

Texas New York Washington, DC Connecticut Seattle Dubai London Jason B. Hutt Partner

202.828.5850 Office 202.857.2114 Fax

jason.hutt@bgllp.com

Bracewell & Giuliani LLP 2000 K Street NW Suite 500 Washington, DC 20006-1872

May 26, 2011

By FedEx

Jacqueline Morrison Land and Chemicals Division (3LC00) U.S. Environmental Protection Agency Region III 1650 Arch Street Philadelphia, Pennsylvania 19103

Re: Request for Information on Marcellus Shale Flowback Water

Dear Ms. Morrison:

As discussed with Humane Zia and in our meeting today with EPA Region III, enclosed please find Chesapeake Energy Corporation's response to RFI Nos. 1 and 4 of United States Environmental Protection Agency Region III's ("EPA Region III") Request for Information dated May 12, 2011 (the "RFI"), CHK00000001-CHK00000024. Subject to our discussion on Friday, May 27, 2011 with Bill Early regarding how best to prioritize the EPA Region III's pending requests for information, Chesapeake intends to continue working diligently and in good faith to respond to this RFI on a rolling basis. Chesapeake expects to complete its response within the next two weeks. In the meantime, please do not hesitate to contact the undersigned with any questions regarding this matter.

Very truly yours,

Brącewell & Giuliani LLP

ason B. Hothy

Jason B. Hutt

Enclosure

cc: Humane Zia, USEPA Region III

Steven Feisal, Chesapeake Energy Corporation Mike Brownell, Chesapeake Energy Corporation

Stephanie Timmermeyer, Chesapeake Energy Corporation



Texas New York Washington, DC Connecticut Seattle Dubai London Jason B. Hutt Partner

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Bracewell & Giuliani LLP 2000 K Street NW Suite 500 Washington, DC 20006-1872

June 9, 2011

By FedEx

Jacqueline Morrison Land and Chemicals Division (3LC00) U.S. Environmental Protection Agency Region III 1650 Arch Street Philadelphia, Pennsylvania 19103

Re: Request for Information on Marcellus Shale Flowback Water

Dear Ms. Morrison:

Enclosed please find Chesapeake Energy Corporation's updated response to RFI No. 1 and response to RFI Nos. 2, 3, 5, and 6 of United States Environmental Protection Agency Region III's ("EPA Region III") Request for Information dated May 12, 2011 (the "RFI"), CHK00000025-CHK00000028.

Very truly yours,

Bracewell & Giuliani LLP

Jason B. Hutt

Enclosure

cc: Humane Zia, USEPA Region III

Steven Feisal, Chesapeake Energy Corporation Mike Brownell, Chesapeake Energy Corporation

Stephanie Timmermeyer, Chesapeake Energy Corporation



Texas New York Washington, DC Connecticut Seattle Dubai London Jason B, Hutt Partner

202.828.5850 Office 202.857.2114 Fax

jason.hutt@bgllp.com

Bracewell & Giuliani LLP 2000 K Street NW Suite 500 Washington, DC 20006-1872

June 17, 2011

By FedEx

Jacqueline Morrison Land and Chemicals Division (3LC00) U.S. Environmental Protection Agency Region III 1650 Arch Street Philadelphia, Pennsylvania 19103

Re: Request for Information on Marcellus Shale Flowback Water

Dear Ms. Morrison:

In our June 9th submittal on behalf of Chesapeake Energy Corporation related to the United States Environmental Protection Agency Region III's Request for Information dated May 12, 2011, we inadvertently excluded the attachments referenced in the narrative enclosure, CHK00000025-CHK00000028. Enclosed please find those excluded attachments, CHK00000029 to CHK00000174.

Very truly yours,

Bracewell & Giuliani LLP

Jason B. Hutt

Enclosure

cc: Humane Zia, USEPA Region III

Steven Feisal, Chesapeake Energy Corporation Mike Brownell, Chesapeake Energy Corporation

Stephanie Timmermeyer, Chesapeake Energy Corporation

CHESAPEAKE ENERGY CORPORATION Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water May 25, 2011

Question 1. Provide a list identifying each state permitted Well that you own or operate in EPA Region III and include the latitude and longitude for each Well and identify whether each Well is actively being drilled, is completed, or is producing natural gas.

Please see attachment CHK00000002-000000024.

Question 4. Identify your intentions for disposal, reuse, treatment, recycling, and reclamation of Gas Extraction Wastewater after May 19, 2011, including your expected methods and locations for disposal, treatment, or recycling during calendar year 2011. Provide the expected percentage of your Gas Extraction Wastewater by disposal, treatment, or recycling method.

For produced water from Marcellus shale gas wells in EPA Region III, Chesapeake Energy Corporation ("Chesapeake") intends to either recycle or dispose of such produced water at state permitted UIC wells during the remainder of calendar year 2011. For such recycling, Chesapeake intends to use filtration in Pennsylvania and West Virginia. For such disposal, Chesapeake intends to utilize UIC wells in West Virginia and Ohio. In Pennsylvania, Chesapeake expects its recycling to disposal percentage to be approximately 90:10 for such produced water. In West Virginia, Chesapeake expects its recycling to disposal percentage to be approximately 50:50 for such produced water. Chesapeake does not expect to generate produced water at any Marcellus shale gas well in any other parts of EPA Region III during the remainder of calendar year 2011.

Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water June 9, 2011

In providing this second, and final submission of information requested by U.S. Environmental Protection Agency Region III's ("EPA Region III") *Request for Information on Marcellus Shale Flowback Water* ("RFI"), Chesapeake has made a good faith effort to compile and produce responsive information through the date of the RFI, but reserves the right to supplement its response consistent with the terms of the RFI to the extent that additional information becomes available or EPA Region III clarifies the scope of the RFI.

Chesapeake is providing the enclosed information on a voluntary basis to assist EPA Region III in understanding the important role that recycling and reuse of produced water plays in the Chesapeake's Marcellus Shale exploration and production activities. In providing this information, Chesapeake does not waive any objections as to the scope of EPA Region III's information request authority under the statutes cited in the RFI. Among other things, Chesapeake does not agree that EPA Region III has the authority to require the submission quarterly reports on waste disposal and recycling practices under any of the statutes cited in the RFI, or to submit information regarding all discharges or releases of any substance or waste without regard to the quantity or identity of such substances or wastes. To the extent these or similar objections are made by other companies responding to the RFI, Chesapeake incorporates and adopts those objections into this response by reference as if fully stated herein.

While reserving any and all legal rights associated with these objections, Chesapeake responds to the RFI as follows:

Question 1. Provide a list identifying each state permitted Well that you own or operate in EPA Region III and include the latitude and longitude for each Well and identify whether each Well is actively being drilled, is completed, or is producing natural gas.

Please see Folder 1 on the enclosed compact disc for a revised list of Chesapeake's Marcellus Shale gas wells. Note, this information is current as of June 2, 2011.

Question 2. Provide all Pennsylvania "26R" forms completed and submitted to the Commonwealth of Pennsylvania for all Gas Extraction Wastewaters associated with your Wells for the calendar year 2010, including complete Chemical Analysis Attachments associated with each.

Responsive information is contained in Folder 2 on the enclosed compact disc.

- Question 3. For the period of April 19, 2011 to present, identify your Gas Extraction Wastewater management activities, including disposal, reuse, treatment, recycling, and reclamation for your Wells. In doing so, provide the following:
- a. For each Well, the actual or estimated amount of Gas Extraction Wastewater generated;

"Flowback" is a process whereby "produced water", which consists of formation water and injected waters, is returned to the surface from the wellbore. For the purpose of responding to

Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water June 9, 2011

this question, Chesapeake has provided information on "produced water"; information responsive to this part is contained in Folder 1 on the enclosed compact disc.

b. For each facility that has received your Gas Extraction Wastewater, including but not limited to, underground injection wells, wastewater treatment plants, and recycling facilities, provide the name and address for each such facility, the name and address of any entity that transported your Gas Extraction Wastewater to each facility, and the volume (in gallons) of such Gas Extraction Wastewater sent to each such facility;

During the relevant time period all of Chesapeake's produced water was either recycled or injected into governmet-permitted underground disposal wells. Further information responsive to this part is contained in Folder 3b on the enclosed compact disc. Note; latitude and longitude coordinates have been provided in lieu of a specific address.

c. The total volume (in gallons) of Gas Extraction Wastewater that you treated and recycled or caused to be treated or recycled for all your Well sites;

Responsive information is contained in the attachment referenced in Question 3b.

d. A description of the method or methods by which you or any third party recyclers recycled such Gas Extraction Wastewater; and

Chesapeake utilizes filtration, primarily employing 20 micron filter bags, and dewatering in order to reuse/recycle our produced water. Chesapeake continually explores for ways to enhance and increase our reuse/recycling efforts.

e. All modified disposal plans that you submitted after April 19, 2011 to the Commonwealth pursuant to the Pennsylvania Code Title 52 Section 78.55.

Chesapeake has not been required to submit a modified disposal plan to the Commonwealth of Pennsylvania.

f. Describe your use of pits, lagoons, impoundments or other land-based units for the storage or disposal of such Gas Extraction Wastewater associated with your gas extraction activities.

None.

g. Provide the latitude and longitude for all pits, lagoons, impoundments or other land-based units used for the storage of Gas Extraction Wastewater associated with your gas extraction activities.

Not applicable.

Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water June 9, 2011

Question 4. Identify your intentions for disposal, reuse, treatment, recycling, and reclamation of Gas Extraction Wastewater after May 19, 2011, including your expected methods and locations for disposal, treatment, or recycling during calendar year 2011. Provide the expected percentage of your Gas Extraction Wastewater by disposal, treatment, or recycling method.

Please see Chesapeake's previous response submitted on May 26, 2011.

Question 5. Submit quarterly reports to EPA on your waste disposal and recycling practices commencing on July 1, 2011 and continuing on a quarterly basis thereafter until June 30, 2012, for a total of four (4) reports. Such quarterly reports shall include the following information for the prior quarter:

Chesapeake wishes to register its objection to Question 5 and its various subparts. Question 5 appears to exceed EPA Region Ill's authority under the statutes cited in the RFI because it requires quarterly reporting not currently mandated by any of the statutory or regulatory authorities relied upon by EPA Region III in issuing the RFI. Nonetheless, while reserving any and all rights associated with these objections, Chesapeake is willing to work on a voluntary basis with EPA Region III and the other recipients of this RFI so that an orderly, consistent and transparent process for responding to Question 5 is achieved; currently, no further information is required under this question until July 1, 2011.

- a. For each Well, the actual or estimated volume (in gallons) of Gas Extraction Wastewater generated;
- b. For each facility that has received your Gas Extraction Wastewater, including but not limited to, underground injection wells, wastewater treatment plants, and recycling facilities, provide the name and address for each such facility, the name and address of any entity that transported your Gas Extraction Wastewater to each facility, and the volume (in gallons) of Gas Extraction Wastewater sent to each such facility;
- c. The total volume (in gallons) of Gas Extraction Wastewater that you or any third parties treated and recycled or caused to be treated or recycled for all your Well sites;
- d. A description of the method or methods by which you or any third party recyclers recycled such Gas Extraction Wastewater; and
- e. Describe your use of pits, lagoons, impoundments or other land-based units for the storage or disposal of such Gas Extraction Wastewater for your gas extraction activities.
- f. Provide the latitude and longitude for all pits, lagoons, impoundments or other land-based units used for the storage of Gas Extraction Wastewater associated with your gas extraction activities.
- Question 6. Identify any and all discharges or releases of any substances, wastes, and/or Gas Extraction Wastewater from facilities that contain Wells that you own or operate and all

Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water June 9, 2011

media (air, water, or land) that were affected by such discharges or releases and the estimated quantities of all substances discharged or released for the past five (5) years.

Chesapeake objects to Question 6 because the request is vague, overbroad in scope, and, accordingly, exceeds EPA Region III's statutory authority to request such information. Without any limiting principle on Question 6, Chesapeake cannot provide any meaningful response. As a result, Chesapeake requests EPA Region III provide clarification as to the definition and scope of terms used in Question 6 so that Chesapeake can better assess whether it has responsive information.





June 8, 2011

Jim Miller
Pennsylvania Department of Environmental Protection
Northcentral Regional Office
208 West Third Street, Suite 101
Williamsport. PA 17701

Dear Mr. Miller

Attached is the Form 26R Chemical Analysis of Residual Waste Annual Report by the generator for fluids, along with the Statement of Qualifications and the analytical report from Test America.

If you should have any questions or require additional information, please do not hesitate to contact me.

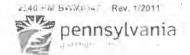
Best Regards.

Chesapeake Appalachia, L.L.C

Tal Oden

Regulatory Manager North, Eastern Division

Enclosures



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

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

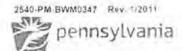
This	form m	ust be fully ar	nd accurate	ly completed. All requ	ired information must be	DEP	USE ONLY
each	attache	ed sheet as F	orm 26R, re		pace is necessary, identify per and identify the date e noted below.	100000000000000000000000000000000000000	ed & General Notes
Gen	eral Reie	rence 287.54					
Date	Prepare	d/Revised	05/30	W2011			
		SECT	ION A. C	LIENT (GENERATO	R OF THE WASTE) INF	ORMATION	
	pany Na						
		Energy Corpory, Name of Par				EDA	Generator ID#
		Operations in		iy		CFA	Generator ID#
Com	pany Ma	iling Address I		C	Company Mailing Address	Line 2	Commence of the Control of the Part of the Administration
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Athe		dress Last Line	e - City	State PA	Zip+4 18810	Phone 5708886564	Ext
200		ntact Last Nam	10	First Name	MI	Suffi	×
Mary				Mary	A		
	cipality				County		
	ens Boro		E	Contact Email Address	Bradford		
	888-656			nary maryott@chk.com			
-			The state of the s	Mailing Address (noted			Yes IN No
		and the second s		ation and storage. see			
Mun	icipality		To me the new tree to the second	County	14100	State	
-	respondy		-	SECTION B. WAS	TE DESCRIPTION	-	
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Was	te Code		Code Des	cription	Amount i	Measure	Frame
420		Process Wa	slewaters		12,422,544	cu yd ⊠ gal lb □ ton	One Time
		-		1. GENERAL F	PROPERTIES	10	TE VICTOR
a.	pH Ra		5.10	10 8.1	(based on analyses or kno	wledge)	
b.	Physi	cal State		Liquid Waste (EPA Method 90) Gas (ambient tempera	095)		
C.	Physi	cal Appearance		Color gray to brown Rumber of Solid or Liqui	Odor d Phases of Separation	none	
				Describe each phase of s	separation.		
			20	2. CHEMICAL ANALY	SIS ATTACHMENTS		4
a.		esults of a deta		The Section of the Section Section 1997 and the Sec	e waste, as described in the	ne 🗀	Yes No
15	A deta	ailed description	n of the wa	ste sampling method is		X	Yes No
G.	The q		re/quality oc	entrol procedures emplo	oyed by the laboratory(ies)	is 🗵	Yes No
d.	The re	sults of the ha	zardous wa	ste determination is atta	ached.		Yes No
ė,		licable, a detail factual chemic		ion supporting use of gi is attached.	enerator knowledge in	☐ Yes ☑	No [N/A

а,		3. PROCESS DESCRIPTION				
	the waste, as specified in the	e manufacturing and/or ne instructions, is attach	pollution control proce		Ti Nev	_ No.
b.	A schematic of the manufacture as specified in the instruction		control processes proc	ducing the waste.	Yes Yes	<u></u>
C.	If portions of the informatio a confidentiality claim, as d			n for 🔯 Yes	_ to	□ MS
	SECT	ION C. MANAGE	MENT OF RESIDU	JAL WASTE		
		1. PROCESSING O	R DISPOSAL FACILITY(IE	ES)		
The a	area below (ad.) will accommo	odate the identification	of two facilities. Attach	additional sheets	it nocessary	
a.	Solid waste permit number(s) for processing or dis	sposal facility being util	ized		
b.	Facility Name	TriCounty				
	Address Line 1	1487 Tom's Run R	oad			
	Address Line 1 Address City State ZIP	Hallbrook	PA	1534		
	Municipality	MOUDIOOK	County	Wayne		
c.	Facility Contact Name	Roy Kohler				
	Title	MOY ISOLINE				
	Phone	724-627-7178	Email Address			
d.	Volume of waste shipped to	processing or disposa	I facility in the previous			
а.	Solid waste permit number(s) for processing or dis	posal facility being util	ized.		
b.	Facility Name					
	Address Line 1					
	Address Line 1					
	Address City State ZIP Municipality		County			
			County			
C,	Facility Contact Name Title					
	Phone		Email Address			
d	Volume of waste shipped to	pracaccina ar dicacc	I facility in the previous	· unas		
u,	0	cu yd gai	the tor			
-		2. BE	NEFICIAL USE			
a	Has the waste been approve				+12-	(F)
	If "Yes", list the general per	mit number or approva	number.			
b.	Volume of waste beneficiali			i check in	. (

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.

Che	ck the following, if applica	ble:			
3	I certify the information and has not changed.	requir	ed in Section 8-1, Genera	al Properties w	as supplied to the Department for the year 2009
	Form Submitted:	123	Form 26R		7
			Other (specify)		
	Date Submitted:	04/0	1/2010		
Ξ	I certify the information and has not changed.	requir	ed in Section B-2, Chemi	cal Analysis w	as supplied to the Department for the year 2009
	Form Submitted!	3	Form 26R		
			Other (specify)		
	Date Submitted:	04/0	1/2010		
	For the year 2010 and h			ss Description	and Schematic, was supplied to the Department
	Form Submitted	E	Farm 26R		
			Other (specify)		
	Date Submitted:	04:0	1/2010		
Nam	e of Responsible Official			Title	Mgr. Ry. Eastern Div.
Sign	ature Isla	La		Date	06/08/2011



COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION BUREAU OF WASTE MANAGEMENT

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

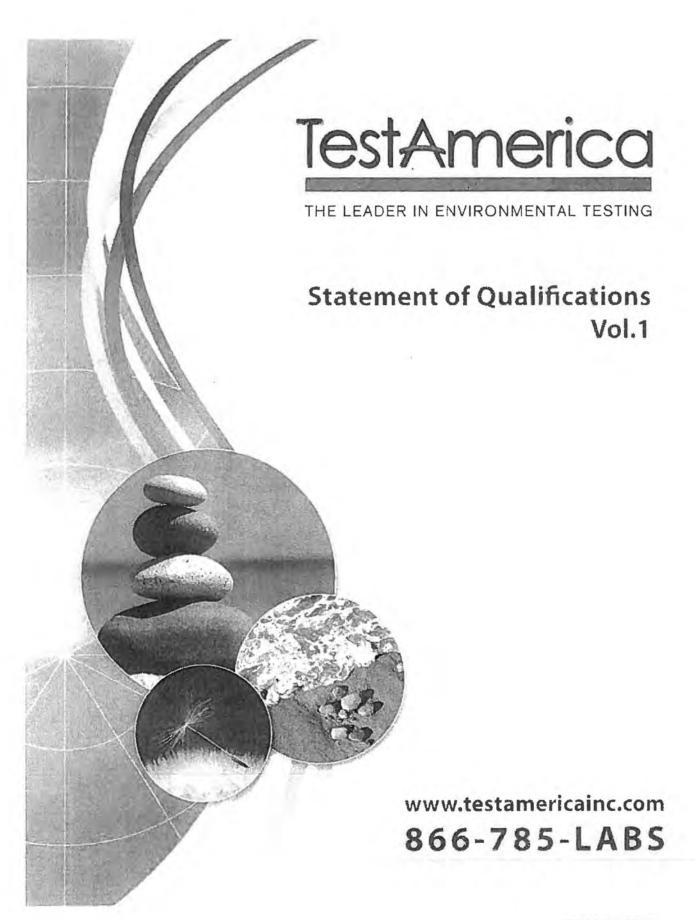
type	d or legit	oly printed in the s d sheet as Form	ccurately completed. A paces provided. If additi 26R, reference the item sheets needs to match t	onal space is necessary number and identify	, identify 0	DEP USE O	
Gen	eral Refe	rence 287.54					
Date	Prepare	d/Revised	05/30/2011				
		SECTION	A. CLIENT (GENE	RATOR OF THE WAS	TE INFORM	NOITA	
	pany Nar	me Energy Corporal	on				
		y. Name of Parent				EPA Gener	ator ID#
Name and Address of the Owner, where the Owner, which the		Operations Inc					
101	N Main			Company Mailing	Address Line 2		
		dress Last Line - C		State Zip+4	Phor		Ext
Athe				PA 18810,	Acres de la constante de la co	856384	
		ntact Last Name	First Name		ΛI	Suffix	
Mary	Participant of the Control of the Co		Mary		1.		
	icipality ens Boro			County Bradford			
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			empany Mailing Address			III FEE	Til No
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Mun	cipality		County			itate	
			SECTION B.	WASTE DESCRIPT	ION		
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Re				Amount	Meas	sure	Frame
	te Code	C	ode Description	Amount	-		
		Process Waster		12,422.544	□ cu ya	☑ gal	Site Time
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Was		Process Wastev	vaters	12,422.544	Cu ya	lon]	
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Was 420 a.	pH Ra Physic	Process Wastev	### 1. GEN 5 10 to 8 1 Solid (EPA Me Gas (ambient to Color gray to	12,422.544 IERAL PROPERTIES (based on analys EPA Method 9095) thod 9095) temperature & pressure)	es or knowledge	lon]	
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Was 420 a. b.	pH Ra Physic	Process Wastevinge cal State	### Table 1	12,422.544 IERAL PROPERTIES (based on analys EPA Method 9095) Indo 9095) Imperature & pressure; brown or Liquid Phases of Separation. ANALYSIS ATTACHMENT	es or knowledge Odor nore	lon]	Oire Time
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Was 420 a. b.	pH Ra Physic Physic The re instru	Process Wastevinge cal State cal Appearance cities of a detailed cities, is attached cited description of callty assurance/quality assurance/quality assurance/quality assurance/quality assurance/quality assurance/quality	Alers 1. Gen 5.10 to 8.1 Liquid Waste (Solid (EPA Me) Gas (ambient) Color gray to Number of Solid of Describe each phi 2. CHEMICAL chemical characterization	12,422.544 IERAL PROPERTIES (based on analys EPA Method 9095) Independent & pressure) brown or Liquid Phases of Separation. ANALYSIS ATTACHMENT on of the waste, as described is attached.	es or knowledge Odor nore tration s	D ton D	One Time
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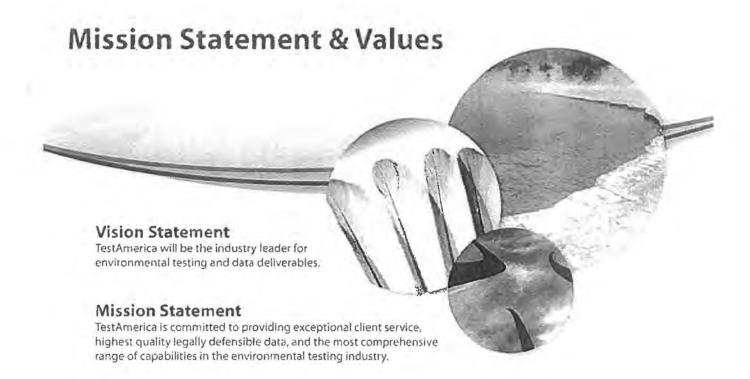
		3. PROCESS DESCRIPTION	& SCHEMATIC ATTA	CHMENTS				
a.		e manufacturing and/or pole instructions, is attached		esses producing	E	Yes		No
0.	A schematic of the manufa as specified in the instructi	cturing and/or pollution cor ions, is attached.	ntrol processes pro	ducing the waste,	Z	Yes		No
re.	If portions of the information a confidentiality claim, as o	on submitted are confidenti described in the instruction		on for Yes		No		N/A
	SECT	TION C. MANAGEME	NT OF RESIDE	JAL WASTE				
	Delining that ways intention	1. PROCESSING OR D	ISPOSAL FACILITY	ES)				
he a	rea below (ad.) will accomm	A LANGE COMMITTEE CONTRACTOR OF THE CONTRACTOR O			if ne	cessary	V.	
	Solid waste permit number WMGR123	(s) for processing or dispo-	sal facility being uti	lized.				
	Facility Name	Eureka						
	Address Line 1	419 Second Street						
	Address Line 1							
	Address City State ZIP	Williamsport	PA	17701				
	Municipality	Williamsport Boro	County	Lycoming				
	Facility Contact Name	Dan Ertel						
	Title	owner	2 7 7 7 7 7 7				_	
	Phone	570-971-9978	Email Address	d.ertel@jertal.co	m			
	Volume of waste shipped to 2,000,000	processing or disposal fa	cility in the previou					
	Solid waste permit number PA0026913	(s) for processing or dispos	sal facility being uti	lized.				
	Facility Name	McKeesport Waste Au	thority					
	Address Line 1	100 Atlantic Ave						
	Address Line 1							
	Address City State ZIP	McKeesport	PA	15132				
	Municipality	McKeesport Boro	County	Allegheny				
	Facility Contact Name	Joe Rost						
	Title	Executive Director						
	Phone	412-673-9701	Email Address	macm_frost@ver	izon.	net		
	Volume of waste shipped to 0	processing or disposal fa	cility in the previou		è			
			FICIAL USE					
	Has the waste been approv	ed for beneficial use?				Yes	X	No
	If "Yes", list the general per	rmit number or approval nu	mber.					
	Volume of waste beneficial	ly used in the previous year cu yd gal	г. П Ib П to	n (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 faisification to authorities, which include fine and imprisonment.

know		at the s	submission of false	information herein	is made subje	and complete to the best of my ect to the penalties of 18 Pa. C.S. t.
Che	ck the following, if applica	able:				
\boxtimes	I certify the information and has not changed.	requir	ed in Section B-1, G	Seneral Properties v	vas supplied to	the Department for the year 2009
	Form Submitted:	X	Form 26R			
			Other (specify)			
	Date Submitted:	04/0	1/2010			
	I certify the information and has not changed.	requir	ed in Section B-2, C	Chemical Analysis v	vas supplied to	the Department for the year 2009
	Form Submitted:	M	Form 26R			
			Other (specify)			
	Date Submitted:	04/0	11/2010			- American
	I certify the information for the year 2010 and h			rocess Description	and Schematic	c, was supplied to the Department
	Form Submitted:		Form 26R		17	
			Other (specify)			The Principal Control of the Principal Control
	Date Submitted:	04/0	1/2010			
Nam	e of Responsible Official			Title	Mgr. Ru	, Eastern DW
Sign	ature 20	Che		Date	06/08/2011	





Core Values

Integrity: We adhere to the highest noral and ethical standards in all that we do.

Client Service: We strive to ensure our clients' satisfaction and success.

Performance: We set challenging goals, hold one another accountable, and reward results.

Technical Excellence: We continually invest in new technologies to provide exceptional data quality and to develop new and emerging methods.

Teamwork: We help each other succeed through a cooperative team effort, in an atmosphere of civility and respect.

People: We invest in training, professional development and career progression for our employees.

Growth: We manage our business for profitable and sustainable growth.

Sustainability Statement

TestAmerica takes pride in being the industry leader for environmental testing and data deliverables. Our services enable clients to make business decisions that positively impact the environment, the importance of which is not overshadowed by TestAmerica's commitment to operating in an environmentally conscious manner. In response, TestAmerica obligates itself to achieving sustainable financial returns and respecting the environment and community within which we work and live.

Sustainability by definition is inherently broad. TestAmerica follows a sustainability framework that ensures the company operates in a manner that achieves financial success through the practice of environmental stewardship, ethical leadership and by embracing our role as corporate citizen in the communities where we work. The foundation blocks of the TestAmerica Sustainability Framework include:

Governance, Ethics and Compliance: Operating in a responsible and ethical manner in accordance with our ethics policy and the law, promoting ethical sales and purchasing practices;

Employees: Providing a rewarding, diverse, and inclusive workplace for employees;

Environment, Health and Safety: Capitalizing on the inherent financial and social benefits stemming from sound environmental practices and a safe and healthy workplace;

Supply Chain: Working with suppliers to improve their social and environmental performance and cooperatively seeking opportunities to reduce the carbon footprint relative to the delivery of services to TestAmerica laboratories and clients:

Charitable & Community Support: Encouraging the support of local and national charitable organizations and other initiatives that support local communities connected to our business and employees;

Economic Impacts: Using financial resources wisely to benefit company stakeholders and to address key sustainability issues:

Public Policy: Working with governments, regulators and policymakers to improve the quality of analytical methods ensuring the consistent delivery of legally defensible data.

Our employees work to integrate sustainable solutions within every business division, every service category and every department of our operations. Sustainability is integral to and embedded within all our actions and the service we provid:

Introduction



Through strategic Investment in people, technology, capital equipment and infrastructure; TestAmerica has developed the world's leading environmental testing company. Our unique combination of experience and expertise is backed by recognized industry experts and an unprecedented scale of analytical services that address an extensive range of environmental applications. TestAmerica is a leading provider of critical analytical support services to both public and private sector clients. Whether it is the Department of Defense, Department of Energy, Fortune 500 industrials, or the consulting and engineering firms that support them, TestAmerica leads the industry in developing it novative solutions to address their testing needs.

TestAmerica focuses on the refinement of methods that address current environmental issues and invests in the development of new solutions for challenges that the market and our clients anticipate facing in the future. To facilitate this process, TestAmerica routinely assumes leadership positions with a variety of environmental trade associations, regulatory review boards and lab industry steering committees. TestAmerica's leadership helps to shape how analytical solutions are brought to market, sets the standard for quality and ethics, and challenges conventional wisdom to drive an industry culture of continuous improvement. TestAmerica holds active leadership positions in each of the following organizations:

- NELAC National Environmental Laboratory Accreditation Conference
- . ITRC Interstate Technology & Regulatory Council
- · ACIL American Council of Independent Laboratories
- . SAME Society of American Military Engineers
- . AWMA Air & Waste Management Association

Through a network of 36 fixed base lab operations, 33 service centers and a fleet of mobile laboratories, TestAmerica brings a unique blend of expertise and convenience to its customers. Our ability to deliver the widest variety of environmental testing services is a function of our unmatched scale. Among the large variety of testing applications TestAmerica provides are:

- Metals by ICP & ICP/MS
- Low Level Mercury
- · Bioavailable Arsenic & Lead
- Alkyl Tins
- Metals Speciation
- Trace Level Volatile Organics
- Trace Level Semivolatile Organics
- Pesticides by HR/MS.
- Agricultural Pesticides
- Herbicides
- · PCB Congeners & Homologs
- · High Resolution Dloxin & Furans
- · Explosive & Energetic Compounds

- Chemical Warfare Agents
- · Petroleum Hydrocarbons Bioavailability
- · Radiological & Mixed Waste
- Radiobioassay & Radio Dating
- · Sediments & Elutriates
- · Plant & Animal Tissues
- Aquatic Toxicology
- · Drinking Water
- Mold, Fungi & Legionella
- · Ambient & Source Air Emissions
- · Geotechnical
- · Multi-Increment Sampling
- · Oil Fingerprinting/Biomarkers



The expertise provided by TestAmerica, and the services we offer, are designed to address the specific requirements of a broad spectrum of regulatory programs. The ability to understand regulatory platforms, the decision criteria they drive and their prescription for quality analytical testing is critical for the development and delivery of test results that meet the needs of their intended use. TestAmerica has long led the industry in the development and refinement of analytical test methodologies for a host of regulatory programs and has often served as a member of steering committees who have shaped the standard of quality and practice for the environmental testing industry. Among the regulatory programs TestAmerica routinely supports are:

- Resource Conservation & Recovery Act (RCRA)
- · Clean Water Act (CWA)
- . Clean Air Act (CAA)
- Safe Drinking Water Act (SDWA)
- Comprehensive Environmental Response, Compensation & Liability Act (CERCLA)
- Superfund Amendments & Reauthorization Act (SARA)
- · Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide & Rodenticide Act
 (FIERA)
- National Environmental Policy Act (NEPA)
- · Inland, Upland & Ocean Testing Manuals
- Total Maximum Daily Load (TMDL)

- National Pollution Discharge Elimination System (NPDES)
- Marine Protection, Research & Sanctuaries Act (MPRSA)
- Maximum Achievable Control Technology (MACT)
- · Boiler & Industrial Furnace (BIF)
- Radioactive Environmental Monitoring Program (REMP)
- Cluster Rule
- . DoD QSM, Version 4.1
- Leaking Underground Storage Tank (LUST/UST)
- · Comprehensive State Brownfields Programs
- National Emission Standards for Hazardous Air Pollutants (NESHAP)







TotalAccess

Total Access =

An overriding benefit that TestAmerica clients receive as a function of our scale and coverage is the inherent convenience in the way we deliver our services. Convenience takes on many definitions and each client's demands are unique. TestAmerica adds the element of convenience to its analytical service offering in the following ways.

TotalAccess allows you to track all aspects of your environmental data program, with instant access through your own familiar web browser.

TotalAccess is a web-based project information tool that provides you with:

Rapid Data Access

6

- · Complete Document Management Library
- · Point & Click Downloads of Project Files
- Use: Customized Data Reporting Functionality
- Automated Comparison Against Hundreds of Regulatory Lists
- Data Relationship & Trending Wizard
- Analytical Budget Management
- Fully Customizable User Preference Settings

TotalAccess provides TestAmerica clientele with online, secure access to services that enable faster communications, rapid access to data, and a centralized repository for all your project information. Users of the TotalAccess system benefit from having...



- · Quick reference to their contacts for each site or program they manage with TestAmerica support.
- Instant notification on project status, including results, electronic deliverables and other documents generated by TestAmerica.
- Online access and download of project documentation including invoices, reports, EDDs and COCs
- Interactive search utility for analytical capabilities and methodologies available within the TestAmerica organization.
- Interactive search utility for lab certification programs detailing which TestAmerica labs hold accreditation and for what program elements.
- Customizable displays capturing data in a single grid and single click downloads to Excel, PDF, or XPS.
- . Budget management tools to keep track of analytical expenditures and purchase order ceilings

The Total Access system is available free of charge to all Test America customers.

Ask the Expert



TestAmerica is recognized as the industry's technical leader, focusing on global concerns related to environmental testing. Featuring over 30 industry professionals, TestAmerica's "Ask the Expert" program allows any individual with a question relative to environmental testing to access the thoughts and opinions of recognized experts in their field through a free, easy to use online platform.



"Of all the services requested by our customers, none is more sought after than our knowledge. All environmental decisions are in part based upon the data collected. Our customers prefer and in some cases demand the application specific expertise we provide as it adds assurance that data provided appropriately matches their decision objectives," offered Jim Miller, Vice President of Marketing and National Accounts.



Mobile Laboratories



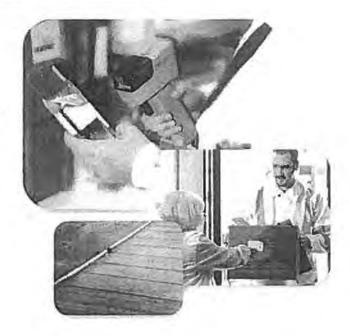
Environmental projects of high sensitivity and compressed timelines can require on-site laboratory support. TestAmenca has a fleet of mobile laboratories equipped to address virtually any testing application that can be done in a fixed base lab. Typical on-site projects completed by TestAmerica include site assessments, investigations, remediation plume delineation, groundwater monitoring, natural attenuation, soil gas surveys and perimeter air monitoring.

Mobile lab analytical results are available for review in the field immediately upon completion. Results are provided after each analysis with final hard copy report provided upon completion of the sample delivery group. Data is also made available via the Total Access system for remote project support personnel.

TestAmerica also has an extensive history assisting clients with outsourced management of their on-site laboratory facilities. Utilizing a customer service based business model that employs commercial laboratory best practices. TestAmerica assists clients with:

- · Analytical instrument procurement and maintenance
- · Lab supply procurement and inventory management
- · Vendor selection and management
- · Establishing and managing performance metrics
- · Managing operation and staffing schedules
- · Work load planning and surge capacity management
- Developing internal and external client feedback systems
- · Records management and storage.

TestAmerica's on-site lab management programs help clients achieve their goals of cost reduction, process improvement and system optimization. Our strategy, which is employed throughout our industry's leading network of labs, drives focus on cost control, productivity improvement and increased customer satisfaction.



National Program Coordination

Clients interested in developing a uniform approach to contracting lab services on a national level benefit from Test America's unique approach to national account support. Test America is the only environmental lab services provider to offer truly national coverage through a network of over 65 business locations in the continental United States, Alaska and Hawaii as well as internationally in Bangkok, Manila, and Seoul. Our coverage allows TestAmerica to provide its national customers with a breadth and depth of service offerings that is unmatched in the industry and couple that coverage with all the conveniences offered by a local supplier. Each of our national service programs is customized to meet the unique meeds of each customer as a is managed through a single point of contact, a National Program Manager, capable of orchestrating the delivery of services from the entire TestAmerica network.

Among the many benefits clients enjoy when contracting with TestAmerica on a national basis are:

Financial

Driven by individual buyer philosophy and goals. TestAmerica develops custom service packages that create financial incentive and scale economy benefits for our clients. Supporting a variety of industry preferred e procurement systems, TestAmerica facilitates further client savings and sustainability objectives through the use of electronic commerce technology.

Consistency & Centralized Program Management

The TestAmerica approach to ristional program support drives consistency in the manner in which analytical data are developed, prepared and delivered to our clients. Our approach provides clients assurance that data they obtain to support a variety of programs under a variety of regulatory requirements is prepared with a standard of care and analytical practice that is consistent acrass laboratory facilities

Consolidation

With over 65 business locations in the United States, Alaska and Hawaii TestAmerica couners provide more geographic coverage than any other lab in the country. Our combination of locations maintains certifications in all SO states and under several government programs. Ali locations provide logistical support for sample transport to and from the lab and many locations. offer sampling support to assist clients with their compliance monitoring needs. TestAmerica's broad based coverage is unique in the industry and provides clients the opportunity to centralize their program, leveraging their purchasing dollar without compromise to the service demands of their monitoring programs.

Custom Planning

Complex projects often require project specific quality assurance plans customized to suit the needs of the regulating body. TestAmerica routinely assists its clients with evaluating project specific data quality objectives and employs appropriate analytical techniques to ensure that those objectives are consistently met.

TestAmerica SOPs are widely utilized in project plans governed by federal and state regulators and are widely recognized for their high quality standards.

