August 16, 2017

Bradford Billings
Hydrologist
New Mexico Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Re: RDX Section 16 recycling containment - variance request to change the liner system (2RF-109)

The purpose of this letter is to request permission to modify the liner system on the already approved registration for the RDX Section 16 recycling containment; 2RF-109.

The originally proposed liner system consisted of a 60 mil primary liner and a 40 mil string reinforced secondary liner underlain with 10-ounce geotextile underlayment with an interstitial leak detection geonet located between the primary and secondary liners. RKI Exploration would like to substitute the 40 mil secondary liner with a 60 mil HDPE liner.

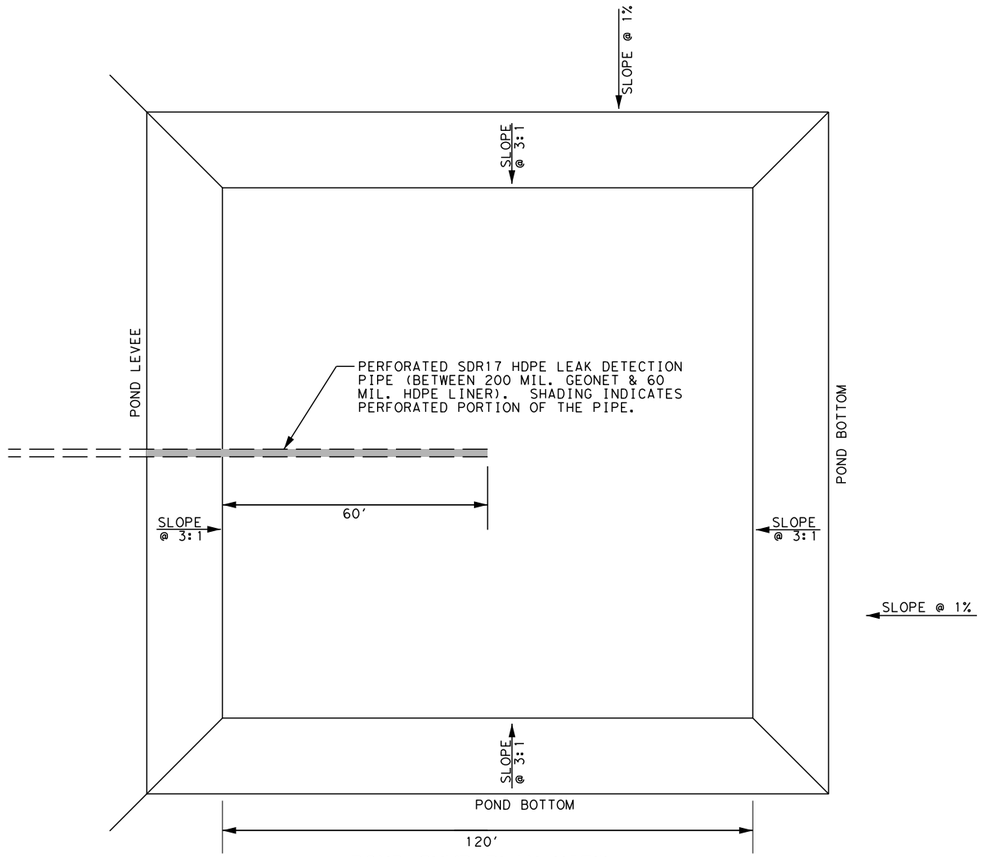
In accordance with the NMOCD 19.15.34.12 A. (4) rule, the recommended secondary liner should consist of 30 mil LLDPE string reinforced or equivalent with a hydraulic conductivity no greater than 1 x 10-9cm/sec. The hydraulic conductivity of a 60 mil liner is 1 x 10-12cm/sec which complies with the above mentioned rule. Attached are the engineering drawings for the proposed liner system along with the liner specifications.

Please do not hesitate to contact me at (970) 589 0743 should you have any questions or concerns.

