

Monzeglio, Hope, NMENV

From: Chavez, Carl J, EMNRD
Sent: Tuesday, April 04, 2006 1:58 PM
To: Jim Lieb
Cc: Ed Riege; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD; Cobrain, Dave, NMENV; Foust, Denny, EMNRD
Subject: RE: Storm water/Firewater Pond project (SWFPP)

Jim:

Good afternoon. In response to your questions about the Storm water/Firewater Pond Project (SWFPP), the OCD has the following responses.

- 1) After reviewing OCD's Ciniza Refinery file, the OCD never received the actual permeability tests and boring log information that was requested from Mr. Romero for the fire pond. He was in the process of soil sample collection, permeability analyses, and providing soil boring lithologic information to the OCD/HWB to consider as part of its fire water pond proposal. This information is needed to help determine whether the clay barrier will be sufficient for secondary containment.
- 2) The OCD recommends a leak detection sump within the pond at the lowest elevation along its perimeter. The OCD's experience with piezoelectric detection systems is that moisture has a tendency to activate and indicate that there is a leakage problem, but doesn't help in understanding the location and magnitude of leakage, etc. A sump will help to monitor fluid levels, determine the leakage rate, allow for removal and repair options, etc.

Similar to the OCD's requirement for analytical data from the RO reject water in Giant's original request for a fire water pond, the OCD also requires analytical data for the boiler water and any other fluids routed to the pond in order to understand the quality of water, liner chemical compatibility, characterization of a potential point source for contamination, etc., and general water quality of the fluids that will be stored and potentially be used to suppress fire.

- 3) No, a Form C-144 does not need to be submitted, since the facility is already permitted by the OCD; however, a major modification is required to address a major change to the permit. The OCD is working to provide Giant with a letter that may identify other items for inclusion in the major modification to help Giant avoid increased expenses of having to submit multiple major modifications to its permit. However, Giant reserves the option to address the SWFPP as one major modification at this time and then submit other major modifications to its permit at a later date at additional expense(s).
- 4) Yes, an engineering plan is required similar to proposed Rule 50B(4) in order for the OCD to review and approve the major modification to the permit.
- 5) While the OCD considers 30-mil PVC to be a very good liner, there are circumstances where it would not be the liner of choice by the OCD. PVC liners do not fare well under direct exposure to ultra violet radiation, and generally would not last more than 3 years in direct sunlight. Sunlight may not be of concern if the PVC is shielded or special sunlight resistant PVC is used; however, a 30-mil LLDPE or equivalent liner may be more appropriate based on the circumstances, chemicals of concern, etc. (please refer to an attached document with general liner comparisons).

Let me know if Giant plans to submit one major modification for the SWFPP. The OCD is working on a letter that may identify other modifications that may be addressed in one major modification. Please contact me if you have questions. Thank you.

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(Pollution Prevention Guidance is under "Publications")

4/4/2006

From: Jim Lieb [mailto:jl Lieb@giant.com]
Sent: Friday, March 31, 2006 9:46 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Riege; Monzeglio, Hope, NMENV
Subject: Storm water/Firewater Pond project

Carl:

I am working on the storm water/fire water pond project and need to touch bases with you on OCD's requirements for use of the pond as a storm water/fire water pond. I have some of James Romero's old emails to you and based on my reading of the emails I believe he had supplied the permeability and soil boring log sheets to you back in September 2005. I have attached a scanned copy of the Precision Engineering results to my email. I have reviewed the OCD's rules under 19.15.2.50 for Pits and Below Grade tanks and see that 19.15.2.50B(1) refers to a form C-144 application to discharge into a pit.

My questions are:

1. Is the soil boring and permeability data acceptable to OCD as documentation that the clay barrier under the pond is sufficient that the low permeability clay will suffice as the secondary containment barrier with a single liner with leak detection is acceptable? I have the guidance on Pit Leak Detection that you provided to James Romero. Giant will follow this guidance.
2. Since we will install a leak detection system (piezoelectric) and the primary liner, then I assume the boiler salt content and RO reject water issues are moot?
3. Need we complete the form C-144 and submit it to OCD?
4. Is the Engineering Plan in 19.15.2.50 B (4) required for this project?
5. 19.15.2.50 C.(2)(c) specifies a liner of at least 30 mils and manufactured of PVC or other equivalent material that meets or exceeds the ASTM standards for PVC. Giant will follow this specification.

If there is anything else I need to be aware of to obtain OCD's approval to use the existing pond as a fire water/storm water retention pond, please let me know.

Regards,
Jim Lieb
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Liner Comparison

ATTRIBUTE	HDPE	LLDPE	CSPE-R	PVC	EPDM	EIA	FPP	GCL
General Chemical Exposure	Excellent	Good	Excellent (when cured)	Fair	Good	Excellent	Excellent	Fair
Hydrocarbon Exposure	Good	Good	Good (when cured)	Fair	Good	Excellent	Good	Fair
Weathering (UV Exposure)	Excellent	Fair	Excellent (when cured)		Excellent	Excellent	Excellent	
Thermal Stability			Excellent	Good	Excellent	Good	Good - Excellent when reinforced	Good
Tensile Performance	Good	Good	Excellent	Good	Good	Excellent	Good - Excellent when reinforced	Good
Uni-Axial Elongation Performance	Excellent	Excellent	Good	Good	Good	Fair	Excellent	Fair
Multi-Axial Elongation Performance	Fair	Excellent	Good	Excellent	Good	Fair	Excellent	Fair
Puncture Performance	Fair	Excellent	Good	Excellent	Good	Excellent	Good	Good
Installation Damage Resistance	Fair	Fair	Good	Excellent	Excellent	Good	Excellent	Good
Seaming Methods	Thermal/ Excellent	Thermal/ Excellent	Thermal or solvent bonding/ Good	Thermal or solvent bonding/ Good	Tape seams/ Good	Thermal/ Excellent	Thermal/ Excellent	Overlap
Repair in Service	Good	Good	None/ requires adhesives	Good	Good	Good	Excellent	
Stress Cracking	Fair	Good						
Flexibility in Detailing	Fair	Excellent	Good	Good	Good	Good	Excellent	

Source: www.geosynthetica.net/tech_docs/LinerComparison.asp

Descriptions:

HDPE: High Density Polyethylene

LLDPE: Linear Low-Density Polyethylene

CSPE-R: Chlorosulfonated Polyethylene- Reinforced

GCL: Geosynthetic Clay Liner

PVC: Poly Vinyl Chloride

EPDM: Ethylene Propylene Diene Monomer

EIA: Ethylene Interpolymer Alloy

FPP: Flexible Polypropylene