When commonly prescribed test methods don't meet project specific needs. TestAmerica works cooperatively with its clients to develop sound scientific applications that deliver confidence and data suitable for its intended use. As the industry leader, TestAmerica routinely serves on industry steering committees that evaluate, refine and promote new analytical practices to address. the evolving testing needs presented by emerging analytical challenges

Database Management

National and multi-national clients who centrally manage environmental data benefit from TestAmerica's information technology expertise. Our staff of over 100 dedicated IT professionals focuses exclusively on the delivery of data via electronic means to accommodate hundreds of client custom data management systems.

E-Procurement

The procurement of environmental services is being revolutionized by the introduction of new on-line business software solutions that help clients efficiently manage their experiditures for environmental services. TestAmerica leads the industry by providing a dedicated team of finance professionals to assist clients with the implementation and management of their e-solutions for procuring laboratory services, saving each client significant time and money. TestAmerica supports dozens of commercial and client proprietary e-procurement systems that include:

- Ariba
- **Bottomline Business**
- Enfos Exostar
- **OB10**
- Oracle
 - Oil-Dex
- Web-Commerce
- WebEDI
- Xign

Services and Capabilities

TestAmerica is the leading environmental testing firm in the United States, including 36 laboratories and 33 service centers providing innovative technical expertise and comprehensive analytical testing services. Specialty analyses include source and ambient air, aquatic toxicity, explosives, specialty organics, dioxins, drinking water, sediments and tissues, emerging contaminants, radiochemistry and mixed waste testing.

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Bigavailable PAHs													×																				
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Tritium	1	1									1											x				x					T	
Volatile Fatty Acids	N		x			1											1								T		x	x				

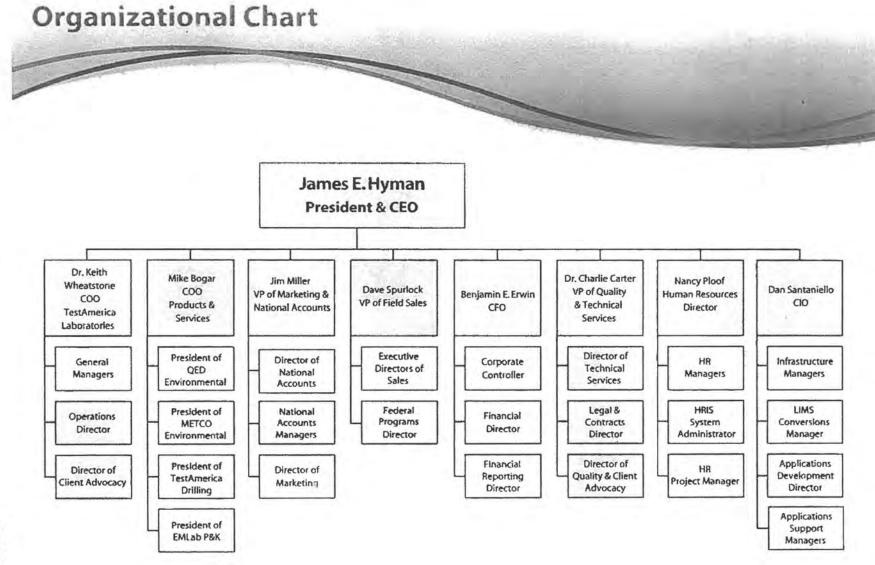
Personnel & Management

TestAmerica attributes its success to the professionalism and technical expertise of its people. Each person contributes directly to the company's growth and success. TestAmerica has made a commitment to its employees to help them achieve both personal and professional success.

TestAmerica employs exceptional people who welcome challenges. We value and reward high performance, hard work, honesty and tearnwork. TestAmerica employees hold themselves accountable to the highest standards of ethics, trust, and quality. These high professional standards, coupled with unparalleled technical leadership, decidedly set TestAmerica apart from the competition.

See Organizational Chart on Page 13





Executive Team

James E. Hyman, President & CEO

Mr. Hyman is President and Chief Executive Officer of TestAmerica Laboratories Inc., reporting to the company's Board of Directors. Prior to joining TestAmerica in 2011, he served as CEO of Cornell Companies, Inc., a provider to government agencies of corrections, education, rehabilitation and treatment services. With over 25 years of experience in international business leadership, Mr. Hyman also has held executive positions with Starwood Hotels & Resorts Worldwide, GE Capital Services. McKinsey & Company, and JP Morgan. Mr. Hyman currently serves on the Americas Board of the Grosvenor Group, a global real estate company and chairs the not-for-profit Mega-Cities Project. Mr. Hyman has an MBA with Distinction from Harvard Business School and an AB with Honors from the University of Chicago.



Dr. Keith Wheatstone, Chief Operating Officer

With a Ph.D. in Analytical Chemistry and over 40 years of environmental laboratory experience, Dr. Wheatstone is responsible for the daily management of all TestAn erica Laboratories facilities. The COO's responsibilities include allocation of personnel and resources, long-term planning, and development of technical policies and management plans. Dr Wheatstone is a Chartered Scientist, Chartered Chemist and a Fellow of the Royal Society of Chemistry (UK).



Michael J. Bogar, Chief Operating Officer, Products and Services

With over 25 years of executive management in marketing, sales, operations and business leadership, Mr. Bogar is responsible for the daily management of all of the Products and Services businesses. The COO's responsibilities include the development and execution of business plans for all the Products and Services businesses.



Benjamin E. Erwin, Chief Financial Officer

Mr. Erwin has 15 years experience in developing, executing and leading global corporate strategies across a variety of industries. As CFO, he is directly responsible for management of finance, accounting treasury and purchasing functions at TestAmerica. He has deep financial expertise with strength in corporate finance, planning & analysis, inerger & acquisition transactions and restructuring. Mr. Erwin graduated with honors degrees in Economic and in Politics from Wake Forest University.



James Miller, Vice President Marketing & National Accounts

Mr. Miller is responsible for the company's National Client Programs and marketing related efforts, reporting to the President and CEO. Mr. Miller holds dual degrees in Chemical Engineering and Journalism. Mr. Miller previously worked with Occidental Petroleum Corporation as well as various media outlets. Mr. Miller has 23 years of experience in the environmental industry, 20 of which he served in various officer posts.



Dr. Charles Carter, Vice President Quality & Technical Services

Dr. Charles Carter is Vice President of Quality and Technical Services, reporting to the President and CEO. In this role he has overall responsibility for corporate quality assurance and laboratory technical development, and he is also involved with legal issues, contracts, health and safety, and information technology efforts. Dr. Carter has a Ph.D. in environmental chemistry, has over 30 years experience in the environmental laboratory industry, and is a recognized industry expert in numerous areas of environmental and analytical chemistry. He has been active in various industry organizations and is a frequent speaker at environmental forums and conferences.





David B. Spurlock, Vice President Field Sales

Mr. Spurlock is Vice President of Field Sales for TestAmerica Laboratories, Inc. and has overall leadership responsibility for the field and federal sales teams. He works in close association with Jim Miller, Vice President of Marketing and National Accounts. Mr. Spurlock holds a B.S. degree in Business Administration from Robert Morris University and has 25 years of leadership experience in the clinical laboratory industry with such companies as SmithKline Beecham, Quest Diagnostics, and LabCorp Inc.



Mr. Santaniello is CIO, reporting to the President and CEO. In this role he has overall responsibility for information technology and Laboratory Information Management Systems (LIMS). Mr. Santaniello has a B.S. in Electrical Engineering and has over 17 years of experience gained through various information technology and operations management roles in the environmental lab industry. Mr. Santaniello is an industry leader in his field having designed several LIMS and on-line environmental data systems in commercial use today.





Nancy Ploof, Human Resources Director

Ms. Ploof serves as the Human Resources Director responsible for leadership, functional expertise, and strategic direction for the management of human resources throughout the organization. She works closely with all levels within TestAmerica to identify and implement necessary HR strategies. She holds an A.A. in Human Resources Management from Baker College located in Flint, Ml. She holds the Professional in Human Resources Management accreditation (PHR) from SHRM since 2000. Ms. Ploof has 15 years of environmental testing industry experience, 11 of which have been in the HR field.

Senior Management Team

Chip Meador, General Manager

Mr. Meador earned his B.S. and M.S. degrees in Botany/Ecology at the University of Florida. He has been a General Manager since 2007 and has worked in a variety of management roles in the environmental industry since 1980. He is experienced in all aspects of laboratory operation and management and is very familiar with RCRA and many aspects of hazardous waste management.



Scott Morris, General Manager

Mr. Morris, as General Manager, has overall leadership responsibility for 10 TestAmerica laboratory locations based in Alaska, California, Hawaii, Oregon and Washington as well as Southeast Asia. In 13 years with the TestAmerica organization, he has served in a variety of leadership roles including General Manager, Laboratory Director, Procurement, Marketing and Business Development. Mr. Morris experience also includes mergers and acquisitions as well as post merger integration. Mr. Morris earned an MBA at the University of Warwick in Coventry, England and his Lindergraduate degree from UCE Birmingham, England.

Chris Oprandi, General Manager

Mr. Oprandi has been in the analytical industry since 1988. He began his career as a laboratory technician and then advanced into laboratory management where he is currently General Manager. Mr. Oprandi is skilled in designing improvements to increase capacity and in identifying and eliminating production bottlenecks. He is experienced in all aspects of laboratory management: production control, project management, database management, quality assurance, environmental health & safety, business development and customer relations. Mr. Oprandi has extensive management and leadership experience. He has developed and implemented numerous training programs addressing both the technical and leadership functions of the business.





Dr. Jack Tuschall, General Manager

Dr. Tuschall earned his Ph.D. and M.S. degrees in Environmental Engineering Science at the University of Florida. He has been a General Manager for TestAmerica and predecessor companies for the past 9 years. Dr. Tuschall has extensive experience in managing full-service analytical laboratories; analytical methods development; design, implementation, and management of environmental monitoring programs; trace organic, inorganic, and mixed-waste analyses; design and implementation of quality assurance programs; and production and use of analytical reference standards. His diverse experience in the environmental analytical chemistry field provides the foundation for successfully leading the Mobile, Nashville, Orlando, Pensacola, Tallahassee and Tampa laboratories. In addition to his General Management responsibilities, Dr. Tuschall is the Director of Best Practices, Environmental Health and Safety Director and is responsible for fostering Continuous improvement through the development and implementation of best practices across the company's laboratories.

Rusty Vicinie, General Manager

Mr. Vicinie is responsible for the operations of TestAmerica laboratories in Knoxville, Dayton, Canton, Pittsburgh, King of Prussia, Edison and Burlington. Mr. Vicinie's professional expertise includes environmental chemistry focused on air toxics, sediment and tissue analysis as well as having a background in industrial hygiene and clinical laboratory services. He holds degrees in both Chemistry and Biology with graduate work conducted in the areas of Analytical Chemistry and Pharmacology Mr. Vicinie has 29 years of analytical laboratory experience with 20 of those years being in the environmental practice.



Dr. Richard Burrows - Director of Technical Services

Dr. Burrows is the Technical Director for TestAmerica's network of laboratorles in the United States. His duties include implementing new technology, improving existing methods and leading technical groups within TestAmerica. Dr. Burrows has over 25 years of experience in analytical chemistry working in both academic and commercial laboratories of which 18 years have been in the environmental laboratory field. He has been actively involved with environmental methods and techniques through the U.S. Environmental Protection Agency (USEPA) and American Council of Independent Laboratories (ACIL). His method development work has involved bringing new perspectives to method detection limits, calibration, quality assurance and quality control and method development. Dr. Burrows is currently a member of the Environmental Laboratory Advisory Board and is twice a recipient of the ACIL Preston Millar Award. Dr. Burrows received his R.S. in Chemistry and Ph.D. in Analytical Chemistry from the University of Bristol in England.





Sharon Gordon - Legal and Contracts Director

Ms. Gordon is responsible for contract review, negotiation, general legal matters and oversight of contract compliance for the entire TestAmerica group of companies. Ms. Gordon regularly conducts training for company employees on contracts, as well as ethics and compliance issues. Ms. Gordon is an attorney, with degrees from Hastings College of Law (JD) and U.C.L.A (B.A. and Masters in Environmental Planning), and a member of the State of California and Kansas Bar Association. She has 34 years of legal experience including 29 years experience in the environmental consulting field, 16 of which have been with environmental testing laboratories.

Bosco Ramirez - Operations Director

Mr. Ramirez has operational responsibilities that include defining standard operational policies, development and provision of training, as well as operational tools and process development. He also is responsible for the temporary takeover and management of individual laboratory operations during periods of transition. Reporting directly to the Chief Operating Officer, Mr. Ramirez works closely with the General Manager team to address operational needs throughout the TestAmerica network of laboratories. Mr. Ramirez holds a Masters Degree in Analytical Chemistry and brings over 20 years of experience in the environmental laboratory field where he has held positions as Lab Director, Technical Director, Quality Assurance Director and Client Services Manager.





Ray Frederici - Director of Quality and Client Advocacy

Mr. Fredericl is highly experienced with 28 years in the environmental testing industry and extensive leadership & management expertise. He possesses excellent abilities for financial management, strategic planning, performance monitoring, policy development and enforcement. As a strong and decisive decision-maker, he takes personal responsibility to spread customer service awareness and lead organizational improvements and solve problems. Through concise communication, presentation, technical writing and technicology/computer expertise, he is an organizational change agent.

Tim O'Shields - Director of Client Advocacy

Mr. O'Shields is a passionate, self-motivated professional with 29 year of experience in the environmental laboratory business. Mr. O'Shields' roles have ranged from positions in laboratory and corporate management to roles in technical leadership. He has spent a number of years in developing and delivering comprehensive leadership development programs. Most recently, his role includes development of programs and training to enhance client service company-wide to Best in Class. This role includes hands-on work across the company for process improvement. Major strengths are technical depth, laboratory operations, business management, leadership team development, quality assurance, process improvement, action planning to resolve issues and for business growth, and business development.



Resources

As the world's leading environmental testing company, TestAmerica offers an unparalleled collection of physical resources designed and managed to support the wide and varied needs of our clientele. Strategically positioned expertise and a carefully orchestrated system of planned redundancy provides a platform for the delivery of analytical services that meets the exacting needs of hundreds of regulatory and client programs while providing the capacity to address peak demand without compromise to client schedules and budget.

Facility & Instrument Summary

TestAmerica Laboratories				M	ajor In	strum	ent Su	ımma	ry			
Facilities Size, Employees and Fig. Major Instrumentation	Square Footage of the Labs	Laboratory Employees	тох	TOC	ñ	Wet Chem Autoanalyzers	ICMS	ice	ICP/MS	CVAA-Hg	CVAF5-11Hg	CVAFS - MeHg
Anchorage Laboratory	3600	5										
Austin Laboratory	27000	40		1		3		2	1	3.8		
Bangkok, Thailand Laboratory	3300	10			-			3				
Buffalo Laboratory	30000	100	2	1	3	3		2	1	7		
Bürlingtani.ajabratory	41000	80	100	3	2	4		3	1	2		-
Gedar Falls Laboratory	12000	45	2	t		2		2		1		
Chicago Laboratory	51000	70	1	- 2	2	. 5		3		5		-
Connecticut (Shelton, CT) Laboratory	16000	40		2	1	1		2		1		
Corpus Christ Laboratory	15000	30		1		1		2	T	2		
Dayton Laboratory	20000	60		1	1	1.		2	1	1		
Denver (Arvada) saboratory	54000	120	3	3	1.7.	4	120	4	2	2		1
Edition Laboratory	49000	130		.3	1	100,000		.4	1	2		
Honolylu laboratory	6400	10		The state of		- 31		1		1		
Houston Laboratory	30000	60		1	2	1		2		1		
Irvine Laboratory	40000	120		4	15		2	. 2	2	1		
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Los Angeles Laboratory	11000	20	Lu. (Talk i	FEET SI	1000						
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Nashville Laboratory	48000	125	3		3	3		3		3		
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Pittspurgh Laboratory	34000	59	7.	2	(half	2	1	.3	12	3	150	
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Richland Laboratory	40000	35		/==1				1				
San Francisco (Pleasanton) Laboratory	21000	35		-1	1			2		1	1	
Savannah Laboratory	55000	100	2	2	4	3		1	2	1		
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Spokane Laboratory	6000	6						1	1 37	1.		
St. Louis(Earth City) Laboratory	51690	85	2 1	2	3	2	VETS	2	1	2		
Tallahassee Laboratory	26000	40		1	1	3		2		i		
Tampa Laboratory	14000	47		2	2	3		2		3		
Va'paraiso Laboratory	15000	35		1	2	3		2	1	1		
Water <u>(ovn</u> Laboratory	11900	36		1	1	1.1		1	4		1	
West Sacramento Laboratory	56000	85	9	4	4	5		2	2	1		
Westfield Laboratory	1,0000	32		1	2	2	31	2	1	2		
Total	976100	2111	26	45	75	60	3	69	97	53	6	7



TestAmerica Laboratories				Majo	rInst	rume	nt Sun	nmar	/		
Facilities Size, Employees and Major Instrumentation	HPLC	CUMSIMS	LC/MS/MS	GC (various detectors)	GC/MS	HRGCHRMS	Alpha Spectrometer	Gamma Spectrometer	Gas Proportional Counter	Liquid Scintillation Detector	Kinetic Phosphorescence Analyzer
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Bengkok, Inaliand Laborators				1	1	1-57					
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Irvine Laboratory				25	32						
King Of Prussia Laboratory				7	10						
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Savannah Laboratory	2			1.7	18	-				1	
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Accreditations and Certification



Quality Assurance

TestAmerica is committed to providing the highest quality data and the best overall service available in the environmental testing industry. To ensure that data produced and reported by TestAmerica meet the requirements of our clients and comply with the letter and spirit of municipal, state and federal regulations, we maintain a quality system that is clear, effective, well communicated and supported at all levels of the organization.

Under the supervision of the Corporate Quality Director, TestAmerica has Instituted a culture of quality that is a product of its organizational design, comprehensive training programs and industry leading systems of checks and balances. TestAmerica quality programs are governed by a corporate quality manual that defines our business policies and management practices, and articulates our systems for quality control, quality assessment and quality improvement. It is our policy to:

- Provide high quality, consistent and objective environmental testing services that meet all federal, state and numicipal regulatory requirements
- Generate data that are scientifically sound, legally defensible, meet project objectives and are appropriate for their intended use
- Build continuous improvement mechanisms into all laboratory, administrative and managerial activities.
- Maintain a working environment that fosters open communication with both clients and staff

TestAmerica analyzes Proficiency Test (PT) samples as required for accreditation and as outlined in the National Environmental Laboratory Accreditation Conference (NELAC). Each facility participates in the PT program semiannually for each area of testing and matrix (e.g. organics, inorganics, microscopy, radiological, microbiological, aqueous and clinking water) for which it is certified.

Proficiency Testing scores are a key performance measure of company performance capability. Laboratory scores are monitored to ensure continuous improvement and sustained high achievement. TestAmerica consistently ranks above industry-wide proficiency testing norms.

State & NELAP Accreditations

The TestAmerica network of laboratories collectively maintains laboratory certifications, accreditations and/or approvals in all 50 U.S. states. All TestAmerica laboratory facilities hold NELAP accreditation as well. TestAmerica is an active member of the NELAC community, chairing a number of committees and participating in the development and implementation of the national standards, now set as requirements under the program. TestAmerica maintains accreditations with sufficient redundancy between laboratories to enable work sharing on national, regional and local levels. This includes maintaining redundant method capabilities and technologies to manage large program sample volumes.

Federal Accreditations

lestAmerica had the first laboratory to be audited and approved under the new DoD Environmental Laboratory Approval Program (ELAP) and now has 11 facilities accredited under the program. TestAmerica has been closely involved with the DoD's development of the new accreditation program, and has made many contributions that are included in the new DoD Quality Systems Manual (QSM) Version 4.1. TestAmerica is also active in Department of Energy (DOE) programs with multiple facilities having successfully passed DOECAP audits. Additionally, TestAmerica is a participant in the USEPA Contract Laboratory Program and has 15 facilities with membership in the USEPA Environmental Response Laboratory Network (ERLN) and Water Laboratory Alliance (WLA).

See Certification Table on Page 22

Accredited to Work in Canada

TestAmerica's Nashville, TN and TestAmerica's Savannah, GA laboratories are accredited in accordance with international standard ISO 17025-2005 for a defined scope and meet the principles of ISO 9001:2008. These TestAmerica laboratories maintain an ISO 17025 compliant scope of accreditation through the internationally recognized accreditation body American Association for caboratory Accreditation (A2LA). Based on a mutual recognition agreement generated by the international caboratory Accreditation Cooperation (ILAC), these TestAmerica laboratories have been recognized as meeting the international requirements of ISO 17025:2005 and as qualified to provide environmental testing support for canadian environmental international requirements of ISO 17025:2005 and Provinces.

Electronic Data

TestAmerica provides electronic data deliverables (EDDs) to numerous government and commercial clients. EDDs can be provided in many TestAmerica standard formats, or can be customized to meet client requirements. We currently provide EDDs in various ASCII. Access, DBF and Excel spreadsheet file formats.

While offering many standard formats, most EDDs are customized to meet our clients' individual requirements, some of which are very complex. TestAmerica employs a technical staff that is dedicated to EDD development and client consultation, ensuring that electronic data provided to our clients are accurate and formatted to meet the clients' exacting requirements.

Health and Safety

TestAmerica is committed to providing a work environment that is free of recognized environmental safety and health hazards. It is TestAmerica policy that all work will be conducted in a manner that is safe to the employee, the community and the environment. We believe that every employee can work without injury or unreasonable exposure to hazardous work conditions. We further believe that all work can be done in a manner that protects the environment.

The TestAmerica Environmental Health & Safety Director (EHSD) ensures our commitment to operating a safe and environmentally sound business is not compromised. Under the supervision of the EHSD, each business unit has a designated Environmental Health & Safety Coordinator (EHSC), who is responsible for ensuring that health and safety operating policies and practices are adhered to at all levels of the operating unit they oversee.

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Project Experience



As the industry leading provider of environmental analytical services, comprised of 36 operating laboratory units combining hundreds of years of experience, TestAmerica has developed broad based experience in support of a multitude of environmental projects for public and private sector clients alike.



Automotive

- TestAmerica provides comprehensive analytical support to one of the nations largest automotive manufacturers
 supporting a variety of compliance programs, waste management needs and large scale remediation efforts. Projects
 often involve analysis of a full range of organic and inorganic parameters covering a variety of environmental media
 to include; wastewater, groundwater, sediment, soil, concrete & waste matrices. TestAmerica routinely coordinates
 specialty analytical services through a network team to address large scale and complex investigation programs.
- TestAmerica developed and deployed a mobile lab unit to a remote Midwestern destination to assist with a 3-year PCB investigation and remediation program at a large auto manufacturing facility. Services required included the analysis of dozens of samples daily with confirmed data due the same day samples were delivered. Confirmation and quality control support was provided by TestAmerica fixed base laboratories. Results produced from the mobile lab were reported following Level IV data package requirements.

Brownfields

- TestAmerica has provided ongoing support for the State of Hawaii Brownfields program, funded by Federal grants,
 Supporting brownfield redevelopment efforts at a former MSW Incinerator facility, TestAmerica performed analyses
 for heavy metals for a variety of investigation and cleanup actions over the past five years, and most recently has
 implemented multi-incremental sample processing procedures for large (2 Kg) sample composites coupled with upscaled (10 g) metals digestion procedures. TestAmerica has provided Level IV data packages for third party validation
 for all sites supported under this program.
- TestAmerica provides analytical support to an Eastern U.S. environmental consulting firm at six discreet project locations
 in support of Brownfields site assessments and redevelopment activities. Project analytical requirements include
 Volatile Organic Compounds (VOC), Semi-Volatile Organic Compounds (SVOC), Pesticides, Polychlorinated Biphenyls
 (PCBs), Polyaromatic Hydrocarbons (PAHs), Herbicides, Total & Dissolved Metals, and inorganic parameters. Four of the
 six sites were funded by EPA Brownsfields Pilot Project money therefore requiring full CLP analytical protocols and data
 packages prepared for third party validation.
- TestAmerica provides services at a former chrome plating shop located in California, working cooperatively with a
 global environmental engineering firm under a USEPA Brownfields grant. Hundreds of soil and groundwater samples
 have been analyzed to date for VOCs, metals, and hexavalent chromium, often requiring final results within 24 hours of
 sample receipt at the lab.

Building and Construction

- TestAmerica worked cooperatively with a national environmental services company to complete a long-term project
 involving a bridge expansion in the greater Philadelphia area. Critical to project success was our ability to meet
 demanding turnaround time requirements on a large volume of samples for a wide range of analyses. Analytical
 requirements included DRO-QAM, volatile and semi-volatile organic compounds, RCRA characteristic parameters, sulfur,
 metals, herbicides, and total organic halides. Project specific communication standards were developed to ensure client
 and project expectations were met and the project completed on time and on budget.
- TestAmetrica has provided extended support services for a large RCRA investigation conducted in conjunction with a
 major airport expansion in Ohio. Testing demands include the analysis of subsurface samples used to delineate the
 nature and extent of site contamination. Services are also being provided to support the facility NPDES program for
 process and storm water discharges as well as general waste characterization services.



Chemical Manufacturing

- TestAmerica provides comprehensive analytical and logistical support for a major petrochemical corporation. Services
 are provided for multiple facility compliance programs to include industrial discharge, RCRA waste characterization,
 groundwater and ambient air monitoring. Additionally, method development studies were also conducted to facilitate
 the transfer of responsibilities from a client operated environmental lab to TestAmerica.
- TestAmerica provides analytical support for a major chemical company, including analyses of all environmental nedia
 for Appendix VIII, Appendix IX, TCL and TAL compounds and elements, providing QC oversight involving replicate
 confirmation sampling and analysis. Continued support is provided for a CERCLA driven remediation program at
 additional operating units (OUs) including analytical support for remedial investigation, feasibility study and remedial
 action steps.
- TestAmerica has worked in conjunction with state and federal agencies to provide ongoing method development and analytical support services for the evaluation of PCBs in water, sediment and blota matrices on behalf of a major chemical company. Several hundred samples of varied matrices have been characterized for PCB Aroclor and Homolog inixtures employing GC-ECD and GC/MS-SIM methodology. TestAmerica staff worked in close association with regulators and company representatives to develop techniques to provide method comparison studies contrasting EPA SW846 Method 8082 and a modified GC/MS Method 680 SIM technique for PCB quantification. Several hundred fish fillet composites of various fresh water species were evaluated employing both techniques during a two-year lake study.
- TestAmerica has been performing daily, monthly and quarterly NPDES sampling and analysis for a major chemical
 manufacturing company, meeting their regulatory requirements for discharge monitoring. Analyses include various
 inorganic analyses on a daily basis, 7 days a week, 365 days a year. Sample collection is performed by TestAmerica staff
 using composite samplers. Additional monthly and quarterly testing includes Volatile Organic Compounds (VOCs),
 semi-Volatile Organic Compounds (SVOCs), Polychlorinated biphenyls (PCBs), Metals, and general chemistry.

Consumer Goods

- TestAmerica provides sampling and analytical services to a major fragrance manufacturer supporting the company's
 compliance monitoring program. Daily, monthly and quarterly NPDES discharge samples are collected and analyzed
 for each of three facilities, one of which also requires semi-annual ground water sampling and analysis. All field
 sampling and analyses are performed in accordance with applicable state guidelines. A wide range of organic and
 inorganic constituents are routinely monitored, including several program specific compounds performed by the lab
 specifically to meet the requirements of this client.
- TestAmerica performs sampling and analysis services for a major food, home care, and personal products manufacturer. TestAmerica field technicians complete numerous client requirements on-site, which include preparation of maintenance field logs and sampling field logs for multiple locations. On-site field support is required daily, 365 days a year. Summary data and activity reports are compiled and submitted monthly and submitted electronically. Additionally, TestAmerica prepares Industrial Self-Monitoring Reports (SMR) for submittal to the local sanitary district and prepares NPDES required Monthly Monitoring Reports (MMR) for submittal to the state agency.
- TestAmerica, ir support of a nonprofit applied science and technology development company, performs analysis of
 air particulates, water, soil/sediment, milk, wine, vegetation, lichen, wildlife, vegetables and silica gel for the following
 isotopes: Americium, Carbon, Curium, Gamma Isotopes, Gross Alpha, Gross Beta, Iodine, Plutonium, Radium, Strontium,
 Technetium, Thorium, Tritium and Uranium (Isotopic and Total).

Project Experience



Department of Defense (DoD)

- TestAmerica has provided continued support to an international environmental and engineering firm in support of their efforts at the Massachusetts Military Reserve, a very high profile Department of Defense project location. Currently in the third phase of project execution, TestAmerica provides rapid turnaround analysis for an ongoing groundwater project. Select drilling process samples are analyzed and reported on a 24-hour TAT basis allowing for continuous, uninterrupted field drilling activities. TestAmerica developed a modification to EPA method 8330 to address a need for lower soil reporting limits, allowing for the quantification of trace levels of explosive residue tentimes lower than standard method protocols.
- TestAmerica continues to support an International consulting/engineering firm at a number of Federal Department of
 Defense sites throughout the country. Support is provided for soil, sediment, water, and waste samples. Analyses are
 perforned following the DOD QSM or the AFCEE QAPP, depending on the site. Level IV data packages, ready for third
 party validation, are provided along with the appropriate electronic data deliverables (ERPIMS or ERIS).
- TestAmerica provides support to a global consulting engineering firm for RFL and risk assessment efforts conducted
 at Altus AFB. AFCEE 3.0 protocols are followed and modified for Appendix IX analytes. Primary samples are analyzed
 for volatiles, semi-volatiles, and metals. Periodically samples are analyzed for pesticides, explosives, anions, dissolved
 gases, radiochemistry parameters and dioxins. All deliverables are provided as full raw data packages in both hard
 copy and CD-ROM formats. EDDs are submitted in AFCEE's ERPIMS 4.0 format.
- TestAmerica provides full-service laboratory support to a Department of Defense installation conducting analyses for
 Volatile Organic Compounds (VOCs), PAHs, PCBs, pesticides, hydrazine, NDMA, and a variety of metals and inorganic
 parameters in soil and water samples employing SW-846 methods and following AFCEE 3.1 protocol. Data deliverables
 include long-form raw data and a customized electronic deliverable. Under this project, TestAmerica has provided
 research and development support for the analysis of hydrazine to ensure compliance with state requirements.
- TestAmerica has provided analytical support to multiple environmental engineering firms managing projects at a Midwest located Department of Defense Army Ammunition Arsenal for the past 12 years. Work was performed following the Army Shell document, and subsequently graduated to Corp District specific guidelines. TestAmerica worked closely with USACE to support the development of this unique program, including providing R&D work to develop soil grinding techniques used in multi-incremental sample processing. Analytical support to date has involved full TCL/TAL Organic and Inorganic parameters, various general chemistry analyses and TCLP analyses as well as explosive and energetic compounds. Report deliverables include Level IV data package and client specific electronic data files.
- TestAmerica works as a subcontractor to a USACE/HTRW prime contractor, providing support for semi-annual
 groundwater sampling events conducted at various operational units within Fort Wainwright. AK and other military
 sites. Groundwater and soil samples are analyzed for GRO, DRO, RRO, VOCs, SVOCs, PAH SIM. Pesticides, PCBs and
 Metals and wet chemistry methods. All work is performed in accordance with the DOD QSM with full COE prescribed
 data packages including EDF and SEDD electronic deliverables.
- TestAmerica provides routine support to a USACE district office conducting chemical and radiochemical analyses on a
 variety of sample types for a noted FUSRAP site. Often, samples result from emergency response related activities and
 require rapid turnaround time support for the Hazardous, Toxic, and Radioactive Waste (HTRW) program.



Department of Energy (DoE)

- TestAmerica participates in many studies conducted in and around Department of Energy plants located in Oak Ridge.
 TN and Kansas City, MC. Concerns over PCB levels contained in native fish tissues have resulted in the establishment of several premiantoring studies. TestAmerica began supporting the projects during the 2006 monitoring event analyzing more than 300 fish and clams over the last three years for PCB aroclors by SW 8082 and for PCB congeners by 1668A. Diagonflies were also analyzed for PCB congeners by 1668A.
- TestAmerica has supported ongoing efforts at the Savannah River Site (SRS), providing analytical services for chemical,
 physical and radiochemical analyses on a variety of different matrices including soil, sediment, sludge, groundwater,
 surface water, waste matrices and building materials such as wood, concrete, metals, and painted materials as required.
 All analyses are performed under strict adherence to the DOE Quality Systems for Analytical Services (QSAS) Version 2.4.
- TestAmerica per forms analysis of urine and fecal tissue for routine and rapid turnaround times to support a large scale
 personnel exposure monitoring program. Analysis is conducted for the following isotopes: Americium, Plutonium,
 Strontium, Thorium, Tritium and Uranium (Isotopic). In support of this program, TestAmerica supplies a contract
 specific customized data report and EDD format.

Emergency Response

- TestAmerica, reaming with a major environmental engineering firm, successfully responded to an off-hours spill at a
 leading telecommunications provider. The coordinated effort involved the receipt and processing of a large number of
 samples on a Friday afternoon of a holiday weekend. Results were furnished immediately upon completion allowing
 the response team to initiate a remedy the very next morning.
- The TestAmerica network of laboratories collaborated to support emergency level support effort for an impacted river
 and aquifer caused by the accidental release of illy ash sludge. TestAmerica led the effort to supply high-quality data
 to identify and define the physical and chemical characteristics of fly ash, soils, groundwater, surface water, sediment,
 drinking water, biota, and macro invertebrates in support of the recovery effort. Data was used for characterization and
 for assessing the degree of remediation achieved, as well as potential litigation.
- TestAmerica provided analytical support for an emergency response effort resulting from a fire at a Midwest chemical
 man, facturing facility. Work included accelerated turnaround of a high volume of soil and water samples analyzed
 for metals, organic and wet chemistry parameters. Post emergency response work continued with waste classification
 analyses required for waste disposal and soil, groundwater and drinking water analyses conducted to assess residual
 environmental impacts associated with the chemical fire. TestAmerica continues to provide long-term monitoring
 support to the site.

Project Experience



International

- Through facilities in Southeast Asia, TestAmerica provides support for multiple multinational oil companies with
 monitoring projects associated with the operation of offshore oil platforms. Sample matrices include seawater,
 sediments, and biota for the determination of PAHs, particle size, metals and TPH at challenging low reporting limits.
 TestAmerica also provides technicians for onboard sample extraction and analysis.
- TestAmerica provides analytical services and field support for international consulting firms conducting Phase II
 site investigations and underground storage tank projects in several Asian countries. Data are produced to meet
 USEPA, international and country-specific rechnical and defensibility criteria. TestAmerica assists by providing project
 management, coordinating international sample shipments and furnishing technical support covering multiple
 countries, including very remote project locations.
- TestAmerica has provided lab support to the investigation and remediation of a large closed exploration and
 production tract in South America for an international oil and gas corporation. An in-country lab was established to
 facilitate quick turnaround time requirements and assist with sample logistics for samples being returned to the United
 States. Lab support included full range organics with metals analyses along with Level IV deliverables.
- TestAmerica provides support to an international environmental consulting company, analyzing samples from various
 site assessments, investigations and monitoring programs conducted at retail gas stations, terminals and refineries
 located throughout Latin America, South America and the Caribbean. Analyses of sediment, soil and groundwater
 typically include Petroleum Hydrocarbons, PAHs. BTEX/MTBE/Ethanol, metals and various inorganic analyses.
 TestAmerica coordinates international shipments of samples and sampling supplies to and from the field addressing a
 variety of country specific requirements and restrictions.

Mining

TestAmerica has been providing analytical services in support of a large remediation project at a mining site in
Southern Nevada. A full range of analytical tests are provided to include: Appendix IX 8260 and 8270, metals,
hexavalent chromium, pesticides and PCBs, cyanide, full wet chemistry analysis, 1625C for NDMA, low level 1,4-dioxane,
PCBSA, perchlorate and radiochemistry analyses. TestAmerica's service center in Las Vegas has been used to stage
sampling equipment and provide courier service to facilitate moving large sample volume and time sensitive samples.



- TestAmerica prepared and deployed a mobile lab facility to support the excavation and removal of a retired pipeline
 in Dutch Harbor. The mobile laboratory obtained full certification by Alaska DEC. This project called for the analysis of
 hundreds of environmental samples under 24 hour turnaround conditions. Results were provided on time routinely
 following project specific requirements for electronic data transfer.
- TestAmerica has conducted an ambient air monitoring program to a consortium of petrochemical refineries in the Gulf
 Coast region for more than 20 years. This ongoing project involves analysis by TO-15 (GC/MS) of more than 160 organic
 compounds in a single analytical run with part per trillion (PPT) reporting limits.
- TestAmerica provides research and development services in support of proprietary product identification projects for
 companies in the petroleum industry. The laboratory works with clients to help establish effective test methodology
 for the identification of unique organic compounds. Addressing these analytical challenges often requires modification
 to routine preparatory and analytical methods resulting in a customized approach to product identification.
- TestAmerica has been assisting a major petrochemical refinery for several years with their compliance monitoring and I azardous waste classification programs. Analytical testing involves a wide range of wet chemistry analysis and TCLP for both organic and inorganic constituents on a variety of challenging matrices covering over 100 samples per month.
- TestAmerical is the sole contracted lab supporting system monitoring samples at a large former oil terminal pipeline
 conducting facility remediation. The analytical support for this project requires the analysis of over 300 samples
 amountly for VOC * List compounds. To meet customer specific needs for this project, TestAmerica invested in
 specialized sampling media and delivers a customized data deliverable.

