 2009. This was despite the finding by Department of Health Services in December of 2006 that this temporary treatment plant was not tertiary by title 22 definition (a violation of the 2001 permit), and inadequately disinfected pathogens.[30] The concern here is that the same sort of "evolution" would happen with alternative 5, where it would start as a temporary plant that minimally treats sewage, but persists to become a long-term part of the City's treatment system. The draft CDO requires that the City discontinue use of this minimal treatment system when the pond is lined. But the City has delayed fixing pond 3 leaks for 32 years, and has delayed its stated intention to line the pond for over 5 years. I am very concerned that this supposedly temporary, but decidedly less-than-tertiary dewatering system could stay in operation for years if the City continues to find more reasons to delay pond lining.

g) The downstream pollution from the City's 2011 bypass demonstrates that this alternative is unable to protect the downstream users and environment from the pollution in pond 3. In March/April of this year the City bypassed 25 million gallons of sewage from pond 3 into Smuther's ravine. They ran this bypass through the same disinfection/filtration system ordered in this Alternative. Although the draft CDO maintains (findings 27, 28, 29) that this water was adequately treated, the picture downstream was quite different. During the 20 days of bypass, Smuther's ravine creek was covered with foam.[31] and the creek constantly gave off the rank smell of sewage for at least a mile downstream. The simple fact is, whether sewage comes from the surface of the pond 3 (as was the case during the bypass) or seepage through the bottom, it needs more than the minimal treatment proposed in alternative 5 before it is fit for downstream uses.

h) This Alternative is a violation of the 2008 Federal court settlement agreement In paragraph 41 of this agreement, "Colfax agrees that it will no longer use the City's interim treatment facility once the new WTTP comes on line. Colfax shall either

29 Conversation with John Hiscox, fisheries biologist with the Department of Fish and Game, in the March of 2008, during a site tour with staff from Department of Fish and Game, and compliance and senior staff from the Regional Water Board.

30 Attachment 8, December 11, 2006 letter from Carl Lischeske, Department of Health Services to Pamela Creedon, Executive Director Regional Water Quality Control Board

31 See Attachment 11, for pictures of foam on Smuther's Ravine creek during the 2011 bypass.

decommission the existing interim treatment facility and leave it in place, or Colfax shall remove the interim treatment facility."[32] This settlement provision was negotiated because of the long history of compliance problems with the interim facility. Ordering alternative 5 would put Colfax in the untenable position of either violating the CDO, or the Federal Court settlement agreement.

*i) **Rather than alternative 5, the Board should consider ordering the City to bring in a temporary, mobile tertiary treatment system for dewatering pond 3.***

V. The draft CDO's approach to fixing the City's insufficient treatment capacity is inadequate. **Right now, not in the indefinite future, the plant needs a total of at least 1.23 mgd capacity -- 0.723 mgd additional capacity beyond current capacity. The dewatering alternatives in the draft would provide from 0.016 mgd to an optimistic, eventual maximum of 0.338 mgd.**

The draft CDO requires that the City institute a number of measures to increase treatment capacity for the purpose of dewatering pond 3 in preparation for lining. Although the draft does not actually order the City to fix the overall undercapacity problem, these dewatering measures, if successful, could partially serve that purpose. Unfortunately the dewatering measures do not appear to be nearly sufficient to meet the additional capacity need as described above. As discussed in section III above, the treatment plant needs a capacity of at least 1.23 mgd to meet its permit obligations– at least 0.723 mgd more than the current plant. In contrast, the draft CDO's dewatering alternatives appear to only provide the following[33]:

A. Alternative 1 – between Zero and a possible maximum of 0.300 mgd, depending on whether the City can correct problems with existing plant operation. However, this alternative should not be allowed until the City can conduct a fair stress test in both winter and summer periods.
B. Alternative 2 – no ability to predict impact
C. Alternative 3 – Somewhere between 6 and 14 million gallons per year according to the City's engineers (between 0.016 and 0.038 mgd)
D. Alternative 5 – This alternative can not be allowed as a part of the long term solution, and because of legal and operational issues, and should not be ordered even as a temporary measure.

VI. **The draft CDO requires measures that trigger CEQA analysis.** The Draft CDO would order the City to complete specifically defined projects for which no CEQA analysis has been done. (See Pub. Resources Code, § 21166(a); CEQA Guidelines, §§ 15162, 15163.) Alternatives 1, 3, and 5 for increasing treatment capacity to dewater pond 3 will require compliance with CEQA. That will, under CEQA, require an objective analysis of alternatives to those projects. The Board must comply with CEQA prior to ordering specific projects. The CEQA analysis may find that the currently envisioned projects have insurmountable impacts, or it may find that other alternatives are more appropriate. Meeting CEQA's requirements requires that the Board wait until that analysis and public review is completed before ordering the City to implement specific projects.

VII. **The draft CDO does not order the City to stop the sewage leakage from pond 3.**

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32 United States District Court, Eastern District of California, Civil Case No.: 2:07-CV-02153-GEB-EFB, "Stipulation to Dismiss Plaintiffs' Claims with Prejudice; Settlement Agreement, Dated November 17, 2008, located at City of Colfax, City Offices.

33 Wastewater Treatment Plant Feasibility Analysis for Alternative Measures to Dewater Pond 3 and Meet Freeboard Requirements, June 2011.

This draft would order the City to dewater pond 3 and install a geofabric pond liner. But this CDO does not order the City to come in compliance with Discharge Prohibition IIIA. The previous 3 CDOs for the Colfax plant required full compliance with Prohibition IIIA, but did not specify a means. Conversely, this CDO requires lining the pond, but does not order compliance.

VIII. The proposed pond liner project has serious problems:

A. **The Dewatering approaches proposed in the draft CDO violate the permit, are inadequate, or of questionable feasibility.** These problems are discussed in detail in section III above.

B. **The pond liner design, as described in the City's preliminary engineering report (Golder report)[34], has serious problems.** In July of this year, the City, for the first time, provide me with the preliminary design of their proposed pond 3 liner. While I had previously strongly urged the lining of pond 3, the information in this report raises serious questions about the viability of the City's planned liner.

i. Seepage beneath the liner

a) The 2008 Golder report identified under-the-liner seepage problems. The report refers to Geotechnical analysis to substantiate the existence of seepage problems, but does not present data that quantifies the seepage. The report recommends addressing this problem with a subliner drain, which would either drain to surface water or into the pond through one-way valves.

b) City identified more extensive seepage problems in the Winter of 2011. In late March of 2011, the City notified the Federal Court and my lawyers that a spill from pond 3 was imminent unless the City pumped water out of the pond in a bypass operation. In that notification, the City provided data indicating that just during a single March storm (with 4.2 inches of precipitation), over 3 million gallons of water may have seeped into pond 3 through the bottom and sides. The letter clearly states that the City was previously unaware of the severity of this problem.[35] After the bypass, the City relined the drain channel that runs along the north and east side of pond 3 in an attempt to cut off seepage into the pond in future wet seasons. The City's engineers, however, have been unable to determine whether this channel relining project will actually reduce future seepage inflows to pond 3.[36] City data appear to show wintertime seepage flows into pond 3 are far more than the City, and presumably Golder Associates, were previously aware. This raises the serious question of whether the liner, as envisioned by Golder Associates, is feasible. And if it is feasible, how its installation costs will change in order to mitigate the seepage problems. (Keep in mind that the application for funding for the liner from the State Water Resources Control Board was based on the Golder preliminary design report, which was written in January 2008 – over three years before the City discovered that seepage inflows are significantly higher than previously thought.)

ii. Exposure of the liner on the pond's steep sideslopes to the south, west, north, and northeast The Golder report identifies potential problems with the exposed geofabric

34 Attachment 2, Preliminary Design Report Pond No 3 Liner retrofit City of Colfax Wastewater Treatment Plant, January, 2008.

35 Attachment 12, a March 17, 2011 letter from Nicole Granquist representing City of Colfax to The Honorable Magistrate Edmond F. Brennan, U.S. District court, Eastern District of California. See Attachment for full text of the letter.

36 Wastewater Treatment Plant Storage Pond Water Balance, Revised Final, August 1, 2011, page 21.

liner. The report concludes that, because of steep sideslopes, the liner will be exposed on the South, West, North, and Northeast sideslopes. The report and an independent consulting engineer identify the following problems with this exposed fabric:

a) Animal damage The Golder report expresses concern that hoofed and clawed animals can punch holes in the liner. It suggests installation of an 8 foot animal fence, although it states that this fence may not eliminate animal damage. The report also states that each repair event is expected to cost $ 4,000 to $10,000. Unless wildlife can be completely excluded, liner repairs could become a major and ongoing operating cost. Or worse yet, lack of funds may force the City to delay or avoid repairing all damage, during which time polluted water would seep out of the pond and into surface or groundwater.

b) Wind lift and associated stresses The Golder report notes that "In the absence of any weight above the liner, wind blowing over the impoundments may cause negative pressures above the liner that will cause the liner to lift upward. In extreme cases, this may result in failure of the liner through tearing or pull-out from anchor trenches". To date there has been no data to conclude that wind damage on the exposed liner is not a problem, and no proposed measures to mitigate this problem.

c) UV damage The Golder report does not mention the problem of UV degradation on sun-exposed sections of the liner. An independent engineering consultant, however, believes that exposure of geofabric liner to direct sunlight may render it nonfunctional within a short period of time[37].

iii. The CDO should note that the pond liner project will require the approval of the Division of Dam safety, and may require the approval of the Army Corps of engineers.

C. **Even after the pond liner problems described above have been resolved, the City should not be allowed to delay or avoid fixing the pond leakage unless there is an extraordinary precipitation seasons.** The current draft CDO (finding 22and Order # 17) would allow delay based on the a seasonal precipitation formula that is a part of the revised Federal court settlement agreement. Under that formula, if the 2010/11 precipitation was over 59.3 inches and the 2012 precipitation was over 74.9 inches, the City could delay lining pond 3 until the fall of 2013. That formula was developed based on a rain gage the City no longer wants to use. The City maintains that the old gage is partially shielded by trees. The new gage, which is located on the dam that forms pond 3, first came into year-round use for the 2010/11 precipitation season. Their proposed new gage, according to City engineers, shows participation levels in any given year that are 135% higher than measured at the old gage. Recalibrating the formula to the data from the new gage, the equivalent first trigger for delaying the pond liner is 80 inches of seasonal rainfall. Given this recalibration, the actual precipitation in 2010/11 was less than the first year trigger for delaying pond lining, so in relation to the Federal settlement agreement, a delay was not triggered. If the Board wishes to go ahead and use this concept for justifying a delay in pond lining, it should recalibrate the table numbers to be consistent with the City's proposed new rain gage. It should be noted that the 59.3 inch precipitation trigger, developed for the old gage, is less than the average annual precipitation the City engineers calculated for this new gage (61 inches per year). An appropriate rainfall amount for a reasonable trigger should be 80 inches or more.

IX. **The Draft CDO would allow the City to cease I&I improvement work without a**

37 Conversation with Dr Bruce Bell, of Carpenter Environmental Associates, Inc. on July 25, 2011.

requirement they upgrade the capacity of the treatment plant. As the draft currently reads (finding 16 and order # 7), the City can cease work on I&I reduction if it completes an analysis showing that increasing the size of the treatment plant is more cost effective than further I&I reduction. But there is no requirement that the City then actually increase the size of the treatment plant. This needs to be changed.

Thank you for the opportunity to comment on this draft CDO. My comments on ACLO R5-2011-xxxx are contained in a separate letter. My list of witnesses for the upcoming hearing on these matters is contained in Attachment 13.

Allen G. Edwards
Owner/Manager
Edwards Family Farm
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cc Mr. Bruce Kranz, City of Colfax
Mr. Michael Garabedian, Friends of the North Fork
Save the American River Association

Attachment 1, Pond water balance for June and July 2008

Pond Leakage Water Balance 8/25/08

Conclusions:
-The water balance below, using city data, shows in June and July 2008 there are about 1.6 million gallons per month of untreated wastewater leaving the plant that can not be accounted for and presumably went into the surface or groundwater.

