

PA ID #: 08-00380  
NY ID #: 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10103212

Phone: (570) 888-0169

Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10103212

PAGE: 1 of 4

PO#:

PWS ID#

PHONE: (607) 731-0145

FAX: (607) 562-4001

## TEST REPORT

Pad

RECEIVED FOR LAB BY: TJC

DATE: 10/21/2010 11:37

Page 1 of 4

SAMPLE: Flowback Sand

Lab ID: 10103212-001A

Composite

SAMPLED BY: SG

Sample Time: 10/20/2010 19:09

SLOQ

Test	Result		Method		Analysis Start	Analysis End	Analyst *
Methanol	16 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
Ethanol	13 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
Isopropanol	14 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
t-Butanol	14 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
n-Propanol	14 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
Isobutanol	14 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
n-Butanol	14 mg/Kg	N	Alcohols by FID	10	10/26/10 8:34	10/26/10	JJ6-CV
Sodium	< 64.9 mg/Kg-dry		EPA 6010B	64.9	10/22/10 10:40	10/22/10	RMD-CV
Bromine	< 0.46 mg/L	N	HACH 8167	0.46	10/25/10 15:25	10/25/10	TLB-CV
1,1-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Methylene chloride	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
2-Butanone	< 0.203 mg/Kg-dry		EPA 8260B	0.203	10/25/10 8:30	10/25/10	DN-CV
trans-1,2-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1-Dichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
cis-1,2-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Chloroform	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1,1-Trichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Carbon tetrachloride	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Benzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2-Dichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Trichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2-Dichloropropane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Dibromomethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Bromodichloromethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

B Analyte detected in the associated Method Blank

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 10/27/2010

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
 Sayre, PA 18840

Work Order: 10103212

Phone: (570) 888-0169

Fax: (570) 888-0717

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NAME: Steve Gridley  
 COMPANY: Talisman Energy USA, Inc.  
 ADDRESS: 337 Daniel Zenker Dr  
 Horseheads, NY 14845

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cis-1,3-Dichloropropene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Toluene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
trans-1,3-Dichloropropene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1,2-Trichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Tetrachloroethene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Dibromochloromethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2-Dibromoethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Chlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Ethylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
m,p-Xylene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
o-Xylene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Bromoform	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2,3-Trichloropropane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,3-Dichlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,4-Dichlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
1,2-Dichlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	10/25/10 8:30	10/25/10	DN-CV
Chloride	< 51.0 mg/Kg-dry	EPA 300.0	51.0	10/22/10 15:07	10/23/10	HDP-CV
Formaldehyde	< 0.9 mg/Kg-dry	N NIOSH 3500	0.9	10/26/10 8:30	10/26/10	LTW-CV
Percent Moisture	1.4 %	SM2540G		10/25/10 15:00	10/26/10	NFM-SA

SAMPLE: Flowback Sand

Lab ID: 10103212-001B

Composite

SAMPLED BY: SG

Sample Time: 10/20/2010 19:09

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	1.35 %	Moisture Calc.	0.01	10/25/10 15:00	10/26/10	NFM-SA

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N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE:

10/27/2010

PA ID #: 08-00380  
NY ID #: 11216

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Sayre, PA 18840

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Test	Result	Method	Unit	Value	Start	End	Analyst
Ammonia as N	19.9 mg/kg-dry	UB	Lachat	10.1	10/21/10 12:12	10/21/10	KAL-SA
Free Liquid	< 0.1 %	EPA 9095A		0.1	10/22/10 15:00	10/22/10	IC-SA
pH	7.27@23.0°C	EPA 9045C			10/26/10 8:50	10/26/10	NFM-SA
Phosphorus	24 mg/kg-dry	EPA 365.3		5	10/25/10 17:00	10/26/10	JP-SA

SAMPLE: Flowback Sand

Lab ID: 10103212-001C

Composite

SAMPLED BY: SG

Sample Time: 10/20/2010 19:09

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols	10.00	10/25/10 0:00	10/25/10	
Propylene glycol	< 10.00 mg/Kg	Glycols	10.00	10/25/10 0:00	10/25/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: Flowback Sand

Lab ID: 10103212-001D

Composite

SAMPLED BY: SG

Sample Time: 10/20/2010 19:09

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	13.0 mg/Kg DRY	EPA 9065	1.27	10/25/10 7:30	10/25/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: Flowback Sand

Lab ID: 10103212-001E

Composite

SAMPLED BY: SG

Sample Time: 10/20/2010 19:09

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	750 mg/Kg	EPA 9071	170	10/23/10 9:00	10/23/10	

Sample Note: Analysis performed by Microbac Laboratories, Inc--Erie Division.

SAMPLE: TCLP Leachate of Flowback Sand

Lab ID: 10103212-001G

Composite

SAMPLED BY: SG

Sample Time: 10/22/2010 7:30

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	10/23/10 10:20	10/24/10	RMD-CV

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N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 10/27/2010

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**Eastern Division**

2566 Pennsylvania Ave.  
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Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	10/23/10 11:10	10/23/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	10/23/10 11:10	10/23/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	10/23/10 11:10	10/23/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	10/23/10 11:10	10/23/10	RMD-CV
Copper - TCLP extracted	0.567 mg/L	EPA 6010B	0.100	10/23/10 11:10	10/23/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	10/23/10 11:10	10/23/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	10/23/10 11:10	10/23/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	10/23/10 11:10	10/23/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	10/23/10 11:10	10/23/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	10/23/10 11:10	10/23/10	RMD-CV

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U Ammonia sample not distilled

MANAGER

*Annie M. Davis*

DATE: 10/27/2010



**CHAIN OF CUSTODY**

**10103212**

10/21/10 11:37

ELS

10103212

PAGE 1 OF 1

Talisman Energy USA, Inc.  
Castle Pad

**REPORT TO:** Talisman / UEG  
geowetlands@aol.com  
twollin@rallysolutions.ca

**CONTACT:** Steve Gridley  
PH# 807-731-0145  
FAX#  
**BILL TO:** Talisman  
PO# COMPLETIONS

**DESCRIPTION:** Pad  
**SIGNATURE / AFFILIATION:** [Signature] UEG  
**CONTAINER / SAMPLING POINT:**

REFRIGERATE SAMPLES  
AFTER COLLECTION

TRANSPORT  
TO  
LABORATORY  
IN COOLER  
WITH ICE

RESULTS ARE BEING USED FOR:

NYDOH  NYDEC  PADEP

LANDFILL  PERSONAL  OTHER

ARE SPECIAL DETECTION LIMITS  
NEEDED:  YES /  NO

IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED?  
 YES /  NO

IF YES, PLEASE ATTACH REQUIREMENTS

DW	DRINKING WATER	SL	SLUDGE
GW	GROUND WATER	SO	SOIL
SW	SURFACE WATER	HZ	HAZARDOUS
WW	WASTE WATER	OTHER	
DE	DEIONIZED WATER	DI	DISTILLED WATER
H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO <sub>3</sub>	SODIUM SULFITE	NH <sub>4</sub>	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

DATE SAMPLED  
TIME OF SAMPLING  
SAMPLE MATRIX  
SAMPLE TYPE - GRAB / COMPOSITE  
SAMPLER INITIALS  
PRESERVATIVE

An Incomplete chain of custody may delay the processing of your sample(s).

ANALYSIS TO BE PERFORMED (PER CONTAINER)

COMPOSITED ON RECEIPT  
PRESERVATIVE ADDED ON RECEIPT

LAB USE ONLY

Please fill out all applicable areas completely

CONTAINER	SAMPLING POINT	DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	LAB USE ONLY
1	Flowback Sand	10/20/10	1909	SO	C	SG	N	TPH, pH, Free Liquids, % Moisture			-001A-C
2								Chlorides, Sodium, Bromine			
3	A, Na, Cl, Bromine, P, Moist, 8260, Alcohol							TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se			
4	Formaldehyde							Ag, Cu, Zn, Ni			
5	B. pH, Free Liquid, % Moisture, Phos, NH <sub>3</sub>							Alcohols, Glycols, Formaldehyde			
6	C. Glycol							EPA 8260			
7	D. Phenol							Total Phosphorus, Total Phenolics			
8	E. TPH							Ammonia - Nitrogen			
9	F. T. Sample										
10	G. TCLP Metals + Cu, Ni, Zn							72 HOUR TURNAROUND			Due 10/26/10
11								TURNAROUND			

LAB USE ONLY

DELIVERED BY SG TEMPERATURE UPON RECEIPT \_\_\_\_\_ °C ARRIVAL ON ICE Y/N

RELINQUISHED BY: [Signature]	DATE: 10/21/10	TIME: 1137	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY: [Signature]	DATE: 10/21/10	TIME: 7137



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b>
	Date Received & General Notes
Date Prepared/Revised	February 11, 2011

SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION				
Company Name Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A
Company Mailing Address Line 1 50 Pennwood Place		Company Mailing Address Line 2		
Company Address Last Line – City Warrendale	State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown	First Name Dina	MI	Suffix	
Municipality Warrendale	County Allegheny			
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the DCNR 587 02-001 well pad site located at 273 Fellows Creek Road, Ward Township, Tioga County, PA. The waste is temporarily stored onsite.				
Municipality	Ward	County	Tioga	State PA

SECTION B. WASTE DESCRIPTION				
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	331	<input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time

1. GENERAL PROPERTIES				
a.	pH Range	6	to	9 (based on analyses or knowledge)
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)		
c.	Physical Appearance	Color	Greyish Black	Odor Hydrocarbon
		Number of Solid or Liquid Phases of Separation	One	
		Describe each phase of separation. Sand		

2. CHEMICAL ANALYSIS ATTACHMENTS				
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
b.	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 331 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official

Title Environmental Specialist

Dina Brown

Signature 

Date 2/25/11

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169  
Fax: (570) 888-0717

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NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053413  
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PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 1 of 5

SAMPLE: **Flowback Sand**

Lab ID: 10053413-001A

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 17:30

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst*</u>
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	505 mg/Kg-dry		EPA 6010B	106	05/25/10 11:50	05/27/10	GSR-CV
Bromine	4.60 mg/kg	N	HACH 8167	0.05	05/26/10 10:23	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Butanone	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

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N Parameter not NELAC certified  
U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053413

PAGE: 2 of 5

PO#:

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Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrolein	< 2.11 mg/Kg-dry	EPA 8260B	2.11	05/27/10 20:05	05/27/10	DN-CV
Carbon disulfide	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
MTBE	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrylonitrile	< 0.211 mg/Kg-dry	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Acetone	< 0.422 mg/Kg-dry	EPA 8260B	0.422	05/27/10 20:05	05/27/10	DN-CV
Vinyl acetate	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrahydrofuran	< 0.211 mg/Kg-dry N	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Bromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**  
2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169  
Fax: (570) 888-0717

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COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053413  
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**TEST REPORT**

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Component	Concentration	Method	Result	Time	Date	Analysis Date	Analysis Time	Analysis Location
1,3-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
2-Hexanone	< 0.211 mg/Kg-dry	EPA 8260B	0.211	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Styrene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Cumene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Bromobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
n-Propylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
2-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
4-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,3,5-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
tert-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,2,4-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
sec-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
p-Isopropyltoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
n-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,2-Dibromo-3-chloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,2,4-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Hexachlorobutadiene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Naphthalene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,2,3-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Chloride	619 mg/Kg-dry	EPA 300.0	52.8	05/26/10 15:48	05/27/10	05/27/10	15:48	HDP-CV
Formaldehyde	< 1.1 mg/Kg-dry	N NIOSH 3500	1.1	05/27/10 7:30	05/27/10	05/27/10	7:30	LTW-CV
Percent Moisture	5.3 %	N SM2540G		05/25/10 11:35	05/27/10	05/27/10	11:35	DMB-CV

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001B

Composite

Sample Time: 05/24/2010 17:30

SLOQ

Test	Result	Method	Analysis Start	Analysis End	Analyst *
Ammonia as N	< 11 mg/kg-dry U	Lachat	11 05/27/10 12:00	05/27/10	JP-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1 05/25/10 11:55	05/25/10	IC-SA

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE:

6/1/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053413

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**TEST REPORT**

DCNR58702 Pad 4

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pH	7.74@22.6°C	EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA
Phosphorus	< 5 mg/kg-dry	EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001C Composite  
Sample Time: 05/24/2010 17:30

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Propylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001D Composite  
Sample Time: 05/24/2010 17:30

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	5.34 mg/Kg DRY	EPA 9065	1.35	05/27/10 8:45	05/27/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001E Composite  
Sample Time: 05/24/2010 17:30

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	4490 mg/Kg	EPA 9071		05/26/10 11:00	05/26/10	

Sample Note: Analysis performed by Microbac- Erie

SAMPLE: **TCLP Leachate of Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001G Composite  
Sample Time: 05/26/2010 7:50

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	05/26/10 13:30	05/27/10	JRA-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	05/26/10 14:00	05/27/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE:

6/1/2010



PA ID #: 08-00380  
NY ID # 11216

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**Eastern Division**

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**TEST REPORT**

DCNR58702 Pad 4

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Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Copper - TCLP extracted	0.146 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	05/26/10 14:00	05/27/10	GSR-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010





**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R  
CHEMICAL ANALYSIS OF RESIDUAL WASTE  
ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b>
	Date Received & General Notes
Date Prepared/Revised	February 11, 2011

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

Company Name Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A
Company Mailing Address Line 1 50 Pennwood Place		Company Mailing Address Line 2		
Company Address Last Line - City Warrendale	State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown	First Name Dina	MI	Suffix	
Municipality Warrendale	County Allegheny			
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the DCNR 587 02-002 well pad site located at 374 Fellows Creek Road, Ward Township, Tioga County, PA. The waste is temporarily stored onsite.				
Municipality	Ward	County	Tioga	State PA

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	369	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time

**1. GENERAL PROPERTIES**

a. pH Range	6	to	9	(based on analyses or knowledge)
b. Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c. Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
	Number of Solid or Liquid Phases of Separation	One		
	Describe each phase of separation. Sand			

**2. CHEMICAL ANALYSIS ATTACHMENTS**

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 369 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature 

Date 2/25/11

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053413

PAGE: 1 of 5

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 1 of 5

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001A Composite  
Sample Time: 05/24/2010 17:30

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	505 mg/Kg-dry		EPA 6010B	106	05/25/10 11:50	05/27/10	GSR-CV
Bromine	4.60 mg/kg	N	HACH 8167	0.05	05/26/10 10:23	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Butanone	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

REMARKS:

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Amie M. Davis*

DATE:

6/1/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169  
Fax: (570) 888-0717

**SEND DATA TO:**

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053413  
PAGE: 2 of 5  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 2 of 5

Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrolein	< 2.11 mg/Kg-dry	EPA 8260B	2.11	05/27/10 20:05	05/27/10	DN-CV
Carbon disulfide	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
MTBE	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrylonitrile	< 0.211 mg/Kg-dry	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Acetone	< 0.422 mg/Kg-dry	EPA 8260B	0.422	05/27/10 20:05	05/27/10	DN-CV
Vinyl acetate	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrahydrofuran	< 0.211 mg/Kg-dry N	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Bromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053413

PAGE: 3 of 5

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 3 of 5

Component	Concentration	Method	Result	Time	Date	Lab
1,3-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Hexanone	< 0.211 mg/Kg-dry	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Styrene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Cumene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
n-Propylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
4-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,3,5-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
tert-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,4-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
sec-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
p-Isopropyltoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
n-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,4-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Hexachlorobutadiene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Naphthalene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,3-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chloride	619 mg/Kg-dry	EPA 300.0	52.8	05/26/10 15:48	05/27/10	HDP-CV
Formaldehyde	< 1.1 mg/Kg-dry	N NIOSH 3500	1.1	05/27/10 7:30	05/27/10	LTW-CV
Percent Moisture	5.3 %	N SM2540G		05/25/10 11:35	05/27/10	DMB-CV

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001B

Composite

Sample Time: 05/24/2010 17:30

Test	Result	U	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ammonia as N	< 11 mg/kg-dry	U	Lachat	11	05/27/10 12:00	05/27/10	JP-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	05/25/10 11:55	05/25/10	IC-SA

REMARKS:

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010



PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10053413

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053413  
PAGE: 4 of 5  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 4 of 5

pH	7.74@22.6°C	EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA
Phosphorus	< 5 mg/kg-dry	EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001C Composite  
Sample Time: 05/24/2010 17:30

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Propylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001D Composite  
Sample Time: 05/24/2010 17:30

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	5.34 mg/Kg DRY	EPA 9065	1.35	05/27/10 8:45	05/27/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001E Composite  
Sample Time: 05/24/2010 17:30

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	4490 mg/Kg	EPA 9071		05/26/10 11:00	05/26/10	

Sample Note: Analysis performed by Microbac- Erie

SAMPLE: **TCLP Leachate of Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001G Composite  
Sample Time: 05/26/2010 7:50

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	05/26/10 13:30	05/27/10	JRA-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	05/26/10 14:00	05/27/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Amie M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

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PAGE: 5 of 5

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**TEST REPORT**

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 5 of 5

Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Copper - TCLP extracted	0.146 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	05/26/10 14:00	05/27/10	GSR-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 6/1/2010

**CHAIN OF CUSTODY**

**REPORT TO:** Talisman / UEG  
 geowetlands@aol.com  
 twollin@rallysolutions.ca

**CONTACT:** Steve Gridley  
 PH# 607-731-0145  
 FAX#

**BILL TO:** Talisman

**PO# COMPLETIONS**

**PROJECT DESCRIPTION:** DCUR 58702 Pad 4  
**SAMPLER SIGNATURE / AFFILIATION:** *SG* UEG  
**CONTAINER / SAMPLING POINT:**

2561

**W/O#: 10053413**

REFRIGERATE SAMPLES AFTER COLLECTION

**TRANSPORT TO LABORATORY IN COOLER WITH ICE**

**FOR:**  PADEP

NYDOH  NYDEC

LANDFILL  PERSONAL  OTHER

SLURRY  SLUDGE

DW DRINKING WATER  GW GROUND WATER  SW SURFACE WATER  WW WASTE WATER  DE DEIONIZED WATER

SO SOIL  HZ HAZARDOUS  OTHER

DI DISTILLED WATER

**ARE SPECIAL DETECTION LIMITS NEEDED:**  YES /  NO

IF YES, PLEASE ATTACH

**IS A QC PACKAGE NEEDED?**  YES /  NO

IF YES, PLEASE ATTACH REQUIREMENTS

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO <sub>3</sub>	SODIUM SULFITE	NH <sub>4</sub>	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

An incomplete chain of custody may delay the processing of your sample(s).

**ANALYSIS TO BE PERFORMED (PER CONTAINER)**

COMPOSITED ON RECEIPT  
 PRESERVATIVE ADDED ON RECEIPT

Please fill out all applicable areas completely

**LAB USE ONLY**

1	2	3	4	5	6	7	8	9	10	11
Flowback Sand	5/24/17	SO	C	SG	N	TPH, pH, Free Liquids, % Moisture				
						Chlorides, Sodium, Bromine				
						TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se				
A - Na, Cl, Bromine, Alcohol, PMoist				8260		Ag, Cu, Zn, Ni				
√ Formaldehyde						Alcohols, Glycols, Formaldehyde				
B pH, Free Liquid, Phos, NH <sub>3</sub>						EPA 8260				
C - Glycerol						Total Phosphorus, Total Phenolics				
D - Phenol						Ammonia - Nitrogen				
E - TPH										
F - T. Sample										
G TCLP Metals + Cu, Ni, Zn										

-001A-6

48 HOUR TURNAROUND  
 \_\_\_\_\_ DAY TURNAROUND

DELIVERED BY: SG TEMPERATURE UPON RECEIPT: \_\_\_\_\_ °C ARRIVAL ON ICE: Y/N

RELINQUISHED BY: <i>SG</i>	DATE: 5/25/10	TIME: 854	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY: <i>Debbie McCarty</i>	DATE: 5/25/10	TIME: 854



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.				<b>DEP USE ONLY</b>		
General Reference 287.54				Date Received & General Notes		
Date Prepared/Revised		February 11, 2011				
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>						
Company Name Talisman Energy USA Inc.						
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A		
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2			
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext	
Company Contact Last Name Brown		First Name Dina	MI	Suffix		
Municipality Warrendale		County Allegheny				
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com			
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the DCNR 587 02-004 well pad site located at 1247 Fallbrook Road, Ward Township, Tioga County, PA. The waste is temporarily stored onsite.						
Municipality		Ward	County	Tioga	State	PA
<b>SECTION B. WASTE DESCRIPTION</b>						
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame	
804	Fracing Fluid Waste (Flow Back Sand)	153	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	<input type="checkbox"/> One Time	
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton		
<b>1. GENERAL PROPERTIES</b>						
a.	pH Range	7.74	to	---	(based on analyses or knowledge)	
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)				
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon	
		Number of Solid or Liquid Phases of Separation		One		
		Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>						
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
b.	A detailed description of the waste sampling method is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
d.	The results of the hazardous waste determination is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.			<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 153 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

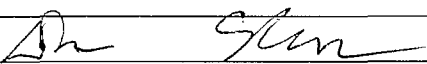
Date Submitted: \_\_\_\_\_

Name of Responsible Official

Title Environmental Specialist

Dina Brown

Signature



Date

2/25/11

PA ID #: 08-00380  
NY ID # 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053413

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053413

PAGE: 1 of 5

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

## TEST REPORT

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 1 of 5

SAMPLE: **Flowback Sand**

Lab ID: 10053413-001A

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 17:30

Test	Result		Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	505 mg/Kg-dry		EPA 8010B	106	05/25/10 11:50	05/27/10	GSR-CV
Bromine	4.60 mg/kg	N	HACH 8167	0.05	05/26/10 10:23	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Butanone	< 0.211 mg/Kg-dry		EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID # 11216

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**Eastern Division**

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Horseheads, NY 14845

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**TEST REPORT**

DCNR58702 Pad 4

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Page 2 of 5

Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrolein	< 2.11 mg/Kg-dry	EPA 8260B	2.11	05/27/10 20:05	05/27/10	DN-CV
Carbon disulfide	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
MTBE	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Acrylonitrile	< 0.211 mg/Kg-dry	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Acetone	< 0.422 mg/Kg-dry	EPA 8260B	0.422	05/27/10 20:05	05/27/10	DN-CV
Vinyl acetate	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
Tetrahydrofuran	< 0.211 mg/Kg-dry N	EPA 8260B	0.211	05/27/10 20:05	05/27/10	DN-CV
Bromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
1,1-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV
2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	DN-CV

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010



PA ID #: 08-00380  
NY ID # 11216

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Sayre, PA 18840

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**TEST REPORT**

DCNR58702 Pad 4

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Page 3 of 5

Component	Concentration	Method	Result	Time	Date	Analysis Date	Analysis Time	Analysis Location
1,3-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
2-Hexanone	< 0.211 mg/Kg-dry	EPA 8260B	0.211	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Styrene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Cumene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Bromobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
n-Propylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
2-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
4-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,3,5-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
tert-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,2,4-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
sec-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
p-Isopropyltoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
n-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,2-Dibromo-3-chloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,2,4-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Hexachlorobutadiene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Naphthalene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
1,2,3-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 20:05	05/27/10	05/27/10	20:05	DN-CV
Chloride	619 mg/Kg-dry	EPA 300.0	52.8	05/26/10 15:48	05/27/10	05/27/10	15:48	HDP-CV
Formaldehyde	< 1.1 mg/Kg-dry	N NIOSH 3500	1.1	05/27/10 7:30	05/27/10	05/27/10	7:30	LTW-CV
Percent Moisture	5.3 %	N SM2540G		05/25/10 11:35	05/27/10	05/27/10	11:35	DMB-CV

SAMPLE: **Flowback Sand**

Lab ID: 10053413-001B

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 17:30

SLOQ

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ammonia as N	< 11 mg/kg-dry	U Lachat	11	05/27/10 12:00	05/27/10	JP-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	05/25/10 11:55	05/25/10	IC-SA

REMARKS:

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MANAGER

*Cassi M. Davis*

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PA ID #: 08-00380  
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**TEST REPORT**

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Page 4 of 5

pH	7.74@22.6°C	EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA
Phosphorus	< 5 mg/kg-dry	EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001C  
Sample Time: 05/24/2010 17:30

Composite

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Propylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001D  
Sample Time: 05/24/2010 17:30

Composite

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	5.34 mg/Kg DRY	EPA 9065	1.35	05/27/10 8:45	05/27/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001E  
Sample Time: 05/24/2010 17:30

Composite

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	4490 mg/Kg	EPA 9071		05/26/10 11:00	05/26/10	

Sample Note: Analysis performed by Microbac- Erie

SAMPLE: **TCLP Leachate of Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053413-001G  
Sample Time: 05/26/2010 7:50

Composite

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	05/26/10 13:30	05/27/10	JRA-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	05/26/10 14:00	05/27/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10053413

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053413

PAGE: 5 of 5

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

DCNR58702 Pad 4

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 5 of 5

Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Copper - TCLP extracted	0.146 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	05/26/10 14:00	05/27/10	GSR-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 6/1/2010

**CHAIN OF CUSTODY**

2561

**REPORT TO:** Talisman / UEG  
 geowetlands@aol.com  
 twollin@rallysolutions.ca

**CONTACT:** Steve Gridley  
 PH# 607-731-0145  
 FAX#

**BILL TO:** Talisman

**PO# COMPLETIONS**

**PROJECT DESCRIPTION:** DCDR 58702 Pad 4  
**SAMPLER SIGNATURE / AFFILIATION:** [Signature] UEG  
**CONTAINER / SAMPLING POINT:**

REFRIGERATE SAMPLES  
AFTER COLLECTION

**TRANSPORT  
TO  
LABORATORY  
IN COOLER  
WITH ICE**

**W/O#: 10053413**

LW DRINKING WATER SL SLUDGE  
 GW GROUND WATER SO SOIL  
 SW SURFACE WATER HZ HAZARDOUS  
 WW WASTE WATER OTHER  
 DE DEIONIZED WATER DI DISTILLED WATER

NYDOH  NYDEC  PADEP

LANDFILL  PERSONAL OTHER

**ARE SPECIAL DETECTION LIMITS**  
 NEEDED:  YES /  NO  
 IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED?  
 YES  NO

IF YES, PLEASE ATTACH REQUIREMENTS

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO <sub>2</sub>	SODIUM SULFITE	NH <sub>4</sub>	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

DATE SAMPLED  
 TIME OF SAMPLING  
 SAMPLE MATRIX  
 SAMPLE TYPE - GRAB / COMPOSITE  
 SAMPLER INITIALS  
 PRESERVATIVE

An incomplete chain of custody may delay the processing of your sample(s).