Power Utilities

- TestAmerica provides analyses of soil, groundwater and building debris, working cooperatively with a national
 consulting engineering firm to support the decommissioning of a major nuclear power facility. TestAmerica maintains
 NRC materials handling licenses and provides for the safe handling of all samples taken during the decommissioning
 process. Samples are analyzed for Volatile Organic Compounds (VOCs), Semi-Volatile Organic Compounds (SVOCs),
 Pesticides and Polychlorinated Biphenyls (PCBs). Metals and Wet Chemistry parameters.
- TestAmerica continues to offer support to a global environmental consulting firm conducting investigation and
 remediation of land contaminated with by-products from manufactured gas plant operations. TestAmerica
 provides analytical services that include the analysis of Volatile Organic Compounds (VOCs), Polycyclic Aromatic
 Hydrocarbons (PAHs) as well as total particulates and metals in air samples using NIOSH methods: NIOSH 1501, NIOSH
 5506, NIOSH 0500 and NIOSH 7300. Data provided is used to support risk assessments for a nearby residential area.
- TestAmerica provides support to a major Texas based power company for their transformer maintenance and spill
 remediation programs. Daily support requires routine analysis of a large number of transformer oil samples for PCBs to
 ensure compliance with EPA regulations and to address clean-up of contaminated sites.
- TestAmerica provides analytical services for groundwater compliance monitoring at multiple locations for a large
 energy company with operations throughout New Jersey. Sites range from active, operating substations to closed
 manufactured gas plant (MGP) facilities. Site-specific analytical programs encompass testing for organic, inorganic,
 general chemistry, biological, and monitored natural attenuation parameters. TestAmerica field service teams provide
 low-flow groundwater sample collection services in accordance with NJDEP Field Sampling protocols following client
 specific site safety protocols.
- TestAmerica provides analytical support on a large remediation effort for a large energy company located in the southeastern United States. This project requires daily sample delivery to the lab, errompassing a 2-3 year project life cycle. All samples are analyzed for a variety of metals and inorganic parameters on an accelerated turnaround basis so that ongoing disposal and treatment decisions can be made, minimizing costly project interruptions. Client specific QA protocols have been established to meet data usability requirements and all data is provided in a Level IV data package. Customized multi-file EQUIS deliverables are included with the delivery of each data set. Total number of samples exceeds 500 per month on average.

Project Experience



Steel & Primary Metals

- TestAmerica provides support to a multi-national steel making organization on an environmental dredging project involving PCB contamination. During the height of the project, dredging operations were conducted 24 hours per day, 6 days per week. An ambient air monitoring program was conducted during dredging activities to assure that the nearby residents and workers were not exposed to fugitive air contaminants that could adversely affect human health. TestAmerica analyzed more than 700 samples for PCB Aroclors using method TO-4A, I AHs by TO-13A and volatiles by TO-14/TO-15. All samples were done on a fast turnaround time basis. Monitoring for volatiles by TO-15 remains ongoing.
- TestAmerica has performed compliance analytical services for the world's leading beverage can maker at 11 locations
 nationwide since 1990. Through centralized project coordination, TestAmerica employs its network of laboratories to
 meet this client's national testing demands. The laboratories analyze compliance samples on a monthly basis as well
 as perform waste characterization services. Summary data packages for submittal to the facilities' local agencies.

Sediment Management

TestAmerica, in support of private industry, provides analytical support for a river sediment investigation in eastern.
 New York. The river has been the subject of a major investigation and remediation effort addressing Polychiorinated Biphenyl (PCB) contamination. TestAmerica continues to provide support to a Fortune 500 company engaged in remedial action for contaminated sediments playing a significant role by performing approximately 20,000 analyses to date for PCBs in sediment. Samples are analyzed using a modification to traditional methodology to address site-specific and matrix concerns resulting in high quality data used to make critical decisions throughout the remediation process.



State Government

- TestAmerica, in support of the State of New York, Department of Environmental Conservation (DEC), receives samples
 from all NYSDEC regions to address the analytical requirements of remedial investigations, discharge evaluations, spill
 responses and state Superfund activities. TestAmerica performs all analyses adhering to the NYS Analytical Services
 Protocol (ASP), which mimics EPA CLP Methods. Sample matrices include wastes, soils, drinking waters, groundwaters,
 sediments, discharge samples and air. This contract requires strict adherence to the required methodologies resulting
 in high quality, legally defensible data for the State of New York.
- TestAmerica maintains analytical support contracts with each of three major engineering firms holding primary
 contracts with the Illinois State Department of Transportation. In this capacity TestAmerica performs a broad range
 of analyses for statewide assessments and investigations. In over 10 years of support provided under this program,
 TestAmerica has uniquely positioned itself to address the program's custom requirements.
- TestAmerica is the primary laboratory supporting development of the Hawaii Department of Health Technical Guidance Manual (TGM) for sampling and risk assessment. Support includes application of draft TGM procedures to determine efficiely at selected sites over the past two years. One site in this effort consisted of a former agricultural property at a remote island location that required testing for Organochlorine Pesticides, Organochlorine Herbicides, Triazines, Carbamates, Metals, SVOCs, and Dioxins as a prerequisite for a housing development. TestAmerica provided solutions to help resolve problematic sample transport logistics from the site. In addition, TestAmerica developed and applied the first-ever super-scaled (5 Kg) multi-incremental sample processing application for a number of the tested parameters, conducting leachability studies on all positive samples, and pioneering commercial lab implementation of the Ruby-Drexler sample preparation technique to determine the 'bioaccessible' component of detected arsenic concentrations.
- TestAmerica is the primary laboratory supporting an ambient air monitoring project within residential dwellings. This ambient air program is under the control of a state government agency and is highly visible within the public domain. TestAmerica has dedicated approximately 180 summa canisters and 130 flow controllers exclusively for use by this client. Canisters are supplied to the client on a weekly basis, batch screened for both SIM and SCAN modes of EPA Method TO-15, maintaining a seamless cycle of appropriate sampling media to the field for systematic project execution.
- TestAmerica worked with the Florida Department of Environmental Protection (FDEP) to validate analytical techniques
 used for the identification of 1,4-dioxane following 8260SIM methodology. TestAmerica was the first laboratory in
 Florida certified for analysis of 1,4-dioxane by 8260SIM.
- TestAmerica has proliferated its analytical capabilities to expand its test offerings specific to the evaluation of
 Hexavalent Chromium in environmental samples. TestAmerica currently serves as the lead lab for an extensive NJDEP
 project addressing the evaluation of background chromium concentrations in urban soils. Processing thousands
 of samples for state driver- programs, the laboratory not only complies with the difficult New Jersey data validation
 guidelines but also performs other non-routine procedures, such as the Japanese Slab Cake method.

Project Experience



Transportation

- TestAmerica has provided ongoing environmental testing services for a major transportation company since 1982 with sites located throughout the eastern US. A variety of matrices have been evaluated for environmental compliance which include water, soil, waste, complex organic niatrices, and air. Routine analytical services include the testing of various matrices for volatile organics, semivolatile organics, metals and wet chemistry parameters for groundwater and surface water monitoring, and waste evaluation programs. Special methodology has been developed to meet unique regulatory compliance concerns, ensuring that minimum reporting levels are achieved despite complex matrix interferences. Data deliverables are customized to meet regulatory and data management needs.
- TestAmerica currently supports a comprehensive remediation effort for a 240-acre rail yard working in conjunction with
 a major consulting engineering firm. High sample volumes and quick turnaround are required to monitor the extent
 of impacted groundwater, groundwater treatment effectiveness, soil remediation effectiveness and to keep stockpiles
 moving. Over 700,000 cubic yards of soil has been excavated to date. Samples are analyzed for 8260, 8270, 8015,
 Metals, STLC and TCLP parameters. Customized quality assurance plans were developed to address challenging matrix
 and site conditions. Data reports and electronic deliverables were also customized to address client specific needs.

Waste Management

- TestAmerica holds a national contract with a national waste management firm to provide sampling and analytical
 services throughout the United States. TestAmerica conducts a wide range of environmental analyses for several
 hundred solid waste landfills under this agreement, assisting the client with meeting their regulatory compliance
 requirements. In addition, at selected locations OSHA trained field personnel are provided to collect groundwater,
 surface water and leachate samples. TestAmerica provides automated sample scheduling services, site specific sample
 kits, long term data management and client specific data handling supporting a wide variety of reporting formats.
- TestAmerica maintains a unique support arrangement with a Midwest area industrial waste recycling facility providing
 waste screening and characterization services as well as process related testing. TestAmerica services are uniquely
 designed to ensure the efficient daily operation of the facility and uninterrupted service to facility clients.

Water Treatment

- TestAmerica supports an international environmental and natural resource management firm with water quality
 monitoring for a large scale TMDL program. Analytical services designed to meet specific TMDL requirements are
 provided at various water bodies throughout the Southeastern United States. Analysis conducted include: low-level
 ortho and total phosphorus, TKN, nitrates, coliform, alkalinity, TDS, TSS, color, turbidity, chlorophyll A. anions and
 metals.
- TestAmerica is the primary laboratory supporting a large-scale drinking water program for a major California
 utility company. Required analyses fall under EPA Title 22 regulations, many of which are conducted under 24-hour
 turnaround conditions. TestAmerica orchestrates a statewide sample transport system picking up samples at various
 locations in the state and delivering them to the lab within time to address short hold-time parameters. Project specific
 communication standards have been developed to immediately notify the client for any positive results, including
 weekends and holidays. Five different report types are needed as dictated by project specific requirements.
- TestAmerica provided analytical support for a wastewater treatment plant pilot study in south Florida. This study was
 designed to evaluate treatment of reuse water as a potential source used to recharge local aquifers currently used to
 provide community drinking water. Samples were collected daily, weekly and monthly with over 1500 samples being
 studied. Analytical requirements included full list organic and inorganic analyses utilizing wastewater, potable water
 and pharmaceutical and personal care products (PPCP) methodologies.

TestAmerica Products & Services Businesses

TestAmerica affiliates include EMLab P&K, the leader in analytical microscopy and indoor air quality testing; QED Environmental Systems, Inc., the leading supplier of groundwater sampling equipment and remediation pumping systems: TestAmerica Drilling Corp., provider of innovative environmental and geotechnical drilling, and TestAmerica Air Emissions Corp. (METCO Environmental), specializing in air emissions testing.

EMLab P&K

is the leading indoor air quality (IAQ) testing laboratory in North America, specializing in lab analysis of air and surface samples for mold, fungi, bacteria, asbestos and allergens with more accredited locations and analysts than any other lab in the nation. EmLab P&K is committed to providing outstanding service, quality and support to industrial hygienists, laboratories, state and local public health departments, hospitals and IAQ professionals.



QED Environmental Systems, Inc.

is the leading international supplier of air-powered pumping systems for groundwater sampling, groundwater remediation and landfill liquids. QED developed products include:

- · MicroPurge Tow-flow groundwater sampling equipment
- AuroPump* remediation and landfill air-powered pumps for use in severe conditions of solids, solvents, corrosives and high temperatures
- Genie' systems selectively pump floating layers of hydrocarbon
- E-Z Tray air strippers remove VOC's from groundwater and waste water

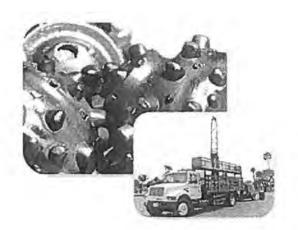


TestAmerica Products & Services Businesses



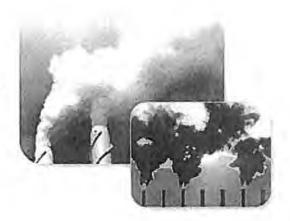
TestAmerica Drilling Corp.

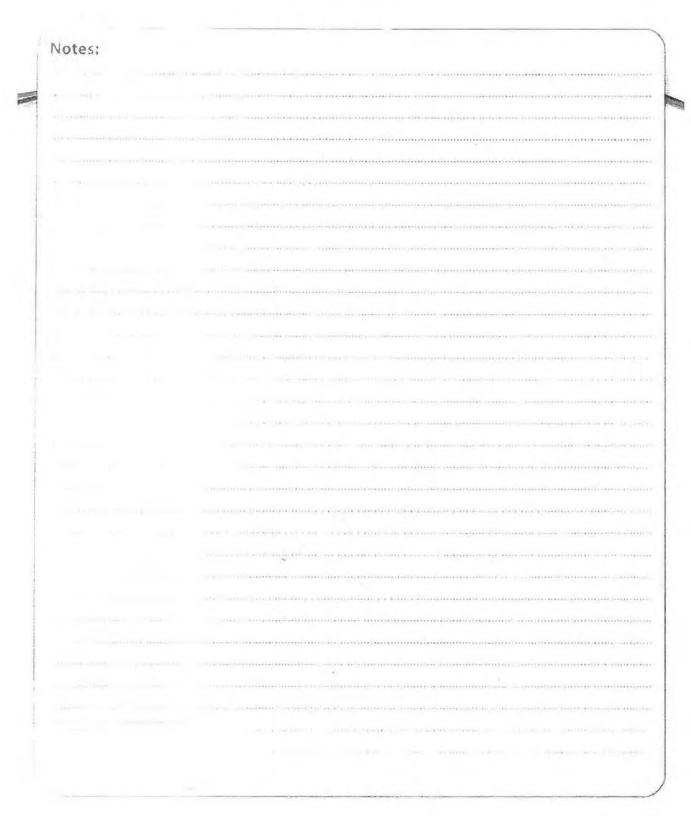
is a leading drilling contractor in the western United States, specializing in environmental, geotechnical, and infrastructure subsurface investigations. Their innovations include the industry's first decontamination trailer, limited access drill rigs and well surface completion toolings. TestAmerica Drilling is widely recognized for its ability to deliver your project on-time and on-budget.



METCO Environmental

is a leader in source emissions testing, serving a full spectrum of industries including, refining, petrochemical, combustion and utilities, both in the U.S. and Internationally. METCO has built a reputation for exacting sampling methods and rigorous quality control, based on having sampled over 25,000 sources. METCO is staffed by highly qualified and trained full-time professional employees who maintain the highest safety standards in the industry.







CHK00000078



2960 Foster Creighton Road Nashville, TN 37304 *800-765-0593 * Fav 015-726-3404

February 03, 2009

3:03:02PM

Client:

Chesapeake Energy Corporation

6100 N. Western Avenue

Oklahoiga City, CK 72118

Atm:

Fred Gipson

NRL0012 Work Order:

Project Name.

Chesapeake Shale Project - PA Sites

4100810701 Project Nbr.

P/O Nbr: Date Received:

12/02 08

SAMPLE IDENTIFICATION

Trip Blank

6910-11D

LAB NUMBER

COLLECTION DATE AND TIME

NRL0012-01

12/01/08 (1.00

NRL0012-02

12 01 08 00:01

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addictional to this report. If you have any question, relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980. Any opinions, if expressed, are outside the scope of the Laboratory's accreditation.

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2960 Foxer Creignon Road Kashwile, TN 37204 1606-765-0980 1 Fex 515-726-7404

Client Chesapeake Energy Corporation

6100 N. Western Avenue Oklahoma Cuy, OK 73118

Alin Fred Gipson

Work Order

SRLOGIZ

Project Name.

Chesupeake Shale Project - PA Snes

Project Number.

4100310701

Received

12/02/08 08:30

Additional Laboratory Comments: This is a complete final report. The subcontracted parameters are listed below and are attached to the end of this report.

All subcontracted data is attached at the end of the Nashville Report. Per client request, the Ro226 and Ra228 (Total Radium) analysis was switched to Gamma Spec Analysis by Method 901 IM due to sample matrix complexities that prevented the first analysis from proper completion. Therefore, the Gamma Spec will be reported in the report in lieu of the Total Radium. No further changes were made.



Sample Anomalies

All samples arrived in good condition and within temperature allowance. The pH tested at sample receipt for the Cyanide containers was pH ~ 10. This was likely contributed to the complexity of the sample matrix and its effects on the acid preservation in the bottle. Client requested we proceed with analysis as received.

The matrix of the sample analyzed required the use of both prep and analytical dilutions in various tests to accommodate the known sample matrix effects that have been seen with this project. These matrix effects have caused some tests to report with elevated detection limits due to these interferences in the analytical methods by the sample complexity. These results are noted in the report with "RL1" qualifiers indicating lower diluted and undiluted rans on this analysis were not feasible due to method QC constraints.

Specific Conductance is reported with an "E" value slightly over the upper linear range. The highest second source standard that can be purchased and used in this data set was at 100,000 umbo/cm thereby establishing the upper linear range of the instrument by our normal SOP for the method. At the request of the client, an in-house standard was prepared and analyzed on the instrument probe showing linearity of the instrument within normal acceptable QC ranges to 250,000 umbo/cm. Therefore, the linearity of the instrument was considered valid to this higher range; however, any value above the 100,000 umbo/cm was noted with an "E" qualifier in the report as per the method SOP recommendations.

Due to the sample complexity issues, the empirical relationship between the Specific conductivity and TDS value may not agree. This would likely be due to the autount of soluble organics and/or any separated out oils represented in the TDS value that may not be reflected in the Specific Conductance analysis. The use of smaller sample aliquous was used in accordance to the method when possible to help minimize the sample complexity issues and improve the empirical variances in these less.

The TDS value is noted with an "A-01" qualifier. The definition of this special notation is located in the sample qualifier definition page at the end of the report.

In comparison of Total and Dissolved metal elements some of the metals results differ. This is likely attributed to the sample matrix complexity that is causing the total recoveries to be less than the dissolved recoveries. The bottles were checked to make sure they were labeled correctly. There were no visible signs noted by the analysts during the tests that indicated a proper digestion and analysis didn't occur, so the data was accepted as reported.

The Trivalent Communication results are reporting twice due to a computer system error. The detection limit of 1006 rag/L is the value than should be used for explanative purposes. The 100 mg/L detection limit should not be used for reporting purposes.

Or Anomalics

The Blank Spike recovery for an-Dimethylphenethylamine, Isosafrale, Methpyrilene, L4-Phenylenediamine,



2950 Poster Greighten Rose Nashveie TN 51 04 15 5 5 5 5 5 5 5 5 5 5

Line Chesapeake Fnergy Corporation

StOON Western Avenue Oktoberna City, UK 73118 Work Order NRL 6012

Project Name

Chesapeal e Shale Procest 193 bries

Project Number Received 1100810701 12002108 08 40

Aun Fred Gipson Received 12/(2/18/0)
Fumplum, and Kepone were biased low in the Appendix IX Sen (volatile analysis). These compounds are

considered a poor performer by the method due to reactivity of the compound. Some of these were not detected in the Blank Spike at any recovery, but due to the nature of these compounds and its reactivity to the extraction process, the sample was not re-extracted for reanalysis. The data was accepted as qualified for this compound. It is noted with an "L2" qualifier in the report.

Some compounds were biased high in the Blank Spike recoveries. The sample results for these runs were all non-detect and noted in the report with an "L" qualifier. The data was not affected so no further action was taken

The Brainide recovery in the associated QC was reported as acceptable within the recovery range of 80-120 % instead of the method default of 90-110% due to the complexity of the sample matrix. The affected sample recoveries are noted with a "C.8" and "L.1" qualifier in the report. The client was made aware of this occurrence due to the Chloride interferences during the IC analysis. No further action was taken

There is a detailed listing of the data qualifiers used in this report located at the end of the report before the COC section.

Subcontracted Analyses:

The following tests were subcontracted to other TestAmerica laboratories. Their results will be located within the body of the report unless noted otherwise at the beginning of the narrative

Color analysis was performed by the TestAmerica Savannah laboratory.

Total & Dissolved Zirconium by Method 6026B and Total Sulfur by Method 6026B were analyzed by the TestAmerica Connecticut laboratory. Gamma Spectroscopy and Gross Alpha and Gross Beta were analyzed by the St. Louis laboratory.

The Chain(s) of Custody. 41 pages, are included and are an integral part of this report.

These results relate only to the items tested. This report shall not be reproduced except in full and with permission of the laboratory

All solids results are reported in wet weight unless specifically stated.

Estimated uncertainty is available upon request.

This report has been electronically signed.

Report Approved By:

Mark Hollingsworth

Program Manager - National Accounts



Clear Chesapeake Faergy Corporation

6100 N. Western Avenue

Oklahona Cev. OK 73118

You Fred Capson

Bestleam

1013

Work Order

NRL0012

Project Name

Chesaveake Shale Protect - PA Shes

Project Number. Received 41008) 0701 12/02/08 08 30

ANALYTICAL REPORT Dilution Analysis MRL Date/Time Method Analyte factor: Batch Result Plag Units Sample ID: NRL0012-01 \$26910-11D - Water) Sampled: 12/01/08 11:00 General Chemistry Parameters 235 mg/L 10.0 12/16/08 14:33 EPA 350.1M 8137287 Ammorra us N Bicarbonate Alkolining as Car. 43 58.9 10.0 (27)2/08 21 12 SM 2320B 8120336 mal. BOD - 5 Day 76.2 1.1 mg/L 40.6 20 12/03/08 17:30 SM 5210B 8120305 Branide 895 500 500 12/07-08 09:14 EPA 300 0 \$120850 mel. Carbonate as CaCO3 ND 10.0 12/02/08 21:12 5M 2320B \$120339 mwl. 1000 100 EPA 4104 8121078 11900 ing'l. 12/05/08/21 14 Chemicel Oxygen Demoid 228000 5000 5000 12/03/08 23:08 SM4500-CLL 8120608 mg/L HTJ 5W84c 2196A 8122645 Cherm cer (VI) 9.22 mel. 1 00 100 12/16/03 19 36 Charlet ND 0.00300 12/15/03 11 3 FPA 3354 8121920 mg/L 1 ND 0.100 12 10 08 09-5 SM4500-F C 8171231 1 World: mgL CIBS COMMANDE SM 5540C 0.050a 121/3/08 07 35 812039.1 11.133 mgil. SM-506-NO3 1 Sitta e Nitt 4 18 's 0.127 mell 0.100 121/3/18 18 59 X120528 1 / 2 Great HIEW 5/2 mga. 5.36 12/16/03 15:51 EPA 1654A 8121525 1154 5.10 HTI pH Units 0.500 12/58/03 10:15 SW \$46 9040C 8121059 101: 008 12 10 EPA 4204 M Manging. ND mall 0.0500 8121531 FPA 365.4 Mescherus ND meil 160 12/12/08 12 17 8121721 Res dual Chlorice 4.89 HTH mg/L 0 100 12/10/08 15:18 SM 4500C1 G 81215-3 237000 A-01, F umho/em 100 12/06/08 14 49 SM2510 B 8121062 Specific confluctance Salate ND mg/L 1 00 12/12/08 12:19 ASTM D516-90 8122036 Sullide 2,60 1.00 12/03/08 15:30 SM4500-S2 F 8120984 mg/L Sulfine ND HTI mg/L 250 12/02/08 18:00 SM4500-503 B 8120326 SM2546 C Total Dissolved Solids 337000 A-Ola 1000 12/02/08 21 40 8120296 mg/L Tetal Organic Carbon 224 1.00 12A(2/08 G\$ 30 SM5310 B mgl. Total Suspended Solid-150 4.00 12/03/08 21 48 5M2540 D 8120489 ing/L NTU 1.00 12/02/08 15 13 SM2130 B 8120332 31.7 Turbiday C) anide. Weak Acid Dissociable ND mg'l 0.0500 12/11/08 10:32 SM4500-CN I 8121713 Temperature of pH determination 22,2 MTI Deg C NA 12/08/08 10 17 EPA 170 T 8121050 8121720 Tetal Kjeldahl Natrogen 585 001 12/11/08 15:27 EPA 351 3 1181 12/05/08 17:31 ND SW846 7195A Climmun, Trivalent NI mg/L 6.00 1000 (CALC) Chemion: Tuvalera NO mg/l 1.00 100 13/16/05 19 36 SW846 2196A (CALC) General Chemistry Parameters - Dissolved C=romium (VI) 7.81 HT3 mg/L 1.00 100 13/16/08 19 36 SW846.7195A 8122645 6.00 1000 12/08/08 18:58 SW846 7196A (CALC! Catomiani, Trivalent Disselved ND MI mg'L Ciromiani, Trivalent Dissolved ND mg/L 1.00 100 13/16/98 19:36 SW 846 7396A [CM.C] Metals H dies Cat O3 40400 (2/05/08 17:31 SM 2349B ICALC: 6530 1960 mg/l Total Metals by EPA Method 501000 Shar (min) ND meL 100 1003 12/65/08 17:51 SW\$46 6016.B 8120068 10.0 1000 (24) 5/08 17 51 SW846 6010B 8120066 Same y 3.15 mg L ND mg L 10.0 1000 :2/650/8 17 31 SW846 5010B 8120066 Misside Har re 8920 100 1000 12/05/08 17:31 SW\$46 6010B \$129066. mg"

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4.00

2.05203 17 31



2960 Faster Creighton Road Nashville 7N 37204 1 800-785-0653 1 Fax 8 (5-725-34)4

Chemi Chesapeake Energy Corporation

6 CON Western Avenue

Oklehoma City, OK 73118

Fred Gosen

Work Order:

NRL0012

Project Name:

Chesapeake Shale Project - PA Sites

Project Number. Received

4100810701 12/02/08 08:30

ANA	1.3	K'AL	BLAN	TMC
	4 3 4	1	The Late 1	7111

Analyte	Result	Flag Units	MRI.	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-01		Vater) - cont. Sample	1: 12/01/08 11:00				
Total Metals by EPA Metho			A TOTAL OF THE PARTY OF THE PAR	7	and the same of th		
Boron	ND	mg/L	50 0	1(8)0	1245/0x 12.41	SW846 60:0B	8120050
Cadmium	`ID	mg.L	tiffu"	1000	12/05/08 17 31	SUASA 1010B	NICTOR
Calenco	14500	mg.L	100	1000	12/05/98 17:31	SW845 601011	\$12656
Chronishin	ND	Pym	5.00	1078)	12 (3.05 [7.3]	SH/856 (60) 013	\$12005
Cobalt	ND	mg/L	30 ti	(1200)	12 / 68 . 1.31	S45.879 veligit	ki Meda
Copper	ND	1027	10 9	(000)	12 (0.08 17.31	thermal New Series	413:4je
Iron	75.4	ngl	30.0	10,50	12 (0.68 12.31	SUSTREGION	\$120060
Leac	ND	night.	3.00	11:50	12 1/258 (2.3)	: WS4A populi	312000
Magnesia n	1010	mgT	600	1000	10 -68 130	-14 546 FG -1B	81200%
Manganese	ND	Tem	15.0	(050	12 1- 28 7 7 1	240846 April 1	X12006
Molybdenian	ND		50.0	1060	12/19/65 (7.7)	\$16.846.60 mg	\$12:06:
Nickel	ND:	mg/l	10.0	1000	12 8 98 17 31	SWS46 60 TOB	\$12006
Potassium	ND		1000	1000	12 15 (8 17.3)	SW\$46.60.003	812000
Selentum	ND ND	mg/l.	10.0	1000	12:05:08:17:31	SW\$46 60.5H	\$129,06
Silver	20	Cam.		1000	1295 08 17.31	E0100 042/1/2	
Sodium	69400	mg/l.	5.00	1000			\$120066
	0,000	mg L	1000		12:05:08:17:31	SW\$46.6616B	8120056
Strontium	3400	mg/L	50.0	1000	12/05/08/17 31	SW\$46.5010B	8120006
Thallium	ND	mg/L	15,0	1000	12/05/08 17:31	SW\$46 5010B	812006
Tio	ND	mg4.	500	(Q(x)	12/05/08 17/31	HC105-615/03	812006
Pitemun	ND.	mg1	50.0	1(ital	12/05/08 17 31	BC105 51.8 #2	812005
Venadioni	NO	mg/L	20.0	1000	12/05/08 13/31	8M316 9010B	812(82%
Zine	ND	mg/L	50.0	1006	12/05/08 17.34	SE164 5013B	8120000
Dissolved Metals by EPA M	ethod 6010B						
Akaminum	ND	cig/L	100	1000	12 68/08/18/58	SW\$46 6010B	8:2007
Antimory	NO	mg/L	10.0	1000	12 08:48 18:55	SW'\$46 6010B	8,2007
Arsenie	ND	mg/L	10.0	1000	12/58/48 18:53	SW\$40 (0)10B	\$12007
Banum	19200	mg-L	30,3	1000	2 23/05/18 58	SW\$46 6010B	\$12007
Beryllian	NO	mg.1	4.00	1092	24/8/05/18 58	SW845 66 (0)3	X12007
Cedmium	ND	mg/L	1.43	1002	12:18:48 18:38	SW345 0010B	212007
Cleonium	ND	ng'L	5,00	10(6)	12 8.08 18.38	SW24e of 10B	212007
Cebalt	ND	::p1.	20 0	1000	12 18 75 18 58	SW846 60100	\$12003
Copper	ND	rig.L	10.0	1644	12 (\$ 108 18 58	5/1/845 63009	8.20m2
ror	196	ngit	59.0	1000	2+8-05-18-38	SW84570 BB	¥10007
red	ND	mg/L	5,00	1650	348,6533.58	5W849-65:0H	812/617
Manganese	18.6	mgil,	15.0	1000	23.64.25	SW845-0010B	813(9)7
slalybdenau	ND	mg.T.	50.0	1170	2 Ch (15 W 15	SWA497-10B	812657
Vickel	ND	m ₂ 1	10.0	1000	15 18 102 A 38	5W.846.7610B	812007
Se enorm	ND	mg/L	10.0	1000	12 05-05 14-58	SWS46 octobe	\$12:07
Stiver	ND	nig/L	5 66	15,60	150808 1858	SW 846 6010B	\$12057
Seontium	7290	mg/L	30 n	17890	120808 18 58	SWN46 MADE	\$12077
I harlion:	ND	mgL	:00	1000	12/08/08 16:58	3 W \$46 65 Hig	812077
Tin	ND	mg T	50 0	1000	12765 708 48 58	SWS46 60 IDB	\$12(k)7.
	1767	11.6	400	4 4	1 2 2 16 244 445 4 45	and the second second	A. V. Sept. S. A.



2960 Foster Creighton Ross Nashvälle. TN 37204 *800-765-3980 * Fax 615-725-3404

Chespread Energy Corporation

Fred Cipson

8100 A. Western Avenue

Oklahoma Cr., Oli 73-16

Work Order

NRL0012

Project Name

Chesapeake Shale Project - PA Sites

4100510701 Project Number Received

12/02/08 08:30

ANALATICAL REPORT

Analyte	Result	Flag.	Units	MRI	Dilution	Analysis Date/Fime	Method	Batch
Sample ID: NRL0012-01 (F	→910-11D	- Water) -	cont. Sampled:	12/01/08 11:00		Charles and the same of the sa		
Dissolved Menas by LPA Method o	:010B = com,							
Yangum .	SD		mg/L		.000	2/08/08 18 58	SW846 6010B	812007-
20,	ND.		ir.g/L	819	con.	:2/08/08 :8 58	SW845 6010B	812007
Mercury by EPA Methods 7470A/7	121 4							
Mercury by 13174 attentions 5435062	ND.		night.	5.00550	1	12/04/08/20 13	SW:846 7470A	812068
Dissolved Mercury by LPA Melland			024			0.00000	S. S	
Mercury	KD.		mg.L	1 1000	Y	2/09/08 2/07	SW846 7470A	\$12117
			mg.L	8-650		7/09/08 12/22	5 W 840 TATUA	5121.17
Valatile Organic Compounds by EF	A Nethod 8260B							
Accione	98.1		ug-L	50.0	1	12/04/08 19 59	5W846 8260B	812141
Actionicale	ND		119/1	200	- 4	2/04/08 19 59	S/1 846 8260B	812141
Acrobs to	ND	L	ug.T.	50 V	- 1	2704108 19 59	5W846 8260B	\$12141
Aurianitile	ND		012/1.	700	7.	12/04/08/19/59	21/8/19 83(Q)B	812141
Her zene	ND		rig-L	1.00	F	12/04/08 19:59	\$11.846.8260B	812141
Biomedicislemmetra p	ND		ng:L	1.00	1	12/04/08 19 59	SW846 8260B	812141
Heenwhorm	ND		uz1	100	1	12/04/08 19 59	SW846 8260B	812141
Bromerrethane	ND		ug.L	1.00	1	2/04/08 19 59	SH-846 8260B	812141
2 Butanons	ND		ບຊາ.	50.0	- 1	.2/04/08 19:59	\$14 846 826017	812141
Carbon disulfide	ND		ug'l	1.00	1	12/04/08 19:59	SW846 8260B	81214)
Carpan Tetrachlorida	ND .		ug/l.	1.00	· F	12/04/08 19:59	54-846 826013	812141
Chloroperizene.	ND.		ug'L	1 00	1	12/04/03 19.59	SW846-8260B	812141
Chlored Stomonychaue	ND		ug'L	1 00	1	12/04/08 19:59	SW846 \$260B	\$12141
Chlorocthape	ND		ng'L	1 60	4	2404/08 19:59	5W846 8360B	812141
CH5roform "	NO	~	ug't.	1 00.	4	12/04/08 19:59	SW846 8260B	812141
Chleigenethane	ND		uga	1.00	1	12/04/08 19 59	SW846 8260B	\$12141
Thorogyene	N15		;eg/1	5.00	T	12/04/08 19 59	SW846 8260B	812141
Ch-oropropene	1.3		:1931	2 00	-1	12/04/05 19 59	SW 846 8260B	812141
1-Ditemo-3-oblevoropare	N15		ugil.	5.97	7	12/04/08 79:59	SW846 8260B	312141
12-Distromorphisms (EDB)	SD		9 <u>2</u> 1.	1.00)	12/04/08/19/59	SB 845 8266B	\$12141
Drygmornestiane	ND		ug/l	; 00	1	12/04/08 19 59	SW846 \$260B	812141
ras - 1.4 Dieffora-2 Satene	ND		JeL.	500	T)	12/04/08 19:59	SW\$46 \$260B	\$12141
i IsDichlorobergene	SO		ug/L	1.66	î	12/04/08 10 59	5W846 8260B	\$12141
Dichloropeazene	ND		ng/L	: 00	10	12/04/08 19:59	SW846 8250B	812141
4 Orchloropenzene	ND		ugl.	1 99	î	12A14/08 10 59	5W346 3260B	812141
heliforpdiffuorementane	ND		ug.7.	(40.)	Ý	12/04/08 19:59	SW846 8260H	812141
1.2 Dichiorachers	ND		ugil	1 00	1	12404/08 19 59	SW846 8260B	812141
I I-Dichioroethane	ND		ug/l	1.00	Ý	12/64/08 19 39	SW845 82608	\$12141
ris-1.2-Dicidoreethene	ND		Lau	:.00		12/(4/08 19 59	SW 845 826GB	812141
rans ".2-Dichloroetning	ND		ray.	1 00	1	12/04/08 19 59		812141
1Dichloroctione	ND.		og L	1.00	7	12/04/08 19:59	51V846 8260B	812141
C-Dichterewepare	ND.		ug/L	1.00	1	1204/08 14:59	SW846 8260B	812141
	ND.		ug/L	1:00	4	12/04/08 19:59	SW846 82600	812141
rarso; ADichloropropone	ND.			1:08	1	12/04/08 19:59	SW846 8260B	812141
no (3-D), hiercyropene			เพีย					
A-Division	10		ug/L	200	1	12/04/08 19:59	SW845 8260B	812)4)



296G Faster Creighton Road Nushville. TN 37204 1800-765-0340 1834-615-726-3406

Chene Chesepeake Evergy Corporation

Hut N Western Avenue

Oslaboro Ces Ok 73118

Attit

Fred Groson

Wors Order

NRL0012

Propost Name

Chesopeake Shale Proc. - UNSC.