- The city claims (we strongly disagree) that the seepage below the pond is actually from natural springs, not seepage from the plant. If the city is correct, then the unaccounted for outflow from the plant into the surface or groundwater was about 4.6 million gallons each month.

Facts, based on attached city data, unless otherwise stated:
-Unlined Pond 3 has leaked for 30 years. The city is currently required to capture and treat all leakage. (Permit requires city to line pond by fall 2009, but city is trying to get out of this.)

-It is assumed in this analysis that the seepage from below the dam that is captured and returned to Pond 3 comes from Pond 3, so it is a zero net sum and is not included as either inflow or outflow in the water balance.

-City monitoring reports (attached) show the treatment system has not operated since April 2008 and there is no discharge from the discharge point. Incoming wastewater is stored in the ponds. (There is untreated wastewater is in unlined Pond 3.)

-Pond 3 contained 40 million gallons at the end of July, with a remaining capacity of 28 million gallons according to the city.

-June and July water balance is simple: no rain, no discharge. The only inflow is incoming wastewater and the only permitted outflow is evaporation.

Seepage or Springs?
-City contends the seepage does not come from the plant, that it is actually from natural springs under the pond.

-June and July seepage that was returned to Pond 3 totaled about 3 million gallons per month. If that is from springs and not from the plant, then it must be included as additional inflow in the water balance. The unaccounted for outflow from the plant into the surface or groundwater would be about 4.6 million gallons per month in June and July 2008.

Downstream creek quality
-City monitoring reports for June and July showed the creek upstream of plant was dry but even though there was no discharge from the plant, the creek was flowing just downstream of the plant. Total Coliform in the creek in June ranged from 80 to 1600. In July they ranged from 500 to over 1600.

June 2008 Water Balance

	Source
Inflow total for June 2008: 4.66 MG	city monitoring report
Treatment and discharge: 0 MG	city monitoring report
Pond 3 freeboard June 1, 2008: 12.48 feet	city monitoring report
Pond 3 surface elevation June 1 2099.31	
Pond 3 freeboard June 30, 2008: 11.77 feet	city monitoring report
Pond 3 surface elevation June 30 2100.02	
Volume in pond 3 June 1, 2008: 37.0MG	Pond 3 elevations table (2099.3'elev)
Volume in pond 3 June 30, 2008: 38.52MG	Pond 3 elevations table (2100' elev.)
Change in pond volume in June : 1.52 MG*	
Surface area June 1, 2008: Pond 1 - 0.8 acres**	city water balance
Pond 2 - 0 acres	pond empty - monitoring report
Pond 3 - 6.61 acres	pond 3 elevations table (2099.3' elev)
total 7.41 acres	
Surface area June 30, 2008: Pond 1- 0.8 acres**	city water balance
Pond 2 - 0 acres	pond empty - monitoring report
Pond 3 - 6.77 acres	pond 3 elevations table (2100' elev)
total 7.57acres	
Average total surface area in June: 7.49 acres	
Evaporation rate in June: 7.5 inches/ month	city water balance
0.625feet/month	

Volume evaporated: 0.625ft/month x 7.49 acres x 0.3267 MG/acre-ft = 1.53 MG/month

If there were no uncaptured leakage or percolation, the net change in volume should be: Inflow - evaporation = 4.66 MG - 1.53 MG = 3.13 MG
Reported change in volume, based on change in pond surface elevation: 1.52 MG
Unaccounted for untreated wastewater outflow in June 2008: 1.61 million gallons

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*Pond 1 freeboard is less than an inch different between 6/1 and 6/30. Pond 2 is empty. Analysis assumes no change in volume in Ponds 1 and 2 over the month.

**We have no data on surface area for different levels in pond 1, so to be conservative we assumed the maximum surface area reported in the city water balance (attached).

July 2008* Water Balance

	Source
Inflow total for July 3 - 29: 4.112 MG	city monitoring report
Treatment and discharge: 0 MG	city monitoring report
Pond surface elevation July 3, 2008: 2100.31 feet	city monitoring report
Pond surface elevation July 29, 2008: 2100.70 feet	city monitoring report
Volume in pond 3 July 3, 2008: 39.21MG	pond 3 elevation table (2100.3'elev)
Volume in pond 3 July 29, 2008: 40.09MG	pond 3 elevation table (2100.7' elev.)
Change in pond volume July 3 - 29: 0.88MG*	
Surface area July 3, 2008: Pond 1- 0.8 acres**	city water balance
Pond 2 - 0 acres	pond empty - monitoring report
Pond 3 - 6.827 acres	pond 3 elevation table (2200.3' elev)
total 7.627 acres	
Surface area July 29, 2008: Pond 1- 0.8 acres**	city water balance
Pond 2 - 0 acres	pond empty - monitoring report
Pond 3 - 6.896 acres	pond 3 elevation table (2100.7' elev)
total 7.696 acres	
Average total surface area July 3 - 29: 7.66 acres	
Evaporation rate in July: 9.0 inches/ month	city water balance
0.75feet/month or 0.653 feet/27 days	

Volume evaporated: 0.653ft/27 days x 7.66 acres x 0.3267 MG/acre-ft = 1.635 MG/27 days

If there were no uncaptured leakage or percolation, the net change in volume should be: Inflow - evaporation = 4.112 MG - 1.635 MG = 2.477 MG
Reported change in volume, based on pond surface elevation: 0.88MG
Unaccounted for untreated wastewater leaving the system July 3 - 29: 1.597 MG

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*The period from July 3 to July 29 was chosen because the freeboard in Pond 1 was the same on those two days, simplifying the pond volume. No freeboard was reported for July 31, making it impossible to assess the entire month.

**We have no data on surface area for different levels in pond 1, so to be conservative we assumed the maximum surface area reported in the city water balance (attached).

Attachment 2

January 2008

PRELIMINARY
DESIGN REPORT
POND NO.3 LINER RETROFIT
CITY OF COLFAX
WASTEWATER TREATMENT PLANT

Submitted to:
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TABLE OF CONTENTS

SUBJECT

INTRODUCTION AND PROJECT DESCRIPTION 1
TECIINICAL ISSUES 3
2.1 Liner Type 3
2.1.1 Pre-Manufactured Flexible Membrane Liner (FML) 3
2.1.2 Spray-On Products 5
2.1.3 Hardscape Alternatives 6
2.2 Liner Protective Cover 6
2.3 Liner Subgrade 7
2.4 Liner Subdrain 7
2.5 Liner Connection to Existing Structures 8
2.6 Summary and Initial Alternative Screening 8
FEASIDILITY EVALUATION 10
3.1 Alternatives Evaluation 10
3.1.1 Pre-Manufactured Geomembranes 10
3.1.2 ESS-13 Spray-On Liner 12
3.1.3 Shotcrete Liner 13
3.2 DSOD Consideration 13
3.3 Summary 14
CONCLUSIONS AND RECOMMENDATIONS 15

LIST OF TABLES

Table 1- Conceptual Pre-fabricated Liner Costs
Table 2 - Conceptual Spray-on Liner Costs
Table 3 - Conceptual Shotcrete Liner Costs

LIST OF FIGURES

Figure I - Pond No.3 Site Location Map
Figure 2 - Pond No.3 Plan
Figure 3 - Flexible Liner Connection details
Figure 4 - Conceptual Pre-Manufactured Liner Section
Figure 5 - Conceptual Spray-On Liner Section
Figure 6 - Conceptual Shotcrete Liner Details
Golder Associates

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DRAFT PRELIMINARY DESIGN REPORT
POND NO.3 LINER RETROFIT
CITY OF COLFAX WASTEWATER TREATMENT PLANT

1.0 INTRODUCTION AND PROJECT DESCRIPTION

Golder Associates Inc. (Golder) is submitting this preliminary design report for retro-fitting the existing Pond No. 3 wastewater storage impoundment with a liner system at the City of Colfax Wastewater Treatment Plant (WWTP) located southeast of the City of Colfax (Figure 1).

Pond No.3 is approximately 9.7-acres in plan area and is located along the southern portion of the WWTP facility. The impoundment is currently unlined and is used to store wastewater as part ofthe City's wastewater treatment operations. The impoundment has a storage capacity of approximately 69 million gallons and has a total depth of approximately 60 feet as measured on the inside face of the embankment.

Pond No.3 was constructed by building an earthen embankment across a pre-existing valley floor. Examination of the topographic contours (August 30, 2007 aerial survey) suggests that some excavation occurred along the west slope, possibly to enlarge the storage capacity and to provide material for the embankment construction. Based on height and storage capacity, the embankment dam classifies as a jurisdictional dam by the California Department of Water Resources Division of Safety of Dams (DSOD). The impoundment has a primary outlet at the toe of the embankment, which appears to consist of a gate valve. A secondary emergency spillway outlet is located on the east side ofthe impoundment (Figure 2).

The grades within the impoundment are highly variable as described below.

- The south embankment dam side-slope is inclined at approximately 2.5 horizontal to vertical (H:V);
- The west excavated slopes are inclined at approximately 1.7H:2V to 2H: 1 V;
- The north slopes are inclined at approximately 2.5H: 1 V and appear to be part of an embankment fill;
- The side-slopes below the northern portion east perimeter road range from approximately 2H: 1 V to 3 .5H: 1 V. The impoundment slopes flatten to approximately 6H: 1 V or less below the southern portion ofthe east perimeter road; and,
- The impoundment bottom slopes are inclined at grades ranging from approximately 5 percent to 10 percent.

The impoundment is currently accessed by a perimeter road along the east side and along the embankment crests at the north and south ends. There is no perimeter road along the western portion

of the impoundment. A small power line extends along the west side of the impoundment to convey power to the pump house at the toe ofthe dam.
Geological and geotechnical explorations completed by Fugro indicate that the impoundment is underlain by metasedimentary bedrock. Groundwater seeps into the impoundment have been observed at the north end of the impoundment.
Seepage of groundwater and wastewater through the dam is collected and pumped back to the wastewater facility for treatment. In order to mitigate seepage concerns of the Regional Water Quality Control Board (RWQCB) and down-gradient land owners, the City has proposed to install a

liner system. Golder understands that the impoundment is not classified as a Class II impoundment, and therefore, there are no regulatory requirements for the design of the Pond No.3 liner system.
In designing an appropriate liner system for the impoundment, there are a number of challenges for this project, which include the following:
• The impoundment subgrade consists of irregular bedrock and rocky soils that are not suitable for conventional geosynthetic liners without extensive subgrade improvements.
• The impoundment is located in a rural area and serves to attract wildlife that can damage traditional geosynthetic liners with claws and hooves.
• The impoundment's steep slide-slopes limit the types of liners that can be used.
• Currently, there is not an access bench on the west slope. Placement of a traditional geosynthetic liner on the west slope will require substantial grading to create an access bench for installation and anchoring. Furthermore, the close proximately of the property line to the southwest end of the embankment will require fill placement to create a anchor bench.
• The liner system must be able to tie-into concrete structures including the primary outlet/gate valve controls and secondary emergency spillway.

Given the above challenges, Golder considered a wide range of liner types for this project. This report describes the identified liner types and evaluates their associated technical and economical characteristics. The remainder of this report is organized as follows:

• Section 2 of this report discusses these challenges and other technical issues and provides an initial screening of options;
• Section 3 presents the technical and economic feasibility of various liner systems; and,
• Section 4 provides Golder's conclusions and recommendations.

2.0 TECHNICAL ISSUES

The key technical issues that need to be addressed by the impoundment liner design are discussed below. For the proposed Pond No.3 liner system, these issues include the following:

- Liner Type;
- Liner Longevity and Protection;
- Liner Sub grade;
- Liner Subdrain; and,
- Liner Connection to Existing Structures.

Each ofthese issues is discussed further below.

2.1 Liner Type

The following three general liner types are potentially applicable for Pond No.3:

- Pre-Manufactured Flexible Membrane Liner (FML);
- Spray-On Products; and,
- Hardscape Liners (i.e. pavements).

