

BEFORE THE
ENVIRONMENTAL QUALITY COUNCIL
STATE OF WYOMING

IN THE MATTER OF THE
REVIEW OF APPLICATION FOR
RENEWAL OF PERMIT
ISSUED TO:

FILED
APR 28 2011
Jim Ruby, Executive Secretary
Environmental Quality Council

MIKE MCDONALD, CHAIRMAN)
FREMONT COUNTY SOLID WASTE)
DISPOSAL DISTRICT (SWDD))
SAND DRAW LANDFILL (10.195))
P.O. BOX 1400)
LANDER, WY 82520)

DOCKET NO. 11-5601

PETITION FOR REVIEW OF REVIEW DETERMINATION
FOR APPLICATION FOR RENEWAL OR PERMIT
AND
REQUEST FOR HEARING

COMES NOW Petitioner, Fremont County Solid Waste Disposal District, hereinafter FCSWDD, and hereby files this Petition for Review of the Decision of the Wyoming Department of Environmental Quality as contained in its review of Petitioner's application for renewal of permit and hereby moves the State of Wyoming Environmental Quality Council to set a date and time to hold a hearing to review the decision of the Wyoming Department of Environmental Quality issued therein. In support Petitioner would state to the Court as follows:

1. On December 23, 2010 Petitioner submitted an application for renewal of its permit at its Sand Draw Facility (10.195) located in Fremont County, Wyoming.
2. Section 4.4 of the application sought a permit amendment to increase the facilities capacity and design life on the currently permitted 80 acre site to extend to the year 2037 through vertical expansion.
3. On March 28, 2011 the Wyoming Department of Environmental Quality issued its review of the application, which review letter and documentation was received by Petitioner on March 30, 2011. A copy of the review letter and comments is attached hereto as Exhibit 1 and incorporated herein for all purposes.
4. On page 9 of 31 the Wyoming Department of Environmental Quality commented that the submission was complete and technically adequate with comments.
5. The comments then proceeded to recite certain dates and discussions that had occurred in previous renewal applications and concluded that Petitioner had committed to ceasing disposal in the original 80 acres by December 31, 2018.
6. The decision further indicated that the renewal application included a permit amendment to extend the life of the 80 acre area to 2037 by adding "a new cell/unit vertically above the current disposal cell/unit".
7. The comment further indicated that a capacity expansion beyond December 31, 2018 constitutes "a new landfill cell/unit".
8. The comment further indicated that "new landfill cells/units must be constructed with an engineered containment system of the operator must submit a performance based design which ensures that the concentration values for pollutants listed in the National Primary Drinking Water Regulations, 40 CFR Part 141, will not be exceeded in the uppermost aquifer at the relevant point of compliance"
9. Petitioner disputes the assertion of the Wyoming Department of Environmental Quality that vertical expansion over an existing permitted area constitutes a "new cell/unit".
10. The comments in response to the permit application issued by the Wyoming Department of Environmental Quality is arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law, and unsupported by substantial evidence.


11. The determination of the Wyoming Department of Environmental Quality that a vertical expansion constitutes a new cell/unit that must submit a performance based design which ensures that the concentration values for pollutants listed in the National Primary Drinking Water Regulations, 40 CFR Part 141, will not be exceeded in the uppermost aquifer at the relevant point of compliance, is arbitrary, capricious, an abuse of discretion or otherwise not in accordance with law, and unsupported by substantial evidence.

WHEREFORE, the Fremont County Solid Waste Disposal District, respectfully requests that a hearing be set in this matter to take testimony and review the permit application review filed in this matter, and following the hearing that the Environmental Quality Council issue a decision that vertical expansion over an existing waste area does not constitute a new cell/unit that must submit a performance based design which ensures that the concentration values for pollutants listed in the National Primary Drinking Water Regulations, 40 CFR Part 141, will not be exceeded in the uppermost aquifer at the relevant point of compliance, issue an order directing the Wyoming Department of Environmental Quality to review the Permit Renewal Application of Petitioner in light of that decision, and for such other and further relief as the Environmental Quality Council deems just and proper in the premises.

DATED this 27th day of April, 2011.

Fremont County Solid Waste Disposal
District, Petitioner

BY:


Rick L. Sollars, WSB #5-2394
Attorney for Petitioner
Western Law Associates, P.C.
277 Lincoln Street
Lander, WY 82520
(307) 332-4331

CERTIFICATE OF SERVICE

I certify that on the 27th day of April, 2011, a true and correct copy of the foregoing Petition for Review of renewal determination for application for renewal permit and Request for Hearing was served upon the following by depositing the same in the United States mail, postage prepaid, address to:

John Corra, Director
Wyoming Department of Environmental Quality
Herschler Building, 4th Floor
122 West 25th Street
Cheyenne, WY 82002

Lucas J. Esch
Wyoming Attorney General's Office
2424 Pioneer Avenue
123 Capitol Building
Cheyenne, WY 82002

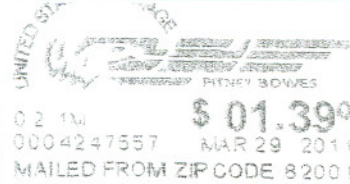


Rick L. Sollars



Department of Environment

To protect, conserve and enhance the quality of environment for the benefit of current and future generations.



Matthew H. Mead, Governor

John Corra, Director

March 28, 2011



Mr. Mike McDonald, Chairman
Fremont County Solid Waste Disposal District
POB 1400
Lander, Wyoming 82520

RE: Sand Draw Landfill Renewal Application
SHWD File #10.195

Dear Mr. McDonald,

The Wyoming Department of Environmental Quality, Solid Waste Permitting Program (Department) has completed its review of the renewal application for the Sand Draw landfill. During our review we have identified several minor deficiencies which will need to be corrected before a renewal permit can be issued. The Department has also identified issues which may require additional work; however, they will not prevent us from issuing a four (4) year renewal permit under the current Solid Waste Rules.

As you know, recent legislation includes provisions for "lifetime" permits. The effective date for issuing lifetime permits is July 1, 2012, which allows the Department time to develop applicable rules. Issuing a four (4) year permit now for the Sand Draw landfill will meet the requirements of the Consent Decree and provide the District additional time to address other issues at the facility prior to the next renewal application submittal and issuance of a lifetime permit.

The application review form identifies both outstanding facility issues and deficiencies of the renewal application. The specific sections that need to be addressed in order to issue a four (4) year renewal permit are summarized below:

- Section 1.1 - Issues related to the P.E. and P.G. certifications of the application.
- Section 4.12 - Insufficient litter inspection and collection program.
- Section 4.14 - Permit wording regarding "Special Wastes".

On November 27, 2001, the Department submitted a letter to the District suggesting that the District submit a renewal application that includes plans for a vertical expansion over the original 80 acre landfill site. On January 14, 2002, the District and the Department met to discuss alternatives. In a follow-up memo, the Department again committed to a vertical expansion of the facility, noting that the District must first submit a permit modification application. On

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ADMIN/OUTREACH (307) 777-7758 FAX 777-7682	ABANDONED MINES (307) 777-6145 FAX 777-6462	AIR QUALITY (307) 777-7391 FAX 777-5616	INDUSTRIAL SITING (307) 777-7369 FAX 777-6937	LAND QUALITY (307) 777-7756 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
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January 18, 2002, the Department sent a letter noting that the remaining permitted life of the facility was approximately 2.8 years. The Department again committed to a vertical expansion that would add up to 14 years of life to the landfill, meaning the facility would need to cease disposal in the unlined original 80 acre area by December 31, 2018. On March 17, 2003, the District submitted a plan and timetable to complete filling in the existing 80 acre area by December 13, 2018, giving the District approximately 15 years of additional capacity beyond what had previously been permitted and more time to establish a long-term plan for waste management. The Department considers these documents to be a commitment by both parties that disposal in the original 80 acres would not continue beyond December 31, 2018.

If the District wishes to make a performance based design demonstration to dispose of waste in areas without engineered containment after December 31, 2018, the questions raised by the District regarding site hydrogeologic conditions will need to be answered prior to the issuance of a lifetime permit. Depending upon the outcome of the District's investigations, changes to the groundwater monitoring network may be required. Lastly, if the District plans to pursue these issues, the Department recommends a meeting to discuss the scope of these activities. A scoping meeting would help to identify all the necessary information required and discuss a plan for collecting and utilizing information in a formal performance based demonstration.