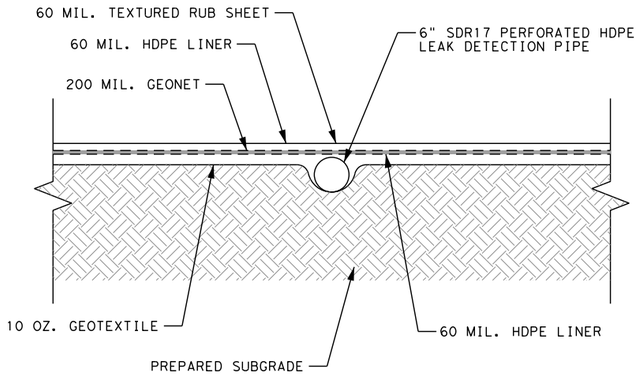
Sincerely,

Karolina Blaney

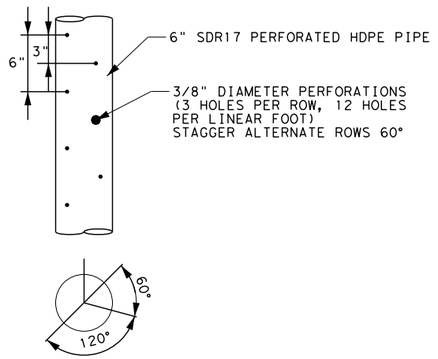
Karolina Blaney
Environmental Specialist
WPX Energy
Office: (575) 885-7514
Cell: (970) 589-0743
karolina.blaney@wpxenergy.com



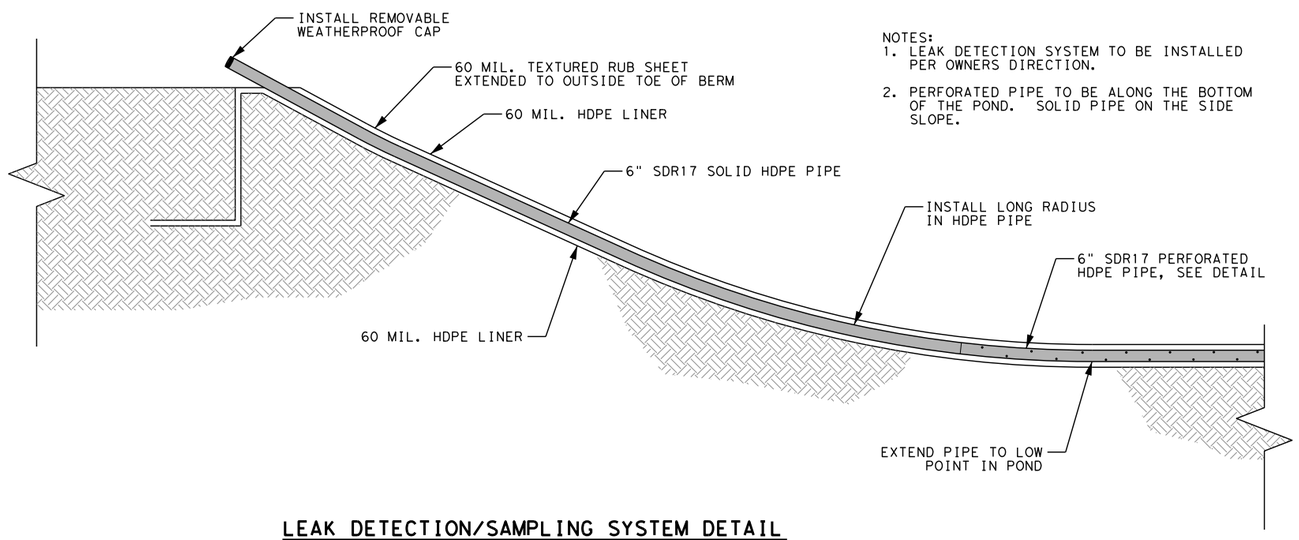
POND SUMP PLAN VIEW
N. T. S.



LEAK DETECTION PIPE DETAIL
N. T. S.



PERFORATED PIPE DETAIL
N. T. S.



NOTES:
1. LEAK DETECTION SYSTEM TO BE INSTALLED PER OWNERS DIRECTION.
2. PERFORATED PIPE TO BE ALONG THE BOTTOM OF THE POND. SOLID PIPE ON THE SIDE SLOPE.