Each ofthese liner types are discussed in the following sections.

2.1.1 Pre-Manufactured Flexible Membrane Liner (FML)

Pre-manufactured geomembranes refer to traditional geosynthetic membranes that are premanufactured in sheets at a factory under controlled conditions. The sheets are then usually seamed in the field during installation. In some cases, the pre-manufactured sheets may be assembled into larger panels at another facility prior to installation and final seaming in the field.

The following discussion includes the most common geomembrane types that are considered for impoundment liner applications and which also have a number of successful impoundment installations.

High-Density Polyethylene (1IDPE). HDPE is most widely used geomembrane in waste containment applications and is generally readily accepted by regulatory agencies including the Regional Water Quality Control Board. HDPE is compatible with a wide range of waste types and carbon black additives provide resistance to ultra-violet (UV) degradation. In exposed applications, manufacturers will typically provide material warranties of 10 years. Golder's experience is that exposed HDPE will last up to about 20 years in Northern California before degradation occurs (in the form of stress cracking). It should be noted that material warranties only address manufacturing defects. Installation warranties to address construction defects are generally provided for one year. HDPE is supplied in rolls that are normally 15 to 22.5 feet wide, which are welded together in the field. Manufacturing and field quality assurance and quality control *(QAlQC)* procedures are generally well established and understood by engineers, manufacturers, and installers.

The primary general technical disadvantages with HDPE include:

• Susceptibility to puncture. The subgrade must be relatively smooth with particles no greater than 3/8-inch in the largest diameter.
• Thermal Expansion. HOPE also experiences relatively large thermal expansion and contraction that can create wrinkles and potentially apply stresses to any structural attachments.

Low-Linear Density Polyethylene (LLDPE). LLDPE is slightly more susceptible to chemical degradation than HOPE in terms of chemical compatibility, but has a greater ability to withstand stresses, including puncture. However, subgrade improvements are still required, which must be relatively smooth with particles generally no larger than II2-inch in maximum diameter. Roll widths, installation and *QAlQC* procedures are similar to HDPE geomembranes.

For containment of the WWTP process water, LLDPE is expected to have suitable chemical resistance and reasonable UV resistance although LLDPE has only been in use for approximately the past 10 years. Therefore, longevity for LLDPE geomembranes is not as well established as HOPE geomembranes. A major LLDPE geomembrane manufacturer indicated that material warranties are provided only for 5-years in exposed applications.

Polyvinyl Chloride (PVC). In liner applications, PVC is more commonly used in mining applications where the liner is buried and is exposed to rocky material. PVC has greater puncture resistance than HDPE and LLDPE. The primary disadvantages to PVC are that it susceptible to degradation from organic solvents and UV exposure. Although organic solvents are not concern for Pond No.3, UV degradation is a major problem for exposed PVC liner applications.

Reinforced Polypropylene (pPr). PPr consists ofpolypropylene geomembrane that is laminated to a reinforcing scrim to increase tensile strength. Concern over the reduced chemical resistance ofPPr in comparison to HDPE has resulted in limited use of polypropylene as base liners for landfill waste containment applications._ PPr is more commonly used in roofmg applications. However, Golder is aware ofPPr liner use for WWTP impoundments located in Sacramento, California.

PPr is normally manufactured in rolls widths of 4 to 6 feet. For impoundment applications, the rolls are sent to prefabrication facility where the rolls are welded together into larger panels. The larger panels are then shipped to the project site and the panels seamed together in the field.

The primary advantages of PPr are that it is highly more puncture resistant in comparison to HOPE and it exhibits a lower thermal expansion coefficient. PPr tends to -be used in applications where the thermal expansion/contraction is a concern and/or increased puncture resistance is desirable.

PPr is considered UV resistant, although Golder is aware of very localized degradation of PPr geomembrane at a Sacramento WWTP facility apparently due to defective UV resistance pigmentation in the liner. Additionally, blisters have developed within the geomembrane at various locations and may be the result of defective lamination. PPr material warranties are variable, but are commonly up to 5 to 10 years in exposed applications.

In Golder's opinion, one key potential disadvantage with PPr is that seaming only fuses the top polypropylene sheet together. Therefore, the tensile strength of the seam is less than that of the entire geomembrane sheet. For HOPE and LLDPE, the seam strength is comparable to the sheet strength. For PPr, the seams represent potential structurally weak points, which may be a concern if tensile stresses are anticipated.

Chlorosulfinated Polyethylene (CSPE). CSPE geomembranes are commonly referred to by the trademark name of Hypalon. CSPE is similar to PPr in that they are primarily used in roofmg applications. CSPE also has similar chemical compatibility, UV and puncture resistance, roll widths, prefabrication procedures for impoundment applications, and material warranties. CSPE has potentially stronger seams than PPr.

2.1.2 Spray-On Products

Spray on liners are commonly used in small-scale, specialty applications where traditional FML's are difficult to place. Golder reviewed available products and further considered two types of spray-on liners:

Liquid Boot. Liquid Boot is trade-mark name for carbon-based polymer that is sprayed on in liquid form which then dries to form a flexible geomembrane liner. Liquid boot is most commonly used to provide a methane barrier below building foundations, although there have been some impoundment applications in the past. Liquid Boot was recently acquired by CETCO and Golder was informed by a sales representative that Liquid Boot is no longer offered for impoundment applications where the liner is exposed.

Other Additives. A variety of organic-based additives can be applied to soils to reduce their permeability. In most cases, these products biodegrade with time. The one product that claims to not degrade is ESS-13 manufactured by Seepage Control Inc. (SCI). A representative of SCI characterized this product as polymer contained in vegetable oil, but would not elaborate on the specific components of ESS-13 due to proprietary reasons. The SCI representative did say the "polymers" were comprised ofminerals.

SCI indicated their product has been used in wastewater impoundments successfully in the past and that they would provide a warranty of up to 10 years. SCI claims their product can decrease permeability offme-grained soils by up to 5 to 10 times their natural permeability.

SCI stated that the requirements for the application of ESS-13 include:

• The product should be applied to fine-grained soil and then compacted. Coarse soils such as sands are not suitable applications. Typically it would require at least 12-inches of soil with a Plastic Index greater than 10. Laboratory testing should be completed prior to fmal design to verifY final permeability values; and,

• A minimum 6-inch soil cover was recommended to provide erosion protection.

Golder tried several times to have SCI provide information on specifically how the product worked to reduce permeability in order to help understand applicability and potential longevity. SCI provided very general information that stated the polymer/vegetable solution is a surfactant that reduces water surface tension. SCI literature claims this allows penetration of ESS-13 into the soil

that preferentially allows the product to occupy soil pore space instead of water. The surfactant solution also serves to break-up the natural structure of clay particles. In Golder's experience, a surfactant can adversely affect the permeability of clays. The SCI literature indicates that by breaking up the clay structure, the clay particles will migrate into macro-structures in the soil and thus help reduce overall permeability. Golder considers this information somewhat contradictory. SCI indicates that re-application of the product, if necessary, can be completed using a waterborne applications where the product is added to a full impoundment.

In addition to Golder's uncertainty in how the product works, it appears that a fme-grained soil would need to be imported for the project since the impoundment is largely underlain by metasedimentary bedrock. While it may be possible that ESS-13 could be applied to existing embankment fills (i.e. the dam) where the material likely has been mechanically broken down to significant soil component, it highly uncertain whether ESS-13 would work in fractured bedrock, which outcrops throughout the west side of impoundment and portions ofthe east side.

r A suitable source of such soil import does not exist on-site nor has a nearby source been identified. Furthermore, the stability of the fine-grained soil on the impoundment side-slopes is questionable. Rapid drawdown will cause the development of seepage stresses in the soil layer which will reduce slope stability. Geotechnical evaluations would be required to assess the stability of a given soil source.

2.1.3 Hardscape Alternatives

In some applications, hardscape surfaces including asphaltic concrete (AC) and shotcrete may be used to line impoundments. Liner damage by wildlife is not a concern for the hardscape surfaces. These liner types are described below.

Asphaltic-Concrete (AC). AC pavements provide a relatively low-permeability surface. They require a relatively smooth surface for application and compaction, which is normally achieved by grading and then placing a top leveling course. However, construction of AC pavement would be limited to the flatter slopes (i.e. 5H:IV or less) and could not be applied to the existing steep impoundment side-slopes. Cracking of the asphalt is expected over time requiring periodic maintenance.

Shotcrete. Shotcrete, which is sometimes referred to as gunite, is applied by spraying a concretetype mix to a surface. For Pond No.3, this has the potential advantage of requiring less grading and subgrade protection. However, shotcrete will crack and we have assumed that some tensile reinforcement, such as welded wire mesh, will be required to reduce the frequency of cracking. Cracking of the shotcrete is expected over time requiring periodic maintenance. Furthermore, Golder anticipates that expansion joints will be required, which tend to allow some water seepage.

2.2 Liner Protective Cover

The issue of whether a liner should be covered with a protective soil layer generally applies to geosynthetic FMLs. Some FML polymers will degrade under ultraviolet protection and must have a protective layer for longevity (i.e. PVC). For a hardscape (shotcrete) liner, a cover soil is neither required nor desirable. Shotcrete should be exposed to allow periodic inspection and sealing of cracks.

For an FML application, a soil cover would be included along an access ramps and the bottom ofthe impoundment to (1) allow equipment access to clean debris periodically from the impoundment and to service/repair the gate valve; and (2) to provide a ballast weight to prevent large-scale wind uplift. In the absence of any weight above the liner, wind blowing over the impoundment may cause negative pressures above the liner that will cause the liner to lift upward. In extreme cases, this may result in failure ofthe liner through tearing or pull-out from anchor trenches.

The placement of an operations layer over a side-slope liner can be constrained by slope stability. Sliding of the operations soil on top of the liner can cause liner tearing or pullout of the liner from

anchor trenches. For preliminary planning purposes, we anticipate that the side-slopes would have to

be 3.5H: 1 V or flatter to support cover soils. Flattening the slopes would cause the following adverse impacts:

- A significant portion of the side-slopes would require flattening, requiring approximately 15,000 to 20,000 cubic yards offill materials.
- Flattening the side-slopes, including the dam, would require extensive modifications to the primary outlet, which may complicate DSOD approval.

Based on the above adverse effects, we conclude slope flattening is not a viable option for this project, and therefore, an FML alternative would need to be installed in an exposed application on the side-slopes. Design measures can be implemented to prevent catastrophic uplift, and wind vents can be installed to reduce the differential pressure above and below the liner. However, the liner will be subject to increased tensile stresses, which may require relatively strong liner seams

2.3 Liner Subgrade

Pre-manufactured geomembranes require relatively smooth subgrade support to prevent puncture. Depending on the type of geomembrane, the maximum particle size may range from 3/8-inch up to II2-inch. Generally, liner subgrade improvements may include:

- Track-walking with bull-dozers;
- Track-walking in conjunction with a geotextile cushion layer; and,
- Placement ofsoil bedding layer.

Subgrade protection is not an issue for spray-on or hardscape liners (ESS-13 or Shotcrete). However, some grading and subgrade improvement is required to limit the application thickness. For example, a 4-inch layer of shotcrete would not be adequate if the surface had numerous 6-inch high protrusions.

2.4 Liner Subdrain

The accumulation of groundwater seepage under the liner can be detrimental to liners. During periods when the impoundment has very low water levels or is empty, hardscape liners may "blowout" and geosynthetic liners may be lifted upward allowing a substantial accumulation of water under the liner.

Fugro's report (draft dated November 2007) indicates that a seep has been observed in the northeast of the impoundment. This seep may be related to infiltration through a perimeter ditch, which was recently lined with shotcrete. This recent lining may mitigate this seep, but the effectiveness of the mitigation is unknown.

The presence of additional seeps is unknown due to the limited exposure and observation of the subgrade. A test pit excavated by Fugro in the north-central portion of the impoundment encountered significant seepage at a depth of 2 feet, which caused caving of the test pit sidewalls. This test pit was excavated at the end of the dry season (October 2007) and significant seepage was encountered at shallow depths. It is possible that this seepage flows into the impoundment during and/or following the rainy season. Given the potentially adverse consequences of seepage under the liner and uncertainty in the presence of the springs, Golder considers it prudent to assume that liner subdrain is required.