**ANALYSIS TO BE PERFORMED (PER CONTAINER)**

COMPOSITED ON RECEIPT  
 PRESERVATIVE ADDED ON RECEIPT

LAB USE ONLY

Please fill out all applicable areas completely

CONTAINER	SAMPLING POINT	DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	LAB USE ONLY
1	Flowback Sand	5/24/10	1730	SO	C	SG	N	TPH, pH, Free Liquids, % Moisture			-001A-6
2								Chlorides, Sodium, Bromine			
3								TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se			
4	A- Na, Cl, Bromine, Alcohol, PMAist							Ag, Cu, Zn, Ni			
5	↓ Formaldehyde							Alcohols, Glycols, Formaldehyde			
6	B pH, Free Liquid, Phos, NH <sub>3</sub>							EPA 8260			
7	C- Glycerol							Total Phosphorus, Total Phenolics			
8	D- Phenol							Ammonia - Nitrogen			
9	E- TPH										
10	F- T-Sample										
11	G TCLP Metals + Cu, Ni, Zn										

48 HOUR TURNAROUND  
     DAY TURNAROUND

**DELIVERED BY:** SG **TEMPERATURE UPON RECEIPT:** °C **ARRIVAL ON ICE: Y/N:**

**Due 5/27/10**

RELINQUISHED BY: [Signature]	DATE: 5/25/10	TIME: 854	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY: Debbie McCarty	DATE: 5/25/10	TIME: 854



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b>
	Date Received & General Notes
Date Prepared/Revised	February 11, 2011

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

Company Name Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A
Company Mailing Address Line 1 50 Pennwood Place		Company Mailing Address Line 2		
Company Address Last Line - City Warrendale	State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown	First Name Dina	MI	Suffix	
Municipality Warrendale	County Allegheny			
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the DCNR 587 02-009 well pad site located at 2499 River Road, Ward Township, Tioga County, PA. The waste is temporarily stored onsite.				
Municipality	Ward	County	Tioga	State PA

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	624	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	<input type="checkbox"/> One Time
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	

**1. GENERAL PROPERTIES**

a.	pH Range	7.21	to	---	(based on analyses or knowledge)
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
		Number of Solid or Liquid Phases of Separation	One		
		Describe each phase of separation. Sand			

**2. CHEMICAL ANALYSIS ATTACHMENTS**

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
	624	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
		<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year.		
	0	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature 

Date 2/25/11

LAB ID: 08-00380  
LAB ID: 39-00401

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090958

Phone: (570) 888-0169

Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090958  
PAGE: 1 of 4  
PO#: Completions  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

DCNR58702 Pad 9

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 1 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10090958-001A

Composite

SAMPLED BY: SG

Sample Time: 09/07/2010 14:15

SLOQ

Test	Result		Method		Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Ethanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Isopropanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
t-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Propanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Isobutanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Sodium	969 mg/Kg-dry		EPA 6010B	126	09/09/10 7:20	09/09/10	RMD-CV
Bromine	20.7 mg/kg	N	HACH 8167	0.05	09/08/10 15:23	09/08/10	SMH-CV
1,1-Dichloroethene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Methylene chloride	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
2-Butanone	< 2.03 mg/Kg-dry		EPA 8260B	2.03	09/08/10 9:50	09/08/10	MTB-CV
trans-1,2-Dichloroethene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,1-Dichloroethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
cis-1,2-Dichloroethene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Chloroform	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,1,1-Trichloroethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Carbon tetrachloride	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Benzene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloroethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Trichloroethene	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloropropane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Dibromomethane	< 0.407 mg/Kg-dry		EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Amie M. Davis*

DATE: 9/13/2010



LAB ID: 08-00380  
LAB ID: 39-00401

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090958

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090958  
PAGE: 2 of 4  
PO#: Completions

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

PWS ID#

DCNR58702 Pad 9

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 2 of 4

Bromodichloromethane	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
cis-1,3-Dichloropropene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Toluene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
4-Methyl-2-pentanone (MIBK)	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
trans-1,3-Dichloropropene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,1,2-Trichloroethane	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Tetrachloroethene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Dibromochloromethane	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dibromoethane	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Chlorobenzene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,1,1,2-Tetrachloroethane	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Ethylbenzene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
m,p-Xylene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
o-Xylene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Xylenes, Total	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Bromoform	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/10/10 13:26	09/10/10	MTB-CV
1,1,2,2-Tetrachloroethane	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2,3-Trichloropropane	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,3-Dichlorobenzene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,4-Dichlorobenzene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichlorobenzene	< 0.407 mg/Kg-dry	EPA 8260B	0.407	09/08/10 9:50	09/08/10	MTB-CV
Chloride	1690 mg/Kg-dry	EPA 300.0	50.9	09/08/10 15:54	09/09/10	HDP-CV
Formaldehyde	1.3 mg/Kg-dry	N NIOSH 3500	1.0	09/10/10 8:10	09/10/10	LTW-CV
Percent Moisture	1.7 %	SM2540G		09/09/10 12:30	09/10/10	SG-SA

Sample Note: Limit of detection increased due to matrix interference and spike recovery data

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 9/13/2010

LAB ID: 08-00380  
LAB ID: 39-00401

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090958

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090958  
PAGE: 3 of 4  
PO#: Completions  
PWS ID#

## TEST REPORT

PHONE: (607) 562-4000  
FAX: (607) 562-4001

DCNR58702 Pad 9

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 3 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10090958-001B

Composite

SAMPLED BY: SG

Sample Time: 09/07/2010 14:15

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	1.70 %	Moisture Calc.	0.01	09/09/10 12:30	09/10/10	SG-SA
Ammonia as N	31.7 mg/kg-dry	U Lachat	10.2	09/09/10 11:31	09/09/10	KAL-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	09/07/10 17:10	09/07/10	IC-SA
pH	7.21@19.7°C	EPA 9045C		09/10/10 10:00	09/10/10	SG-SA
Phosphorus	48 mg/kg-dry	EPA 365.3	5	09/09/10 10:30	09/10/10	MED-SA

SAMPLE: **Flowback Sand**

Lab ID: 10090958-001C

Composite

SAMPLED BY: SG

Sample Time: 09/07/2010 14:15

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/10/10 0:00	09/10/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/10/10 0:00	09/10/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: **Flowback Sand**

Lab ID: 10090958-001D

Composite

SAMPLED BY: SG

Sample Time: 09/07/2010 14:15

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	6.12 mg/Kg DRY	EPA 9065	1.29	09/09/10 7:15	09/09/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: **Flowback Sand**

Lab ID: 10090958-001E

Composite

SAMPLED BY: SG

Sample Time: 09/07/2010 14:15

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	6500 mg/Kg	EPA 9071		09/08/10 14:30	09/08/10	

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Carie M. Davis*

DATE: 9/13/2010

LAB ID: 08-00380  
LAB ID: 39-00401

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090958

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090958  
PAGE: 4 of 4  
PO#: Completions  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

DCNR58702 Pad 9

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 4 of 4

Sample Note: Analysis performed by Microbac Laboratories, Inc.-Erie Division

SAMPLE: **TCLP Leachate of Flowback Sand**

Lab ID: 10090958-001G

Composite

SAMPLED BY: SG

Sample Time: 09/08/2010 10:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	09/09/10 10:00	09/09/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Barium - TCLP extracted	43.7 mg/L L	EPA 6010B	10.00	09/09/10 12:45	09/09/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Copper - TCLP extracted	0.313 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Zinc - TCLP extracted	0.476 mg/L	EPA 6010B	0.200	09/09/10 12:45	09/09/10	RMD-CV

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- U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 9/13/2010



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.					<b>DEP USE ONLY</b>	
General Reference 287.54					Date Received & General Notes	
Date Prepared/Revised		February 11, 2011				
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>						
Company Name Talisman Energy USA Inc.						
If a Subsidiary, Name of Parent Company Talisman Energy Inc.					EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2			
Company Address Last Line - City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext	
Company Contact Last Name Brown		First Name Dina	MI	Suffix		
Municipality Warrendale			County Allegheny			
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com			
Is the waste generated at the Company Mailing Address (noted above)?					<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the DCNR 587 02-017 well pad site located at 1247 Fallbrook Road, Ward Township, Tioga County, PA. The waste is temporarily stored onsite.						
Municipality		Ward	County	Tioga	State	PA
<b>SECTION B. WASTE DESCRIPTION</b>						
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame	
804	Fracing Fluid Waste (Flow Back Sand)	348	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal		
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time	
<b>1. GENERAL PROPERTIES</b>						
a.	pH Range	8.30	to	---	(based on analyses or knowledge)	
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)				
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon	
		Number of Solid or Liquid Phases of Separation		One		
		Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>						
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.		<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A	

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 348 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official  
Dina Brown

Title Environmental Specialist

Signature 

Date 2/25/11

PA ID #: 08-00380  
NY ID # 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053433

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053433

PAGE: 1 of 5

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

DCNR58702 Pad 17

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 1 of 5

SAMPLE: **Flowback Sand**

Lab ID: 10053433-001A

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 17:00

SLOQ

Test	Result		Method		Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	331 mg/Kg-dry		EPA 6010B	114	05/25/10 11:50	05/27/10	GSR-CV
Bromine	< 4.6 mg/kg	N	HACH 8167		05/26/10 10:29	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
2-Butanone	< 0.209 mg/Kg-dry		EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV

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N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Candice M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053433

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053433

PAGE: 2 of 5

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

DCNR58702 Pad 17

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 2 of 5

Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Acrolein	< 2.09 mg/Kg-dry	EPA 8260B	2.09	05/27/10 19:36	05/27/10	DN-CV
Carbon disulfide	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
MTBE	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Acrylonitrile	< 0.209 mg/Kg-dry	EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
Acetone	< 0.209 mg/Kg-dry	EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
Vinyl acetate	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
2,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Tetrahydrofuran	< 0.209 mg/Kg-dry	EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
Bromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,1-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,3-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV

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N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Candice M. Davis*

DATE: 6/1/2010



PA ID #: 08-00380  
NY ID #: 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053433

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053433

PAGE: 3 of 5

PO#:

PWS ID#

PHONE: (607) 562-4000  
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## TEST REPORT

DCNR58702 Pad 17

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 3 of 5

2-Hexanone	< 0.209 mg/Kg-dry	EPA 8260B	0.209	05/27/10 19:36	05/27/10	DN-CV
Styrene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Cumene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Bromobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
n-Propylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
2-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
4-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,3,5-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
tert-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2,4-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
sec-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
p-Isopropyltoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
n-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2,4-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Hexachlorobutadiene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Naphthalene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
1,2,3-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:36	05/27/10	DN-CV
Chloride	735 mg/Kg-dry	EPA 300.0	52.2	05/26/10 15:48	05/27/10	HDP-CV
Formaldehyde	1.1 mg/Kg-dry	N NIOSH 3500	1.0	05/27/10 7:30	05/27/10	LTW-CV
Percent Moisture	4.3 %	N SM2540G		05/25/10 11:35	05/27/10	DMB-CV

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053433-001B Composite

Sample Time: 05/24/2010 17:00

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Ammonia as N	< 10 mg/kg-dry U	Lachat	10	05/27/10 12:00	05/27/10	JP-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	05/25/10 12:05	05/25/10	IC-SA
pH	8.30@22.4°C	EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA
Phosphorus	< 5 mg/kg-dry	EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA

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N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053433

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053433  
PAGE: 4 of 5  
PO#:  
PWS ID#

**TEST REPORT**

PHONE: (607) 562-4000  
FAX: (607) 562-4001

DCNR58702 Pad 17

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 4 of 5

SAMPLE: **Flowback Sand**

Lab ID: 10053433-001C

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 17:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 1.00 mg/Kg	Glycols by 8015	1.00	05/26/10 0:00	05/27/10	
Propylene glycol	< 1.00 mg/kg	Glycols by 8015	1.00	05/26/10 0:00	05/27/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **Flowback Sand**

Lab ID: 10053433-001D

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 17:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	< 1.29 mg/Kg DRY	EPA 9065	1.29	05/27/10 8:45	05/27/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: **Flowback Sand**

Lab ID: 10053433-001E

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 17:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Total Petroleum Hydrocarbons	< 345 mg/Kg	EPA 9071	345	05/26/10 11:00	05/26/10	

Sample Note: Analysis performed by Microbac-Erie

SAMPLE: **TCLP Leachate of Flowback Sand**

Lab ID: 10053433-001G

Composite

SAMPLED BY: SG

Sample Time: 05/26/2010 7:50

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	05/26/10 13:30	05/27/10	JRA-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	05/26/10 14:00	05/27/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Copper - TCLP extracted	0.118 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053433

Phone: (570) 888-0169  
Fax: (570) 888-0717

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PAGE: 5 of 5

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**TEST REPORT**

DCNR58702 Pad 17

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 5 of 5

Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	05/26/10 14:00	05/27/10	GSR-CV

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N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 6/1/2010



**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b> Date Received & General Notes
Date Prepared/Revised                      February 11, 2011	

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

<b>Company Name</b> Talisman Energy USA Inc.				
<b>If a Subsidiary, Name of Parent Company</b> Talisman Energy Inc.				<b>EPA Generator ID#</b> N/A
<b>Company Mailing Address Line 1</b> 50 Pennwood Place		<b>Company Mailing Address Line 2</b>		
<b>Company Address Last Line – City</b> Warrendale	<b>State</b> PA	<b>Zip+4</b> 15086	<b>Phone</b> (724) 814-5300	<b>Ext</b>
<b>Company Contact Last Name</b> Brown	<b>First Name</b> Dina	<b>MI</b>	<b>Suffix</b>	
<b>Municipality</b> Warrendale		<b>County</b> Allegheny		
<b>Contact Phone</b> (724) 814-5321	<b>Ext</b>	<b>Contact Email Address</b> dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the DCNR 587 02-018 well pad site located at 560 Fallbrook Road, Ward Township, Tioga County, PA. The waste is temporarily stored onsite.				
<b>Municipality</b>	<b>Ward</b>	<b>County</b>	Tioga	<b>State</b>
				PA

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	442	<input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time

**1. GENERAL PROPERTIES**

<b>a.</b>	<b>pH Range</b>	7.76	to	---	(based on analyses or knowledge)
<b>b.</b>	<b>Physical State</b>	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
<b>c.</b>	<b>Physical Appearance</b>	<b>Color</b>	<b>Odor</b>	<b>Hydrocarbon</b>	
		Greyish Black		One	
		<b>Number of Solid or Liquid Phases of Separation</b> One <b>Describe each phase of separation.</b> Sand			

**2. CHEMICAL ANALYSIS ATTACHMENTS**

<b>a.</b>	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>b.</b>	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>c.</b>	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>d.</b>	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>e.</b>	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
SECTION C. MANAGEMENT OF RESIDUAL WASTE			
1. PROCESSING OR DISPOSAL FACILITY(IES)			
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.			
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 442 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		
2. BENEFICIAL USE			
a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_


I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature 

Date 2/25/11

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10093523

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10093523  
PAGE: 1 of 4  
PO#: Completions  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

DCNR58702 Pad 18

RECEIVED FOR LAB BY: DLM2

DATE: 09/22/2010 11:10

Page 1 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10093523-001A

Composite

SAMPLED BY: SG

Sample Time: 09/20/2010 15:33

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
Ethanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
Isopropanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
t-Butanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
n-Propanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
Isobutanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
n-Butanol	< 8 mg/Kg	NQ	Alcohols by FID	8	09/27/10 13:36	09/27/10	JJ6-CV
Sodium	886 mg/Kg-dry		EPA 6010B	139	09/23/10 10:10	09/23/10	GSR-CV
Bromine	6.90 mg/kg	N	HACH 8167	0.05	09/23/10 11:43	09/23/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
2-Butanone	< 0.208 mg/Kg-dry		EPA 8260B	0.208	09/23/10 15:19	09/24/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 9/29/2010

PA ID #: 08-00380  
NY ID #: 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10093523

Phone: (570) 888-0169

Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10093523  
PAGE: 2 of 4  
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## TEST REPORT

DCNR58702 Pad 18

RECEIVED FOR LAB BY: DLM2

DATE: 09/22/2010 11:10

Page 2 of 4

Bromodichloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	09/23/10 15:19	09/24/10	DN-CV
Chloride	1660 mg/Kg-dry	EPA 300.0	52.1	09/22/10 16:55	09/23/10	HDP-CV
Formaldehyde	1.3 mg/Kg-dry	N NIOSH 3500	1.0	09/27/10 7:50	09/27/10	LTW-CV
Percent Moisture	4.1 %	SM2540G		09/23/10 9:10	09/24/10	IC-SA

REMARKS:

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- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Candice M. Davis*

DATE: 9/29/2010



PA ID #: 08-00380  
NY ID # 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

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Phone: (570) 888-0169  
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Horseheads, NY 14845

WO#: 10093523  
PAGE: 3 of 4  
PO#: Completions  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

DCNR58702 Pad 18

RECEIVED FOR LAB BY: DLM2

DATE: 09/22/2010 11:10

Page 3 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10093523-001B

Composite

SAMPLED BY: SG

Sample Time: 09/20/2010 15:33

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Moisture	4.05 %	Moisture Calc.	0.01	09/23/10 9:10	09/24/10	IC-SA
Ammonia as N	32.4 mg/kg-dry	U Lachat	10.4	09/23/10 9:45	09/23/10	KAL-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	09/22/10 17:05	09/22/10	IC-SA
pH	7.76@21.4°C	EPA 9045C		09/23/10 16:34	09/23/10	KAL-SA
Phosphorus	18 mg/kg-dry	EPA 365.3	5	09/23/10 12:00	09/24/10	MED-SA

SAMPLE: **Flowback Sand**

Lab ID: 10093523-001C

Composite

SAMPLED BY: SG

Sample Time: 09/20/2010 15:33

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/24/10 0:00	09/24/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/24/10 0:00	09/24/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: **Flowback Sand**

Lab ID: 10093523-001D

Composite

SAMPLED BY: SG

Sample Time: 09/20/2010 15:33

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	11.1 mg/kg Dry	EPA 9065		09/28/10 8:20	09/28/10	

Sample Note: Analysis performed by QC lab

SAMPLE: **Flowback Sand**

Lab ID: 10093523-001E

Composite

SAMPLED BY: SG

Sample Time: 09/20/2010 15:33

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Total Petroleum Hydrocarbons	760 mg/Kg	EPA 9071		09/24/10 8:30	09/24/10	

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

Q Due to matrix effects, not all quality control parameters met acceptance criteria

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE:

9/29/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10093523

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10093523  
PAGE: 4 of 4  
PO#: Completions  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

DCNR58702 Pad 18

RECEIVED FOR LAB BY: DLM2

DATE: 09/22/2010 11:10

Page 4 of 4

Sample Note: Analysis performed by Microbac-Erie

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10093523-001G  
Sample Time: 09/23/2010 7:30

Composite

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	09/24/10 11:00	09/27/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/24/10 10:30	09/26/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L L	EPA 6010B	10.00	09/24/10 10:30	09/26/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/24/10 10:30	09/26/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/24/10 10:30	09/26/10	RMD-CV
Copper - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/24/10 10:30	09/26/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/24/10 10:30	09/26/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/24/10 10:30	09/26/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/24/10 10:30	09/26/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/24/10 10:30	09/26/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	09/24/10 10:30	09/26/10	RMD-CV

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- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 9/29/2010



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.					<b>DEP USE ONLY</b>	
General Reference 287.54					Date Received & General Notes	
Date Prepared/Revised February 11, 2011						
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>						
Company Name Talisman Energy USA Inc.						
If a Subsidiary, Name of Parent Company Talisman Energy Inc.					EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2			
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext	
Company Contact Last Name Brown		First Name Dina	MI	Suffix		
Municipality Warrendale			County Allegheny			
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com			
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (03-013) W well pad site located at 1456 Fairbanks Road, Columbia Township, Bradford County, PA. The waste is temporarily stored onsite.						
Municipality Columbia		County Bradford	State PA			
<b>SECTION B. WASTE DESCRIPTION</b>						
Residual Waste Code	Residual Waste Code Description		Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)		718	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	
				<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time
<b>1. GENERAL PROPERTIES</b>						
a.	pH Range 8.21 to --- (based on analyses or knowledge)					
b.	Physical State		<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance		Color <u>Greyish Black</u> Odor <u>Hydrocarbon</u> Number of Solid or Liquid Phases of Separation <u>One</u> Describe each phase of separation. <u>Sand</u>			
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>						
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.				<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
	718	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
		<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year.		
	0	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

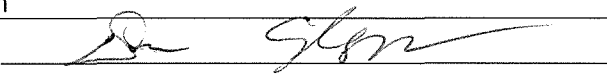
I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature  Date 2/25/14

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10080716

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10080716

PAGE: 1 of 5

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

3

RECEIVED FOR LAB BY: DLM2

DATE: 08/05/2010 9:50

Page 1 of 5

SAMPLE: **Flowback Sand**

Lab ID: 10080716-001A

Composite

SAMPLED BY: LS

Sample Time: 08/04/2010 10:00

SLOQ

Test	Result		Method		Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	08/06/10 8:57	08/06/10	JJ6-CV
Sodium	116 mg/Kg-dry		EPA 6010B	37.8	08/09/10 13:00	08/10/10	RMD-CV
Bromine	< 0.46 mg/kg	N	HACH 8167	0.46	08/10/10 16:00	08/10/10	TLB-CV
1,1-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Methylene chloride	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
2-Butanone	< 0.203 mg/Kg-dry		EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
trans-1,2-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1-Dichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
cis-1,2-Dichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Chloroform	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1,1-Trichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Carbon tetrachloride	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Benzene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dichloroethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Trichloroethene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dichloropropane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Dibromomethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Bromodichloromethane	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
cis-1,3-Dichloropropene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV

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N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE:

8/10/2010

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10080716

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10080716  
PAGE: 2 of 5  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

13

RECEIVED FOR LAB BY: DLM2

DATE: 08/05/2010 9:50

Page 2 of 5

Toluene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
trans-1,3-Dichloropropene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1,2-Trichloroethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Tetrachloroethene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Dibromochloromethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dibromoethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Chlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Ethylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Xylenes, Total	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Bromoform	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2,3-Trichloropropane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,3-Dichlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,4-Dichlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dichlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Acrolein	< 2.03 mg/Kg-dry	EPA 8260B	2.03	08/09/10 14:42	08/10/10	DN-CV
Carbon disulfide	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
MTBE	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Acrylonitrile	< 0.203 mg/Kg-dry	EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
Acetone	< 0.203 mg/Kg-dry	EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
Vinyl acetate	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
2,2-Dichloropropane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Tetrahydrofuran	< 0.203 mg/Kg-dry	EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
Bromochloromethane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,1-Dichloropropene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
2-Chloroethyl vinyl ether	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,3-Dichloropropane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV

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U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 8/10/2010

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**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

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Phone: (570) 888-0169  
Fax: (570) 888-0717

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PHONE: (607) 562-4000  
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**TEST REPORT**

13

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DATE: 08/05/2010 9:50

Page 3 of 5

2-Hexanone	< 0.203 mg/Kg-dry	EPA 8260B	0.203	08/09/10 14:42	08/10/10	DN-CV
Styrene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Cumene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Bromobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
n-Propylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
2-Chlorotoluene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
4-Chlorotoluene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,3,5-Trimethylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
tert-Butylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2,4-Trimethylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
sec-Butylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
p-Isopropyltoluene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
n-Butylbenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2,4-Trichlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Hexachlorobutadiene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Naphthalene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
1,2,3-Trichlorobenzene	< 0.041 mg/Kg-dry	EPA 8260B	0.041	08/09/10 14:42	08/10/10	DN-CV
Chloride	302 mg/Kg-dry	EPA 300.0	50.9	08/06/10 13:50	08/07/10	HDP-CV
Formaldehyde	4.0 mg/Kg-dry	N NIOSH 3500	1.0	08/10/10 8:30	08/10/10	LTW-CV
Percent Moisture	1.7 %	SM2540G		08/09/10 14:45	08/10/10	NFM-SA