LEAK DETECTION/SAMPLING SYSTEM DETAIL
N. T. S.

RKI EXPLORATION & PRODUCTION, LLC
210 PARK AVENUE, STE 900
OKLAHOMA CITY, OK 73102

RKI Exploration & Production

KIRK E. LOWE NEW MEXICO 23827 PROFESSIONAL ENGINEER
06/15/17

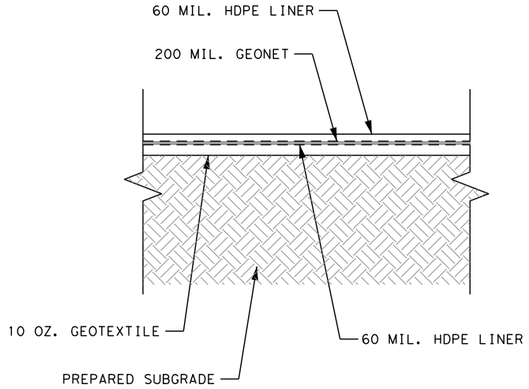
RDX SECTION 16 PRODUCED WATER IMPOUNDMENT
EDDY COUNTY, NEW MEXICO

GENERAL DETAILS

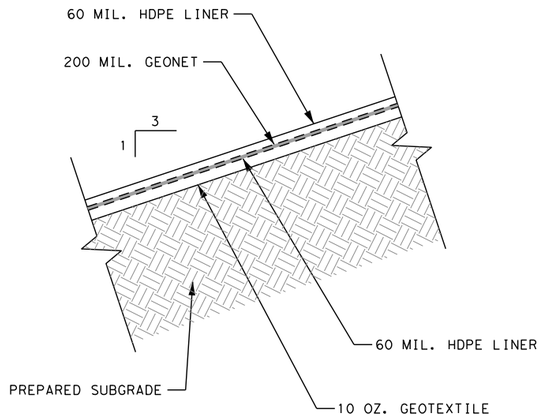
FSC INC SURVEYORS+ENGINEERS
2205 WALNUT STREET / COLUMBUS, TX 78934
1.855.637.5725 / WWW.FSCINC.NET
TBPE FIRM # 17957 / TBPLS # 10000100

Project No.:	2017030374
Issued:	08/15/17
Drawn By:	FSC
Checked By:	KL

C1.03
SHEET



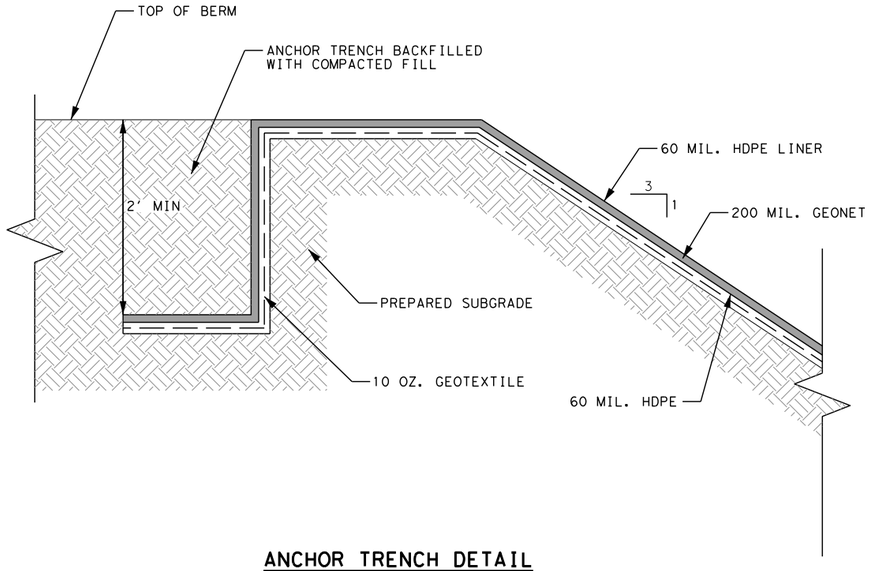
LINER SYSTEM FLOOR DETAIL
N. T. S.



