



Florida Department of Environmental Protection

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Charlie Crist
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Transmitted via email only to dan.gray@mymanatee.org

Mr. Daniel Gray, Utilities Department Director
Manatee County Government
4410 66th Street West
Bradenton, Florida 34210

June 16, 2010

RE: Lena Road Class I Landfill Operation Permit Renewal
Pending Permit No.: 39884-018-SO/01, Manatee County
WACS ID No: SWD-41-44795

Dear Mr. Gray:

This is to acknowledge receipt of the permit application prepared by PBS&J, dated May 17, 2010 (received May 13, 2010), for operation permit renewal, including construction and operation of a lateral expansion (Stage II), of an existing Class I landfill, referred to as the Lena Road Class I Landfill, located at 3333 Lena Road, Bradenton, Manatee County, Florida.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your application for a permit is incomplete. This is the Department's second request for information. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

GENERAL:

1. The requested information and comments below do not necessarily repeat the information submitted by the applicant. However, every effort has been made to concisely refer to the section, page, drawing detail number, etc. where the information has been presented in the original submittal.
2. Please submit **4 copies** of all requested information. Please specify if revised information is intended to supplement, or replace, previously submitted information. Please submit all revised plans and reports as a complete package. For revisions to the narrative reports, deletions may be struckthrough (~~struckthrough~~) and additions may be shaded ~~shaded~~ or similar notation method. This format will expedite the review process. Please include revision date on all revised pages.
3. Please provide a summary of all revisions to drawings, and indicate the revision on each of the applicable plan sheets. Please use a consistent numbering system for drawings. If new sheets must be added to the original plan set, please use the same numbering system with a prefix or suffix to indicate the sheet was an addition, e.g. Sheet 1A, 1B, P1-A, etc.
4. Please be advised that although some comments do not explicitly request additional information, the intent of all comments shall be to request revised calculations, narrative, technical specifications, QA documentation, plan sheets, clarification to the item, and/or other information as appropriate. **Please be reminded that all calculations must be signed and sealed by the registered professional engineer (or geologist as appropriate) preparing them.**

The following information is needed in support of the solid waste application [Chapter 62-701, Florida Administrative Code (F.A.C.)]:

1. **Rule 62-701.320(5)(b), F.A.C.** Please address the comments in John Morris' June 16, 2010 memorandum (attached) regarding this application. You may call Mr. Morris at (813) 632-7600, extension 336, to discuss the items in his memorandum.

Rule 62-701.320(7)(b), F.A.C. Application Form #62-701.900(1): Please address the following comments regarding the permit application form and/or supporting information and provide a revised application form with revised information, where applicable:

2. **Part G (previously Part H):**

a. The statement that "Part H is not applicable since this is renewal... which does not involve any new construction" still appears incorrect. As previously stated, at a minimum, this application indicates that the excavation of Stage II to design bottom grades has not been completed to date and must be constructed and certified prior to operation in Stage II. The information provided in the May 13, 2010 response appears to include a site exploration report, permit drawings, and construction progress reports for the Stage II slurry wall and as-built drawings for the Stage II leachate collection system and force main. The Department has found no records in its current files of a certification of construction completion of Stage II that approves final construction or authorizes operation in Stage II. Because base-grading of Stage II is proposed as part of this permit application, it is not likely that prior certification of construction completion by the applicant was provided and therefore prior approval of final construction and authorization to operate in Stage II by the Department would not have been given. The fact that the acreage of Stage II has been included in previous permits issued by the Department should not be interpreted to mean that final construction of Stage II was previously approved or that operation in Stage II was previously authorized by the Department.

Similar to the construction/excavation in Stage III during the previous permit cycle, the permittee will be required to provide certification of construction completion of the base grading approved as part of this permit application and operation in Stage II will be authorized upon the Department's approval of this construction certification. **This comment is provided for informational purposes only and does not necessarily require a response other than acknowledgement of the comment.**

b. Permit information and/or drawings that show the previously permitted base grade elevations of Stage II do not appear to be included in the information provided. Please provide this information, as appropriate.

3. **Part I. (previously Part J) (Rule 62-701.410, F.A.C.):** A change in fill sequence from "west to east" to "east to west" does not appear to be the only operation revision from that originally proposed. The proposed operation of Stage II has been revised from initial operation along the south end of Phase II (adjacent to the north slope of Phase I) to initial operation in the northeast portion of Stage II. The proposed base grading of the initial disposal area in Phase II may also have been revised from the originally proposed (see Comment #2.b.). Therefore please provide updated geotechnical information based on the revised operational design, as indicated in the comments below. Part I will be re-evaluated upon receipt of this information.

a. Part I.1.d.(1) - Foundation Bearing Capacity Analysis (Rule 62-701.410(2)(e)1., F.A.C.): The referenced and provided previous geotechnical information does not appear to include foundation bearing capacity analyses. Please address the following comments regarding Figure I-2 and revise Figure I-2 and this section, as appropriate.