Conceptually, we envision a series of gravel-filled trenches that convey seepage toward the dam. Water could be pumped from a sump back to the impoundment. Alternatively, it may be possible to design and construct pressure relief valves that extend through the liner and discharge in only one direction (upward and into the impoundment). Further evaluation of the longevity and reliability of such pressure relief valves is warranted.

2.5 Liner Connection to Existing Structnres

The impoundment liner will need to connect to the following concrete structures:

- The concrete box that contains the gate valve box (primary outlet);
- Support columns for the gate valve rod; and,
- Secondary spillway.

Each ofthese connections requires tying the liner to a concrete structure. The shotcrete liner is fairly simple and would involve a cold joint between the shotcrete and existing shotcrete. For ESS-13 product, the soil would be placed in contact with the concrete, which could be amended locally with bentonite to reduce seepage along the concrete contact. For pre-manufactured geomembranes, there are the following two types ofconnections:

- Embedment Bars: HDPE embedment bars are available and can be cast in concrete to create surface that geomembrane sheet can be extrusion welded to. Polypropylene embedment bars have been offered intermittently due to limited demand and mayor may not be available for construction next year.
- Batten Strips: A batten strip consists of connecting a sheet between steel bars with neoprene gaskets. Stainless steel bolts spaced at 6.inch intervals are used to tighten the batten strips together. In comparison to embedment bars, batten strips are considerably more expensive, but they are the only alternative readily available for non-HDPE geomembranes.

For the Pond No.3 liner retrofit project, Golder anticipates that that embedment bars or batten strips would be installed in a new strip of reinforced concrete poured adjacent to the existing concrete structures. Figure 3 illustrates typical details for these types of connections.

2.6 Summary and Initial Alternative Screening

There are a variety of liner types that are potentially applicable for the Pond No.3 liner retrofit project, which include traditional pre-manufactured geomembranes, spray-on products, and hardscape liners. However, the Pond No. 3 liner project presents some specific challenges and constraints. Based on our preliminary evaluations, Golder believes that the side-slopes of the impoundment will need to remain relatively steep, which provides limitations on constructability and the liner will be exposed on the side-slopes. Furthermore, Golder recommends eliminating FML and spray-on liner alternatives that have material warranties that are less than 10 years.

Based on the previous discussion of FML and hardscape liners, the following liner alternatives are considered not suitable for the Pond No.3 liner retrofit:

- PVC geomembranes due to UV degradation concerns because FML's cannot be fully covered by soil;

• Reinforced polypropylene due to seam strength concerns;
• Liquid Boot due to the manufacturer's restricted use; and
• AC pavements due constructability constraints (no placement on steep slopes).

Although Golder has concerns over the ESS-13 spray product, this alternative was carried through for more specific evaluation.

3.0 FEASmILITY EVALUATION

The feasibility ofthe various alternatives was evaluated in more detail to identify specific design and construction considerations to determine technical performance and cost impacts. These evaluations are the basis of our conclusions and recommendations presented in Section 4.

3.1 Alternatives Evaluation

Conceptual liner designs and costs were developed for the following general liner types:
• Pre-manufactured geomembranes consisting of HDPE or Hypalon;
• Spray-On Liner consisting ofESS-13; and
• Shotcrete Liner.

Each of these alternative liner designs are discussed in the following sections. In addition, preliminary costs were developed for each liner system. Costs to construct the underdrain were omitted because the underdrain costs are common for each alternative.

3.1.1 Pre-Manufactured Geomembranes

Construction of a geomembrane-lined impoundment would involve the following elements:
• Minor basin grading to smooth out irregularities along east and west slopes,
along with track walking of the slopes with a dozer to reduce protrusions by

rocks to I-inch or less. This grading includes the removal of existing tree stumps.
• Construction of an underdrain.
• Relocation of the power lines to the dam seepage pump-back system to allow slope excavation on the west side of the impoundment.
• Grading along the west slope to create a slope bench. Due property boundary constraints, this will require a fill along the southern portion of this slope. Excavation can be completed along the northern portion ofthis slope.
• Liner subgrade improvement. For cost estimating purposes, Golder assumed importing and placing a 3-inch thick sand bedding layer. A geotextile cushion layer may be used as a substitute for the sand in portions of the impoundment (i.e. steeper slopes), but the overall cost is expected to be generally comparable (within 20 percent).
• Installation of a geomembrane. For cost estimating purposes, Golder assumed a relatively thick 80-mil HDPE geomembrane to improve puncture resistance. This cost is comparable to a 35-mil Hypalon geomembrane with equal or improved puncture resistance. It should be noted that geomembrane prices are currently volatile due to rapidly changing oil prices.
• Casting concrete and attachment ofthe liner to existing concrete structures.

• Placement of an operations soil layer along the bottom of the impoundment and slopes flatter than 4H:IV.
• Placement of an 8-inch thick aggregate road base to allow access to the bottom of the impoundment.

• Potential installation of an 8-foot high fence to discourage selected wildlife from accessing the liner. This fence, however, may not prevent wildlife access.

In the event wildlife damaged the liner, a small qualified liner crew would need to be mobilization to the site to repair the liner. Depending on the extent of the damage, these type of repair events are expected to cost approximately $4,000 to $10,000 each. To minimize potential seepage through the liner due to defects, the liner should be inspected prior to and during filling of the impoundment to allow the repair of defects before they are inundated.

Table 1 summarizes preliminary construction costs for the conceptual geomembrane liner alternative, which are estimated to be approximately $2.55 million excluding the underdrain construction. Key assumptions and cost uncertainties include the following:

• The underdrain construction costs are not included.

• The west slope grading. quantity is not accurately known due to inadequate survey coverage. Additional survey is required to complete the fmal design.

• The sand bedding is assumed to be purchased from Chevreaux Aggregates in Meadow Vista, California. Purchase and deliver cost was quoted at *$25.50/ton.* Golder considers this conservative, and a more economical subgrade improvement alternative may be appropriate, such as the use of a geotextile cushion layer.

• Golder assumed that material could be excavated from the northern end of the west slope or within the impoundment and to provide sufficient quality and quantity of weathered bedrock to provide suitable fill material. In addition, we assumed this material could be crushed and screened to create soil operations/ballast layer placed on the bottom portion of the geomembrane liner. An on-site stockpiling and processing area will be needed. If necessary, this can be staged in the impoundment, but will increase costs and construction duration.

• A cost of $50,000 was assigned to the power line relocation. Further cost refinement should be completed; however, the relocation of the power line is expected to have only a minor impact on the overall cost.

• A 20 percent contingency was added to subtotal costs to reflect the current uncertainty ofthe cost estimate.

Golder considers this alternative technically feasible. Inspections and repair of liner damage, particularly by wildlife, will be required. The extent and frequency of damage is uncertain, and might be mitigated by installing a perimeter fence. Although an 8-foot high chain-link fence was assumed for this initial evaluation, a considerably higher or different fence type may be appropriate. In addition, the interface ofthe primary outlet with the 2-foot thick operations layer will require some design consideration so that the primary outlet is not adversely impacted.

3.1.2 ESS-13 Spray-On Liner

Construction of an ESS-13 spray on liner would involve the following elements:

• Minor basin grading to smooth out irregularities along east slope and west slope, along with some minor track walking of the slopes with a dozer to reduce extreme protrusions. This includes the removal of existing tree stwnps.

• Construction of an underdrain.

• Importing and spreading a suitable fme-grained liner one foot thick.

• Applying the ESS-13 product to the fine-grained soil layer followed by compaction of the soil layer.
• Placement of a protective 6-inch soil layer over the ESS-13 treated soil layer for protection in accordance with the manufacturer's recommendations.
• Placement of an 8-inch thick aggregate road base to allow access to bottom of the impoundment.

Table 2 summarizes preliminary construction costs for this conceptual alternative, are estimated to be approximately $1.2 million excluding the underdrain construction. Key assumptions and cost uncertainties include the following:

• The underdrain construction costs are not included.
• The fme-grained soil was assumed to cost $30 for purchase, transport, placement, and compaction. The actual cost may vary considerably since a suitable source has not been identified.
• A 20 percent contingency was added to subtotal costs to reflect the current uncertainty ofthe cost estimate.

In addition to the cost analyses, Golder completed liner "leakage" calculations assuming a full impoundment for the following assumed soil liner permeability values:

cll Seepage through the soil liner with a permeability of 1 x 10..6 cm/s would be approximately 160,000 gallons per day (gpd).
• Seepage through the soil liner with a permeability of 1 x $10^{.8}$ cm/s would be approximately 1,600 gallons per day.

The above calculations do not take into account potential low-permeability characteristics of the bedrock or the dam, and therefore may over-estimate leakage potnetial through the dam. However, the calculations illustrate the sensitivity of seepage to the soil permeability. An acceptable liner leakage rate has not been established for the project, but Golder considers a potential seepage rate of 160,000 gpd as likely unacceptable to the RWQCB. Therefore, an in-field permeability of closer to I x 10-8 cm/s or less may be necessary for this project. Since the manufacturer indicated the soil permeability is reduced up to 5 to 10 times natural permeability, the soil would likely need to have a natural permeability of 1 x $10^{.7}$ cm/s, which requires at least a moderately plastic clay. A locally available source of a moderately plastic clay is considered unlikely.

Golder considers this alternative uncertain with respect to technical feasibility. A suitable source of soil has not been identified. Furthermore, there is uncertainty whether a soil liner permeability on the order of IxlO·^{8} cmls is achievable, whether the soil liner would desiccate under dry conditions, and whether the soil liner would exhibit sufficient shear strength to stand on the impoundment sideslopes. Addressing these uncertainties requires identification of a specific borrow source and completion of geotechnical laboratory testing. In addition, without an improved understanding of the constituents of ESS-13 and how the material works to reduce permeability, Golder cannot recommend this alternative.

3.1.3 Shotcrete Liner

Construction of a shotcrete liner would involve the following elements:

• Minor basin grading to smooth out irregularities along east slope and west slope, along with some minor track walking of the slopes with a dozer to reduce protrusions to 2 inches or less. This includes the removal of existing tree stumps.

• Construction of an underdrain.

• Placing a welded wire mesh on the impoundment subgrade, installing expansion joints, and then applying an approximately 4-inch thick layer of shotcrete.

• Applying a sealant to any cracks observed after curing.

Table 3 summarizes preliminary construction costs for this conceptual alternative, which are estimated to be approximately $3 million excluding the underdrain construction. Key assumptions and cost uncertainties include the following:

• The underdrain construction costs are not included.

• A 20 percent contingency was added to subtotal costs to reflect the current uncertainty ofthe cost estimate.

Golder considers this alternative technically feasible although it appears to be the most expensive. Some minor cracking of the shotcrete is expected over time due to drying following initial placement, thermal expansion and cracking to temperature changes, and differential settlement under loading. The cracking can be mitigated by sealing the cracks periodically. Inspection and repair ofcracks will be required periodically.

3.2 DSOD Consideration

It is Golder's understanding that modifications to jurisdictional dams require DSOD approval. Construction of a liner likely qualifies as a modification to the dam. However, installation of the liner should not adversely affect the dam and impoundment provided that there is not a significant alteration to the storage capacity. Construction ofthe liner will reduce seepage and should be viewed by the DSOD as an improvement to the dam stability. However, given the strong desire by the City and the RWQCB to have the liner installed in 2009, the DSOD should be brought into the project as soon as practical to avoid potential delays in obtaining DSOD approval.

3.3 Summary

Based on the feasibility and cost evaluations for the three conceptual liner systems, Golder considers the geomembrane liner alternative the most applicable based on a combination of technical performance and costs. Additional cost savings may be achieved by further evaluating subgrade improvement options. Further consideration needs to be given to the trade-off between liner repairs and installing a wildlife barrier around the pond.

