Autumn Wind Associates, Inc.
Comments on Air Quality Analysis and Mitigations in the West Coyote Hills Specific Plan Amendment Revised Recirculated DEIR, City of Fullerton
March 3, 2007

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Laurel Impett
Shute, Mihaly & Weinberger LLP
396 Hayes Street
San Francisco, CA 94102

RE: Comments on Air Quality Analysis and Mitigations in the West Coyote Hills Specific Plan Amendment Revised Recirculated DEIR, City of Fullerton

Dear Ms. Impett:

At your request, Autumn Wind Associates has reviewed the 2008 Recirculated, Revised Draft Environmental Impact Report ("RRDEIR") for the West Coyote Hills Specific Plan Amendment ("Project"). As demonstrated in the pages that follow, the RRDEIR provides inadequate analysis and discussion of the air quality impacts of the proposed Project, and it fails to require implementation of the mitigation measures necessary to reduce unavoidable, significant impacts to the extent feasible and other impacts to a less than significant level.

I. The RRDEIR Fails to Demonstrate Compliance with the 2007 Air Quality Management Plan, Uses an Incorrect Federal $PM_{2.5}$ standard, and Fails to Adequately Mitigate the Project's Significant Air Quality Impacts.

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The RRDEIR's discussion of the South Coast Air Quality Management District's ("SCAQMD") Air Quality Management Plan ("AQMP") is woefully inadequate. In addition, the RRDEIR fails to require implementation of all feasible mitigation measures to reduce the air quality impacts that the document asserts are significant and unavoidable.

A. RRDEIR Fails to Adequately Discuss and Demonstrate Compliance with the 2007 AQMP

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The RRDEIR fails to mention that the SCAQMD prepared and approved its 2007 AQMP prior to release of the RRDEIR. The AQMP is highly relevant to the discussion of significant mobile source impacts and their contextual placement, with respect to the emissions that will be generated as a result of the approval of the proposed West Coyote Hills Project. In fact, the 2007 AQMP draft was available for reference prior to release of the RRDEIR, and review of the AQMP makes it clear that the severity of air quality nonattainment and the challenges facing regulators and breathers in the air basin are extreme. Similarly, the RRDEIR provides

2 inadequate discussion of the Federal Clean Air Act (FCAA) requirement that SCAQMD prepare and submit an eight-hour hour ozone State Implementation Plan (SIP) by June 15, 2007. The revised air quality element fails to describe the requirements for the Ozone SIP.

3 Similarly, the RRDEIR fails to accurately demonstrate compliance with the AQMP. Although it discusses compliance with respect to carbon monoxide, the RRDEIR fails to discuss compliance with respect to PM_{10}, NOx, and other pollutants for which the basin is in non-attainment. Because the Project exceeds the threshold of significance for several of these pollutants, it will increase air quality violations and delay attainment with the air standards of the AQMP. The RRDEIR must be revised to accurately discuss compliance with the AQMP.

B. The RRDEIR Uses an Incorrect Federal Ambient Air Quality Standard for $PM_{2.5}$

4 The RRDEIR's Air Quality element also fails to note or discuss the latest revisions to federal air quality standards. Specifically, the federal $PM_{2.5}$ ambient air quality standard was reduced from 65 ug/m3 to 35 ug/m23 (24 hrs) in December of 2006. Most, if not all, of the South Coast air basin is predicted to remain in nonattainment of the $PM_{2.5}$ standard until sometime after 2020. In this context, the RRDEIR fails to place the Project's particulate matter ("PM") emissions in context to its cumulative emissions impacts, either operationally or for construction impacts. As noted elsewhere in these comments, the RRDEIR incorrectly claims and applies a 90% reduction of Project-related construction $PM_{2.5}$; MM4.4-5 is vague, unenforceable, and is practicably impossible to implement under current market conditions or CARB requirements applied to retrofit technology verifications for offroad engines. Based on the severity of particulate emissions in the basin and the failure of past measures to bring the basin back into attainment, together with among the highest ambient levels of DPM-related (diesel particulate matter) toxics in the country[1], the RRDEIR must be revised to reflect the more stringent federal air quality standard, with that revision then placed in context to substantial revisions in $PM_{2.5}$ control mechanisms detailed in the 2007 AQMP. As written, the Air Quality section provides inadequate coverage of $PM_{2.5}$ standards, and it will provide almost no combustion-related $PM_{2.5}$ mitigation for construction and operational emission impacts based on fatal flaws found in MM4.4-5.