SAMPLE: **Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10080716-001B  
Sample Time: 08/04/2010 10:00

Composite

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	1.71 %	Moisture Calc.	0.01	08/09/10 14:45	08/10/10	NFM-SA
Ammonia as N	35.6 mg/kg-dry	U Lachat	10.2	08/05/10 12:03	08/05/10	RHN-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	08/05/10 14:10	08/05/10	IC-SA
pH	8.21@22.1°C	EPA 9045C		08/06/10 14:21	08/06/10	SG-SA

REMARKS:

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N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 8/10/2010



PA ID #: 08-00380  
NY ID # 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10080716

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10080716  
PAGE: 4 of 5  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

13

RECEIVED FOR LAB BY: DLM2

DATE: 08/05/2010 9:50

Page 4 of 5

Phosphorus	106 mg/kg-dry	EPA 365.3	5	08/09/10 15:05	08/10/10	JP-SA
------------	---------------	-----------	---	----------------	----------	-------

SAMPLE: **Flowback Sand**

Lab ID: 10080716-001C

Composite

SAMPLED BY: LS

Sample Time: 08/04/2010 10:00

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	08/06/10 0:00	08/06/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	08/06/10 0:00	08/06/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: **Flowback Sand**

Lab ID: 10080716-001D

Composite

SAMPLED BY: LS

Sample Time: 08/04/2010 10:00

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	2.94 mg/Kg Dry	EPA 9065		08/10/10 7:45	08/10/10	

Sample Note: Analysis performed by QC Lab

SAMPLE: **Flowback Sand**

Lab ID: 10080716-001E

Composite

SAMPLED BY: LS

Sample Time: 08/04/2010 10:00

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	1570 mg/Kg	EPA 9071		08/09/10 11:25	08/09/10	

Sample Note: Analysis performed by Microbac-Erie

SAMPLE: **TCLP Leachate of Flowback Sand**

Lab ID: 10080716-001G

Composite

SAMPLED BY: LS

Sample Time: 08/06/2010 7:45

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	08/09/10 9:00	08/10/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/09/10 10:30	08/09/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	08/09/10 10:30	08/09/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	08/09/10 10:30	08/09/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/09/10 10:30	08/09/10	RMD-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 8/10/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10080716

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10080716

PAGE: 5 of 5

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

13

RECEIVED FOR LAB BY: DLM2

DATE: 08/05/2010 9:50

Page 5 of 5

Copper - TCLP extracted	0.142 mg/L	EPA 6010B	0.100	08/09/10 10:30	08/09/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/09/10 10:30	08/09/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	08/09/10 10:30	08/09/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/09/10 10:30	08/09/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	08/09/10 10:30	08/09/10	RMD-CV
Zinc - TCLP extracted	0.716 mg/L	EPA 6010B	0.200	08/09/10 10:30	08/09/10	RMD-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 8/10/2010



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b>
	Date Received & General Notes
Date Prepared/Revised	February 11, 2011

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

Company Name Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A
Company Mailing Address Line 1 50 Pennwood Place		Company Mailing Address Line 2		
Company Address Last Line – City Warrendale	State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown	First Name Dina	MI	Suffix	
Municipality Warrendale	County Allegheny			
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-071) well pad site located at 5290 Fallbrook Road, Troy Township, Bradford County, PA. The waste is temporarily stored onsite.				
Municipality	Troy	County	Bradford	State PA

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	85	<input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time

**1. GENERAL PROPERTIES**

a.	pH Range	8.62	to	---	(based on analyses or knowledge)
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
		Number of Solid or Liquid Phases of Separation	One		
		Describe each phase of separation. Sand			

**2. CHEMICAL ANALYSIS ATTACHMENTS**

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
SECTION C. MANAGEMENT OF RESIDUAL WASTE			
1. PROCESSING OR DISPOSAL FACILITY(IES)			
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.			
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 85 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		
2. BENEFICIAL USE			
a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

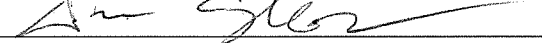
I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown

Signature 

Date 2/25/11

LAB ID: 08-00380  
LAB ID: 39-00401

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10114176

**SEND DATA TO:**

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10114176  
PAGE: 1 of 2  
PO#: AF 77728  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

## TEST REPORT

01-074

RECEIVED FOR LAB BY: SCP

DATE: 11/30/2010 11:10

Page 1 of 2

SAMPLE: Pad Sand  
SAMPLED BY: SG

Lab ID: 10114176-001A Composite

Sample Time: 11/29/2010 17:14

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	< 103 mg/Kg	EPA 9071	103	12/07/10 14:30	12/07/10	

Sample Note: Analysis performed by Microbac Laboratories, Inc.-Erie Division

SAMPLE: Pad Sand  
SAMPLED BY: SG

Lab ID: 10114176-001B Composite

Sample Time: 11/29/2010 17:14

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	8.62 %	Moisture Calc.	0.01	11/30/10 9:40	12/01/10	NFM-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	11/30/10 14:10	11/30/10	IC-SA
pH	8.62@22.7°C	EPA 9045C		11/30/10 8:00	11/30/10	NFM-SA

SAMPLE: Pad Sand  
SAMPLED BY: SG

Lab ID: 10114176-001C Composite

Sample Time: 11/29/2010 17:14

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Sodium	< 84.9 mg/Kg	EPA 6010B	84.9	12/01/10 9:00	12/01/10	JRA-CV
Chloride	< 46.5 mg/Kg	EPA 300.0	46.5	11/30/10 14:49	12/01/10	HDP-CV

SAMPLE: TCLP Leachate of Pad Sand  
SAMPLED BY: SG

Lab ID: 10114176-001E Composite

Sample Time: 12/01/2010 7:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	12/01/10 12:50	12/01/10	RMD-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/01/10 12:30	12/01/10	JRA-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	12/01/10 12:30	12/01/10	JRA-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/01/10 12:30	12/01/10	JRA-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/01/10 12:30	12/01/10	JRA-CV
Copper - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/01/10 12:30	12/01/10	JRA-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/01/10 12:30	12/01/10	JRA-CV

**REMARKS:**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

Z Due to matrix bias, spike recovery was outside acceptance limits

MANAGER

*Cassie M. Davis*

DATE: 12/9/2010

LAB ID: 08-00380  
LAB ID: 39-00401

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10114176

Phone: (570) 888-0169  
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NAME: Steve Gridley  
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Horseheads, NY 14845

WO#: 10114176  
PAGE: 2 of 2  
PO#: AF 77728  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

01-074

RECEIVED FOR LAB BY: SCP

DATE: 11/30/2010 11:10

Page 2 of 2

Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/01/10 12:30	12/02/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	z EPA 6010B	0.500	12/01/10 12:30	12/01/10	JRA-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/01/10 12:30	12/01/10	JRA-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	12/01/10 12:30	12/01/10	JRA-CV

REMARKS:

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z Due to matrix bias, spike recovery was outside acceptance limits

MANAGER

*Carrie M. Davis*

DATE: 12/9/2010

**CHAIN OF CUSTODY**

**REPORT TO:** Talisman / UEG  
 geowetlands@aol.com

**CONTACT:** Steve Gridley  
 PH# 607-731-0145  
 FAX#  
**BILL TO:** Talisman  
 PO# AF 77728  
 PROJECT DESCRIPTION  
 [REDACTED] 01-074  
 SAMPLER SIGNATURE / AFFILIATION  
 [Signature] UEG  
 CONTAINER SAMPLING POINT

**W/O#: 10114176**

REFRIGERATE SAMPLES  
 AFTER COLLECTION

**TRANSPORT  
 TO  
 LABORATORY  
 IN COOLER  
 WITH ICE**

RESULTS ARE BEING USED FOR:

NYDOH  NYDEC  PADEP

LANDFILL  PERSONAL  OTHER

**ARE SPECIAL DETECTION LIMITS  
 NEEDED:**  YES  NO

IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED?  
 YES  NO

IF YES, PLEASE ATTACH REQUIREMENTS

DW	DRINKING WATER	SL	SLUDGE
GW	GROUND WATER	SO	SOIL
SW	SURFACE WATER	HZ	HAZARDOUS
WW	WASTE WATER	OTHER	
DE	DEIONIZED WATER	DI	DISTILLED WATER
H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO <sub>3</sub>	SODIUM SULFITE	NH <sub>4</sub>	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

DATE SAMPLED  
 TIME OF SAMPLING  
 SAMPLE MATRIX  
 SAMPLE TYPE - GRAB / COMPOSITE  
 SAMPLER INITIALS  
 PRESERVATIVE

An incomplete chain of custody may delay the processing of your sample(s).

ANALYSIS TO BE PERFORMED  
 (PER CONTAINER)

COMPOSITED ON RECEIPT  
 PRESERVATIVE ADDED ON RECEIPT

Please fill out all applicable areas completely

LAB USE ONLY

1	Inv Cuttings Pad Sand	11/29/10	1714	SO	C	2-N	TPH, Sodium, Chloride			
2							pH			
3							TCLP 8 RCRA Metals + Cu, Ni, Zn			
4	A - TPH						Free Liquids / % Moisture			
5	B - pH, free liquid, -1. moisture									
6	C - metals, Anions						Perform BTEX ONLY IF the TPH			
7	D - total sample						exceeds 100,000 mg/Kg			
8	E - TCLP metals									
9							72 HOUR TURNAROUND			
10							DAY TURNAROUND			
11							due 11/30/10			

LAB USE ONLY

DELIVERED BY: [Signature] TEMPERATURE UPON RECEIPT: [ ] ARRIVAL ON ICE Y/N: [ ]

RELINQUISHED BY: [Signature]	DATE: 11/30/10	TIME: 1100	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY: [Signature]	DATE: 11/30/10	TIME: 11:10





COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b>
	Date Received & General Notes
Date Prepared/Revised	February 11, 2011

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

Company Name Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A
Company Mailing Address Line 1 50 Pennwood Place		Company Mailing Address Line 2		
Company Address Last Line – City Warrendale	State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown	First Name Dina	MI	Suffix	
Municipality Warrendale	County Allegheny			
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-032) well pad site located at 554 Alba Mountain Road, Canton Township, Bradford County, PA. The waste is temporarily stored onsite.				
Municipality	Canton	County	Bradford	State PA

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	17	<input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time

**1. GENERAL PROPERTIES**

a. pH Range	6	to	9	(based on analyses or knowledge)
b. Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c. Physical Appearance	Color	Greyish black	Odor	Hydrocarbon
	Number of Solid or Liquid Phases of Separation		One	
	Describe each phase of separation. Sand			

**2. CHEMICAL ANALYSIS ATTACHMENTS**

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
	17	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
		<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year.		
	0	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown

Signature  Date 2/25/11

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10070634  
PAGE: 1 of 3  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

Pad

RECEIVED FOR LAB BY: TJC

DATE: 07/06/2010 13:04

Page 1 of 3

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070634-001A

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 7:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Ethanol	< 4 mg/Kg	N Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isopropanol	< 4 mg/Kg	N Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
t-Butanol	< 4 mg/Kg	N Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Propanol	< 4 mg/Kg	N Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isobutanol	< 4 mg/Kg	N Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Butanol	< 4 mg/Kg	N Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Sodium	5440 mg/Kg-dry	L EPA 6010B	91.8	07/08/10 7:00	07/09/10	JRA-CV
Bromine	<4.6 mg/kg	N HACH 8167	0.05	07/07/10 10:14	07/07/10	SMH-CV
Styrene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	07/07/10 15:29	07/08/10	DN-CV
Chloride	12600 mg/Kg-dry	EPA 300.0	281	07/07/10 15:24	07/08/10	HDP-CV
Formaldehyde	1.9 mg/Kg-dry	N NIOSH 3500	1.1	07/09/10 8:15	07/09/10	LTW-CV
Percent Moisture	11.1 %	SM2540G		07/07/10 9:00	07/08/10	NFM-SA

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070634-001B

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 7:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	11.1 %	Moisture Calc.	0.01	07/07/10 9:00	07/08/10	NFM-SA
Ammonia as N	11.1 mg/kg-dry	U Lachat	1.1	07/08/10 10:42	07/08/10	RHN-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	07/07/10 8:20	07/07/10	IC-SA
pH	8.09@22.0°C	EPA 9045C		07/07/10 14:41	07/07/10	MED-SA
Phosphorus	39 mg/kg-dry	EPA 365.3	23	07/08/10 10:15	07/08/10	MED-SA

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 7/12/2010

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10070634  
PAGE: 2 of 3  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

██████ Pad

RECEIVED FOR LAB BY: TJC

DATE: 07/06/2010 13:04

Page 2 of 3

SAMPLE: **Pit-Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10070634-001C  
Sample Time: 06/30/2010 7:00

Composite

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	07/08/10 0:00	07/08/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	07/08/10 0:00	07/08/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: **Pit-Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10070634-001D  
Sample Time: 06/30/2010 7:00

Composite

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	10.1 mg/Kg DRY	EPA 9065	1.53	07/08/10 8:45	07/08/10	

Sample Note: Analysis performed by QC Laboratories.

Sample Note: Holding times for preparation or analysis exceeded

SAMPLE: **Pit-Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10070634-001E  
Sample Time: 06/30/2010 7:00

Composite

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Total Petroleum Hydrocarbons	8830 mg/Kg	EPA 9071		07/07/10 0:00	07/07/10	

Sample Note: Analysis performed by Microbac-Erie

SAMPLE: **TCLP Leachate of Pit-Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10070634-001G  
Sample Time: 06/30/2010 7:00

Composite

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	07/08/10 11:00	07/09/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Barium - TCLP extracted	58.6 mg/L	EPA 6010B	10.00	07/08/10 11:45	07/09/10	JRA-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 7/12/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10070634

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10070634  
PAGE: 3 of 3  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

██████████ Pad

RECEIVED FOR LAB BY: TJC

DATE: 07/06/2010 13:04

Page 3 of 3

Copper - TCLP extracted	0.712 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Zinc - TCLP extracted	0.282 mg/L	EPA 6010B	0.200	07/08/10 11:45	07/09/10	JRA-CV

Sample Note: The temperature of the extraction room exceeded the range of 23 ± 2°C

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

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L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 7/12/2010



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.				<b>DEP USE ONLY</b>	
General Reference 287.54				Date Received & General Notes	
Date Prepared/Revised		February 11, 2011			
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>					
Company Name Talisman Energy USA Inc.					
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2		
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown		First Name Dina	MI	Suffix	
Municipality Warrendale			County Allegheny		
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com			
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-004) M well pad site located at 3268 Rundell Creek Road, Armenia Township, Bradford County, PA. The waste is temporarily stored onsite.					
Municipality Armenia		County Bradford		State PA	
<b>SECTION B. WASTE DESCRIPTION</b>					
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	834	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	<input type="checkbox"/> One Time
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	
<b>1. GENERAL PROPERTIES</b>					
a.	pH Range	6	to	9	(based on analyses or knowledge)
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
		Number of Solid or Liquid Phases of Separation		One	
		Describe each phase of separation. Sand			
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>					
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.				<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
	834	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
		<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year.		
	0	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)



**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown

Signature  Date 2/25/14

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10123074

Phone: (570) 888-0169  
Fax: (570) 888-0717

**SEND DATA TO:**

NAME: Dina Brown  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10123074  
PAGE: 1 of 1  
PO#: COMPLETIONS  
PWS ID#

**TEST REPORT**

PHONE: (607) 562-4000  
FAX: (607) 562-4001

Harvest Holding

RECEIVED FOR LAB BY: CMS

DATE: 12/20/2010 11:58

Page 1 of 1

SAMPLE: **Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10123074-001A Grab  
Sample Time: 12/19/2010 16:00

Test	Result	Method	SLOG	Analysis Start	Analysis End	Analyst*
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	12/20/10 11:30	12/21/10	KW-CV
Aluminum - TCLP extracted	0.827 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Antimony - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Barium - TCLP extracted	17.2 mg/L L	EPA 6010B	10.00	12/21/10 11:30	12/21/10	GSR-CV
Beryllium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Boron - TCLP extracted	< 1.25 mg/L	EPA 6010B	1.25	12/21/10 11:30	12/21/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Cobalt - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Copper - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Iron - TCLP extracted	19.1 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Manganese - TCLP extracted	0.687 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Thallium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Vanadium - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	12/21/10 11:30	12/21/10	GSR-CV

**REMARKS:**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

MANAGER

*Carrie M. Davis*

DATE: 12/22/2010

**CHAIN OF CUSTODY**

**REPORT TO:** Talisman / UEG  
 geowetlands@aol.com  
*Harvest Holding*

**CONTACT:** *Dina Brown*  
 724 814 5301  
 724 814 5321

**BILL TO:** Talisman

**PO# COMPLETIONS**

**PROJECT DESCRIPTION**

**SAMPLER SIGNATURE / AFFILIATION**

**CONTAINER SAMPLING POINT**

REFRIGERATE AFTER CC.

**W/O#: 10123074**

**TRANSPORT TO LABORATORY IN COOLER WITH ICE**

- DW DRINKING WATER SL SLUDGE
- GW GROUND WATER SO SOIL
- SW SURFACE WATER HZ HAZARDOUS
- WW WASTE WATER OTHER
- DE DEIONIZED WATER DI DISTILLED WATER

RESULTS ARE BEING USED FOR:

NYDOH  NYDEC  PADEP

LANDFILL Mostoller

PERSONAL  OTHER

**ARE SPECIAL DETECTION LIMITS NEEDED:**  YES  NO

IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED?  YES  NO

IF YES, PLEASE ATTACH REQUIREMENTS

- H HYDROCHLORIC ACID OH SODIUM HYDROXIDE
- S SULFURIC ACID AS ASCORBIC ACID
- N NITRIC ACID AC ACETIC ACID
- SO<sub>3</sub> SODIUM SULFITE NH<sub>4</sub> AMMONIUM CHLORIDE
- Thio SODIUM THIOSULFATE ZN ZINC ACETATE
- NONE Hg MERCURIC CHLORIDE

An incomplete chain of custody may delay the processing of your sample(s).

ANALYSIS TO BE PERFORMED (PER CONTAINER)

COMPOSITED ON RECEIPT  
 PRESERVATIVE ADDED ON RECEIPT

Please fill out all applicable areas completely

LAB USE ONLY

DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT
12/17/10	4:00 PM	C	LS			Ignitability, Reactive Sulfide & Cyanide		
		C				PCBs, Total Solids		
		G				Total Volatile Solids		
		C				Water Leaching Procedure: COD,		
		C				Total Solids, Oil & Grease,		
		C				TCUP metals only per Dina Brown 12/21/10		
						24 HOUR TURNAROUND		
						DAY TURNAROUND		

**DELIVERED BY:** *[Signature]* **TEMPERATURE UPON RECEIPT:** 60 °C **ARRIVAL ON ICE:** 12/19/10

RELINQUISHED BY: <i>[Signature]</i>	DATE: 12/19/10	TIME: 7:30 PM	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY: <i>Charlene McSparr</i>	DATE: 12/20/10	TIME:



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.				<b>DEP USE ONLY</b>	
General Reference 287.54				Date Received & General Notes	
Date Prepared/Revised		February 11, 2011			
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>					
Company Name Talisman Energy USA Inc.					
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2		
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown	First Name Dina	MI	Suffix		
Municipality Warrendale		County Allegheny			
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com			
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the Harvest Holdings (01-036) well pad site located at 909 Newell Road, Canton Township, Bradford County, PA. The waste is temporarily stored onsite.					
Municipality	Canton	County	Bradford	State	PA
<b>SECTION B. WASTE DESCRIPTION</b>					
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	225	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	<input type="checkbox"/> One Time
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	
<b>1. GENERAL PROPERTIES</b>					
a.	pH Range	6	to	9	(based on analyses or knowledge)
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
		Number of Solid or Liquid Phases of Separation	One		
		Describe each phase of separation. Sand			
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>					
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
b.	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/>	Yes	<input type="checkbox"/>	No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
				<input checked="" type="checkbox"/>	N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
	100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
	225	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
		<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
	If "Yes", list the general permit number or approval number.		
b.	Volume of waste beneficially used in the previous year.		
	0	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

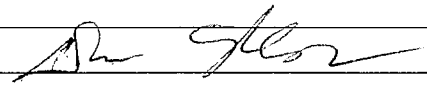
I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature 

Date 2/25/11

PA ID #: 08-00380  
NY ID #: 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10123074

Phone: (570) 888-0169  
Fax: (570) 888-0717

**SEND DATA TO:**

NAME: Dina Brown  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10123074  
PAGE: 1 of 1  
PO#: COMPLETIONS  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

Harvest Holding

RECEIVED FOR LAB BY: CMS

DATE: 12/20/2010 11:58

Page 1 of 1

SAMPLE: **Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10123074-001A Grab  
Sample Time: 12/19/2010 16:00

SLOQ

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst*
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	12/20/10 11:30	12/21/10	KW-CV
Aluminum - TCLP extracted	0.827 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Antimony - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Barium - TCLP extracted	17.2 mg/L L	EPA 6010B	10.00	12/21/10 11:30	12/21/10	GSR-CV
Beryllium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Boron - TCLP extracted	< 1.25 mg/L	EPA 6010B	1.25	12/21/10 11:30	12/21/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Cobalt - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Copper - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Iron - TCLP extracted	19.1 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Manganese - TCLP extracted	0.687 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Thallium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Vanadium - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	12/21/10 11:30	12/21/10	GSR-CV

**REMARKS:**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

MANAGER

*Cassie M. Davis*

DATE: 12/22/2010

**CHAIN OF CUSTODY**

**REPORT TO:** Talisman / UEG  
 geowetlands@aol.com  
*Harvest Holdings*

**CONTACT:** *Dina Brown*  
 PH# *724 814 5301*  
 H# *724 814 5321*

**BILL TO:** Talisman

PO# COMPLETIONS  
 PROJECT DESCRIPTION  
 SAMPLER SIGNATURE / AFFILIATION  
 CONTAINER SAMPLING POINT

REFRIGERATE AFTER CC.

**TRANSPORT TO LABORATORY IN COOLER WITH ICE**

**W/O#: 10123074**

- DW DRINKING WATER
- GW GROUND WATER
- SW SURFACE WATER
- WW WASTE WATER
- DE DEIONIZED WATER
- SL SLUDGE
- SO SOIL
- HZ HAZARDOUS
- OTHER
- DI DISTILLED WATER

RESULTS ARE BEING USED FOR:

NYDOH  NYDEC  PADEP

LANDFILL Mostoller

PERSONAL  OTHER

ARE SPECIAL DETECTION LIMITS NEEDED:  YES  NO

IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED?  YES  NO

IF YES, PLEASE ATTACH REQUIREMENTS

- H HYDROCHLORIC ACID
- S SULFURIC ACID
- N NITRIC ACID
- SO<sub>3</sub> SODIUM SULFITE
- Thio SODIUM THIOSULFATE
- NONE
- OH SODIUM HYDROXIDE
- AS ASCORBIC ACID
- AC ACETIC ACID
- NH<sub>4</sub> AMMONIUM CHLORIDE
- ZN ZINC ACETATE
- Hg MERCURIC CHLORIDE

DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	LAB USE ONLY
						Ignitability, Reactive Sulfide & Cyanide			
						PCBs, Total Solids			
						Total Volatile Solids			
						Water Leaching Procedure: COD,			
						Total Solids, Oil & Grease,			
						<i>TCUP metals only per Dina Brown 12/21/10</i>			
						<u>24</u> HOUR TURNAROUND			
						DAY TURNAROUND			

An incomplete chain of custody may delay the processing of your sample(s).