A shotcrete liner is considered technically feasible, but has an estimated cost that is approximately 20% more than that of the geomembrane liner. The ESS-13 spray liner has an apparent cost savings of 50% or more in comparison to a geomembrane. However, uncertainty in the soil source and resulting costs, long-term permeability, and adequate shear strength make this alternative uncertain with respect to technical performance and cost.

4.0 CONCLUSIONS AND RECOMMENDATIONS

A variety ofliner types were identified and evaluated for the Pond No.3 liner retro-fit project. Based on the preliminary evaluations presented in this report, Golder developed the following conclusions:

- A geomembrane liner has the lowest cost for an alternative that is considered technically feasible. The cost evaluation takes into account extensive earthworks that will be required.
- A geomembrane will need to be exposed on the side-slopes. The final design will need to consider wind uplift and associated stresses.
- HDPE and Hypalon geomembrane are considered the most applicable based longevity and seam strength in exposed applications.
- ESS-13 is not recommended due to uncertainties in performance and cost.

For the fmalliner design, Golder recommends the following:

- The DSOD should be contacted as soon as possible to determine review requirements in order to avoid permitting and construction delays.
- Additional surveying along the west slope is required to design the west slope grading that is necessary to establish an access bench. Recommendations for a cut slope will be necessary for fmal design.
- The selection of an HOPE or Hypalon geomembrane should be made as part of the final design based on further evaluations of seam and sheet strength including puncture resistance.
- The final design should address the subgrade improvements in detail and consider the potential use ofa geotextile cushion layer over portions of the sideslopes.
- Further consideration needs to be given to the trade-off between liner repairs and installing a wildlife barrier around the pond.
- Design considerations are required for the interface ofthe primary outlet and the 2-foot thick soil operations layer on top of the liner. In addition, some erosion

protection measures may be required for discharge of wastewater into the impoundment.

TABLES

TABLEt
CONCEPTUAL PRE-FABRICATED LINER COSTS

Cost Item	**Quantity**	**Unit Cost**	**Subtotal Cost**
Basin Grading	1	$ 125,450 Is	$ 125,450
West Bench Excavation and Fill	25,000	cy $ 25 cy	$ 625,000
Liner Bedding Soil (3" Thick)	4,339	cy $ 65 cy	$ 282,003
Geomembrane	468,559	sf $ 0.90 sf	$ 421,703
Operations Soil Layer	12,500	cy $ 30 cy	$ 375,000
Access Ramp Agg. Base	400	cy $ 45 cy	$ 18,000
Cast New Concrete Next to Structures	100	cy $ 750 cy	$ 75,000
Geomembrane Attachment to Concrete Structures	350	If $ 40 /If	$ 14,000
Power Line Relocation	1	$ 50,000 Is	$ 50,000
Perimeter Fence	2,800	If $ *501ft*	$ 140,000
Total			$ 2,126,156
20% Contingency			$ 425,231
Total *wi* Contingency			$ 2,551,387

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TABLE 2

CONCEPTUAL SPRAY-ON LINER COSTS

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Unit Subtotal
Cost Item **Quantity Cost Cost**
Basin Grading 1 $ 125,450 Is $ 125,450
Import, Place, Compact 12-in Soil Layer 17,047 cy $ 30 Icy $ 511,411
ESS~13 Surfactant Solution 460,270 sf $ 0.40 *Isf* $ 184,108
6-inch Soil Cover 8,524 cy $ 30 *Icy* $ 255,706
Aggregate Base (8" Thick) 400 cy $ 45 *Icy* $ 18,000
Total $ 969,225
20% Contingency $ 193,845
Total wI Contingency $ 1,163,070

Golder Associates

L TABLE 3

CONCEPTUAL SHOTCRETE **LINER COSTS** I

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Unit Subtotal
Cost Item **Quantity Cost Cost**
Basin Grading 1 $ 125,450 lIs $ 125,450
Welded-Wire Fabric 460,270 $ 0.75 *Isf* $ 345,203

4-in. Shocrete 460,270 $ 4.00 *lsf* $ 1,841,080
Concrete Sealant For Cracks 1 $ 150,000 Is $ 150,000
Total $ 2,461,733
20% Contingency $ 492,347
Total *wl* Contingency $ 2,954,079
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Major Road
Local Road Map Coordinate: CaHfornia
Minor Road State Plane Zone II, NAD-83
Ramp

FIGURE 1

Source: ESRI, TIGER 2000, **SITE LOCATION MAP** Pedestrain Way CAGIS (www.gis.ca.gov). USGS HDR/COLFAX WVI/TP LINER RETRORT/CA

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SCALE FEET

LEGEND

5-FT INDEX TOPOGRAPHIC CONTOUR
INTERMEDIATE TOPOGRAPHIC CONTOUR

NOTE

1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY ANDREGG GEOMATICS. DATE OF TOPOGRAPHY: AUGUST 31. *2007*. TOPOGRAPHIC DATUM: HORIZONTAL - CA STATE PLANE ZONE II. NAD83 HPGN; VERTICAL - NAVD88.

POND NO.3 PLAN

FIGURE 2

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SECURE ANCHOR llES 318 SST HEX NUT
318 SST LDCKWASHER
CLFAN AND SCARIFY IN'IERf'ACE. WELD (WHERE EXI'ENSION
INSERT ANCHORS. AND APPLY IS REQUIRED)
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CONCREIE STRIP.

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EMBEDMENT BAR BATTEN STRIP

(NOT TO SCALE) (NOT TO SCALE)

GEOMEMBRANE ATTACHMENT OPTIONS

Sacramento. CA **FIGURE 3**

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4-IN THICK UNER
BEDDING SOIL
CONSTRUCTION OF BENCH
(WIIL REQUIRE FIll. PLACEMENT
ANDI OR EXCAVATION ALONG
WEST SLOPE). :GEOMEMBRANE
ANCHOR TRENCH

2-FT SOIL BN.LAST ~__ _

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Sacramento, CA

CONCEPTUAL PRE-MANUFACTURED GEOMEMBRANE LINER

FIGURE 4

PROJECT ND•.07397207 FILE No. Ag 4 - Pre CAOO M.L. DATE 1/11/08

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Sacramento, CA

PRO.IECT No. 07397207 FILE No. Flg 5 - Spr DADO JOR DATE 11/16/07

1 FOOT FINE-GRAINEO SOIL
TREATEO WITH ESS-13

CONCEPTUAL SPRAY-ON LINER

FIGURE 5

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4-IN THICK SHOTCRETE

WELDED WIRE MESH

Sacramento. CA

PROJECT No. 07397207 FILE No. 1'19 6 - Sho CAOD JDR DATE 11/16/07

SUBGRADE

CONCEPTUAL SHOTCRETE LINER SECTION

FIGURE 6

Attachment 3, July 15 memo from the City of Colfax correcting pond size

P.O. Box 702
33 S. Main Street
Colfax, CA 95713

530-346-2313
Fax 530-346-6214

CITY OF COLFAX

May 4, 2011

Mr. Spencer Joplin, P.E.
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive #200
Rancho Cordova, CA 95670-6114

RE: Corrections to Reported Pond 3 Volume in March 2011 Self Monitoring Report (SMR) for NPDES Permit NO. CA0079529, WDR Order No. R5-2007-0130 and CDO Order No. R5-2010-0001; City of Colfax Wastewater Treatment Plant, Placer County

Dear Spencer,

We have determined that the dam slope measurements used to calculate pond elevations were incorrect from March 16, 2011 to March 21, 2011.

Pond 3 elevations and volumes are determined from tabularized relationships based on the height of water on the pond's dam. The physical measurement taken by Operations staff occurs on a sloped pipe (Figure 1), with markers at 10 feet intervals. Before March 16, 2011, there was more than 10 feet of dam slope, and measurements were based on the 10 foot mark on the slope (see **point 1** in Figure 1). Between March 16, 2011 and March 22, 2011 the dam slope measurements were incorrectly based on an out of date mark on the slope (see **point 2** in Figure 1). As the pond levels increased, it became apparent that the mark being used was incorrect. On March 22, 2011 the correct mark on the slope was identified (**point 3** in Figure 1) and used thereafter for dam slope measurements. The distance between the two marks is 28 inches. The incorrectly reported values are detailed in Table 1. The corrected values are detailed in Table 2.

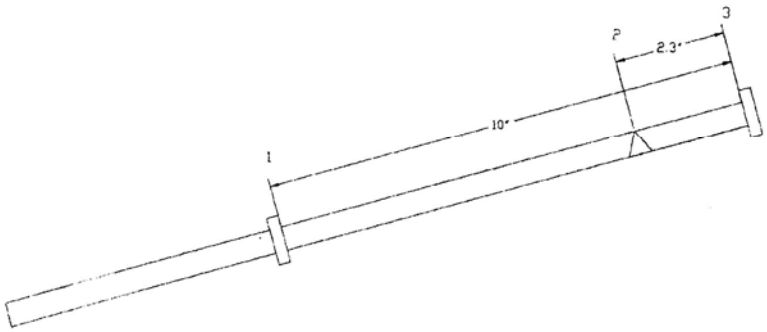

Figure 1. Dam Slope Measurements (approximate, not to scale)

Table 1. Reported Dam Slope, Elevation and Pond Volume

Date	Reported Dam Slope (ft)[a]	Reported Vertical Freeboard (ft)	Reported Elevation (ft)	Pond Volume (MG)[b]
3/16/2011	7.0	2.59	2109.2	61.29
3/17/2011	5.1	1.89	2109.9	63.22
3/18/2011	4.6	1.69	2110.1	63.78
3/19/2011	3.8	1.39	2110.4	64.63
3/20/2011	1.9	0.69	2111.1	66.61
3/21/2011	1.6	0.59	2111.2	66.90

[a] Dam slope measurements are not reported in SMR, but they are used to determine freeboard and volume.
[b] Not presented in March 2011 SMR.

Table 2. Corrected Dam Slope, Elevation and Pond Volume

Date	Corrected Dam Slope (ft)[a]	Corrected Vertical Freeboard (ft)	Corrected Elevation (ft)	Corrected Pond Volume (MG)
3/16/2011	9.3	3.45	2108.3	58.84
3/17/2011	7.4	2.75	2109.0	60.74
3/18/2011	6.9	2.56	2109.2	61.29
3/19/2011	6.1	2.27	2109.5	62.11
3/20/2011	4.2	1.56	2110.2	64.06
3/21/2011	3.9	1.45	2110.3	64.34

[a] Dam slope measurements are not reported in SMR, but they are used to determine freeboard and volume.

All values listed in the March 2011 SMR not specifically identified in Table 1 are correct. Feel free to contact me at (530) 308-6715 with any questions you may have.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my knowledge and on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate , and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Sincerely,

Bruce Kranz
City Manager

Cc: Nicole Granquist, Downey Brand
Mitchell Mysliwiec, LWA
Steve Calderwood, WPCS
Alan Edwards

Attachment 4, Foam on Smuther's Ravine creek in September, 2011

Foam on Smuther's Ravine creek, September 11, 2011, one mile downstream from sewer plant – 6 foot by 9 foot culvert near Edwards home.

Foam on Smuther's Ravine Creek, September 11, 2011, approximately 800 yards downstream from sewer plant.

Foam on Smuther's Ravine Creek, September 9, 2011, at receiving water collection site R-2, approximately 100 feet downstream from the sewer plant discharge point. Even though the water flow is fast, notice the foam in the lower right, upper left, and upper center of the picture.

Attachment 5, Foam on Smuther's Ravine creek in Spring of 2011

Foam in Smuther's Ravine creek, 6/14/2011, approximately 1000 feet downstream from sewer plant.

Foam on Smuther's Ravine creek, 6/14, 2001, approximately 1600 yards downstream from sewer plant.

Attachment 6, Algae in Smuther's Ravine creek during summer of 2011

Algae in Smuther's ravine creek, 7/11/2011, approximately 100 yards upstream from house (approximately 1700 yards downstream from sewer plant).