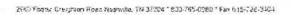
Project Senibe Received

4100819701

12/02/08/09 30

ANALATICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution l'actor	Analysis Date:Time	Method	Batch
Sample ID: NRL0012-01 (F-	6910-111	D - Water)	- cont. Sampled:	12/01/08 11:00				
Volatile Organic Compounds by FPA			- cont. Ontopica.	12/01/00 11/00		The state of the s		
Einsternene	ND	Civilia.	ug/L	1.00		12:04 CS 10 SV	SW 846 8266B	6 31461
Ernyl Methecrylate	ND CIA		GE/L	10.0		12/14/25 (9.5)	5W 845 x200B	8.21-11
Hexachiorobusciene	ND		ugl:	1.00		12/04/05 13:54	SWS46 8264B	812121
2-Hexagone	ND		Lg/L	50.0		12394 (25-19-5)	SW845 \$200B	8 21411
lodomethana	ND		Le/L	10.0	- 7	121- 5 10 16	\$8345 \$2600	\$13030
Isobatano)	ND		ug'L	50.0	3	12/6- 5 19 19	SM 845 8269B	3121311
Methacrylonitrile	ND		LeL	20.0	1	1216- \$ 10.00	SW845 8266B	\$121411
Methylane Chloride	ND		ugil.	5.00	1	12 04/95 (4.5)	\$15.845.5200B	\$121411
Methyl Methzerylate	ND		59 L	5.00	1	12/07/05 9:59	5W \$46 82 - GB	8121411
4-Methyl-2-pentanone	ND		ugiL	10.0		12 6 2013 9 59	27/819 87VGB	\$(2141)
Proprenante	NO		ug/L	20.0		12-04-05 9-59	SW \$44 8260B	\$121411
Sorene	ND		112/1	1.00		12/14/05 0 /6	SW\$46 8200B	8121411
1-1-2-2-Tetrechlorge hane	ND		(102.7]	1.00		12/04/05 0.59	SW\$46 \$200B	8121411
1.1.1.2-Tetrzehloromhane	ND		ug L	1.00	- 8	12014/05 19:69	SW849 8200B	8/21411
Tetrachloroethene	ND		ucl	1.00	9	12 St Da In Hy	SW84/ 8560B	8 21411
Tulkane	ND		ug/L	1.60		(5/04/08/17/14	SW\$46 83/ 13	8 211 1
1.2.4-Trichloroitenzene	ND		us:L	1.00	1	775-1/5-10	599.468-618	8 14-1
L.L.Trichleroethane	NU		useL	1.00	1	CARLA TRA	5/3 546 8200B	
1,12-Trichlorocthane	ND		024	1.09		C-14/0 10 ==	~W 856 8560B	8 2140
Trichloroethene	NI		ug-1	1.00	No.	2029 0	5/464/8,6/3	8 2020
Trichlorof upromethane	ND		ug l	1,06	1	12 Year 9 -	Geran sheets	8 - 41
1.2.3-Trichlerogragane	80		ug L	1 (9)	11	120 18 7 1	FOR FOR \$2500H	812101
Viry facerate	ND		ug/L	30.0	4	124 (58 0 %)	\$9.816.82660	8/2/40
Viny Lelstaride	ND		ug·L	100	Y	13 11 38 34 5	90.8 in 8060H	8(2)111
Xylenes, total	ND		ug-L	370		120 408 09 50	4W846 \$200B	3121411
Surr 1 2-Dichloroethane-d4 (60-1405)	137.80			2.70		12 02 68 10 19	St. 836 83602	8/3/4//
Sorr Dibromofinoromethany (25-124%)	108 %					12 85 66 10 10	5 R N46 N76/15	9121411
Sur: Tohicky-d\$ (78-121%)	103 %					12 81 15 10 10	50346 8760E	3121411
Surr 4-Bromoftum chenzene (79-124%)	111 95					12 17 - 3 16 59	511 840 826118	812/11/
Semivolatile Organic Compounds by E.	PA Method 827	uc.						
a,a-Dimethylphenethylamine	ND	1.2	ug/L	47.6		13.00%		81 - 15
Acenaphinene	NO		Lg/L	9.52	1	11 ===	Sin oh	A134
Accomplishylene	NO:		1:21	9.52	1.61	12.00 18 (1.27	\$11.840 X, 48	-\$12m 99
Accophenone	ND		1.27.	9.52	1	12:05 (\$ 17.45	SMS to \$2700	\$1202-
2-Acetylatoinofluorene	ND		ue1.	9.52	4	12 9 18 17 42	VH.34" 575K	3120200
4 Astroobiphens!	ND		ned	9.52	1	120 51 12	\$48482 DC	Silving
Aniune	ND		ug/L	47.5	1	25 OF 18 1 42	SHAM \$2700	3220
Anthrocene	ND		mg/L	9.52	(1)	2005 to 17 a2	531 546 8270	\$1202.0
Aramite	NO		ug'L	470	1	20303 17042	SW846 \$2790	N 20219
Benzo (a) anthracene	NU		ug1.	9.52	1	12/65-08 17 12	SW 846 82700"	8 20209
Benzo (a) pytens	ND		ugʻl.	9.32	1	12-0558 1 - 12	SW846 8270C	8 20250
Bengo (b) Illioranthene	NO		, heil.	9.52		124348 732	SW 846 8270C	8:20249
Benzo (g.h.i) perviene	ND		ŭg/L	9.32	6	12/03/08 19 42	\$33.846 \$2700	8.505.00





Cherry Chesepeake Livergy Corporation:

6100 N. Western Avenue

Oklahoma City, OK 73118

Aca Feel Greson

Work Order: NRL0912

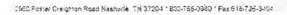
Project Name Chesapease Shale Project - PA Sites

Project Number: 4100819701

Received; 12/02/08 08:30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	MRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample 1D: NRL0012-01	26910-111	- Water)	- cont. Sampled:	12/01/08 11:00		-		
Simisolatile Organie Compounds by			3310 43111111421	14.511.40 -11.40				
tienzo (k.) fluorapthen:	ND-	(iv.) Comin	ug*L	9.52	1	12/05/08 17:42	SW846 \$270C	\$120299
Henry Largobol	ND		ust	47.5	1	12/05/08 17:42	SW846 \$270C	\$120299
4 Brumpphenyl phenyl ether	ND		ugA.	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Butyl certed prihalate	ND-		ug/L	9.53	1	12/05/08 17:42	SW846 8270C	8125299
Carburole	ND.		ug.1.	9.52	1	12/05/08 17:42	SW846 8270C	8120299
4-Chara-3-meth Iphena	517		ug/L	9.52	i i	12/65/08 17:42	SW846 8270C	8120299
4 Chierospiene	417		ug/L	9.52	1	12/05/08 17:43	SW846 3270C	\$120299
Charles claus	10		rgi	47.6	1	(2/05/08 17.42	SW846 8270C	\$120799
Blazy insethocopie sort	SD		ug L	9.52	A	12/05/08 17.42	SW846 8270C	8120299
Box 2 an areal in Treme	50	0	ug'L	9.52	1	12/05/08 17.42	SW846 8270C	8120399
R st2-ch prosepteps) who	511		ug.l.	9.52	1	12/05/08 17.42	SW846 8270C	8120399
" i, Moromachinale	ND		ugT	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2 - Chlorephenol	8.15		igf1	9.32	1	12/05/08 17.42	SW846 8270C	8120299
4-1 (dorophonic) poem Letter	ND		ug/l.	9.52	1	12/05/08 17.42	SW846 8270C	3120299
Chrysen.	ND		ug'L	9,52	1	12/05/08 17:42	5W846 8270C	8120299
Dial'ate (cis er mans)	NO.		ug/L	376	1	12/05/08 17.42	SW846 8270C	8120399
Dibertz (a.b) arthracent	ND		ug-L	9.52	Ť	12/05/08 17:42	SW846 8270C	8120299
Ditenzorumn	ND		rgi	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Derebus I philadate	ND		Ly1	9,52	1	F2/05/08 17:42	51/846 82700	8120299
1,2 Dichlorocenzene	ND		we'l.	9.52	1	12/05/08 17.42	SW846 8270C	8120299
1.4-Dichloropenzene	ND		LOL	0.52	i	12/05/08 17:42	SW846.8270C	8120299
1 4-Dichlorobenzene	KD		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120249
7. 3-Diehlorobenzieline	KD		ug/i-	9.52	1	12/05/08 17:42	SW846 8270C	8120199
2.4-Dichloropherol	NO		up/L	9.52	1	12/05/08 17:42	5W846 8270C	8120299
2.6 Dictiorophenol	ND		well.	190	Ĩ	12/05/08 17:42	SW846 82700	8120299
Diethyl pinkalaid	ND		SET	0.52	1	12/05/08 17:42	SW846 8270C	8120299
Donethoate	ND		uw/L	0.57	- 1	12/05/05 17:42	S1V846 8270C	8120299
Dimethylaminoazobenzene	KID		Lg/L	9.52	1	12/05/05 17:42	SW846 8270C	8120299
7 12-Dunethylbens turu il-racere	NO		usyl_	9.52	1	12/05/05 17:42	SW846 8270C	8120259
3.3-Dimethylbeitzidine	MD		bet.	47.6	1	12/05/08 17:42	SW846 8270C	8120299
2.4-Dimethylphenol	ND		ise'L	9.52	1	12/05/05 17:42	SW346 8270C	R120299
Dismothyl phinalate	ND		ug/L	9.52	1	12/05/05 17:42	SW846 8270C	8120299
4 =- Omitra-2-metra infature	ND		hell.	23.8	Y	12/05/08 17 42	SW846 8270C	8120209
1.3.Dinitrobenzene	ND		99.1.	9.52	1	12/05/08 17:42	SW\$46 \$270C	8120299
2 Dinitropt- not	80	J.	ug-L	23.8	1	12/05/08 17 42	SW846 8270C	\$130299
2 - Diaimonduche	ND		ug/L	9.52	1	12/05/08 17 42	SW\$46 \$270C	\$120299
2.4 Pilingorgraphe	510		ug/I	9.52	_ F	12/05/08 17 42	SW\$46 8270C	\$120299
Lheiseh	ND		ne T	9.52	1	12/05/08 17 42	5W846 \$270C	\$120290
Die set I physicale	SD		ugʻl	9.52	1	12/05/08 17:42	SW346 82700	\$120299
Dietseny amine	ND		on/1	9.52	1	12/05/08 17:42	SW846/\$270C	\$120299
Distanton	ND		we'L	9.32	4	12/05/08 17 42	SW 846 8270C	3120299
His 2-vitix hexylapathalate	612		ue-L	9.52		12/05/08 17 42	SW846 8270C	8120299
Lea Viethanesullerane	N12		og/1	9 52	Y	12/05/08 17:42	SW \$46 8270C	8120290





Client Chesapeake Energy Corporation

6100 N. Western Avenue

Oklahoma City, OK 73118 Fred Gipson

Work Order

NR1.60 2

Preject Name

Chesapeake Shale Project - PA Siles

Project Number Received

4100810701 12/02/08 08:30

		- 4	NALVTICAL R	EPORT				
7-6-5					Dilution	Amalysis	1.75	
Analyte	Result	Flag	Units	MRI.	Factor	Date/Hine	Method	Barch
Sample ID: NRL0012-01	26910-11	D - Water)	cont. Sampled	: 12/01/08 11:00				
Semivolatile Organic Compounds b	EPA Method \$2	70C - cont.				- Co.		
Famphur	ND	1.2	uziL	9.52	T	128(5.08 17.42	SW \$45 82700	\$120299
Fluoranthene	ND		uzL	9.52	1	12/05/08 17:42	\$11.846.82700	\$ (2029)
Fluore: e	ND		ug/L	9,52	1	120508 17 43	SW\$46 \$270C	\$120299
Hexachloropenzene	ND		ng/L	9.52	1	12/03/08 7:42	SM.849 85.00C	\$120200
Hexacilloroburadiene	ND		ugt	9.52	1	13.85 (\$ 542	83545 82700	8)2009
Hexaculorocy elope madiene	ND		uget	9,52	1	12:05- 8 7 43	5M 845 8270C	812 (20)
Plesucaloroginane	SD		ug't.	9.52	1	126 St & 742	SWS33 8270C	8170200
Hexachlurophene	ND		ug·l.	9.52	1	124668 741	SWS45-S270C	312,00
Hexachloropropene	ND		ug-L.	9,52	1	(24)3 (8) 2:40	SW845 \$270C	\$12729
Indeno (1,2,3-cd) pyrene	ND		ug L	9.52	1	1.245-08 142	54 545 5276	8(2)299
Isodan	ND		ug-L	9.52	1	(2,05,0) 5471	SVC845 \$270C	3120295
Isophorene	ND.		ug L	9.52	1	(2/05/05/7.42)	SW845 82700	8120299
Isosafrole	ND	L3 -	ug/L	47.6	1	(2.05 UN 17.43)	SW845 \$2700	812-1297
Kepone	ND	1.2	ugt.	9,52	1	12/05/08 17 42	SW\$45 \$279C	8127290
Methapyrilene	ND	1.2	ug'L	47.6	7	12/05/08 17:43	SW846 8275C	3120295
3-Methylcholanthrene	ND		ug/L	9.52	1	12/05/08 17 42	SW845 827/82	\$170290
Methyl Mothanesulfonate	ND		ug/L	9.52	1	12/05/08 17:42	SW\$45 8279C	8120299
2-Methy maphthalene	ND		ug'L	9.52	3.5	12/05/08 17:42	SW815 8270C	8120299
2-Methylphenoi	ND		ug L	9.52	1	12/05/08 17:42	SW 846 8270C	8120209
3/4-Methylphenol	ND		ug/L	9.52	1.0	12/05/05 17 42	SW\$45 8270C	8120299
Nephthalene	ND		ugil.	9.52		12/05/08 17:42	511 x24 82720	8120299
1.4-Naphthaquinone	ND		ug-L	9 52	1	12/0/5/08 17/42	SW845 82700	8127 95
1-Naplithylamine	ND		ug/L	9.52	7	12 05-08 17 42	SW 846 82700	8120295
2-Naphthy lumine	ND		ug.L	9.52	1	12/05/08 17 42	SW 846 82700	8120299
4-Naroaniline	ND		ug/L	23.8		12/08/08 17:42	SW844 82790	812029S
3-Nitroaniline	ND		ugit	23.8	1	12/03/ANS 17:42	SN 845 82 70C	8126208
2-Nitroaniline	ND		ug/L	23.8	1	12/95/08 17 42	SW846 82700	81202-16
Narobenzene	ND.		ugʻL	9.52	g	12 18/08 17 42	SW846 8270s	\$120298
2-Nitrophenol	ND		ug'L	9.52	3-1	12 15/08 17 47	SW846 82700	#12029S
4-Nitrophena!	ND		ng/L	23.8	1	12 15/08 17 42	SW840 K2700	8110294
4-Nitrogumolme-ii-oxide	ND:		ug/1	952	1	121/3/38 1.142	548248274	8120294
N-Nurosodi-n-buty lamine	ND		1121.	9.52		1, 5/09 1 4	SH KIN KING	813/205
N-Varosodiethylamice	ND		ng-L	9.52	3	12 14/08 17:42	SHEED ATTI	3120208
N-Nurosodimethylamine	ND		ug 1	9 52	- 1	12-95 (0) 17-22	S# 246 E2707	51200V
N-Nurosolipheavlamine	80		u21	0.53		12 546 15 42	511 846 817 1	813/12/3
N-Nitrosoth-n-propy lumme	80	1.	ng1	9.42	- 6	12 30817-22	841+26 17	\$12054
N-Narosomethy lethy lamine	ND		ug/L	9.32	100	12 14 36 17 22	83.546.827.6	8130 190
N-Nurosomorpholine	ND		4421	9.52		25.5081 1	58 946 (27)	P127 98
N-Nitrosopiperi.line	ND		ug'l	952	Y	13 3 - 1 17 45	58 846 827 C	812029
N-Nitrosopyrrolidine	NO		ugʻl.	9.52	1	12 3 //9 17 42	5W846 \$25H	\$130200
5-Nuro-o-tolurtine	ND		ug'l	9 57	1	12 3 40 17 42	SW846 827 %	\$12.54
C.O.O-Trietly I phosphorolinosis	ND		ug/l.	932	- 7	12 45 1 8 1 5 42	SW \$46 \$273C	8120295
Parathon-ethyl	ND.		ug/L	9.52		13 .5 48 1742	2M846 875.4.	\$12,000



2950 Focial Creignion Rose Nashville, TN 37234 1800-765-9980 1 Fax 615-725-3404

Then: Chesabenke Energy Corporation

6150 N Western Avenue

Calaborat by CA 73118

Ann Fred Gipson

Work Order

NR1,0012

Project Name

Chesapeake Shale Project - PA Sites

Project Number Received 4190810701 12/02/08 08 30

ANALYTICAL REPORT

Analyte	Result	Flag	Units	VIRL	Dilution Factor	Analysis Date/Time	Method	Batch
Sample ID: NRL0012-01	6910-111) Water)	- com. Sampled:	12/01/08 11:00		and the		
Samiyolatile Organic Compounds by h			com onmparm	12/01/01/11/00				
Pencultoropeneene	ND	oc - com.	tig/L	9.52	1	12/05:08 17:42	SW346 8270C	8.20299
Pennichtororbane	ND			9,52	1	12/05/08 17:42	SW 346 8270C	8120299
Pertuebborontrobenzens	ND		ug/L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Pentachtorophenol	ND		ug1.	23.8	1	12/05/08 17:42	SW846 8270C	8120299
Premientario premo i	ND			9.52	ä	12/05/08 17:42	SW\$46 8270C	8120299
Phenanthrene	NO		ng/L	9.52	4	12/05/08 17:42	SW346 8270C	8120299
Prend	ND		ug-L			12/05/08 17:42	SW346 8270C	8120299
			ug/L	9.52		12/05/08 17:42	SW346 82700	8120299
1.2-Pischyleten daner	NO.	1.2	ug/L	47.6	- 1		Contract and the contract of t	8120299
Private	ND		rig/l	9.52	9	12/05/08 17:42	SW346 8270C	1000
2-thyoline	ND		ug l	9.52	1.	12/05/08 17:42	SW846 8276C	8120299
Progra (m.te)	ND		nag.	9.52	4	12/05/08 17:42	SW846 8270C	8120299
P wife	ND		og l.	9.52	4	12/05/08 17:42	SW846 8270C	8120299
Parachion-merhy l	ND		ugA.	9.52	4	12/05/08 17:42	SW846 8276C	8120399
Pyricine	ND		ug-1.	9.52	1	12/05/08 17:42	SW846 8270C	8120299
Safrole	ND		ug/L	9.52	1	12/05/08 17:42	SW\$46 8270C	8120299
Sulforep	Nix		nā.r	9.52	- 1	12/05/08 17:42	SW846 8270C	8120299
1.2.4.5-Tetrochiompenzono	ND		ug l	9.52	1	12/05/08 17:42	SW846 8270C	8120299
2.5.4.6- Fetrachdorophenol	60		112 L	9.52	1	12/05/08 17:42	SW846 8270C	8120299
I bigerazin	NO		nz.j-	9.52	1	12/05/08 17:42	SW846 8270C	8120299
s-Tultacine	NO		ag 1	9 52	1	12/05/08 17/42	51/946 8270C	8120299
1,2.4-Yrichtorobenzene	200		ug t	9.52	1	12:05:08 17:42	SW846 8270C	8120299
2.1.5 Trichlorophenal	ND		ug l	25 8	1	12/05/08 17/42	SW346 8270C	8120299
2.4.5-Trichlorophenyl	20		ue la	9.52	1	12/05/08 17:43	SW\$46 8270C	8120299
1.5-Trinitropenzene	717		ugl.	9.52	1	12/05/05 17 42	SW\$46 8270C	8120299
Surr. Terphenyt-dl 1 r21-123%.	26.					12:05 08 17:43	58846827A	8/2020
Surv. 2.4.6-Tribromophenol (23-129%).	111 56					12'05 08 17.42	SI1 545 82:0C	812029
www. Phenol.d5 (19-100%)	43 ° 6					12'03 08 12:42	2H 846 82 10C	812029
Sur 2-Elwarolophenyl (34-168%)	(11) %					12:05 08 17:42	SH 840 83701	812029
Sur 2-Fluorophenni (10-100%)	91%					12:05 N8 17.42	SH:846 8279C	812029
Surr Nitrobenzene-d5 (29-116%)	5950					12/15/08 17.42	511846 82700	812029



2550 Foster Creighton Road Nashwile, TN 37204 1 800-765 0380 1 Fai: 645-725-3434

Cheer. Chesupeake Energy Corporation

610th N. Western Averue

Oklahema Cny. OK 73 (.8

Attn Fred Gipson

Methylene Chloride

NIT

Work Order NRL0012

Project Same. Chesapeake Shale Project PA Sic.

Project Number 41008107711 Received 127/12763 (4.30)

5.00

			ANALYTICAL REF	OKI				
Analyte	Result	Flag	Linits	MRI.	Dilution Factor	Analysis Date Fime	Method	Barci
Sample ID: NRL0012-02 (Trip		minea:	12/01/06 (M):01					
Volatile Organic Compounds by E				- AL.		Andrew Company of the	more vector	*
Acetone	ND		ug'L	200	, L	121111111919	SW846 \$2500	\$(_1,
Acetonitule	ND		ug/L			1250 17 47	SAS'846 27600	3121-
Acmlein	- ND	T.	ug/L	50,0	(10)	12 Miles " 25	SW\$46 8360B	31711
verylanimie	ND		ug/l.	10.0	- 1	120-1-12-17-12	5% 845 (CAO)	31-12
ser,zone	ND		ug/1.	1.00	10	松州市店村	94/346 824(0)	81214
Secondicistoromet lane	NO		113:1.	1,00	1	12(4181927	SW 846 8260B	31214
tiomoform	30		112/1.	120	1	1210-03-17-17	MAN 97 97 97 97 97 97 97 97 97 97 97 97 97	8:21:
Sommerhane -	ND.		ugʻl.	1.00	1	15/24/10/15/43	\$10,846,8260B	SEN
-Butanore	AD		02.1.	50.0	J.	12(41)3 14 14	\$11,846,82800	5:212
arbon distillede	SD		115.47	1.00	0	(24 G) # 1 4.47	SWE16 8260H	8,234
larbort Ferracislorida	ND		0 <u>2</u> 4	1,690	1.	12304 10 17 47	SW 849 5760H	41.11
Thiocohenzene	ND		194.	1,10	10	12 ren il 1147	21/846 8269B	
"blocodibromomechane	ND		1:24	(42)		1217-1-1-1	80523 943745	
Thorauhane	XD		121.	1.00	4	174000 1493	51/846 8260H	
Horoform	ND		rg/L	(,54)	4	\$14 3 FAT		3.415
hioromethane	NO		1.2.1	1,500	1	12-0-49 17-47	Hoors 975 MS	
Eloroprene	ND		rat.	5 (1)	-1	124443 1747	\$W\$46.8000B	8,214
-Chloropropene	MD		T.E.T.	2,00	1	17.0	27/246 (260B)	K
2-Dibronto-3-elibropropane	ND		ug'L	5.00	t	00 - A 174	58 846 826 93	8, 214
2-Dibromoethane:(EDB)	20		1.g/L	1.00	1	1- (27/5/10/82/04[No.
Dibromomethane	40		sig/L	1.193	7	130 - 34 De 14	21.840 x2.013	7.17
rans- i 4-Dichlaro-2-batene	MO		112. L	5.00	1	(\$1.54. he for	SWE46 826010	N 212
.2-lactifarebenzene	113		ULT.	102	- 1	11.64 5 17 9	Statesmit	17213
J-Du alore byttene	NO		ugl.	1.0%	1	11 15 17 15	N. 846 879 14	4 214
J-Dier, probenzene	1517		ret.T	1 195	Y	112654 2712	多点をおかっての意	8 212
Pichlerodiffuoramentane	ND		ng i	1.00		V2108 L.T.	50546326 8	8 313
2-Dightoroethage	F.D.		ug'l	1.116		12 6000 524	58 546 526 H	N'216
i-Dienforgethane	ND		ugit	1 00		(Diskly 1, 12	511 San 821118	5 213
is-: 2-Dichloraethene	(51)		1251	1.00	χ.	(2444) 1747	SW\$46 STROB	51212
1205-1.2-Dichloroethene	SD		ua'l	1.00		(200,05 17 47	SW\$46 \$260B	3,234
.1-Dichlorgethene	ND		ng-1.	: 08	7.7	12 94 95 17 47	SH 140 8200B	8'214
,2-Dichloropropage	ND		ug/L	. 60	- 10	12:04:05 7:47	536545821848	5,214
rans-1.3-Dichloropropene	80		ug/L	1.66	1	(2/page 7.47	555545 525016	34214
is-1,3-Dichloropropens	ND		1.20	1.00	1	13.04% 17.47	XXX 545 X250B	3 214
4-Dioxane	NO		ugit	2100	1	120403 .747	550 546 32603	31214
thylbenzere	80		11211	100	1	1284.05 .7.47	SH'S to \$200B	
thel Methaciviate	ND		ng/l	100	1	12 udate 17-49	SWY-a 826608	81214
lexachiorghunadiene	ZD		ugʻl	1.00	1	1" (Mala 1" 47	4H, 174 8540B	
Hesanone	ND		ugit	50.0	1	12-84/05 17-49	SWX to \$29940	
odomethare	ND		ing L	(0.0)	1	12249 05 13 47	SW\$26 \$260R	
sofigiano)	ND		og L	50.0	1	12.0408 17.47	SW526 32668	81214
deshaczy longs de	ND		vg't	20.0	1	12014-06 17'47	SW\$-6 32008	
of the loss of blackets	2.75		18.4	20,0		1500 11 12 12	39 3-9 ALVOO	21214

11.20

(2/04/04/17/47 SW646/8360B 81214)?



2950 Fouler Creights" Road Nashville, TN 37204 1800 765-0980 1Fax 815-725-3404

Chem Chempeake Fielg, Englander

Show V. Wy done Assente Oklaho da Co., Ok. 73, 11

Aim lifed Consum

Work Order

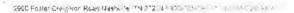
NRLG0[3

Project Name Chesapeake Shale Project - P.V. Sites

Project Number 4100810701 Received. 12702/08/08/30

4 1 1	1 3.7	ICAL	REFO	DJ.

ANALYTICAL REPORT												
Analyte	Result	Flug	Units	MRL.	Dilution Factor	Analysis Date/Time	Method	Batel				
Sample ID: NRL0012-02 (Trip Bla	nk - Water) -	cont. Sampl	ed: 12/01/08 0	0:01								
Noballe Organic Compounds by LPA 5	Method 8260B -	cont.										
Medical Methodrylate	80		ugil.	5.00	1	12/03/08 17:47	SW846 8260B	\$121413				
4-Menul Esperiarons	ND		aga'll.	10.0	1	12/04/08 17 47	SW 846 8250H	812141				
Prepromptly	51)		ogs/L	2/10	1	13/04/08 17:47	518846 8260B	8121411				
Springe	ND		ag-L	1.00	- ((2040) 1747	SW 846 8260B	8121411				
L. J. Lerra, Mary mary	ND		ug.T.	1 480	1	2 04/08 17 27	SW846 8260B	\$121411				
Structure From	NU		621.	1,00	1	12004/08 17:27	5117446 x260H	3121411				
la ach mether	8/1		ng/L	1,450	Y	13 04/08 17 - 1	SW\$46.\$260H	912[4]				
In Crear	N13		124°1	1.00	1	12/2/08/12/22	58/846 \$ 260B	\$12141				
1-Transcorpe	N10		sm.l.	1.00	1	12/04/3 17 ==	53F82A 8260B	\$12141				
Leidene ne	1813		ag à	7.00	1	12 (4.08 17.45	SW 826 8250B	8.2141				
L-Indianaliane	NII		1300	1.00	1	12/04/15 17:47	SW946 8266R	3.2141				
Ir descoulage	ND		Jul.	7 (30)	i.	12/04/08 17:47	5WS46 \$260B	×(2)411				
is the alleanned to g	Mis		ug-l.	1.00	Ĩ	12/04/08 17:47	5.W\$46.8260B	8:21411				
- 10 d Recorogram	ND		uel.	4.00	1	12/01/08 17:37	SW\$46 \$260B	8 21411				
6 and hectate	N15		ug-L	0.0	1	1200035 17-47	SW\$46 826611	8:2141				
V = 1 cWorse	ND		ug/L	5,00	1	12/04/98 17:47	SW\$16 \$260B	8:21411				
Nymeros total	810		ug/l.	3.00	Ť	12 04:08 17 47	SW\$46 \$260B	872141				
m 12 Inchloren in call it which	11470		-			12/64 08 17 47	5:1740 8260B	872141				
ine Enhanteethen developer (3-124%)	102 %					12 nd 08 12 42	511346 83600	812141				
ins Foluenced Cast 21 Fet	100 %.					1201-08 17.47	SH\$46 8260B	3/2/4/				
Sum 4 Reamofficial receive 179-124" at	106 %					12 04 05 14.42	SH846.5260B	312141				





Cient Chesapeake Energy Corporation

6100 N. Western Avenue

Oklahoma Cay, OK 73118

Attn Fred Gipson

Work Order NRL0012

Project Name Chesapeake Shale Project - PA Siles

Project Number - Received

4100810701 12/03/08 08:30

SAMPLE EXTRACTION DATA

			11.5 601	6			Latintics
Parameter	Batch	Lab Number	Extracred	Extracted Vol	Dec	-0000	Yeller
Dissolved Mercury by LPA Methods 747	10A/7471A						
SW846 7470 \	812:171	NRI 0012-57	3.09	20.0	15 08 08 08 00 00	17.5%	APA PIL
Dissolved Meta's by EPA Method 6016H	5						
SW 846 6010B	8120074	NP1 0012-01	90.00	55 60	12.68 (5) (1)	109	PEASIBLE SELEC
SW \$46 60 IOB	812(074	NRI 0012-01	55,00	50,00	15 08 05	1.4.0	Alek Street Serve
2 M.8 19 05 10B	8120074	NRI,0002-01	5900	50,00	12 08 05	1,19	Deposite sen
51/184c 6010B	3120074	VST0013-0.	50.00	50,00	12 08 08 37 00	179	FEF 2019 F 4-10
7 // 846 20.0F	8120074	NRLG012-0	50.00	50.00	2 5 106 11.1	1.78	PARICA MIL
SW 546 50:0B	8120074	NRI (017-0)	5 7 00	56.06	2:08:55 171	1.79	FRACESA ADD
SW840 6010Ft	8126074	SRL0012-61	5- 00	59.00	1250 100	1.538	FFA 300 V 522
\$11 840 60 TuB	8120074	NET 0012-01	4.360	412 450	418 11 11	197	PROMITE AT
P0166 46#2	N; 2/E/74	NRI 0012-01	35.05	50 10	PERMIT	1 1	Children serio
5W846 c016B	8456674	S81 to 12-01	Site day	sage	12 (2) N	1 1	Blackers of
SN \$46 00 (08)	8120074	VRI 45 12-61	20.00	501-162	William !	1-10-	ATTIVE STATE
28 8 4 6 6 1 1 1 B	\$130074	NR148012-01	30.00	30.00	120800	0.0	The many Kity
SW\$40.601/11	S126624	5 R1 0012-01	50.00	40.66	6.040	1 1-	Continue of
<## safe gb16B	\$120074	NR (0/12-01	20.00	46.44	12:25.09	1 10	ATTEMPTO
4W816 6010B	812001.1	SR_0012-01	45) (4)	64. P.F.	12/25/95	1 4	175 00 000
SW\$45 ngt0R	E(20074	SRI 0012-01	50.00	50 00	(2.14.10)	('H	(2× 0 m 100
SW \$40 6010B	8/2/074	10-210012-01	50 66.	90.60	12 14 08	7.74	TW1 0 000 4000
51: 5:4 6010B	8120074	NRL1012-01	50.00	50.00	1250808 1	427	CARROLL William
5.7 8-0 0010F	E120574	NRL0012-01	20 (10)	so to	12:08:04	130	Photos am
SW846 60101:	9120074	NRI 0012-0,	50.00	50 60	12.08 %	3/(1)	PA 2010 F 16719
SW846 6010B	8120/54	ARL0012-01	50 CC	\$0.70	12/08/68 11 =	130	- 19 3 Toron - 1 1000
SW846 6010B	8125074	NRL0012-61	377.06	50.00	150878 (====	17.0	The folial Years
General Chemistry Parameters Syregrop	8120304	N91.5012-01	300 Uh	300,00	47.02-06-01000	\$117	BODCBOD
Mercury by EPA Methods 7470A/7471A							
SW836 7470A	8132643	NRLE-012-01	3.00	trov	120-08-17-1	3518.	FF 4 7470
Semivolatile Organic Compound: by EP.	A Method 8270						
SW546 82700	8120392	NR1,0012-01	0050200	1 5/0	2.03.08 ~+1	2814	LIGHT TRIBE
Total Meiols by EPA Method 6010B							
SW816 COIDB	\$120006	SRE5012-01	50.00	50 00	12-05708 1137	3.511	104.55(645+66)
SW\$46 6610B	\$220066	NRL0012-01	50.00	50.60	12.05 08 11	199	Mrs Sing July
SW346 6010D	8120066	NRI.0012-01	50,00	50 141	120508-1-3	HYN	Epichelia con
SW846 6010B	\$120056	NRI.0012-01	50,00	5C 100	12 93 08	1.06	they below more
SW846 6010B	312005e	NRL0912-01	50,60	50 160	12-27-05	.18	FF:V-VILA WITE
SW846 4610B	21 200ah	NR: 0912-01	50.60	90.00	77.95 68	r rii	Treams int
SW\$46 6010B	8120056	58,0012401	56.00	59 69	17.516	7.716	DECIMENS AND
SW \$46 0010B	X120066	JR17012-01	10.00	30 (%)	2000		ATT-STATE OF
5W816 60 WH	8100966	NRL0012-01	40 90	30.00	Station IV		his Many and
SW 840 64-50D	812956h	NEG9012-01	40 645	364.45	45 1000 000	- 0-	THE RESIDE
816 60109	\$120004	N31 0012-0.	\$(0.40.A	AGE TOTAL	A 100 (R.4)	1.17	432 Luci
5/4 816 60103	8120066	5301,0012-01	50.00	5000	Year Mary	1140	Theresand
\$11 \$46 50118	8.1.21m166	NRL0012-00	50.00	55.80	110000	777	name or



2980 Foster Creighton Road Nesticite, TN 37204 1800-765-0980 1 Fex 215-725-3404

The appeal of the register of the transfer of the second o

Fred vimson

Stock Wistern Arguer
(Globana CR) CR 23118

Work Order Project Name Fraged Number NRIJE012

Chesapeake Shale Project - PA Such

Frager Number 4168810701 Received 12/02/08/08/30

NAMPLE EXTRACTION DATA

Newson	0.1	1.18-1	We ved	Extracted Visit	finte	0.774	Extraction Medical
Parado	Faith	Lat Sunday	Extracted	LARBOUT VO	Line	112/12/	5 Western
15472 Nr.+(0) (0)4	5120066	NRL001201	50,00	50 00	12 05 08 14:05	173	CBA 3013 27 (616
SM 840 W 100	5,120,066	NRL0012-01	52,00	56 66	12 05:08 11:03	1.742	EPA 3010A 16010
516.833-600.00%	2120000	NPL0015-01	5000	Str this	12 95 08 11 03	1.74	EPA 3010A 76015
50 ×16 m (9)	&==(Augu	NBC0212-01	5,1,60	59 No	110598 1595	1.1(2)	EPA 3016 4 / 6516
(1-87) = (1-10) y	8 , 1000	NRL6912-01	420 (96)	50 m.	12-95-08 11-03	Lili	FPA 10.03 6016
SW SSO Window	8 12 (80 (4)	NRI 0012-01	17.00	50 (0)	12 05-08 11:05	I.TR	EPA 3600 V 10010
11/1 524 April 10	5 ² _00066	NRI 0012-01	59.00	50.100	12 05 08 11 40	1.113	1.2A 35.0A corr
NY NES 60, 002	\$120000	8101.0012-01	59.96	50.00	12-05-08 11.03	LIE	627A 30.0A (6916
5-25 1-445 m(0.333+	4520000	5.81 (412-01	50.00	50.06	1243-08 11:03	1,116	694.30,64 6010
SWS In not fell	8120066	NRI 5012-01	5:3 ch	*41 (91)	12 05 08 11:03	F.1.9	LPA 35003 5010
All Kits on the	81249/46	581 9912-01	50 (8)	Su 66	12:95 08 11:95	LTB	EPA 401931 5710
Wally to the	\$120050	NRL9012-01	53.00	50.00	12 05 08 11:02	1.105	FPA 3010A - 5310
5W 7/10 (-010 +	812(8)60	581.0012-01	50,00	50.00	12 65 08 11:03	1.11	EPA 30:0A 6012
5 th 3 16 A 0 19 0	\$120000	NRL9912-91	10.00	50.00	12 05:08 11:03	1,700	1724 3010 \$ / 6010



2560 Foster Creighton Rosd Nashville. TN 37204 1800-765 0939 1Fax 615/708/3434

Chem Chesapeake Energy Corporation

6100 N Western Avenue

Oklahoma City, OK 73118

Attn Fred Gipson

Work Order:

NR1.0012

Project Name:

Chesapeake Shale Project + PA Siles

Project Number: 4100810701 Received 12.02/08108.30

PROJECT QUALITY CONTROL DATA Black

Nucleo	Blank Value	0	(mis	D.C. Bareti	Tail Neather	of talk of the aftern
General Chemistry Parameters						
8120197-BLK1						
Local the game Carleton	le-5150		m. 1.	10.25.09	\$1,0-155,00 (S)	1210 Mar 55 Mg
8120296-BLK1						
Local Dissolved Nobels	* 5 CH /		tog L	\$ 20.46	\$120295494,84	1276 (\$1.215e)
8120305-BLK1						
BOD - 5 Day	C.S.		mi T	8120303	\$(20205.00.1.1	1.5 o. 16: 15-4:1
3120332-BLK1						
Turbidity	-6.266		NITE	\$120333	\$120333-8183	1207.68 1807
8120336-BLK1						
Incarbonate Alkalinaty as CaCO3	-45 Ista		102.1	N (20336	8120336-Fil KT	1202.03.03(1)
3120339-BI_K1						
Curbonate as CaCO3	455 60		me 1	8 20339	\$12032043184	120000800112
120340-BLK1						
Sulfine	1.20		may.	8 20340	\$120,500,131,61	12.02.08.2896
120390-BLK1						
MBAS (mot wr 320)	- 0 0250		må 1	8 20,390	\$120796-FC F.1	23.5 (V () (V)
120489-BLK1					and a simulation	To account to the control
"dial Suspended Solida	20.500r		138	8 20489	81/0/89/11 371	12.12.15 \$1.30
120548-BLK1	11:12:41		1611	8 20 48	**************************************	1 7 9
Strate April 45 S			ر فرد	9 70 49	2020 380 ST	17.2
120608-BLK1						
120608-BEK1	0.506		Fig 1	& Locus	8170008-15-5-1	6 7 1 108
			1.4.1	46-13-16	ALEMANT AL	
120880-BLK1						
Itamule	13		m2 1	\$ 20\$80	812088643 - KT	12 - (- f.C (A= 3).7
				W. 4004610	Gradenin (181)	7 - 20 4 7 m 100
120984-BLK1						
ultide	19,280		mel.	6.10081	\$12(984(B) K)	756 65 12 30
			. 3 .			
121062-BLK1						
ipecinic conduciance	-1100		unha ein	N.21662	8(4106343) 81	12.05765 (4-40-
121078-BLK1						
Benneal Oxyger Deniand	43,66		mg 1	F. 3 (27.5	\$121078-BLK1	15 05 08 27 14



Carps - Chestrenes Progs Corps dem 686-8 Western Avenue

Oklahoma Cay Ok Falls

Alto Trea Great

Work Order:

NR1.0012

Project Name: Chesapeake Shale Project - PA Sites

Project Number 41908:1070 | Received 12702:08:08:30

You're	Wall Value	v.	Lange	Q C state	Lab % a nber	Araly and Date Time
General Chen istry Parameters						
8121281-BLK1						
1.0.012	- 019 Ay		Tage Z	8721281	8121281-10 %1	Y5814GY 30.13
			0.5			
8121525-BLK1						
this between N	9.0		mer f	8131424	8121225-11, 6,1	17 10 08 (3.47
8121531-BLK1						
1 max 10 10	10, 85 9		log L	\$1,142)	R121531-BLK1	(=1) us = 10
8121543-BLK1				William .	Germany	***********
Residual Change	-0.04(5)		mg L	8121317	£121543-BLK1	13/10/03 14 13
8 21713-BLK1	116700		40.70	0/5/4/6	Stateta pro	211 09 10:22
to ands, West Acro Dissecuble	11/200		my L	8/21715	\$121713-BLK"	12 11 (03 10 12
8121720-BLK1						
Tour har felt Nova 1	n/est.		ngt	8101720	\$121720-91 K	1231.98 10.51
The National Asset	347.4			790000	210122 2001	seron na-
8121721-BLK1						
P pages	14,0210		ma L	\$131721	8.21721-BLK1	12 202 1217
8121929-BLK1						
Ca. It	0.0500		Here'T	8121929	8121929-BLK1	(21505 1151
8122036-BLK1						
A district	17.7.2		ni# L	8122036	\$132936-BLK1	72 (2 08 12 19)
8122287-BLK1	>0.00			0153505	6 33307 01 07	A 1-10 Line
Starrow Xull S	50020		mer L	8100081	\$ 12287-HLK	7 144 550 842 117
DADDEAE DI MA						
8122645-BLK1	TO THE REAL PROPERTY.		Sept.	8177674	\$105,000 %	13 6 10 Page
General Chen istry Parameters	Dissalved					
8122645-BLK1	(Manusch					
7 - N :	-mi-3;		TO L	8,22615	\$125615-30 5.1	2 look to a
			7.4	0.00		7.1.11
Foral Metals by EP's Methort 601	1018					
B120066-BLK1						
Alamora	0.6563		ing L	812:065	8120066-BC61	12 03 08 16:55
According	3 00385		rap l	\$120000	\$120066-BLK1	12:03:08:18:59
Aison	0.001140		1921.	8120986	8120066-BLA1	12-05-08 11-38
Parent	0.00380		mg-T	81215151	\$12006C-BLK1	12 03 05 05 19
Tax fanti	:0 (14)(14)		ו ערו	\$120060	8120066-BLK1	12 05 08 11 48
1772 17070	V			4.4 # 54.00.40	Atmost Parist	Me ar Mar 18 18



2980 Postor Craignon Rosd Nashville. TN 37204 (900-795-4440 1707-015-726-3454)

Client Chesipeake Energy Corporation

6100 N. Western Average

Oklahoma City, OK 73118

Ann Fnal Gipson

Work Order NRL6012

Project Name Chesapoake Shalo Project - Un Siles.