C. The RRDEIR Fails to Require Implementation of All Feasible Mitigation Measures to Reduce Significant and Unavoidable Impacts

5 Rather than pursuing a policy of maximum mitigation, however, the RRDEIR's air quality mitigation measures largely reflect a relatively "status quo" perspective, buttressed with what amounts to compliance with SCAQMD regulations. Compliance with existing air agency requirements, as with reductions of fugitive dust emissions at West Coyote Hills as required by

[1] SCAQMD, Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES-II, March 2000.

SCAQMD Rule 403, does not by itself satisfy CEQA's requirement that significant impacts be reduced by the use of all reasonable and feasible mitigation measures.

In fact, the South Coast Air Basin remains in desperate need of emission reductions. The SCAQMD 2007 AQMP, the blueprint for achieving attainment of state and federal air quality standards, states at page ES-10 that the basin will, due to the extreme severity of air quality challenges, request a "bump-up" to attain federal ozone standards to later than 2021. Once again, regulatory agencies have failed to provide adequate control methods and measures to assure attainment of state and federal air quality standards; the AQMP, at pages 3-4, notes that "As the inventory methodology has improved, more emissions have been quantified, resulting in equal or higher emissions than previously anticipated in spite of more rules being adopted. This creates a greater challenge for attainment." Similarly, it states on page 4-5 that "The sheer magnitude of emission reductions needed for the attainment of the federal $PM_{2.5}$ and 8-hour ozone standards poses a tremendous challenge to the South Coast Basin."

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Changes to CARB's EMFAC2007 model have resulted in increase in certain vehicle category-related emissions, meaning that EMFAC-modeled mobile source emissions in South Coast are, overall, worse than previously predicted.[2] The SCAQMD admits that they do not have sufficient control measures to attain and will depend on CARB to produce the needed benefits at the State level:

> "Therefore, since not fully attaining the $PM_{2.5}$ standard by 2015 is not an acceptable or legally allowed public policy, the District staff is proposing that CARB commit to the additional 63 tons per day of NOx reductions from mobile sources to close the reduction gap for $PM_{2.5}$ attainment by 2015. These NOx reductions will also be critically needed for achieving the 8-hour ozone and the 24-hour $PM_{2.5}$ standards and making expeditious progress to implement all feasible measures."

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(AQMP at ES-13.)

In the RRDEIR, the proposed mitigation measures are insufficient to reduce the impacts to a less than significant level, and effective measures frequently in mitigating air quality impacts from similar developments in less polluted air basins are never considered. The RRDEIR ignores reasonable and feasible air quality mitigation measures used in similar new developments in other California air basins. For instance, the San Joaquin Valley Air Pollution Control District ("SJVAPCD") promulgated Rule 9510 a few years ago as an indirect source regulation, capturing critically important, discrete, quantifiable emission benefits from operational and construction emission reductions in new developments (such as West Coyote

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[2] Similarly, because the RRDEIR fails to use CARB's EMFAC2007 model, it therefore underestimates the emissions from the Project.

7 Hills). The RRDEIR wholly avoids analysis and any meaningful discussion of indirect source regulation to reduce overall emissions and improve air quality. Regardless of the well-demonstrated history of failures to attain air quality standards in South Coast, CEQA requires the meaningful consideration of all potentially reasonable, feasible mitigations – and the RRDEIR fails to achieve this most essential requirement.

8 In fact, other residential-related developments have agreed to mitigate 100% of their construction and operational emission impacts in California, and the RRDEIR should have discussed and carefully considered those mitigation examples since the West Coyote Hills Project will occur in the country's worst air basin and cause significant and (potentially) unavoidable air quality impacts. Mitigation measures specifically intended to reduce NOx, PM_{10}, DPM and TAC emissions and public health exposures are available and used routinely by the City of Bakersfield and Kern County to fully mitigate the air quality impacts (NOx and PM_{10}) from operation and construction. In addition, fully mitigating a project's PM10 emissions provides benefits in terms of reducing DPM and TAC emissions as well.