If you have any questions regarding our review or would like to schedule a scoping meeting, please contact Patrick Troxel at 307.335.6950.

Sincerely,



Carl Anderson, Administrator
Solid and Hazardous Waste Division

Encl. Permit application review, dated March 28, 2011

cc. Bob Doctor, WDEQ Program Manager
Patrick Troxel, District #2 Supervisor
Lander SHWD File #10.195
Cheyenne SHWD File #10.195

Wyoming Department of Environmental Quality
Solid & Hazardous Waste Division

SOLID WASTE PERMIT APPLICATION REVIEW FORM
(Version 12/11/2009)

Facility Name:	Sand Draw Landfill
SHWD Facility File #:	10.195
Type of Application:	Sanitary Landfill - Renewal with Major Amendment Solid Waste Chapter 2 (October 15, 1998)
SHWD Reviewer:	Patrick Troxel, District #2 Supervisor
Application Date:	1st - December 23, 2010
Application Received:	1st - December 27, 2010
Review Completed:	1st - March 25, 2011

REVIEW COMMENTS

The applicable permit application requirements are outlined below. Each requirement is followed by a summary of the application standard, a description of the type of information required, and the applicable technical standards which must be met. The reader is referred to the rules and regulations for a full description of each standard.

All sections of the application must be determined to be complete and technically adequate before a draft permit can be issued. Renewal, major amendment and closure applications are reviewed for completeness and technical adequacy simultaneously. New facility applications are reviewed for completeness first. Technical reviews of new facility applications are not initiated until *all* sections of an application are determined to be complete. Technical reviews of new facility applications must carefully consider any comments received during the initial round of public notice and comment. The reviewer may propose permit conditions in order to insure that a particular section of the application is technically adequate.

The following terms are used to describe the reviewer's comments regarding completeness and technical adequacy determinations:

- "Complete" means a permit application that contains all the information required to be submitted by the solid waste rules and regulations, in sufficient detail to allow a technical review of the information to commence.
- "Incomplete" means a permit application *does not* contain all the information required to be submitted by the solid waste rules and regulations, in sufficient detail to allow a technical review of the information to commence.
- "Adequate" means a permit application which demonstrates information submitted complies with

applicable technical standards set forth in the Solid Waste Rules and Regulations.

"Inadequate" means a permit application which *does not* demonstrates information submitted complies with applicable technical standards set forth in the Solid Waste Rules and Regulations.

"NA" This term indicates that the particular section or standard is *Not Applicable*. When this determination is made, a comment is provided to justify this determination.

"NE" This term indicates that the particular section or standard was *Not Evaluated* because it was previously approved and there is no obvious reason (e.g., modification, change in circumstances) to warrant a new review.

1.0 GENERAL INFORMATION

1.1 Application Form**	Section 2.b.i-ii
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- Must use double-sided form provided by the department (see Solid Waste Guideline #3)
- Must be signed, dated and stamped by Wyoming P.E.
- Must be signed and dated by landowner (if not the same as applicant)
- Must be signed and dated by applicant (ranking elected official, 2 principal officers, or proprietor/general partner)
- Applicant signature(s) must be notarized
- NOTE: All sections of the application which require geological services or work must be stamped, signed, and dated by a professional geologist (see W.S. § 33-41-115). As an alternative to stamping, signing and dating individual sections of the application, the applicant may attach a page to the permit application form which identifies those sections of the application which were prepared by or under the supervision of a professional geologist (see Solid Waste Guideline #3)
- **Closure application cross-reference: Section 2.d.i.B

Comments... **Deficient.**

The permit application form is signed by a Wyoming PG and PE; however, the form has been altered to read "This certification is limited to work completed by Trihydro Corporation." Therefore, the permit application must include a detailed list of the specific sections being certified by Trihydro Corporation (Trihydro). In addition, any sections not being certified by Trihydro must include additional certifications or be removed from the permit application.

1.2 Operator Information**	Section 2.b.iii.A.I
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- Must ID name, address, telephone number
- Must provide summary of any administrative order, civil or administrative penalty assessment, bond forfeiture, civil, misdemeanor or felony conviction or court proceeding for any local, state or federal law occurring within a minimum of 5 years relating to environmental quality or criminal racketeering of the manager, operator, partners and/or executive officers
- **Closure application cross-reference: Section 2.d.i.B.I

Comments... COMPLETE AND TECHNICALLY ADEQUATE

1.3 Manager Information**	Section 2.b.iii.A.II
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- Must ID name, address, telephone number
- Must ID basic training requirements and examination courses, including length and frequency of each requirement or course
- Must ID schedule for training and examination of new managers
- Must ID location of training and examination records
- **Closure application cross-reference: Section 2.d.i.B.I

Comments... COMPLETE AND TECHNICALLY ADEQUATE

1.4 Legal Description**	Section 2.b.iii.A.III
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- Must include a plat with monumented corners and a metes and bounds description
- Plat must be stamped, signed and dated by a Wyoming PLS (see W.S. § 33-29-111)
- **Closure application cross-reference: Section 2.d.i.B.I

Comments... COMPLETE AND TECHNICALLY ADEQUATE

1.5 General Facility Description**	Section 2.b.iii.A.IV
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- Must ID size of facility (acres)
- Must ID type of management method (e.g., area fill, trench fill, storage, treatment, etc) for each waste type
- Must ID type, service area and acceptance rate for each type of waste, including MSW rate in tons per day
- **Closure application cross-reference: Section 2.d.i.A.I

Comments... COMPLETE AND TECHNICALLY ADEQUATE

1.6 Surface & Mineral Ownership	Section 2.b.iii.A.V
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- Must ID surface and mineral ownership of the site
- Must ID surface ownership of all lands within one (1) mile of the facility boundary

Comments... COMPLETE AND TECHNICALLY ADEQUATE

2.0 LOCATION STANDARDS

Comments... N/E

This facility is not proposing any changes which require a re-evaluation of the location standards.

3.0 GEOLOGY, GROUNDWATER, SOILS, UNSTABLE AREAS

3.1 Regional Geology and Groundwater**	Section 2.b.iii.A.VII
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- Regional information required
- Must summarize stratigraphy (i.e., formations, lithologies and thicknesses) and structure (folding, faulting, strike and dip)
- Must summarize hydrogeology (i.e., aquifers, water quality, recharge and discharge areas, flow directions, etc.)
- Copies of all available well logs for water wells within a one (1) mile of the site are required as supporting documentation (a computer printout from the State Engineer's Office is useful in identifying all wells within a one (1) mile of the site)
- A geologic map, stratigraphic section and cross-section(s) are required as supporting documentation (color or unique patterns required)
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- Geological services or work must be stamped, signed, and dated by a professional geologist (see W.S. § 33-41-115)
- **Closure application cross-reference: Section 2.d.i.A.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

3.2 Site Suitability	Section 2.b.iii.A.VIII
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- Must ID any features, natural or man-made, which would limit the site's suitability as a landfill
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative

Comments... COMPLETE AND TECHNICALLY ADEQUATE

3.3 Soils**	Section 2.b.iii.A.IX.1
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- Must provide site-specific information
- Must ID USCS soil descriptions
- Must ID thickness and areal extent of all soil types (isopach map may be necessary as supporting documentation)
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- **Closure application cross-reference: Section 2.d.i.A.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

3.4 Geology**	Section 2.b.iii.A.IX.2
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- Must provide site-specific information
- At a minimum, the narrative must contain a detailed summary of any supporting documentation such as site-specific geologic reports
- Must summarize stratigraphy (i.e., formations, lithologies and thicknesses) and structure (folding, faulting, strike and dip)
- A geologic map, stratigraphic section and cross-section(s) are required as supporting documentation (color or unique patterns required)
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- Geological services or work must be stamped, signed, and dated by a professional geologist (see W.S. § 33-41-115)
- **Closure application cross-reference: Section 2.d.i.A.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

3.5 Unstable Areas**	Section 2.b.iii.A.IX.3
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- Must provide site-specific information, including a discussion of trench wall design
- Must ID unstable areas caused by natural features or man-made features or events, and which may result in geologic hazards including but not limited to slope failures, landslides, rockfalls, differential and excessive settling or severe erosion
- A map identifying the location of any unstable areas must be provided as supporting documentation
- Supporting documentation must be provided as an exhibit or appendix and must be properly

- referenced in the narrative
- **Closure application cross-reference: Section 2.d.i.A.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

