



Gallup

**Monzeglio, Hope, NMENV**

From: Chavez, Carl J, EMNRD
Sent: Tuesday, July 15, 2008 11:08 AM
To: Riege, Ed
Cc: Ed Cote; Rajen, Gaurav; Monzeglio, Hope, NMENV
Subject: RE: Western Refining SW- Gallup Refinery (GW-032) Engineering & Design of the Sanitary Wastewater Lift Station

Mr. Riege:

The Agencies hereby conclude that the engineering design drawings are satisfactory to fulfill the OCD Letter of March 12, 2008, and OCD Discharge Permit (GW-032) Item 5 (Condition 24A & B).

Please be advised that NMOCD approval of this plan does not relieve Western Refining Southwest- Gallup Refinery of responsibility should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Western Refining Southwest- Gallup Refinery of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Thank you.

Carl J. Chavez, CHMM
 New Mexico Energy, Minerals & Natural Resources Dept.
 Oil Conservation Division, Environmental Bureau
 1220 South St. Francis Dr., Santa Fe, New Mexico 87505
 Office: (505) 476-3491
 Fax: (505) 476-3462
 E-mail: CarlJ.Chavez@state.nm.us
 Website: <http://www.emnrd.state.nm.us/oecd/index.htm>
 (Pollution Prevention Guidance is under "Publications")

From: Riege, Ed [mailto:Ed.Riege@wnr.com]
Sent: Tuesday, July 15, 2008 10:32 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Cote; Rajen, Gaurav; Monzeglio, Hope, NMENV
Subject: RE: Western Refining SW- Gallup Refinery (GW-032) Engineering & Design of the Sanitary Wastewater Lift Station

Dear Carl:

Many thanks for your review of our engineering and design drawings of the Sanitary Wastewater Lift Station.

In response to your questions:

- 1) The emergency storage tanks will be placed directly on top of the 12 inches of native excavated soil which will be underlain by a Geosynthetic Clay Liner (GCL; specifications discussed below) according to the manufacturer's guidelines and specifications. The 12 inches of excavated native soil will be replaced, graded, and re-compacted to 90 percent density (minimum). All pipe penetrations, collars and seals through the GCL will be per the manufacturer's details and sealed with Bentonite.
- 2) The GCL is manufactured by CETCO and is the CETCO Bentomat SDN. The attached file provides details of the GCL and its specifications as well as certified properties. A brief description of the GCL as described by the manufacturer is provided below.
- 3) The secondary containment area will be designed and constructed to hold 1 + 1/3 the volume of the largest tank and/or the volume of all interconnected tanks within the bermed secondary containment area.

Please do not hesitate to contact me with further questions if you need any more clarifications.

With my best regards,

Ed Riege

Manufacturer description of GCL (more detailed technical specifications in the attached file)

7/15/2008

Gallup

Monzeglio, Hope, NMENV

From: Riege, Ed [Ed.Riege@wnr.com]
Sent: Tuesday, July 15, 2008 10:32 AM
To: Chavez, Carl J, EMNRD
Cc: Ed Cote; Rajen, Gaurav; Monzeglio, Hope, NMENV
Subject: RE: Western Refining SW- Gallup Refinery (GW-032) Engineering & Design of the Sanitary Wastewater Lift Station
Attachments: TR-401bmsdn.pdf

Dear Carl:

Many thanks for your review of our engineering and design drawings of the Sanitary Wastewater Lift Station.

In response to your questions:

- 1) The emergency storage tanks will be placed directly on top of the 12 inches of native excavated soil which will be underlain by a Geosynthetic Clay Liner (GCL; specifications discussed below) according to the manufacturer's guidelines and specifications. The 12 inches of excavated native soil will be replaced, graded, and re-compacted to 90 percent density (minimum). All pipe penetrations, collars and seals through the GCL will be per the manufacturer's details and sealed with Bentonite.
- 2) The GCL is manufactured by CETCO and is the CETCO Bentomat SDN. The attached file provides details of the GCL and its specifications as well as certified properties. A brief description of the GCL as described by the manufacturer is provided below.
- 3) The secondary containment area will be designed and constructed to hold 1 + 1/3 the volume of the largest tank and/or the volume of all interconnected tanks within the bermed secondary containment area.