9 CEQA-reviewed projects approved with 100% mitigation of NOx, ROG, and/or PM_{10} emissions impacts to or near zero include West Ming Specific Plan Area[3] in Bakersfield, the Gateway Village Final EIR[4] (Madera County), Walmart-Panama at Hwy 99 and Walmart – Gosford Village (Bakersfield), and the Tejon Industrial Complex-West (Kern County). A variety of specific measures are utilized in such examples to reduce project-related emissions directly, or via the purchase of offsets through the SJVAPCD or other means. SCAQMD disburses funding for emission reductions obtained under the auspices of the Moyer Program, and has operated the RECLAIM program for many years; these programs reflect that the air district has the capacity to provide assistance to the developer for the production of developer-acquired emission reductions or offsets. If Lead Agencies working with the local air district in the seriously polluted San Joaquin Valley can fully mitigate the emissions impacts of new developments such as that envisioned for the West Coyote Hills Specific Plan area, why can't the City of Fullerton, the Developer, and the SCAQMD?

10 With respect to on-site emission reductions, it appears that the RRDEIR fails to require use of DPF, EGR, or any mitigation measures with respect to on-road diesel emissions, although the wording of MM 4.4-5 is somewhat ambiguous (see below). These emissions, particularly from haul trucks during the extensive soil remediation that is required on the site, exceed the threshold of significance for NOx. Yet the RRDEIR fails to require any mitigation measures to

[3] West Ming Specific Plan DEIR; Michael Brandman Associates H:\Client (PN-JN)\0216\02160029\DEIR 9-1\02160029_Appendices.doc; Air Quality Assessment, pg. 2; http://www.bakersfieldcity.us/weblink7/ElectronicFile.aspx?docid=622047.

[4] Gateway Village Final EIR, Air Quality Assessment; County of Madera; pg 4-5; May 2007. http://www.madera-county.com/rma/archives/uploads/1178735211_Document_upload__coverandtitle.pdf

10 reduce these emissions. EGR can be effective at reducing NOx emissions, and the failure to consider or analyze this and other feasible mitigation measures is inexcusable.

11 Likewise, the significant and unavoidable air quality impacts (particularly with respect to PM_{10} and $PM_{2.5}$) from construction can be mitigated by reducing the amount of grading and site remediation that is performed each day. By reducing the area that is graded each day, and proportionally reducing the number of equipment operating each day, daily construction emissions may be reduced to a less than significant level. Similarly, by reducing the number of haul truck trips each day, NOx emissions can be reduced below a level of significance.

12 Under CEQA, if feasible mitigation exists that would reduce or avoid a project's significant environmental impacts the project may not be approved unless that mitigation is adopted. (Pub. Resources Code §21002.) And if the lead agency decides not to adopt proposed mitigation, it must provide substantial evidence that the mitigation is infeasible. (CEQA Guidelines § 15091(a)(3).) In this case the RRDEIR omits any reference to much more effective mitigations used at other, similar projects, and there is no reason to believe that the mechanisms used by developers in Kern County and other locations for 100% mitigation would not work effectively in South Coast. The RRDEIR must be revised to analyze all feasible mitigation measures to reduce significant and unavoidable impacts.

II. Because Mitigation Measure 4.4-5 is Infeasible and Cannot be Implemented, the RRDEIR Must be Revised to Show the Air Quality Impacts if this Measure is Not Implemented and Must Require Implementation of All Feasible Mitigation Measures.

13 Unfortunately, the RRDEIR's air quality analysis is based on the use of mitigation measures which are infeasible. The RRDEIR's analysis relies on Mitigation Measure 4.4-5, which requires the use of diesel particulate traps and exhaust gas recirculation for all heavy duty construction equipment, to reduce air quality impacts caused by construction of the Project. (RRDEIR at 4.4-41 ("Diesel particulate traps and exhaust gas recirculation shall be employed for all heavy duty equipment use during construction.").) The emissions models in the Appendix to the RRDEIR show that this is the only mitigation measure that would reduce ROG, NOx, and CO emissions from construction equipment.