Project Number 4100\$10701 Received 1202708 68:30

Analyse	Glank Value	Long Long	Q.C. Haith	Lab Number	has/yead One Tone	
Total Metals by EPA Met	hod 6010B					
8120066-BLK1						
15eron	- 1: JE 2(1)	ms I	\$139.066	8120066-81 81	(0.65.90 (4.5%	
Cadmount	0.0007100	mg7.	8120066	8120066-131,5.1	12 05 05 Inc55	
Cathom	46.95	1221	\$1,E0060.	8.200milsi i.1	17 05 73 10 58	
Chromium	(6.001.50	rig l.	8.1 F0Ge6	81200m-61.K1	12.05.68 16.58	
Cobalt	64,90200	toget.	8120066	20.2000(cht.K.)	12 62 08 16 5%	
Cepps	<0.0005B	me h	81.10966	8/Junion-StK1	13 48 6% Inc\$5	
free	+:0 0280	me I.	8:20056	8,20000-BUE	1. 1 (1) 108 100 58	
Lead	-0.05280	mg L	\$120066	8:20066-18.1-1	13 115 68 18:58	
Magnesmen	99.160	ing T	5. 219166	E1200(66-10), E1	12 05 48 TA-35	
Mangancae	-0.0G100	mis F	37/2006/6	\$120066eB1.K.1	2111112 1-25	
MAN Edensite	(6,66,667)	ing L	8.200-66	\$1200(m) For F.J.	13 07 5% 16(3%	
* ichet	+ 0,400340	m ₂ :1.	£1.79060	81211166-137.7.3	15 ft 08 16 58	
Pensium	±25, 3100	r ym	W. District	812miAp-167.571	1815 19 15 55	
Selertion	2000000	ma L	1.120067.	El Suntanti L. L.	(2) No. 2 y 10 .5 y	
Silver	9.00366	real.	8120966	81,500,60 [4] 1,1	1 v = 4 3m 5g:	
Selana	-0.309	my L	\$120566	\$1300 co.ds; 1;1	f 102 08 16 13	
Siluntain	71.0% (20)	mg L	4120202	\$1200 ants; k.)	1 m as 16 %	
Tenthorn	OZ (0) 7,51)	rsy/l	5120055	8130065-BUKT	12 07 54 Ar 58	
Tire-	-C 00.580	m_{π} 1.	\$120965	\$126066-BURT	12 05 58 35.58	
Teamon	11 6500	egg/1	8 20066	\$120066-EL111	12 mt ds. 36:58	
Vacadamy	1,00 \ 502	arg.).	¥120050	8151066-BLK1	12 of 68 16558	
Zine	W.5.99	ing 7.	N 20066	\$120006-BEKT	12500 68 (6.58	
Dissolved Metals by EPA	Method 6010B					
8120074-BLK1						
Abarraum	10 0180	ing !	\$12/074	\$120074-BLK4	2 106 705 131.35	
Ammony	che COSia	my T	8120074	\$1205(4-01.5)	12 Me CE . R 36	
Arsenia	0.00450	ing I	8120074	£126074-BUST	12 05 05 18 76	
Bactour	+0 £0 [21)	mg-1	8120074	\$12500-031.51	12 08 08 18 3N	
Hery Emm	#Q up EDG	ngl	8129974	8(20074-B2K)	12 66 08 18.36	
Cadmina	1 16>0504	ngl	\$120974	\$120074 B153	12 64-08 18 16	
Chromium	1110,570	ngt	8196674	\$12007-0-EEX.1	13 06 38 18 16	
Cebali	0156280	org L	8120074	81200 4-81.51	12 58 08 18 W	
Ceptier	W(6554)C	mg L	8120074	8120671-36343	12 18 67 18 36	
hon	10,544	m≠ L	8126074	812mmi-421.1	(2 1 5 0 5 An 26	
Lead	S 734G	regit.	8126974	\$1205T1 (C.K.)	12 12 08 15 56	
Mangarioce	1/1/80	יין ערו	812/8174	81 Manager K1	(51278 8 51	
Me yedeman	1452753	mar 1.	8120674	8/20074-BEST	17 654A 3 M	
Siekel	EL (0.00.45)	my L	8120074	8 (20074-31 5.)	17 45 mg & 50	
Seleman	(1) (143)	itigt I	8120074	912m744m3.1	12 March - 8 %	
Schor	-) m) (g/;	rig-1	8726074	8) 2027+49.5.	12-36- 636	



Client Chesipease (- 150 % orpos

6160 & Weslan Victor

Okanopia Co., Ox. 23115

Tred Chasses

Work Code: NRL0012

Project Name Che sipeake Shale Project PA Sites

Project Number 41008 (076) Received

12,02/08 09,30

Ansiste	is one Value	Çı Çmış	Q.C. Batch	Lab Souther	Analyted Pate Tims
Dissolved Metals by EPA Metho	od 6010B	e commence (duc)			
8120074-BLK1					
Monthly in	0.000200	reg t	8176624	8120074-31%)	12 08 18 18:56
Entreio	eu p g750	nsg.1.	\$120074	8120074-3151	12 08 98 18:36
Tin	~15 CH (5 Str)	ng L	5120074	\$120074-8.33	12 08 08 (8:36
Titropiel	6000469	ing L	8120074	8120974-813.1	12 08.08 18:36
Sie aller	1:00.50	my L	\$1260~1	8120074-90K1	12 63 98 18-36
Y-	<0.0100	n.g L	#120071	£120074-51 K1	12 02 08 18 36
Mercury by EPA Methods 2470	V7451 V				
8120683-BLK1					
New Y	CONTRACTOR	179 2.	E (2068)	8120653-823-1	1274 08 18-21
Dissolved Mercury by LPA Mer	hody 7470 Ar7471A				
8121171-BLK1					
Mark 15	(*#2) £11	1422	\$12)1-	4(5)14049-81	1.4 (45 04 (=
Colamie Organia Con potendy by	FP v Method 8260B				
3121411-BLK1					
1 - 51-78	2.6	ng C	8(3)4(1	\$121415-BLX1	15 91 79 13 33
3 205 0 10	+3:36	ng t	8121111	\$12141B1.KT	12.04.98 1:27
A.r. ven	653.3	0g*‡	812(41)	\$121411 B' \1	12 04 08 13-23
Arryneightide	43.53	rg T	8121461	8121417-813.1	12.04.08 13:27
fusyent	-0.250	m.T.	8121411	8121-11-BLX1	12 04 08 12 27
Promote biocouronas	0.350	og/L	8121411	812141 -BLAT	24,42.6
Dictional into	~0.450	ng#	E/21411	\$12141 -BLKT	
Livery and other trains	<3.420	mg Y	8821411	\$12) \$1 (-B) £1	12 04 08 12:27
2. Search letter	-12 40	og T.	\$121411	8121111-BL&1	12 m4 C8 13-23
a a sudject of the	~10.780	wg-1	8121411	8121111-BLK1	12 04 68 13:27
C-C-V Testacido ede	-56.230	1192 "	#121411	\$121411-BLK1	12 94 68 13:28
c marketsise	49 180	100 %	2121411	\$12141 BLL	12 %tres (2:22
CANALOW WOOD LAND	< 0.280	Mg T.	\$121411	8121-17-81 21	12 04-68 13 23
L. Maintenia	PG 250	110 .7°	8121411	8121311-BLK1	72 04 68 12 23
Childrennia	-15.280	42 4	2121413	8171411-81-31	204 (2) 1221
Community and	+3.380	nh r	2121411	\$121112-BL&1	12 54 CS 12:22
(1 otoprzec	4510	10/2772	8121411	812131 -BLKT	12:04:08 17:25
to histopropers	-5.400	ue:	8121411	8121111-81.51	12 04 68 13 23
time-operates simpoint by	-9.360	ings i.	8121111	8121411-B1 K t	204 8 13 23
Lord allower performer for lefter	487.390	ug. L	#12(4)1	\$121411-BLK1	120405 1477
T regranichance	4 55 37 G	pry C.	8121411	812141 BUST	12 04 08 13:22
the High-Section	35 (25)	uy'L	8 31411	8151411-16 K1	33 04 08 13 22
1.03 m hint/Tame ins	0.560	ag"L	\$12111	812141 MIKE	20468 12.24
CHIP COMP	7,81	ey T	8121-012	812141;-BUK)	10018 1272



2980 Foster Creighton Road Nashwille TN \$7204 1600-765-046911 Fry E1540A-365

Client Chesapeake Energy Corporation

6100 N. Western Avenue

Oklahoma City, OK 73118

Aun Fred Gipson.

Work Order: NRI 9012
Project Name Chesapeake Shale Project - PA Sues

Project Number 4100810761 Received

12:02 75:05:30

Amigre.	(Gank Volum Q	l'mus	O.C. Batch	Lab Souther	Analyzed Date Trate
Volatile Organic Compounds by	v EPA Method 8260B				
8121411-BLK1					
1.4-Dichlorofsenzene	9.380	up T	2121411	\$171411-HEKT	00.3398 (5.23
Dieklandillogromethane	12D. 1601	ug T.	8121411	8,21411-81,61	12.64 (6. 15.31
1.2-Dichtoroemane	-10,579	10g ¹⁴ .	\$121411	8;24411-80321	1774 to 15 %
Li-Dichloroemann	×4,540	my E	8121411	812)411-PLK1	12 04 08 13 2-
(is-1,2-Dichloroethene	40,390	ug".	2121411	\$121) (1-BLK)	12:02 17:27
trans-1,2-Dichlumethens	<0,470	tig k.	8:21411	8(2141)-BLK	323(19)6 18.23
1.1-Diehlozoethene	<0.340	age L	8121411	8121113-61.83	770108 1525
1.2-Dichleropropane	<0.320	ng L	8121411	81214114183	120168 1338
trans-1 3-Dichlocopropere	46.330	ng L.	8121411	81211111-01K)	12 6- 68 12 23
c.s.1,3-Dichloropropens	A9.290	us 1.	8121411	8121111-6(E)	12 03.43 30.25
Ld-Dioxane	E62.2	MC.F	8121417	813,411/61,231	17.04 (8.17.23
l'dy licenzone	-26,320	ng T.	8121411	812:111-BLK1	12006 1223
Ethyl Medocrytaie	-3.23	mg/T	21254t1	F17 411-D1 K1	179413 1773
Heanthlyrobutadiene	~a 610	ne L	5/2/1/1	817 (411-10112)	120178 1725
2-1 reamone	515.7	ug 4.	812 1414	812141145161	1,5 14 08 1° 15
Informations	43.33	ue'L	8121411	8121411000.83	12-01-811-31
Ischutanes	414.5m	0.4%	2/2/4/1	RIZINII BUKT	12 (113) - 12
Memorylemente	34.14	py4	\$131117	\$1711 149.61	=-14 -x 1 33
Metalene Chlorida	- 6.33D	kg T	\$121411	\$121 (1341), (725459-13-13
Stetlis I Mediaccy Inte	€,540	113.71:	3121417	EIZITITIBLET	N1 W 1828
4-Methyl-2-pentioned	42,4%	ng T	3121411	812131 - 81 6.1	7 mg / 421
Propietotrile	62.28	ng T	812141:	8(2(4:1)(9.5.)	27) 188 1921
Shirene	79,330	ng/L	8121411	\$121311-1915-1	12:0165 3.25
1.1.2.2-Terrachiorcelouse	-10.290	ag 1.	3121411	8(214) I-BUNT	12.0178-13.25
1.111.5-Terrechtorsethane	~{4.290	age ti	812)4)1	8(21-1)-8(.8)	42.61 (4. 14.23)
Temalileroespene	-:0.2.50	tig T	8121411	8121411-3C K1	1261:8 1721
Toluene	-8 280	ne L	8/2/411	8(214)(53)(6)	12 61 58 18 23
1.2.4. Trichlorubenza ie	< 9.560	ug-1.	8(2141)	8121411-B1 K1	12/01/28 13:23
1.1.1-Trichiprochane	50.370	top: L	8121211	8(21211-R).K(12.61.68 15.25
1.1.2-Trichloraethane	<0.406	ug L	8121411	\$[2]4[]-BLK;	12 64 78 18 23
Trichlomethene	+9/230	ng 1.	3121411	81214114BUR2	1561A8 3 15
Tricklorothiorumethane	50.350	ilin Z	3121411	812 (411-00 K)	10109 1139
1,2,3-Trickloropropuse	90 242	Ly L	312(4))	8(21411-B) K1	12 31 58 13 25
Vinyl scenare	43.22	1.2°L	8121411	\$121411-(013)	125178 325
Vinyl chloude	s0.259	Lg L	\$121411	8121411-BL/5	1004 04 17 18
Xvienes, total	~0.560	Let.	8;21411	8121411-181,53	12 -2 18 12 23
Surrogan : 1.2-Ewilliamethaneule	111%	-6 -	8:2(4))	\$12(1)(1)(1)(8)	12.24 08.43.25
Surrogene Del a moltussiasciliane	1014%		8:21411	\$1214 (-BLK)	12.94.08 13.23
Surrogate Tolachests	101%		\$121417	\$15,1, 10 77	12.24 (b) 15.25
Surgeste 4-Remodinisations in	10826		81214(1)	812141 3181 N	17 at ex 13.23
Fluoroberteane	22.0	193.	815,4.	512.4.1 B) K	17 54 98 13 25



These peake Louight important 6 to 5. Western Avenue.

Okianona Chy. OK 73:15

Arm 1 red Girson

Wirt, O'der

NRI 0012

Project Name

Chesapeake Shale Project - PA Sites

Received.

Project Number. 4100810701 12/02/08 08 30

kry-jv-	11 20% (3)115	. 0	1 mile	()) Hajzh	Lab Sampo	Analyzed Date True
Valatile Organis Companieds by	1 PA Method 8260B					
81214T1-BLK1						
to the second	×-0		-2 A	\$17.1411	8121411411.81	12,310 114
4 10 poor H	25 7		x p. 4.	203711	8(2)4)1-02.54	(Zelink Pro
Servicidatile Organic Compound	ls by EPA Method 827	nc:				
8120299-BLK1						
a, is Jacethylpheodby in 10-2	()		115	8120299	\$ 20209-RI KT	(2.6) 08 14(32
Average of eng.	K 6.00		ng-7	8 20299	8120299-91 K1	(2.05.5% (4:52
See plobylene	17.00		103+L	8.20200	8120209-81 K1	12 05 1/8 (4:52
San observes	1941		age 1.	8 20291	8120299-BLET	12 05 08 14:52
Telephone your Spanning	<1.69		up-1.	AT 200200	\$120299-DLK1	12 95 68 14 52
Telemoki, nenvi	5.50		Sg I.	\$120299	\$120299-BLKT	12 05 63 14/52
to be	+ 550		un L	8120200	8120200-BLK1	12.05/08.14/57
# 118 th 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- 1 (4)		Fgu	8120299	\$12000948 1.1	12 05 08 (4:52
weeks.	- 10 3		ogel	\$120209	8120299-8-1-1	10 05 08 (4:52)
1 - to applications	1.69		ug:T	\$120240	\$120209-BI K1	12 05 05 (4)52
Torrest Carrier	- (gi)		nā .	\$120269	\$120209-BLK1	2.04.08 12/2
Fortunate Manager and Manager	7/10		ng 2	8120299	8120,199-181 1-1	2.05 - 8 (4)52
Hildrigh Gallery	1.000		ug T	\$120299	8120299-BLK1	14 95.08 14 52
in no kin more	140		og T	\$170299	3120299-61 KT	12 05 08 14:52
Level depoid	vi- Q0		ve1	9120399	\$120309-BLK1	12 05 05 14:52
i-transposity on	- 5.3G		aux 1	W120269	8126299-181 121	12 45 68 42/52
for the first plate of the	7.50		ng L	8120239	8120299.10 K	12 05 7.8 (4.52
1 0 00 X	1,20		ug I	X120799	8120299-B1 K1	1398 08 14 55
Little Leaving School	100		og 1	8120709	\$120209-BLK	12 08 98 14 52
To 1 - wilder	1243		ag 1	8120259	\$120299-01400	12 65 08 14 52
Laurent day	127		0, 3	X1202V2	8120299/B1 K.	12 64 08 14 32
Corn committee commit	94067		V#7	8120299	8120299-Bi kil	10 05 min 14:50
the state of the s	475		hg 1	8/20299	8121,100-K, PT	122 5 AS LETS
be a control segment of the second	4.59		ag I	\$120259	8120299-01-1-1	12 05 us 14 52
And the first of the first	13.54		ug I	8120291	8120299-B; N1	126508 150
Secretary Control	116		151	8120290	8:20299-BLK1	12 05 05 14 52
test and a section for the	Dec		ng I.	811,0299	8129299-BLKT	12 VS WW 14 52
The spile	1781		og L	8120200	8120299-BLK1	12 05.98 14:52
filed one or come	1.30		ug L	\$120297	\$120299-BLK1	12.85 V8 14.52
Department of the mark	3.00		uy L	8:20299	\$120299-BLK1	12 05/05/14 32
Directions	eC 909		ng4.	8130399	8120299-BLKT	12 03 08 14.82
D wilphystates	-3.50		ay L	8 20200	8120299-BLK1	12/65/08/14:52
1 decisional Automore	4.4		ag L	E120299	8120299-RI.KT	12-07-08-14-52
1 Softworkstated	660		ing I.	\$1,50290	8120200-01 KT	12 02 05 14 52
The seminary francisco	-4.59		ng I	A120291	8(20299-B: K1	22 O5 OS 14 FE
to a shoreley	(3.00)		ng-7	N120201	81202994BLET	12 05 08 4 52



2960 Foster Creighton Road Nashville "N 27204" 600-765-0680 " Fax 515 726-3404

Chem Chesapeake Energy Corporation

6100 N. Western Avenue

Oklahoma City, OK 73118

Ann Fred Gipson

Work Order NRL6012

Project Name Chesapeake Shale Project - PA Sites

Project Number 410081070 Received 12 02/98 08:30

Analyte	Blank Value	O	f mis	OC Bash	Tab SauSer	On vixed Due Time	
Semivolatile Organic Compound	s by EPA Method 827	000					
8120299-BLK1							
2.4-Dichlarophenol	. 30		ug.	8120299	8(20299-BLK)	12 05 08 14 52	
2.6-Dichl.scogheno,	-3.40		ug -	8120299	8120209-BLK1	12 05 08 11 52	
Diethy Uphilialare	o. = 30		ug -	8120299	\$120299-81.1.1	12 05 08 14 52	
Discettoate	~ f 7u		nā .	6 (2029)	\$120299-HEKT	12.05.08 14.53	
Dreethylaninousobensens	>:1.60		uy T	8120299	\$150299-BLET	12 05 08 14 32	
7.12-Dimethythenz (as a chracene)	≤1 10		my ?	8120299	\$120299-BLK1	12:05:08 14:52	
3.3-D medy benefit ne	(2.5)		ng 1	8 20277	\$120299-B1 K1	12 05 08 14 52	
2.1-D methy iplicant	(1.10)		ug-1	\$1202-20	\$ 20259-BLK1	12 05 08 14 52	
Do se a Uplaha'ate	= 70		11g 7.	\$129299	\$ 20299-BLK1	12 05 05 14 55	
4.6-D mine-2-methylphane.	(3 1)		1127	\$120299	8 20299-BLKT	12 05 08 54 52	
13-Dinimbensent	-:1 90		ugl	8170299	\$ 20295-BLK1	12 05-05 14 52	
2,4-Doutrophenol	~.3 40		097	8120299	\$120299-BLK1	12 05 75 04 52	
2.1-DustrosStiene	~3 30		Ug T	5120299	8120299-BLK1	12 65 08 74 52	
2.6-D nurotoluene	- 2.29		ng 1	\$120297	8120299-BLK1	12 05 08 34 32	
Dinoseh	- 3.00		ug 1	\$120299	\$120299-BLK1	12 05 08 14 52	
Discussivi phillialine	4.3-30		rgl	8120299	\$120299-BLK1	12 05 08 14 52	
Diphenylamine -	-1.50		1 30	\$120299	8120299-BLK1 -		
Disultorus	91.60		ug L	8120299	8120299-111 (5)	:2 05 08 14:55	
B s 2-edylhesylle abalate	-3.30		ugL	8122299	8120299-BLK1	2 05 08 11-52	
Edic Merianesol fenare	-:1 30		ug L	8125290	8120799-HEKT	12 03 08 11/52	
Farplin	+ 2.20		ap-L	6120299	\$120299-RUKT	13.55 08 11.51	
Floringhere	< 1.0n)		ugʻl.	8120209	8120299-Hi K I	12 65 08 14/52	
Huerane	× (0c)		my f.	X120209	8 (20269-B1 K1	12 05 08 11 52	
Hesachharabenzene	- ×3.00		ag L	8120299	8120209-BIN1	12 55 08 11 52	
Hevsehlershatadiene	25.00		1447.	8120200	£129299-31.3.1	12 05 08 14 42	
Hespelderugs Signer Calle e	3.50		1 90	8126299	\$120299-7C S.I	12 65 08 14 52	
Hexaghleroethane	- < 40		age 1.	8126299	\$120299-BLK1	12 115 08 14 52	
Hexachlorophene	~ 3 (Us)		Fegu.	8100299	\$120209-BLE1	12.05.08 14.52	
Herachleropsopone	et) 30		1'91,	\$120299	\$12(299-8181	12.05 ON 14:52	
Tedenti (1.2.7-ed) proene	-∞t 00-		041	8110269	8120179-BLS1	12 05 08 14:52	
Isodnin	1.90		HE L	8120200	8120249-BLK1	12 05 08 14:52	
Isophorone	-74.70		Tgu	8130299	\$120299-fn K1	12 05:08 34:52	
Isomfiele	~1.70		ng I	8110299	\$120200-BLK1	12.05/08 14:52	
Kepore	-2.50		Fga	\$12(299	81262 (9.BLK)	12 05 08 14:52	
Methapyrilene	4 00		ny T	8120299	8170209-BLK1	12 65 08 14-52	
3-Meiliyleho anthrene	-7 20		ng I	\$120299	8120200-BLK1	12 05 08 14 52	
Methyl Methanesulfonate	= 11()		ug l	\$120299	8126299-BLK1	12 05 08 14:52	
2-Methyluaphiliateus	16		ny T	8126299	8120299-BLK1	12 03 08 (4 52	
2-Merlty Inhenol	3 -5(1		ug I	\$120299	2120299-BLK1	12 03 08 12-52	
3.4-Methylphenol	- 4 60		ng T	8120299	8120299-BLK1	1205 08 14 52	
Nudelialeie	167		ng I	8120299	8126299-BLK1	12 05 08 14 52	



2980 Fosier Creignion Road Nashwille TN 37004 1800-765-0980 1 Fair 515-726-3404

Client Chesapeake Energy Corporation

6100 N. Western Avenue Oklahoma City, OK 73118

nn Fred Gipson

Work Other NRI 0012

Project Name Chesapeake Shale Project - PA Sites

Project Number 4100810701 Received: 12702508 08 30

PROJECT QUALITY CONTROL DATA Blank - Cont.

Analyte	Blank Value	Q.	Cain	Q.C. Burch	Lab Number	Analyzed Date Time	
Semivolatile Organic Compound	s by EPA Method 827	oc.					
8120299-BLK1	44						
L.I-Napadioquinous	=2.20		ng L	R: 20269	8120199 BLK1	12:05:05:11:52	
I-Naphibyl com	279		og f	8 20299	8120299-BLKT	(2.05.08.14.52	
2-Naphily faming	4.26		ug L	8 20299	8 20299-BLK)	12 05 08 4 52	
4-Nuroand ne	3.30		ng 1	8(20209	S120299-BLK1	12 07 05 (4.52	
3-Neroundine	3,50		reg 1	8 (2029)	8:20799-BLK1	12 03 05 14 32	
2-Nr. cambine	- (A)		(gr.)	8120299	8126299-81301	12 05 08 14 52	
Nitropenzene	3.50		ag I	8121/299	\$120209-BLK1	12 05 08 14 52	
2-Nit opheant	3.20		ugri.	8120299	6120290-BLK1	12 05 08 14 52	
4-Nonophenol	44.70		ng'i	8120299	8120299-BLK1	12 05 08 14 52	
4-27th oquitoline-n-oxide	-SAV1		112°-	5120299	8120299-BLK1	12 05 05 14 52	
N-Nirosudi-n-burylamine	~ 1±hi		119 1	8120299	8120299-BEET	12 65 68 (4 52	
N-Numso her warning	-4.1.80		agi	8120210	8120299-BLK3	12 05 69 (1.52	
N-Nitrosodimerbylamiac	<3.30		ng. (8120209	\$120290-BLK	12 65 68 (4 52	
N-Nitrosodipliany lamine	=53.50		ng T	\$120299	8120299-BLK1	12 63 68 14 52	
N-Nitrosodi-a-propylamine	~3.40		120	61202-29	\$120299-BLKT	12 05 08 14 52	
N-Nitrosontethylethylamine	-:1.40		Fgo	\$120200	\$120209-BLK1	12 05 98 14 52	
N-Nitrasamorpholins			ng.L	8120299	3120299-BLK1 -	12.65 (8-11.52	
N-Minastriapetidine	-1.30		ug'l	\$120299	8120299-BLN1	12 05 08 14 52	
N-Nip-sopyrrolidine	-) 60		ug "L	8120299	8120299-BLK1	12 05 38 14 52	
5-Naro-o-tolardine	< 1.60		ug'l	\$120299	8120299-FILKT	12 65 08 14 52	
O.D.O-Triethal phosphorathicare	:1):90		up-1	\$120299	8120399-BLK1	12 05 08 12 52	
Parnthion-ethyl	~1 30		hu L	8120209	8120299-BLK1	12 05 03 12 52	
Pennaliforebengene	~170		ns 1	8120297	8120399 BLK1	15 05 08 12 52	
Pemach'oroethane	-146		1927	8120299	\$120299 BLK1	12 05 08 14 53	
Penrach'oronarolarizate	-2.10		og L	8121294	8120299-BLK1	12 05 08 14 52	
Pentach prophenel	~3.34		118 1.	8120299	8120299-BLK (12 05 08 1: 52	
Phenacetin	=1.90.		024.	8120299	8120299-81.84	12 05 08 13 52	
Phonerchicone	-100		US.T.	\$120299	\$126299 BLS.1	12-05-08 14-52	
Phenol	~3.20		1.50	\$120299	X120299-BLK1	12 05 08 14 52	
L.1-Pheny's ned anniae	-:4(1:)		ny T.	8120299	8120299-B; K1	12 05 08 14 52	
Phorate	1 NU		ng to	\$120259	8120299-01.61	12 05 08 14:52	
2-Pizwine	45.10		1121	8120299	8120290-111 K.)	12 95 08 14 52	
Procumde.	=1 80		ng le	8120294	\$120299-BLK1	12 05 08 14 52	
Pyrane	- 1 G9		:02 1	\$120200	8120209-BLK1	12 05 08 14 52	
Paradi énimeros i	-:1 ±/G		ug 1	\$120299	8120297-BLK1	120508 1452	
Pandine	-370		og L	8)2/299	8120299-BLK1	12 05 08 14 52	
Safule	7:1.20		ng L	\$120299	\$126299-BLK1	12 05 08 14 52	
Sufferen	-2 20		ug T	8120299	8120297-111-1-1	12 05 08 14 30	
124 Silemachinobenzene	~1.70		027	\$120299	8120299-BLK1	12 05 08 14 55	
2.3.4 % Letrachlimopheno	51.50		ng L	8120299	8120299-1811-1	12 05 08 14 52	
Il ienszoi	-170		HE I	8:20293	8120299-BLKT	12 05 08 14 32	
TI NAMEDI	2.00		112	1110111	Mener and Mil	14 3, 158, 1484	



DANA many a complete a and become the last at the last and last an

Chent Chesapeake Energy Corporation

6100 N. Western Avenue

Oklahome Cay, OK 73118

Attin I red Gipson

Work Order

NRL0012

Project Name Chesapeake Shale Project - PA Spe-

Project Number 4100810701 Received 42/02/08 08:30

PROJECT QUALITY CONTROL DATA Blank - Cont.

Analyte	Blank Value	O	Leilin	Q C. Battle	Lab Number	MA 2cd Date Title.
Control of Control	La Cha Mark at 629	0.21				
Semivolatile Organic Compounds	by EPA Memod 827	O.C.				
8120299-BLK1						
e-Toluidine	+:4,60		PA.F	8120299	81.10209-RLK1	1 10 11 10 11
1.2.4-Trieblysobenzene	4.4 36		as L	\$120299	R120295-HLK1	V-100
2.4.5-Trichlorophenol	×3 10		u, T	8:20299	\$120299-8111	0.00000
2.4,fe-Tricido:ophenol	67.52		984.	\$120290	3120299-BLK1	1000
1.3,5-Trimtrobenzone	×(10		og L	5:20209	8(20299-BLK)	100.14.100
Surveyore Torphonfalls	74%			8120299	\$120299-B1 K1	men u li
Surregue I embedient glomat	9674			8:20299	\$120299-61 KI	Committee of the last
Surrogae, Physiolets	35%			8126299	\$120299-51 KT	100 0 141
Surrogate 3-Home-sphere!	636			5120299	\$12529544 K1	
Surregare 2-Hunrophoni	48 %			\$120299	\$1500mm12.4	
Surveyes Annahonsus -15	76.04			\$120299	\$1200,000,000	



0960 Foster Creighton Road Nashville, TN-37204 1869-769-9860 1 Fax 615-726-3404

Clear Chesapeake Faergy Corporation.

6350 N. Western Avenue

Oblastoma City, OK 75113

Arry Fred top-set

Work Order

NRL6012

Project Name

Chesapeake Sha'e Project - PA Sites

Project Number 410081070 12/02/08 08 30 Received:

PROJECT QUALITY CONTROL DATA Dupliente

				10 C \$ 10 cm					
V	119 34	Deple as	Q	t ora	RPD	Len	Garch	Sample Toplicated	Analyzed Date Time
feneral t hemistry Parameters									
3120197-DUP1									
to the parata law	- 141	0.66		rise:		20	8 (20) 97	SPECALO	12 02 c3 08 30
3120197-DUP2									
Israel Organic Confession	71-1	ND		$u \leq \epsilon$		20	8)20/97	NRK2309-01	12 (12 38 08 30
3120295-DUP1									
ford Disselved Not its	2+70	3310		ing L	2	29	8/2029k	VIII. 0036-01	2 02 2 4 3 30
120305-DUP1									
600 - 5 D ₂ y	45	18-0		26.2. s.	+	20	8130801	ARTHOLOG	(0.50 17.30
3120332-DUP1									
(i) du.	0.5	37.7		510	7	10	\$12037.5	Mercetto)	2025) 1813
3120336-DUP1									
duarbinal. Alkelini (2012)	25.6	6254		mg 1	7	20	X120536	NR: 001/101	3 02 ax 2, (1
120339-DUP1									
is made as CaCCC	5.32	NT.		ngt		20	8120359	SRICCHOL	2 42 48 27 12
3120340-DUP1									
Sn ' le	716	22		rig t		19	8120340	SR 001501	12 02 05 18 00
3120390-DUP1									
MASSING CTI		× 145		mil	.5	26	\$ (2439)	\$8(00) not	103 3 Nº 30
120489-DUP1									
Les Naspendest Solois	100	181		ms L	20	29	\$12/159	NR 0012704	35,08 21.35
3120489-DUP2									
Loa Swipsiel a Salide	COL	1.2(10,7	Fgor	30	259	5120459	NRL030*401	11/01/03/11/18
120548-DUP1									
satile Santeas S	221	124		$m_{\mathcal{Z}} 1$	2	20	8 (2054)	NRC.G012-01	73 03 03 18:50
3120608-DUP1									
Mernle	73500	229000		Pyrit	96	10	N) 2(16/18	NR19012-01	.2 03 38 23 68
120880-DUP1									
(Lane	-44	99		my t	92	ου	8120880	NRL0012-01	20 7 74 199.32
120984-DUP1									
P011(1) 15 71(1)									



Client Chesapenke Energy Corporation

6100 N. Western Avenue Oklahoma City OK 73118

Fred Gipson

Attn

Work Order

NRL0-12

Project Name.

Chesapeake Shale Project - PA Siles

Project Number 4100810701 Received

12/02/08 05:30

PROJECT QUALITY CONTROL DATA Duplicate - Cont.

Analyse	Ona Val	Duri care	0	Urite	RPD	Linds	Said	sugh-	Application Durc Tillian
General Chemistry Parameters	4) (4)					3.5			
8120984-DUP1									
Suite.	2 10	2.40		org t	y.		Sibehi	A	
8121050-DUP1									
pil	5 0	3.20	1443	pH that-	-	2006	\$12 DOM:	531 11	12 (4) (5) (6)
Temperature of pH determination	32.2	22.7	1111	Deg C	u	200	8121090	-3.1107-09-	The Paris of the Con-
8121062-DUP1									
Specific conductance	469	482		numper = ox	0.4	339	8121062	May vitte in	(C=4-C) (1.45)
8121078-DUP1									
Chemical Oxygen Demand	NO	NO		mg L		100	8121018	NS19479.01	12288283
8121281-DUP1									
Fluoride	B-10.00	11)(101)		nig L	10-	20	SIZITEL	120 Hr (19)	12 19 16 19 29
8121531-DUP1									
Plumolies	ND	80		mgl		3.7	8(2(5))	221103EU	(0) . 0 %
8121543-DUP1 Residual Chlorine	E 665	0.844			4	2	\$1.71247	9.5.1 (0)-4-01	12 19 26 15 56
Kesighai Calornie	11 603	0.544	×1	mg L	3	2	86,1545	12100-101	10.10.14 12.14
8121713-DUP1									
Cyanide Weak Acid Distrelable	50	303		mg-I.		29	6(2)713	311111 ZW	3241.18 19.32
8121720-DUP1									
Total K, eldalif, Nitrogen	15.953	1-342		77-1	11.0	3	80.12.	21,000	121-11075
8121721-DUP1									
Prosphorus	D-184	0.125	R±.	491	40	70	\$101-17	5f(0/d)=	COLUMN CO.
8121929-DUP1									
Cyarida	512	205		mig		45	11-493	56 (197)	1
8122036-DUP1									
Sulfate	(44	144		10).		177	81% 6	"downers	E 12-20 (1) 19
8122287-DUP1									
Ammonia as N	\$25	87.1		Free T	4	Sec	8120297	$ZE_{+}(\cdot) \otimes (\pi i)$	77 to 15 (f. 8.1)
8122645-DUP1									
Chemiun (VI)	425	226		vay	1-2	15	\$122/25	Str. 2008	11. 19-58 mm



2000 Foster Craighton Road Nashvilla. TN 37204 * 800-765-2550 * Fair 6 * 6 7 26-3404

Chem. Chesaptake Energy Corporation

61791 Nieben Avenue

Oklahoma Cin. Ok 73118

Attn. Free Gipson

Work Order

Received

NRL0012

Project Name

Chesapeake Shale Project - PA Sites

Project Number: 4109819701

12/02/08 08 30

PROJECT QUALITY CONTROL DATA

Duplicate - Cont.