3.6 Seismic Impact Zones, Fault Areas, Floodplains, Wetlands**	Section 2.b.iii.A.IX.4
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- Must provide site-specific information
- Must ID any feature which is present
- Seismic impact zones should be identified using USGS website mapping tools available at <http://gldims.cr.usgs.gov/website/nshmp2002/viewer.htm>
- A map identifying the location of any fault areas, 100-year floodplains or wetlands must be provided as supporting documentation
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- **Closure application cross-reference: Section 2.d.i.A.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

3.7 Groundwater Occurrence**	Section 2.b.iii.A.IX.5
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- Must provide site-specific information
- At a minimum, the narrative must contain a detailed summary of any supporting documentation such as site-specific groundwater reports
- Must ID depth to the uppermost aquifer, the thickness of the aquifer, and the hydrologic properties of the aquifer
- A potentiometric surface map must be provided as supporting documentation
- Potentiometric surfaces in close proximity to waste management units should be identified on site-specific cross-sections
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- **Closure application cross-reference: Section 2.d.i.A.III

Comments... **Complete and Technically Adequate with comments**

Historically, the facility has submitted information and asserted that the groundwater being monitored at the facility was a continuous water bearing unit with a hydrogeologic connection between wells and that the uppermost aquifer is being monitored. However, the most recent renewal application suggests that the previous assertions may or may not be accurate.

The current application states that a hydrogeologic connection between wells at the site may or may not be the case. The application also suggests that shallow groundwater may be perched. Historical data submitted by the applicant has consistently indicated that wells are in hydrogeologic communication. As stated on page 4-10, existing data is inadequate to correlate observed changes in water levels to specific precipitation events or characterize the nature and extent of hydrogeologic connections between specific wells

The permit application states that the lack of a recharge source in the northern portion of the expansion area and relatively consistent static water levels suggest the presence of one (1) or more perched zones. However, the application also notes water level trends and annual increases and decreases in static water levels in individual wells. Relatively consistent static water levels in a well may be due to a general balance between infiltration and groundwater migration in the subsurface. While recharge in an arid climate is less than in more temperate zones, recharge does occur and has been documented at lined arid landfills in Wyoming and other western states. Infiltration and subsurface migration of groundwater have been demonstrated at the Sand Draw Landfill site by measured increases and decreases in static water levels in monitoring wells. None of these conditions mentioned in support of perched groundwater in and of themselves confirm the presence of perched groundwater.

In addition, potentiometric surface maps provided by the facility in groundwater monitoring reports indicate a groundwater mound that could only be the result of infiltration at the site. This interpretation is consistent with water level data indicating that infiltration occurs at the site.

The application raises questions about groundwater at the site, but as stated by the applicant, there is insufficient data to demonstrate that a hydrogeologic connection does not exist between wells at the site. The data provided does not sufficiently support the presence of perched zones or define the nature and extent of these zones. In particular, the Department does not believe that the geophysical data or the groundwater dating information are conclusive. However, because the application states that this information raises questions and has not drawn specific conclusions or interpretations from it, relative to the groundwater monitoring network, a formal technical evaluation of these documents is not being provided at this time.

Rather than delay the permit process further, the Department plans to issue a renewal permit for this facility authorizing continued disposal in the original 80 acre area for the next four (4) year permit term. The next permit application for the facility will need to include a detailed discussion/evaluation of these issues.

3.8 Groundwater Quality**	Section 2.b.iii.A.IX.6
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- Must provide site-specific information
- Must ID seasonal and spatial variations in groundwater quality (if present)
- A minimum of four (4) groundwater samples (upgradient and downgradient) are required to define baseline groundwater quality; more may be need on a site-specific basis
- Eight (8) pre-waste groundwater samples are required to support intrawell analysis
- Laboratory reports must be provided as supporting documentation
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- **Closure application cross-reference: Section 2.d.i.A.III

Comments... Complete and Technically Adequate with comments:

The renewal application did not include statistical data utilized in the analysis. The permit application must include electronic and hard copies of all data utilized in the groundwater

analysis. However, groundwater quality is an outstanding issue that will be addressed separately from the application renewal process.

4.0 DESIGN, CONSTRUCTION AND OPERATION

4.1 Service Area	Section 2.b.iii.A.X.1
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- Must ID the geographic service area
- Must ID all types of waste received (e.g., municipal, industrial, construction/demolition, scrap tires, non-friable asbestos, friable asbestos, petroleum-contaminated soils, petroleum storage tanks, used oil, etc)
- Must ID quantity of wastes received for disposal (annual average, in units of tons per day) ... if site-specific data not available, must assume 6.3 pounds per person per day.
- Must define facility classification
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative

Comments... COMPLETE AND TECHNICALLY ADEQUATE

4.2 Access Control	Section 2.b.iii.A.X.13
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- Must ID facility access controls (e.g., natural barriers, fences, gates)
- Section 4.b.i -- Must be fenced to prevent access by the public, livestock and wildlife and to contain litter w/in the facility
- Section 4.b.ii and 5.d -- Must be equipped with a gate which can be locked at the end of each operating day

Comments... COMPLETE AND TECHNICALLY ADEQUATE

4.3 Waste Screening	Section 2.b.iii.A.X.13
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- Must ID waste screening program, including a list of prohibited wastes
- Section 5.e -- Liquid wastes (fail Paint Filter Liquids Test) are prohibited, unless household quantities or managed in a unit designed for liquids
- Section 5.f -- Regulated quantities of hazardous waste are prohibited. Random inspections or some other program must be used to prohibit disposal of PCBs and regulated quantities of hazardous waste, unless CESQG or household hazardous wastes. SHWD must be promptly notified if regulated quantities of hazardous waste or PCBs are discovered.

Comments... COMPLETE AND TECHNICALLY ADEQUATE

- Must estimate total facility capacity
- Must estimate total facility life
- Must ID assumptions and calculations used as supporting documentation
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative

Comments... **Complete and Technically Adequate with comments**

On November 27, 2001, the Department submitted a letter to the District suggesting that the District submit a renewal application that includes plans for a vertical expansion over the original 80 acre landfill site. On January 14, 2002, the District and the Department met to discuss alternatives. In a follow-up memo, the Department again committed to a vertical expansion of the facility, noting that the District must first submit a permit modification application. Both parties committed to a work session. On January 18, 2002, the Department sent a letter noting that the remaining permitted life of the facility was approximately 2.8 years. The Department again committed to a vertical expansion that would add up to 14 years of life to the landfill, meaning the facility would need to cease disposal in the unlined original 80 acre area by December 31, 2018. On March 17, 2003, the District submitted a plan and timetable to complete filling in the existing 80 acre area by December 13, 2018, giving the District approximately 15 years of additional capacity beyond what had previously been permitted and more time to establish a long-term plan for waste management.

The Department considers these documents to be a commitment by both parties that disposal in the original 80 acres would not continue beyond December 31, 2018.

The current renewal application includes a permit amendment which will increase the facility's capacity and design life to the year 2037 by adding a new cell/unit vertically above the current disposal cell/unit. A capacity expansion beyond December 31, 2018, constitutes a permit amendment and the area used beyond December 31, 2018, constitutes a new landfill cell/unit. Per existing Solid Waste Rules and recent statutes, new landfill cells/units must be constructed with an engineered containment system or the operator must submit a performance based design which ensures that the concentration values for pollutants listed in the National Primary Drinking Water Regulations, 40 CFR Part 141, will not be exceeded in the uppermost aquifer at the relevant point of compliance. The current application includes neither of these elements.

Rather than delay the permit process further, the Department plans to issue a renewal permit for the facility authorizing continued disposal in the original 80 acre area for the next four (4) year permit term. The next permit application for the facility will need to include a performance based design or an engineered containment system design for all units that will receive waste after December 31, 2018. Alternatively, the District could decide to cease disposal in the original 80 acre area by December 31, 2018 and begin disposal in the expansion area.