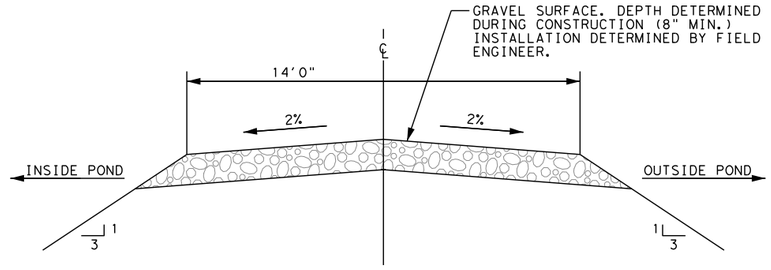
LINER SYSTEM SIDE SLOPE DETAIL
N. T. S.

GENERAL NOTES

1. PREPARED SUBGRADE MEANS COMPACTED SMOOTH SUBGRADE FREE OF ROCKS, ROOTS, WOOD DEBRIS, CONCRETE RUBBLE AND ANY SHARP OBJECTS THAT MIGHT PUNCTURE THE HDPE LINER.
2. IF SUBGRADE IS NOT FREE OF SHARP OBJECTS, THEN 16 OUNCE GEOTEXTILE MATERIALS SHALL BE INSTALLED UNDER ALL HDPE LINER.
3. ALL EMBANKMENT SLOPES SHALL HAVE A RATIO OF 3:1 MAX. COMPACTED EARTH EMBANKMENTS TO BE CONSTRUCTED WITH 12 INCH (MAX) LOOSE LIFTS, COMPACTED TO 90% STANDARD PROCTOR DENSITY.
4. PERFORM GEOTECHNICAL ANALYSIS OF EXISTING SOIL TO CONFIRM SOIL IS SUITABLE FOR USE IN THE LEVEE.



ANCHOR TRENCH DETAIL
N. T. S.



TYPICAL CREST DETAIL
N. T. S.

RKI EXPLORATION
& PRODUCTION, LLC
210 PARK AVENUE, STE 900
OKLAHOMA CITY, OK 73102

RKI Exploration & Production

KIRK E. LOWE
NEW MEXICO
23827
PROFESSIONAL ENGINEER
08/15/17

RDX SECTION 16
PRODUCED WATER IMPOUNDMENT
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GENERAL DETAILS

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Project No.:	2017030374
Issued:	08/15/17
Drawn By:	FSC
Checked By:	KL

C1.04
SHEET

60 mil

TECHNICAL DATA SHEET

Geomembrane HDPE Smooth

PROPERTY	TEST METHOD	FREQUENCY (1)	UNIT Metric	460-2000
SPECIFICATIONS				
Thickness (min. avg.)	ASTM D-5199	Every roll	mm	1.5
Thickness (min.)	ASTM D-5199	Every roll	mm	1.35
Resin Density	ASTM D-1505	1/Batch	g/cc	> 0.932
Melt Index - 190/2.16 (max.)	ASTM D-1238	1/Batch	g/10 min	1.0
Sheet Density	ASTM D-1505	Every 2 rolls	g/cc	> 0.94
Carbon Black Content	ASTM D-4218	Every 2 rolls	%	> 2.0 / < 3.0
Carbon Black Dispersion	ASTM D-5596	Every 6 rolls	Category	Cat. 1 / Cat. 2
Oxidation Induction Time (min. ave)	ASTM D-3895	1/Batch	min	100
Tensile Properties (min. avg) (2)	ASTM D-6693	Every 2 rolls		
Strength at Yield			kN/m	22
Elongation at Yield			%	13
Strength at Break			kN/m	42
Elongation at Break			%	700
Tear Resistance (min. avg.)	ASTM D-1004	Every 6 rolls	N	187
Puncture Resistance (min. avg.)	ASTM D-4833	Every 6 rolls	N	540
Dimensional Stability	ASTM D-1204	Every 6 rolls	%	± 2
Stress Crack Resistance (SP-NCTL)	ASTM D-5397	1/Batch	hr	400
Oven Aging - % retained after 90 days	ASTM D-5721	Per formulation		
HP OIT (min. avg.)	ASTM D-5885		%	80
UV Resistance - % retained after 1600 hr	GRI-GM-11	Per formulation		
HP-OIT (min. avg.)	ASTM D-5885		%	50
SUPPLY SPECIFICATIONS *(Roll dimensions may vary ±1%)*				
Roll Dimension - Width	-		m	6.80
Roll Dimension - Length	-		m	158.5
Area (Surface/Roll)	-		m²	1077.8