Please fill out all applicable areas completely

1	Flowback Sand	12/17	4:00 PM	C	LS	Ignitability, Reactive Sulfide & Cyanide			
2				C		PCBs, Total Solids			
3				G		Total Volatile Solids			
4				C		Water Leaching Procedure: COD,			
5				C		Total Solids, Oil & Grease,			
6				C		<i>TCUP metals only per Dina Brown 12/21/10</i>			
7						<u>24</u> HOUR TURNAROUND			
8						DAY TURNAROUND			
9									
10									
11									

LAB USE ONLY

DELIVERED BY: *[Signature]* TEMPERATURE UPON RECEIPT: 6 °C ARRIVAL ON ICE: Y

RELINQUISHED BY: <i>[Signature]</i>	DATE: 12/19/10	TIME: 2:30 PM	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY: <i>Charlene McLean</i>	DATE: 12/20/10	TIME:





**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.				<b>DEP USE ONLY</b>	
General Reference 287.54				Date Received & General Notes	
Date Prepared/Revised		February 11, 2011			
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>					
Company Name Talisman Energy USA Inc.					
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2		
Company Address Last Line - City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown		First Name Dina	MI	Suffix	
Municipality Warrendale			County Allegheny		
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-017) G well pad site located at 13766 Route 14, Canton Township, Bradford County, PA. The waste is temporarily stored onsite.					
Municipality Canton		County Bradford		State PA	
<b>SECTION B. WASTE DESCRIPTION</b>					
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	681	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time
<b>1. GENERAL PROPERTIES</b>					
a.	pH Range	8.09	to	---	(based on analyses or knowledge)
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
		Number of Solid or Liquid Phases of Separation		One	
	Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>					
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.			<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
	681	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
		<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year.		
	0	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

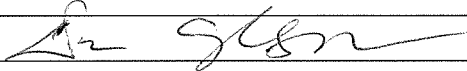
Date Submitted: \_\_\_\_\_

Name of Responsible Official

Title Environmental Specialist

Dina Brown

Signature



Date

2/25/14

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10070634  
PAGE: 1 of 3  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

██████ Pad

RECEIVED FOR LAB BY: TJC

DATE: 07/06/2010 13:04

Page 1 of 3

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070634-001A

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 7:00

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Sodium	5440 mg/Kg-dry	L	EPA 6010B	91.8	07/08/10 7:00	07/09/10	JRA-CV
Bromine	<4.6 mg/kg	N	HACH 8167	0.05	07/07/10 10:14	07/07/10	SMH-CV
Styrene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	07/07/10 15:29	07/08/10	DN-CV
Chloride	12600 mg/Kg-dry		EPA 300.0	281	07/07/10 15:24	07/08/10	HDP-CV
Formaldehyde	1.9 mg/Kg-dry	N	NIOSH 3500	1.1	07/09/10 8:15	07/09/10	LTW-CV
Percent Moisture	11.1 %		SM2540G		07/07/10 9:00	07/08/10	NFM-SA

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070634-001B

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 7:00

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Moisture	11.1 %		Moisture Calc.	0.01	07/07/10 9:00	07/08/10	NFM-SA
Ammonia as N	11.1 mg/kg-dry	U	Lachat	1.1	07/08/10 10:42	07/08/10	RHN-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	07/07/10 8:20	07/07/10	IC-SA
pH	8.09@22.0°C		EPA 9045C		07/07/10 14:41	07/07/10	MED-SA
Phosphorus	39 mg/kg-dry		EPA 365.3	23	07/08/10 10:15	07/08/10	MED-SA

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 7/12/2010

PA ID #: 08-00380  
NY ID # 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10070634  
PAGE: 2 of 3  
PO#:  
PWS ID#

## TEST REPORT

PHONE: (607) 562-4000  
FAX: (607) 562-4001

██████ Pad

RECEIVED FOR LAB BY: TJC

DATE: 07/06/2010 13:04

Page 2 of 3

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070634-001C

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 7:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	07/08/10 0:00	07/08/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	07/08/10 0:00	07/08/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070634-001D

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 7:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	10.1 mg/Kg DRY	EPA 9065	1.53	07/08/10 8:45	07/08/10	

Sample Note: Analysis performed by QC Laboratories.

Sample Note: Holding times for preparation or analysis exceeded

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070634-001E

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 7:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Total Petroleum Hydrocarbons	8830 mg/Kg	EPA 9071		07/07/10 0:00	07/07/10	

Sample Note: Analysis performed by Microbac-Erie

SAMPLE: **TCLP Leachate of Pit-Flowback Sand**

Lab ID: 10070634-001G

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 7:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	07/08/10 11:00	07/09/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Barium - TCLP extracted	58.6 mg/L	EPA 6010B	10.00	07/08/10 11:45	07/09/10	JRA-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 7/12/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10070634

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10070634

PAGE: 3 of 3

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

██████ Pad

RECEIVED FOR LAB BY: TJC

DATE: 07/06/2010 13:04

Page 3 of 3

Copper - TCLP extracted	0.712 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Zinc - TCLP extracted	0.282 mg/L	EPA 6010B	0.200	07/08/10 11:45	07/09/10	JRA-CV

Sample Note: The temperature of the extraction room exceeded the range of 23 ± 2°C

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

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L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 7/12/2010



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.					<b>DEP USE ONLY</b>	
General Reference 287.54					Date Received & General Notes	
Date Prepared/Revised February 11, 2011						
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>						
Company Name Talisman Energy USA Inc.						
If a Subsidiary, Name of Parent Company Talisman Energy Inc.					EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2			
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext	
Company Contact Last Name Brown		First Name Dina	MI	Suffix		
Municipality Warrendale			County Allegheny			
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com			
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-014) R well pad site located at 2509 Fallbrook Road, Armenia Township, Bradford County, PA. The waste is temporarily stored onsite.						
Municipality Armenia		County Bradford	State PA			
<b>SECTION B. WASTE DESCRIPTION</b>						
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame	
804	Fracing Fluid Waste (Flow Back Sand)	528	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal		
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time	
<b>1. GENERAL PROPERTIES</b>						
a.	pH Range	7.60	to	---	(based on analyses or knowledge)	
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)				
c.	Physical Appearance	Color	Grayish Black	Odor	Hydrocarbon	
		Number of Solid or Liquid Phases of Separation		One		
		Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>						
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.				<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 528 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		



**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

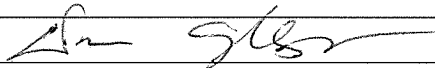
Date Submitted: \_\_\_\_\_

Name of Responsible Official

Title Environmental Specialist

Dina Brown

Signature



Date

2/25/14

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10030496

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030496  
PAGE: 1 of 4  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

Pad Frac

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:50

Page 1 of 4

SAMPLE: **FB Sand-KL-1**  
SAMPLED BY: SG

Lab ID: 10030496-001A Composite

Sample Time: 03/01/2010 11:20

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Bromine	<4.6 mg/kg	K	HACH 8167	0.05	03/12/10 13:20	03/12/10	TLB-CV
Total Petroleum Hydrocarbons	1800 mg/Kg		EPA 1664A	170	03/16/10 13:30	03/17/10	DTG-CV

SAMPLE: **FB Sand-KL-1**  
SAMPLED BY: SG

Lab ID: 10030496-001B Composite

Sample Time: 03/01/2010 11:20

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Moisture	5.95 %		Moisture Calc.	0.01	03/09/10 12:30	03/10/10	NFM-SA
Ammonia as N	< 100 mg/kg	U	Lachat	100	03/04/10 12:07	03/04/10	KAL-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	03/11/10 11:00	03/11/10	IC-SA
pH	7.60@23.9°C		EPA 9045C		03/10/10 16:00	03/10/10	NFM-SA
Phosphorus	< 250 mg/kg		EPA 365.3	250	03/16/10 11:04	03/16/10	JP-SA
% Solids	94.05 % Wght.		SM2540B	0.10	03/09/10 12:30	03/10/10	NFM-SA

SAMPLE: **FB Sand-KL-1**  
SAMPLED BY: SG

Lab ID: 10030496-001C Composite

Sample Time: 03/01/2010 11:20

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
1,1-Dichloroethene	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Methylene chloride	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
2-Butanone	< 0.200 mg/Kg		EPA 8260B	0.200	03/08/10 14:09	03/09/10	DN-CV
trans-1,2-Dichloroethene	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,1-Dichloroethane	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
cis-1,2-Dichloroethene	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Chloroform	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,1,1-Trichloroethane	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Carbon tetrachloride	< 0.040 mg/Kg		EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.  
\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

U Ammonia sample not distilled

MANAGER

*Candice M. Davis*

DATE: 3/18/2010

PA ID #: 08-00380  
NY ID #: 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10030496

Phone: (570) 888-0169

Fax: (570) 888-0717

### SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030496

PAGE: 2 of 4

PO#:

PHONE: (607) 731-0145

FAX: (607) 562-4001

## TEST REPORT

PWS ID#

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DATE: 03/03/2010 9:50

Page 2 of 4

Benzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichloroethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Trichloroethene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichloropropane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Dibromomethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Bromodichloromethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
cis-1,3-Dichloropropene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Toluene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
trans-1,3-Dichloropropene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,1,2-Trichloroethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Tetrachloroethene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Dibromochloromethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,2-Dibromoethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Chlorobenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Ethylbenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
m,p-Xylene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
o-Xylene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Xylenes, Total	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
Bromoform	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,2,3-Trichloropropane	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,3-Dichlorobenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,4-Dichlorobenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichlorobenzene	< 0.040 mg/Kg	EPA 8260B	0.040	03/08/10 14:09	03/09/10	DN-CV

### REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 3/18/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10030496

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030496  
PAGE: 3 of 4  
PO#:   
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

Pad Frac

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:50

Page 3 of 4

SAMPLE: **FB Sand-KL-1**  
SAMPLED BY: SG

Lab ID: 10030496-001D Composite  
Sample Time: 03/01/2010 11:20

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
Ethanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
Isopropanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
t-Butanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
n-Propanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
Isobutanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
n-Butanol	< 20 mg/Kg	Alcohols by FID	20	03/16/10 11:53	03/16/10	JJ6-CV
Formaldehyde	< 1.0 mg/Kg	NIOSH 3500	1.0	03/15/10 8:10	03/15/10	LTW-CV

SAMPLE: **FB Sand-KL-1**  
SAMPLED BY: SG

Lab ID: 10030496-001E Composite  
Sample Time: 03/01/2010 11:20

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 2.00 mg/kg	Glycols	2.00	03/05/10 0:00	03/10/10	
Propylene glycol	< 1.00 mg/kg	Glycols	1.00	03/05/10 0:00	03/10/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **FB Sand-KL-1**  
SAMPLED BY: SG

Lab ID: 10030496-001F Composite  
Sample Time: 03/01/2010 11:20

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	9.26 dry mg/Kg	EPA 9065		03/10/10 9:30	03/10/10	

Sample Note: Analysis performed by QC Lab

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.  
\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 3/18/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10030496

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030496  
PAGE: 4 of 4  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

Pad Frac

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:50

Page 4 of 4

SAMPLE: **TCLP Leachate of FB Sand-KL-1**

Lab ID: 10030496-001H

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 11:20

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	03/11/10 8:30	03/12/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	03/10/10 13:40	03/11/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Copper - TCLP extracted	0.230 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	03/10/10 13:40	03/11/10	RMD-CV

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.  
\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 3/18/2010

# CHAIN OF CUSTODY

Bench

REPORT TO: Talisman

CONTACT: Steve Conkey

PH#: 607-731-0145

FAX#

BILL TO: Talisman

PO#: Completions

PROJECT DESCRIPTION: Pad Trac

SAMPLER SIGNATURE / AFFILIATION: Steve Conkey UEG

Container: \_\_\_\_\_ Sample Point No./Type: \_\_\_\_\_

2566 Pennsylv  
Ph  
Fi

W/O#: 10030496

REFRIGERATE SAMPLES  
AFTER COLLECTION

TRANSPORT  
TO  
LABORATORY  
IN COOLER  
WITH ICE

DW	DRINKING WATER	SL	SLUDGE	NYDOH	<u>NYDEC</u>	<u>PADEP</u>
GW	GROUND WATER	SO	SOIL		LANDFILL	
SW	SURFACE WATER	HZ	HAZARDOUS			
WW	WASTE WATER	OTHER				
DE	DEIONIZED WATER	DI	DISTILLED WATER	PERSONAL	OTHER	

ARE SPECIAL DETECTION LIMITS  
NEEDED: YES / NO

IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED?  
YES / NO

IF YES, PLEASE ATTACH REQUIREMENTS

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO <sub>3</sub>	SODIUM SULFITE	NH <sub>4</sub>	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

PWS ID# \_\_\_\_\_

Location \_\_\_\_\_

Sample Point \_\_\_\_\_

DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	Chlorine Residual Total <input type="checkbox"/>	Free <input type="checkbox"/>
--------------	------------------	---------------	--------------------------------	------------------	--------------	--	-------------------------------

An incomplete chain of custody may delay the processing of your sample(s).

ANALYSIS TO BE PERFORMED  
(PER CONTAINER)

COMPOSITED ON RECEIPT

PRESERVATIVE ADDED ON RECEIPT

LAB USE ONLY

Container	Sample Point No./Type	DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	Chlorine Residual Total	Free	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	LAB USE ONLY
1	FB Sand. KL-1	3/11/20	50	C	N					TCLP Metals: Ar, Ba, Cd, Cr, Pb			001A-H
2										Hg, Se, Ag, Cu, Ni, Zn			
3	A TPH									TPH, pH, free liquids, % moisture			
4	B - pH, Free Liquid, % Moisture, Phos, NH <sub>3</sub> , %OTS									8260, Alcohols, glycols			
5	C - 8260									Formaldehyde, Bromine			
6	D - Alcohol, Formaldehyde									Total Phosphorus			
7	E Glycol									Ammonia - Nitrogen			
8	F - Phenols									Total Phenolics			
9	G T. Sample												
10	H - TCLP Metals + Cu, Ni, Zn												
11													

Due 3/17/10

LAB USE ONLY

DELIVERED BY: SG TEMPERATURE UPON RECEIPT: 4 °C ARRIVAL ON ICE: (Y/N)

RELINQUISHED BY: <u>[Signature]</u>	DATE: <u>3/13/10</u>	TIME: <u>9:38</u>	RECEIVED BY:	DATE: <u>1/1</u>	TIME:
RELINQUISHED BY:	DATE: <u>1/1</u>	TIME:	RECEIVED BY:	DATE: <u>1/1</u>	TIME:
RELINQUISHED BY:	DATE: <u>1/1</u>	TIME:	RECEIVED BY: <u>Debbie McCarty</u>	DATE: <u>3/18/10</u>	TIME: <u>9:50</u>



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b>
	Date Received & General Notes
Date Prepared/Revised	February 11, 2011

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

Company Name Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A
Company Mailing Address Line 1 50 Pennwood Place		Company Mailing Address Line 2		
Company Address Last Line - City Warrendale	State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown	First Name Dina	MI	Suffix	
Municipality Warrendale	County Allegheny			
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-024) well pad site located at 720 Knights Drive, Troy Township, Bradford County, PA. The waste is temporarily stored onsite.				
Municipality	Troy	County	Bradford	State PA

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	151	<input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time

**1. GENERAL PROPERTIES**

a.	pH Range	7.30 to 7.57	(based on analyses or knowledge)	
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)		
c.	Physical Appearance	Color Greyish Black	Odor	Hydrocarbon
		Number of Solid or Liquid Phases of Separation		One
	Describe each phase of separation. Sand			

**2. CHEMICAL ANALYSIS ATTACHMENTS**

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
SECTION C. MANAGEMENT OF RESIDUAL WASTE			
1. PROCESSING OR DISPOSAL FACILITY(IES)			
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.			
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 151 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		
2. BENEFICIAL USE			
a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		



**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_


I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature 

Date 2/25/14

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10030514

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030514

PAGE: 1 of 4

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 1 of 4

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001A

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Bromine	4.60 mg/kg	K HACH 8167	0.05	03/12/10 13:26	03/12/10	TLB-CV
Percent Moisture	4.7 %	SM2540G		03/09/10 12:30	03/10/10	NFM-SA
Total Petroleum Hydrocarbons	< 180 mg/Kg-dry	EPA 1664A	180	03/12/10 13:50	03/15/10	DTG-CV

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001B

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ammonia as N	< 105 mg/kg-dry	U Lachat	105	03/04/10 12:07	03/04/10	KAL-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	03/11/10 11:05	03/11/10	IC-SA
pH	7.57@23.8°C	EPA 9045C		03/10/10 16:00	03/10/10	NFM-SA
Phosphorus	< 3 mg/kg	EPA 365.3	3	03/16/10 11:04	03/16/10	JP-SA

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001C

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
1,1-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
2-Butanone	< 0.210 mg/Kg-dry	EPA 8260B	0.210	03/08/10 14:09	03/09/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Benzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE:

3/17/2010

PA ID #: 08-00380  
NY ID #: 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10030514

Phone: (570) 888-0169  
Fax: (570) 888-0717

**SEND DATA TO:**

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030514  
PAGE: 2 of 4  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

## TEST REPORT

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 2 of 4

1,2-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Bromofom	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV

**REMARKS:**

- The above test procedures meet all the requirements of NELAC and relate only to these samples.  
\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA  
K Sample was received past holding time.  
U Ammonia sample not distilled

MANAGER

*Carie M. Davis*

DATE: 3/17/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10030514

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030514

PAGE: 3 of 4

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 3 of 4

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001D

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
Ethanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
Isopropanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
t-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
n-Propanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
Isobutanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
n-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
Formaldehyde	< 1.0 mg/Kg-dry	NIOSH 3500	1.0	03/15/10 8:10	03/15/10	LTW-CV

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001E

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 2.00 mg/kg	Glycols	2.00	03/05/10 0:00	03/10/10	
Propylene glycol	< 1.00 mg/kg	Glycols	1.00	03/05/10 0:00	03/10/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001F

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	3.93 dry mg/Kg	EPA 9065		03/10/10 9:30	03/10/10	

Sample Note: Analysis performed by QC Lab

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 3/17/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10030514

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030514  
PAGE: 4 of 4  
PO#:   
PWS ID#

**TEST REPORT**

PHONE: (607) 731-0145  
FAX: (607) 562-4001

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 4 of 4

SAMPLE: TCLP Leachate of FB Sand-KN-1

Lab ID: 10030514-001H

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	03/11/10 8:30	03/12/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	03/10/10 13:40	03/11/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Copper - TCLP extracted	0.116 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	03/10/10 13:40	03/11/10	RMD-CV

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.  
\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA  
K Sample was received past holding time.  
U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 3/17/2010

**CHAIN OF CUSTODY**

REPORT TO: Talisman

CONTACT: Steve Cordley

PH#: 607-731-0145

BILL TO: Talisman

PO#: Completions

PROJECT DESCRIPTION: L2H Pad Frac

SAMPLER SIGNATURE / AFFILIATION: [Signature] UEG

Container: \_\_\_\_\_ Sample Point No./Type: \_\_\_\_\_

2566

W/O#: 10030514

REFRIGERATE SAMPLES AFTER COLLECTION

TRANSPORT TO LABORATORY IN COOLER WITH ICE

DW	DRINKING WATER	SL	SLUDGE
GW	GROUND WATER	SO	SOIL
SW	SURFACE WATER	HZ	HAZARDOUS
WW	WASTE WATER	OTHER	
DE	DEIONIZED WATER	DI	DISTILLED WATER

RESULTS ARE BEING USED FOR:

NYDOH  NYDEC  PADEP

LANDFILL \_\_\_\_\_

PERSONAL \_\_\_\_\_ OTHER \_\_\_\_\_

ARE SPECIAL DETECTION LIMITS NEEDED: YES /  NO

IF YES, PLEASE ATTACH \_\_\_\_\_

IS A QC PACKAGE NEEDED? YES  NO

IF YES, PLEASE ATTACH REQUIREMENTS \_\_\_\_\_

PWS ID# \_\_\_\_\_

Location \_\_\_\_\_

Sample Point \_\_\_\_\_

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO <sub>3</sub>	SODIUM SULFITE	NH <sub>4</sub>	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	Chlorine Residual Total <input type="checkbox"/> Free <input type="checkbox"/>
--------------	------------------	---------------	--------------------------------	------------------	--------------	--

An incomplete chain of custody may delay the processing of your sample(s).

ANALYSIS TO BE PERFORMED (PER CONTAINER)

COMPOSITED ON RECEIPT \_\_\_\_\_

PRESERVATIVE ADDED ON RECEIPT \_\_\_\_\_

LAB USE ONLY

Please fill out all applicable areas completely.

Container	Sample Point No./Type	DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	Chlorine Residual Total <input type="checkbox"/> Free <input type="checkbox"/>	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	LAB USE ONLY
1	FB Sand Kn-1	3/1	1415	SO	C	SO	N		TCLP Metals: Ar, Ba, Cd, Cr, Pb Hg, Se, Ag, Cu, Ni, Zn. TPH, pH, free liquids, % moisture 8260, Alcohols, Glycols Formaldehyde, Bromine Total Phosphorus Ammonia - Nitrogen Total Phenolics			-001A-H
2												
3												
4	A TPH, Bromine											
5	B - w. Chem											
6	C - 8260											
7	D - Alcohols, Formaldehyde											
8	E Glycol											
9	F Phenol											
10	G - T. Sample											
11	H - TCLP Metals + Cu, Ni, Zn											

Due 3/15/10

LAB USE ONLY

DELIVERED BY: SG TEMPERATURE UPON RECEIPT: 3 °C ARRIVAL ON ICE:  Y  N

RELINQUISHED BY: <u>[Signature]</u>	DATE: <u>3/13/10</u>	TIME: <u>938</u>	RECEIVED BY:	DATE: <u>   </u>	TIME: <u>   </u>
RELINQUISHED BY:	DATE: <u>   </u>	TIME: <u>   </u>	RECEIVED BY:	DATE: <u>   </u>	TIME: <u>   </u>
RELINQUISHED BY:	DATE: <u>   </u>	TIME: <u>   </u>	RECEIVED BY: <u>Debbie McCarty</u>	DATE: <u>3/13/10</u>	TIME: <u>938</u>



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.					<b>DEP USE ONLY</b>	
General Reference 287.54					Date Received & General Notes	
Date Prepared/Revised		February 11, 2011				
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>						
Company Name Talisman Energy USA Inc.						
If a Subsidiary, Name of Parent Company Talisman Energy Inc.					EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2			
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext	
Company Contact Last Name Brown		First Name Dina	MI	Suffix		
Municipality Warrendale			County Allegheny			
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com			
Is the waste generated at the Company Mailing Address (noted above)?					<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-044) well pad site located at 720 Knights Drive, Troy Township, Bradford County, PA. The waste is temporarily stored onsite.						
Municipality Troy		County Bradford		State PA		
<b>SECTION B. WASTE DESCRIPTION</b>						
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame	
804	Fracing Fluid Waste (Flow Back Sand)	151	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal		
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time	
<b>1. GENERAL PROPERTIES</b>						
a.	pH Range	7.30	to	7.57	(based on analyses or knowledge)	
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)				
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon	
		Number of Solid or Liquid Phases of Separation		One		
		Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>						
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.				<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS																					
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached. <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>																				
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached. <span style="float: right;"><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</span>																				
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached. <span style="float: right;"><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A</span>																				
SECTION C. MANAGEMENT OF RESIDUAL WASTE																					
1. PROCESSING OR DISPOSAL FACILITY(IES)																					
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.																					
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361																				
b.	<table style="width:100%; border: none;"> <tr><td style="width: 25%;">Facility Name</td><td colspan="3">McKean County Landfill</td></tr> <tr><td>Address Line 1</td><td colspan="3">19 Ness Lane</td></tr> <tr><td>Address Line 1</td><td colspan="3"> </td></tr> <tr><td>Address City State ZIP</td><td>Kane</td><td>PA</td><td>16735</td></tr> <tr><td>Municipality</td><td>Kane</td><td>County</td><td>McKean</td></tr> </table>	Facility Name	McKean County Landfill			Address Line 1	19 Ness Lane			Address Line 1				Address City State ZIP	Kane	PA	16735	Municipality	Kane	County	McKean
Facility Name	McKean County Landfill																				
Address Line 1	19 Ness Lane																				
Address Line 1																					
Address City State ZIP	Kane	PA	16735																		
Municipality	Kane	County	McKean																		
c.	<table style="width:100%; border: none;"> <tr><td style="width: 25%;">Facility Contact Name</td><td colspan="3">Mike Manderfeld</td></tr> <tr><td>Title</td><td colspan="3">General Manager</td></tr> <tr><td>Phone</td><td>814-778-9931</td><td>Email Address</td><td>manderfeld@gmail.com</td></tr> </table>	Facility Contact Name	Mike Manderfeld			Title	General Manager			Phone	814-778-9931	Email Address	manderfeld@gmail.com								
Facility Contact Name	Mike Manderfeld																				
Title	General Manager																				
Phone	814-778-9931	Email Address	manderfeld@gmail.com																		
d.	Volume of waste shipped to processing or disposal facility in the previous year. 151 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)																				
a.	Solid waste permit number(s) for processing or disposal facility being utilized.																				
b.	<table style="width:100%; border: none;"> <tr><td style="width: 25%;">Facility Name</td><td colspan="3"> </td></tr> <tr><td>Address Line 1</td><td colspan="3"> </td></tr> <tr><td>Address Line 1</td><td colspan="3"> </td></tr> <tr><td>Address City State ZIP</td><td colspan="3"> </td></tr> <tr><td>Municipality</td><td colspan="3">County</td></tr> </table>	Facility Name				Address Line 1				Address Line 1				Address City State ZIP				Municipality	County		
Facility Name																					
Address Line 1																					
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Facility Contact Name																					
Title																					
Phone	Email Address																				
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)																				
2. BENEFICIAL USE																					
a.	Has the waste been approved for beneficial use? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span> If "Yes", list the general permit number or approval number.																				
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)																				



**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

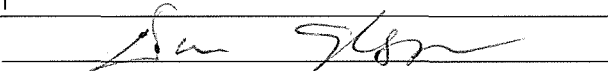
Date Submitted: \_\_\_\_\_

Name of Responsible Official

Title Environmental Specialist

Dina Brown

Signature



Date

2/25/14

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10030514

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030514  
PAGE: 1 of 4  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 1 of 4

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001A

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Bromine	4.60 mg/kg	K	HACH 8167	0.05	03/12/10 13:26	03/12/10	TLB-CV
Percent Moisture	4.7 %		SM2540G		03/09/10 12:30	03/10/10	NFM-SA
Total Petroleum Hydrocarbons	< 180 mg/Kg-dry		EPA 1664A	180	03/12/10 13:50	03/15/10	DTG-CV

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001B

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ammonia as N	< 105 mg/kg-dry	U	Lachat	105	03/04/10 12:07	03/04/10	KAL-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	03/11/10 11:05	03/11/10	IC-SA
pH	7.57@23.8°C		EPA 9045C		03/10/10 16:00	03/10/10	NFM-SA
Phosphorus	< 3 mg/kg		EPA 365.3	3	03/16/10 11:04	03/16/10	JP-SA