4.5 Potential Impacts to Surface Water and Ground Water**	Section 2.b.iii.A.X.3
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- Must consider facility design (e.g., liner and cover systems, surface water control systems) and hydrogeologic conditions (e.g., soil and bedrock lithologies, depth to ground water)
- Should include assumptions and design calculations for surface water control structures as supporting documentation, including a map of contributing drainage basins
- If potential migration pathways exist, should also include technical evaluation of leachate generation rates (e.g., HELP Model analysis) and migration rates during operating and closure periods as supporting documentation
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- Section 4.i -- Temporary surface water diversion structures (<5 years) must be designed for 25-year / 24-hour event. Permanent surface water diversion structures (5+ years) must be designed for 100-year / 24-hour event. Sediment control structures must meet WQD Chapter 11 standards.
- Section 5.u -- Standing or running water may not be allowed to contact solid waste or pond of filled areas
- Section 5.v -- Leachate, contaminated groundwater and/or surface water run-off from active areas may not enter groundwater or surface water
- Section 5.w -- Waste shall not be placed in contact with groundwater
- Section 5.x -- Facilities shall not alter groundwater quality
- **Closure application cross-reference: Section 2.d.i.A.V

Comments... **Complete and Technically Adequate with comments:**

At the time of this review, the District has identified statistically significant differences between background and downgradient groundwater quality. However, this is an outstanding issue that will be addressed separately from the current four (4) year renewal process. Electronic and hard copies of all data utilized in the groundwater analysis must be included in the application document.

4.6 Cover Material	Section 2.b.iii.A.X.4
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- Must ID schedule and procedures for applying routine and intermediate cover
- Must ID characteristics and volumes of cover material required for routine, intermediate and final cover
- Must ID characteristics and volumes of cover material available at site
- If sufficient volumes of suitable cover material are not available on-site, alternative sources must be identified
- Must ID assumptions and calculations used as supporting documentation
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- Section 5.q.ii -- Six (6) inches of routine cover shall be applied daily (>10 TPD), every 7 days (>3 TPD), or every 16 days (<3 TPD)
- Section 5.q.iii -- Clean wood burn pile, scrap tire stockpiles, construction/demolition debris metallic waste stockpiles and PCS treatment areas are exempt from routine cover requirement.
- Section 5.q.iv -- Alternative cover materials must control infiltration, disease vectors, fires, odors, litter and scavenging. If an approved alternative cover is used, 6 inches of soil must be applied every 30 days.
- Section 5.r -- An additional twelve (12) inches of intermediate cover shall be applied to any area

- where wastes will not be disposed for a period of 180 days
- Section 7.d -- Final soil cover must include a minimum of 2 feet of compacted soil (in addition to daily or intermediate cover already in place), unless an alternative infiltration barrier layer design is approved
- Section 4.k Clay barrier layers included in a final cover must be overlain by a layer of soil suitable to protect the clay barrier layer from frost penetration

Comments... **N/E with comment**

Due to the length of time until final cover placement will occur, the Department has determined that detailed evaluation of this section of the permit is not necessary in order to issue a four (4) year renewal permit. However, this section will be evaluated as part of the next permit renewal (lifetime). The Department has noted the following:

- **The application indicates the current borrow source (located in the expansion area) has approximately 1.2 million cubic yards of material available and that the final cover will require approximately 610,000 cubic yards. However, the permit does not address the characteristics and volumes of cover material required for routine, intermediate and final covers, or any supporting calculations or characteristics of cover material available at site.**

4.7 Engineered Containment Systems**	Section 2.b.iii.A.X.5
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- Must ID the design, specifications, construction methods and quality control program of any engineered containment systems (compacted soil layers forming a final cover are considered part of an engineered containment system)
- If Type I facility, applicant must demonstrate compliance with ECS design & construction standards in Section 4(j) and 4(k) or demonstrate that ECS is not necessary
- If Type II facility, SHWD will require owner/operator to provide site specific information adequate for SHWD to determine if ECS is needed in consideration of factors in Section 4(j).
- Section 4.j -- ECS required unless all of the following conditions are met
 - native soils are sufficiently impermeable to prevent potential contamination
 - waste types or operating practices minimize potential for contamination
 - site hydrologic conditions are sufficient to protect groundwater from contamination, and
 - facility accepts less than 500 short tons of unprocessed household or mixed household and industrial refuse per day
- Section 4.k and 4.l -- Minimum ECS Standards
 - barrier layers forming caps and/or liners
 - bearing strength
 - synthetic membranes
 - lateral drainage layers
 - leachate collection and detection systems
 - QA/QC plan to assure adequate construction and testing for all components
 - cell capacity limit = 1,000,000 cubic yards unless leak detection is capable of isolating leak locations
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... **Complete and Technically Adequate with comments:**

The facility has submitted conceptual designs as required; however, the Department believes that submitting the details regarding the design three (3) years prior to implementation would not provide sufficient time for regulatory review and construction. The Department recommends changing this to five (5) years. However, based on the current developmental stage of the facility and the uncertainty of rules needed to implement new statutes, we will defer this issue until the next renewal application (lifetime permit).

As indicated above, the Department plans to issue a renewal permit for this facility authorizing continued disposal in the original 80 acre area for the next four (4) year permit term. The next permit application for the facility will need to include a performance based design or an engineered containment system design for all units that will receive waste after December 31, 2018.

4.8 Leachate Management**	Section 2.b.iii.A.X.6
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- If facility design includes a leachate collection system, must ID schedules and procedures for monitoring, collection, treatment and disposal of leachate
- Section 5.v -- Leachate may not be discharged to surface water or ground water without an NPDES permit
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... **COMPLETE AND TECHNICALLY ADEQUATE**

4.9 Fire Fighting and Emergency Procedures	Section 2.b.iii.A.X.7
---	-----------------------

- Must ID emergency equipment, location of fire lanes and procedures for contacting emergency personnel
- Must ID protocol for fighting fires in the working face
- Sections 4.e & 5.k -- Facilities must maintain an unobstructed 10-foot fire lane within the working area or perimeter fence. Landfill personnel shall have access to portable fire extinguishers when on-site. Communication systems may be necessary to alert emergency personnel.

Comments... **Complete and Technically Adequate with comments:**

The Department is requesting that all facilities include DEQ notification within 24 hrs to their fire emergency procedures.

4.10 Topsoil Handling	Section 2.b.iii.A.X.8
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- Must ID procedures for stripping, stockpiling, stabilizing and signing topsoil
- Section 4.g -- Topsoil must be stripped and stockpiled for use in reclamation, identified by signs, and revegetated (as required) for stabilization. Topsoil may not be removed from the facility without SHWD authorization

Comments... **COMPLETE AND TECHNICALLY ADEQUATE**

4.11 Facility Signs	Section 2.b.iii.A.X.9
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- Must ID location and actual wording of all signs
- Section 4.c -- Each point of access must contain a sign which is easily readable, in good condition, and ID facility name, name & phone number of emergency contacts, hours of operation, prohibited wastes, requirement to notify operator if wastes contain asbestos

Comments... COMPLETE AND TECHNICALLY ADEQUATE

4.12 Litter Control	Section 2.b.iii.A.X.10
----------------------------	------------------------

- Must ID all areas which will be subject to litter control program, including internal fences, perimeter fences, and off-site areas
- Must ID frequency for litter collection at all areas
- Must ID special operating procedures to be used during period of high wind, including a procedure for defining high wind conditions
- Must ID local wind speed and direction data, including source of data
- Sections 4.n and 5.l -- Litter control program must be effective in controlling litter on-site and off-site during all wind conditions

Comments... **Deficient**

Based on information collected during DEQ inspections the Department has determined that the proposed litter collection program is insufficient. The Department is requesting that the program be modified to include daily litter inspections on-site and off-site, and routine collections which will prevent the accumulation of litter on-site and off-site. The Department has determined that a predetermined collection schedule may not prevent the accumulation of litter causing the facility to violate their permit. Instead the Department feels a daily inspection with routine (as necessary) collection should promote compliance with litter management standards.