0000	one Val	Indicate	0	Lyne	KHU	torn	Hoteli	Sample Dupleared	Analyzed Date Tone	
teci eral Chemistrs Paratae		The second		1,711	M.C		******			
8122645-DUP1										
a 10	+81			1971	10.4	100	P.22519	VRI == 2-DIRED	12 14 43 1975	



2960 Fower Creighton Road Nashville, TN 37704 1800-765-3617 (Flav Life Con Life)

Chert Chesapeake Laergy Corporation

Tred Gipson

6100 N. Western Avenue

Oklanoma City, CK 73115

Project Name

51(jo 1817

ame Chesape An Shale Pina - 11 - 11-

Project Number 41 Received 12

Rock inge

41005 0701 12 12/05 08 30

PROJECT QUALITY CONTROL DATA

LCS

Vitalyte	Strong Val	Analyzed Val	9	Truts	*) Xi	(Pr1)	ice	Apatrosi Nati Pini
General Chemistry Parameters								
8120197-BS1								
Total Organic Carbon	260	185		ng ml	0.58	100	5.2797	1140 18 20
3120296-BS1								
Total Dissolved Selici-	(60)	47.11		ACT TO L	0.4	- 0	h Salto	10375
3120305-BS1								
BOD - 5 Day	198	(24)	7.1	og est.	121%	8, 17	5.2 (50)	百分级证金
3120332-BS1								
Terhidity	2.00	4 500		22	486	300 11	# 38Q cz	THE SE IN L
8120340-BS1								
Sulfre	400	36.4		1091	400	200	5 7 11 100	10,049, 805
8120390-BS1								
NIII AS (10.0" wt 320)	9,530	718		172	1000		x 25.80	U Truk in the
1120489-BS1								
Total Suspensed S. L.J.	(155)	(01)		pe det	357.67		5 100	0.000 = 95
1120548-BS1								
Smat2/Sirite as S	6.02	*4		my t	ar.	2	1500	11/17/33 (198)
3120608-BS1								
Chloride	157	10 0	W.E.	mg I	1224	.41	7 200 m	111000 3506
3120880-BS1								
Bromide	10.0	10.1	SINE	n ¢ L	10.10	900	K 1980a	11. 12.115 1.17.7
3120984-BS1								
Sulfide	20.0	74.1		mg L	979 _L	31-31	35000	Carried to
121050-BS1								
p34	7:-0	~91	нп	Hi Lain	Ice's	0.300	4 CC 30H	1 45% 1012
121062-BS1								
Specific conductance	3500	17:0		unto co	200.0	0.00	\$1.75	1) 4- mK (1.10)
121078-BS1								
Chemical Osygen Demand	20.0	103		92 (9)	1/25	6.00	8.2.78	(40004))+
121281-BS1								
Honde	0.0160	185		ina i	1005.05		8 70	0.00



thesaprake Intergy Comporation 6160 N. Western Avenue

Oldahema Cie., OK 73118

Allin 1 red Gipson

Work Order

NRL0012

Project Name Chesapeake Shale Project - PA Sites

Project Number 4100810701 Received

12/02/08 08:30

mis ?	Sefental	Analyzed Val	ō.	1 mil	S. Kg.	Targer Range	Daich	Staly sed Date Title
General Chemistry Parameters		5						
8121525-BS1								
Old General Ca	20.0	:96		mg L	10000	79-114	8121525	12 19 18 14 17
8121531-B\$1								
Proofes	4 7 40	6.756		1.50	1010+	86-120	8(21/5)	12 -3 88 12 10
3121543-BS1								
Fendagi Chleriae	w 360	V-319		eig t	1100-	60-130	\$111541	12 /01/8 25 15
121713-BS1								
Counde West Visit 1 111	11.75	25110		ring-E	1194	81-111	\$12171F	12 1 98 10 12
3121720-B51								
to K got Sing.	277	= 86		cig L	Disa	21-10	811(79)	12/1/08 to 25
121721-BS1								
"A spek or	_+a*	9.17		w.t.	4.57	70-210	11353	12 (208 1215
121929-BS1								
1.25-44	10,000	4.600		12 ger	47%	31 1)	\$121929	12 (5 08 11 3)
122036-BS1								
Sollate	0.0	981	VINR	nh-iuf	2570	P0-10	8122036	12 12 08 12-19
122287-BS1								
Ammonto da N	6.660	3 14		con L	103*	-00 - 10	\$122287	12 (6.01)4.55
122645-BS1								
romann Ali	9.130	0.106		ing L	1000	8/	\$ 2614	12 16 08 19 56
eneral Chemistry Parameters - Dis	solved							
122645-BS1								
, fr. missen (NI)	1.00	0.146		mp-2	106%	89:115	8122645	12 14 08 19 36
ofal Metals by EPA Method 6010B								
120066-BS1								
(i) the app	2 Par	2 Cr		tah ,	10.36 ~	80 - 120	8120060	12 35 08 17 62
- 11	1.700	C 1984		neg :	Janya p	\$0 - 120	8126699	12.05 08 17:02
	0.112/0107	0 10 12		mg 2	10204	30 - 12	8120066	12 05 68 17:02
(married and married and marri	2.900	7,21		1115 2	11100	30 - 120	8120-06	12 35 68 17 02
distant.	(140) re	14.自治14		me 3.	10354	80 - , 20	812007.6	12 55 08 17 02
n —	1.96	1.51		nig 3.	into.	361 - 120	K120996	12 05 08 17 02
	- (5.54)	W 6.527		nig L	10100	\$4.120	5120066	12 05 08 17 03
1	7.394	± 12		ing is	1044.	50 - 129	Manual Che	12 98 68 17 02



2000 Forder Creighton Road Nastwire FM 20204 1800 (868-869) 1 Mark 176-186-

Cient Cosapease Freigy Corporation

6100 N Western Avenue

Oklahoma City OK 73" 18

Auto Fred Cop-con

Work Order

NRLCOIS .

Project Name Chesapeade Shale Project - PA Sais-

Procet Number 4100810751 12/02/08 08:30

Linanta	VorCord Val	0.1	Ciac	P. Ree	Dige.	ARM I	Applicated to the
	100/110.10			71,50			
							F. H. S. Jak
			19:31/				4200 mg 470
			ing t				1 T (14 10) -1
			regil		81019		Litterik La
5 66	8.1(3)		mg i	101-	81- 1		Labina
5.500	6.512		raight.	16.300		815 33	120104
5 K13/2	C 458		rtig L	700	20-170	812244	3717 00 7
1.500	0.498		log L	30000	180-1	314	120100 2
2.00	4.15		rag L	K36.6	20. (10)	8 19 10	12 m 36 =
6.0509	0.0478		my L	260 0		A. Nigh	1_00000
11.04.55	6-15-17-17		the L	1500	.2	0.07000	1100 0 15
1 Cart	9.61		my L	1.00	3 4	31.1920	BULL -
4.44	1.68		cos. C	1980	3	100	1 9.
0.0316	7011 4 1 8		05.00	1415		2170.00	
Di.	1.04		eg T	2.0		1 Victor	
2.00	(0)		ms I	NO.	GH 11	40,000	Universe in
1 × Ca	0.500		tek li		Action 1	1000	1991 19- 9
0.500	0.364		$\sigma \in I$	15-		1,500	1205/00
10В							
9.69	1.97		us L	1804	40-100	51h-16	1210 VL 15
0 (00	£ 0.843		ing L	80.0	100	8133574	1500 15 18
9 9 9 8 9	€ 0472		me L	Gara.	N - 12	5 Sur.	(24878-18
2.89	2,68		tne'L	7010	81-140	8125/04	1:05.08 13
6 6500	15 (4.6)			1670	80 - 100	800.677	12.28 (% 15
0 0500	1102			1660	93.1.9	8.70.03	15.08.92 15
6200	927					8514	12 4 68 18
	0 530					93.4	17:505 18
						8354	12.08 (15.14
							10.802.17
							12 05 63, 13
							13 ms fix 13
							1076 28 19
							(2.6£(1).74
							264 55-13
6.0500	0.095				1		
P. Gebbb	0.11.500		1 1	9-312		F I	
66	5.45		5.00	100		Sec.	
; 64 26500	1.03		1145." A.E. A	46	4	\$ 1	71.75 A
	2.592 1.366 2.00 1.059 1.07 1.07 0.055 0.0 1.0	0 257 0 254 0 254 0 254 0 254 0 307 0 366 0 303 0 366 0 405	0 250 1	1	1		Limin Size Volgred Val Q



Font Chempeen Energy Corporation 6 to 18 Western Avenue

Oka (mate) (18.75.1)

to tred to pear

Work Order:

NRI (012

Project Name Chesapeake Shale Project - PA Sites

Project Number Received

4100810701 12 02408 08 30

	LCS-Cont.										
Alam	Sandra 1	an a seed Mal	Q	& Agreets	* Se-	Traye Range	13.81ch	tocked Fine Trac			
Dissilved Metals by LPA Method fol											
8120074-8S1											
141040	1.00	101		ing to	1010	8/2 - (20)	8120074	1203 98 1841			
A residence	0.500	9,507		mg 1	101%	80-120	81200-1	12 08 08 18 41			
(X) _m	1,500	2514		ncy L	101%	80 - 120	8129674	12 05 03 18 41			
Mercury by EPA Methods 2470A/2-	471.4										
8120683-BS1											
Messure	UU000	0.035488		mgA	4772	78 - 124	8126683	12/04/08 18/23			
Dissolved Mercury by LPA Method	s 7470 A/7471 A										
8121171-ES1											
7 h 174 m	8 2010 -	0.000055		mg·l.	3620	18 - 125	8321(7)	12 09 08 12 02			
Volatile Organic Compounds by CP	V Method 8260B										
8121411-BS1											
Arethia	750	373		upit.	, hiju g	62-150	8121411	12 04 08 10 45			
Armen	250	1210	£.	T.gu	451u u	30 - 150	815 (41)	13:01:08 10:15			
Acry matrife	259	250		bel	2000	73 - 135	8127411	12 04 08 10:45			
lecorand	\$10.79	45.5		ug L	3300	30 - 12"	812/411	12 04:08 10:45			
Represdictly contentions	4905	33.9		sig L	1480	50 - 129	\$12:111	12 04 05 10 45			
Been allower	10.0	515 =		ug L	Ritte	69 - 124	\$12(41)	12 04 5/4 Do46			
Disagregationic	50.6	52 1		os 1	11:90	62 - 118	8121411	12"4"88 10:45			
2ethaniques	239	224		454	9200	- A 1 42	9151411	120108 1044			
Cor - v J satisfa	- HC Q-	N6:3		ng Y	113%	-2.1 - 2.16	8121111	120108 1045			
I had an industrial ende	(3) A.V.	30 %		(og 1	11200	76 - 143	2151411	12 04 08 10,45			
A Martingary	10	42.3		us fi	400	80 - 120	8121411	12 04 05 10:45			
and the a representative is	His	49 ±		op T.	99	76 - 123	8151411	whate was			
1 Care attacks	Acres	403		342 1	P.C.	115	8171111	20108 10 45			
Completo	19,0	16.6		set.	930	30 - 15 -	812(41)	.2 64 68 10 43			
Charametrian,	140,14	48 1		153	-dean	35 - 105	3121411	12:04:08 30:45			
1.1.4 thomas as health and released	411.15	42.1		mi 6	0120	00 - 170	N:21:11	12-64 CS 10:45			
1.0- Promove:hine (7177)	£0.00	49 ,		ight.	982	80 - 125	8121411	10 04/08 10:05			
Departmentione	3(7.6)	15.9		ing '[9:00	80-124	\$121411	12 64 08 10:45			
may tol-Dichloro Scharere	35.6	54 1		ay L	1054	10-150	812(+))	12 04 08 10:45			
Literate de la companyante	50.0	48 1		up L	9-06	80 - 122	\$121:11	12 57:05 10,45			
La finchicrolamane	50.C	48.5		ng L	2500	80-123	8121411	17 04 05 (0.45			
1 4-Dichforthonous	50,0	4K C		ug L	9000	80 - 120	8121411	13 05 680 18:45			
Cherly "Consumerbaries	50,0	46.1		ug 1.	-90.00	39-12(812,411	12 6: 18 10 45			
1.3-Quehlurouth me	550.0	49.2		197,	994	60-116	8.23411	1214 08 10.15			
Earl Desire de la constanción	5019	53.5		ve T	11/70;	96 - 127	5 21411	12 04 05 10 45			
siel Mari erecisie	\$(0,0)	49.0		hg L	980,	80 - 129	3,71471	12 04 68 10 44			
A STATE OF THE STATE OF THE STATE OF		49.8		agi L	1504	89 - 131	312(4,1	12 114 08 2 45			



THE LEADER IN ENVIRONMENTAL TESTING

2990 Foster Creignion Road Nashville, TN 27704 1810-765 (40 110) 1/15/15/15/15

Chesa Chesapeake Freigs Corporation

6150 N. Western Avenue Oklahoma City, Ok. 73 (18)

Attn Fred Gipron

Work Order

MRLou.1

Project Name Chesapenile Shale Project - PAS ies

Project Number 41008 (120) Received 12/02 08 08 30

Analyte	Sman ta	Apalyzed Val	D	Contra	S. Ros	Tarky.	0.051	Prov Tone
Vulatife Organic Compounds by EP.	A Method \$260B							
8121411-BS1								
Ut-Dickinnettiere	50-	1997		rig I	0.64		7,41+11	THE PARTY
1.2-Dichtor generane	\$14.0	41.6		13: 1	45"-		2. 14.2	
man - 1 3- Nichimopre year	200	XI		VEL	1410		-1.1211	4100
c =1. *- Dich'en respene	300	553		av L	1.5		+1.2635	
1 bilinerane	3000	140/1		ng. L	95%		dinta).	. dim
Edly (benzens	100	49 5		ng-1	10791		2171311	shipm - 1
Fred Melbach Jack	294	.43		og-1	0-		8121411	12124/1702
Hexachlorobutadies e	20.4	43.3		mgt L	320	78.16	412(2))	12 49 68 (1.44
3-Hexanone	230	291		ug L	20" -	25 145	8121811	23448 N H
Enfonterhance	250	267		ug:1.	X21 c	Tellis.	812(4))	thirtes had
Merch lane Chlonde	50.0	53.5		og:I.	1754	79:117	8121411	LINE OF HIS
4-Methy1-2-pentanous	2511	235		age3.	1555	27 165	\$121411	12 64 15 10 17
Styrene	30.0	33.5		ing L	10774	31177	3/21231	ables in as
1 (2.2-Temacularcellane	511.0	29.3		ug L	759ª n	FE IDV.	8,2(21)	15.84 m to 1/
11.1.5 Letracylerechane	50.0	48.6		ueL	67.74	8- 1-	X. 3/4/1	1214 OK 10 P
Cerachiemerhene	59.0	47.5		1.20	4350	E 15	+1,1211	11 94 68 19 45
Tohiere	50,0	46.5		ng t	93%	40.00	: 1111	CONTRACTOR NOTES
1 2,4-Tox dorobesizene	50.0	53.1		Sign &	1000	8 [43	8.2101	2 94 EX 18-44
1.1.1-Trichlemethane	50 a	50.9		Se L	1628e	45 1.73	55000	204.59, 9647
1 1/2-Trichlereethene	30 0	48 S		ug L	98%	9 122	5120411	166.08 10.18
Trichlocoethene	50.0	17.4		teg. J.	95"4	5= (1)	80/10(1)	12 state (to 1)
Tirchlorofhioromethane	50 0	46.2		ng I	11.14 a	10 11:	A(2) 111	20048 (6.6)
12.3-Trichloropropose	501:	482		ag f	90%	2 -11-	K) T 153	14,174, 18,19
Vinyl injeting	250	294		úg 1	1189-	42-04	417:11	17 marcs 16-15
Varyt ekloude	50 (1	16 .:		ug L	12300	27-129	61284	LOADS THE
Ardenes, total	150	1.35		ng l	10114	4- 7-	8171	Caxis of
Sucrogate 4.34 w.14 raction att	23.0	21.3			60%		1 (1	100 Kill K
Surregues 1986 consplains mechanic	35.4	30. 0			Torre	29 TY	1100	1. 375 0 15
Surregary volume 114	25.0	25.8			0.3 -		1.541	14/4 4
Surroyant lefter in this several we	250	25 7			690.5	Section	by D.F.	16-17
Flaprobusiene	25 0	250		1164	p= .b		11000	
c'hlorybenzene-45	.5.	24.0		179.1	16.7	11	2000	1000 \$ 1000
1.1-Dield.echenzenesd (25.1	25 (2		101	-77		10,0	100
8121411-BS2								
Acronius's	502	441		1.45	27.670	Jan Ha	112.4	PARTITION OF
Cleoroprese	-0 u	50 9		tig !	1027	40.00	8.711	TERMS IN T
3-Cherapropere	50.0	41 4		ay1	10.24	(C. Ac	3.200	1241.8 1611
Isobuzzali	300	417		12.1	4.77	16	5.700	Free 18 18 4"
Media rytominie	500	454		196	1120	37 - 13	302000	D 81 (4) 155
N'ethy: Methacry ate	30.0	32.6		19.1	1 400	10 1 L/s	1(2)(1)	1012 or 11/31



t mapacke Cherge torporation

6 90 N Western Avenue Orialisma Ch. OK 73118

Vap. Fred Gipson

Werk Orce

NRI.0212

Project Name

Chesapeake Shale Project - PA Shev

Project Number: 4100840701 Received: 12/02/08/08/50

Vision	to, my Val	Andyzed Val	Q.	Ums	PaPec	Turger Range	Basch	Aralyzed Dute Time
and the second		THE TAIL	4.	871779	31/50			
Volatile Organic Compounds by I	PA Method 8260B							
8121411-BS2	144				1-20	De 100	0.51110	A CAMP OF STREET
Proposer trice	500 25 ft	46.3		sg1.	1300	10 - 150	8,21411	1, 74 08 11 75
Nongove 120 in to movement be	25.9	250			1000	60 - 140	8,21411	12 94 08 11 32
European Policies de romanies.	2.4	2.58			167e	75 - 124	8223411	12 04 2 11:37
heanga tanara sir		26.77				14 - 121	5 2, 411	12 04 8 11:51
Survivian - Productional Co.	25.0	217		200	21610	79 = 124	3,2(4)1	12.04 08 (1.57
Homorenegic	25 6	250		1122 F	974	50 - 350	812.414	15 04 98 11 9,
A Alternative political	35.6	25.0		ng t.	1)8">	50 - 200	8,2,411	12 01 08 11 57
1 settlem in dem ignestet	28.0	25 9		64 1	2061.74	30 - 250	812, 411	12.64 8 (1.59
Semivolatile Organic Compounds	by F.PA Method 8270C							
8120299-BS1								
5 affine	55.11	44:	4148	My T.	88"	49 × 10"	5112199	12 45 08 15/15
- cy y select	364	4. 1	VINS.	ag L	0460	10-108	8120200	12 05 08 17 13
	50.0	35.7	SPAR.	ag L	10.25 m	33-137	8120,000	1242 68 (41)
We .	50.40	26.10	MNS.	ne t.	5270	22 - 119	8120209	12:05 08 12 13
sochrakeser.	50, 0	31.*	MNR.	:02 1.	10375	42 - 121	\$120,199	10 65 08 15 15
Laure ter andre, na-	50.0	45 "	SINRI	uyA.	9-1-	27-115	\$120299	12 05 08 15-1
le was digitente	200	45 4	MINRI	mg L	9104	25 - 125	3120260	12.05 08 15.13
ferage than are appear	540.72	€0 ₹	MSRI	ug 1	:019.	54 - 122	8126/299	12 05 48 15-13
Immgo se manyon tune	Fty t	45 0	VINKI	uc T.	911° 0	4"=121	\$120229	12 05 98 14.13
Herefolder Followshield	tu o	44.5	MNRI	og L	88*-	45-125	8120299	12 05 08 15.13
He evisioned	b to	14 6	MSRI	113-2	4000	23 - 174	5120259	13 05 08 15:13
tale exercise (decry) tales	20.0	46.8	MAG	1957-1	94°c	48-102	8120290	1237 98 15 1
Rear / Surged powerings	A44.0	12.2	375101	ug E.	1047-	33 - 134	8120299	12 05 05 15-13
L Jgale	70.0	45 6	VIVEL	ug'i.	91%	44-113	\$170399	12 65 05 13.13
Andrew Congression	\$4	41 0	327R1	ag L	830.	33 - 122	8120299	12 03 08 15 13
44 de ande c	2004	28 2	MNRI	ma L	5500	39 - 108	8120229	12 05 08 15 17
Brez al form fresh fraglision	30€	49,0	MARI	ng T.	9600	48 - 107	8120299	12 65 us 15.13
(C) /Endligge (rylighter)	*6.6	54.6	L. MNR!	tog T.	10400	15-104	8120299	12 65 08 15 13
to a Schlorent sprey; lemm	26.0	503	SPERI	up.L	181190	46 - 105	8120259	12 00 08 (3.13
La chi confidenzare	30.00	14.3	AINRI	og t.	Kelo."	47 - 1:13	5120209	12 03/08 15 13
Se lifera travell	36.4	43.1	MISRI	ug E	270 0	33 - 112	8120290	12 95 68 15 1.
A STRUMPTON A PROPERTY WITH	50 4	50.5	MINEL	ng/L	1017.	59+116	8120200	12 05 08 15 13
£15-48	50.0	40.5	SIMPLE	ag-L	9344	53 - 116	8120299	12 05 08 15 13
Description Property	SPA	15.4	SPART	ng L	910	13-121	6126299	12 05 08 15.13
KKINDOMER	- 40-00	47.5	54881	eg T.	870	Q1-154	\$100099	12715 98 15 1
Decision periodos	# (P - 2)	40 11	MNRI	ng I	112	35 - 120	8120200	12 05:08 13 13
F 100 C Section 1900	*Y = 6	54-2	SISRI	mg f	8376	27 - 191	\$171,069	12 05 05 15 13
I for memory	20-0	225	575403	ng l	86%	25	2120199	12 03 08 15 1
TTT-Portugues Aven	300	23	MARE	ag-I	£6ª.	28 - 100	\$120.30	17.05.08 15.13
A CONTRACTOR	-70	an š	NISB!	ng L	80%	37.122	8100000	12 05:08 15 1.



THE LEADER IN ENVIRONMENTAL TESTING

2766 Fusial Crephum Rood Nash.-le TN 37204 1860-766-19-

Cherry Chesapeake Energy Corporation

6100 N. Western Avenue Oklahonia City, OE 73118

Aug Tred Capsion

Work Drove

Received

VRI UHZ

Project Name

Chesage: ke Sinie Pin-11 PANTA

Project Number 4150810000

12/90/08/08/08/01

Analyte	Known Val	Analyzed Val	ġ.). nue	* Bec	(ny)= Execu	#4.0	Analyzed Date hing
Semivolatile Organic Compound	is by LPA Method 82700							
8120299-BS1								
2,4-Dichlorophenol	50.0	40.4	MNRI	65-	Afre	T 197	\$117.0x	E 14 0X - 13
Diethyl philialaie	511.61	52.3	NERT	621	1,000	84 112	4 (7)(7+1	1100 -11
2 d-Dimethylpheint	36.0	36.7	NERI	Die .	6284	1 F/n	6320	08 (F.fri
Dimetiful philintare	50.0	51.6	ATSRI	ng. I	11.20 %	12m	81 200	12 - 18 11 11
d to Divino 2-meth Apterel	50.0	66.7	MARG	Section	132""	31-11-	87 /11 (9)	1/10/16 14 13
1,3-Dinombenzere	50.6	51.2	MSRI	1657	9.0 a	86 LHS	50.49.7(0)	1214 03 (5.17
2.4-Diskrophanol	\$6.6	29 ()	L_VINRI	lik.	14800	in the	732.291	1566.8 (01)
2 st-Diajuerolnere	56.0	50 S	MNRI	491	1020 4	50 (10	8120313	12.07.08 (5.19
2 %-Disconsoluene	50 G	50-4	MNRI	R. L	1010	0 175	8176264	(2000) 19 17
Di-n-octyl plukulate	50 0	320	MNRI	ag L	1000	al. 141	8577	12 05 19 19 17
Bist 2-ethy thexy Ophthalate	civ is	513	MSRI	141	16.20	16 (2"	2125394	57 84 hs of 17
Huoranthene	300	101 8	MNET	427	100%	AS TOWN	405-294	2111-108 11 11
Fluorenz	50 G	46.9	SESTE	191	50%	50-(1)	410/50	Tolti W IV LV
Hexachlorobenzene	20 0	25.9	SISKI	agl	94%	100	4	THE BU
Hesachlorobundiere	50.6	22 13	1820	-21	944		=136-10	100 0.00
Hexaeldorosyclopes adiene	86.0	F7.6	33881	22	789		1000	4-4:00
Hexachloroeilione	571 G	25.1	SINGL	A.			1000	1770 12 1
Indones (1.2. East) by rone	50-0	45.0	52500	1.27	9.4		A	607
Isophorone	50.6	17 5	MSEL	1.21	45		Miller	Special IV-Y
2-Medic Implifications	30) to	37.5	MNRI	ng T	-30		+121(19)	MOTOR CO.
2-Mathy/phenol	50.6	-10 %	50081	ag J	\$2"		E (5 199	mission ()
3.4 Methylphenel	Su B	245	SPSRI	ne"	591	10. 10	Acres 6	201 of 11 tv
Saphinalene	÷) (i	38.0	MSRI	ille 7.	-60%	1 139	8120464	James Perli
4-Nicomitate	6,02	43.2	MNRI	ag L	557	40 12-	41.56,1169	This property
3. Naroanii 10.	67.0	19.2	MNRI	121	-1,5,	Ph 28	830.99	2 5 5 15 17
2. Vicegan Title	50.0	44.8	SISRI	age L	727.1	84 (34)	8 20209	1. 图像11.0
5-1 robenzene	50.0	42.4	MSRI	ng L	9175	254 (4)	8.20.00	110798-1513
2-Nirrephenol	30 m	42.6	MNRI	J. Zu	3504	35 - 1	\$ TAY 109	12000 1101
4-Xirophenol	\$0.0	29.0	MNRT	ug f	4500		8.1000	15/6/2 000
N-Narosodimethylamae	K/1 ()	35 2	SINRI	ug4.	- 1 1 m	27 (4)	8 1120	Eds of
N-Nurospa.pheny.acure	Som	50.5	SINEL	0; T	Wife.	1000	310000	0.00%
N-Ninosedi-uspropylanura	500	617	1 MOVRI	ng7	1210	25-1/2	5120299	1272 68 15
Pents, a orophen-1	50 6	ce.8	SINRI	ME'L	1220	21 17	\$1.6.99	150819 (1)
Pheranchrone	50 0	45.4	MNRI	ag L	47.4	ALV. IN	342629	there is
Friend	56.0	26 8	SISRI	ng'l.	24ª a	554.40	312 (200	1- 64 AS . 1-
Perent	50 (t	49 (MERT	ag T.	28.4	100 22	\$47,6299	11.18.08-1.14
Pendine	50.0	8 71	MYRI	190	1700	3.00	81,0,97	Mattal Edit
1 4.6-Tetracalizeophen d	59.6	54. 9	MNRI	ng f	11479	Harmo	3426200	Throban TO CL
1.2.4-Trichlorobenzene	50 0	37.8	MS31	tig f	760 6	di-mi	61-1-00	02 8x 08 1/ 17
7.1 S-Tricklorophenol	60.6	48 7	SINRI	ag T	979%	0.1	RU 3/4	(1.0.68): 13
2.4 o-fradilarentenoi	50,0	47.4	Miskl	ng I	960.	14.525	4.181.04	10000





.

Chem Chesapeake Friergy Corporation 6/16/19 Western Avenue

Oblahoud City, OX 73118

A'm Fred Gipson

Week Order

NRL0013

Project Name

Chesapease Shale Project - PA Sites

Project Number: 4100810761 Received 12/02/98 08 30

PROJECT QUALITY CONTROL DATA

LCS - Cont.

te di un	Knoan 'Va.	Analyzed Val	17	Cont	· Fer	Turge:	france	Analyzed Faus Tone
Semisolatile Organie Compound	s by EPA Method 8270C						7	
8120299-BS1	o no to training of the							
Surroca Territoriatis	55 "	39 9			80%	21 - 125	8, 20390	12 05 08 15:13
s was to be the forest waters and	40.0	58 (1100=	23-129	8,20290	12 05 G8 15.13
Set to - Localist	52.0	.99			40%	10 - 100	8,20200	12 05 08 15:13
was a Saltoneomy land	30.0	37.6			750	34 - 108	8.20299	12'05'08 15 13
Server deline edicie?	53.9	_R [512°c	10-160	8120399	12:65 08 15:13
No. 24 Mathematical	200	42.3			819.	29-116	8129239	12 %5 C8 (5)
8120299-BS2								
on Chemistry Street attention to	4011	N5	12	631	10.50	0 - 1/91	60,000	120508 12.34
21-1-2-2-	Ac.II	29-1		0,2 1.	25.4	11.719	8/20200	12.05 08. 15-34
4. 11 (P) 18(C) To	1,000	28.4		ag L	57%	35 - 30	\$124299	12.07.08 15:31
d percent comes	100	21- 12		697	530 c	11 -34	8129239	12/03/05 15:34
Association		1-4		ag L	1250	1:50	8 20299	12 03 08 32:33
Line Language	201	45 9		cp 1	10000	A = 1,50	8.20200	12:308 -2:34
(to the property of	1.0	63.8		ng L	56%	16 - 150	\$,20299	12/05/08 15:34
1. III Sann oberments	Hall.	53.6		ug T.	1074	77-127	5120299	12 05 08 15 34
2 * 12 x oropherm)	35.0°	48 *		ng 1.	4000	3" - 150	8120299	:2 05:68 15.34
Digit Desails	100	33.3		lets 1.	6794	28 - 150	8 20230	(2 05/18 15:34
Dancile la tribuscul en conc	30° 0	24.9		ug L	fath",	39 - 148	5:20299	12 05 08 15 34
= 2-Doncto berz in autoscie	33/0	02.5		mgA.	.26° e	39 - 14%	\$120299	12 05 168 15 34
Tribution of Security and	350	2* 0		ing L	5400	(0 - 150	8120299	12 05 08 15 3
Laftenn deagens	100	30.0		ugd.	6)00	40.15)	8120200	12 05 08 15.3
De och	40 th	66.4		ng L	133**	41 + 142	8170299	12 05 08 15:34
Option Grove	300	29 0		ug1.	48%	42 - 149	\$120299	12 05 08 18 34
I to activities	597	33.1		ng-L	070 e	27 - 140	8120290	12-02-08 15:34
First Mediane off care	121	48 1		me i	3744	23 - 121	8120200	13 05 68 15 74
Leighta	397.0	.50	1=	102 L	i th er	19 - 150	\$120299	12 95 98 15-32
Lesardosophita	255	80.3		met.	35%	10 - 159	\$122299	12 93 68 15 34
Ная поприореле	40.2	27 5		ng-T.	554 e	10 - 107	8125300	12 03 08 15 3
Design	501	32.3		ag L	6500	42 - 134	8120200	12 05 68 15 33
Fe will ally	100	54 8	12	ng.L	5500	71 - 131	2 (7627)	12 05 08 15 35
Kalifornia	30 ()	NO	15	ig L	1000	10 - 150	1177.299	12 05:08 15 23
Malagariens	26.2.71	80	(:	ug/l.	u to q	10-125	\$125299	12 05 08 15 34
the amplitude of the second	*34	SA to		ng-L	113%	48-121	#170299	13 05 08 15 3
Mag - Mercaning con-	2.8.11	35 2		mg L	7100	09 - 150	×120209	C 05 08 15 3
$= -i \pi^{-1} \pi^$	25.5	15.5		ugit.	TT" A	10 - 150	\$159,36	12 15 00 15 34
(= (p) = 45a0)	3/2	27.4		wa'L	337.	10 - 124	41/0199	12 95 98 15 30
Lious	- 61	24.9		rigit.	3000	10 - 135	8/27/40	100598 153
In the second product of the	10.0	3.4 3		ag L	5975	13-120	81.9159V	12.35 08.45.5
" ar -d 1'+ 1 "1	1944	32.1		up:L	6100	10.150	3 (5)(5)2	2 05 08 15,3
the market inc	1.50.0	27.5		well.	35%	3-122	51"0"Tex	12 35 48 15 3



2060 Foster Creignton Road Nashwi,4: TN 27204 1 800-765-0880 1 Fa : 615-736-5434

Client Chesapeake Livergy Corporation

6100 N Western Avenue

Oklahoma City, OK 73118

Tred Gipson

Work Order

NRI 0012

Chesapeake Shale Project, 194 Sitals Project Name.

Project Number 2.60816791

12:02:18:08:30 Received

Analyte	Known tal	Analyzed Vol	Q	Late	*485	(ac)	Hur.h	Analysed Date Thus
Semivolatile Organic Compounds	hy EPA Method 8270C							
8120299-BS2								
No arosa healty lealis factore	625 T	26,5		421	649	76-177	MICH	STATE OF STREET
5-Sugar acptains	5/1.0	27.1		100	550 4	0.129	A1 1-	200
Navosupiperiume	501 3	29.1		19.1	584.	9.19		
NATOSOPYTION line	79.0	25 €		4.9.1	5.76 4	100	94252W	74.00
5-Nurve-rehoding	Sij in	21.5		424	12:00	Sec. Ho	1677-	March 187
Q (1.Q-1 riefls) phosphor disoate	50.0	29.1		oy E	186.	20.10	X1	10.108 14.40
Parathiosi-ethyl	50.0	32.4		lig s	man.	- Co-	100	THE STATE IN
Pentachiorobenzene	50.0	50.4		agt	1.15	01234	379.50	12 /15 03 11 11
Pentach invertible	50.0	24 -		42	200	= 11	1000	12 65 10 17 51
Pentachi meninchengene	54.0	35.0		not.	-1300	11-12/	1000	12/03/08 15 (1
Plemeetin	50.0	33.4		ag.t	(Thu	14 147	41,120	12 43 08 1 14
: -Phenylerediamine	50.6	ND	12	121	100	16-7-	21 1 12	12 86.08 (- 1)
Phrace	50.6	34, 21		12.1	100	350 000	517.00	tracks in it
2-Picoline	50 ft	139		021	100	0.00	\$1,000	129552 15 51
Processede	50.0	326		991	65¢	40 (1)	Y125200	12 03 08 35 51
Parameter light	100	40.2		ner't	80%	3 - 7 *	Allegan	12.6 - 68 - 01
Andme.	50 0	12 8		427	154.	III 1704 -	927/039	10 00 08 (FE)
Sativic	50 A	277		923	5600	7 8149	811-194	12 05 02 3 34
Sutstep	20.0	38 5		ngel.	****	3.5-10	8126269	12 63 68 13 51
1.24.5-Tetrachlorobenzene	50 6	27.5		ng-3	446.	35 CUS.	412.2m*	17 68 68 15 W
2.3.4.6-Tetrachleropters	50.6	100 5		41/2 /2	1210-	No Dec	81.1149	12.05.08 (5.31
Thonavir	36.5	30 ÷		46.7	6.7%	0.10	11,1759	12 05 08 15 51
o-Toluidio2	50.0	354		0972	10 pm	36 15	Almoni	1. 05 08 15 51
1.3.5-Treumbhencone	50,0	35.5		ug-L	-year	25110	XIIIVY	12 95 18 15 31
Sucreyone Terphenels 314	56.7	AT T			385	9 - 120	812 11	12 05 62 15 34
Surrogan, 24% treman phenoi	See f.	511			380	0.10	\$11.19	-11.6 48 1411
Surragate, Photods.F	50.0	16.7			154	100	7.00	15to 8 25 kg
Surgesty, S.Fm in Sylvant	±10 x	ti i			37	4.50	7.1110	111 15
Surgary Detroit Level	80 m	69.4			2		0.75.594	57 28
Surregue Sarabenseas II	31.1	je d			100	11	100	* 4 - 8



Care - Ti csapsake Uni ya Consocation

O), anoma City, OK 731 C

Work Order

NRL0012

Project Force

Chesapeake Shale Project - PA Sites

Project Number 4199810707 Received 12/02/08/08/30

PROJECT QUALITY CONTROL DATA LCS Dup

4 3/	they 3 x	* sporae	17	t nite	Spde.	S. Rt.	Lerget Kangr	HP47	Aracs	15.06.60	Sau piz Diplica oc	Analyzed Dure'l me
Consent Change to a Consensation												
General Chemistry Parameters												
B120489-BSD1		109		111 111		1000	90 - 110	18	20	3121-489		1205 08 21,45
and a sequence		10.4		Len and		10.04	50 - 110	139	257	\$121.460		120408 21,48
120608-BSD1												
(11) (de		19.4		Linu	15.0	10104	50 : (10	37.8	- (0-	8110608		12 03 08 25 08
121050-BSD1												
		7 (a)	200	pH tages	-	100%	$9 \cdot 200$.0.1	2661	8121086		12 08 08 10 17
121281-BSD1		4.7				T. E. V.	W 75			A. S. Carlo		
1.52		1 lev		ing L		10396%	99 × 1100	1	20	8:21781		12 09,08 69,48
121525-BSD1												
to A tempor (BM)		159		mel	43.0	102%	78 · (1-	2	1.8	8121531		12 10 08 15 57
121713-BSD1												
yanide, Weak Acid Instacrable		1011		100	8170	11150	\$1 - 119	0.4	20	\$121713		12 11 08 10 32
Z1929-BSD1												
salede		31:979		rup I	J 192	950	90 - 110.	0.6	23	8121929		12 5 08 11 31
issulved Metals by E.P.A Method 6	MIGB											
120074-BSD1		04.53				74.7	Er Vici					12120 201
Synonica -		2.02		mμ	200		\$6-120	- 0	940	8) IL C4		.08 08 15 45
Diff. (20)		20202		ang t.	G (2)	Stre	N3 - 20	01	24	8120000		3.08.08.18.12
LT 4967		man.		mg L	0000	7,369	89 - 20		20	2129971		12 08 08 18,45
hant'		2.12		tieft y	7.07	1.1600	40 - 70	2	2%	81,0621		12 08 09 18-15
bil.co		-11514		arige."		14.70	36.5 301	3	20	\$120071		12 05 48 18:45
admission.		: 23.10		11/6	(79.)	1636	80 - 120	3	25	8130073		12/08/03/18/15
promoun		¢ 211		mp t	1.720	1000	80 1.20	3	20	8120023		12:08:08:18:45
chan-		\$ 542		rue 1	250	1000	89 - 120	2	25	812/05/		12-05-08 18 45
(g) per		0.254		tuft Y	0 2.93	1 Mes 0	Sep. 120	3	3.C	81700-1		12 08:03 18:45
OP.		1.05		mg L	1.06	111720	89 - 120	5	29	\$120071		15 45 08 18 75
ead		0.0493		1.500	0.9500	100e*	89-120	1	20	8:20071		12 03 93 18 45
lungistere		0.555		T qui	23.0	10754	80 - 120	2	20	8:20074		12.08 03 13:45
Foly b.2 comm		0.508		ing I.	0.500	10200	85 - 120	3	20	¥-70044		12 08 53 14 15
relad		0.520		Fgm	5.50	1/1200	80 - 126	2	16	\$120021		12 65 03 18:45
(Section 1975)		0.6254		Pgm	0.0200	994"	80 - 100	10	201	×.10074		13 05 05 18 15
hot		0.0326		my d	1046	10500	kp = 120	14	26	81,50074		12 08 05 8,45
0, 414 4424		1.02		mgL	1.34	102%	80 - 120	0.5	20	S120074		12 08 08 8,45
call me's		6 6455		my T	0.0500	9-0	80 - 136	20	26	8110075		121908 08:28
di,		1.04		my/L	170	1040	80 - 126	1.	26	\$150074		12/03/08 78/45
N.20404 A		U.996		1045	1.00		80 - 120	1	30	8120074		12-68-68 18-45



THE LEADER IN ENVIRONMENTAL TESTING

2663 Faster Creignor Road Nastville, TN 37264 1801 Teach 5

Cliem Chesapeake I nergy Corporation

61% N Western Asertue

Oktahonia City, OK 13118

Alln Fred Glpson

Work Oakt

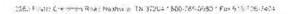
NET GO:

Protect Name

Charapea' e Sini e Pi

Project Number 415081070 Received 125020830830

Analyte	Cry Va.	Deplicare	Q	t was	Splie	". Ke:	Targe! Rerge	RPD	† (set	962	Many Actual	Analyzed Date Titles
	144100			19774		110.75	river					
Dissolved Metals by EPA Meth	100 001013											
8120074-BSD1		0.515		- 254	094	Idle.	e. (35	4	39	81.0		19816 IV II
Vanadiem		0.519		my f	il Ses		\$0 - 120	2	že.	210-		2000 IF I
Zang		0.524		mg 1	7,540	11000	59 - 120	2	24	330		1440 11 1
Mercury by EPA Methods 747	0.1/747LA											
3120683-BSD1												
Mercury		from the sale		my L		75%	75 - 121	21	17.	X1 (00) (CHAIR SHE
Dissolved Mercury by EPA Me	athoris 7470A/74	711										
3121171-BSD1	Allineia 1470.4.24											
Mercun		000111		my fa	100	11:54	78 - 124	15	23	\$1/11/		12/8/08 (27)
received.				any are		111.0						
Velatile Organic Compounds b	by EPA Method 8	3260B										
3121411-BSD1												
Actions		2 8		ug 1.	41	100	07-1-1	2	2.2	217		27 200 -0
tero.eu		13.00	1	1.51	-27	100	10 15	2	11	100.0		E1 4100 T
As cylonomic		35		sage 1	-	100	30.110	-)				DOM: N
Perizene		40 S		nu f	301	11°c	8 11-	.0	0	23,11		
Parama-Gizh) comerhare		55.0		tip !	1/3	24	32 177		100	030		10-10-1
Begnafore		516 -		mg- T	8.0	0.0	61 157	₩.	44	31/1		0.0
branamerhaie		24.7		141	400	1111	57 118	CN	24	AY/ADT		11 (400) (
2-Suranone		3.52		097	24-	474		1	7.6.	62 446		1,000 11
Carbon shoulde		200		ng f.	115	1140	80-120	2	16	X101211		DOM: U.D.
Curren Tempehlonde		\$6.8		w I.	5012	1144	26 - 145	1	70	3427511		THE RECO
Chi vocenzane		48,4		ng t	2015	976	36 - 120	2	27	812) 111		2 1628 ()
Chlarodiframonicihasa		30.0		ng I	51: o	16:00	76,-123	09	21	842)111		120105-11
Cidospetl.ane		10.7		ug 1.	\$19.7)	9.7">	27 - 127	\$ 117	32	312111		22195-11
(hiprotorm		1* 2		ng T	415	4.12	50 - 153	i	25	812 CH		11.08.11
Charrenichane		47.8		ugl	30.0	41.60	33 - 125	0.5	21	517 411		20109-11
1.1 Dibromo-3-schoopropane		4 .6		ing 1	50 €	17700	40 - 136	Y	29	642 41		T0259-01
LI-Dibromoethane (RDB)		1.05		ug I	200	100%	80 - 123	2	21	512-11		20000 11
Disromontetaine		47.6		og L	510	4500	80 - 121	2	210	812 (11		0.0058.000
trans-1.4-Dichloro-2-butene		27.4		114.1	4.0	1070	10 - 150	3	4,	81= 11		98708-11-9
1,2-Dithlurobenzene		42.2		ug-1	510	930.	56 - 122	1	25	8(2-1)		EH24 H 3
, e-Siehlorebenzepe		19.5		ng T	303	mr.	\$0 - 125	1	18	26.1		12 (Fee 11)
4-Dighlorobeagene		48.6		ay L	10.0	970	50 - 150	1	19	513 (1)		154.5.11
Neklorodalheroriethane		45 E		ne L	000	9:00	30 - 120	1.8	la.	KI2-111		Ameria, J.L.
L2-D.chloroethane		49.5		us L	100	ucio,	69 - 136	0.1	24.	P17 -		110248-111
L1-Diebloroethmic		*10		as T	411.3	1385	76 - 130	134	15	612-11		HARPS IN I
ris-1,2-Digiplaroethene		15 6		212	350	99%	80 - 124	1	H	A411		200-0
irius-1,2-Dichlomethene		410		mg T.	\$ 12		36-131	,	14	F12 = 12		1994 (1.1
1.1-Dishleroethene		4.13		ne I	511	COTTA	80 - 127	1	366	Al		- 12-55-31





Charge is hecapeaux language Composarion

60a) S. Westera Ascinor Oldar ume Cus. 708-73115

Acon Fred Gipson

Work Order VRL0012

Project Name. Ch

Chesapeake Shale Project - PA Sites

Project Number 41908 (975) Received: 12/02/05 08:36

321312	Phys. Val.	Daplicate	13	Man	Spike	*a Rec	Targe Bange	RPD	Limot	Tuch	Saughe Saughe	Analyzed Date Time	
Volatile Organic Compounds by L.	PA Method I	8260B											
8121411-BSD1													
1.2-Oschloropropasa		44.1		eg 1.	45.22	85° 5	80 - 120	0.0	TV.	812131)		12.04 (8 11-11	
1920 LEDichloropropere		(0.5		tet.	350	1015	7v - 132	100	20	817.141)		12 04 05 11 11	
ers 1.3-, heldsmyropene		55.1		ug'l.	110	11256	76 - 135	2	19	8121411		12 (4 08 14 1)	
1.1-Diocane		4860		ug I.	539	474	35 - 150	9.7	44	812141)		(204-08 1) 1)	
littly bearing		49.0		ug £.	.56	1907.	80-128	1	11	8121/11		120105 11 11	
billy Mediceryline		239		ME I.	244	1000	78 - 153.	1.	30	8/514/1		12.03.08 11.11	
Hexacillorobidediese		3511		ne t		Hittiga	64. 134	2,	31	8111111		12 64 08 11 11	
2-Hesarone		214		ag i	ŽAŽ:	10.40	69.148	11	11	£ 71(11)		12 94 98 11 11	
Laternestring		2.20		ng.f.	35%	584	$t_{T_1}=\pm 1.7$	2	11	F 294		12 04 08 11 11	
Stell-Clear Chambe		580		19: 1	55.76	1080.,	7. 4 134	60	18	8/217		12 04 05 11 11	
testediy (-2-penticies)		290		145	201	win .	10-145	10		97234		12/04/98 11/11	
binsene		55.5		146	\$24	11174	21.139	4	10	51216		1204-08 11 11	
1.3.2.5 Intackly remoine		-0.74		n, L	70.50	0.80%	£1 - 145	V. 7	25	3.1271		12 (9) (8) 11-11	
1.1 (2-Tenachlorae have		+0.3		ng t	196	1975-	80 - 135	3	7	8/2/1.		(2.04 02.11.11	
Tertaphloroethene		(8.5		1.05	29.5-	932	80 - 125	3	33	817.1		12 04-08 11 11	
1 1.00		47 ():		ng k	2011	240	8u - 125	Ť	19	5123411		12 04 68 11 11	
C. D. Carble of Agreement		300		est.	34.3	10104	69 - 149	1	36	8123413		12 04 98 11:11	
(3 1-1 whicheshaes		52.6		46.1	211.2	101%	80 - 131	2	14	F1214:)		12-01-08 11.11	
1.1.2 Inchlorethms		(9.3		Vg.I	300	99"2	8/1-122	1	21	8123411		12-61:08 11 11	
hadd synethere		476		ag 1.	100	33%	8031	0.4	28	\$121411		12 04 08 11 11	
find, senjagramentura		47.3		ag T.	502	9400	13 - 15	7.3	241	11111113		12 00 08 11-11	
L.C. 3: Profil briefstepane		43 :		ng't	47.2	979a	(4) . : :=	W_,	26.	8.121.111		12 04 08 11 11	
New Jaceste		505		317.1	250	1160	37+150	1	200	81,1111		12/04/08 11/11	
X-my/ elitoriae		10.9		u2),	56.5	41%	119 - 140	1	25	5(2)(1)		12 04 08 11,1)	
Nytenes tend		155		ug	172	11139%	30 - 129	1	15	3121213		204 (8 11 11	
Services 1 24% liberary discould		361.7	1.0	ne:	23%	1070-	60 - 143			5(2)4(1)		204 8 (1 ()	
arragane Impromationering than		26.4		ng t.	75.6	158-7e	75 - 124			810 (41)		2 04 08 (1:1)	
arragar talianess		23.9		112.7	25.6	10402	78 - 121			8121111		12 04 98 11 11	
Service of Green March track		25.		ng L	500	19340	79 - 124			8121111		2/04/08 11/11	
Himpheirene		34.0		og T.	253	995	30 - 300			3(2)411		220108 11 11	
Chimphensene-45		100		tige!	55.0	9800	50 - 200			9121111		20468 [13].	
(:- Dietilorobenzeur-d)		27.00		ag L	25.6	17:0-	50 - 200			R(2(d))		.2 04 08 11 11	
3121411-BSD2													
leanamit de		636		og/L	6.7	1428" 5	10 - 150	2	511	8121111) 7 04 fts: 12 fts.	
The or speed		20, 1		ng f.	*24	990	12 - 150	2	5%	8121411		12-94-08 12-01	
>> + forgratepoly		8 *		1127 5	2/10	9.00	10 - 140	0	50	N15151T		12 01 58 17 51	
Hiltinar w		417		ng L	200	830.	10-150	15402	5,62	8121411		12/04/08 12:01	
Here's marks		121		ng/l	60	1120	10 - 150	1	50.	8 21-11		120108 1204	
of milestransical		1120		asit.	1. 12	108" 11	15 - 150	3	10	877 (11)		17 04 05 12:00	
(V A) + Var Ca		1.68		49.1	265	4300	10-150	112	500	412(E)		1-04 08 12 04	



THE LEADER IN ENVIRONMENTAL TESTING

2980 Foster Creighton Road Nashville, TN 37204 1800-761-5950 1 Fax 815-725-2404

Client Chesapeake Energy Corporation

6100 N. Western Avenue

Oklahoma City, OK 73118

Ann Fred Cipsun

Work Order:

NRL00.2

Project Name

Chesopeake Shale Pricey I'A Site:

Project Number 4105810701 Received 12:02:58:08:30

PROJECT QUALITY CONTROL DATA

LCS Dup - Cont.

Analyse	(my. Val	Duplicare	Q	L'orts	Spike Cers	*# Rec	Furyet Range	RM i un	No. 6	Sumple Machanted	Analyzed Date Time
Volatile Organic Compounds by	FPA Method	826018									
8121411-BSD2											
Surregary 13-legionardiare de		25.5		112 [296	19:00	54-145		81(-1)		100 100 100
needing to be one the countries		01.6		tte. In	20	10205	75 - (24		DOM: 101		10 × 107 × 07
Sherigan Indiana of		20 4		1141	27.4	17.76	28-121				111-0
Surregue definencia and access		24.1		by T	27.6	$\pm i \gamma_a$	70. (2)		300		1000
Iuonopenzenz		25 6		Lg L	24:	1.04	98 - 200		8.0		W 8 0
Ch on kenzene-d5		37 6		Age L	24:	15175	10.200		100		104 (8 11)
1.4-Enchlorobenzone-da		25 1.		Ng I	265	MS n	fa - 200				1010 00 00 00



2550 Foxer Creighton Road Nashville, TN 27204 * 800-765-0950 * Fax 615-726-3404

Claim Cocapease Energy Corporation

8122645-MS1

n° (6 N Western Wende (Alahoma Cin. Ol, *1 P (52) — fred Crpson Work Order

NRL0012

Project Name

Chesapeake Shale Project - PA Sites

Project Number 4190810701 Received 124/2/08/08/36

PROJECT QUALITY CONTROL DATA

Matrix Spike												
HEAL STREET	(1) 4 10.	Ms val	13.	Units	Spile Con	". Rev	Target Range	tta (l)	Sump's applied	Analyzed Date Time		
General Chemistry Parameters												
8120197-MS1												
Live Ongain, warbore	1.71	19.6		remi.	20.0	57 4	- 1.13	8:51.9	SRK217340	12 42 98 98 70		
8120390-MS1												
NEGAS (met xi 120)	0.357	30244	278	ing L	0.750	560 .	81+118	51 205-20	NRLGHE 01	12-03-08-07-30		
8120548-MS1												
Smary Strate as N	0.0773	5.89	915	mg 2	4110	0302	46-113	\$120548	NP1,2656-01	15.63.08 17:58		
8120984-MS1												
See fide	3.40	19.5		my 1	20.0	850-	74 - 112	8120/984	5.RK2655-61	12 03 48 19,50		
8121062-MS1												
Specific emplactance	1520	1890		indiscore	101	63%	17 - 21/17	31211/62	NRE9175-02	13 66 08: 14 40		
8121078-MS1												
Chemical OKs per Memorial	0.81	67.5		ogenii.	90.0	98°=	90 - 110	8121/78	SR4-2420-01	12-03-08-21/14		
8121281-MS1												
Ha (Le	3/6	4.5		ngl	66300	182085	22+151	8/212K	NR1.2656-01	120908 09 15		
8121525-MS1												
Co.A. Lee of HI 51	HE	420		mg-)_	45.0	(03*.,	78 - 114	8424525	5.RL9719-01	12 10 18 15 57		
8121531-MS1												
1000 14	140	2.71 0		mgr 1	9.759	1,500	30-10	410133	NRI RESERVE	121108 210		
8121713-MS1												
County West Violatieseconie	5):	100		ing L	1.00	111%	72 - 121	31217/1	NRN9791-01R	13 11 08 .0 52		
8121720-MS1												
Total Kieldalil Sit ogen	\$ 15	19.4	MY	C-8-2	3.50	82**	90 - 110	4151530	NR21627-01	72 11 08 16 27		
8121721-MS1												
Prosphorus	1.59	1.50	M3	mg T	1.00	- 700	76-112	8121721	NRC0299-01	12-12-78 12-17		
8121929-MS1												
t sande	325	0.000		Fgn:	11.100	1/8°a	-58 - 154	8131030	"(R1 0658-0)	2/395 1/31		
8122287-MS1												
Amongst cas fe	8.1%	5.53		107.1	5.000	5429	90 - 110	8122212	NRI 0299-01	12 15/05 14:33		



THE LEADER IN ENVIRONMENTAL TESTING

0590 Foeth Chalatter Read Nashville, TN 27724 1500-16522 159, 419, 419, 414

Chem	Chesapeake	nergy	Corporation	

6100 N. Western Avenue

Oklahoma City, OK 73118

Fred Gipson

Ann

Work Order

NR1.16- 2

Project Name Project Number

Chesapeake Sita e Politica (15 hotes

416-081-6701 Recened. (21/2/08/08/30

PROJECT QUALITY CONTROL DATA Matrix Spike - Cont.												
							Torgal		Sangl.	Analyzed		
Analyte	Orige yal.	MS Val	Q	Units	Spike Con-	A Rec	Range	Be	Spilled	Figs Time		
General Chemistry Paramet	ers											
8122645-MS1												
Chromam (VI)	3,12	d>	514	my 1.	6 100	922.	85 - 115	41.500	10001	\$ 10 m 10		
General Chemistry Paramet	ers - Dissolved											
8122645-MS1												
Claominic (VI)	-\$1	SD	7.01	ng L	0.150	-2510%	8: -11:	31°2518	NERS (24) 162	Language State		
Total Metals by E.P.A Method	0 6010B											
8120066-MS1												
Marginen	6.348	2.29		mg L	200.	103%	75 123	87311.65	SRK W. M.	Control of the		
Agrin by	8.2	612		mg.T	f. 160	112%	25 24	1 Street	284 256, mg	Thirties of the		
Americ	5.55	0.0302		me L	0.0550	lens"	41 33	3 (1)	ARK W.	Parket L.		
Danier.	0,315.49	227		my L	2.00	10174	ar _ 20	A.C. Se	* P1.718*	Printer 1		
Hen Lucin	5.5	11 6 5 3 12		me L	0.05.0	1952 >	9. 11	81.019	We also	ONAL		
Beton	0.0627	7.10		meL	195	103%	764.05	4-7100	- hi - 15	17/19/11		
Coz nicio	7) 1:122	a (2049)		my L	0.0500	1435 2	45 45	4,200	DOK! (IC. or)	166		
Chromus	4.0533	G 261		my L	0.240	103%	75) 25	E.Aures	AMICISCO.	15 let 20 12 l		
Cerali	0.00920	0.540		my L	0.300	106°c	73 - 14	A: 20174	588718 IF	(T44.98) II)		
Copper	0.0363	6,281		me L	11.250	10354	25 . 25	C) 24d co	# 158 " +9 .+0.	(200A) 2		
Iron	7.99	5,16		med	1.64	1210	45 450	\$176711	* KK233***	14 (2.02 -)		
I ead	0.00626	0.0562		ing L	0.0550	100,0	-6 73x	172038	*:Rk243*-12	1170 8 (1)		
Marganie	0.0363	0.570		my 1.	0.500	16,7° a	78 - 115	8/20045	78K22874C	20308		
Mely Edenain	0.01-3	6.542		my L	0.500	11:140	75 125	41 766	*D1:248*-01	120408 111		
Nicket	0.637.1	0 272		mg L	0.360	160° a	25-120	81,4121	1,424,74 Person	14 65 65 17 1		
Se entury	80	0 (15(1)		myl	0.0200	10000	4-14	51" 25	14823300	4, 60,02 1=1		
Silver		0.0030		mg L	0.0300	16264	19-175	NUMBER	WRK23 FOR	12 H-08 1-		
Sharmen	6.128	1 12		may 7	1.00	440	75, 115	8 to 46	PRF112, 401	17.00 08 1c		
Theliner	ND	0.0403		ing 1	0.0500	93%	75 - 175	8/200	CRF-18-	15 00 00 11 2		
Die	C8800,9	1.66		m, 1	1.00	10,50	3 - 159	KTS out	VBV 748, 25	120 08 1 1		
Three son	0.0123	1 00		mg 1	1.00	97° E	15-101	\$1.27	1. RE2+47-12	12 09 08 12 1		
Vimudium	0 (161	0.518		mp L	6.360	16200	*4 × 150	302004	5 Pr 245*22	15.65.68 (=)		
Z102	* R5(9	0.552		nis L	9.504	102°	25 - 25	R-5-41	MRKITAGE	124(50)(0.7)		
Dissolved Metals by EPA Me B120074-MS1	thod 6(11)B											
Alamonar	0 6411	- 14		org/1	536	104	61	S 1	11	1 2 2 2		
Anumer :	ND	0.087Z		mp t	\$80.0	*-	71			100		
Aseria	0.0594	10.37/4		0.67	11176.5	1.10-	200 100			-4		



Contract Chesipeake Litergy Corporar in

6100 N. Wystern Avenue Oklaboria City, 108, 75-18

Are Tred the sear

Work Order:

NRL0012

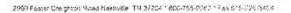
Project Name

Chesapeake Shale Project - PA Sites

Project Number: 4100810701 Received 12/02/08 08 30

PROJECT QUALITY CONTROL DATA Matrix Spike - Cont

Mutrix Spike - Cont.												
We she	1912 VI	his Val	-0	Cones	Spike Conc	" kee	Target Runge	Buieb	Sample Sp.ked	Aunty zed Date Line		
				1,000	Topics of Sus-							
Disabled Metals by EPA Me 8120074-MS1	thou enture											
Bana	130	2.28		my l	2.00	1350	75 - 125	8 29974	NRLD536-95	(# 9s os 12 62		
16. 11.40)	'50	0.0499		ngd	V 0500	(1902)	25 - 125	8 20074	NRL0556-08	12 08 68 19 07		
Cadmings	NO	0.0425		itia t	(171514)	k50.	75 - 125	812992)	NR; 0536-08	12 08 05 19 05		
Organia	SD	0.198		ng L	0.200	9997	25 - 125	8120074	XRI 0536-08	12 08 08 19 07		
Colors	50	0.5119		myte	0.500	10200	75 - 125	8100021	XRI 0536-08	12 63 95 19 07		
Capper	ND	6259		ing 1	0.250	13400	75 - 125	8120074	5RL0376-08	12:08 68 19:07		
ber	64.0	66.2	ME	mg/L	(200	1020	75 - 125	8120074	NRI 6526-08	(2 hs as 19 07		
1928	30	0 0433		its L	0,0360	95%	75 - 125	\$120074	NR1,0536-08	12-08-68 19.07		
Mangarese	176.	2.27		a:w1	0.300	1030	75 - 125	8120074	NRL0530-08	(2.08 03 19 07		
26. y Sagram	SO	0.459		ng 7	0.300;	4300	75 - 125	\$120072	VRL0536-08	12 08-04 19,07		
74,6gl	NO.	0.475		ing 1.	0,500	965.	74 - 125	8120074	NRI 0450-08	12 08:08 19:07		
Securion	420	0.0426		nrg 7	6.0300	8540	75 - 121	8120074	ARI 0536-03	12 08 08 19 07		
Striggt	NO.	0.0503		mg/L	0.0500	19276	*4 . 125	8120014	XRL0536-08	12.08/06 19/07		
Sucre (iii)	+189	1.29		1119/7	1.00	10100	15 - 125	8120074	581 0456-PS	12 08 og 19 07		
Final tract	571	0.0415		mg 1	7.05-0	87%	25 - 125	8129974	KRI 5556-08	12-68 US 19-07		
(is	50	1,02		my T.	0.00	102%	75 : 125	3 2007-2	XRL0536-05	1248 08 19.07		
10223060	Direct Ser	17,996		ing L	0.00	99**	79 - 125	#120021	NRL6530-05	12-08-05 19 07		
A paramara	0.021	0.501		mg-L	0.8	100° c	75 - 125	8120074	SRL0556-05	12/08/08 19/07		
Zier	OST	0.515		org k	(1)	10200	75-125	8120074	KRI.0536-03	12 08 08 19 07		
Mercury by LPA Methods 74	(70 X/747) X											
8120683-MS1												
Norway	7.184	5.00(1)		Figure 7	201100	026	-61 - 129	\$120685	NRL8036-01	17.07.08 15.72		
Dissolved Mercue, Ly EPA N	lethods 7470A/7471A											
8121171-MS1												
Marenty	20	00120		me I	(vole)	13/4	43 - 178	815(15)	NRI.0510-20	12.59 as 17 (2		
Volatile Organic Compounds	by EPA Method 826	013										
8121411-MS1												
Scetone	-812	253		Millian	230	102%	55 - 148	8121411	NRL0266-01	12 04:68 21 19		
Acaded	800	1210	5.12	ug L	250	45440	11-190	8121411	NRI 0166-01	12-06/08/21 19		
Acigh cinde	ND.	237		my'L	250	10300	54 - 50	83314))	VR_2765-01	12 04 08 21 19		
Шчигирс	519	34.3		540	511.0	370	65-143	1111111	2850364-0H	(2.94.08-21.19		
Boat-draft) apellane	-2.03	5.7 5		191	50 0	1070	80 - 12	812141)	VRL0766-01	12 04 08 21 19		
Bicini degra-	51.5	-18.6		Lyt	30.4	9400	64 - 123	8121411	NRC0266-01	12 84 (8 2) 19		
ist on nethers	80	30.2		1.2-1	\$0.0	100%	39 - 16h	812)4(.	VR16266-01	12:14 08 21:19		
2. Buran bue	30	213		u ₄ 1.	250	85":	50 - 154	8121433	NRI.0266-01	12 0.1 118 20 19		





Client Chesapeake Energy Corporation

6100 N Western Avenue

Oklahisma City, OK 73118

Air. Fred Circson

Work Order NRL*012

Project Name: Chesapeake Shale Project - UA Sag-

Project Number #106810701 Received. #12/02/98/08/30

PROJECT QUALITY CONTROL DATA Matrix Spike - Cont.

Analyte	Orig. Val.	315 \ 41	'n	Units	Spike Conc	o Rec	Target Renies	=81	Spings :	Training.
	0.11	- X			Track track	4 (044	Acres 1			4100
Volatile Organic (compounds by	ri viemod 826	O.D.								
8121411-MS1 Carbon distribut	Six	41.4		e) 1	Sar Q	(FS	71-12		Legition	240000
Carton Segrephorate	-516-	220		ng L	3000	10	6. 18	41 71	10000	1000
Cidorobenzene	515	17.4		ug L	59	9300	6" (12)	817 100	ST Cont	111.50
Chlorotibiogramichane	ND	1.8 =		ne.	50.0	3"	71-178	ALTER	546 -01	1234 (0.00.0)
Chloroethus.	770	472		ag 2	50.0	0.1°	21-14	11/14	530 Bibliot	100478-7119
Chloroform	×D	14-2		ug	56,6	9:00	59 - 157	81,471	who is oful) a	(2.34.55.3) (-
Chleromethane	' D	59.4		ug L	50 0	11959	35-175	211213	510.00000	1244 9 21
1.2-Dibromo-3-chkoopropane	NO.	44.7		ny :	20.0	59-	60 - 15	SILLIE	NR. 0206401	13.54.68-31 =
1.2-Dibremeethane (EDB)	20	47.7		ug-L	500	9500	80 - 132	\$17111	(Coperty 15.2	(2.74.08-7)
Dibroniametkane	ND	13.5		wer	50.0	Mark.	79 - 151	31-14	Sat20296-04	(20124 2)
nans-1.4-Dichlorn-2-lucene	ND	127		up-L	500	106%	10 200	81 14	- K ((17.6 g, w))	0.063.9
(I-Dichlorobenzene	×:0	15.1		og L	56.0	9160	85 - 136	ADE	54.2 Mon	(E) 194 (E) H
1.3-Dichlorobenzene	ND	47.5		og L	505	950	72 -132	82.71	A I Crawfi I	(241.36.2) -
1.4-Dichlorebenzene	ND	46,8		we'L	30.0	1946c	81-12	\$10 PF	961.10-1-04	(19196-11)
Dichlorodillucromethane	SD	47,2		492"	50.0	6206	36-140	87.00	- 15 to day (1015)	1 9168 5 16
1.1-Dichloroethane	NO	42.2		ing L	50 0	3201	27 - 146	8 11	281(1.0-201(3))	14.6104 (4.60
L1-Dichlordethane	ND	535		up. L	260	10***	76 - (3)	8.11	54(102(4))	12.04 (3.1) 10
cis/1.2-Dichteroethene	ND	(5.1)		ng L	\$6.0	98°c	78 - 141	8121111	5R10200-01	12 (4 (9 - 21))
trans-1 2-Dichloroethene	ND	54.9		G2 L	55.0	1107=	8-157	5000	2.81 alzered t	12/14/15 20 10
1.1-Dichloroettene	'AD	53 5		ng L	*5.6	107%	165 - 187	EMILE	SRI (Chamber)	1274 14 14 15
1.2-Dichbeopropage	ND	43.2		4 L	55.0	.\$0°	**-1.18	8. 14.6	580,0265-01	12:51:28 (0.16)
uar v-1.5-Dichtaroproperu	ND	160		1,227	\$2.0	98°	55 152	10041	MERSON	12
cis-1 3-Dichloropropene	ND	55 %		ing T	80 C	UPF	-11100	50 (1)	ARTICIPATION	0.115
1 delinovane	3.0	871		ng L	2000	82-	251 30	2-01 ()	200 opening	U14(0) 1)
Liliv Fenzene	ND	48.5		ng L	51) (25%	8: 119	1000	BUILDING	711 10 11
Ethyl Motificary late	-819	200		1.12	210	1044	13	×11 114	SW109501	17.7
Hexachlerobandiene	89	44.3		igh	C4+ 1	300	44. 57	V 111	Tr (Cx>-0-)	
2-Hexarione	N"Y	216		1.47	250	viria "	56 15	\$10 ¹ (711)	1,000000	- 1 W
lodone hane	N.D.	129		441	256		15 = 16 "	8121611	Willeson	(I-4 x 4 -) be
Sleibylene Caloride	SD	13.7		Ggf I	591.6	100%	$al \times b$	8 12 111	SECTION OF	7 15 1 15 1 15
4- Methy I-2-pentanone	ND	2.43		og l	2,57)	0.00	24.155	8/21311	150 Cob-27	17 4 8 21 19
Sty ene	ND	*10		3.2 T.	50.0	194%	80.00	600777	No. 200 (64)	12 61 15 21 (9
(,1,2,2-Tetrachiomethane	613	19 11		try 1	\$0.0	99%	58.157	9009450	Will sout	12 64 15 21 19
1.1.1.2-Tenachloraethane	ND	18.2		313	50.0	964 a	25+1.00	3/2000	SPLICE V	12 04 W 21 10
Tenachloreeshene -	40	18 u		42 1	50,0	97°v	6-117	A-193311	+4(1000)	1564 /5 1 10
Tobace	SD	46. 4		JE	50.0	910,	35 - (59	5 //11/	34000000	12 94 98 21 19
1.2.4-Trichloropensone	ND.	17 4		1620 2	50 0	950	56 76	14040	45 at 200 ma	12 04 05 19



2960 Foster Creighton Road Nashville, TN 37204 * 800-765-0960 *Fau 615-726-0404

Chem Chesopeake Energy Corporation

6100 N. Western Average Ochahoma Cny. OK 73418

Aria Free Gipsens

Work Order

NRL6012

Project Name

Chesapeake Shale Project - PA Sites

Project Number 4100810701 Received: 12/03/08/08/30

PROJECT QUALITY CONTROL DATA Matrix Spike - Cont.

			of the safetimes	4.0111					
Notice	ong tal	VIS YM	Q Lents	Spile Con:	*» Kec	Targy) Range	BA 51	Sample Spiked	Nobjeed Date Time
Vulatile Organic Compounds by I	P. V. Method 826	013							
8121411-MS1									
A Inferential Company of the Inference o	-12	52.4	457)	50.0	104%	80-150	8)2 (1)	N41.0266-01	1201-18 77 10
1 2 Tai Supplementation	SD	28.6	inge 1	50.6	075	77 - 128	\$12:411	NRL CASOL	1274 08 21-19
Trademodificac	NB	47.5	451	50.0	614"	37-158	812:171	NKL 0205-01	12 54 98 25 16
Trichtorofhiloromes) and	50	59 2	Lyc I	55.0	118%	6-11-5-5	\$121411	BRL #268-01	12/01/28 21:19
У. 2. Пистымующение	80	48.5	ag L	50.0	971,	55 - 137	8123411	NRL2266-01	12 04 18 21 19
Nay! uccaste	112	258	trg. L	250	H100	23. 69	5:2!4]]	NRL/26/60)	1234 38 21:10
Vervi shanda	8.0	31.6	uge L.	50.0	103**	10 .56	k:::111	NRI 0200-01	12 64 98 21 19
Nature, (Nat	NIY	146	ug.L	150	979.	80 -134	8(211)1	NRD-256-01	12 64 08 21:19
Sour name ("S" religious diament)		26.9	18 L	250	107+	6040	8121411	X81 0356-01	12 04 98 21-10
Astronomy 1985 and Europeanisms		26.4	try'l	250	106%	-75 - 120	\$121411	SBL0266-00	12 04 08 21:10
Surrey William Survey		24.2	eg 7.	25.0	10.10	78 - 721	8121411	NRL0256-01	15 61 68 21:19
Surregade of the public ordered in		26.5	3g L	25.0	103%	79 - 124	81 [21]	Whet = 1266-217	12 64 08 2 (:19
L'assertenza e		25.0	age I.	37.0	102"	50 - 200	8121411	SRL0256-01	1004 08 21.19
Chickory res red		25 G	ng t.	23.0	107%	50 - 200	8(2)4()	SEL GEGIN	12/04/08 21:19
1.3-Di. Mores senzencial		25 ()	ug T.	25.0	100%	50 - 200	8121411	NRL6286-01	1254 08 21.19



THE LEADER IN ENVIRONMENTAL TESTING

2960 Foster Craighton Road Nushri of TN No. of The Total Conference of the Conferenc

Chem Chesapeake Energy Corporation

6109 N. Western Avenue Oklahoma City, OK 75118

Attr. Fred Gipson

Work Chart.

NR1951:

Project Name Chesapeake shale Project 1 2 min-

Project Number

4100810701

Received 12 02/08 08 30

PROJECT QUALITY CONTROL DATA Matrix Spike Dup

The second secon				.,,,,,,,,,,		T.						
Arabi c	ties va	Duplicate	0	Unas	Spil.e Coac	· a Pec	Targer Renge	PPO	Lust	Is con	Samply Oupstated	Analyzed Date Time
General Chemistry Parameters												
8120197-MSD1												
Total Organis, Carbon	(1 173)	D/A		opi re t	29/0	88"=	77.128	ž	55	41		0.1509
8120390-MSD1												
MBAS (mac) wt 326)	9.551	3 (9)	118	T year	P1755	48"a	84 - 118	-1	AC.	15-	5-K) 700 - O	Dies co
8120548-MSD1												
Nitrate/Nitrate as N	16.00	3.85	707	mp/l	610	0.50	48 /16	10.7	90	41	ARRESTA	14558740
8120984-MSD1												
Sulfide	2.30	5.4		634	200	84"4	"p- (12	27		40.00	All and	$Y \cap f = \mathcal{L}(d \cdot ((n \cdot 0)))$
8121062-MSD1												
Specific conductance	1822	1896		108/0 101		6,5-	3.50				Car of	- 4
8121078-MSD1												
Chemical Oxogen Decemb	18.1	42.5		18.61	4,000	450	-0. (0			100	20197	11 12 12 1
8121281-MSD1												
Piconde	9.166	140		myd	-LH;	9200	12 / 129	1	25	40,000	NW/2960 L	12 district
8121531-MSD1												
Phonolics	30	0 -45		(alte)	s to	(b): +	Ab - 20	7	10	40,000	-BL2:025	
8121720-MSD1												
Total Kyeldald Nitrogen	51.	2.02	112	mg L	2.80	30% i	90 - 110	15	31	81 750	-1.1.457 (17.1	11,500
8121721-MSD1												
Phosphorus	1.20x	7.32	11.2	1221	\$50	07%	76 (12	91	77	-11/10/1	elit America	145
8121929-MSD1												
Cyanide	NE	-0.0005		· mu_	\$.90	9)°a	105 - 724	1	1	345	Jki mjenic	(3 , 48 29
8122287-MSD1												
Ammonia #2 N	0.843	3.18		74	4.00	915	90-110	I	26	91010A	×KL0290-0	12 in 08: 14.55
8122645-MSD1												
Chromium (VI)	6.5	50	-94	mg.	\$ 10.	-9220%	85 - 115		1.0	81	- 4-45-46	12 600 10 1
		7										
General Chemistry Parameters - D	issolved											
B122645-MSD1		202	3,500	100			Sec. 25					
Ctranscon (A1)	-107	213	214	mg L	1411	41:00	85 13			15-1	7	

2560 Foster Creighton Road Navink lie. TN 370041 800-765-0680 1 Fex 615-706-0404

Chesapeaks Lings Corps on

60% Nederli Avenue On about a Car Cik 73118

Attis Fred Cityspia

Work Orger

NRI 00:2

Project Names

Chesapeake Shale Project - PA'Sites

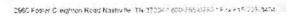
Project Number 4100310701

Received

12/02/08/08 50

PROJECT QUALITY CONTROL DATA Matrix Spike Dup - Cont,

Ames 5.	One Vol.	Diplicate	ġ	Chin	Conc	1. Rec	Target Range	RPD	Limit	Pauli	Sample Diphened	Analyzed Data'line
I wat Metals by LPA Method til	nina					- 0						
3120066-MSD1	irettin											
2120000-W2D1	6.339	2.19		nig L	2.74	081	75 - 135	5	20	\$12000	5-2X2487-02	12 05 68 17:2
SHIPPAN	SD.	6.104		mg L	01,60	104%	75 - 125	9	20	8120066	NRN2487-02	12 05-08 12:3
Assess	ND	D:1486		ing L	50560	9796	75 - 128	3	20	K120050	NR5-24802	12 05 03 17 3
Saman	3.0352	1.97		me i.	2 59	460	75 - 125	4	20	\$120(mi	NP1;2487-02	12 05 88 17 2
tar dear	810	0.0300		my t	5 (19:00	101%	75 - 125	4	20	\$12000	NSE2487-02	12 03 68 17 7
3 8-7	0.0622	102		mail	110	13-00	-1 . 125	6	20	\$1,200/4	NEK2487-02	12/05/06 17/2
Carronaes	-0.02	0.6615		mg L	5-696	979	75 - 123	4	30	8120000	NRK248" 02	12 63 pk. 12 3
le sports	6201	0.234		iny L	9.500	1004	-6 - 125	<	20	8120066	NR1,2487-02	12 05 08 123
3.15	1985	0.815		10g L	- 3(43	(1)115	75 - 125		29	\$12000	5fth.2485-02	12 65 08 17.3
	2000	0.26%		rae L	2239	D'es to	TF-125		20	\$1.509.c.	VINE AREAST	12325 Ox 1342
	91	1.00		neg L		VSA.	74 - 125	•	20	\$1200ni	NKK1487-02	12/03/08 17:2
	-, 79	1,3284		my L	5.686	960	35-125	3	20	812000A	NRICE187-02	117500 123
- 7 Kit-5 a	111927	6.545		new L	1.50	93°a	1 125	3	56	51.200.66	NRN 2487-412	1275 08 17.
12 110	+ 10.72	6.515		ing I	1.460	10° a	28 - 135	3	20	\$111006	NRI-0485-02	1274 98 170
4,24	0.023	6.7(12		my L	Victory	1116	75 - 125	-	24	\$120005	NKK2497-02	120750 (*)
iteact	1.15	9 313 7		my L	63466	9100	** 135	2	10.	RECORNS	NRK2487-02	12 07/08 12:3
1.6	11.12	V.3001		ing L	1.050	1014	75 - 125	1	20	812 666	NRIC3485-02	12.54.08 (20)
59m m3	50 E28	1.01		tine 1	- 00	2100	35 - 125	7	20	\$120066	NERCHAR-03	12,408 17
Feathers	NO	13549).		mu I	9.05ml	920	75 - 128	0.7	2.1	8120066	NRK2487-02	12 05 08 17 3
Ent	1 03887	0.962		nig I	110	4500	75 - 175	7	25	8120064	NRK2187-02	17 63 65 10 J
Traum	940,53	0.050		mg 7.	:3.6	44"0	25 - 125	4	25	8.20/66	NRK3487-02	1235-08 173
21510-0	115:61	0.100		195.1.	0.50%	979.	75 - 175	3	26	\$12/6156	NPK 485-02	12 05 08 13 3
10	11 (4-19)	4.534		յոց ե	6-51.50	9849	77 - 125	5	20	8120006	MKK2487-02	12/05/08 [7]
Dissolved Metals by EPA Metho	od 6#10B											
120074-MSD1												
Marioner	20411	7.15		mg T	200	100%	29 - 125	4	20	8120074	NRI 0535-08	12 68 18 17.
NEL 10° glas	0.10	0.0343		mg.T.	5 100	77e2	75 - 175	1	20	812:607:	SRI 05.66-05	12:08:05:19
\$1970 ×	0.0294	2 141		my I.	1,6400	Sara	75 - 125	*	20	812/074	SRL0536-05	12 1/8 08 10
2 MIGER	6.324	2.79		mg.T.	: Cò	9800	75 - 125	4	20	8120074	NRI 0536-08	12 63 08 19
nega Ritura	NO.	0.6178		T gin	6.4560	196. my	75 - 123	4	2.3	8120074	NRL0530-08	12 08 98 19
nārbas ti	2	# 0-110		my L	2.0500	8200	75 - 125	+	30	8120074	MRL0530-08	12 68 76 19
17507272071	20	0.190		me L	5 200	9500	75 - 125	4	33	8120074	ARLOSS US	12 Pg DV , A
2180a	821	9 (89		ing (500	4300	75 - 125	4	23	8123574	3-RL9535-08	120508 0
7197	N/A	9.248		ttig T	9 239	89","	35 : 125	4	23	8120074	NRL2536-08	72 (48 DS 19)
Ya.	1-126	65 0	488	ngl	. 50	324	75 - 125	2	23	\$120004	331 4535-UK	12/08/08 19
5 (4)	5.75	939474		are r	1. 1. 424.2	950	23 : (22	1	25	8120074	5.21 1536-08	12:08:08:19
30,000	1.56	2.35		101g 7,	5(4)	Wee.	22 - 135	8	20	812: 1-1	NAT0234-08	12 68 03 19
5407-14 (c)	3.4	Lott		1.50 L	de	944	75 - 125	4	23	812:074	\$30.0536-08	12 05 08 19
1.0	>21	HIEE		mg L	- 4/2	220	72 - 125	1	30	8121:774	X2L0530-08	12 68 38 19
100	523	118.13		might.	0.550	5:00	75 - 135	1	13	RICE174	+, 21 0536-08	17 08 06 19 1





Chent Chesapeake Energy Corporation

5100 N. Western Avenue

O'Slahoma City OK 23118

Attn - Leed Gipson

Work Order

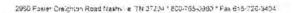
NRL0012

Project Name Chesapeake Shale Project PA Sites

Project Number 4100810701 Received 12/02/08/08/30

PROJECT QUALITY CONTROL DATA Matrix Spike Dup - Cont.