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001C

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
2-Butanone	< 0.210 mg/Kg-dry		EPA 8260B	0.210	03/08/10 14:09	03/09/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 3/17/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
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Phone: (570) 888-0169  
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NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
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Horseheads, NY 14845

WO#: 10030514  
PAGE: 2 of 4  
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PHONE: (607) 731-0145  
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**TEST REPORT**

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 2 of 4

1,2-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.  
\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA  
K Sample was received past holding time.  
U Ammonia sample not distilled

MANAGER

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DATE: 3/17/2010

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Fax: (570) 888-0717

Work Order: 10030514

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NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030514  
PAGE: 3 of 4  
PO#:  
PWS ID#

**TEST REPORT**

PHONE: (607) 731-0145  
FAX: (607) 562-4001

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 3 of 4

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001D

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
Ethanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
Isopropanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
t-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
n-Propanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
Isobutanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
n-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:02	03/15/10	ASC-CV
Formaldehyde	< 1.0 mg/Kg-dry	NIOSH 3500	1.0	03/15/10 8:10	03/15/10	LTW-CV

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001E

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 2.00 mg/kg	Glycols	2.00	03/05/10 0:00	03/10/10	
Propylene glycol	< 1.00 mg/kg	Glycols	1.00	03/05/10 0:00	03/10/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **FB Sand-KN-1**

Lab ID: 10030514-001F

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	3.93 dry mg/Kg	EPA 9065		03/10/10 9:30	03/10/10	

Sample Note: Analysis performed by QC Lab

**REMARKS:**

The above test procedures meet all the requirements of NELAC and relate only to these samples.  
\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

U Ammonia sample not distilled

MANAGER

*Annie M. Davis*

DATE: 3/17/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169

Fax: (570) 888-0717

Work Order: 10030514

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030514

PAGE: 4 of 4

PO#:

PWS ID#

PHONE: (607) 731-0145

FAX: (607) 562-4001

**TEST REPORT**

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 4 of 4

SAMPLE: **TCLP Leachate of FB Sand-KN-1**

Lab ID: 10030514-001H

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:15

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst*</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	03/11/10 8:30	03/12/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	03/10/10 13:40	03/11/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Copper - TCLP extracted	0.116 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	03/10/10 13:40	03/11/10	RMD-CV

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

U Ammonia sample not distilled

MANAGER

*Amie M. Davis*

DATE: 3/17/2010

**CHAIN OF CUSTODY**

REPORT TO: Talisman

CONTACT: Steve Conley

PH#: 607-731-0145

FAX#:

BILL TO: Talisman

PO#: Completions

PROJECT DESCRIPTION: L2H Pad Frac

SAMPLER SIGNATURE / AFFILIATION: Steve UEG

2566

WIO#: 10030514

REFRIGERATE SAMPLES AFTER COLLECTION

TRANSPORT TO LABORATORY IN COOLER WITH ICE

DW	DRINKING WATER	SL	SLUDGE
GW	GROUND WATER	SO	SOIL
SW	SURFACE WATER	HZ	HAZARDOUS
WW	WASTE WATER	OTHER	
DE	DEIONIZED WATER	DI	DISTILLED WATER

RESULTS ARE BEING USED FOR:

NYDOH  NYDEC  PADEP

LANDFILL

PERSONAL  OTHER

ARE SPECIAL DETECTION LIMITS NEEDED: YES  NO

IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED? YES  NO

IF YES, PLEASE ATTACH REQUIREMENTS

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO <sub>3</sub>	SODIUM SULFITE	NH <sub>4</sub>	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

PWS ID# \_\_\_\_\_

Location \_\_\_\_\_

Sample Point \_\_\_\_\_

DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	Chlorine Residual Total <input type="checkbox"/> Free <input type="checkbox"/>
--------------	------------------	---------------	--------------------------------	------------------	--------------	--

An incomplete chain of custody may delay the processing of your sample(s).

ANALYSIS TO BE PERFORMED (PER CONTAINER)

COMPOSITED ON RECEIPT

PRESERVATIVE ADDED ON RECEIPT

LAB USE ONLY

Container	Sample Point No./Type	DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	Chlorine Residual Total <input type="checkbox"/> Free <input type="checkbox"/>	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	LAB USE ONLY
1	FB Sand Kn-1	3/1	1415	SO	C	SO	N		TCLP Metals: Ar, Ba, Cd, Cr, Pb Hg, Se, Ag, Cu, Ni, Zn. TPH, pH, free liquids, 70 mols fore 8260, Alcohols, Glycols Formaldehyde, Bromine Total Phosphorus Ammonia - Nitrogen Total Phenolics			001A-H
2												
3												
4	A TPH, Bromine											
5	B. W. Chem											
6	C - 8260											
7	D. Alcohols, Formaldehyde											
8	E Glycol											
9	F. Phenol											
10	G - T. Sample											
11	H - TCLP Metals + Cu, Ni, Zn											

Due 3/15/10

LAB USE ONLY

DELIVERED BY: SG TEMPERATURE UPON RECEIPT: 3 °C ARRIVAL ON ICE  N

RELINQUISHED BY: <u>Steve Conley</u>	DATE: <u>3/13/10</u>	TIME: <u>938</u>	RECEIVED BY:	DATE: <u>1/1</u>	TIME:
RELINQUISHED BY:	DATE: <u>1/1</u>	TIME:	RECEIVED BY:	DATE: <u>1/1</u>	TIME:
RELINQUISHED BY:	DATE: <u>1/1</u>	TIME:	RECEIVED BY: <u>Debbie McCarty</u>	DATE: <u>3/13/10</u>	TIME: <u>938</u>



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.					<b>DEP USE ONLY</b>	
General Reference 287.54					Date Received & General Notes	
Date Prepared/Revised February 11, 2011						
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>						
Company Name Talisman Energy USA Inc.						
If a Subsidiary, Name of Parent Company Talisman Energy Inc.					EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2			
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext	
Company Contact Last Name Brown		First Name Dina	MI	Suffix		
Municipality Warrendale			County Allegheny			
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com			
Is the waste generated at the Company Mailing Address (noted above)?					<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the [REDACTED] (03-008) G well pad site located at 2202 Wolfe Hollow Road, Columbia Township, Bradford County, PA. The waste is temporarily stored onsite.						
Municipality Columbia		County Bradford	State PA			
<b>SECTION B. WASTE DESCRIPTION</b>						
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame	
804	Fracing Fluid Waste (Flow Back Sand)	359	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal		
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time	
<b>1. GENERAL PROPERTIES</b>						
a.	pH Range	8.02	to	---	(based on analyses or knowledge)	
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)				
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon	
		Number of Solid or Liquid Phases of Separation		One		
		Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>						
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.				<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 359 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		



**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature  Date 2/25/11

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10122879

SEND DATA TO:

NAME: Dina Brown  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10122879  
PAGE: 1 of 5  
PO#: COMPLETIONS  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

RECEIVED FOR LAB BY: TJC

DATE: 12/17/2010 9:25

Page 1 of 5

SAMPLE: **Flowback Sand**  
SAMPLED BY: Client

Lab ID: 10122879-001A  
Sample Time: 12/17/2010 0:00

Composite

SLOG

Test	Result		Method		Analysis Start	Analysis End	Analyst *
Methanol	137 mg/Kg	NQ	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
Ethanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
Isopropanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
t-Butanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
n-Propanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
Isobutanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
n-Butanol	< 10 mg/Kg	N	Alcohols by FID	10	12/20/10 8:25	12/20/10	KMG-CV
1,1-Dichloroethene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Methylene chloride	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2-Butanone	< 0.238 mg/Kg-dry		EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
trans-1,2-Dichloroethene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1-Dichloroethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
cis-1,2-Dichloroethene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Chloroform	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1,1-Trichloroethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Carbon tetrachloride	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Benzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2-Dichloroethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Trichloroethene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2-Dichloropropane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Dibromomethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Bromodichloromethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
cis-1,3-Dichloropropene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 12/22/2010

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10122879

Phone: (570) 888-0169  
Fax: (570) 888-0717

**SEND DATA TO:**

NAME: Dina Brown  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10122879  
PAGE: 2 of 5  
PO#: COMPLETIONS  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

RECEIVED FOR LAB BY: TJC

DATE: 12/17/2010 9:25

Page 2 of 5

Toluene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
trans-1,3-Dichloropropene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1,2-Trichloroethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Tetrachloroethene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Dibromochloromethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2-Dibromoethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Chlorobenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Ethylbenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
m,p-Xylene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
o-Xylene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Xylenes, Total	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Bromoform	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2,3-Trichloropropane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,3-Dichlorobenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,4-Dichlorobenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2-Dichlorobenzene	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Acrolein	< 2.38 mg/Kg-dry	EPA 8260B	2.38	12/20/10 9:12	12/20/10	DN-CV
Carbon disulfide	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
MTBE	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Acrylonitrile	< 0.238 mg/Kg-dry	EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
Acetone	< 0.238 mg/Kg-dry	EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
Vinyl acetate	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2,2-Dichloropropane	< 0.048 mg/Kg-dry	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV

**REMARKS:**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 12/22/2010

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10122879

Phone: (570) 888-0169  
Fax: (570) 888-0717

**SEND DATA TO:**

NAME: Dina Brown  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10122879  
PAGE: 3 of 5  
PO#: COMPLETIONS  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

RECEIVED FOR LAB BY: TJC

DATE: 12/17/2010 9:25

Page 3 of 5

Tetrahydrofuran	< 0.238 mg/Kg-dry	N	EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
Bromochloromethane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,1-Dichloropropene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2-Chloroethyl vinyl ether	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,3-Dichloropropane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2-Hexanone	< 0.238 mg/Kg-dry		EPA 8260B	0.238	12/20/10 9:12	12/20/10	DN-CV
Styrene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Cumene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Bromobenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
n-Propylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
2-Chlorotoluene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
4-Chlorotoluene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,3,5-Trimethylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
tert-Butylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2,4-Trimethylbenzene	0.109 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
sec-Butylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
p-Isopropyltoluene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
n-Butylbenzene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2,4-Trichlorobenzene	< 0.048 mg/Kg-dry	Q	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Hexachlorobutadiene	< 0.048 mg/Kg-dry		EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Naphthalene	< 0.048 mg/Kg-dry	Q	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
1,2,3-Trichlorobenzene	< 0.048 mg/Kg-dry	Q	EPA 8260B	0.048	12/20/10 9:12	12/20/10	DN-CV
Percent Moisture	15.9 %		SM2540G		12/20/10 16:25	12/21/10	BJW-CV

**REMARKS:**

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 12/22/2010

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10122879

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Dina Brown  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10122879  
PAGE: 4 of 5  
PO#: COMPLETIONS  
PWS ID#

**TEST REPORT**

PHONE: (607) 562-4000  
FAX: (607) 562-4001

RECEIVED FOR LAB BY: TJC

DATE: 12/17/2010 9:25

Page 4 of 5

**SAMPLE: Flowback Sand**

Lab ID: 10122879-001B

Composite

SAMPLED BY: Client

Sample Time: 12/17/2010 0:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ammonia as N	26.8 mg/kg-dry	U Lachat	11.9	12/21/10 10:30	12/21/10	KMF-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	12/17/10 13:00	12/17/10	IC-SA
pH	8.02@19.7°C	EPA 9045C		12/20/10 15:11	12/20/10	SG-SA
Phosphorus	37 mg/kg-dry	EPA 365.3	6	12/20/10 13:20	12/21/10	JP-SA

**SAMPLE: Flowback Sand**

Lab ID: 10122879-001C

Composite

SAMPLED BY: Client

Sample Time: 12/17/2010 0:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	12/20/10 0:00	12/20/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	12/20/10 0:00	12/20/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

**SAMPLE: TCLP Leachate of Flowback Sand**

Lab ID: 10122879-001G

Composite

SAMPLED BY: Client

Sample Time: 12/17/2010 0:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	12/20/10 11:30	12/21/10	KW-CV
Aluminum - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Antimony - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Barium - TCLP extracted	28.2 mg/L	L EPA 6010B	10.00	12/21/10 11:30	12/21/10	GSR-CV
Beryllium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Boron - TCLP extracted	< 1.25 mg/L	EPA 6010B	1.25	12/21/10 11:30	12/21/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV

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MANAGER

*Cassie M. Davis*

DATE:

12/22/2010

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10122879

Phone: (570) 888-0169  
Fax: (570) 888-0717

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NAME: Dina Brown  
COMPANY: Talisman Energy USA, Inc.  
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Horseheads, NY 14845

WO#: 10122879  
PAGE: 5 of 5  
PO#: COMPLETIONS  
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**TEST REPORT**

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DATE: 12/17/2010 9:25

Page 5 of 5

Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Cobalt - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Copper - TCLP extracted	0.191 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Iron - TCLP extracted	19.4 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Manganese - TCLP extracted	0.610 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Thallium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Vanadium - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Zinc - TCLP extracted	0.421 mg/L	EPA 6010B	0.200	12/21/10 11:30	12/21/10	GSR-CV

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- U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE:

12/22/2010





COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.					<b>DEP USE ONLY</b>	
General Reference 287.54					Date Received & General Notes	
Date Prepared/Revised February 11, 2011						
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>						
Company Name Talisman Energy USA Inc.						
If a Subsidiary, Name of Parent Company Talisman Energy Inc.					EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2			
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext	
Company Contact Last Name Brown		First Name Dina	MI	Suffix		
Municipality Warrendale			County Allegheny			
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com			
Is the waste generated at the Company Mailing Address (noted above)?					<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the T2H well pad site located at 225 Buckwheat Road, Troy Township, Bradford County, PA. The waste is temporarily stored onsite.						
Municipality Troy		County Bradford		State PA		
<b>SECTION B. WASTE DESCRIPTION</b>						
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame	
804	Fracing Fluid Waste (Flow Back Sand)	402	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal		
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time	
<b>1. GENERAL PROPERTIES</b>						
a.	pH Range	7.05	to	---	(based on analyses or knowledge)	
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)				
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon	
		Number of Solid or Liquid Phases of Separation	One			
		Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>						
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.				<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A



3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 402 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature  Date 2/25/11

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10070625

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10070625  
PAGE: 1 of 3  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

Pad

RECEIVED FOR LAB BY: TJC

DATE: 07/06/2010 13:04

Page 1 of 3

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070625-001A

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 9:00

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	07/09/10 15:23	07/09/10	TTT-CV
Sodium	3430 mg/Kg-dry		EPA 6010B	131	07/08/10 7:00	07/09/10	JRA-CV
Bromine	13.8 mg/kg	N	HACH 8167	0.05	07/07/10 10:08	07/07/10	SMH-CV
Styrene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	07/07/10 15:29	07/08/10	DN-CV
Chloride	8830 mg/Kg-dry		EPA 300.0	51.9	07/07/10 15:24	07/08/10	HDP-CV
Formaldehyde	1.8 mg/Kg-dry	N	NIOSH 3500	1.0	07/09/10 8:15	07/09/10	LTW-CV
Percent Moisture	3.7 %		SM2540G		07/07/10 9:00	07/08/10	NFM-SA

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070625-001B

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 9:00

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Moisture	3.68 %		Moisture Calc.	0.01	07/07/10 9:00	07/08/10	NFM-SA
Ammonia as N	18.1 mg/kg-dry	U	Lachat	10.4	07/08/10 10:42	07/08/10	RHN-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	07/07/10 8:10	07/07/10	IC-SA
pH	7.05@22.2°C		EPA 9045C		07/07/10 14:41	07/07/10	MED-SA
Phosphorus	44 mg/kg-dry		EPA 365.3	22	07/08/10 10:15	07/08/10	MED-SA

REMARKS:

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L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE:

7/12/2010

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10070625

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
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WO#: 10070625  
PAGE: 2 of 3  
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## TEST REPORT

Pad

RECEIVED FOR LAB BY: TJC

DATE: 07/06/2010 13:04

Page 2 of 3

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070625-001C

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 9:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	07/08/10 0:00	07/08/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	07/08/10 0:00	07/08/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070625-001D

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 9:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	6.60 mg/Kg DRY	EPA 9065	1.30	07/08/10 8:45	07/08/10	

Sample Note: Analysis performed by QC Laboratories.

Sample Note: Holding times for preparation or analysis exceeded

SAMPLE: **Pit-Flowback Sand**

Lab ID: 10070625-001E

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 9:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	232 mg/Kg	EPA 9071	170	07/07/10 0:00	07/07/10	

Sample Note: Analysis performed by Microbac-Erie

SAMPLE: **TCLP Leachate of Pit-Flowback Sand**

Lab ID: 10070625-001G

Composite

SAMPLED BY: LS

Sample Time: 06/30/2010 9:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	07/08/10 11:00	07/09/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Barium - TCLP extracted	28.7 mg/L	EPA 6010B <sup>L</sup>	10.00	07/08/10 11:45	07/09/10	JRA-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV

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U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 7/12/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10070625

Phone: (570) 888-0169  
Fax: (570) 888-0717

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PAGE: 3 of 3

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

Pad

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DATE: 07/06/2010 13:04

Page 3 of 3

Copper - TCLP extracted	0.671 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	07/08/10 11:45	07/09/10	JRA-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	07/08/10 11:45	07/09/10	JRA-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	07/08/10 11:45	07/09/10	JRA-CV

Sample Note: The temperature of the extraction room exceeded the range of 23 ± 2°C

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 7/12/2010



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.				<b>DEP USE ONLY</b>	
General Reference 287.54				Date Received & General Notes	
Date Prepared/Revised February 11, 2011					
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>					
Company Name Talisman Energy USA Inc.					
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2		
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown		First Name Dina	MI	Suffix	
Municipality Warrendale			County Allegheny		
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-006) J well pad site located at 234 Phinney Drive, Troy Township, Bradford County, PA. The waste is temporarily stored onsite.					
Municipality Troy		County Bradford		State PA	
<b>SECTION B. WASTE DESCRIPTION</b>					
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	877	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time
<b>1. GENERAL PROPERTIES</b>					
a.	pH Range	6.29	to	---	(based on analyses or knowledge)
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
		Number of Solid or Liquid Phases of Separation		One	
	Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>					
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.			<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 877 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

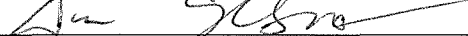
I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature 

Date 2/25/11



LAB ID # 11216  
LAB ID # 11827

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10050721

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10050721  
PAGE: 1 of 5  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

Pad

RECEIVED FOR LAB BY: DLM2

DATE: 05/06/2010 11:51

Page 1 of 5

SAMPLE: **Flowback Sand**

Lab ID: 10050721-001A

Composite

SAMPLED BY: SG

Sample Time: 05/04/2010 17:50

SLOQ

Test	Result	Method		Analysis Start	Analysis End	Analyst *
Methanol	7 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
Ethanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
Isopropanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
t-Butanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
n-Propanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
Isobutanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
n-Butanol	< 4 mg/Kg	Alcohols by FID	4	05/14/10 9:16	05/14/10	JJ6-CV
Sodium	623 mg/Kg-dry	EPA 6010B	104	05/11/10 8:10	05/12/10	GSR-CV
Bromine	57.5 mg/kg	HACH 8167	0.05	05/07/10 9:58	05/07/10	SMH-CV
1,1-Dichloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Methylene chloride	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
2-Butanone	< 0.215 mg/Kg-dry	EPA 8260B	0.215	05/11/10 14:06	05/11/10	DN-CV
trans-1,2-Dichloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,1-Dichloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
cis-1,2-Dichloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Chloroform	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,1,1-Trichloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Carbon tetrachloride	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Benzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2-Dichloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Trichloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2-Dichloropropane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Dibromomethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 5/17/2010

LAB ID # 11216  
LAB ID # 11827

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10050721

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10050721  
PAGE: 2 of 5  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

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DATE: 05/06/2010 11:51

Page 2 of 5

Bromodichloromethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
cis-1,3-Dichloropropene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Toluene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
trans-1,3-Dichloropropene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,1,2-Trichloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Tetrachloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Dibromochloromethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2-Dibromoethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Chlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Ethylbenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
m,p-Xylene	< 0.043 mg/Kg-dry	N EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
o-Xylene	< 0.043 mg/Kg-dry	N EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Xylenes, Total	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Bromoform	0.237 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2,3-Trichloropropane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,3-Dichlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,4-Dichlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2-Dichlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Acrolein	< 2.15 mg/Kg-dry	EPA 8260B	2.15	05/11/10 14:06	05/11/10	DN-CV
Carbon disulfide	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
MTBE	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Acrylonitrile	< 0.215 mg/Kg-dry	EPA 8260B	0.215	05/11/10 14:06	05/11/10	DN-CV
Acetone	< 0.429 mg/Kg-dry	EPA 8260B	0.429	05/11/10 14:06	05/11/10	DN-CV
Vinyl acetate	< 0.043 mg/Kg-dry	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- K Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- U Ammonia sample not distilled

MANAGER

*Amie M. Davis*

DATE: 5/17/2010

LAB ID # 11216  
LAB ID # 11827

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10050721

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10050721  
PAGE: 3 of 5  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
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**TEST REPORT**

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DATE: 05/06/2010 11:51

Page 3 of 5

2,2-Dichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Tetrahydrofuran	< 0.215 mg/Kg-dry	N	EPA 8260B	0.215	05/11/10 14:06	05/11/10	DN-CV
Bromochloromethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,1-Dichloropropene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
2-Chloroethyl vinyl ether	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,3-Dichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
2-Hexanone	< 0.215 mg/Kg-dry		EPA 8260B	0.215	05/11/10 14:06	05/11/10	DN-CV
Styrene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Cumene	< 0.043 mg/Kg-dry	N	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Bromobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
n-Propylbenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
2-Chlorotoluene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
4-Chlorotoluene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,3,5-Trimethylbenzene	0.078 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
tert-Butylbenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2,4-Trimethylbenzene	0.156 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
sec-Butylbenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
p-Isopropyltoluene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
n-Butylbenzene	0.057 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2,4-Trichlorobenzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Hexachlorobutadiene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Naphthalene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
1,2,3-Trichlorobenzene	< 0.043 mg/Kg-dry	N	EPA 8260B	0.043	05/11/10 14:06	05/11/10	DN-CV
Chloride	1490 mg/Kg-dry		EPA 300.0	53.7	05/07/10 15:03	05/08/10	HDP-CV
Formaldehyde	2.8 mg/Kg-dry	N	NIOSH 3500	1.0	05/14/10 9:20	05/14/10	LTW-CV
Percent Moisture	6.8 %		SM2540G		05/11/10 11:40	05/12/10	NFM-SA

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- K Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- U Ammonia sample not distilled

MANAGER

*Candice M. Davis*

DATE: 5/17/2010

LAB ID # 11216  
LAB ID # 11827

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10050721

Phone: (570) 888-0169  
Fax: (570) 888-0717

**SEND DATA TO:**

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10050721

PAGE: 4 of 5

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

██████████ Pad

RECEIVED FOR LAB BY: DLM2

DATE: 05/06/2010 11:51

Page 4 of 5

SAMPLE: **Flowback Sand**

Lab ID: 10050721-001B

Composite

SAMPLED BY: SG

Sample Time: 05/04/2010 17:50

SLOQ

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	6.82 %	Moisture Calc.	0.01	05/11/10 11:40	05/12/10	NFM-SA
Ammonia as N	118 mg/kg	Lachat	100	05/13/10 12:14	05/13/10	KAL-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	05/12/10 15:30	05/12/10	IC-SA
pH	6.29@23.6°C	EPA 9045C		05/12/10 14:35	05/12/10	NFM-SA
Phosphorus	120 mg/kg-dry	EPA 365.3	5	05/10/10 16:30	05/11/10	JP-SA

SAMPLE: **Flowback Sand**

Lab ID: 10050721-001C

Composite

SAMPLED BY: SG

Sample Time: 05/04/2010 17:50

SLOQ

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ethylene glycol	37.0 mg/kg	Glycols by 8015	1.00	05/10/10 0:00	05/13/10	
Propylene glycol	< 0.50 mg/kg	Glycols by 8015	0.50	05/10/10 0:00	05/13/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **Flowback Sand**

Lab ID: 10050721-001D

Composite

SAMPLED BY: SG

Sample Time: 05/04/2010 17:50

SLOQ

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	6.31 mg/Kg Dry	EPA 9065	1.32	05/10/10 9:30	05/10/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: **Flowback Sand**

Lab ID: 10050721-001E

Composite

SAMPLED BY: SG

Sample Time: 05/04/2010 17:50

SLOQ

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	14600 mg/Kg	EPA 9071		05/10/10 8:00	05/10/10	

**REMARKS:**

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- K Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 5/17/2010

LAB ID # 11216  
LAB ID # 11827

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10050721

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10050721  
PAGE: 5 of 5  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