4.13 Equipment	Section 2.b.iii.A.X.11
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- Must ID type amount and purpose of all equipment, including procedures for covering and compacting
- Must ID source or procedures for obtaining backup equipment
- Section 5.c -- Equipment must be adequate to cover and compact waste. Backup equipment must be available to insure compliance with compaction & covering requirements
- Section 5.p -- Wastes must be adequately compacted to reduce long-term settling and conserve landfill space

Comments... COMPLETE AND TECHNICALLY ADEQUATE

4.14 Special Waste Areas	Section 2.b.iii.A.X.12
---------------------------------	------------------------

- Must ID design, construction and operation of units dedicated to a specific waste such as dead animals, red-bag wastes, clean-wood burn piles, lead-acid batteries, used oil and other wastes stored or stockpiled for recycling
- If used oil is managed, the application must also address the applicable provisions of Chapter 12 of the HWRR, a separate review form should be attached.
- Section 5.g -- Dead animals must be covered daily
- Section 5.i -- Salvaging, if permitted, shall be conducted in such a manner as not to interfere with normal operations
- Section 5.j -- Nothing but clean wood may be burned, and only if a burn permit has been issued by the Air Quality Division
- Sections 4.p & 5.z -- Chapter 8 standards apply to units which manage scrap tires, non-friable asbestos, friable asbestos, petroleum-contaminated soils and petroleum storage tanks
- Section 4.q & 5.aa -- Chapter 6 standards may apply to larger transfer/storage/treatment units

Comments... Deficient

Section 5.4.3 of the application indicates that the management of Lead-acid batteries, scrap metal, petroleum contaminated soils (PCS), scrap tires, used antifreeze, used oil and used paint are “exempt from the requirement to obtain a permit.” All waste management activities at this facility are regulated under Chapter 2 of the Solid Waste Rules and Regulations (SWRR). Specifically Chapter 2 section 4 (q) requires that the facility comply with the design and construction standards in Chapter 6 and special waste management standards in Chapter 8 of the SWRR. In Addition, the management of used oil must meet the requirements of Chapter 12 of the HWRR Therefore, these activities are not exempt from regulation and the “exempt” notation must be removed from the text. In addition, the following sections have been determined to be deficient:

- **Section 5.14: used antifreeze, used Oil and used paint must be managed in accordance with Chapter 6 section 4(a)(ix) which requires all units which store liquid wastes be equipped with secondary containment equal to 110% of the largest container within the unit.**

4.15 Other Design, Construction and Operation Information	Section 2.b.iii.A.X.13
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- Must ID engineering measures taken to ensure stability of structural components (e.g., ECS, ponds, corrective action systems) in unstable areas, fault areas and seismic impact zones
- Must ID design and construction of trench walls
- Must ID design and construction of methane control systems for on-site structures
- Must ID procedures for controlling vectors, dust and odor
- Must ID procedures for confining the working face to the smallest practical area, including signs to direct traffic
- Must ID location and availability of facility records
- Section 4.h -- Engineering measures must be incorporated in facility design & construction to ensure stability of structural components in unstable areas
- Section 4.m -- Trench walls shall not exceed ratio of 1.5:1 (H:V) unless slope stability analysis is provided to demonstrate that steeper slopes can be safely constructed and maintained. Analysis may be based on site-specific stability calculations or WOSHA regulations.

- Section 4.o -- On-site structures must be designed and constructed to prevent the accumulation of methane gas
- Section 5.a -- Training & examination records must be available for SHWD review, manager must have working knowledge of plan within 6 months, basic training program must include training identification of PCB and hazardous wastes
- Section 5.h -- Signs must be posted to direct traffic to the proper area
- Section 5.m -- On-site populations of disease vectors must be prevented or controlled
- Section 5.n -- Adequate measures must be taken to control dust and odors
- Section 5.o -- Working face must be confined to the smallest practical area using signs or physical barriers
- Section 5.y -- Records must be maintained at the facility or an approved alternative location and available for inspection and copying

Comments... COMPLETE AND TECHNICALLY ADEQUATE

5.0 ENVIRONMENTAL MONITORING

5.1 Groundwater Monitoring System**	Section 2.b.iii.A.XI.1
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- Must ID the location, design, construction and development of all groundwater monitoring wells
- Must ID upgradient and downgradient wells
- Drilling logs, reports and well schematics must be provided as supporting documentation
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- **Closure application cross-reference: Section 2.d.i.B.II

Type I Systems...

- Section 6.b.i.B.I -- Well locations must be capable of monitoring upgradient and downgradient conditions in the uppermost aquifer. Locations must be approved by SHWD; downgradient wells must be as close as possible to disposal facility waste boundary but no more than 150 meters from waste on land owned, leased, or otherwise controlled by the operator
- Section 6.b.i.B.II -- System design must consider number, spacing and orientation of waste units, hydrologic setting, history & design of the facility, and waste types
- Section 6.b.i.B.III -- System design must consider site-specific info on aquifer thickness, properties, flow direction and rates (including seasonality), soil information, aquitards and aquicludes

Type II Systems...

- Section 6.b.ii.A -- Well locations must be capable of monitoring upgradient and downgradient conditions in the uppermost aquifer
- Section 6.b.ii.B -- Wells must be designed, constructed and installed in accordance with WQD Chapter 11 requirements
- Section 6.b.ii.C -- Well locations, design, construction and development must be approved by SHWD

Comments... COMPLETE AND TECHNICALLY ADEQUATE

- Must ID the sampling locations, frequency, schedule (i.e., months), parameters, procedures, test methods and quality control procedures
- A detailed Standard Operating Procedure is recommended as supporting documentation
- Must ID procedures (e.g., statistical, graphical) for analyzing the data
- **Closure application cross-reference: Section 2.d.i.B.II

Type I Systems...

- Section 6.a -- All samples must be collected and managed in accordance with SHWD guidance or equivalent methods approved by SHWD
- Section 6.b.i.C.I -- Sample collection, preservation, shipment, laboratory analysis, chain-of-custody and QA/QC procedures must be described
- Section 6.b.i.C.II -- Sampling and analysis procedures must be appropriate and accurate. Field filtering is prohibited
- Section 6.b.i.C.III -- Static water level measurements must be taken prior to purging. Groundwater flow direction must be determined during each sampling event. Groundwater flow rates must be measured or calculated, as requested by the SHWD
- Section 6.b.i.C.IV -- Background water quality must be established in hydraulically upgradient well
- Section 6.b.i.C.V -- Operator shall collect a sufficient number of samples to meet the requirements of the statistical analysis selected in Section 6.b.i.C.VI
- Section 6.b.i.C.VI & VII -- Statistical analysis must be conducted using parametric analysis of variance, non-parametric analysis of variance, tolerance or prediction interval procedure, control charts, or other method approved by SHWD and meet appropriate performance standards
- Section 6.b.i.D -- Detection Monitoring
 - Appendix A at least semi-annually (quarterly for 1st year)
 - Alternative list of constituents must be approved by SHWD
 - Alternative frequency for Appendix A must be approved by SHWD (minimum is annually)
 - Statistical analysis must be completed within 30 days of completing sampling and analysis for each event (Section 6.b.i.C.)
 - If statistically significant increase is detected, operator must notify SHWD within 14 days and start assessment monitoring within 90 days (unless alternative explanation approved)
- Section 6.b.i.E -- Assessment Monitoring
 - Appendix B in all downgradient wells within 90 days and annually thereafter
 - 4 independent samples in all downgradient wells for Appendix B constituents detected
 - Alternative wells, constituents and frequency must be approved by SHWD
 - Appendix A and all Appendix B constituents detected in all wells at least semi-annually
 - Alternative frequency for Appendix B constituents detected must be approved by SHWD (minimum is annually)

Type II Systems...

- Section 6.a -- All samples must be collected and managed in accordance with SHWD guidance or equivalent methods approved by SHWD
- Section 6.b.ii.D.1 -- Baseline monitoring
- Section 6.b.ii.D.II -- Detection monitoring
- Section 6.b.ii.D.III -- Assessment monitoring
- Section 6.b.ii.D.IV -- SHWD may specify additional parameters including organic constituents

Comments... **COMPLETE AND TECHNICALLY ADEQUATE** provided the noted change is made.

Section 3.9 of the sampling and analysis plan contained in appendix GG indicates that low-flow sampling can be utilized upon notification of the WDEQ/SHWD. The SWRR require that the facility have approval of permit modifications prior to implementation. This should be reworded to indicate low-flow sampling procedures may be utilized upon approval by WDEQ/SHWD.

5.3 Methane Monitoring System**	Section 2.b.iii.A.XI.3
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- Must ID the location, design and construction of the methane monitoring system
- Must ID system abandonment procedures
- Drilling logs, reports and well schematics must be provided as supporting documentation
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- Section 6.a -- All samples must be collected and managed in accordance with SHWD guidance or equivalent methods approved by SHWD
- Section 6.c.i -- Location, design, construction and installation of the system must be approved by the SHWD
- Section 6.c.ii -- Abandoned methane monitoring system must be plugged and sealed in accordance with SHWD recommendations
- **Closure application cross-reference: Section 2.d.i.B.II

Comments... **Complete and Technically Adequate with comments!**

Section 4.0 Methane Monitoring indicates that the shop building and two methane vents will be monitored for the presence of methane. The Department has determined that monitoring the two vents is not necessary. Also, the Department is recommending the facility install a permanent methane monitoring device in the shop building. This would aid the facility in demonstrating that methane is not accumulating in the facility structure above 25% LEL.