- 1) Please revise this analysis, as appropriate, based on the proposed changes to the base grading and operational sequence of the facility.
- 2) Please provide a copy of the referenced pages from Foundation Engineering (1953).
- 3) Please explain why the foundation bearing capacity analysis only considers the top subsurface sand layer.
- 4) Please provide the calculations and/or analyses conducted in support of the generalized n-value assumed for the subsurface sand layer.

b. Part I.1.b - Sinkhole Potential Investigation (Rule 62-701.410(2)(c), F.A.C.): Please provide an updated sinkhole potential evaluation for the facility that includes the following and revise this section, accordingly.

- 1) The evaluation of sinkhole potential provided in the compiled geotechnical reports does not appear to include an evaluation that identifies areas of loose sands and other anomalies, if any, that could indicate potentially unstable areas beneath or within the immediate vicinity of the Stage II footprint and adequately explains or addresses this potential, and/or identifies sufficient geotechnical measures necessary to modify the foundation to provide adequate structural support for the landfill. Please address this issue in the updated sinkhole evaluation accordingly.
- 2) The evaluation of sinkhole potential provided in the compiled geotechnical reports does not appear to include an evaluation of the site specific subsurface data generated as part of the previous geotechnical evaluation of Stage II, as related to sinkhole potential. Please provide an evaluation of this data, as related to sinkhole potential at the facility, in the updated sinkhole evaluation.
- 3) An evaluation of the additional subsurface investigation conducted as part of this application or since the reports provided or an indication that no additional subsurface investigation was conducted.
- 4) An evaluation of the proposed construction details for Stage II that address the findings in Comments (1) through (4) above, or an indication that no changes in construction details is proposed.

c. Part I.1.d.(3) - Slope Stability Analysis (Rule 62-701.410(2)(e)3., F.A.C.): The referenced and provided previous geotechnical information does not appear to include slope stability analyses. Please address the following comments regarding the information provided in this section and on Figure I-3 revise Figure I-3 and this section, as appropriate.

- 1) Please revise this analysis, as appropriate, based on the proposed changes to the base grading.

2) Figure I-3 does not indicate which operational slope is being evaluated. Since the configurations of all four proposed slopes appear to be different, an analysis of each slope should be provided. Please verify and revise the slope stability analyses accordingly.

3) Figure I-3 does not appear to indicate whether it represents a circular failure analysis, block failure analysis, or both. Please note that both circular and block failure analyses shall be conducted. Please verify and revise the slope stability analyses accordingly.

4) Please provide the calculations and/or analyses conducted in support of the assumed soil parameters utilized, including a specific reference to where in the previous geotechnical report the utilized information is located.

5) Please revise the analyses based on the operational and closure slopes presented on Sheet C-7 through C-9 and Sheet C-11 and C-12 (see Comments #7 and #8.a.).

d. Rule 62-701.410(2)(e)2., F.A.C.: The settlement analyses results reported Section 5.5 and the of the March 3, 1983 geotechnical and hydrogeological investigation report indicates that "a field test implementation of a settlement plate observation program is necessary in order to establish more accurately the limits of design", as related to the magnitude of secondary compression and that "Implementation of the settlement plate program would enable us to evaluate and refine our settlement predictions in relation to the actual conditions effecting settlement in the field." The settlement conclusions and recommendations in Chapter 6 of the recommends a settlement plate data program and indicates that recommendation for this program were provided previously under separate cover. Please verify whether this additional settlement analyses has been conducted or is proposed as part of this permit application and/or as applicable, provide updated supporting justification, including an updated settlement analyses as appropriate, for not conducting the settlement plate program. Please revise Part I.1.c.(2) of the application form and the Part I narrative, as appropriate.

PART K - OPERATIONS PLAN (RULE 62-701.730(9), F.A.C.)

Please provide the following additional information and revisions to the facility Operations Plan. Please provide replacement pages with revisions noted (deletions may be struckthrough [struckthrough] and additions may be underlined [underlined] or a similar method may be used) and each page numbered with the document title and date of revision.

4. Section 9.0:

a. Figure K-8: Gas monitoring well GMW-11 appears to be identified as well GMW-11A on Figure K-9. Please verify and revise these figures, as appropriate.