NOTES

1. Testing frequency based on standard roll dimensions and one batch is approximately 180,000 lbs (or one railcar).
2. Machine Direction (MD) and Cross Machine Direction (XMD or TD) average values should be on the basis of 5 specimens each direction.

* All values are nominal test results, except when specified as minimum or maximum.
* The information contained herein is provided for reference purposes only and is not intended as a warranty of guarantee. Final determination of suitability for use contemplated is the sole responsability of the user.BlueWater assumes no liability in connection with the use of this information.

GSE®

GSE STANDARD PRODUCTS

Product Data Sheet

GSE HyperNet, HF, HS and UF Geonet

GSE HyperNet geonets are synthetic drainage materials manufactured from a premium grade high density polyethylene (HDPE) resin. The structure of the HyperNet geonet is formed specifically to transmit fluids uniformly under a variety of field conditions. HDPE resins are inert to chemicals encountered in most of the civil and environmental applications where these materials are used. GSE geonets are formulated to be resistant to ultraviolet light for time periods necessary to complete installation. GSE HyperNet geonets are available in standard, HF, HS, and UF varieties.

The table below provides index physical, mechanical and hydraulic characteristics of GSE geonets. Contact GSE for information regarding performance of these products under site-specific load, gradient, and boundary conditions.

Product Specifications

TESTED PROPERTY	TEST METHOD	FREQUENCY	MINIMUM AVERAGE ROLL VALUE[b]			
			HyperNet	HyperNet HF	HyperNet HS	HyperNet UF
Product Code			XL4000N004	XL5000N004	XL7000N004	XL8000N004
Transmissivity[a], gal/min/ft (m^2/sec)	ASTM D 4716	1/540,000 ft^2	9.66 (2 x 10^{-3})	14.49 (3 x 10^{-3})	28.98 (6 x 10^{-3})	38.64 (8 x 10^{-3})
Thickness, mil (mm)	ASTM D 5199	1/50,000 ft^2	200 (5)	250 (6.3)	275 (7)	300 (7.6)
Density, g/cm^3	ASTM D 1505	1/50,000 ft^2	0.94	0.94	0.94	0.94
Tensile Strength (MD), lb/in (N/mm)	ASTM D 5035	1/50,000 ft^2	45 (7.9)	55 (9.6)	65 (11.5)	75 (13.3)
Carbon Black Content, %	ASTM D 1603, modified	1/50,000 ft^2	2.0	2.0	2.0	2.0
Roll Width[c], ft (m)			15 (4.6)	15 (4.6)	15 (4.6)	15 (4.6)
Roll Length[c], ft (m)			300 (91)	250 (76)	220 (67)	200 (60)
Roll Area, ft^2 (m^2)			4,500 (418)	3,750 (348)	3,300 (305)	3,000 (278)

NOTES:

- [a]Gradient of 0.1, normal load of 10,000 psf, water at 70° F (20° C), between steel plates for 15 minutes.
- [b]These are MARV values that are based on the cumulative results of specimens tested by GSE.
- [c]Roll widths and lengths have a tolerance of ±1%.

North America	GSE Lining Technology, Inc.	Houston, Texas	800 435 2008	281 443 8564	Fax: 281 230 8650
South America	GSE Lining Technology Chile S.A.	Santiago, Chile		56 2 595 4200	Fax: 56 2 595 4290
Asia Pacific	GSE Lining Technology Company Limited	Bangkok, Thailand		66 2 937 0091	Fax: 66 2 937 0097
Europe & Africa	GSE Lining Technology GmbH	Hamburg, Germany		49 40 767420	Fax: 49 40 7674234
Middle East	GSE Lining Technology-Egypt	The 6th of October City, Egypt		202 2 828 8888	Fax: 202 2 828 8889

www.gseworld.com