5.4 Methane Monitoring Program**	Section 2.b.iii.A.XI.4
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- Must ID the sampling locations, frequency, schedule (i.e., months) and procedures
- A detailed Standard Operating Procedure is recommended as supporting documentation
- Must ID procedures for notifying the SHWD if methane levels exceed 25% of the Lower Explosive Limit
- Section 4.o -- Methane levels at on-site structures may not exceed 25% of the LEL
- Section 5.t -- Methane levels at on-site structures and at the facility boundary may not exceed 25% of the LEL. If they do, the operator must immediately notify the administrator and take steps to protect human health. Within 7 days of detection, monitoring data and a description of steps to protect human health must be placed in the facility operating record. Within 60 days of detection, operator must implement an SHWD-approved remediation plan and place a copy of the plan in the facility operating record.
- Section 6.a -- All samples must be collected and managed in accordance with SHWD guidance or

equivalent methods approved by SHWD

- Section 6.c.iii -- Methane analyses must be conducted at least quarterly if required at a facility
- **Closure application cross-reference: Section 2.d.i.B.II

Comments... **COMPLETE AND TECHNICALLY ADEQUATE See comment in section 5.3**

5.5 Other Monitoring Information**	Section 2.b.iii.A.XI.5
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- If applicable, must ID location, design, construction and operation of air monitoring systems
- If applicable, must ID location, design, construction and operation of soil core monitoring systems
- If applicable, must ID location, design, construction and operation of vadose zone monitoring systems
- Must ID schedule (i.e., month) for submitting monitoring data and analysis
- Section 6.d -- Air monitoring must be conducted in accordance with AQD rules
- Section 6.e -- Soil core monitoring must be conducted in accordance with SHWD-approved plan
- Section 6.f -- Air monitoring must be conducted in accordance with SHWD-approved plan
- Section 6.b.iii -- Groundwater monitoring data must be submitted in paper format. Groundwater monitoring data from Type I systems must also be submitted in an SHWD-specified electronic format. SHWD may require groundwater monitoring data from Type II systems with 3 or more wells to be submitted in an SHWD-specified electronic format.
- Section 6.g -- All monitoring data must be submitted annually. Type I facilities must also provide statistical analysis of data. All facilities may be required to submit supporting charts and/or maps which represent the data.
- **Closure application cross-reference: Section 2.d.i.B.II

Comments... **COMPLETE AND TECHNICALLY ADEQUATE**

6.0 CLOSURE & POST-CLOSURE

6.1 Post-Closure Land Use**	Section 2.b.iii.A.XII.1
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- Must ID land use anticipated after closure
- Section 7(p) -- Facility shall be returned to post-closure use specified in the permit unless an alternative use is approved by the SHWD
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... **COMPLETE AND TECHNICALLY ADEQUATE**

6.2 Deed Notice**	Section 2.b.iii.A.XII.2
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- Must ID actual wording of the deed notice, including a metes and bounds description of the permit boundary
- Section 7.g -- Notice must be filed at closure with county clerk. Notice must indicate that the property has been used as a solid waste disposal facility and assure that the post-closure use of the property will be restricted to prevent any disturbance to the facility containment and monitoring systems
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

6.3 Public Notice of Closure**	Section 2.b.iii.A.XII.3
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- Must ID actual wording of the notice and indicate where notice will be posted and published
- Section 7.b -- Notice must be published in an area newspaper and all points of facility access
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

6.4 Final Soil Cover**	Section 2.b.iii.A.XII.4
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- If final soil cover includes a compacted layer or other barrier layer, it is considered part of an engineered containment system; this section of the application may contain a reference to the appropriate section of the application with information on the barrier layer
- Must ID design, specifications, construction and quality control procedures for the final soil cover system
- Must ID revegetation specifications (e.g., mixture, root depths), procedures (e.g., application rates and methods) and methods for evaluating success
- Should include technical evaluation of final cover performance (e.g., HELP Model analysis) to demonstrate that infiltration rates are minimized. (Excessive infiltration will increase leachate and methane generation rates, waste decomposition, and settling.)
- Section 7.c -- Facility must be engineered to inhibit future problems with erosion or ponding of surface water over filled areas. Should include evaluation of erosion using the Revised Universal Soil Loss Equation (RUSLE) or similar method
- Section 7.d -- Minimum Soil Cover Standards
 - infiltration barrier layer of subsoil or combination of materials as specified in the permit application, constructed over refuse or any intermediate cover already in place
 - infiltration barrier ... minimum of 2 feet of soil with a minimum permeability less than or equal to permeability of bottom liner or subsoils, or a permeability of 1×10^{-5} cm/sec, whichever is less, or such lower value as specified by the permit
 - alternative infiltration barrier ... minimum of 2 feet of soil which is capable of providing an equivalent reduction in the annual flux of infiltration; must be approved by SHWD. SHWD may require monitoring of alternative infiltration barrier layer designs to demonstrate performance
 - infiltration barrier is in addition to any routine or intermediate cover
 - topsoil must be at least 6 inches thick

- Section 4.k – Design/construction of ECS
 - Frost protection required for any compacted clay layer forming part of a final cover system
 - QA/QC plan required to assure adequate construction and testing
- Section 7.e -- Seed mixture shall be a diverse mix compatible with climatic conditions, require little maintenance and have root depths that will not exceed the depth of the final soil. Vegetation should be compatible with post-closure land use.
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... N/E with comment

Due to the length of time until final cover placement will occur, the Department has determined that detailed evaluation of this section of the permit is not necessary in order to issue a four (4) year renewal permit. However, this section will be evaluated as part of the next permit renewal (lifetime) The Department has noted the following:

- Section 7.4.4 and appendix CC discuss soil loss as evaluated by the Revised Universal Soil Loss Equation (RUSLE). The Department has determined that soil loss should be re-evaluated utilizing the most recent version RUSLE2 as part of the next renewal (lifetime) application. The RUSLE2 program is available at:
<http://www.ars.usda.gov/Research/docs.htm?docid=6010>

6.5 Surface Water Diversion**	Section 2.b.iii.A.XII.5
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- Must ID design of permanent surface water diversion system
- Should include assumptions and design calculations for surface water control structures as supporting documentation, including a map of contributing drainage basins
- Supporting documentation must be provided as an exhibit or appendix and must be properly referenced in the narrative
- Section 4.i -- Temporary surface water diversion structures (<5 years) must be designed for 25-year / 24-hour event. Permanent surface water diversion structures (5+ years) must be designed for 100-year / 24-hour event. Sediment control structures must meet WQD Chapter 11 standards.
- Section 7.j -- Surface water diversion system must be maintained and operated throughout the closure and post-closure period
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

6.6 Inspection & Maintenance**	Section 2.b.iii.A.XII.6
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- Must ID the frequency and schedule (i.e., months) for inspecting the site during the post-closure period
- Must ID features to be inspected (e.g., access controls, waste containment systems, surface water diversion systems, environmental monitoring systems, etc) and the procedures for insuring that problems are promptly corrected
- Section 7.h -- Facility fences, gates and other access restrictions must be maintained until the site

has been satisfactorily closed and revegetated

- Section 7.i -- Waste containment systems must be maintained and operated throughout the closure and post-closure periods
- Section 7.j -- Surface water diversion system must be maintained and operated throughout the closure and post-closure periods
- Section 7.k -- Environmental monitoring systems must be maintained and operated throughout the closure and post-closure periods
- Section 7.l -- The operator must respond to any pollution problem reasonably related to the facility's activities. Corrective action systems must be maintained and operated throughout the closure and post-closure periods.
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

6.7 Environmental Monitoring Program**	Section 2.b.iii.A.XII.7
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- If the environmental monitoring program for the active life of the facility is to be used during the closure and post-closure periods, this section of the application may contain a reference to the appropriate section of the application
- Must ID the environmental monitoring program for the closure and post-closure periods
- Section 7.k -- Environmental monitoring systems must be maintained and operated throughout the closure and post-closure periods
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

6.8 Access Controls**	Section 2.b.iii.A.XII.8
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- Must ID the length of time and methods by which access will be restricted
- Section 7.h -- Facility fences, gates and other access restrictions must be maintained until the site has been satisfactorily closed and revegetated
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

6.9 Other Closure & Post-Closure Information**	Section 2.b.iii.A.XII.9
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- Must ID a tentative schedule for initiation and completion of all closure activities
- Must ID schedule, procedures, etc for closure of any special waste management units as required by SWRR Chapter 8
- Must ID schedule, procedures, etc for closure of any transfer, treatment or storage units as required by SWRR Chapter 6
- Must ID commitment to provide certification of closure by a Wyoming registered professional engineer
- Section 7.a -- Closure activities must commence within 30 days following the time the facility ceases to receive wastes and must be completed within an additional 180 days. SHWD may approve delayed closure or extensions under certain conditions.