Pad

RECEIVED FOR LAB BY: DLM2

DATE: 05/06/2010 11:51

Page 5 of 5

Sample Note: Analysis performed by Microbac Lab- Erie

SAMPLE: **TCLP Leachate of Flowback Sand**

Lab ID: 10050721-001G

Composite

SAMPLED BY: SG

Sample Time: 05/04/2010 17:50

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	05/12/10 7:10	05/12/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/11/10 11:50	05/14/10	GSR-CV
Barium - TCLP extracted	12.4 mg/L	L EPA 6010B	10.00	05/11/10 11:50	05/14/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/11/10 11:50	05/14/10	GSR-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/11/10 11:50	05/14/10	GSR-CV
Copper - TCLP extracted	0.403 mg/L	EPA 6010B	0.100	05/11/10 11:50	05/14/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/11/10 11:50	05/14/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/11/10 11:50	05/14/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/11/10 11:50	05/14/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/11/10 11:50	05/14/10	GSR-CV
Zinc - TCLP extracted	0.852 mg/L	EPA 6010B	0.200	05/11/10 11:50	05/14/10	GSR-CV

Sample Note: The temperature of the extraction room exceeded the range of 23 ± 2°C

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- K Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 5/17/2010



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b>
	Date Received & General Notes
Date Prepared/Revised	February 11, 2011

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

Company Name Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A
Company Mailing Address Line 1 50 Pennwood Place		Company Mailing Address Line 2		
Company Address Last Line – City Warrendale	State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown	First Name Dina	MI	Suffix	
Municipality Warrendale	County Allegheny			
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-076) L well pad site located at 3637 Fallbrook Road, Armenia Township, Bradford County, PA. The waste is temporarily stored onsite.				
Municipality	Armenia	County	Bradford	State PA

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	36	<input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time

**1. GENERAL PROPERTIES**

a. pH Range	8	to	9	(based on analyses or knowledge)
b. Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c. Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
	Number of Solid or Liquid Phases of Separation	One		
	Describe each phase of separation. Sand			

**2. CHEMICAL ANALYSIS ATTACHMENTS**

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
SECTION C. MANAGEMENT OF RESIDUAL WASTE			
1. PROCESSING OR DISPOSAL FACILITY(IES)			
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.			
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
	36	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)
a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
		<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)
2. BENEFICIAL USE			
a.	Has the waste been approved for beneficial use?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	If "Yes", list the general permit number or approval number.		
b.	Volume of waste beneficially used in the previous year.		
	0	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature  Date 2/25/11



PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10123073

SEND DATA TO:

NAME: Dina Brown  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10123073  
PAGE: 1 of 1  
PO#: Completions  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

76

RECEIVED FOR LAB BY: SCP

DATE: 12/20/2010 11:56

Page 1 of 1

SAMPLE: **TCLP Leachate of Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10123073-001G

Composite

Sample Time: 12/19/2010 18:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	12/20/10 11:30	12/21/10	KW-CV
Aluminum - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Antimony - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Barium - TCLP extracted	13.8 mg/L L	EPA 6010B	10.00	12/21/10 11:30	12/21/10	GSR-CV
Beryllium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Boron - TCLP extracted	< 1.25 mg/L	EPA 6010B	1.25	12/21/10 11:30	12/21/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Cobalt - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Copper - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Iron - TCLP extracted	16.0 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Manganese - TCLP extracted	0.216 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	12/21/10 11:30	12/21/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Thallium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	12/21/10 11:30	12/21/10	GSR-CV
Vanadium - TCLP extracted	< 0.050 mg/L	EPA 6010B	0.050	12/21/10 11:30	12/21/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	12/21/10 11:30	12/21/10	GSR-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

MANAGER

*Carrie M. Davis*

DATE: 12/22/2010

**CHAIN OF CUSTODY**

**REPORT TO:** Talisman / UEG  
 geowetlands@aol.com

**CONTACT:** Dina Brown

**PH#:** 724 814 5321  
**FAX#:** 724 814 5321

**BILL TO:** Talisman

**PO# COMPLETIONS:**

**FR:** [Redacted] N 76

**SAMPLER SIGNATURE / AFFILIATION:**

**CONTAINER SAMPLING POINT:**

**W/O#: 10123073**

40

REFRIGERATE SAMPLES  
AFTER COLLECTION

TRANSPORT  
TO  
LABORATORY  
IN COOLER  
WITH ICE

- |    |                 |       |                 |
|----|-----------------|-------|-----------------|
| DW | DRINKING WATER  | SL    | SLUDGE          |
| GW | GROUND WATER    | SO    | SOIL            |
| SW | SURFACE WATER   | HZ    | HAZARDOUS       |
| WW | WASTE WATER     | OTHER |                 |
| DE | DEIONIZED WATER | DI    | DISTILLED WATER |

RESULTS ARE BEING USED FOR:

NYDOH  NYDEC  PADEP

LANDFILL \_\_\_\_\_

PERSONAL  OTHER

ARE SPECIAL DETECTION LIMITS  
NEEDED:  YES /  NO

IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED?  
 YES  NO

IF YES, PLEASE ATTACH REQUIREMENTS

- |                 |                    |                 |                   |
|-----------------|--------------------|-----------------|-------------------|
| H               | HYDROCHLORIC ACID  | OH              | SODIUM HYDROXIDE  |
| S               | SULFURIC ACID      | AS              | ASCORBIC ACID     |
| N               | NITRIC ACID        | AC              | ACETIC ACID       |
| SO <sub>3</sub> | SODIUM SULFITE     | NH <sub>4</sub> | AMMONIUM CHLORIDE |
| Thio            | SODIUM THIOSULFATE | ZN              | ZINC ACETATE      |
| -               | NONE               | Hg              | MERCURIC CHLORIDE |

ANALYSIS TO BE PERFORMED (PER CONTAINER)	DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	LAB USE ONLY		
							COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	
TPH, pH, Free Liquids, % Moisture	12/19	6:00	G	LS					
<del>Chlorides, Sodium, Bromine</del>									
TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se									
Ag, Cu, Zn, Ni, +extra list									
<del>Alcohols, Glycols, Formaldehyde</del>									
EPA 8260									
Total Phosphorus, Total Phenolics									
Ammonia Nitrogen									
24 HOUR TURNAROUND									
DAY TURNAROUND									

An incomplete chain of custody may delay the processing of your sample(s).

Please fill out all applicable areas completely

LAB USE ONLY

DELIVERED BY: Client TEMPERATURE UPON RECEIPT: 10 °C ARRIVAL ON ICE: Y

RELINQUISHED BY: <u>[Signature]</u>	DATE: <u>12/19/10</u>	TIME: <u>7:30</u>	RECEIVED BY:	DATE: <u>1 1</u>	TIME:
RELINQUISHED BY:	DATE: <u>1 1</u>	TIME:	RECEIVED BY:	DATE: <u>1 1</u>	TIME:
RELINQUISHED BY:	DATE: <u>1 1</u>	TIME:	RECEIVED BY: <u>[Signature]</u>	DATE: <u>12/20/10</u>	TIME: <u>11:50</u>



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R  
CHEMICAL ANALYSIS OF RESIDUAL WASTE  
ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b>
	Date Received & General Notes
Date Prepared/Revised	February 11, 2011

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

<b>Company Name</b> Talisman Energy USA Inc.				
<b>If a Subsidiary, Name of Parent Company</b> Talisman Energy Inc.				<b>EPA Generator ID#</b> N/A
<b>Company Mailing Address Line 1</b> 50 Pennwood Place		<b>Company Mailing Address Line 2</b>		
<b>Company Address Last Line - City</b> Warrendale	<b>State</b> PA	<b>Zip+4</b> 15086	<b>Phone</b> (724) 814-5300	<b>Ext</b>
<b>Company Contact Last Name</b> Brown	<b>First Name</b> Dina	<b>MI</b>	<b>Suffix</b>	
<b>Municipality</b> Warrendale		<b>County</b> Allegheny		
<b>Contact Phone</b> (724) 814-5321	<b>Ext</b>	<b>Contact Email Address</b> dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the [redacted] (01-077) L well pad site located at 2871 Fallbrook Road, Armenia Township, Bradford County, PA. The waste is temporarily stored onsite.				
<b>Municipality</b>	Armenia	<b>County</b>	Bradford	<b>State</b> PA

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	857	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time

**1. GENERAL PROPERTIES**

<b>a. pH Range</b>	8.59 to ---	(based on analyses or knowledge)		
<b>b. Physical State</b>	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
<b>c. Physical Appearance</b>	<b>Color</b> Greyish Black	<b>Odor</b> Hydrocarbon		
	<b>Number of Solid or Liquid Phases of Separation</b> One			
	Describe each phase of separation. Sand			

**2. CHEMICAL ANALYSIS ATTACHMENTS**

<b>a.</b>	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>b.</b>	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>c.</b>	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>d.</b>	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>e.</b>	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
	857	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
		<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year.		
	0	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_


I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown

Signature 

Date 2/25/11

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10100732

Phone: (570) 888-0169

Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10100732  
PAGE: 1 of 4  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

77

RECEIVED FOR LAB BY: DLM2

DATE: 10/06/2010 9:55

Page 1 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10100732-001A

Composite

SAMPLED BY: SG

Sample Time: 10/04/2010 17:00

SLOQ

Test	Result		Method		Analysis Start	Analysis End	Analyst *
Methanol	13 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
Ethanol	< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
Isopropanol	< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
t-Butanol	< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
n-Propanol	< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
Isobutanol	< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
n-Butanol	< 10 mg/Kg	N	Alcohols by FID	10	10/11/10 11:02	10/11/10	JJ6-CV
Sodium	311 mg/Kg-dry		EPA 6010B	57.0	10/07/10 12:30	10/08/10	GSR-CV
Bromine	4.60 mg/kg	KN	HACH 8167	0.05	10/07/10 17:30	10/07/10	SMH-CV
1,1-Dichloroethene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Methylene chloride	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
2-Butanone	< 0.225 mg/Kg-dry		EPA 8260B	0.225	10/07/10 10:13	10/07/10	DN-CV
trans-1,2-Dichloroethene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,1-Dichloroethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
cis-1,2-Dichloroethene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Chloroform	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,1,1-Trichloroethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Carbon tetrachloride	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Benzene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,2-Dichloroethane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Trichloroethene	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,2-Dichloropropane	< 0.045 mg/Kg-dry		EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

Q Due to matrix effects, not all quality control parameters met acceptance criteria

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 10/12/2010

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10100732

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10100732

PAGE: 2 of 4

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

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Page 2 of 4

Dibromomethane	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Bromodichloromethane	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
cis-1,3-Dichloropropene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Toluene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
trans-1,3-Dichloropropene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,1,2-Trichloroethane	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Tetrachloroethene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Dibromochloromethane	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,2-Dibromoethane	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Chlorobenzene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Ethylbenzene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
m,p-Xylene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
o-Xylene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Xylenes, Total	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Bromoform	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,2,3-Trichloropropane	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,3-Dichlorobenzene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,4-Dichlorobenzene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
1,2-Dichlorobenzene	< 0.045 mg/Kg-dry	EPA 8260B	0.045	10/07/10 10:13	10/07/10	DN-CV
Chloride	518 mg/Kg-dry	Q EPA 300.0	54.0	10/07/10 14:51	10/08/10	HDP-CV
Formaldehyde	8.1 mg/Kg-dry	N NIOSH 3500	1.0	10/11/10 8:15	10/11/10	LTW-CV
Percent Moisture	11.2 %	SM2540G		10/06/10 10:30	10/07/10	NFM-SA

REMARKS:

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- K Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Cassi M. Davis*

DATE: 10/12/2010

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10100732

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10100732  
PAGE: 3 of 4  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

77

RECEIVED FOR LAB BY: DLM2

DATE: 10/06/2010 9:55

Page 3 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10100732-001B

Composite

SAMPLED BY: SG

Sample Time: 10/04/2010 17:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Moisture	11.2 %	Moisture Calc.	0.01	10/06/10 10:30	10/07/10	NFM-SA
Ammonia as N	34.8 mg/kg-dry U	Lachat	11.3	10/07/10 10:36	10/07/10	JP-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	10/08/10 11:00	10/08/10	IC-SA
pH	8.59@20.5°C	EPA 9045C		10/06/10 16:30	10/06/10	NFM-SA
Phosphorus	32 mg/kg-dry	EPA 365.3	6	10/09/10 10:00	10/11/10	JP-SA

SAMPLE: **Flowback Sand**

Lab ID: 10100732-001C

Composite

SAMPLED BY: SG

Sample Time: 10/04/2010 17:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 10.00 mg/Kg	Glycols	10.00	10/08/10 0:00	10/08/10	
Propylene glycol	< 10.00 mg/Kg	Glycols	10.00	10/08/10 0:00	10/08/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: **Flowback Sand**

Lab ID: 10100732-001D

Composite

SAMPLED BY: SG

Sample Time: 10/04/2010 17:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	8.76 mg/Kg Dry	EPA 9065	1.41	10/08/10 8:00	10/08/10	

Sample Note: Analysis performed by QC lab

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- U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 10/12/2010



PA ID #: 08-00380  
NY ID #: 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10100732

**SEND DATA TO:**

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10100732

PAGE: 4 of 4

PO#:

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PHONE: (607) 731-0145  
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## TEST REPORT

77

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Page 4 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10100732-001E

Composite

SAMPLED BY: SG

Sample Time: 10/04/2010 17:00

SLOQ

Test	Result	Method	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	400 mg/Kg	EPA 9071	10/08/10 14:00	10/08/10	

Sample Note: Analysis performed by Microbac -Erie

SAMPLE: **TCLP Leachate of Flowback Sand**

Lab ID: 10100732-001G

Composite

SAMPLED BY: SG

Sample Time: 10/07/2010 9:15

SLOQ

Test	Result	Method	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008 10/08/10 8:40	10/11/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500 10/08/10 12:30	10/08/10	GSR-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00 10/08/10 12:30	10/08/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100 10/08/10 12:30	10/08/10	GSR-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500 10/08/10 12:30	10/08/10	GSR-CV
Copper - TCLP extracted	0.115 mg/L	EPA 6010B	0.100 10/08/10 12:30	10/08/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500 10/08/10 12:30	10/08/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100 10/08/10 12:30	10/08/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500 10/08/10 12:30	10/08/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100 10/08/10 12:30	10/08/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200 10/08/10 12:30	10/08/10	GSR-CV

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- U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE:

10/12/2010

**CHAIN OF CUSTODY**

**REPORT TO:** Talisman / UEG  
 geowetlands@aol.com  
 twollin@rallysolutions.ca

**CONTACT:** Steve Gridley  
 PH# 607-731-0145  
 FAX#

**BILL TO:** Talisman

**PO# COMPLETIONS**  
 P [REDACTED] 77

**SAMPLER SIGNATURE / AFFILIATION**  
 [Signature] UEG

**CONTAINER SAMPLING POINT**

REFRIGERATE SAMPLES  
AFTER COLLECTION

**TRANSPORT  
TO  
LABORATORY  
IN COOLER  
WITH ICE**

**W/O#: 10100732**

RESULTS ARE BEING USED FOR:

NYDOH  NYDEC  PADEP

LANDFILL  PERSONAL OTHER

DW DRINKING WATER SL SLUDGE  
 GW GROUND WATER SO SOIL  
 SW SURFACE WATER HZ HAZARDOUS  
 WW WASTE WATER OTHER  
 DE DEIONIZED WATER DI DISTILLED WATER

**ARE SPECIAL DETECTION LIMITS**  
 NEEDED:  YES  NO

IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED?  
 YES  NO

IF YES, PLEASE ATTACH REQUIREMENTS

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO	SODIUM SULFITE	NH	AMMONIUM CHLORIDE
TMo	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

An Incomplete chain of custody may delay the processing of your sample(s).

ANALYSIS TO BE PERFORMED  
(PER CONTAINER)

COMPOSITED ON RECEIPT  
 PRESERVATIVE ADDED ON RECEIPT

Please fill out all applicable areas completely

LAB USE ONLY

1	Flowback Sand	10-4	1700	50	C	SG-N	TPH, pH, Free Liquids, % Moisture						
2							Chlorides, Sodium, Bromine						
3							TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se						
4	A - Na, Cl, Bromine, 8260, Alcohol, Formaldehyde						Ag, Cu, Zn, Ni						
5	B - pH, Free Liquid, % Moisture, Phos, NH3						Alcohols, Glycols, Formaldehyde						
6	C - Glycol						EPA 8260						
7	D - Phenol						Total Phosphorus, Total Phenolics						
8	E - TPH						Ammonia - Nitrogen						
9	F - T. Sample												
10	G - TCLP Metals: Cu, Ni, Zn												
11													

LAB USE ONLY

DELIVERED BY: SG TEMPERATURE UPON RECEIPT: Due 10/11/10 °C ARRIVAL ON ICE: Y/N

RELINQUISHED BY: [Signature]	DATE: 10/6/10	TIME: 954	RECEIVED BY: [Signature]	DATE: 10/6/10	TIME: 955
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.				<b>DEP USE ONLY</b>	
General Reference 287.54				Date Received & General Notes	
Date Prepared/Revised		February 11, 2011			
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>					
Company Name Talisman Energy USA Inc.					
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2		
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown		First Name Dina	MI	Suffix	
Municipality Warrendale		County Allegheny			
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-013/043) D well pad site located at 177 Mud Creek Road, Troy Township, Bradford County, PA. The waste is temporarily stored onsite.					
Municipality Troy		County Bradford		State PA	
<b>SECTION B. WASTE DESCRIPTION</b>					
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	243	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time
<b>1. GENERAL PROPERTIES</b>					
a.	pH Range	7.29	to	---	(based on analyses or knowledge)
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
		Number of Solid or Liquid Phases of Separation		One	
	Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>					
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.			<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
SECTION C. MANAGEMENT OF RESIDUAL WASTE			
1. PROCESSING OR DISPOSAL FACILITY(IES)			
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.			
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA 16735	
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 243 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		
2. BENEFICIAL USE			
a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year 2009 and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year 2009 and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist  
Dina Brown

Signature  Date 2/25/11

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10030540

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030540  
PAGE: 1 of 4  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 1 of 4

SAMPLE: **FB Sand SH-1**  
SAMPLED BY: SG

Lab ID: 10030540-001A Composite  
Sample Time: 03/01/2010 14:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Bromine	<4.6 mg/kg	K HACH 8167	0.05	03/12/10 13:32	03/12/10	TLB-CV
Percent Moisture	3.7 %	SM2540G		03/09/10 12:30	03/10/10	NFM-SA
Total Petroleum Hydrocarbons	540 mg/Kg-dry	EPA 1664A	180	03/12/10 13:50	03/15/10	DTG-CV

SAMPLE: **FB Sand SH-1**  
SAMPLED BY: SG

Lab ID: 10030540-001B Composite  
Sample Time: 03/01/2010 14:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ammonia as N	< 104 mg/kg-dry	U Lachat	104	03/04/10 12:07	03/04/10	KAL-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	03/11/10 11:15	03/11/10	IC-SA
pH	7.29@23.8°C	EPA 9045C		03/10/10 16:00	03/10/10	NFM-SA
Phosphorus	< 3 mg/kg	EPA 365.3	3	03/16/10 11:04	03/16/10	JP-SA

SAMPLE: **FB Sand SH-1**  
SAMPLED BY: SG

Lab ID: 10030540-001C Composite  
Sample Time: 03/01/2010 14:00

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
1,1-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
2-Butanone	< 0.208 mg/Kg-dry	EPA 8260B	0.208	03/08/10 14:09	03/09/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.  
\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- K Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 3/17/2010

PA ID #: 08-00380  
NY ID #: 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10030540

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030540

PAGE: 2 of 4

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

## TEST REPORT

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 2 of 4

Benzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	03/08/10 14:09	03/09/10	DN-CV

REMARKS:

- The above test procedures meet all the requirements of NELAC and relate only to these samples.  
\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA  
K Sample was received past holding time.  
L Value above calibration range but within annually verified linear range  
U Ammonia sample not distilled

MANAGER

*Amie M. Davis*

DATE: 3/17/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10030540

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030540  
PAGE: 3 of 4  
PO#:  
PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 3 of 4

SAMPLE: **FB Sand SH-1**

Lab ID: 10030540-001D

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
Ethanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
Isopropanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
t-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
n-Propanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
Isobutanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
n-Butanol	< 10 mg/Kg	Alcohols by FID	10	03/15/10 16:17	03/15/10	ASC-CV
Formaldehyde	< 1.0 mg/Kg-dry	NIOSH 3500	1.0	03/15/10 8:10	03/15/10	LTW-CV

SAMPLE: **FB Sand SH-1**

Lab ID: 10030540-001E

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 2.00 mg/kg	Glycols	2.00	03/05/10 0:00	03/10/10	
Propylene glycol	< 1.00 mg/kg	Glycols	1.00	03/05/10 0:00	03/10/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **FB Sand SH-1**

Lab ID: 10030540-001F

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	11.3 dry mg/Kg	EPA 9065		03/10/10 9:30	03/10/10	

Sample Note: Analysis performed by QC lab

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

L Value above calibration range but within annually verified linear range

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 3/17/2010



PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10030540

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10030540

PAGE: 4 of 4

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

NTSW TCLP Metals/TPH/pH/%Moisture

RECEIVED FOR LAB BY: DLM2

DATE: 03/03/2010 9:38

Page 4 of 4

SAMPLE: TCLP Leachate of FB Sand SH-1

Lab ID: 10030540-001H

Composite

SAMPLED BY: SG

Sample Time: 03/01/2010 14:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	03/11/10 8:30	03/12/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Barium - TCLP extracted	14.5 mg/L	EPA 6010B	10.00	03/10/10 13:40	03/11/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Copper - TCLP extracted	0.410 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	03/10/10 13:40	03/11/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	03/10/10 13:40	03/11/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	03/10/10 13:40	03/11/10	RMD-CV

REMARKS:

The above test procedures meet all the requirements of NELAC and relate only to these samples.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

L Value above calibration range but within annually verified linear range

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 3/17/2010

**CHAIN OF CUSTODY**

**Benchmark**  
 Easterr  
 2566 Pennsylvania Av  
 Phone: (57  
 Fax: (570

- 1 OF 1

REPORT TO: Talisman

CONTACT: Steve Bradley

PH#: 607-731-0145

FAX#

BILL TO: Talisman

PO# Completions

DESCRIPTION: D4H Pad Free

SAMPLER SIGNATURE / AFFILIATION: S Bradley UEG

REFRIGERATE SAMPLES  
 AFTER COLLECTION

TRANSPORT  
 TO  
 LABORATORY  
 IN COOLER  
 WITH ICE

W/O#: 10030540

ANALYTICAL DETECTION LIMITS  
 YES / NO

LEASE ATTACH

IS A QC PACKAGE NEEDED?  
 YES NO

IF YES, PLEASE ATTACH REQUIREMENTS

DW	DRINKING WATER	SL	SLUDGE	NYDOH	<u>NYDEC</u>	<u>RADEP</u>
GW	GROUND WATER	SO	SOIL	LANDFILL		
SW	SURFACE WATER	HZ	HAZARDOUS			
WW	WASTE WATER	OTHER				
DE	DEIONIZED WATER	DI	DISTILLED WATER	PERSONAL	OTHER	

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO <sub>3</sub>	SODIUM SULFITE	NH <sub>4</sub>	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

PWS ID# \_\_\_\_\_

Location \_\_\_\_\_

Sample Point \_\_\_\_\_

DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	Chlorine Residual Total <input type="checkbox"/>	Free <input type="checkbox"/>
--------------	------------------	---------------	--------------------------------	------------------	--------------	--	-------------------------------

An incomplete chain of custody may delay the processing of your sample(s).

ANALYSIS TO BE PERFORMED  
 (PER CONTAINER)

COMPOSITED ON RECEIPT

PRESERVATIVE ADDED ON RECEIPT

LAB USE ONLY

Please fill out all applicable areas completely.