Algae in Smuther's Ravine creek, July 12, 2011, approximately 800 yards downstream from sewer plant.

Algae in Smuther's Ravine creek, 7/13/2011, at receiving water collection site R-2.

Algae in Smuther's ravine, 7/31/2011, receiving water collection site R-2

Algae in Smuther's Ravine creek, 8/13/2011, approximately 800 yards downstream from sewer plant.

Algae in Smuther's Ravine Creek, 8/13/2011, site R-2, 100 feet downstream from sewer plant

Algae in Smuther's Ravine creek, Sept 11, 2011, approximately 700 yards downstream from sewer plant.

Algae in Smuther's ravine creek, at receiving water collection site R-2, 9/11/2011

Attachment 8– Department of Health Services Letter of December 11, 2006

State of California—Health and Human Services Agency
Department of Health Services

California Department of Health Services
SANDRA SHEWRY
Director

ARNOLD SCHWARZENEGGER
Governor

December 11, 2006

Pamela C. Creedon, Executive Officer
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Dear Ms. Creedon:

CITY OF COLFAX WASTE DISCHARGE REQUIREMENTS

As requested by the Central Valley Regional Water Quality Control Board (Regional Board) and the City of Colfax, California Department of Health Services (CDHS) staff met with staff from the Regional Board to inspect the tertiary facilities at the subject wastewater treatment plant on Friday, October 16, 2006. In attendance were Pat Leary, Regional Board; Terry Macaulay, Sacramento District Engineer for CDHS; Joan Phillippe, Colfax City Manager, Tom Parnum, the City's wastewater treatment plant operator, Don Snelling, a technical consultant to the City, and myself. The purpose of the inspection was for CDHS staff to examine the subject facilities and to provide comments regarding whether the wastewater treatment facilities provide adequate health protection for downstream users, given the treatment requirements for disinfection and filtration stipulated in the wastewater discharge requirements (WDRs) for this wastewater treatment plant.

This letter will confirm the observations and comments made by Ms. Macaulay and myself during the course of the inspection.

1. The chlorine contact facilities are being used as a settling basin for coagulated solids prior to the filtration process. This practice does not provide adequate disinfection, since any viruses that are attached to the solids are effectively shielded from disinfection. This is why the Title 22 Water Recycling Regulations require that disinfection take place after filtration. The fact that the effluent usually meets bacterial standards does not indicate that the effluent is safe, because regulations on which the standards are based assume the removal of most of the solids from the effluent to "condition" it for effective disinfection.

2. The filtration facilities are of a non-conventional design that has not been demonstrated to be effective in treating coagulated wastewater effluents. The filtration system consists of eight very short, small diameter pressure filters (approximately 3-foot diameter with a 16-inch sidewall height). The filter media used is a roughly 10-inch thick layer of fine sand, supported by a bed of larger sand and gravel. The backwash system does not

provide air scour or surface agitation. Although the system usually meets the turbidity performance criteria, our experience leads us to conclude that, over time, such a filtration system is likely to develop severe problems with media loss, plugging, cracking, and/or mudball formation. These problems would make it very difficult to meet the performance requirements for effluent turbidity specified in the WDRs.

Consistent with our observations, CDHS recommends that the City modify these facilities as follows:

1. Provide post-filtration disinfection, and
2. Replace the existing filtration equipment with a process proven to be effective for filtering sewage effluent.

Ms. Phillippe, Colfax City Manager, indicated that the City will have a "package plant" installed next year that will accomplish these objectives. From the description provided by the City representatives, CDHS concurs with this assessment. However, the Regional Board should review the plans and specifications for the proposed treatment facilities prior to construction.

We hope you find these comments useful. Please contact me at (916) 449-5596 if you require further information.

Sincerely,

Carl Lischeske

Carl Lischeske, P.E., Chief
Northern California Region
Drinking Water Field Operations

Cc: Mr. and Mrs. Allen Edwards
22801 Gillis Hill Road
Colfax, CA 95713

Ms. Joan Phillippe, City Manager
City of Colfax
P.O. Box 702
Colfax, CA 95713

Ms. Pat Leary
Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114

Attachment 9, Pond 3 Categorical Exclusion

Categorical Exclusion for the City of Colfax, California
WWTP Storage Pond (Pond 3) Improvements Project

Proposed Action

Existing Storage Pond

The proposed action is the installation of a geomembrane liner in the City of Colfax Wastewater Treatment Plant's (WWTP) Pond 3. Pond 3 is an unlined wastewater storage pond enclosed on one side by an earthen dam. Wastewater has been known to seep from the pond at the base of the dam and into the unnamed tributary in Smuthers Ravine.

The existing storage pond acts as a storage equalization pond to attenuate peak wastewater inflows until such time as they can be returned for full treatment and discharge. The pond is designed to hold 212 acre-feet (ac-ft; 69 million gallons) of water at the level of the spillway crest. The WWTP's latest Waste Discharge Requirements prohibit water levels higher than two feet below the spillway, effectively reducing the storage volume to about 196 ac-ft (64 million gallons).

The installation of the pond liner would not result in treatment capacity increases at the WWTP.

Description of Proposed Project

Based on the volume required for effective operation of the WWTP, the entire area of Pond 3 would need to be lined. The Pond 3 liner would consist of a 60-millimeter high-density polyethylene (HDPE) synthetic material. The liner would be flexible, durable, and resistant to ultraviolet light and chemicals. This type of liner is widely used for lining ponds, and its failure is considered very unlikely. The liner would be manufactured and installed under strict specifications and inspected to ensure quality.

Pond 3 would need to be dewatered prior to installing the pond liner. Pond 3's wastewater would be pumped into Pond 2 and to the temporary treatment facilities (i.e., temporary tertiary treatment facility, including chlorination; coagulation/flocculation, filtration, dechlorination, and PH control). Pond 3's bottom sludge layer would be removed and appropriately disposed of, in accordance with existing regulations. If during construction, the presence of natural springs is confirmed in the base of Pond 3, then French drains would be installed under the liner to drain their flow. Some grading of the existing pond area could be needed to eliminate sharp bends and to smooth the ground surface.

Following dewatering, sludge removal, checking for springs and grading, the liner would be installed. The installer would key the liner into the existing soil above the pond high water line. They would use a trench-style anchorage detail that would be approximately one foot wide by two feet deep running the entire perimeter of the pond. The liner would not extend beyond the existing perimeter of the pond.

If French drains are installed, spring water issuing from the drains would be directed to a sump at the edge of the liner and then discharged to the unnamed tributary. Any such water flowing from the French drains would be tested routinely for signs of liner leakage. If wastewater is detected in the spring water, the City will take appropriate action to stop the contamination, or otherwise keep any untreated flow from reaching the unnamed tributary.

The condition of the liner would be inspected annually. The pond would be empty of wastewater during the inspection.

Justification of Categorical Exclusion

The proposed action is consistent with the category of Categorical Exclusion specified in 40 CFR § 6.107(d)(1) as it is directed toward the, "functional replacement of equipment." The project will not affect the degree of treatment, nor will it increase the treatment capacity of the existing system. The project will not have any significant impacts on the quality of the human environment.

In determining the appropriateness of a Categorical Exclusion, the U.S. Environmental Protection Agency (EPA) examined various federal cross-cutting laws and Executive Orders in accordance with 40 CFR § 6.300. The laws, and analysis of the impacts of the proposed action, are described below:

National Natural Landmarks - The Secretary of the Interior is authorized to designate areas as Natural Landmarks for listing on the National Registry of Natural Landmarks pursuant to the Historic Act of 1935, 16 U.S. Code *USC) 461 *et seq*. No natural U.S. landmarks exist within the project area nor would any be impacted by the proposed action.

Cultural Resources Data - The Archeological and Historical Preservation Act (AHPA) of 1974, 16 USC 469 et seq., provides for the preservation of cultural resources of an EPA activity that may cause irreparable loss or destruction of significant scientific, prehistoric, or archeological data. The project area lies within the existing WWTP storage pond, which has been previously disturbed. Reasonable means have been used to identify cultural resources within the project area, including archival research and contacts with Native American organizations. No archaeological sites or artifacts were identified within the project area. Therefore, it is unlikely that any significant cultural resource will be affected directly or indirectly during the implementation of the proposed action (see attached report - Archaeological and Historical Investigations for the Colfax WWTP Improvements Project, PMC, November 13, 2006).

Cultural Resources - The *National Historic Preservation Act* (NHPA), as amended 16 USC 470, directs federal agencies to integrate historic preservation into all activities which either directly or indirectly involve land use decisions. The NHPA is administered by the National Park Service (NPS), the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Offices (SHPOs), and each federal agency. Implementing regulations include 36 CFR § 800: *Regulations of the Advisory Council on*

Historic Preservation Governing the NHPA Section 106 Review Process. Section 106 of the NHP requires federal agencies to take into consideration the impact than an action may have on historic properties which are included on, or are eligible for inclusion on, the National Register of Historic Places (see attached report - Archaeological and Historical Investigations for the Colfax WWTP Improvements Project, PMC, November 13, 2006).

Based on a review of PMC's cultural resources report (cited above), the EPA has determined that it is unlikely that any significant cultural resources will be affected directly or indirectly during the implementation of the proposed project. The California State Water Resources Control Board (SWRCB), on behalf of the EPA, sent a letter to the California State Historic Preservation Officer (SHPO) on December 15, 2006, requesting concurrence on Section 106 compliance and a finding of "No Historic Properties Affected" for the City of Colfax' project. The SWRCB submitted the letter as they are also proposing to fund a project at the City of Colfax WWTP and also require SHPO concurrence. The SHPO responded with a letter dated January 11, 2007, concurring on Section 106 compliance and a finding of "No Historic Properties Affected."

Wetlands Protection - EO 11990, "Protection of Wetlands" of 1977, requires federal agencies conducting certain activities to avoid, to the extent possible, adverse impacts associated with the destruction or loss of wetlands and to avoid support of new construction in wetlands, if a practicable alternative exists. Discharge of dredge or fill material into wetlands and other waters of the U.S. are also regulated under Section 404 of the Clean Water Act.

No wetlands occur in the area to be affected by the proposed project. The effluent storage pond was considered but rejected as other waters because it is an actively-maintained artificial lake created by the diking of dry land and is used to collect and retain water for the purpose of settling solids (i.e., it acts as a settling basin). These types of artificial features are generally not considered waters of the U.S. (51 FR 219; November 13, 1986: 41217). No wetlands or other waters of the U.S. will be filled or otherwise adversely impacted by the proposed action.

The project includes measures to reduce the potential for erosion and/or runoff, and would prevent indirect effects on water quality near the project area. The City will require the contractor to implement Best Management Practices and a Storm Water Pollution Prevention Plan to control erosion and sediment releases from the project (see attached report - Biological Report for the Storage Pond Lining Project, Colfax Wastewater Treatment Plant, Ramona Robison, PhD, November 10, 2006).

Floodplain Management - EO 11988, "Floodplain Management" of 1977, required federal agencies to evaluate the potential effects of actions they may take in a floodplain to avoid, to the extent possible, any adverse effects associated with the direct and indirect development of a floodplain. The project is not located within a 100 year floodplain, and

will not have any adverse impacts associated with direct or indirect development of a floodplain.

Important Farmland - *EPA Policy to Protect Environmentally Significant Agricultural Lands* requires EPA to consider and protect the nation's significant/important agricultural lands from irreversible conversion to uses that result in their loss as an environmental or essential food production resource. Moreover, the *Farmland Protection Policy Act* (FPPA), 7 USC 4201 *et seq.*, and the U. S. Department of Agriculture's (USDA) implementing procedures require federal agencies to evaluate the adverse effects of their actions on prime and unique farmland, including farmland of statewide and local importance. The project does not involve conversion of, or otherwise affect, prime, unique, or important farmland.

Coastal Zone Management Act - The *Coastal Zone Management Act* (CZMA), 16 USC 1451 *et seq.*, requires that federal agencies in coast areas be consistent with approved State Coastal Zone Management Programs, to the maximum extent possible. If an EPA action may affect a coastal zone area, the responsible official is required to assess the impact of the action on the coastal zone. The proposed action will not affect a coastal zone area.