5. Section 10.0:

a. Stage II System: The narrative in this section of the revised Operation Plan does not appear to be revised, as indicated in the May 17, 2010 response letter. Please verify and revise this section to specifically describe the procedures for stormwater management in Stage II as part of the operation of Stage II.

**LANDFILL FILL SEQUENCE DRAWINGS TITLED - MANATEE COUNTY LENA ROAD CLASS I
LANDFILL FILL SEQUENCE PLAN FROM 2009 TO 2015 - NOVEMBER 2009 (RULE 62-
701.320(7)(f), F.A.C.)**

Please provide the following additional information and revisions to the facility fill sequence plan drawings.

6. **Sheet C-4:** In support of the response to Comment #25 provided in the May 17, 2010 response letter, please provide the following information:

- a. The date that the certification of construction completion for the eastern expansion was submitted to the Department for approval,
- b. The approximate date that Fill Sequence #4A was completed and copy of the permittee's notification to the Department that they had completed Fill Sequence #4A and request for approval to modify the fill sequence to proceed to Sequence #6, because approval of construction of the eastern expansion (i.e. approval to operation Sequence #5) was still pending, in accordance with Specific Conditions #A.3.a. and #D.1.b. of Permit No 39884-010-SO/01, and
- c. A copy of the Department's comments and/or approval of the requested change in fill sequence in accordance Specific Condition #C.7. of Permit No 39884-010-SO/01.

7. **Sheets C-7 and C-8:**

- a. Sections A and B on Sheet C-11 shows 5H:1V side slopes between the terraces. However the contours on the upper three lifts of Stage III on these sheets appear to show a 4H:1V slope between the terraces. Please provide supporting settlement calculations that demonstrate that 4H:1V operational slopes will settle evenly to 5H:1V slopes as shown on Sheet C-11 after landfill settlement. Alternatively, please revise these sheets to provide consistent landfill side slopes.

8. **Sheet C-10:**

- a. Sections A and B on Sheet C-12 shows 5H:1V side slopes between the terraces. However the contours on the upper three lifts of Stage II on this sheet appear to show a 4H:1V slope between the terraces. Please provide supporting settlement calculations that demonstrate that 4H:1V operational slopes will settle evenly to 5H:1V slopes as shown on Sheet C-12 after landfill settlement. Alternatively, please revise these sheets to provide consistent landfill side slopes.
- b. The slope stability analysis provided in Part I, assumes a 5H:1V slopes for both the operational and final closure slopes of Phase II. Please provide revised slope stability analyses, as appropriate, based on your response to Comment #8.a.

PART S - FINANCIAL RESPONSIBILITY REQUIREMENTS (RULE 62-701.630, F.A.C.)

9. Please address the comments in Department's June 16, 2010 letter (attached) regarding the financial assurance cost estimates provided in Part S.

APPENDIX A - LCS VIDEO INSPECTION (RULE 62-701.400(4), F.A.C.)

10. Summary of Video Inspection - Stage II:

- a. The distance of pipe video inspected reported on the video for B-B1 (approx 700 ft), appears inconsistent with the distance reported on the summary report. Please verify and revise the summary report, as appropriate.
- b. Video inspections of the leachate collection line F-F1 and G-G1, which will service the initial disposal area of Stage II, and leachate collection line A-A1 do not appear to have been provided with the May 11, 2010 summary report provided with the May 13, 2010 submittal. Please verify whether these leachate collection lines were video inspected and either provide a copy of the video inspection conducted on these lines, conduct a video inspection of these lines and provide a copy of the video inspection, or provide a explanation as to why these lines were not video inspected.
- c. Please explain why the leachate transmission lines between the leachate manholes in Stage II were only jet cleaned and not video inspected with the remainder of the Stage II leachate collection system.

APPENDIX B - SLURRY WALL GRADIENT DATA (RULE 62-701.400(11), F.A.C.)

11. Figure 1: Please revise the table on this figure or provide a supporting table that includes the water levels recorded from the piezometers.

Please provide all responses that relate to engineering for design and operation, including plan sheets, signed and sealed by a professional engineer. Responses that relate to the facility operations should be included as part of the Operation Plan. All replacement pages should be numbered, and with revision date.

This staff assessment is preliminary and is designed to assist in the review of the application prior to final agency action. The comments provided herein are not the final position of the Department and may be subject to revision pursuant to additional information and further review.


Please respond by **August 4, 2010**, or an alternate the date established in the meeting referenced below, responding to all of the information requests and indicating when a response to any unanswered questions will be submitted. If the response will require longer than the above schedule, you should develop an alternate timetable for the submission of the requested information for Department review and consideration. If the Department does not receive a timely, complete response to this request for information, the Department may issue a final order denying your application. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant may reapply as soon as the requested information is available.