- Section 7.m -- Special waste management units must be closed in compliance with the applicable closure standards in SWRR Chapter 8
- Section 7.n -- Transfer, treatment or storage units must be closed in compliance with the applicable closure standards in SWRR Chapter 6
- Section 7.o -- Completion of closure activities must be certified by a Wyoming registered professional engineer
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.0 EXHIBITS

- Exhibits may be provided to provide detailed information regarding specific aspects of the permit application, and may include, but are not limited to:
 - maps, cross-sections or drawings
 - record-keeping logs
 - QA/QC plans for all components of engineered containment systems
 - standard operating procedures for leachate collection systems
 - standard operating procedures for environmental monitoring programs
 - standard operating procedures for transfer, treatment or storage units or special waste management units
 - state engineer permits for water wells
- A "List of Exhibits" must be provided
- Each exhibit should have a title page with a unique title, author/source and date
- All exhibits should be referenced within the application narrative
- Geological services or work must be stamped, signed, and dated by a professional geologist (see W.S. § 33-41-115)

7.1 USGS Topographic Map	Section 2.b.iii.B
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- Must be an original (scale of 1:24,000) or high quality color copy
- Must ID facility location

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.2 Map or Aerial Photograph**	Section 2.b.iii.C
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- Must ID the following features within a one (1) mile radius of all facility boundaries:
 - land ownership
 - land use
 - zoning
 - city boundaries
 - occupied dwellings, schools, hospitals, industrial buildings
 - water wells
 - water courses
 - roads
 - other applicable details
 - general topography

- **Closure application cross-reference: Section 2.d.i.A.IV

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.3 General Facility Plot Plan(s)**	Section 2.b.iii.D
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- Must be a scale of 200 feet to the inch with five (5) foot contour intervals
- Must ID the following features on one or more plans:
 - facility boundaries
 - buffer zones
 - points of access
 - soil borings
 - groundwater monitor wells
 - methane monitor wells
 - proposed trenches or area fills
 - working area or perimeter fire lanes
 - facility buildings
 - working area and/or perimeter fence locations
 - permanent surface water diversion structures
- Must contain a north arrow, written and bar scales, references to design details, original and revision dates, title and drawing number
- Section 4.a -- All site boundary corners must be surveyed and marked with permanent survey caps
- Section 4.b -- Working area must be fenced and gated to discourage access by people and livestock and to contain litter
- Section 4.e -- 10-foot fire lane required around active units or within perimeter fence
- Section 4.f -- 20-foot buffer zone required within perimeter fence
- **Closure application cross-reference: Section 2.d.i.A.II

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.4 Facility Development Plan(s)	Section 2.b.iii.E, F &
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- Must be at same scale as General Facility Plot Plans (200 feet to the inch with five foot contour intervals)
- Must ID the following features on one or more plans:
 - excavation plans for disposal units (including bottom elevations)
 - temporary surface water diversion structures
 - internal access roads
 - routine cover stockpiles
 - topsoil stockpiles
 - litter screen placement
 - special waste treatment/storage/disposal units
 - other pertinent development details requested by the SHWD
- Must contain a north arrow, written and bar scales, references to design details, original and revision dates, title and drawing number
- May depict development details for the life of the site or the first permit term
- Section 4.h -- Engineering measures must be incorporated in facility design & construction to ensure stability of structural components in unstable areas

- Section 4.m -- Trench walls shall not exceed ratio of 1.5:1 (H:V) unless slope stability analysis is provided to demonstrate that steeper slopes can be safely constructed and maintained. Analysis may be based on site-specific stability calculations or WOSHA regulations.
- Section 5.u -- Standing or running water may not be allowed to contact solid wastes
- Section 5.w -- Waste shall not be placed in contact with groundwater

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.5 Final Contour Map(s)**	Section 2.b.iii.H
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- Must be at same scale as General Facility Plot Plans (not greater than 200 feet to the inch with five foot contour intervals)
- Must ID the following features:
 - final contours
 - location and identification of environmental monitoring systems
 - permanent surface water diversion structures
 - maximum areal extent of disposal units and cover system
 - post-closure surface features (e.g., transfer station, recycling center, storage units, etc.)
- Must contain a north arrow, written and bar scales, references to design details, original and revision dates, title and drawing number
- Section 4.i -- Permanent surface water diversion structures (5+ years) must be designed for 100-year / 24-hour event. Sediment control structures must meet WQD Chapter 11 standards.
- Section 7.c -- Facility must be designed to inhibit future problems with erosion or ponding
- Section 7.f -- Facility boundary corners must be surveyed and marked with permanent survey caps
- Section 7.j -- Surface water diversion system must be maintained and operated throughout the closure and post-closure period
- **Closure application cross-reference: Section 2.d.i.B.IV

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.6 Cross Sections and Design Details**	Section 2.b.iii.I
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- Must ID design and specifications of the following features (if present):
 - internal litter catch screens and fences
 - working area and perimeter fencing
 - access roads
 - trench or area fill cells
 - special waste treatment/storage/disposal units
 - leachate management systems
 - groundwater monitoring wells
 - methane monitoring wells
 - surface water diversion structures and subsurface drains
 - all components of any engineered containment systems
 - final cover system
 - any other features requested by the SHWD
- Must contain written and bar scales, references to maps, original and revision dates, title and drawing number
- Section 4.b -- Working area must be fenced and gated to discourage access by people and

- livestock and to contain litter
- Section 4.d -- Access roads must be constructed to enable use in inclement weather
- Section 4.h -- Engineering measures must be incorporated in facility design & construction to ensure stability of structural components in unstable areas
- Section 4.i -- Temporary surface water diversion structures (<5 years) must be designed for 25-year / 24-hour event. Permanent surface water diversion structures (5+ years) must be designed for 100-year / 24-hour event. Sediment control structures must meet WQD Chapter 11 standards.
- Section 4.k -- Minimum ECS Standards
 - barrier layers
 - lateral drainage layers, leachate collection and detection systems
- Section 4.m -- Trench walls shall not exceed ratio of 1.5:1 (H:V) unless slope stability analysis is provided to demonstrate that steeper slopes can be safely constructed and maintained. Analysis may be based on site-specific stability calculations or WOSHA regulations.
- Section 4.o -- On-site structures must be designed and constructed to prevent the accumulation of methane gas
- Section 7.d -- Minimum Soil Cover Standards
 - infiltration barrier ... minimum of 2 feet of soil with a minimum permeability less than or equal to permeability of bottom liner or subsoils, or a permeability of 1×10^{-5} cm/sec, whichever is less, or such lower value as specified by the permit
 - alternative infiltration barrier ... minimum of 2 feet of soil which is capable of providing an equivalent reduction in the annual flux of infiltration (must be approved by SHWD)
 - infiltration barrier is in addition to any routine or intermediate cover
 - topsoil must be at least 6 inches thick
- **Closure application cross-reference: Section 2.d.i.B.V

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.7 Record Keeping Log**	Section 2.b.iii.J
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- Must provide blank copies of all record keeping forms
- Must describe temporary and permanent location of all records
- Section 5.y.i -- The following records must be maintained for a minimum of three (3) years:
 - litter collection activities (e.g., dates, areas, personnel)
 - compaction & covering activities (e.g., dates, areas, personnel)
 - special waste treatment/storage/disposal activities (e.g., dates, weights/volumes, sources)
 - wastes sold or salvaged (e.g., dates, weights/volumes, destination)
 - operating problems such as fires, equipment failure, etc. (e.g., dates, nature of problem)
 - copy of permit
- Section 5.y.ii -- The following records must be maintained through active, closure and post-closure phase of the facility:
 - copy of permit application document
 - location restriction demonstration (if not in permit application document)
 - log of random inspections or other waste screening activities for regulated wastes and PCBs (e.g., dates, times, generator & transporter info, inspection personnel)
 - landfill personnel training records (e.g., personnel, dates, type, amount, location, etc.)
 - methane monitoring activities and data