Container	Sample Point No./Type	DATE SAMPLED	TIME OF SAMPLING	SAMPLE MATRIX	SAMPLE TYPE - GRAB / COMPOSITE	SAMPLER INITIALS	PRESERVATIVE	Chlorine Residual Total	Free	ANALYSIS TO BE PERFORMED (PER CONTAINER)	COMPOSITED ON RECEIPT	PRESERVATIVE ADDED ON RECEIPT	LAB USE ONLY
1	FB Sand. Sh-1	3/11/10	9:00	S	C	SO	N			TCLP Metals: Ar, Ba, Cd, Cr, Pb			-001A-H
2										Hg, Se, Ag, Cu, Ni, Zn			
3										TPH, pH, free liquids, % moisture			
4	A - TPH, Bromine									8260, Alcohols, glycols			
5	B - Wtchem									Formaldehyde, Bromine			
6	C - 8260									Total Phosphorus			
7	D - Alcohol, Formaldehyde									Ammonia - Nitrogen			
8	E - Glycol									Total Phenolics			
9	F - Phenol												
10	G - T. Sample												
11	H - TCLP Metals												

Due 3/15/10

LAB USE ONLY

DELIVERED BY: SG

TEMPERATURE UPON RECEIPT: 3 °C

ARRIVAL ON ICE: Y/N

RELINQUISHED BY: <u>S Bradley</u>	DATE: <u>3/10/10</u>	TIME: <u>9:38</u>	RECEIVED BY:	DATE: <u>1/1</u>	TIME:
RELINQUISHED BY:	DATE: <u>1/1</u>	TIME:	RECEIVED BY:	DATE: <u>1/1</u>	TIME:
RELINQUISHED BY:	DATE: <u>1/1</u>	TIME:	RECEIVED BY: <u>Debbie McCarty</u>	DATE: <u>3/13/10</u>	TIME: <u>9:38</u>



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.					<b>DEP USE ONLY</b>	
General Reference 287.54					Date Received & General Notes	
Date Prepared/Revised		February 11, 2011				
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>						
Company Name Talisman Energy USA Inc.						
If a Subsidiary, Name of Parent Company Talisman Energy Inc.					EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2			
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext	
Company Contact Last Name Brown		First Name Dina	MI	Suffix		
Municipality Warrendale		County Allegheny				
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com				
Is the waste generated at the Company Mailing Address (noted above)?						<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the [redacted] FT 2H well pad site located at 257 Thomas Lane, Troy Township, Bradford County, PA. The waste is temporarily stored onsite.						
Municipality	Troy	County	Bradford	State	PA	
<b>SECTION B. WASTE DESCRIPTION</b>						
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame	
804	Fracing Fluid Waste (Flow Back Sand)	395	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal		
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time	
<b>1. GENERAL PROPERTIES</b>						
a.	pH Range	7.27	to	---	(based on analyses or knowledge)	
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)				
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon	
		Number of Solid or Liquid Phases of Separation		One		
		Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>						
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.				<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
SECTION C. MANAGEMENT OF RESIDUAL WASTE			
1. PROCESSING OR DISPOSAL FACILITY(IES)			
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.			
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 395 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		
2. BENEFICIAL USE			
a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

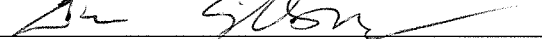
I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown

Signature  Date 2/25/11

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10053428

Phone: (570) 888-0169

Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053428

PAGE: 1 of 5

PO#:

PWS ID#

PHONE: (607) 731-0145  
FAX: (607) 562-4001

**TEST REPORT**

FT3H Pad

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 1 of 5

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053428-001A Composite

Sample Time: 05/24/2010 18:00

SLOQ

Test	Result		Method		Analysis Start	Analysis End	Analyst *
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	05/27/10 14:40	05/27/10	JJ6-CV
Sodium	643 mg/Kg-dry		EPA 6010B	106	05/25/10 11:50	05/27/10	GSR-CV
Bromine	9.20 mg/kg	N	HACH 8167	0.05	05/26/10 10:26	05/26/10	SMH-CV
1,1-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2-Butanone	< 0.209 mg/Kg-dry		EPA 8260B	0.209	05/27/10 19:06	05/27/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Benzene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry		EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

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FT3H Pad

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DATE: 05/25/2010 8:54

Page 2 of 5

Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Acrolein	< 2.09 mg/Kg-dry	EPA 8260B	2.09	05/27/10 19:06	05/27/10	DN-CV
Carbon disulfide	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
MTBE	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Acrylonitrile	< 0.209 mg/Kg-dry	EPA 8260B	0.209	05/27/10 19:06	05/27/10	DN-CV
Acetone	< 0.419 mg/Kg-dry	EPA 8260B	0.419	05/27/10 19:06	05/27/10	DN-CV
Vinyl acetate	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Tetrahydrofuran	< 0.209 mg/Kg-dry	N EPA 8260B	0.209	05/27/10 19:06	05/27/10	DN-CV
Bromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,1-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2-Chloroethyl vinyl ether	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Candice M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
NY ID # 11216

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Sayre, PA 18840

Phone: (570) 888-0169  
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COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10053428

PAGE: 3 of 5

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## TEST REPORT

FT3H Pad

RECEIVED FOR LAB BY: DLM2

DATE: 05/25/2010 8:54

Page 3 of 5

Component	Concentration	Method	Value	Time	Date	Lab
1,3-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2-Hexanone	< 0.209 mg/Kg-dry	EPA 8260B	0.209	05/27/10 19:06	05/27/10	DN-CV
Styrene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Cumene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Bromobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
n-Propylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
2-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
4-Chlorotoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,3,5-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
tert-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2,4-Trimethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
sec-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
p-Isopropyltoluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
n-Butylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2-Dibromo-3-chloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2,4-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Hexachlorobutadiene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Naphthalene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
1,2,3-Trichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	05/27/10 19:06	05/27/10	DN-CV
Chloride	1290 mg/Kg-dry	EPA 300.0	52.4	05/26/10 15:48	05/27/10	HDP-CV
Formaldehyde	< 1.0 mg/Kg-dry	N NIOSH 3500	1.0	05/27/10 7:30	05/27/10	LTW-CV
Percent Moisture	4.5 %	N SM2540G		05/25/10 11:35	05/27/10	DMB-CV

SAMPLE: Flowback Sand

Lab ID: 10053428-001B

Composite

SAMPLED BY: SG

Sample Time: 05/24/2010 18:00

SLOQ

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ammonia as N	< 10 mg/kg-dry	U Lachat	10	05/27/10 12:00	05/27/10	JP-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	05/25/10 12:00	05/25/10	IC-SA

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010



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NAME: Steve Gridley  
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Horseheads, NY 14845

WO#: 10053428  
PAGE: 4 of 5  
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PHONE: (607) 731-0145  
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## TEST REPORT

FT3H Pad

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DATE: 05/25/2010 8:54

Page 4 of 5

Parameter	Result	Method	Units	Analysis Start	Analysis End	Analyst
pH	7.27@22.0°C	EPA 9045C		05/27/10 8:40	05/27/10	NFM-SA
Phosphorus	< 5 mg/kg-dry	EPA 365.3	5	05/25/10 8:00	05/25/10	MED-SA

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053428-001C Composite

Sample Time: 05/24/2010 18:00

SLOQ

Test	Result	Method	Units	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	
Propylene glycol	< 1.00 mg/Kg	Glycols	1.00	05/26/10 0:00	05/27/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053428-001D Composite

Sample Time: 05/24/2010 18:00

SLOQ

Test	Result	Method	Units	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	< 1.48 mg/Kg DRY	EPA 9065	1.48	05/27/10 8:45	05/27/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: **Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053428-001E Composite

Sample Time: 05/24/2010 18:00

SLOQ

Test	Result	Method	Units	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	575 mg/Kg	EPA 9071		05/26/10 11:00	05/26/10	

Sample Note: Analysis performed by Microbac- Erie

SAMPLE: **TCLP Leachate of Flowback Sand**  
SAMPLED BY: SG

Lab ID: 10053428-001G Composite

Sample Time: 05/26/2010 7:50

SLOQ

Test	Result	Method	Units	Analysis Start	Analysis End	Analyst *
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	05/26/10 13:30	05/27/10	JRA-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	05/26/10 14:00	05/27/10	GSR-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV

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U Ammonia sample not distilled

MANAGER

*Cassie M. Davis*

DATE: 6/1/2010

PA ID #: 08-00380  
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Page 5 of 5

Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Copper - TCLP extracted	0.180 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	05/26/10 14:00	05/27/10	GSR-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	05/26/10 14:00	05/27/10	GSR-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	05/26/10 14:00	05/27/10	GSR-CV

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N Parameter not NELAC certified

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 6/1/2010

# CHAIN OF CUSTODY

Benchm

**REPORT TO:** Talisman / UEG  
 geowetlands@aol.com  
 twollin@rallysolutions.ca

**CONTACT:** Steve Gridley  
 PH# 607-731-0145  
 FAX#

**BILL TO:** Talisman

**PO# COMPLETIONS**

**DESCRIPTION:** FT3H Pod  
**SAMPLER SIGNATURE / AFFILIATION:** [Signature]  
**CONTAINER / SAMPLING POINT:**

2566 Pennsylvan  
 Phon  
 Fax:

**W/O#: 10053428**

**SPECIAL DETECTION LIMITS**  
 D:  YES  NO

IF YES, PLEASE ATTACH

IS A QC PACKAGE NEEDED?  
 YES  NO

IF YES, PLEASE ATTACH REQUIREMENTS

REFRIGERATE SAMPLES  
 AFTER COLLECTION

TRANSPORT  
 TO  
 LABORATORY  
 IN COOLER  
 WITH ICE

RESULTS ARE BEING USED FOR:

NYDOH  NYDEC  PADEP

LANDFILL

PERSONAL  OTHER

H	HYDROCHLORIC ACID	OH	SODIUM HYDROXIDE
S	SULFURIC ACID	AS	ASCORBIC ACID
N	NITRIC ACID	AC	ACETIC ACID
SO <sub>3</sub>	SODIUM SULFITE	NH <sub>4</sub>	AMMONIUM CHLORIDE
Thio	SODIUM THIOSULFATE	ZN	ZINC ACETATE
-	NONE	Hg	MERCURIC CHLORIDE

An incomplete chain of custody may delay the processing of your sample(s).

ANALYSIS TO BE PERFORMED  
 (PER CONTAINER)

COMPOSITED ON RECEIPT  
 PRESERVATIVE ADDED ON RECEIPT

Please fill out all applicable areas completely

LAB USE ONLY

1	Flowback Sand	5/24	1800	SO	C	SB	N	TPH, pH, Free Liquids, % Moisture										
2								Chlorides, Sodium, Bromine										
3								TCLP Metals: Ar, Ba, Cd, Cr, Pb, Hg, Se										
4	A - Na, Cl, Bromine, Alcohol, P. Moist.							Ag, Cu, Zn, Ni										
5	↓ Formaldehyde							Alcohols, Glycols, Formaldehyde										
6	B - pH, Free Liquid, Phos, NH <sub>3</sub>							EPA 8260										
7	C Glycol							Total Phosphorus, Total Phenolics										
8	D Phenol							Ammonia - Nitrogen										
9	E TPH																	
10	F - T. Sample							48 HOUR TURNAROUND										
11	G TCLP Metals + Cu, Ni, Zn							DAY TURNAROUND										

DELIVERED BY: SG TEMPERATURE UPON RECEIPT: \_\_\_\_\_ °C ARRIVAL ON ICE: Y/N

RELINQUISHED BY: [Signature]	DATE: 5/25/10	TIME: 854	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY:	DATE: / /	TIME:
RELINQUISHED BY:	DATE: / /	TIME:	RECEIVED BY: Debbie Mc Casley	DATE: 5/25/10	TIME: 854



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.					<b>DEP USE ONLY</b>	
General Reference 287.54					Date Received & General Notes	
Date Prepared/Revised February 11, 2011						
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>						
Company Name Talisman Energy USA Inc.						
If a Subsidiary, Name of Parent Company Talisman Energy Inc.					EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2			
Company Address Last Line - City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext	
Company Contact Last Name Brown		First Name Dina	MI	Suffix		
Municipality Warrendale		County Allegheny				
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com				
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No						
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the TWL Associates 01-016 well pad site located at 1242 Swamp Road, Armenia Township, Bradford County, PA. The waste is temporarily stored onsite.						
Municipality	Armenia	County	Bradford	State	PA	
<b>SECTION B. WASTE DESCRIPTION</b>						
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame	
804	Fracing Fluid Waste (Flow Back Sand)	638	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal		
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time	
<b>1. GENERAL PROPERTIES</b>						
a.	pH Range	7.60	to	---	(based on analyses or knowledge)	
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)				
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon	
		Number of Solid or Liquid Phases of Separation		One		
		Describe each phase of separation. Sand				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>						
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.				<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
	638	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)

a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year.		
		<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year.		
	0	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown

Signature  Date 2/25/11

LAB ID: 08-00380  
LAB ID: 39-00401

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090957

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090957

PAGE: 1 of 4

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

TWL Assoc.

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 1 of 4

SAMPLE: **Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10090957-001A Composite

Sample Time: 08/30/2010 13:30

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Ethanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Isopropanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
t-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Propanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Isobutanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Sodium	1810 mg/Kg-dry		EPA 6010B	126	09/09/10 7:20	09/09/10	RMD-CV
Bromine	18.4 mg/kg	KN	HACH 8167	0.05	09/08/10 15:20	09/08/10	SMH-CV
1,1-Dichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Methylene chloride	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
2-Butanone	< 0.213 mg/Kg-dry		EPA 8260B	0.213	09/08/10 9:50	09/08/10	MTB-CV
trans-1,2-Dichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1-Dichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
cis-1,2-Dichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chloroform	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,1-Trichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Carbon tetrachloride	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Benzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Trichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

N Parameter is not NELAC certified

Q Due to matrix effects, not all quality control parameters met acceptance criteria

U Ammonia sample not distilled

Z Due to matrix bias, spike recovery was outside acceptance limits

MANAGER

*Carrie M. Davis*

DATE: 9/13/2010

LAB ID: 08-00380  
LAB ID: 39-00401

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090957

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090957

PAGE: 2 of 4

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

TWL Assoc.

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 2 of 4

Dibromomethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Bromodichloromethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
cis-1,3-Dichloropropene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Toluene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
4-Methyl-2-pentanone (MIBK)	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
trans-1,3-Dichloropropene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,2-Trichloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Tetrachloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Dibromochloromethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dibromoethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,1,2-Tetrachloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Ethylbenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
m,p-Xylene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
o-Xylene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Xylenes, Total	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Bromoform	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/10/10 13:26	09/10/10	MTB-CV
1,1,2,2-Tetrachloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2,3-Trichloropropane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,3-Dichlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,4-Dichlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chloride	3150 mg/Kg-dry	EPA 300.0	53.4	09/08/10 15:54	09/09/10	HDP-CV
Formaldehyde	< 1.1 mg/Kg-dry	NZ NIOSH 3500	1.1	09/10/10 8:10	09/10/10	LTW-CV
Percent Moisture	6.3 %	K SM2540G		09/09/10 12:30	09/10/10	SG-SA

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- K Sample was received past holding time.
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled
- Z Due to matrix bias, spike recovery was outside acceptance limits

MANAGER

*Cami M. Davis*

DATE: 9/13/2010



LAB ID: 08-00380  
LAB ID: 39-00401

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090957

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090957  
PAGE: 3 of 4  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

TWL Assoc.

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 3 of 4

SAMPLE: **Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10090957-001B  
Sample Time: 08/30/2010 13:30

Composite

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Moisture	6.30 %	K	Moisture Calc.	0.01	09/09/10 12:30	09/10/10	SG-SA
Ammonia as N	33.7 mg/kg-dry	U	Lachat	10.7	09/09/10 11:31	09/09/10	KAL-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	09/07/10 17:05	09/07/10	IC-SA
pH	7.60@19.5°C		EPA 9045C		09/10/10 10:00	09/10/10	SG-SA
Phosphorus	34 mg/kg-dry		EPA 365.3	5	09/09/10 10:30	09/10/10	MED-SA

SAMPLE: **Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10090957-001C  
Sample Time: 08/30/2010 13:30

Composite

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 10.00 mg/Kg		Glycols by 8015	10.00	09/10/10 0:00	09/10/10	
Propylene glycol	< 10.00 mg/Kg		Glycols by 8015	10.00	09/10/10 0:00	09/10/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: **Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10090957-001D  
Sample Time: 08/30/2010 13:30

Composite

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	8.59 mg/Kg DRY	K	EPA 9065	1.33	09/09/10 7:15	09/09/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: **Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10090957-001E  
Sample Time: 08/30/2010 13:30

Composite

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Total Petroleum Hydrocarbons	370 mg/Kg		EPA 9071		09/08/10 14:30	09/08/10	

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

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- K Sample was received past holding time.
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled
- Z Due to matrix bias, spike recovery was outside acceptance limits

MANAGER

*Cari M. Davis*

DATE: 9/13/2010

LAB ID: 08-00380  
LAB ID: 39-00401

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090957

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
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PAGE: 4 of 4

PO#:

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PHONE: (607) 562-4000  
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## TEST REPORT

TWL Assoc.

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 4 of 4

Sample Note: Analysis performed by Microbac Laboratories, Inc.-Erie Division

SAMPLE: **TCLP Leachate of Flowback Sand**  
SAMPLED BY: LS

Lab ID: 10090957-001G  
Sample Time: 09/08/2010 10:00

Composite

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	09/09/10 10:00	09/09/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	09/09/10 12:45	09/09/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Copper - TCLP extracted	0.733 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	09/09/10 12:45	09/09/10	RMD-CV

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

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- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled
- Z Due to matrix bias, spike recovery was outside acceptance limits

MANAGER

*Cami M. Davis*

DATE: 9/13/2010



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.					<b>DEPOSE ONLY</b>		
General Reference 287.54					Date Received & General Notes		
Date Prepared/Revised February 11, 2011							
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>							
Company Name Talisman Energy USA Inc.							
If a Subsidiary, Name of Parent Company Talisman Energy Inc.					EPA Generator ID# N/A		
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2				
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext		
Company Contact Last Name Brown		First Name Dina	MI	Suffix			
Municipality Warrendale		County Allegheny					
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com					
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No							
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (03-004) R well pad site located at 1226 Besley Road, Columbia Township, Bradford County, PA. The waste is temporarily stored onsite.							
Municipality	Columbia	County	Bradford	State	PA		
<b>SECTION B. WASTE DESCRIPTION</b>							
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame		
804	Fracing Fluid Waste (Flow Back Sand)	546	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal			
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time		
<b>1. GENERAL PROPERTIES</b>							
a.	pH Range	7.54	to	8.04	(based on analyses or knowledge)		
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)					
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon		
		Number of Solid or Liquid Phases of Separation		One			
		Describe each phase of separation. Sand					
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>							
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.					<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.					<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.					<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.					<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.					<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
SECTION C. MANAGEMENT OF RESIDUAL WASTE			
1. PROCESSING OR DISPOSAL FACILITY(IES)			
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.			
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 546 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name	_____	
	Address Line 1	_____	
	Address Line 1	_____	
	Address City State ZIP	_____	
	Municipality	County	
c.	Facility Contact Name	_____	
	Title	_____	
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		
2. BENEFICIAL USE			
a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_


I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature 

Date 2/25/11

PA ID #: 08-00380  
NY ID # 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10083673

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10083673

PAGE: 1 of 3

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

1 Pad

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DATE: 08/20/2010 11:51

Page 1 of 3

SAMPLE: **Flowback Sand**

Lab ID: 10083673-001A

Composite

SAMPLED BY: SG

Sample Time: 08/15/2010 13:30

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
Ethanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
Isopropanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
t-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
n-Propanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
Isobutanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
n-Butanol	< 4 mg/Kg	N	Alcohols by FID	4	08/26/10 9:32	08/26/10	JJ6-CV
Sodium	740 mg/Kg-dry		EPA 6010B	137	08/24/10 15:00	08/24/10	RMD-CV
Bromine	<0.46 mg/Kg	KN	HACH 8167	0.05	08/23/10 17:32	08/23/10	TLB-CV
Styrene	< 0.041 mg/Kg-dry		EPA 8260B	0.041	08/24/10 8:50	08/24/10	DN-CV
Chloride	1130 mg/Kg-dry		EPA 300.0	51.5	08/23/10 14:05	08/23/10	HDP-CV
Formaldehyde	< 1.0 mg/Kg-dry	NZ	NIOSH 3500	1.0	08/25/10 8:10	08/25/10	LTW-CV
Percent Moisture	3.0 %		SM2540G		08/23/10 13:30	08/24/10	MED-SA

SAMPLE: **Flowback Sand**

Lab ID: 10083673-001B

Composite

SAMPLED BY: SG

Sample Time: 08/15/2010 13:30

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Moisture	3.00 %		Moisture Calc.	0.01	08/23/10 13:30	08/24/10	MED-SA
Ammonia as N	10.5 mg/kg-dry	UB	Lachat	1.0	08/23/10 14:46	08/23/10	RHN-SA
Free Liquid	< 0.1 %		EPA 9095A	0.1	08/23/10 15:35	08/23/10	IC-SA
pH	8.04@21.1°C		EPA 9045C		08/23/10 16:12	08/23/10	MED-SA
Phosphorus	28 mg/kg-dry		EPA 365.3	5	08/23/10 15:30	08/24/10	JP-SA

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

B Analyte detected in the associated Method Blank

K Sample was received past holding time.

N Parameter is not NELAC certified

U Ammonia sample not distilled

Z Due to matrix bias, spike recovery was outside acceptance limits

MANAGER

*Carrie M. Davis*

DATE: 8/26/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Phone: (570) 888-0169  
Fax: (570) 888-0717

Work Order: 10083673

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10083673  
PAGE: 2 of 3  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

1 Pad

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DATE: 08/20/2010 11:51

Page 2 of 3

**SAMPLE: Flowback Sand**

Lab ID: 10083673-001C

Composite

SAMPLED BY: SG

Sample Time: 08/15/2010 13:30

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	08/25/10 0:00	08/25/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

**SAMPLE: Flowback Sand**

Lab ID: 10083673-001D

Composite

SAMPLED BY: SG

Sample Time: 08/15/2010 13:30

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	6.22 mg/Kg DRY	EPA 9065	1.31	08/25/10 7:15	08/25/10	

Sample Note: Analysis performed by QC Laboratories.

**SAMPLE: Flowback Sand**

Lab ID: 10083673-001E

Composite

SAMPLED BY: SG

Sample Time: 08/15/2010 13:30

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Total Petroleum Hydrocarbons	1420 mg/Kg	EPA 9071		08/23/10 11:15	08/23/10	

Sample Note: Analysis performed by Microbac-Erie

**SAMPLE: TCLP Leachate of Flowback Sand**

Lab ID: 10083673-001G

Composite

SAMPLED BY: SG

Sample Time: 08/21/2010 9:00

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	08/24/10 8:45	08/24/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/24/10 10:50	08/24/10	RMD-CV
Barium - TCLP extracted	< 10.00 mg/L	EPA 6010B	10.00	08/24/10 10:50	08/24/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	08/24/10 10:50	08/24/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/24/10 10:50	08/24/10	RMD-CV

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- K Sample was received past holding time.
- N Parameter is not NELAC certified
- U Ammonia sample not distilled
- Z Due to matrix bias, spike recovery was outside acceptance limits

MANAGER

*Candice M. Davis*

DATE: 8/26/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10083673

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10083673

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**TEST REPORT**

1 Pad

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Page 3 of 3

Copper - TCLP extracted	0.707 mg/L	EPA 6010B	0.100	08/24/10 10:50	08/24/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/24/10 10:50	08/24/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	08/24/10 10:50	08/24/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	08/24/10 10:50	08/24/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	08/24/10 10:50	08/24/10	RMD-CV
Zinc - TCLP extracted	0.666 mg/L	EPA 6010B	0.200	08/24/10 10:50	08/24/10	RMD-CV

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- U Ammonia sample not distilled
- Z Due to matrix bias, spike recovery was outside acceptance limits

MANAGER

*Amie M. Davis*

DATE: 8/26/2010



PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090959

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090959

PAGE: 1 of 4

PO#:

PWS ID#

PHONE: (607) 562-4000  
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**TEST REPORT**

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 1 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10090959-001A

Composite

SAMPLED BY: LS

Sample Time: 08/30/2010 12:19

SLOQ

<u>Test</u>	<u>Result</u>		<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Ethanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Isopropanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
t-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Propanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Isobutanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
n-Butanol	< 4 mg/Kg	NQ	Alcohols by FID	4	09/10/10 8:24	09/10/10	JJ6-CV
Sodium	2870 mg/Kg-dry		EPA 6010B	130	09/09/10 7:20	09/09/10	RMD-CV
Bromine	6.90 mg/kg	KN	HACH 8167	0.05	09/08/10 15:26	09/08/10	SMH-CV
1,1-Dichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Methylene chloride	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
2-Butanone	< 0.213 mg/Kg-dry		EPA 8260B	0.213	09/08/10 9:50	09/08/10	MTB-CV
trans-1,2-Dichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1-Dichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
cis-1,2-Dichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chloroform	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,1-Trichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Carbon tetrachloride	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Benzene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloroethane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Trichloroethene	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichloropropane	< 0.043 mg/Kg-dry		EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

K Sample was received past holding time.

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

Q Due to matrix effects, not all quality control parameters met acceptance criteria

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 9/13/2010

PA ID #: 08-00380  
NY ID # 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090959

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090959

PAGE: 2 of 4

PO#:

PWS ID#

PHONE: (607) 562-4000  
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**TEST REPORT**

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 2 of 4

Dibromomethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Bromodichloromethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
cis-1,3-Dichloropropene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Toluene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
4-Methyl-2-pentanone (MIBK)	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
trans-1,3-Dichloropropene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,2-Trichloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Tetrachloroethene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Dibromochloromethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dibromoethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,1,1,2-Tetrachloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Ethylbenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
m,p-Xylene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
o-Xylene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Xylenes, Total	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Bromoform	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/10/10 13:26	09/10/10	MTB-CV
1,1,2,2-Tetrachloroethane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2,3-Trichloropropane	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,3-Dichlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,4-Dichlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
1,2-Dichlorobenzene	< 0.043 mg/Kg-dry	EPA 8260B	0.043	09/08/10 9:50	09/08/10	MTB-CV
Chloride	5890 mg/Kg-dry	EPA 300.0	53.4	09/08/10 15:54	09/09/10	HDP-CV
Formaldehyde	1.5 mg/Kg-dry	N NIOSH 3500	1.1	09/10/10 8:10	09/10/10	LTW-CV
Percent Moisture	6.3 %	K SM2540G		09/09/10 12:30	09/10/10	SG-SA

REMARKS:

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K Sample was received past holding time.