Mr. Daniel Gray, Utilities Department Director
Manatee County Government

Lena Road Class I Landfill
Page 7 of 7

You are requested to submit 4 copies of your response to this letter as one complete package. The Department recommends that the applicant contact the Department to set up a meeting to discuss this letter and subsequent submittals, prior to response to this letter. Please contact me at (813) 632-7600 ext. 385 to schedule this meeting.

Sincerely,




Steven G. Morgan
Solid Waste Section
Southwest District

SM/sgm

Attachments

cc: Joseph L. Miller, P.E., PBSJ, jlmliller@pbsj.com
Frank Hornbrook, FDEP, Tallahassee (e-mail)
Richard Tedder, P.E., FDEP, Tallahassee (e-mail)
David Zell/Cindy Zhang-Torres, FDEP Tampa Air Section (e-mail)
John Morris, P.G., FDEP Tampa (e-mail)
Susan Pelz, P.E., FDEP Tampa (e-mail)





Florida Department of Environmental Protection

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Transmitted via email only to dan.gray@mymanatee.org

Mr. Daniel Gray, Utilities Department Director
Manatee County Government
4410 66th Street West
Bradenton, Florida 34210

June 16, 2010

RE: Lena Road Class I Landfill Operation Permit Renewal
Financial Assurance Cost Estimates
Pending Permit No.: 39884-018-SO/01, Manatee County
WACS ID No: SWD-41-44795

Dear Mr. Gray:

This letter is to acknowledge receipt of the cost estimates dated February 10, 2010 (received February 23, 2010), prepared by PBSJ. The financial assurance information provided on February 23, 2010 is not approved. The following information is needed to fully evaluate the estimates submitted:

General Comments

1. Based on your response to the comments below and comments provided as part of the above referenced permit application, please provide a revised DEP Form 62-701.900(28), (effective 1/6/2010) that incorporates all proposed changes to the closure and long-term care cost estimates and is signed by the applicant or signed and sealed by the professional engineer who prepared the estimate.
2. Please note that quantities and unit costs for closure and long-term care items may be added or changed based on comments and revisions to the above referenced permit application and therefore the proposed closure and long-term care costs will need to be revised accordingly.

Solid Waste Disposal Units Included in Estimate

1. Please revise this table to include the relevant information on the portions of Stage I that have been closed.

Closing Costs

2. Vegetative Layer: Please provide a copy of the supporting cost for sod from a recent project (within the last year) in the vicinity of Manatee County.
3. Gas Control – Active: Please provide supporting information for the assumed costs provided for this item.

4. Site Specific Costs:

a. While the HHW drop-off area is exempt from permitting, the management, storage, and disposal of unacceptable wastes, special wastes, and recyclables generated at the facility is part of operation of the Class I facility, and is not exempt from financial assurance. In accordance with Rule 62-701.630(3)(a), closure and long-term care costs estimates shall be based on "... the time period in the landfill operations when the extent and manner of its operation making closing most expensive." In the case of the disposal of these materials, the worst case costs would occur if the maximum proposed quantity of each of these materials was on site at the time that a third party was tasked to close the facility. Worst case assumes that these materials have been abandoned, and are not intended for recycling and therefore worst case cost assume disposal (not recycling) of these materials. Please provide cost estimates and supporting third party quotes for the costs of loading, hauling, and disposal of the maximum quantity of unacceptable wastes, special wastes, and recyclables proposed to be stored at the facility at any one time, as indicated in Section 2.0.c. of the Operations Plan (Part K) provided as part of the above permit application.

b. Leachate Disposal: Leachate generation and the associated cost of disposal will continue during closure of the facility. The leachate generation rate during closure should be based on the calculated leachate generation rate at the time of closure of the facility. Please revise this section to include estimated costs for leachate disposal during closure as a site specific closure cost.

Long-term Care Costs

5. Groundwater, Surface Water, and Leachate Monitoring :


a. Supporting third-party information provided for assumed cost should be based on current information (within approx. 1 year). The 2006 costs for monitoring in Hardee County is not current supporting third-party information. Please provide supporting third-party quote for the assumed costs that are current (less than 1 year old) and revise the costs provided in these sections, as appropriate.

b. The sampling frequency provided in this section may not correspond to the sampling frequency that will be in the facility's approved groundwater monitoring plan (See John Morris' memorandum dated June 16, 2010). Please revise this section accordingly.