Coastal Barrier Resources Act - The *Coastal Barrier Resources Act* (CBRA), 16 USC 3501 *et seq.*, generally prohibits new federal expenditures and financial assistance for development within the Coastal Barrier Resources System (CBRS) and therefore protects ecologically sensitive U.S. coastal barriers. The proposed action does not affect any coastal barriers.

Wild and Scenic Rivers - The *Wild and Scenic Rivers Act* (WSRA), 16 USC 271 *et seq.*, establishes requirements applicable to the water resource projects affecting wild, scenic, or recreational rivers within the National wild and Scenic river System, as well as rivers designated on the national Rivers Inventory. The proposed action does not affect any river designated as wild or scenic.

Fish and Wildlife Protection - The *Fish and Wildlife Coordination Act* (FWCA), 16 USC 661 *et seq.*, requires federal agencies involved in actions that will result in the control or structural modification of any natural stream or body of water for any purpose, to take action to protect the fish and wildlife resources that may be affected by the action. No streams or water bodies would be structurally modified or controlled by the proposed action (see attached report - Biological Report for the Storage Pond Lining Project, Colfax Wastewater Treatment Plant, Ramona Robison, PhD, November 10, 2006).

Endangered Species Protection - The *Endangered Species Act* (ESA), 16 USC 1536 *et seq.*, prohibits agencies from jeopardizing threatened or endangered species or adversely modifying habitats essential to their survival. No threatened or endangered species are known to utilize the project area and EPA has determined that the project will have "no effect" on federally listed species (see attached report - Biological Report for the Storage

Pond Lining Project, Colfax Wastewater Treatment Plant, Ramona Robison, PhD, November 10, 2006).

Wilderness Protection - The *Wilderness Act* (WA), 16 USC 1131 *et seq*., established a system of National Wilderness Areas. The WA established a policy for protecting the system by generally prohibiting motorized equipment, structure, installation, roads, commercial enterprises, aircraft landings and mechanical transport. The project area is within the urban limits of the City of Colfax, California. No wilderness areas occur within the project area and the project will not affect any wilderness area.

Air Quality - The Clean Air Act (CAA) requires federal actions to conform to any state implementation plan approved or promulgated under Section 110 of the Act. For EPA actions, the applicable conformity requirements specified in 40 CFR Part 51, Subpart W; 40 CFR Part 93, Subpart B; and the applicable state implementation plan must be met. Under the Federal Rule on General Conformity, 40 CFR Part 93, a conformity determination is required only when emissions occur in a non-attainment area. The proposed action would not generate operation emissions but would generate construction period emissions.

The proposed action will conform to the State Air Quality Standards, which are more stringent than the national standards. The Placer County Unified Air Pollution Control District (the District) regulates the air quality in the region and seeks to minimize emissions of all air pollutants. The District focuses primarily on the criteria pollutants for which the region periodically exceeds state standards; particularly for ozone. The City will comply with all requirements for controlling air pollution during construction activities related to the proposed action.

Environmental Justice - EO 12897, "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations," and the accompanying presidential memorandum, advise federal agencies to identify and address, whenever feasible, disproportionately high and adverse human health or environmental effects on minority communities and/or low-income communities. The proposed action will not adversely impact minority or low-income communities in the area.

Public Support

The proposed project was developed in response to community requests for a lined pond and, therefore, has the support of the community. During the environmental process and hearings, and in response to public comments concerning the need to protect the downstream area, the City Council determined that the pond should be lined to assure that untreated wastewater would not leak into the downstream unnamed tributary of Smuthers Ravine.

Cost Effectiveness

The proposed project is cost effective in that it will be a relatively low cost method of preventing untreated wastewater from leaking downstream into the unnamed tributary of Smuthers Ravine. The lining of the pond will also help reduce or eliminate the cost of

the current dam pump back system which collects and returns the leakage for full treatment in the wastewater treatment plant. In addition, project costs will be directly controlled by the combination of competitive bids, quality control, and oversight by competent construction inspectors and resident engineers.

Attachment 10, 2004 letters regarding authorization of the dewatering plant

O. Box 702
3 S. Main Street
olfax, CA 95713

CITY OF COLFAX

530-346-2313
Fax 530-346-6214

March 15, 2004

Ken Landau
Assistant Executive Officer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, CA 95670

RE: CRWQCB Order No.5-01-180 (Waste Discharge Requirements)
CRWQCB Order No. 5-01-181 (Cease and Desist)
City of Colfax

Dear Mr. Landau:

The City is seeking a minor modification to the City's NPDES requirements to permit an increase of discharge volume and total pounds of TSS and BOD. This permit modification is necessary in order to commence dewatering this summer of the City's existing 69 million gallon storage pond. Consequently, if authorized, the dewatering will occur in a timely fashion and enable the plant improvements to be completed by 2006. The quality of discharge proposed will provide tertiary treatment and meet Title 22 requirements.

What this will do for the City:

- The storage reservoir to be dewatered, evaluated, design plans prepared for lining to eliminate the seepage, and construction commenced;
- Allow the City to meet the 2006 date for permanent tertiary treatment facilities;
- Decrease the potential for future discharge violations prior to completion of the permanent tertiary treatment plant improvements in 2006;
- Elimination of future spills.

The following information provides the background and justifications for the above request:

Existing WWTP Operation

The City of Colfax (City) owns and operates a wastewater treatment plant (WWTP) that consists of two aerated treatment ponds followed by a Sodium Hypochlorite disinfection process. The disinfected water is discharged to a 69 million gallon storage reservoir from where it is pumped to spray irrigation fields for final disposal.

A portion of the disinfected water in storage seeps through the reservoir dam at the base and is captured and pumped to a second chlorination/de-chlorination facility that is located at the base of the dam. Water from this unit is then discharged to an unnamed tributary of Smuthers Ravine, which flows, to Bunch Creek and then into the North Fork of the American River.

In order to line the storage pond and eliminate the seepage, the reservoir must be drained, evaluated, design plans prepared, project bid, and then improvements constructed. The Boards has set 2006 as the completion date for this and other work related to the City's Cease and Desist Order. Further the City must continue to operate the existing WWTP and meet the existing discharge limitations.

The Problem

The City Staff and project consultants recently held several sessions to determine if there were any potential barriers to meeting the time schedule to complete and have on line a tertiary WWTP on line by June 14, 2006. As a result of these sessions, staff has determined that it may not be possible to dewater the plant as originally envisioned.

After an in depth analysis of the City's existing WWTP 69,000,000 gallon (69MG) storage reservoir (aka Pond 3), it was concluded that the reservoir could not be dewatered, reservoir lining designed (to prevent seepage), and lining constructed and completed by the permit order date of June 16, 2006 while at the same time meeting the current discharge requirements.

The above conclusion is based on the following:

a. During the last two years, at the end of the rainy season and the beginning of summer the storage reservoir has been full, e.g. 69 MG in storage;
b. During the last two years, the reservoir at the end of the summer season, after the normal WWTP irrigation disposal season, and prior to onset of rainfall, the storage reservoir has had approximately 35 MG in storage. This appears to be the extent to which the storage pond can be dewatered under existing conditions.
c. Section Order 5-01-180 limits the monthly daily average of TSS is 16.7 pounds/day loading and BOD is 16.7 pounds/day. This maximum loading was based on an ADDWF of 200,000 gallons per the footnote under the table.

d. Using the information in "a", "b" and "c" above and assuming at the start of summer no additional wastewater is discharged into Pond 3, and that adequate treatment was provided, it would take 345 days to dewater Pond 3 at a total discharge of 200,000 gallons/day. However, the above does not take into account possible springs that may be feeding into Pond 3, any storm water, any seepage from under the Pond 3 dam that may bypass the storage in Pond 3, any back seepage from the irrigated land, and assumes that the City's land disposal irrigation system can dispose of all of the wastewater entering the plant during the year.

e. Once dewatered, using the current plan with optimum results the plant would operationally be immediately into the winter season again and would need to use Pond 3 for equalization storage. Thus, there would be no time to do any design much less construct the pond liner to prevent seepage from the dam as the pond would again be filling with water.

Solution to Problem

The California Regional Water Quality Control Board (Board) has provided the City with the option to bypass the storage reservoir, and discharge tertiary treated effluent directly to the waters of the United States. To take advantage of this option the WWTP effluent must meet tertiary treatment requirements and quality standards established for "Title 22" water.

The City has developed an operating scheme that will make it possible to continue to operate the existing ponds and at the same time, dewater the reservoir, by pumping 0.3 mgd from the bottom of the storage reservoir up to Pond 2. All of this wastewater (WWTP Influent plus reservoir dewatering) will receive coagulation, chlorination, filtration, pH adjustment, and de-chlorination prior to being discharged to the unnamed tributary of Smuthers Ravine. This level of treatment complies with Tertiary Treatment standards and will meet "Title 22" criteria.

The City's proposal to commence dewatering will be installed as soon as it receives your approval of the minor modification request: and involves the following elements

The City will continue to treat the Plant Influent by operating the existing treatment ponds

Treated water from the storage pond will be wheeled through the irrigation pumps and pipes, up to the intermediate pump station that is adjacent to Treatment Pond #2 at a rate of 0.3+/- mgd. From here the water will be diverted into Pond #2.

The combined flows (Plant influent plus treated water from Pond#3) will be pumped through existing pumps to the existing chlorination basin.

Modifications will be made to the chlorine contact basin by installing a second hypochlorite addition point at a calculated distance down the basin channel. The second Chlorine feed point will be located to afford a 2-hour chlorine contact time at a flow through rate of 0.500 mgd.

A Flocculating Chemical will be added at the entrance of the chlorine basin by direct injection into the transfer pump piping prior to the basin. This will yield a 30-minute coagulation and settling time ahead of the Chlorine addition point. It is anticipated that additional settling will occur as the treated water moves to the exit point.

The proposal includes the installation of a set of three pressure sand filters adjacent to the end of the contact basin. The filters are of the same design as those that have been approved, installed, and operating successfully at the Planada CSD WWTP in the San Joaquin Valley.

Transfer pumps will be set just ahead of the basins exit baffle and V-notch weir. From here the treated water will be pumped to the filters. Placing the pumps ahead of the exit baffle will result in a failsafe operation that would allow any excess flow to run into the storage pond should the filter operation be impaired.

The pH adjustment and de-chlorination chemicals will be added to the filter effluent. Reaction time will be achieved in the discharge piping.

At this point the water (plant influent and stored recycle) have received biological treatment, flocculation, chlorination, filtration, pH adjustment, and de-chlorination. This meets the requirements of tertiary treatment.

The final element of the proposal is to pipe the fully treated filter effluent to the lower end of the plant and discharge it, through a diffuser, to the tributary to Smuthers Ravine.

At the present time the Board has set standards that limit the City's WWTP effluent volume to 0.2 mgd (see page 16 of Board Order No. 5-01-180). This restriction was accomplished by limiting the discharge of the total pounds of BOD_5 and TSS to the following levels:

Constituent	Units	Monthly Average	7-Day Average	Daily Maximum
BOD_5	mg/L	10	15	25
	lbs/day	16.7	25	41.7
TSS	mg/L	10	15	25
	lb/day	16.7	25	41.7

The City's proposed modifications are designed to produce water that meets tertiary treatment standards, but due to the need to dewater the 69 million gallon storage pond, and at the same time continue to treat the normal daily flow, the City finds that it is necessary to request an interim variance that will enable us to discharge, directly to the tributary of Bunch Creek, an additional 0.500 MGD of tertiary treated wastewater and Total Pounds of BOD_5, and TSS as follows in addition to the existing treated 0.070 to 0.150 mgd seepage at the base of the storage pond dam. Thus on a temporary bases the temporary request is for 0.650 mgd with the following maximums:

Constituent	Units	Monthly Average	7-Day Average	Daily Maximum
BOD_5	mg/L	10	15	25
	lb/day-seepage	12.5	18.8	31.5
	-tertiary	41.7	62.6	104.5
	Total	54.2	81.4	135.8
TSS	mg/L	10	15	25
	lb/day-seepage	12.5	18.8	31.5
	-tertiary	41.7	62.6	104.5
	Total	54.2	81.4	135.8

The above problem and solution has been discussed with Richard McHenry and Trinh Pham of your staff.