14 As written, MM 4.4-5 is neither practicable nor enforceable. It incorrectly assumes that 100% of construction equipment that will be used at the Project across its anticipated five-year building period can and will be equipped with exhaust gas recirculation (EGR) with diesel particulate traps (more commonly known as diesel particulate filter or "DPF"). EGR has only recently been added to some new heavy-duty diesel onroad truck engines (see "Detroit Diesel Corporation Chooses EGR as 2007 Technology, available online at http://www.dieselnet.com/news/2004/03ddc.php). Offroad equipment (including diesel-powered construction equipment) emission standards typically follow onroad emission standards by five to ten years; only some Tier III offroad engines equipped with EGR are now

14 beginning to make it into the marketplace, and full penetration will not occur for at least a decade.

15 Further, new construction equipment is long-lived and expensive to replace and thus existing, higher-polluting, non-EGR and non-DPF equipped off-road construction equipment will remain in the active offroad inventory for decades. As an example, scrapers are the primary offroad diesel-powered vehicle used for rough grading of projects over a few acres in size, are several hundred thousand dollars or more to purchase new, have long (> two years) lead times to order and purchase, and are extremely (30+ years) long-lived in the California offroad vehicle inventory. The great majority of scrapers in the state are high-emitting, Tier 0 (unregulated, very high emission levels) or Tier 1 (1996 – 1998) emission level certified, and it is highly probable that mass grading to be conducted at West Coyote Hills will occur with these older, high-emitting pieces of construction equipment.

16 Construction vehicles for West Coyote Hills must only be equipped with CARB-verified EGR and DPF retrofits, per comments received by the Lead Agency from SCAQMD (*see* letter dated June 9, 2006), yet no such dual-application systems are CARB-verified or even available for offroad diesels (including "heavy duty equipment used during construction" as noted in MM 4.4-5) and it is very unlikely they will be for years (if then) due to significant and daunting technical barriers. (*See* CARB's list of Verified Diesel Emission Control strategies at http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm.) Industry and regulatory agency concerns here include the potential for excessive exhaust-system back-pressure from DPFs leading to malfunction of EGR controls – excessive back-pressure at the DPF can occur, with this then causing excessive NOx emissions and potential engine damage. A considerable number of Tier 0 engines will not be retrofitted with DPFs that will satisfy CARB's in-use durability requirements since cold duty cycle operation or excessive smoking will readily overwhelm catalyst and filtering functions, and DPF manufacturers will not knowingly support such failure-prone applications. Finally, while DPFs retrofits have been approved for certain offroad diesel applications, no EGR system has been CARB-verified---and CARB is currently not allowing *any* DPF retrofit to be joined to an offroad EGR-equipped engine due to the concern noted above.

17 As written, MM 4.4-5 is seriously flawed. It fails to specify whether it applies to offroad construction vehicles, onroad construction vehicles that will work at or serve the Project, or a combination of both. More importantly, it fails by being unenforceable – no information is provided that specifies how "all heavy duty equipment use during construction" will comply with the measure, given that it is not possible to equip virtually any offroad construction equipment with EGR and DPF technologies to comply with the measure.

18 There is also no mechanism to enforce this measure. Will the City's building inspectors or zoning enforcement officers perform this function by daily or weekly checking all construction equipment at the Project site over the five-year construction life to verify that EGRs and DPFs are being used on all equipment, once they have received extensive emissions-

and diesel-technology training? Because of the complexity and importance of this measure to providing the RRDEIR-claimed NOx, PM10, and Toxic Air Contaminant (TAC) emission reductions, an effective enforcement process must be detailed within the Mitigation Monitoring and Reporting Program (MMRP). 18

Even if this mitigation measure were feasible, the RRDEIR drastically overstates the reductions in PM_{10} and $PM_{2.5}$ emissions that result from the use of EGR and DPF, as discussed in Part IV, below.

Most importantly, MM4.4-5 must be amended to reflect realistic, available construction-related emissions controls and the benefits they can be expected to provide across the Project's five-year construction period. As written, the associated emission benefits claimed in the RRDEIR are simply not possible and will not occur, and thus, the Air Quality element of the RRDEIR is highly flawed. 19

III. The RRDEIR's Analysis of Human Health Impacts from Construction Must be Revised Because the Document Relies on Infeasible Mitigation (Mitigation Measure 4.4-5).