Please do not hesitate to contact me with further questions if you need any more clarifications.

With my best regards,

Ed Riege

Manufacturer description of GCL (more detailed technical specifications in the attached file)

Bentomat® Geosynthetic Clay Liners

CETCO is the world leader in the production of geosynthetic clay liners. The Bentomat® geosynthetic clay liners (GCLs) are high performance environmental liners manufactured with durable high-strength geotextiles and a uniform layer of low-permeability granular Volclay® sodium bentonite. The Bentomat patented manufacturing process utilizes a needle punched technique which encapsulates the sodium bentonite between two layers of geotextile, inhibiting migration of the clay in its dry or hydrated state. The geotextiles offer a long lasting resistance to physical and chemical break-down in harsh environments. The bentonite's high swelling capacity and low permeability provide an effective hydraulic seal. With a total thickness of less than one inch, CETCO GCLs provide better hydraulic performance than several feet of compacted clay.

Ed Riege
 Environmental Superintendent

Western Refining
 Gallup Refinery
 Route 3 Box 7
 Gallup, NM 87301
 (505) 722-0217
 rieke.ed@wnr.com

From: Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]
Sent: Wednesday, July 09, 2008 2:30 PM
To: Riege, Ed
Cc: Turri, Mark; Riley, Don; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Subject: Western Refining SW- Gallup Refinery (GW-032) Engineering & Design of the Sanitary Wastewater Lift Station

7/15/2008

Mr. Riege:

The New Mexico (NM) Oil Conservation Division (OCD) in consultation with the NM Environment Department- Hazardous Waste Bureau (Agencies) have complete our review of the Diagrams: C-1; A-1; S-1; P-1; P-2; E-1 thru E-3; and I-1 thru I-9 completed by Hubbell, Roth & Clark, Inc. and signed by Edward L. Cote, P.E.

DePauli Engineering & Surveying, LLC. was contacted today to verify the survey date (12/10/07) with conversion of vertical elevation to the NVGD29 System.

There are a few questions or clarifications related to drawings C-1 and P-1, which reference geosynthetic liner system and geosynthetic clay liner (GCL) w/ 12 inch of soil cover respectively within the bermed area of the emergency storage tank area. Please verify that the emergency tanks will be placed directly on top of the 12 inches of native excavated soil, which will be underlain by GCL (mil spec & type?) in a cement secondary containment area? Will the secondary containment area be constructed to hold 1 + 1/3 the volume of the largest tank and/or the volume of all interconnected tanks within the bermed secondary containment area?

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/ocd/index.htm>
(Pollution Prevention Guidance is under "Publications")

Confidentiality Notice: This e-mail, including all attachments is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited unless specifically provided under the New Mexico Inspection of Public Records Act. If you are not the intended recipient, please contact the sender and destroy all copies of this message. -- This email has been scanned by the Sybari - Antigen Email System.

This inbound email has been scanned by the MessageLabs Email Security System.

7/15/2008



Certified Properties

BENTOMAT® SDN CERTIFIED PROPERTIES

MATERIAL PROPERTY	TEST METHOD	TEST FREQUENCY ft ² (m ²)	REQUIRED VALUES
Bentonite Swell Index ¹	ASTM D 5890	1 per 50 tonnes	24 mL/2g min.
Bentonite Fluid Loss ¹	ASTM D 5891	1 per 50 tonnes	18 mL max.
Bentonite Mass/Area ²	ASTM D 5993	40,000 ft ² (4,000 m ²)	0.75 lb/ft ² (3.6 kg/m ²) min
GCL Grab Strength ³	ASTM D 6768	200,000 ft ² (20,000 m ²)	30 lbs/in (53 N/cm) MARV
GCL Peel Strength ³	ASTM D 6496	40,000 ft ² (4,000 m ²)	2.5 lbs/in (4.4 N/cm) min
GCL Index Flux ⁴	ASTM D 5887	Weekly	1 x 10 ⁻⁸ m ³ /m ² /sec max
GCL Hydraulic Conductivity ⁴	ASTM D 5887	Weekly	5 x 10 ⁻⁹ cm/sec max
GCL Hydrated Internal Shear Strength ⁵	ASTM D 5321 ASTM D 6243	Periodic	500 psf (24 kPa) typ @ 200 psf

Bentomat SDN is a reinforced GCL consisting of a layer of sodium bentonite between two nonwoven geotextiles, which are needlepunched together.