Conclusion

We request the proposed modification in order to accomplish the WWTP project in a timely manner to meet the State requirements. The City looks forward to meeting with you for the purpose of discussing this request, and proposal.

Sincerely,

Bob Perrault

Bob Perrault
City Manager

CC: City Council
Richard McHenry, Senior WRC Engineer
Trinh Pham WRC Engineer
Tom Leland, City Engineer
Don Snelling Plant Operator

California Regional Water Quality Control Board

Central Valley Region

Robert Schneider, Chair

Arnold Schwarzenegger
Governor

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otection

Sacramento Main Office
Internet Address: http://www.swrcb.ca.gov/rwqcb5
11020 Sun Center Drive #200 Rancho Cordova, CA 95670-6114
Phone (916) 464-3291 · FAX (916) 464-4681

10 May 2004

Mr. Bob Perrault, City Manager
City of Colfax
P.O. Box 702
Colfax, CA 95713

WASTEWATER POND DEWATERING, WASTEWATER TREATMENT PLANT, CITY OF COLFAX, PLACER COUNTY

We have received your letter, dated 15 March 2004, requesting our evaluation of the City's workplan for dewatering an effluent storage pond. The City is proposing to dewater the pond in preparation of the addition of a liner to eliminate seepage as part of the overall project to achieve compliance with waste discharge requirements. As we understand the City's proposal:

- The City will be adding temporary filters and temporarily modify the use of the chlorine contact tank to add coagulants prior to disinfection. The goal is to produce a "Title 22" quality effluent, which is essentially pathogen free.

- The City will operate the facility to assure proper treatment of the wastewater influent before bleeding in water from the pond. Flow rates from the pond dewatering will be metered in to assure compliance with waste discharge limitations.

The "problem" presented in your letter is that the proposed project will result in exceedance of the mass limitations for BOD and TSS, although all other final effluent limits will be met.

We have reviewed the City's proposed pond dewatering proposal and Waste Discharge Requirements, Order No. 5-01-180 (WDRs). The mass limitations for BOD and TSS in the WDRs are based on the influent average dry weather flow rate. The influent average dry weather flow (ADWF) rate for this facility was determined to be 0.2 mgd. Regional Board staff are on record stating that the ADWF rate is questionable at best since seepage through pond levees is not a properly engineered system. The ADWF based mass limitations are included in NPDES permits to assure facilities are not organically overloaded. Compliance with the ADWF based mass limitations is evaluated during dry weather periods when the impacts of I/I have receded. Therefore, flow from the temporary pond dewatering would not constitute an influent ADWF condition.

It is our conclusion, based on review of the City's proposal and review of the WDRs, that exceedance of the mass limitations for BOD and TSS during the dewatering project would not constitute a violation of the influent ADWF based limitations. All other limitations are water quality based and exceedance would constitute a violation of the WDRs. The City must fully document, in the Monthly Monitoring Reports, the period of dewatering and the influent wastewater and dewatering flow rates.

Please call Richard McHenry at (916) 464-4655 if we can be of assistance or answer any questions regarding the above comments.

KENNETH D. LANDAU
Assistant Executive Officer

cc: Mr. Alan Edwards, 22801 Gillis Hills Road, Colfax, 95713

Attachment 11, pictures of foam on Smuther's Ravine Creek during 2011 bypass

Foam on Smuther's Ravine creek during bypass, 3/27/2011, 250 feet downstream from sewer plant discharge point.

Foam on Smuther's Ravine creek during bypass, 4/4/2011, approximately 800 yards downstream from sewer plant.

Foam on Smuther's Ravine creek during bypass, 4/4/2011, approximately 750 yards downstream from sewer plant.

Foam on Smuther's Ravine creek during bypass, 4/6/2011, approximately 600 yards downstream from sewer plant.

Foam on Smuther's Ravine creek during bypass, 4/6/2011, approximately 1700 feet downstream from sewer plant.

Attachment 12

DOWNEY BRAND ATTORNEYS LLP

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March 17, 2011

The Honorable Magistrate Edmund F. Brennan
United States District Court, Eastern District of California
501 I Street
Sacramento, California 95814

Mr. Daniel Cooper
Lawyers for Clean Water, Inc.
1004 O'Reilly Avenue
San Francisco, California 94129

Re: *ELF and Edwards v. City of Colfax*, U.S. District Court, Eastern District, Case No.: 2:07-CV-02153-GEB-EFB

Dear Magistrate Brennan and Mr. Cooper:

The purpose of this letter is to inform both the District Court and Plaintiffs in the above-captioned case of an emergency situation faced by the City of Colfax ("City") with regard to the level of water in Pond No. 3. The City's next monthly status report is not due until April 10, 2011, and the City believes that earlier notification to both Plaintiffs and the Court of the issues surrounding Pond No. 3 and upcoming activities related thereto is appropriate and a gesture of good faith, keeping with the cooperative tone and tenor of discussions between the Parties and the Court.

As you are aware, the District Court's November 2010 Order Re Compliance with Settlement Agreement ("Order") requires the City to dewater and line Pond No. 3. (*See* November 2, 2010 Order, Dkt. No. 113, paragraphs 19-23). Since last Fall, the City has been diligently operating its treatment facility to maximize dewatering of Pond No. 3, in an effort to achieve the pond liner schedule set forth in the Order. Much progress was made in reducing the volume in Pond No. 3 prior to, and at the beginning of, the 2010-2011 wet season (Oct. 2010 – May 2011), and the City remains steadfast in its commitment to complying with the Court's Order.

To that end, the City has been closely monitoring the volume in Pond No. 3. This focus has recently revealed an issue that is significantly and negatively impacting the volume of water in Pond No. 3, the severity of which City staff, engineers, and operators were previously unaware. Specifically, during storm events, significant amounts of storm water runoff is entering Pond No. 3 from the immediate surrounding watershed and the City suspects significant groundwater contributions as well. This volume is in addition to expected rainfall that falls directly into Pond No. 3, and any excess wet weather flows from the City's wastewater treatment facility that must

be diverted to Pond No. 3 after receiving partial treatment due to the limiting design capacity of the tertiary treatment system.

As a result of the substantial late winter/early spring rains experienced in Colfax, Pond No. 3's volume is increasing tremendously and at a rapid pace. The City predicts Pond No. 3 will be unable ability to contain all flows should wet weather persist as presently predicted.[1] The most recent storm on March 15-16, 2011, during which 4.2 inches of rain fell, resulted in another six (6) million gallons being added to Pond No. 3. City engineers calculate that of that amount, only 1.45 million gallons was diverted from the treatment facility, 1.5 million gallons was rain that fell directly in to Pond No. 3, and over 3 million gallons was either storm water runoff from the adjacent areas and/or upwelling ground water. After that storm, Pond No. 3 had a volume of 61 million gallons (the capacity of Pond No. 3 is 69 million gallons).

The City is now faced with a Morton's fork – that is, the City must decide between two choices that yield equivalent, often undesirable, results. Rather than taking no action and risking the detriments of Pond No. 3 spilling uncontrollably over its top, the City is choosing instead to protect water quality and the structural integrity of Pond No. 3 by taking emergency action to dewater Pond No. 3. Specifically, the City plans to immediately implement Alternative II, set forth on page 8 of the City's Pond No. 3 Emergency Spill and Dewatering Plan attached hereto, which consists of diverting water from Pond No. 3 in a controlled manner into the City's prior treatment plant's chlorine contact basin for chlorination and dechlorination (to ensure proper disinfection before discharge), and then discharging the water via emergency infrastructure rented from a third party. City staff met with Regional Water Board staff on March 16, 2011 to discuss and agree upon the City's approach, and as a result of those discussions, the City will provide Regional Water Board staff with weekly updates during the emergency dewatering process.

The City understands that by proactively addressing the serious issue of Pond No. 3's volume, while still trying to protect water quality and the structural integrity of Pond No. 3, that the City may encounter non-compliance with the January 2009 Settlement Agreement. We hope Plaintiffs and this Court understand the City's motivation and work with the City during this trying time.

Very truly yours,

Nicole E. Granquist
Attorneys for City of Colfax

[1] While Pond No. 3 may have sufficient volume left to accommodate flows diverted from the wastewater treatment facility and seasonal precipitation into Pond No. 3 under 100-year storm conditions, it is likely insufficient to provide storage for the significant storm water runoff and/or upwelling groundwater that is contributing so much volume to Pond No. 3.

Enclosure

cc: Don Mooney, Attorney for Plaintiffs
Mick Cabral, City Attorney, City of Colfax

Attachment 13

Comments on the draft Cease and Desist order NO. R5-2011-xxxx for the City of Colfax Wastewater Treatment Plant, submitted by Allen Edwards.

Witness list

Allen G. Edwards
Subject: comments on the draft Cease and Desist order NO. R5-2011-xxxx, and draft Administrative Civil Liability Order R5-2011-xxxx for the City of Colfax Wastewater Treatment Plant, submitted by Allen Edwards.
Qualifications: Owner and manager of Edwards Family Farm, situated immediately downstream from Colfax WWTP
Estimated time: 15 minutes

Dr Mitch Mysliwiec
Subject: Colfax City Wastewater Treatment Plant
Qualifications: Engineer with Larry Walker and Associates (under contract to City of Colfax)
Estimated time: 10 minutes

Allen and Nancy Edwards - Evidence List for Hearing for CDO and ACLO for City of Colfax Wastewater Treatment Facility scheduled for 30 November/1-2 December 2011

The following documents and correspondence, which are referred to in our comments on the draft CDO and draft ACLO, are in addition to those listed by the Regional Water Quality Control Board staff.

- 1979 clean-up and abatement order, Central Valley Regional water Quality Control Board
- Calculations of June and July 2008 water balances, see Attachment 1 to our Comments on draft CDO
- Preliminary Design report for Pond No. 3, Liner Retrofit, City of Colfax Wastewater Treatment Plant, 2008, see Attachment 2 to our Comments on draft CDO
- July 15, 2011 memo from Bruce Kranz to Spencer Joplin regarding correction to Pond 3 volume, see Attachment 3 to our Comments on draft CDO
- SMRs for 1979 through 2006, available at Central Valley Regional Water Quality Control Board offices
- Pictures of foam on creek, September 2011, see Attachment 4 to our Comments on draft CDO
- Pictures of foam on creek, spring and fall of 2011, see Attachment 5 to our Comments on draft CDO
- Pictures of algae in the creek, see Attachment 6 to our Comments on draft CDO
- Pictures of dry creek bed after effluent cut-off in September 2011, see Attachment 7 to our Comments on draft CDO
- December 2006 letter from Carl Lischeske, DHS, to Pamela Creedon, see Attachment 8 to our Comments on draft CDO
- Language regarding CEQA categorical exclusion, see Attachment 9 to our Comments on draft CDO
- Letters from Bob Perrault, Colfax City Manager, and Ken Landau, Regional Water Quality Control Board, dated March 15, 2004 and May 10, 2004, see Attachment 10 to our Comments on draft CDO
- Pictures of foam on Smuther's Ravine creek during 2011 bypass, see Attachment 11 to our comments on draft CDO
- United States District Court, Eastern District of California, Civil Case No.: 2:07-CV-02153-GEB-EFB, Stipulation to Dismiss Plaintiffs' Claims with Prejudice; Settlement Agreement, Dated November 17, 2008, located at Federal Court building, Sacramento CA
- March 17, 2011 letter from Nicole Granquist representing City of Colfax to the Honorable Magistrate Edmond F. Brennan, US District court, see Attachment 12 to our comments on draft CDO
- Laboratory report for July 29, 2009, attached to our comments on 2011 ACLO

- Laboratory report for February 3, 2010, attached to our comments on 2011 ACLO