The RRDEIR improperly concludes that the potentially significant human health impacts will be reduced to a less than significant level with mitigation. It states that "...mitigation measures have been prescribed that require the use of diesel particulate traps and exhaust gas recirculation for heavy equipment use. These measures would reduce 29.8 pounds per day to about .9 pounds per day." (RRDEIR at 4.4-31.) 20

However, as noted above, MM 4.4-5 will produce little actual emission benefits for the Project, since no technologies have been approved to functionally meet both SCAQMD and CARB requirements applied to offroad construction equipment. Some Tier III diesels are CARB-certified with EGR, but none are certified with EGR and DPFs. New Tier III diesels are being phased in across three years, with the lowest horsepower category (50 – 99 hp) not required until 2008. Many new Tier III diesel engines do not use EGR. While no statistics are readily available, it is likely the number of pieces of construction equipment equipped with Tier III engines with EGR is very limited---perhaps less than 15%--and will grow too slowly to provide more than a small measure of the mitigation sought by the RRDEIR's MM 4.4-5. The great majority of new Tier IV engines that are expected to be equipped with EGR will not even enter the market until after the RRDEIR-estimated conclusion of construction prior to 2012. 21

Unfortunately, the RRDEIR has taken a substantial and invalid claim for emission benefits in lbs/day reductions of criteria pollutants, and then compounded the error by mistakenly assigning significant reductions in health risks derived from dispersion modeling conducted for the Project. The RRDEIR states 22

> Table 4.4-12 reflects the post-mitigation concentrations of the diesel emissions, which are all reduced to below the 10 per million threshold. Therefore, potentially significant impacts would be reduced to a less than significant level, as indicated in Table 4.4-12.

(RRDEIR at 4.4-31.) Based on incomplete construction equipment emissions calculations (*see* above regarding the heavy-duty vehicle vendor trip emissions that are omitted), the 29.2 lbs/day estimated at pg. 4.4-31 should be greater. Worse, the roughly 96% quantitative emission benefit claimed simply will not materialize because the proposed mitigation measure is infeasible. And while some penetration of Level III particulate retrofit controls may occur in the next few years, the great majority of particulate benefits of implementation of CARB's offroad diesel ATCM---the only regulatory driver that will provide ancillary benefit to the West Coyote Hills Project, since MM 4.4.-5 is not practicable or enforceable--will occur *after* the RRDEIR's specified five-year construction period concludes. Because construction-related emission impacts are underestimated and mitigation benefits are greatly overestimated, the RRDEIR cannot accurately conclude that DPM-related health risks are held below the established TAC-related cancer threshold of significance of ten in a million. Without implementation of the infeasible mitigation measure, diesel particulate matter emissions from construction of the Project will cause a significant human health risk. This is a fatal flaw and must be corrected with accurate emissions estimates pre- and post-mitigation, with resulting accurate inputs used for re-modeling Project-related health risks.

IV. The RRDEIR Fails to Accurately Assess Air Quality Impacts from Construction of the Project.

In addition, the modeled emissions are inaccurate and fail to accurately account for several emission sources. EIRs typically provide detailed estimates of emissions from specified equipment profiles, and projects of significant size or duration will typically provide estimates of vendor-related onroad heavy-duty diesel-fueled vehicles that will serve the Project. URBEMIS2002 does not provide related estimates of vendor-related onroad diesel truck emissions, and vendor delivery vehicle emissions are often significant and must be considered significant for calculation and mitigation purposes in the most polluted air basin in the country. As an example, diesel-related vehicle emissions will result from what will likely be thousands of miles of VMT (vehicle miles traveled) and hundreds, perhaps thousands of hours, of PTO pump operation resulting from Project-serving concrete transit-mix trucks. No estimates for this portion of construction emissions appear to have been provided.