L Value above calibration range but within annually verified linear range

N Parameter is not NELAC certified

Q Due to matrix effects, not all quality control parameters met acceptance criteria

U Ammonia sample not distilled

MANAGER

*Amie M. Davis*

DATE: 9/13/2010

PA ID #: 08-00380  
NY ID # 11216

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090959

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090959  
PAGE: 3 of 4  
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PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 3 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10090959-001B

Composite

SAMPLED BY: LS

Sample Time: 08/30/2010 12:19

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Moisture	6.30 %	K Moisture Calc.	0.01	09/09/10 12:30	09/10/10	SG-SA
Ammonia as N	54.7 mg/kg-dry	U Lachat	10.7	09/09/10 11:31	09/09/10	KAL-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	09/07/10 17:15	09/07/10	IC-SA
pH	7.54@19.8°C	EPA 9045C		09/10/10 10:00	09/10/10	SG-SA
Phosphorus	27 mg/kg-dry	EPA 365.3	5	09/09/10 10:30	09/10/10	MED-SA

SAMPLE: **Flowback Sand**

Lab ID: 10090959-001C

Composite

SAMPLED BY: LS

Sample Time: 08/30/2010 12:19

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Ethylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/10/10 0:00	09/10/10	
Propylene glycol	< 10.00 mg/Kg	Glycols by 8015	10.00	09/10/10 0:00	09/10/10	

Sample Note: Analysis performed by Summit Environmental Technologies, Inc.

SAMPLE: **Flowback Sand**

Lab ID: 10090959-001D

Composite

SAMPLED BY: LS

Sample Time: 08/30/2010 12:19

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Phenolics, Total Recoverable	8.80 mg/Kg DRY	K EPA 9065	1.33	09/09/10 7:15	09/09/10	

Sample Note: Analysis performed by QC Laboratories.

SAMPLE: **Flowback Sand**

Lab ID: 10090959-001E

Composite

SAMPLED BY: LS

Sample Time: 08/30/2010 12:19

Test	Result	Method	SLOQ	Analysis Start	Analysis End	Analyst *
Total Petroleum Hydrocarbons	230 mg/Kg	EPA 9071		09/08/10 14:30	09/08/10	

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- K Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Cari M. Davis*

DATE: 9/13/2010

PA ID #: 08-00380  
NY ID #: 11216

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10090959

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10090959  
PAGE: 4 of 4  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

RECEIVED FOR LAB BY: DLM2

DATE: 09/07/2010 16:25

Page 4 of 4

Sample Note: Analysis performed by Microbac Laboratories, Inc.-Erie Division

SAMPLE: **TCLP Leachate of Flowback Sand**

Lab ID: 10090959-001G

Composite

SAMPLED BY: LS

Sample Time: 09/08/2010 10:00

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	09/09/10 10:00	09/09/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Barium - TCLP extracted	38.5 mg/L L	EPA 6010B	10.00	09/09/10 12:45	09/09/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Copper - TCLP extracted	0.351 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	09/09/10 12:45	09/09/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	09/09/10 12:45	09/09/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	09/09/10 12:45	09/09/10	RMD-CV

REMARKS:

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\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

- K Sample was received past holding time.
- L Value above calibration range but within annually verified linear range
- N Parameter is not NELAC certified
- Q Due to matrix effects, not all quality control parameters met acceptance criteria
- U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 9/13/2010



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.  General Reference 287.54	<b>DEP USE ONLY</b>
	Date Received & General Notes
Date Prepared/Revised	February 11, 2011

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

Company Name Talisman Energy USA Inc.				
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A
Company Mailing Address Line 1 50 Pennwood Place		Company Mailing Address Line 2		
Company Address Last Line – City Warrendale	State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown	First Name Dina	MI	Suffix	
Municipality Warrendale	County Allegheny			
Contact Phone (724) 814-5321	Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				
If 'No', describe location of waste generation and storage. Waste is generated during natural gas completion operations at the (01-041/042) R well pad site located at 778 Cease Drive, Troy Township, Bradford County, PA. The waste is temporarily stored onsite.				
Municipality	Troy	County	Bradford	State PA

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
804	Fracing Fluid Waste (Flow Back Sand)	645	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	<input type="checkbox"/> One Time
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	

**1. GENERAL PROPERTIES**

a.	pH Range	7.20	to	---	(based on analyses or knowledge)
b.	Physical State	<input type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance	Color	Greyish Black	Odor	Hydrocarbon
		Number of Solid or Liquid Phases of Separation		One	
		Describe each phase of separation. Sand			

**2. CHEMICAL ANALYSIS ATTACHMENTS**

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

3. PROCESS DESCRIPTION & SCHEMATIC ATTACHMENTS			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

a.	Solid waste permit number(s) for processing or disposal facility being utilized. 100361		
b.	Facility Name	McKean County Landfill	
	Address Line 1	19 Ness Lane	
	Address Line 1		
	Address City State ZIP	Kane PA	16735
	Municipality	Kane County	McKean
c.	Facility Contact Name	Mike Manderfeld	
	Title	General Manager	
	Phone	814-778-9931	Email Address manderfeld@gmail.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 645 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized.		
b.	Facility Name		
	Address Line 1		
	Address Line 1		
	Address City State ZIP		
	Municipality	County	
c.	Facility Contact Name		
	Title		
	Phone	Email Address	
d.	Volume of waste shipped to processing or disposal facility in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. 0 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official \_\_\_\_\_ Title Environmental Specialist

Dina Brown \_\_\_\_\_

Signature  \_\_\_\_\_

Date 2/25/11

LAB ID: 08-00380  
LAB ID: 39-00401

# Benchmark Analytics, Inc. Eastern Division

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10041150

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10041150  
PAGE: 1 of 4  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

## TEST REPORT

Pad

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DATE: 04/08/2010 12:32

Page 1 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10041150-001B

Grab

SAMPLED BY: SG

Sample Time: 04/07/2010 20:30

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Methanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
Ethanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
Isopropanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
t-Butanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
n-Propanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
Isobutanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
n-Butanol	< 20 mg/Kg	Alcohols by FID	20	04/14/10 12:24	04/14/10	JJ6-CV
Phosphorus	< 41.0 mg/Kg-dry	EPA 6010B	41.0	04/09/10 9:15	04/12/10	RMD-CV
Bromine	4.6 mg/kg	HACH 8167	0.05	04/12/10 15:23	04/12/10	SMH-CV
Formaldehyde	< 1.0 mg/Kg-dry	NIOSH 3500	1.0	04/12/10 8:30	04/12/10	LTW-CV
Percent Moisture	3.7 %	SM2540G		04/13/10 17:25	04/14/10	DMB-CV
Total Petroleum Hydrocarbons	< 260 mg/Kg-dry	EPA 1664A	260	04/14/10 13:00	04/15/10	DTG-CV

SAMPLE: **Flowback Sand**

Lab ID: 10041150-001C

Grab

SAMPLED BY: SG

Sample Time: 04/07/2010 20:30

SLOQ

<u>Test</u>	<u>Result</u>	<u>Method</u>		<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
1,1-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Methylene chloride	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
2-Butanone	< 0.208 mg/Kg-dry	EPA 8260B	0.208	04/09/10 9:38	04/09/10	DN-CV
trans-1,2-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
cis-1,2-Dichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Chloroform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1,1-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Carbon tetrachloride	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV

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L Value above calibration range but within annually verified linear range

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 4/15/2010



LAB ID: 08-00380  
LAB ID: 39-00401

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10041150

Phone: (570) 888-0169

Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10041150  
PAGE: 2 of 4  
PO#:  
PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

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DATE: 04/08/2010 12:32

Page 2 of 4

Benzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2-Dichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Trichloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2-Dichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Dibromomethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Bromodichloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
cis-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Toluene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
4-Methyl-2-pentanone (MIBK)	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
trans-1,3-Dichloropropene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1,2-Trichloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Tetrachloroethene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Dibromochloromethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2-Dibromoethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Chlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1,1,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Ethylbenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
m,p-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
o-Xylene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Xylenes, Total	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
Bromoform	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,1,2,2-Tetrachloroethane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2,3-Trichloropropane	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,3-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,4-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV
1,2-Dichlorobenzene	< 0.042 mg/Kg-dry	EPA 8260B	0.042	04/09/10 9:38	04/09/10	DN-CV

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L Value above calibration range but within annually verified linear range

U Ammonia sample not distilled

MANAGER

*Carrie M. Davis*

DATE: 4/15/2010

LAB ID: 08-00380  
LAB ID: 39-00401

**Benchmark Analytics, Inc.**  
**Eastern Division**

2566 Pennsylvania Ave.  
Sayre, PA 18840

Work Order: 10041150

Phone: (570) 888-0169  
Fax: (570) 888-0717

SEND DATA TO:

NAME: Steve Gridley  
COMPANY: Talisman Energy USA, Inc.  
ADDRESS: 337 Daniel Zenker Dr  
Horseheads, NY 14845

WO#: 10041150

PAGE: 3 of 4

PO#:

PWS ID#

PHONE: (607) 562-4000  
FAX: (607) 562-4001

**TEST REPORT**

Pad

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DATE: 04/08/2010 12:32

Page 3 of 4

SAMPLE: **Flowback Sand**

Lab ID: 10041150-001D

Grab

SAMPLED BY: SG

Sample Time: 04/07/2010 20:30

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Ethylene glycol	< 0.50 mg/Kg	Glycols by 8015	0.50	04/09/10 0:00	04/13/10	
Propylene glycol	< 0.50 mg/Kg	Glycols by 8015	0.50	04/09/10 0:00	04/13/10	

Sample Note: Analysis performed by Life Science

SAMPLE: **Flowback Sand**

Lab ID: 10041150-001E

Grab

SAMPLED BY: SG

Sample Time: 04/07/2010 20:30

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Moisture	6.55 %	Moisture Calc.	0.01	04/13/10 14:00	04/14/10	NFM-SA
Ammonia as N	< 10 mg/kg-dry U	Lachat	10	04/15/10 12:07	04/15/10	KAL-SA
Free Liquid	< 0.1 %	EPA 9095A	0.1	04/14/10 11:30	04/14/10	IC-SA
pH	7.20@22.7°C	EPA 9045C		04/14/10 8:00	04/15/10	NFM-SA

SAMPLE: **Flowback Sand**

Lab ID: 10041150-001F

Grab

SAMPLED BY: SG

Sample Time: 04/07/2010 20:30

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Phenolics, Total Recoverable	9.50 mg/Kg Dry	EPA 9065		04/13/10 10:30	04/13/10	

Sample Note: Analysis performed by QC lab

SAMPLE: **TCLP Leachate of Flowback Sand**

Lab ID: 10041150-001G

Grab

SAMPLED BY: SG

Sample Time: 04/07/2010 20:30

<u>Test</u>	<u>Result</u>	<u>Method</u>	<u>SLOQ</u>	<u>Analysis Start</u>	<u>Analysis End</u>	<u>Analyst *</u>
Mercury - TCLP extracted	< 0.0008 mg/L	EPA 7470A	0.0008	04/12/10 9:30	04/13/10	KW-CV
Arsenic - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	04/12/10 10:25	04/12/10	RMD-CV
Barium - TCLP extracted	18.9 mg/L L	EPA 6010B	10.00	04/12/10 10:25	04/12/10	RMD-CV
Cadmium - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	04/12/10 10:25	04/12/10	RMD-CV
Chromium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	04/12/10 10:25	04/12/10	RMD-CV

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 4/15/2010

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LAB ID: 39-00401

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**Eastern Division**

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**TEST REPORT**

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RECEIVED FOR LAB BY: WCB

DATE: 04/08/2010 12:32

Page 4 of 4

Copper - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	04/12/10 10:25	04/12/10	RMD-CV
Lead - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	04/12/10 10:25	04/12/10	RMD-CV
Nickel - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	04/12/10 10:25	04/12/10	RMD-CV
Selenium - TCLP extracted	< 0.500 mg/L	EPA 6010B	0.500	04/12/10 10:25	04/12/10	RMD-CV
Silver - TCLP extracted	< 0.100 mg/L	EPA 6010B	0.100	04/12/10 10:25	04/12/10	RMD-CV
Zinc - TCLP extracted	< 0.200 mg/L	EPA 6010B	0.200	04/12/10 10:25	04/12/10	RMD-CV

Sample Note: The temperature of the extraction room exceeded the range of 23 ± 2°C

REMARKS:

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted on the Analytical Report.

\* CV = Benchmark Analytics, Inc. Center Valley, PA; SA = Benchmark Analytics, Inc. Sayre, PA

L Value above calibration range but within annually verified linear range

U Ammonia sample not distilled

MANAGER

*Cami M. Davis*

DATE: 4/15/2010



TALISMAN ENERGY USA INC.  
50 Pennwood Place  
Warrendale, Pennsylvania 15086  
Tel: (724) 814-5300  
Fax: (724) 814-5301

February 28, 2011

Pennsylvania Department of Environmental Protection  
Northcentral Regional Office  
Bureau of Waste Management  
208 W. 3<sup>rd</sup> Street, Suite 101  
Williamsport, PA 17701

RE: Submittal of Form 26R Chemical Analysis of Residual Waste Annual Report by the Generator for 2010

To Whom It May Concern:

Please find enclosed Talisman Energy USA Inc.'s Form 26R Chemical Analysis of Residual Waste Annual Report by the Generator for 2010. Should you have any questions or comments concerning our reports please do not hesitate to contact me at (724) 814-5321 or [dybrown@talismanusa.com](mailto:dybrown@talismanusa.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Dina E. Brown".

Dina E. Brown  
Environmental Specialist

Enclosures



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.	<b>DEP USE ONLY</b>
General Reference 287.54	Date Received & General Notes
Date Prepared/Revised February 11, 2011	

**SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION**

<b>Company Name</b> Talisman Energy USA Inc.				
<b>If a Subsidiary, Name of Parent Company</b> Talisman Energy Inc.				<b>EPA Generator ID#</b> N/A
<b>Company Mailing Address Line 1</b> 50 Pennwood Place		<b>Company Mailing Address Line 2</b>		
<b>Company Address Last Line -- City</b> Warrendale	<b>State</b> PA	<b>Zip+4</b> 15086	<b>Phone</b> (724) 814-5300	<b>Ext</b>
<b>Company Contact Last Name</b> Brown	<b>First Name</b> Dina	<b>MI</b>	<b>Suffix</b>	
<b>Municipality</b> Warrendale		<b>County</b> Allegheny		
<b>Contact Phone</b> (724) 814-5321	<b>Ext</b>	<b>Contact Email Address</b> dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <span style="float: right;"><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</span>				
If 'No', describe location of waste generation and storage. Waste is generated from the compressors at the Staland Compressor Station site located at 374 Fellows Creek Road in Ward Township, Tioga County, PA. The waste is temporarily stored in tanks onsite.				
<b>Municipality</b>	<b>Ward</b>	<b>County</b> Tioga	<b>State</b> PA	

**SECTION B. WASTE DESCRIPTION**

Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure	Time Frame
808	Servicing Fluid, Oil/water emulsion	93	<input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time

**1. GENERAL PROPERTIES**

a.	<b>pH Range</b> 6 to 7 (based on analyses or knowledge)
b.	<b>Physical State</b> <input checked="" type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)
c.	<b>Physical Appearance</b> Color <u>translucent yellow/brown</u> Odor <u>hydrocarbon</u> Number of Solid or Liquid Phases of Separation <u>2</u> Describe each phase of separation. <u>Liquid and Solid</u>

**2. CHEMICAL ANALYSIS ATTACHMENTS**

a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

<b>3. PROCESS DESCRIPTION &amp; SCHEMATIC ATTACHMENTS</b>			
<b>a.</b>	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>b.</b>	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
<b>c.</b>	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A

**SECTION C. MANAGEMENT OF RESIDUAL WASTE**

**1. PROCESSING OR DISPOSAL FACILITY(IES)**

The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.

<b>a.</b>	Solid waste permit number(s) for processing or disposal facility being utilized. 8-0728-00004/00013		
<b>b.</b>	Facility Name	Chemung County Landfill	
	Address Line 1	1690 Lake Street.	
	Address Line 1		
	Address City State ZIP	Elmira NY 14903	
	Municipality	Elmira City	County Chemung
<b>c.</b>	Facility Contact Name	Carla Canjar	
	Title	Environmental Manager	
	Phone	(585) 797-5941	Email Address carla.canjar@casella.com
<b>d.</b>	Volume of waste shipped to processing or disposal facility in the previous year. 24 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
<b>a.</b>	Solid waste permit number(s) for processing or disposal facility being utilized. PA301344		
<b>b.</b>	Facility Name	Environmental Recovery Corporation of PA	
	Address Line 1	1076 Old Manheim Pike	
	Address Line 1		
	Address City State ZIP	Lancaster PA 17601	
	Municipality	City of Lancaster	County Lancaster
<b>c.</b>	Facility Contact Name	Terry Leatherman	
	Title	General Manager	
	Phone	(717) 393-2627	Email Address info@ercofpa.com
<b>d.</b>	Volume of waste shipped to processing or disposal facility in the previous year. 69 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		

**2. BENEFICIAL USE**

<b>a.</b>	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>b.</b>	Volume of waste beneficially used in the previous year.	<input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)	

### SECTION D. CERTIFICATION

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_  
Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_  
Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_  
Date Submitted: \_\_\_\_\_

Name of Responsible Official

Title Environmental Specialist

Dina Brown

Signature 

Date 2/25/11



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form 26R, reference the item number and identify the date prepared. The date on attached sheets needs to match the date noted below.				<b>DEP USE ONLY</b>	
General Reference 287.54				Date Received & General Notes	
Date Prepared/Revised		February 11, 2011			
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>					
Company Name Talisman Energy USA Inc.					
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2		
Company Address Last Line – City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown		First Name Dina	MI	Suffix	
Municipality Warrendale			County Allegheny		
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
If 'No', describe location of waste generation and storage. Waste is generated from the compressors at the Compressor Station located at 193 Buckwheat Road, Troy Township, Bradford County, PA. The waste is temporarily stored in tanks onsite.					
Municipality Troy		County Bradford		State PA	
<b>SECTION B. WASTE DESCRIPTION</b>					
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
808	Servicing Fluid, Oil/water emulsion	327	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time
<b>1. GENERAL PROPERTIES</b>					
a.	pH Range	6	to	7	(based on analyses or knowledge)
b.	Physical State	<input checked="" type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)			
c.	Physical Appearance	Color	translucent yellow/brown		Odor
		Number of Solid or Liquid Phases of Separation		2	
		Describe each phase of separation. Liquid and Solid			
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>					
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.			<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.			<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.			<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.			<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A



<b>3. PROCESS DESCRIPTION &amp; SCHEMATIC ATTACHMENTS</b>			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<b>SECTION C. MANAGEMENT OF RESIDUAL WASTE</b>			
<b>1. PROCESSING OR DISPOSAL FACILITY(IES)</b>			
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.			
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 08-0728-00004/00013		
b.	Facility Name	Chemung County Landfill	
	Address Line 1	1690 Lake Street	
	Address Line 1		
	Address City State ZIP	Elmira NY	14903
	Municipality	Elmira	County Chemung
c.	Facility Contact Name	Carla Canjar	
	Title	Environmental Manager	
	Phone	585-797-5941	Email Address carla.canjar@casella.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 165 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized. PA301344		
b.	Facility Name	Environmental Recovery Corporation of PA	
	Address Line 1	10760 Old Manheim Pike	
	Address Line 1		
	Address City State ZIP	Lancaster PA	17601
	Municipality	City of Lancaster	County Lancaster
c.	Facility Contact Name	Terry Leatherman	
	Title	General Manager	
	Phone	717-393-2627	Email Address info@ercofpa.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 162 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
<b>2. BENEFICIAL USE</b>			
a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Name of Responsible Official

Title Environmental Specialist

Dina Brown

Signature 

Date 2/25/11



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WASTE MANAGEMENT

**FORM 26R**  
**CHEMICAL ANALYSIS OF RESIDUAL WASTE**  
**ANNUAL REPORT BY THE GENERATOR**

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General Reference 287.54				Date Received & General Notes	
Date Prepared/Revised		February 11, 2011			
<b>SECTION A. CLIENT (GENERATOR OF THE WASTE) INFORMATION</b>					
Company Name Talisman Energy USA Inc.					
If a Subsidiary, Name of Parent Company Talisman Energy Inc.				EPA Generator ID# N/A	
Company Mailing Address Line 1 50 Pennwood Place			Company Mailing Address Line 2		
Company Address Last Line -- City Warrendale		State PA	Zip+4 15086	Phone (724) 814-5300	Ext
Company Contact Last Name Brown		First Name Dina	MI	Suffix	
Municipality Warrendale			County Allegheny		
Contact Phone (724) 814-5321		Ext	Contact Email Address dybrown@talismanusa.com		
Is the waste generated at the Company Mailing Address (noted above)? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No					
If 'No', describe location of waste generation and storage. Waste is generated from the compressors at the Compressor Station located at 1614 Watkins Hill Road, Columbia Township, Bradford County, PA. The waste is temporarily stored in tanks onsite.					
Municipality Columbia		County Bradford		State PA	
<b>SECTION B. WASTE DESCRIPTION</b>					
Residual Waste Code	Residual Waste Code Description	Amount	Unit of Measure		Time Frame
808	Servicing Fluid, Oil/water emulsion	31	<input type="checkbox"/> cu yd	<input type="checkbox"/> gal	
			<input type="checkbox"/> lb	<input checked="" type="checkbox"/> ton	<input type="checkbox"/> One Time
<b>1. GENERAL PROPERTIES</b>					
a.	pH Range 6 to 7 (based on analyses or knowledge)				
b.	Physical State <input checked="" type="checkbox"/> Liquid Waste (EPA Method 9095) <input checked="" type="checkbox"/> Solid (EPA Method 9095) <input type="checkbox"/> Gas (ambient temperature & pressure)				
c.	Physical Appearance Color translucent yellow/brown Odor hydrocarbon Number of Solid or Liquid Phases of Separation 2 Describe each phase of separation. Liquid and Solid				
<b>2. CHEMICAL ANALYSIS ATTACHMENTS</b>					
a.	The results of a detailed chemical characterization of the waste, as described in the instructions, is attached.				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b.	A detailed description of the waste sampling method is attached.				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
c.	The quality assurance/quality control procedures employed by the laboratory(ies) is attached.				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
d.	The results of the hazardous waste determination is attached.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
e.	If applicable, a detailed explanation supporting use of generator knowledge in lieu of actual chemical analysis is attached.				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A

<b>3. PROCESS DESCRIPTION &amp; SCHEMATIC ATTACHMENTS</b>			
a.	A detailed description of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
b.	A schematic of the manufacturing and/or pollution control processes producing the waste, as specified in the instructions, is attached.	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
c.	If portions of the information submitted are confidential, the substantiation for a confidentiality claim, as described in the instructions, is attached.	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A
<b>SECTION C. MANAGEMENT OF RESIDUAL WASTE</b>			
<b>1. PROCESSING OR DISPOSAL FACILITY(IES)</b>			
The area below (a.-d.) will accommodate the identification of two facilities. Attach additional sheets if necessary.			
a.	Solid waste permit number(s) for processing or disposal facility being utilized. 8-0728-00004/00013		
b.	Facility Name	Chemung County Landfill	
	Address Line 1	1690 Lake Street	
	Address Line 1		
	Address City State ZIP	Elmira NY 14903	
	Municipality	Elmira City	County Chemung
c.	Facility Contact Name	Carla Canjar	
	Title	Environmental Manager	
	Phone	585-797-5941	Email Address carla.canjar@casella.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 9 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
a.	Solid waste permit number(s) for processing or disposal facility being utilized. PA301344		
b.	Facility Name	Environmental Recovery Corporation of PA	
	Address Line 1	1076 Old Manheim Pike	
	Address Line 1		
	Address City State ZIP	Lancaster PA 17601	
	Municipality	City of Lancaster	County Lancaster
c.	Facility Contact Name	Terry Leatherman	
	Title	General Manager	
	Phone	717-393-2627	Email Address info@ercofpa.com
d.	Volume of waste shipped to processing or disposal facility in the previous year. 22 <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input checked="" type="checkbox"/> ton (check one)		
<b>2. BENEFICIAL USE</b>			
a.	Has the waste been approved for beneficial use? If "Yes", list the general permit number or approval number.		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
b.	Volume of waste beneficially used in the previous year. <input type="checkbox"/> cu yd <input type="checkbox"/> gal <input type="checkbox"/> lb <input type="checkbox"/> ton (check one)		

**SECTION D. CERTIFICATION**

I certify, under penalty of law, that I have personally examined and am familiar with the information submitted in this Annual Report and all attached documents and that based upon my inquiry of those individuals immediately responsible for obtaining the information, I verify that the submitted information is true, accurate and complete to the best of my knowledge. I understand that the submission of false information herein is made subject to the penalties of 18 Pa. C.S. §4904, relating to unsworn falsification to authorities, which include fine and imprisonment.

Check the following, if applicable:

I certify the information required in Section B-1, General Properties was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-2, Chemical Analysis was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

Date Submitted: \_\_\_\_\_

I certify the information required in Section B-3, Process Description and Schematic, was supplied to the Department for the year \_\_\_\_\_ and has not changed.

Form Submitted:  Form 26R  
 Other (specify) \_\_\_\_\_

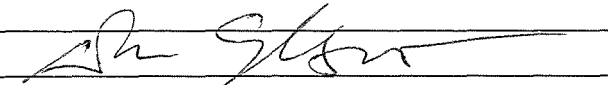
Date Submitted: \_\_\_\_\_

Name of Responsible Official

Title Environmental Specialist

Dina Brown

Signature



Date

2/25/11