6.. Leachate Disposal: Please provide a supporting current third-party quote for the assumed unit leachate disposal costs provide in this section and revise the costs in this section, as appropriate.

The Department requests .that all information be provided with your response to the Department's June 16, 2010 letter regarding the above referenced permit application. If you have any questions or concerns, please contact me at (813) 632-7600 ext. 385.

Sincerely,



Steven G. Morgan
Solid Waste Section
Southwest District

SM/sgm

cc: Joseph L. Miller, P.E., PBSJ, jlmiller@pbsj.com
Frank Hornbrook, FDEP, Tallahassee (e-mail)
John Morris, P.G., FDEP Tampa (e-mail)
Susan Pelz, P.E., FDEP Tampa (e-mail)



Memorandum

Florida Department of Environmental Protection

TO: Steve Morgan
FROM: John R. Morris, P.G. JRM
DATE: June 16, 2010
SUBJECT: Lena Road Class I Landfill, Manatee County
Operation Permit Renewal Application, Pending Permit #39884-018-SO
Environmental Monitoring Review Comments [Responses to RAI #1]
cc: Susan Pelz, P.E. SP

I have reviewed portions of the materials submitted to the Department in support of the referenced application for the Lena Road Class I Landfill operations permit that were prepared by Post Buckley Schuh & Jernigan (PBSJ), on behalf of Manatee County Utilities Department, Solid Waste Division, received May 18, 2010. These materials were prepared in response to the Department's letter dated December 10, 2009 that requested additional information for the referenced facility. My review focused on the hydrogeologic and environmental monitoring aspects of the referenced permit application, and included the following:

- Document entitled "Application and Engineering Report for Renewal of the Class I Landfill Operation Permit" [referred to as the "**Engineering Report**"], revised May 11, 2010, including:
 - Letter prepared by PBSJ dated May 17, 2010, re: "Lena Road Class I Landfill Operations Permit Renewal" [referred to as the "**response letter**"],
 - DEP Form #62-701.900(1), Application for a Permit to Construct, Operate, Modify or Close a Solid Waste Management Facility, signed/sealed May 11, 2010
 - Part H – Hydrogeological Investigation Requirements
 - Part L – Water Quality and Leachate Monitoring Requirements
- Document entitled "Biennial Water Quality Monitoring Plan Evaluation, First Half 2007 Through First Half 2009, Manatee County Solid Waste Division, Lena Road Class I Landfill" [referred to as the "**BWQMPE document**"], prepared by PBSJ, revised January 2010

Additional information is required to address the requirements of Rules 62-701.410 and 62-701.510, F.A.C., and to evaluate the adequacy of the proposed monitoring plan. Please have the applicant address all of the review comments that do not include the phrase: "**No additional information is requested.**" Please have the applicant submit responses to the following review comments and provide revised submittals, or replacement pages to the submittals, that use a strike-through and underline format, or similar format, to facilitate review. Please also have the applicant include the revision date as part of the header/footer for all revised pages [including text, figures, tables, attachments, forms, plan sheets, etc.].

The review comment numbers presented below are consistent with my memorandum dated December 9, 2009. The information requests have been referenced to sections of the permit application and are also referenced to the sections of the supporting documents where appropriate, as presented below:

GENERAL COMMENTS

1. Part H of the application form referred to the March 1983 Ardaman & Associates, Inc., report referenced in Part I of the Engineering Report. **No additional information is requested.**

SECTION H – HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS

(Rule 62-701.410(1), F.A.C.)

2. H.1.g.: Inventory of all public and private water wells within a one-mile radius of the landfill including , . . .

H.1.i.: Include a map showing locations of all potable wells . . .

[Rules 62-701.410(1)(b) and 62-701.410(1)(d), F.A.C., respectively] [Renumbered from items I.1.g., and I.1.i.]

These items on revised page 24 of the application form referenced Chapter 3.6 [“Well Inventory”] of the document entitled “Geotechnical and Hydrogeological Investigation, Lena Road Landfill,” prepared by Ardaman & Associates, Inc., dated March 3, 1983, and the updated well inventory provided in Part H of the Engineering Report. Please note that the discussion provided in Part H regarding the query of the Water Use Permitting database maintained by the Southwest Florida Water Management District in the vicinity of the facility [as depicted on the included map] does not provide all the information required by Rules 62-701.410(1)(b)1 through 62-701.410(1)(b)3, F.A.C., for the area within a one-mile radius of the site. Please also note that a query of the Water Use Permitting database is not sufficient to demonstrate compliance with Rule 62-701.300(2)(b), F.A.C., regarding the occurrence of potable wells within 500 feet of waste storage and disposal areas. Please submit a revised Engineering Report that provides supplemental information to address these well inventory requirements.