Similarly, the emissions models overestimate the reduction in emissions caused by use of EGR and DPF. The models assume that use of DPF would reduce PM_{10} emissions by 80%, and that use of EGRs would reduce PM_{10} emissions by an additional 85%. *See* Appendix. Yet none of the CARB-certified EGRs reduce PM_{10} emissions anywhere near this level. (*See* CARB's list of Verified Diesel Emission Control strategies, available online at

24 http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm.). Thus, even if Mitigation Measure 4.4-5 were feasible, the RRDEIR unjustifiably overstates the emission reductions that would result.

25 The RRDEIR's assumptions about the numbers and types of equipment used during the site grading phase are also unrealistic, and dramatically understate the emissions that will result. The RRDEIR bases its conclusions on emissions models which assume the use of 20 rubber tired dozers, 22 tractor/loader/backhoes, and 1 "other equipment." (See Appendix 14.5) Yet the models do not include any scrapers or other heavy grading equipment which is far more likely to be used on the site. If the RRDEIR is not revised to include a more realistic mix of construction equipment, a condition of approval must be required to limit the use of equipment during the site grading phase to that analyzed in the RRDEIR. Otherwise, the Project will result in significant air quality impacts that were not analyzed in the document.

26 There are additional problems with the analysis. The emissions models also appear to significantly underestimate the extent and duration of VMT resulting from remediation of the site, because it underestimates the amount of soil that must be remediated. Similarly, by using the EMFAC2002 model, rather than the EMFAC2007 model, mobile source emissions are underestimated. And the RRDEIR wholly fails to analyze the impact of reducing grading to 14 acres per day, as required by mitigation measure MM 4.4-1, instead analyzing emissions based on a larger area to be graded in each phase. (*See* RRDEIR at 4.4-23 to 4.4-24.)

27 These errors cause significant errors in the calculation of the Project's air quality impacts, resulting in additional significant impacts beyond those identified in the RRDEIR. Therefore, the RRDEIR must be revised to correct these errors and provide an accurate estimate of the Project's air quality impacts.

V. The RRDEIR's Analysis of Operational Air Quality Impacts is Inadequate

28 In addition, the RRDEIR's analysis of operational impacts fails to require all feasible mitigation measures and fails to quantify the effects of the mitigation measures that are proposed. These operational emissions will worsen the existing air quality problems in the basin, yet the document fails to assess the effectiveness of the proposed measures and to require additional measures to reduce this impact, which the RRDEIR asserts is significant and unavoidable.

29 The RRDEIR proposes a suite of measures (MM 4.4-3d) to reduce operational emissions caused by the Project. Yet the document wholly fails to analyze or quantify the effectiveness of these measures. Other agencies, such as the Sacramento Metropolitan Air Quality Management District ("SMAQMD"), have adopted methodologies for estimating the emission reductions that result from implementation of these types of mitigation measures. (http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf). The RRDEIR must make

29 an attempt to quantify the proposed measures to determine if they will reduce operational impacts to a less than significant level.

Similarly, because the RRDEIR concludes that the impacts are significant and unavoidable, all feasible mitigation measures must be implemented. There are numerous other measures that should be considered, including off-site mitigation measures that are discussed above. The SJVAPCD has a list of such measures online at (http://www.valleyair.org/ISR/Documents/onsite_measures/all_measures.pdf, and the SMAQMD has a similar list online at http://www.airquality.org/ceqa/GuidanceLUEmissionReductions.pdf. CEQA requires that the RRDEIR analyze and require implementation of all feasible mitigation measures to reduce the Project's operational air quality impacts, which the RRDEIR concludes are significant and unavoidable. 30

V. Conclusion

In summary, the RRDEIR fails to comply with CEQA, in particular because it: (1) relies on infeasible mitigation measures to conclude that impacts have been reduced to a less than significant level; (2) fails to require implementation of all feasible mitigation measures with respect to impacts that it identifies as significant and unavoidable; (3) fails to demonstrate compliance with the AQMP; and (4) makes significant errors in calculating the Project's emissions which result in significantly underestimating the Project's air quality impacts. Together, the errors identified above result in the RRDEIR failing to accurately assess the Project's air quality impacts, and failing to effectively mitigate those impacts to the extent feasible. Therefore, the RRDEIR must be revised to correct these errors. 31

Please feel free to contact me at your convenience if you have any questions or comments with the information contained herein.

Sincerely,

Greg Gilbert
Autumn Wind Associates, Inc.