- groundwater monitoring activities and data
- as-built specifications for length, depth and location of waste disposal units
- completion dates and contents of waste disposal units
- closure and post-closure plans (if not in the permit application document) and associated monitoring, testing and analytical data
- information supporting cost estimates and financial assurance as required by SWRR Chapter 7
- information supporting facility clarification (if not in permit application document)
- information supporting waiver of engineered containment system requirement for Type I facilities (if not in the permit application document)
- reclamation activities (e.g., dates, areas)
- **Closure application cross-reference: Section 2.d.i.B.V

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.8 Engineered Containment System QA/QC Plans**	Section 2.b.iii.K
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- Must ID specific installation and testing procedures for clay barrier systems, including:
 - specifications and properties
 - moisture content
 - lift thickness
 - density
- Must ID specific installation and testing procedures for synthetic membrane systems, including:
 - specifications and properties
 - compatibility (waste & leachate)
 - installation procedures
 - layout pattern
 - seam leaks (100%)
 - seam strength
 - defects
- Must ID specific procedures and testing plans for lateral drainage systems, leachate collection and leachate detection systems, including:
 - specifications & properties
 - compatibility
 - installation procedures
 - layout pattern
 - filter fabric or material
- Section 4.k -- QA/QC plan must assure adequate construction and testing of system components
- **Closure application cross-reference: Section 2.d.i.B.III

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.9 Transfer/Treatment/Storage Facility Requirements**	Section 2.b.iv
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- SWRR Chapter 6: As an alternative to providing information in the application regarding the location, design, construction, operation, monitoring, closure and post-closure care of unique transfer, treatment and storage units, the application can provide stand-alone plans for these units which address the applicable requirements of SWRR Chapter 6.
- If used oil is managed, the application must also address the applicable provisions of Chapter 12

of the HWRR; a separate review form should be attached.

- **Closure application cross-reference: Section 2.d.ii

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.10 Special Waste Management Standards**	Section 2.b.iv
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- SWRR Chapter 8: As an alternative to providing information in the application regarding the location, design, construction, operation, monitoring, closure and post-closure care of special waste management units, the application can provide stand-alone plans for these units which address the applicable requirements of SWRR Chapter 8.
- **Closure application cross-reference: Section 2.d.ii

Comments... COMPLETE AND TECHNICALLY ADEQUATE

7.11 Commercial Facility Requirements**	Section 2.b.iv
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- SWRR Chapter 10: If the facility meets the definition of a "commercial facility", the application must address the applicable provisions of SWRR Chapter 10
- **Closure application cross-reference: Section 2.d.ii

Comments... N/A

8.0 FINANCIAL ASSURANCE

- Applicability: See Chapter 7, Section 7.b

8.1 Cost Estimates**	Section 2.b.iv
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- Must contain estimates for a 3rd party to complete each closure and post-closure task (see SWRR Chapter 7, Section 3 for coverage requirements)
- May use published data (e.g., Means Cost Data) if properly referenced
- May use local contractor bids if they are signed, dated, valid for a minimum of one (1) year and identify the SHWD as a potential client (copies must be provided)
- Municipally owned/operated disposal facilities may use the procedures specified in SWRR Chapter 7, Section 9 (see Solid Waste Guideline #12)
- Must include 15% contingency fee
- **Closure application cross-reference: Section 2.d.ii

Comments... COMPLETE AND TECHNICALLY ADEQUATE

8.2 Mechanism**	Section 2.f
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- Allowable mechanisms include self-bonds, surety bonds, federally-insured certificates of deposit, government-backed securities, cash, or letters of credit (see SWRR Chapter 7, Section 4 for detailed information regarding specific forms of financial assurance)
- Allowable mechanisms also includes the State closure and post-closure account for municipally-owned solid waste disposal facilities (see SWRR Chapter 7, Section 9 for detailed information regarding use of this account)
- Mechanism must be reviewed and approved by SHWD bonding analyst and senior assistant attorney general
- **Closure application cross-reference: Section 2.d.ii

Comments... COMPLETE AND TECHNICALLY ADEQUATE

9.0 RENEWAL APPLICATION REQUIREMENTS

9.1 Previously Approved Amendments and Revisions	Section 2.c.i
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- An updated permit application form must be signed and dated by the applicant. If engineering modifications have been made, the updated permit application form must also be stamped, signed and dated by a professional engineer. If the application contains a major amendment, the updated permit application form must also be signed and dated by the landowner.
- All amendments (major and minor) and plan revisions approved during the previous permit term should be briefly described in the narrative
- The applicant can provide a revised permit application document or replacement pages, drawings, etc.
- Replacement pages, drawings, etc. must be appropriately numbered and dated so that they can be inserted into the permit application document and obsolete pages, drawings, etc. can be removed

Comments... COMPLETE AND TECHNICALLY ADEQUATE

9.2 New Amendments and Revisions	Section 2.c.ii.A
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- Proposed amendments (major and minor) and plan revisions must be briefly described in the narrative
- If applicable provisions of SWRR Chapter 2 have been modified since the previous permit was issued, the renewal application must demonstrate compliance with the most current rules and regulations
- The applicant can provide a revised permit application document or replacement pages, drawings, etc.
- Replacement pages, drawings, etc. must be appropriately numbered and dated so that they can be inserted into the permit application document and obsolete pages, drawings, etc. can be removed

Comments... **N/E with note**

Due to the length of time until final cover placement will occur, the Department has

9.6 Correction of Operational Deficiencies	Section 2.c.ii.E
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- Must describe steps taken to mitigate or correct practices that have resulted in operational deficiencies during the previous permit term
- Deficiencies include those ID'd by inspection reports, administrative orders and civil orders

Comments... COMPLETE AND TECHNICALLY ADEQUATE

9.7 Updated Transfer/Treatment/Storage Facility Requirements	Section 2.c.ii.F
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- Amendments or revisions to transfer/treatment/storage facilities should be briefly described in the narrative
- If applicable provisions of SWRR Chapter 6 have been modified since the previous permit was issued, the renewal application must demonstrate compliance with the most current rules and regulations
- The applicant can provide a revised permit application document or replacement pages, drawings, etc.
- Replacement pages, drawings, etc. must be appropriately numbered and dated so that they can be inserted into the permit application document and obsolete pages, drawings, etc. can be removed

Comments... COMPLETE AND TECHNICALLY ADEQUATE

9.8 Updated Special Waste Management Requirements	Section 2.c.ii.F
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- Amendments or revisions to special waste management units should be briefly described in the narrative
- If applicable provisions of SWRR Chapter 8 have been modified since the previous permit was issued, the renewal application must demonstrate compliance with the most current rules and regulations
- The applicant can provide a revised permit application document or replacement pages, drawings, etc.
- Replacement pages, drawings, etc. must be appropriately numbered and dated so that they can be inserted into the permit application document and obsolete pages, drawings, etc. can be removed

Comments... COMPLETE AND TECHNICALLY ADEQUATE

9.9 Updated Commercial Facility Requirements	Section 2.c.ii.F
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Comments... N/A

9.10 Updated Financial Assurance Requirements	Section 2.c.ii.F
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- Must provide updated cost estimates which are supported by published data, written bids or State Account Worksheets (see Solid Waste Guideline #12)
- If existing financial assurance mechanism is inadequate, an additional or revised mechanism must be provided
- If applicable provisions of SWRR Chapter 7 have been modified since the previous permit was issued, the renewal application must demonstrate compliance with the most current rules and regulations
- The applicant can provide a revised permit application document or replacement pages, drawings, etc.
- Replacement pages, drawings, etc must be appropriately numbered and dated so that they can be inserted into the permit application document and obsolete pages, drawings, etc. can be removed

Comments... COMPLETE AND TECHNICALLY ADEQUATE

10.0 APPENDICES

- Appendices may be provided to support the assumptions and conclusions contained in the permit application, and may include, but are not limited to:
 - geotechnical investigation reports
 - geologic investigation reports
 - hydrologic investigation reports
 - planning studies
 - field or laboratory data (waste, soil or groundwater)
 - computer modeling reports
- A "List of Appendices" must be provided
- Each appendix should have a title page with a unique title, author/source and date
- All appendices should be referenced within the application narrative
- Geological services or work must be stamped, signed, and dated by a professional geologist (see W.S. § 33-41-115)

Comments... COMPLETE AND TECHNICALLY ADEQUATE

END OF PERMIT APPLICATION REVIEW