SECTION L – WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS

(Rule 62-701.510, F.A.C.)

3. L.1.b.: All sampling and analysis performed . . . [Rule 62-701.510(2)(a), F.A.C.] [Renumbered from item M.1.b.] The response letter referred to Section L.1.b.(1) of the Engineering Report that was revised to reference the Department’s updated SOPs dated March 31, 2008. **No additional information is requested.**

4. L.1.c.(1): Detection wells located downgradient from and within 50 feet of disposal units

[Rule 62-701.510(3)(a), F.A.C.] [Renumbered from item M.1.c.(1)] The response letter indicated that the lateral distance between the slurry wall [considered to be the edge of the disposal unit for the Lena Road landfill] and the proposed detection wells was shown on Figure L-2. Please note that the revisions to Figure L-2 do not specify the lateral distance from the slurry wall around Stage II to proposed monitor wells GW-18 to GW-28. Please submit revisions to this section of the Engineering Report to specify the lateral distances between the slurry wall and existing wells GW-3 through GW-17, and the lateral distances between the slurry wall and proposed wells GW-18 through GW-28. Please submit additional revisions to this section of the Engineering Report to indicate if there are any areas around Stages I, II, or III where the zone of discharge is less than 100 feet wide [refer to Specific Condition #E.2.a., of permit #39884-010-SO: “The zone of discharge for this landfill shall extend horizontally 100 feet from the limits of the landfill slurry wall (designated as Stage I, II and III landfill areas) or to the property boundary, whichever is less, and shall extend vertically to the bottom of the surficial aquifer.”].

5. L.1.c.(2): Downgradient compliance wells as required [Rule 62-701.510(3)(b), F.A.C.] [Renumbered from item M.1.c.(2)] The response letter indicated that this section of the Engineering Report was revised to add the criteria for requiring compliance wells. It is noted that there is no Section L.1.c.(2) in the Engineering Report, and that the revisions to Section L.1.c., of the Engineering Report do not appear to address the criteria for requiring the installation of compliance wells. Please submit revisions to this section of the Engineering Report to address this item.

6. L.1.c.(4): Location information for each monitoring well [Rule 62-701.510(3)(d)1, F.A.C.] [Renumbered from item M.1.c.(4)] The response letter indicated that the references to DEP Form #62-522.900(3) were corrected. The revision to Note #2.A. on Figure L-2 that referenced DEP Form #62-520.900(3) is noted. Please submit revisions to Section L.1.f.(1), bullet item #1 [page L-5] to also reference DEP Form #62-520.900(3).

7. **L.1.c.(6): Well screen locations properly selected** [Rule 62-701.510(3)(d)4, F.A.C.] [Renumbered from item M.1.c.(6)] The response letter indicated inset Table 1 on Figure L-2 provided the rationale for the range of screen elevations for proposed wells GW-18 through GW-28 [each well screened at 26.5 to 36.5 feet NGVD]. It is noted that the wells furthest downgradient from Stage III [GW-8, GW-9 and GW-10] have reported low ground water levels less than 26 ft NGVD during the period from August 2005 to September 2009. It is also noted that the surficial aquifer monitor wells formerly located around Stage II [LR-II-1 through LR-II-5] have reported low ground water levels less than 24 ft NGVD during the period from July 1999 to February 2005]. This information has been provided to assist with the characterization of seasonal variations in ground water elevations at the facility [required by Rule 62-701.410(1)(a)1, F.A.C.] to meet the technical justification of construction details for proposed monitor well to meet the requirements of this item. Please submit revisions to this section of the Engineering Report and to Figure L-2 as needed to support the construction details of the proposed monitor wells.

8. **L.1.d.: Surface water monitoring requirements** [Rule 62-701.510(4), F.A.C.] [Renumbered from item M.1.d.] The response letter referred to renumbered Section L.1.d., of the Engineering Report. **No additional information is requested.**

9. **L.1.e.: Leachate sampling locations proposed** [Rule 62-701.510(5), F.A.C.] [Renumbered from item M.1.e.] The response letter referred to renumbered Section L.1.e., of the Engineering Report. **No additional information is requested.**

10. **L.1.f.: Initial and routine sampling frequency and requirements** [Rule 62-701.510(6), F.A.C.] [Renumbered from item M.1.f.]