Notes

¹ Bentonite property tests performed at a bentonite processing facility before shipment to CETCO's GCL production facilities.

² Bentonite mass/area reported at 0 percent moisture content.

³ All tensile strength testing is performed in the machine direction using ASTM D 6768. All peel strength testing is performed using ASTM D 6496. Upon request, tensile and peel results can be reported per modified ASTM D 4632 using 4 inch grips.

⁴ Index flux and permeability testing with deaired distilled/deionized water at 80 psi (551kPa) cell pressure, 77 psi (531 kPa) headwater pressure and 75 psi (517 kPa) tailwater pressure. Reported value is equivalent to 925 gal/acre/day. This flux value is equivalent to a permeability of 5x10⁻⁹ cm/sec for typical GCL thickness. Actual flux values vary with field condition pressures. The last 20 weekly values prior the end of the production date of the supplied GCL may be provided.

⁵ Peak values measured at 200 psf (10 kPa) normal stress for a specimen hydrated for 48 hours. Site-specific materials, GCL products, and test conditions must be used to verify internal and interface strength of the proposed design.

CETCO has developed an edge enhancement system that eliminates the need to use additional granular sodium bentonite within the overlap area of the seams. We call this edge enhancement, SuperGroove™, and it comes standard on both longitudinal edges of Bentomat® SDN. It should be noted that SuperGroove™ does not appear on the end-of-roll overlaps and recommend the continued use of supplemental bentonite for all end-of-roll seams.



1500 W. Shure Drive Arlington Heights, IL 60004 USA 800.527.9948 Fax 847.577.5571

For the most up-to-date information please visit our website, www.cetco.com

A wholly owned subsidiary of AMCOL International

The information and data contained herein are believed to be accurate and reliable. CETCO makes no warranty of any kind and accepts no responsibility for the results obtained through application of this information.

Revised 05/07
TR 401-BMSDN

Monzeglio, Hope, NMENV

From: Chavez, Carl J, EMNRD
Sent: Wednesday, July 09, 2008 2:30 PM
To: Riege, Ed
Cc: Mark Turri; Don Riley; Monzeglio, Hope, NMENV; Price, Wayne, EMNRD
Subject: Western Refining SW- Gallup Refinery (GW-032) Engineering & Design of the Sanitary Wastewater Lift Station

Mr. Riege:

The New Mexico (NM) Oil Conservation Division (OCD) in consultation with the NM Environment Department- Hazardous Waste Bureau (Agencies) have complete our review of the Diagrams: C-1; A-1; S-1; P-1; P-2; E-1 thru E-3; and I-1 thru I-9 completed by Hubbell, Roth & Clark, Inc. and signed by Edward L. Cote, P.E.

DePauli Engineering & Surveying, LLC. was contacted today to verify the survey date (12/10/07) with conversion of vertical elevation to the NVGD29 System.

There are a few questions or clarifications related to drawings C-1 and P-1, which reference geosynthetic liner system and geosynthetic clay liner (GCL) w/ 12 inch of soil cover respectively within the bermed area of the emergency storage tank area. Please verify that the emergency tanks will be placed directly on top of the 12 inches of native excavated soil, which will be underlain by GCL (mil spec & type?) in a cement secondary containment area? Will the secondary containment area be constructed to hold 1 + 1/3 the volume of the largest tank and/or the volume of all interconnected tanks within the bermed secondary containment area?

Thank you.

Carl J. Chavez, CHMM
New Mexico Energy, Minerals & Natural Resources Dept.
Oil Conservation Division, Environmental Bureau
1220 South St. Francis Dr., Santa Fe, New Mexico 87505
Office: (505) 476-3491
Fax: (505) 476-3462
E-mail: CarlJ.Chavez@state.nm.us
Website: <http://www.emnrd.state.nm.us/oed/index.htm>
(Pollution Prevention Guidance is under "Publications")