a. The response letter referred to renumbered Sections L.1.f.(1) through L.1.f.(4) of the Engineering Report. Please submit revisions to Section L.1.f.(2) of the Engineering Report to provide the leachate parameter list consistent with the revisions to Rule 62-701.510(8)(c), F.A.C., that were effective on January 6, 2010. Please also submit revisions to Section L.1.f.(4) of the Engineering Report to provide the surface water parameter list consistent with the revisions to Rule 62-701.510(8)(b), F.A.C., that were effective on January 6, 2010.

b. The response letter indicated that Section L.1.f.(3) of the Engineering Report had been revised to indicate monitor wells shall be sampled in accordance with Rule 62-701.510(6)(d), F.A.C., however this section of the Engineering Report (top of page L-6) still referenced Rule 62-701.510(6)(c), F.A.C. Please submit revisions to this section of the Engineering Report to address this inconsistency and provide the correct rule citation for routine ground water sampling parameters. Please note that the appropriateness of the semi-annual frequency for conducting routine ground water sampling events indicated in Section L.1.f.(3) will be evaluated once sufficient responses to comment #4., above, and #13.m., below, are received.

11. **L.1.g.: Describe procedures for implementing evaluation monitoring, prevention measures and corrective action as required** [Rule 62-701.510(7), F.A.C.] [Renumbered from item M.1.g.] The response letter referred to renumbered Section L.1.g., of the Engineering Report. **No additional information is requested.**

12. **L.1.h.(1): Semi-annual report requirements** [Rule 62-701.510(9)(a), F.A.C.] [Renumbered from item M.1.h.(1)] The response letter referred to renumbered Section L.1.h.(1), of the Engineering Report. **No additional information is requested.**

13. **L.1.h.(3): Bi-annual report requirements signed, dated and sealed by PG or PE** [Rule 62-701.510(9)(b), F.A.C.] [Renumbered from item M.1.h.(2)] Please submit revisions to this item of the application form [page 32] to also reference the revised BWQMPE document.

Please submit additional revision to the BWQMPE document to address the following:

Section 1.1.1 – Water Quality Monitoring Network and Program

a. ¶1 of this section was revised to reference Specific Conditions #E.1., through #E.12., the facility's permit that stipulated water quality and leachate monitoring requirements. ¶3 of this section was revised to indicate Specific Condition #E.1.a., requires field work to be conducted in accordance with the Department's SOPs. **No additional information is requested.**

Section 1.2 – Objectives

b. The first bullet item of this section was revised to indicate hydrographs were prepared for all monitor wells. **No additional information is requested.**

Section 2.1.2 – Ground Water Data Summary

c. The indication in the response letter that Table 2-7 was revised to indicate the iron concentration reported for well GW-10 during the August 2008 sampling event was 0.997 mg/L is noted. Please submit additional revisions to Table 2-7 to highlight the iron concentration reported for well GW-11 during the August 2008 sampling event [iron concentration of 19.8 mg/L exceeds the secondary ground water standard of 0.3 mg/L].

d. ¶3 and the third bullet item in ¶4 of this section were revised to indicate ammonia has been reported at concentrations that exceeded the ground water minimum criterion. **No additional information is requested.**

e. The second bullet item in ¶4 of this section was revised to indicate the MCL for arsenic is 0.01 mg/L. **No additional information is requested.**

Section 3.1.3 – Related Parameter Correlation

f. The response letter indicated that the concentration graphs prepared to evaluate the correlation between arsenic and turbidity were revised as requested. Please submit additional revisions to Appendix C-3 to address the following arsenic concentrations:

- March 2007 – GW-6 @ 0.012 mg/L, GW-11 @ 0.015 mg/L
- August 2007 – GW-6 @ 0.009 mg/L
- August 2008 – GW-12 @ 0.01 mg/L

g. Please submit revisions to the discussion of turbidity vs. arsenic in this section to be consistent with the responses provided to comment #13.f., above, as appropriate.

Section 3.1.4 – Upgradient vs. Downgradient Correlation

h. The response letter indicated that the cross-gradient graph of arsenic concentrations provided in Appendix D had been revised to provide a more clear presentation of the change in concentrations over time for each well location. Please submit additional revisions to this graph to indicate that arsenic was reported at a concentration of 0.014 mg/L for the sample collected from well GW-15 during the August 2008 sampling event.

i. The second and fourth bullet items in this section were revised to indicate iron and TDS concentrations at background well BGW-1 were relatively low, respectively. The third bullet item in this section was revised to indicate the results suggest the presence of the landfill may contribute to the elevated iron and TDS concentrations on the downgradient side of the landfill. **No additional information is requested.**

j. The third bullet item in this section was revised to indicate the results suggest the presence of the landfill may contribute to the elevated arsenic concentrations on the downgradient side of the landfill. **No additional information is requested.**

[Comment #13., continued]

Section 4.1 – Ground Water Flow Patterns

k. The response letter indicated that Table 4-2 was revised to include the screen elevations at each well location [as provided in Table 1-2]. It is noted that the top of casing elevations and well depths presented in Table 1-2 that were used to calculate the well screen elevations presented in Tables 1-2 and 4-2 appear to be inconsistent with the monitor well and piezometer configurations provided in Figure L-2 of the Engineering Report for selected locations. Using a 0.5-foot tailpipe and 15-foot screened interval, the screen elevations presented for wells GW-10 and GW-11 appear to be inconsistent using the top of casing and total depth measurements in Table 1-2. Using a 0.5-foot tailpipe and 10-foot screened interval, the screen elevations presented for piezometers PZ-1 through PZ-17 appear to be inconsistent using the top of casing and total depth measurements in Table 1-2. Please review these apparent inconsistencies and submit revisions to Tables 1-2 and 4-2, as appropriate. Please revise the discussion of ground water and screen elevations for well GW-11 provided in ¶2 of this section, as appropriate.

l. ¶2 of this section was revised to indicate a general northwest ground water flow direction across Stage I and a general west-southwest ground water flow direction across Stage III. **No additional information is requested.**

m. ¶4 of this section was revised to provide calculations of horizontal hydraulic gradient for Stages I and III using the water table surface contour maps prepared using water levels measured during the five sampling events conducted during the period of review. Please submit revisions to Figures 2 through 6 to show the sections used to calculate the horizontal hydraulic gradient values presented in ¶4 of this section. As the slurry wall installed at the facility was intended to isolate the landfill from the surficial aquifer, it is assumed that calculating hydraulic gradient values along the perimeter of Stages I and III is more appropriate than across Stages I and III. Please note that the average of the hydraulic gradient values presented in ¶4 of this section for Stage I is 0.00424 ft/ft [rather than 0.0021 ft/ft as indicated]. Please also note that with an average value of hydraulic gradient for Stage I of 0.00424 ft/ft and an average value of hydraulic gradient for Stage III of 0.0027 ft/ft, an average hydraulic gradient for the site would be 0.00347 ft/ft [rather than 0.0024 ft/ft as indicated]. Please submit additional revisions to this section to calculate the range of ground water velocity values that reflect the range of horizontal hydraulic gradient values, the range of horizontal hydraulic conductivity values obtained for the surficial aquifer, and a representative effective porosity value.

Section 5.0 – Summary, Conclusions and Recommendations

n. The second bullet item in ¶1 of this section was revised to indicate scattered organic detections were reported in ground water samples. **No additional information is requested.**

o. ¶4 of this section was revised to indicate that the Department's SOP guidelines be followed carefully during future ground water sampling events for collection of samples to be analyzed for volatile organic compounds. **No additional information is requested.**

p. ¶3 of this section was revised to indicate a general northwest ground water flow direction across Stage I and a general west-southwest ground water flow direction across Stage III. **No additional information is requested.**

q. The sixth and seventh sentences in ¶4 of this section were added to address the adequacy of well GW-11 to meet the requirements of Rule 62-701.510(3)(d)4, F.A.C. ["Wells monitoring the unconfined water table shall be screened so that the water table can be sampled at all times."]. Please submit additional revisions to this section to be consistent with the response to comment #13.k., above, regarding the well screen interval elevations and determine if the well screen has been submerged during the period of review. As previously requested, in the event that a replacement for well GW-11 is proposed, please submit revisions to Part M of the Engineering Report to provide the justification of construction details to meet the requirements of the above-cited rule.

[Comment #13., continued]

r. ¶5 of this section was revised to recommend implementation of supplemental activities to further characterize the occurrence and source(s) of elevated arsenic concentrations and to reduce sample turbidity. ¶5 of this section was also revised to recommend that these supplemental activities be conducted during the next two semi-annual ground water sampling events, with the results provided to the Department in a Supplemental Site Assessment Report. are inconclusive. **Please implement these supplemental activities during the 2nd half 2010 and 1st half 2011 ground water sampling events. This comment was presented for informational purposes and does not require a response.**

s. In the event that responses to comment #13.k., #13.m., and #13.q., above, require changes to the existing monitoring plan for Stages I and III, please submit revisions to ¶5 of this section and to Part M of the Engineering Report, as appropriate.

This staff assessment is preliminary and is designed to assist in the review of the application prior to final agency action. The comments provided herein are not the final position of the Department and may be subject to revision pursuant to additional information for further review.

I can be contacted at (813)-632-7600, extension 336, to discuss the comments in this memorandum.

jrm