Amlyie	Ong Val.	Duplicate	0	Thirs	Spike Cost	* Pec	Tarpet Range	RPD	i mit	Total	Sample Digitalisa	Analyzed Date Time
Amaiyie	Cut Aur	Lopiteste	Q	2,007.2	(0.14	o nec	Kange	64.17		130	trapacson.	Count of the
Dissolved Metals by EPA Method	d 6010B											
8120074-MSD1												
Silver	2.53	13461		refly in								
Strontum	0.285	125		mg.A								
Thallian	5.17	0.0444	5/2	7975					-	-61		
Go.	**(1	0.487		11		20	3 - 22			0		
T1 at (23-11)	F (4) (5)	0.020				7,20	7 (22		3	1000	10.0	1
Variations.	15:1042371	0.486				17237	22 - 124		211	4000	ABLICONS	134-0 341
Zurc	3.0	3.0			37.5	29"	25 (25	-1			25607.00%	DESCRIPTION OF
Mercury by EPA Methods 7470 v	174711											
3120683-MSD1												
Mercury	0.060489	0.00108		nog it	6,000	89° e	63 - (38	7.5	35	25401	200700,510	120 OF 1810
Dissolved Mercury by EPA Meth	ods 7470.4/747	IA										
3121171-MSD1												
Mercury	ND	0.00719		mg-L	100	11900	65-138	0.8	4.	8,200	1-17-20-0	*010012
olatile Organic Compounds by	FPA Method 8	260R										
3121411-MSD1	in a section of	2001										
Accione	ND	230		agl.	290	020	55 - 148	142	21	2004	SELECTION	158210-55
Acrole r	75	1330	400	Fgu	250	53300	10 - 196	12	14	815.37	13,8195-01	325279. 3143
Acry legiting	8.1	283		ug I	250	113"-	54 - 157	161	54	815-101	8916Seatt	120418 1115
Benzeue	83	50.3		Fyu.	160	10 4,	68 - 143		4.5	errole.	1,913(9).01	(2048) 21.44
Bro. aodichloron, miere	4:D	576		Jegu.	50-3	11170	80 - 152		18	812:477	381 (350.01	1204 0 2141
Bronipform	SD	54.0		62 L	50 C	(fiko o	67 - 123	10	24	8171-	NEL0206-01	Bures of is
Briano nethani	SD	57.2		ug L	50.0	71100	22 - 166	13	45	217 0 1	2810369.01	(1916)
2-Suranges	Sb	212		og L	250	9204	10-154	1	S.F.	813 (31	Skil attribute	716478 1138
Carbon disu'tide	SD.	60.2		MA	14.4	1276	29.147	à		\$100 W	NO142 (6.0)	100000 000
Carbon Fenachlonds	ND	63.0		ng =	57746	1274	62 - 165	10	24	strials	Leg Inchin	105113 7112
Chlorobe, were	ND	50.9		Self A	100	10000	(, 40)		9.61	ALTERNA	Markey a	Andrew Teach
Crierod homoguethare	NO	55.4		mg/l	0576	D**>g	22 - 23	ű.	4	WI COLD	No Comme	(1010.00)
Chlorechine	SD	41		mg L	50	tions.	74.14	(F		21.019	40.000	Sheet I
Chloratorn	.81)	40.2		wit.		HITT	49 [42	75	-1	11 1171	C. Confort	24 M 22 1
Chlorenisthane	\$10	63.4		mg L	79.0	1285	33 - 128		10	STATE	1155451	12 4 4 m B
1,2-Dilas mo-Acid oropropago	ND	59 1			30.61	(m)+0	mis 130	11	36	1. 17	THE STREET	Gin 24-
LI-Dibromeet and (PDR)	SD	52.6		0.3	Je 6	19474	NO 192	- 5	4	1775	100 74 7	Ent. 3141
D'immonierhaue	ND ND	19.5		ugi	808	Part !	29-131			435 00	SPERSON	15.11.06 51.11
trans-1,4-1 helion -2-basene	SD	220		ug i	56-5	11476	10 - 100		900	8.500	190024	12 92 68 15
1.2-Dichlorober zers	ND	5211			fed	104°a	80 - 130	10	30	51 (2)	1315500	Law in the
1.2-Arthoriter zers	ND ND	52.2		ag l			75 - 182	9	125	W-1311	5/8(1/256/12)	1- 0-2 (A, 7) 42
				221	10.5	1040		9				
1.4-1 nels probenzene	ND	31.3		ng L	3000	1340	80 - 120	9	12	8.7147	E) 101-1	12 (×18 1) 41



NRL3012



Chesapeake Energy Corporation

p100 N. Western Avenue Orlahamo (197, 198, 73118) Aug. Fred Orposit

Project 5

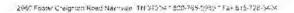
Project Name: Chesapeake Shale Project - FA Sites

Project Number 4, 00816701 Received. 12/02/08/08/30

Work Order

PROJECT QUALITY CONTROL DATA Matrix Spike Dup - Cont.

Target .	124 500	frae ale	or .	v mrc	Spice	e Re	Sarper Congre	RPD	True.	Martin	Sample	Anniyaed Date Time
		- File into	-	Chin				.,,,,				
Volatile Organie Compounds by	FFA Method 3	8260B										
8121411-MSD1												
Los for historiana	NO	43=		102	V	1650 v	53 . 146	5	76	812 (1)	NRI 0255-01	12 04 98 21 4
1.1. A still femally as	5-TA	780		by L	141.0	1100	76 - 121	8	12	812:414	1,R1 (250-0)	12 04 98 21 4
and Silver deethaw	NI	5. N		mg .	10.3	1050	50 - (1)	8	11	8121411	SRI 0255-01	72 94 98 21-4
trans-12-19-Open-gracies	\D	39.5		112	50.2	11950	78 - 137	*	1.8	8121411	VELTOSAMI)	1274 08 21 4
f. I-Danissochere	-: 17	28.6		og L	500	11702	67 - 157	7	26	8121411	NR1 0265-01	12 04 08 21 4
1.2-Dichertop opane	803	37.4		051	192	9500	22 - 128	9	16	2121311	NR1 0255-01	12/04/08/21/4
market 2-faz deroproyent	2-17	34 F		ugl	\$114	1950 4	55 - 137	10	20	8121311	5Ri 0265-01	12/5/108 21 1
Co-1 2-Dichlompropore	ND	110		ugL	35.0	12264	71-140	#	14	8)214(1	NR1 0266-(6)	12 94 98 21 4
1 bibox we	*.D	1:-0		og L	25.0	8700	34 . [31]	4.	.19	2151711	NRI-9255-01	72 04 08 21 4
Erry theurene	SD.	52.4		mg 1	200	11)420	50 . 1.15	8	1*	8131111	NRI 9266-91	12 04 05 21 4
i neck Metonagates.	ND	221		ng l	250	10000	60-158	8,	33	\$121311	SRI 0265-01	12 04 98 21 4
they dissert and me	80	34.0		ug L	500	1089	45 - 155	r;	34	3121111	NRL 1288-DI	(2 94 03 214
2-Mc sabotic	7:D	249		ug T	250	1085.	58 - 154	9	3.1	8171411	NR1 0265-01.	(2 04 08 21 4
los nerbane	5.0	2(6		MR L	250	\$10 v	43 - 167	1)	35	5121411	MRI 0366-01	12 04 98 21 4
Storie love Chilande	5.0	58.1		ng 1	520	Hate	64 - 140	3	15	813141)	NRL 0266-01	1764 (5 214
d-Ageny to Especializate	20	364		wg L	250	10504	55 - 163	3	31	3121411	KRC 0265-01	13 04 08 21 4
Nr. 800	25	25.3		us t	310	11395	80 - 139	3	10	8121411	NR1/0066-01	12 04 98 21 4
L. 20-Tetra-Oderoedia ie	20	54.6		hg-L	550	111996	35 - 152	10	24	\$121411	SRI 0200-411	12 01 08 214
Lill a Terracidordellace	3.13	52.0		ns L	100	10500	55-140	9	17	8721411	NRI 02/6-01	127041/5 214
Lettachloroetlene	*-15	52.2		og L	54.0	1044-	67 - 150	7	17	8121411	53(10266-01	12 04 05 21.4
LeCarrie	513	rg 3		my L	506	(01%	75 - 134		14.	512.37	N101 078-6-01	120408 214
1. 221 al conhencene	313	320		ray L	200	16420	54 - 135	94	25	\$12 \(\Perc)	NEL0366-01	G-64-08-Cis/
LI The Ginner Park	5,00	\$6.2		141	300	11300	8/1 - 136	9	16	\$1274	NG 0245-01	12 04-08 21 4
on trainments	2.13	337.		50 1	50.0	1050	77 - 138	\$	21	8/3/1	SRL 0266-01	12 64 05 25.4
La Service		2303		ng t	305	103%	47-158	8	29	S(2) L.	541 0266-01	12 64 08 21.4
r ar as the sendance	513-	44.8		191	360	12870	98.116	7	20	\$ 2.1.	VET 0260-01	12 04 08 00 4
2 - Drahit coste pass	1514	45.7		reg Ti	\$0.5	10:00	35 - 137	9	26	X(2241)	VR1.0266-01	12 04 49, 7:14
vial cams	* 0	782		.x2 L.	24%	.2100	44 - 169	3	12	3121411	NRL0286/01	12 04 08 21.4
includ konfe	-500	55.6		ag L	300	.54	19 . 150	8	26	\$1214)1	NRL 0200-01	17 64 08 254
Ny energial	ND	437		-g1	130	20500	20 - 136	8	14	\$ 21441	XFL030(-0)	12-01 08 21-4
whom the first to the confining of		22.5		ug L	355	10000	60 - 140			8 21411	2.81026.64)	12 04 (pt 21st
neragare Eulementinenavitaine		26.1		ug7.	255	16:20	25 . 121			8 21411	SRI 0264-91	12 64 08 2004
Charles Labora - 15		25 8		1127.	150	10.50	78 - 121			8121411	NRI 0566-01	17.64 (8 2) 4
nergale definationally and the series		26.3		W.T.	23.0	10500	19-121			8121411	NRI 0266 01	12 04 05 214
hiprobenzane		22.0		og k	38.6	11194	50 - 200			8121111	10-550.027	12 04 08 21-4
of not oncounts.		Y # (1		ng f.	23.7	110%	40 - 200			8171411	NKL0266-61	(2)(4)(8) 2) 4
1 / Datidor Sucrement		25.0		age !	25 0		50.200			8121411	N810266-01	12 01 03 21 4





Chem Chesapenke Energy Corporation 6100 N Western Avenue

Ollahoma City, OK 73118

Ann Fred Capital

Work Order NRLIGHT

Project Name Chesapeake Shall I (1997)

Project Nambe: 41608-07-1 Received: 12/02-18/19/29

CERTIFICATION SUMMARY

TestA	merica	Nasl	Will	Ċ
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Method	Matrix	AIIIA	Nelac	Puntsylvania
ASIM D516-90	Water			73
EPA 1664A	Water	201	X	X
EPA 170.1	Water	N.A.		
EPA 300 (c	Water	N/A	8	Υ.
FPA 3354	Water	NA	N	X
LPA 350 [N]	Water	NA	N	X.
1 PA 351 2	Water	NA	3	X
1.12 A 305 A	Water	NA.	X	. X
13PA 410.4	Water	N'A	X	1
FPA 420 4 M	Water		X	
SM 2320B	Water	N/A		
SM 2340B	Water	N'A	X	7.
SM 4500C LG	Water	N-A		
SM 5210B	Water	N'A	X	X
9M 5540C	Water	N/A	N	X X X
SN12130 B	Water		X	X
SM2510 B	Water		X	N.
SM2540 C	Water	SA.	N	1
SM2546 D	Water		1.	N
SA1450G-C11	Water		N	· N
SM4500-CN1	Water			
SM4500-1-0	Winer		- 5	X
SA145111-2-1731	Water		- 8	N.
5 M45c/652 1	Water.		× × × × × × × × × × × × × × × × × × ×	7.
SM2500-SO5 B	Water		8	1.
5M5310 B	Winter		8	1
2M 849 90 10B	Water	N.A.	8	25
SW\$46 7196A	Water		N	N.
SW 845 7470A	Water	N'A	8	N-
SW 846 8360B	Water	N-A	Y	2
SW846 8270C	Water	N/A	×	.8
5 W 845 9140E	W nter			

Subcontincted Laboratories

TestAmerica - Savannah (5A (1437))

5102 LaRoche Avenue - Savannah, GA 31404

Analysis Performed. Subcomme: Culor

Samples NRI.0012-01

TestAmerica - Farth City, 510 (14321)

15715 Rider Pan North - Faith Cite, MQ 63645

Analysis Performed Subcontract - Cross Alpha

Samples: NRLG012-31

Analysis Performed: Sutcontract - Gross Beta

Samples: NRL0012-01

Analysis Performed Subcontract - Radium (unal)

Samples: SRLS012-01



THE LEADER IN ENVIRONMENTAL TESTING

2960 Footer Creignoch Ros (Nam) - 16, TN 37204 1200-755-0960 1 Fax 615-726-9404

Chesqueak Chergy Corporate

Klud N. Wester, Avenue

Oslahoma City, OK 73118

3117: Fred Copson Week Order

NRL0012

Project Same

Chesapeake Shale Project - PA Sites

4150810701 Project Number

Received 12/02/08 08:30

CERTIFICATION SUMMARY

Subcontracted Laboratories

TestAmenaire Lance Con., MCr. (4321)

07 15 Rider 153 North - Fanta Ca. Mc) 63048

Analysis Performed Surgountage - Sulfur ASTM 2622

Language MRI.0012411

Analysis Pertorned Subasmiaer Vicconium

Samples MRL00:301



2080 Foster Greighton Road Nashelle, TN 37204 1 800 TUS 1998 1998 999-3404

Am	Free Cipson	Received	12/02/95 UN 30
	Oklahorat City OK 731 5	Project Number	4100810731
	6400 N. Western Avenue	Project Name	Chesapeake Shale Project - VA Sites
Chent	Chesapeula Energy Corporation	Work Order	NRL0012

DATA QUALIFIERS AND DEFINITIONS
Conductivity probe/meter linear to 250,000 unthos/em.
Sample weight on litter is greater than 0.2 groups.

A-01a	Sample weight on litter is greater than 0.2 grains.
E	Concentration exceeds the calibration range and therefore result is send-quantitative.
птз	Sample received with insufficient holding time remaining for analysis to be performed within the method's holding time requirements.
HTI	The holding time for this test is immediate. The laboratory measurement, therefore, may not be suitable for compliance purposes
1,	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Attaivie not detected, data not impacted.
1.1	Laboratory Control San ple and/or Laboratory Control Sample Duplicate recovery was above acceptance by the
1.2	Laboratory Control Sample and in Laboratory Control Sample Duplicate recovery was below acceptance firms.
1/2	The MS and or MSD were below the acceptance to mis due to sample matrix interference. See Black Spike (LCS)
/11	The MS MSD required a dilution due to matrix interference. Because of this dilution, the matrix spike concentrations in the sample were reduced to a level where the recovery calculation does not provide useful information. See Blank Spike (LCS)
117	The MS and or MSD were above the acceptance limits. See Blank Spike (LCS).
118	The MS and or MSD were below the acceptance limits. See Blank Spike (LCS).
MNR	No results were reported for the MS/MSD. The sample used for the MS/MSD required dilution due to the sample matrix. Because of this, the spike compounds were diluted below the detection limit.

MNRI There was no MS/MSD analyzed with this batch due to insufficient sample volume. See Blank Spike

NI See case narrative.

A-01

R2 The RPD exceeded the acceptance limit

R4 Due to the low levels of analyte in the sample, the duplicate RPD calculation does not provide useful information.

Not detected at the reporting limit (or method detection limit if shown) 11)

MILTHOD MODIFICATION NOTES

350.1 M - M = Ammonia-Nitrogen method modified for midi-distillation with Lachat Procedure 10-107-06-1-A

COD 410.4 M - M = COD method modified for use of Hach method 8000



ANALYTICAL REPORT

Job Number: 680-42739-1

Job Description: NRL0012 Chesepeake Shale Project

For:

TestAmerica Laboratories, Inc 2960 Foster Creighton Drive Nashville, TN 37204

Attention: Mr. Mark Hollingsworth

180

naprotest to 14 ease. Not h Page Project Metalger (12/9/2018 6:07 Ph.)

Abbie Page
Project Manager I
abbie.page@testamericainc.com
12/09/2008

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report, may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

Savannah Certifications and ID #s: A2LA: 0399.01; AL: 41450; ARDEQ: 88-0692; ARDOH; CA: 03217CA; CO; CT: PH0161; DE; FL: E87052; GA: 803; Guam; HI; IL: 200022; IN; IA: 353; KS: E-10322; KY EPPC; 90084; KY UST; LA DEQ: 30690; LA DHH: LA080008; ME: 2008022; MD: 250; MA: M-GA006; MI: 9925; MS; NFESC: 249; NV: GA00006; NJ: GA769; NM; NY: 10842; NC DWQ: 269; NC DHHS: 13701; PA: 68-00474; PR: GA00006; RI: LAO00244; SC 98001001; TN: TN0296; TX: T104704185; USEPA: GA00006; VT: VT-87052; VA: 00302; WA: WV DEP: 094; WV DHHR: 9950 C; WI DNR: 999819810; WY/EPAR8; 8TMS-Q

TestAmerica Laboratories, Inc.

TestAmerica Sovernah, 6102 LaRoche Avenue, Savannah, GA 31404 Tel (912) 354-7858, Fax (912) 352-0165, sww.testamericalnc.com



Job Narrative 680-J42739-1

No additional comments

All san ples were received in good condition within temperature requirements.

General Chemistry
Method(s) SM 2120B. The following sample(s) was received outside of holding time: NRL0012-B1 (580-427.39-1)

No other analytical or quality issues were noted.

METHOD SUMMARY

Client TestAmerica Laboratories Inc.

Job Number: 680-42739-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
Color, Colorintetric	TALSAV	SM SM 2120B	

Lab References:

TAL SAV = TestAmerica Savarinah

Method References:

SM = 'Standard Methods For The Examination Of Water And Wastewater".

SAMPLE SUMMARY

Client TestAmerica Laboratories, Inc.

Jeb Number 680-42739-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-42739-1	NRL0012-01	Water	12/01/2008 1100	12/03/2008 0858

Analytical Data

Job Number: 680-42739-1

Client TestAmerica Laboratories Inc.

General Chemistry Client Sample 10: NBLODI2-01 sati Sample IC 585-67 12/01/2008 1100 Date Sampled Date Received: 12/03/2008 0858 Chem Mains Myale: Analy's Result Qual Units RL DIF Method Solor 180 H POU 20 SM 21208 Any Batch E80-124416 12/03/2008 1340 Date Arralyzed

DATA REPORTING QUALIFIERS

Client: TestAmerica Laboratories Inc.

135 Number 588-13735-1

Lab Section	Qualifier	Description
General Chemistry		
	U	Indicates the analyte was analyzed for but not detected
	H	Sample was prepped or analyzed beyond the specified holding time.

Cient TestAmerica Laboratories, Inc.

Job Number 680-42739-1

Method Blank - Batch: 680-124416

Method: SM 2120B Preparation: N/A

Lat Sample ID M8 680:124616/1

Water:

Analysis Batch 680-124416 Prep Batch: N/A Units: PCU

Instrument ID. No Equipment Assigned

Cherr Matria Dilution

100

Lab File ID

Initial Weight/Volume

Date Analyzed, 12/03/2008 1340 Date Prepared: N/A

N/A Final Weight/Volume. 10 mL

Anslyle

Total

Result

Qual

RL 50

Calculations are performed before rounding to avoid round-off errors in calculated results.

SUBCONTRACT ORDER

TestAmerica Nashville NRL0012

SENDING LABORATORY:

TestAmerica Nashville

2960 Foster Creighton Road Nashville, TN 37204

Phone: 800-765-0980

Fax. 615-726-3404

Project Manager. Mark Hollingsworth

Client: Chesapeake Laergy Corporation

RECEIVING LABORATORY:

TestAmerica Savannah 5102 LaRoche Avenue

Savannah, GA 31404 Phone (912) 354-7858

Fax' (912) 352-0165

Project Location. Pennsylvania

Receipt Temperature:

lee: Y / A

Copy/Ralog from NRJ2373. Copy/Relog from NRJ1829, Copy/Relog from NRJ1157. Copy/Relog from NRJ1155. Copy/Relog from NRJ0705. Copy/Relog from NRJ0546 Gopy/Relog from NRJ0458.

Analysis

Units

%

Due

Expires

Interlab Price Surch Comments

Sample ID: NRL0012-01 Subcontract - Color

Water

Sampled: 12/01/08 11:00 12/12/08 08/27/11 10:00

\$18.00

Sub to TA Savarman - Method SM

21208

Containers Supplied: W 500ml Amber

Glass Unpreserved (N)

Released By

Received By

Released By

Date/Time

Received By

Date/Time

Page 1 ol 1 12/09/2008

Page 8 of 8





COOLER RECLI

MRI DOT?

	JAKI 1811	
Cooler Received/Opened On 12/02/2008 @ 0830		
1 Tracking # 177 ((last 4 digits, FedEx)		
Couner FedEx IR Gun ID 96210146		
2 Temperature of rep. sample or temp blank when opened: U CDegrees Celsius		
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank froze	HT YES NO. NA	
4. Were custody seals on outside of cooler?	NO NA	
If yes, how many and where:	HE-H	
5. Were the seals intact, signed, and dated correctly?	WEB NO NA	
6. Were custody papers inside cooler?	YES NO NA	
certify that i opened the cooler and answered questions 1-6 (initial)	1/2	
7. Were custody seals on containers: YES NO and Intact	YES NO NA	>
Were these signed and dated correctly?	YES NO (NA)	
8 Packing mat'l used? Subblewrap) Plastic bag Peanuts Vermiculite Foam Insert Pa	per Other (None)	
9. Cooling process: (leg) Ice-pack (ce (direct contact), Dry	ice Other None	*
10. Did all containers arrive in good condition (unbroken)?	(YES) NO NA	
11. Were all container labels complete (#, date, signed, pres., etc)?	YES NO NA	
12. Did all container labels and tags agree with custody papers?	(YES).NONA	
13a. Were VOA viols received?	YES.).NONA	
h Was there any observable headspace present in any VOA vial	YES NO. NA	
14 Was there a Trip Blank in this cooler? YES, NONA Is multiple coolers, sequ	ence #	
centry that l'unionged the cooler and answered questions 7-14 (int:al)	1	
15a On pries's bottles, did pH test strips suggest preservation reached the correct pH leve	HT YES NO NA	834h Comple C+1407
ti. Did the bottle labels indicate that the correct preservatives were used	YES., NONA	Church
If preservation in-house was needed, record standard ID of preservative used her	re	(= x 1 14 · ·)
16. Was residual chlorine present?	YES NO .NA	F1- 00
certify that I checked for chlorine and pH as per SOP and answered questions 15-15 (Intia	0	
17. Were sustedy papers properly filled out (lnk, signed, etc)?	(YES JNO NA	
18. Did you sign the custody papers in the appropriate place?	(YES),NONA	
19. Were correct containers used for the analysis requested?	(YES).NONA	
20. Was sufficient amount of sample sent in each container?	YES NO NA	
cortify that I entered this project into LIMS and answered guestions, 17-20 (intial)		
certify that I attached a label with the unique LIMS number to each container (Initia)	in	
21. Were there Non-Conformance issues at login? (YES., NO Was :: PIPE generated? YES	J	

BR Baker only -

End at Foto:

F. vised 2/6/07



COOLER RECEIPT FORM

Cooler Received/O	pened On	12/02/2008@	0830			
1. Tracking #	1983	(last 4 digi	Is, FedEx)			
Courier: FedEx	R Gun ID	96210146				
2. Temperature of	rep. sample or	temp blank when	opened: 1	De De	grees Celsius	
3. If Item #2 temper	rature Is 0°C or	less, was the rep	resentative	sample of	temp blank frozen?	YES NO. (NA)
4. Were custody se	See	of cooler?			2 freat	(YES) NO NA
5. Were the seals		nd dated correcti	v?			(YED NO NA
6. Were custody pe	M:					(YES. NONA
certify that I opens	*		stions 1-6 (in	ntiali		V)
7. Were custody se	C. William		YES	NO	and Intact	YES NO THA
Were these sign	ed and dated c	orrectly?				YES NO. NA
8. Packing mat'l us	1		Peanuts Ve	rmir.ullte	- Foam Insert Pape	or Other None
9. Cooling process		1) Ice-pack	1		>
10. Did all contains	rs arrive in goo	od condition (unb	roken)?	-		YES) NONA
11. Were all contain	ner labels comp	plete (#, date, sign	ed, pres., e	tc)?		YES) NONA
12. Did all contains	r labels and tag	gs agree with cus	tody papers	7		(YES) NONA
13a. Were VOA vial	s received?					YES (NO.) NA
b. Was there any	observable he	adspace present	in any VOA	vial?		YES NO NA
14. Was there a Tri	p Blank in this	cooler? YES	NO(NA) If mult	lple coolers, sequer	100 #
I certify that I unloa	ded the cooler	and answered qu	estions 7-14	(Intial)	-	0
15a. On pres'd bott	les, did pH test	strips suggest p	reservation	reached t	he correct pH level?	YES NO NA
b. Did the bottle	labels Indicate	that the correct p	preservative	s were us	ed	(YES NO NA
If preserve	ition in-house	was needed, reco	rd standard	ID of pres	servative used here	
16. Was residual ch	lorine present	7				YES.(.NO)NA
I certify that I check	ed for chlorine	and pH as per SC	OP and ansv	vered que	stions 15-16 (intial)	1
17. Were custody p	apers properly	filled out (ink, sig	gned, etc)?			(YES)NO. NA
18. Did you sign th	e custody pape	ers in the appropr	late place?			YES NO NA
19. Were correct co	ntainers used	for the analysis re	equested?		1	YES NO NA
20. Was sufficient a	mount of sam	ple sent in each c	ontainer?			(YES) NO MA
certify that I enters	d this project i	into LIMS and ans	wered ques	tions 17-	20 (int al)	
certify that I attach	ed a label with	the unique LIMS	number to	each ront	ainer (intial)	
21. Were there Non	-Conformance	Issues at login	YES.NO	Was PIP	E generated YES.	NO. # 5/535

BIS ≈ Broken in shipment Cooler Receipt Form doc

LF-1 End of Form

Resided Your

CHENT NAME			SILL MANAGEH			T	PAR	RAME	ERS	METH	(00)	NUMBE	R T	CHAIN	-OF DY RECORD
	Confidential		Fred Gipson			CHS	1			-7			1		
PROJECT NO.	701	-	PROJECT NAME			CONTAINERS	Ì					SWDC		NRL00	23.59 Aeroson IX 817,630 e43 VHAIM - Aeroson IX 817,630 e43 VHAIM - Aeroson IX 600224 349
PAGE L	PAGE	2	LAB. PO# BUIC	iont		EROF					*	Z Z			K destroy straight statute we so to her
DATE	TIME	MATRIX	SAMPLE ID			NUNBER	Green 1	Group 2	Dressp 3	-	V	Ass	ęt	LAB I.D. NUMUER AB USE ONLY	HEMARKS 11 C. FILTERED, UNFAFERED, PRESERVED, UNPRESERVED, GRAB CUMPOSITE
12/1/08	100		The BLOK	626910-1	1.0.	16	X	×	×		X	X	-	21	Group 1-3 (4) 250 mlP HNO3 (3) 1L P NP
361.100		CIL AD.	TICH BLAZE								^			12	(2) 1L G H2904; (1) 1L PH2904
-											>			0	(1) 1L GANP
							1	-							Group 4
11111				00	_	-									(Z) 250 rsiPHNO3; (2) 1LPNP
				1				71							(1) % PH2904; (1) 1L GANP
		-		fe-						-					(4) 1L PHN03; (1) 125 ml PHO
		1	-			1	1			-		-	+		(1) 250 rd P NaOH / Zn Acetate
				_	-		1				-	-	-	-	(1) 500 mi GA H2904
_															Appendix IX
See Section Section															VOC. (3) 40 ml VOAHCI
					-										SYOC: (2) IL GAMP
SAMPLED BY IS	mature)		DATE: 12/1/08	RELIFICATION OF	(Sanature)					40			RECE	IV-D BY (Sign	ature) DATE:
RELINQUISHED D	W. (Signatu	re)	DATE:	HLCEIVED BY: (Sign	nature)			DATE	-	-1-	afterior.es		SAME	PLE SHIPPED E	Y: (Circle) AIRBILL # 97102330174
			TIME:				-	TIME			_		FEDE	2	PONY XPS VEL XPS
COMMENTS		Attorney!	Sort privious				THIS		OUND	TIME and	NEE	DED		DELIVERED	
MEULIANO GAG	hader.		est America	* monthship	neceiven	BY LAI	JORA	TOP	. /	. ,					ON LIFON RECEIPT. (Lab Use Only)
AUDRESS.	2500	Foeter Creigi	Mon Dr.			1	1.	1	in	L.l.	-		Ten	peraturo .	2 - b World Prosent Y N
			STATE: THE	37204			is	Signat	(are)				VO.	A's Free of Hea	dspace Y N
					1	3.9					-		Co	nments	
PHONE	615-301	5064			DATE	17/	Hox	_		TIME:	3.	50	-		
BENHAM CONTA	CT PERSON	I(S)								321-38					The state of the s
	Scott H	400													
						_	_	_	_	_	_				MASY LUBNIA

r II				11172
CLIENT NAME	SITE MANAGER	10	PARAMETERS METHOD NUMBER	CHAIN-OF-CUSTODY RECORD
Confidential	Fred Gipson Industr's NAME Confidential	CONTAINERS	, voc	SENHAW
PAGE Z PAGE Z	AR FOR BIN Client	8	××	200 - 13 x 100 - 1
DATE TIME VALGO	AWITE IDENTIFICATION	MUM BERMON	Group 1 Group 2 Group 4 Appendix	(LAB LD. REMARK) NUMBER HE HETCHE, JACKETHED THE SCHOOL II AB USE ONLY) SIN THE SERVED CRAIT COMPOSITE
12/1/08 NOO COTO	F 626910.	-110 18	the second of th	() Group 1-3
				(4) 250 ml P HNO3; (3) 1L PNP
-				(2) 1L GH2S04; (1) 1L PH2S04
				EN IL GANP
	_			Group 4
	0.0			(Z) 250 ml PHNO3; (2) 1L PNP
				(1) 1L PH2S04; (1) 1L GANP
	1			PHN03; (1) 125miPHO
				6 , 22 3
				(1) 250 ml P NaOH / Zn Acetate
				(1) 500 ml GA H2SO4
	- Control of the Cont			Appendix IX
				VOC: (3) 40 ml VOA HQ
				SYOC (2) IL GANP
SALIDLE STOP Signature	TIME: 05 SHOW	D BY: (Siphature)	DATE 12/1/08	RECEIVED BY (Signature) DATE: TIME:
FELINOUISHED BY: (Signature)	DATE. PECEIVED BY:	(Signature)	The second secon	SAMPLE SHIPPED BY: (Circle) AIRIBILL # 97107330798
	TIME		TIME:	
COMMENTS.		- Samuel Control of	TURN AROUND TIME NEEDED	FEDEX PONY XPS VEL XPS
Attorney J	client priviledge		Standard	HAND DELIVERED UPS OTHER
SOCTION REPORTED TO		ACCENTO BY U	Sugnation (de /)	SAMPLE CONDITION UPON RECEIPT. (Lab Use Only)
ADDRESS 2960 Foster Creig			and w	Temperature 1- 2 Wel ice Présent: Y N
	STATE IN _ AP _ 37204		(Signature)	VOA's Free of Headspace Y N
CONTACT Mark Hollogsworth		- 1	1 5.2	Composite:
PHONE. 615-301-5044		DATE 17/7	11ME: S.'30	
BENHAM CONTACT PERSON(S) Scott Hens	190		PHONE # 405-321-3895	
			1	



ANALYTICAL REPORT

Job Number: 220-7492-1 SDG Number: 220-7492 Job Description: F8L030326

For:

TestAmerica Laboratories, Inc. 13715 Rider Trail North Earth City, MO 63045 Attention: Ms. Sherryl Adam

Joan Widomski

Account or repaired at the 12/15/2008 & 20 Feb.

Designee for Erin A Gaus Project Manager I erin.gaus@testamericainc.com 12/18/2008

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Connecticut Certifications and Approvals: CTDOH PH-047, MADEP CT023, RIDOH A43, NYDOH 10602, NY NELAP 10602, NHDES 2528, NJDEP CT410, ME DOH CT023, UT DOH 2032614458

TestAmerica Ephoratories, Inc.
TestAmerica Connecticut 128 Long Hill Cross Road Shelton, CT G5484
Tel (203) 529-8140 Fax (203) 929-8142 www.testamericainc.com



Job Narrative 220-J7492-1

Comments

No additional comments

Receip

All samples were received in good condition within temperature requirements

Metals

Method(s) 6020; The following samples were diluted due to the nature of the sample matrix: NRL0012-01 (220-7492-1), NRL0012-01-DISSOLVED (220-7492-2). Elevated reporting limits (RLs) are provided.

No other analytical or quality issues were noted.

METHOD SUMMARY

Client: TeslAmerica Laboratories, Inc.

Job Number: 220-7492-1 Sdg Number: 220-7492

Lab Location	Method	Preparation Method	
TAL CT	SW846 6020		
TAL CT		FIELD_FLTRD	
TAL CT		SW846 3010A	
	TAL CT TAL CT	TAL CT SW846 6020 TAL CT	

Lab References:

TAL CT = TestAmerica Connecticut

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition. November 1986 And Its Updates. "

METHOD / ANALYST SUMMARY

Client: TestAmerica Laboratories, Inc.

Job Number 220-7492-1 Sdg Number: 220-7492

Method	Analyst	Analyst ID
SW846 6020	Petronchak Nestor	NP

SAMPLE SUMMARY

Client TestAmerica Laboratories, Inc.

Job Number: 220-7492-1 Sdg Number: 220-7492

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
220-7492-1	NRL0012-01	Water	12/01/2008 0000	12/11/2008 C955
220-7492-2	NRL0012-01-DISSOLVED	Water	12/01/2008 0000	12/11/2008 0955

SAMPLE RESULTS

Analytical Data

Client TestAmerica Laboratories, Inc.

Job Number: 220-7492-1

Sdg Number 220-7492

Client Sample ID: NRL0012-01

Lab Sample ID 320-492-1 Date Sampled. 12/01/2008 0000 12/11/2008 0955 Client Matrix Water Date Received.

6020 Metals (ICP/MS)

Method 6020 Analysis Batch: 220-22933 Instrument ID: Agilent ICPMS Preparation 3010A Prep Batch 220-22804 N/A Lab File ID: Dilation 10 Initial Weight/Volume 5 mL Date Analyzed 12/16/2009 1723 Final Weight/Volume: 500 mL Date Prepared. 12/12/2008 1524

Analyte Qualifier MOL RL Result (ug/L) 100 30 100 Sullar 30000 82100 100000

Analytical Data

Client: TestAmerica Laboratories, Inc.

Job Number: 220-7492-1 Sdg Number: 220-7492

Client Sample ID: NRL0012-01-DISSOLVED

Lab Sample ID Client Matrix

220-7492-2

Water

Date Sampled. 12/01/2008 0000

Date Received (2/11/2008 0956

6020 Metals (ICP/MS)-Dissolved

Method. Preparation

Dilution

Analyte

6020 3010A

10

12/16/2008 1727 Date Analyzed 12/12/2008 1524 Date Prepared

Analysis Batch: 220-22933

Prep Batch 220-22804

Instrument ID:

Agilent ICPMS

Lab File ID: Initial Weight/Volume

Final Weight/Volume.

NIA 5 mL SEO mL

Result (ug/L)

Qualifier

MUL

RL

21

100

36

100

DATA REPORTING QUALIFIERS

Client: TestAmerica Laboratories, Inc.

Job Number: 220-7492-1 Sdg Number; 220-7492

Lab Section	Qualifier	Description
Metals		
	())	Indicates analyzed for but not detected
	.1	Sample result is greater than the MDL but below the CRDL

QUALITY CONTROL RESULTS

Client TestAmerica Laboratories, Inc.

Job Number: 220-7492-1 Sdg Number: 220-7492

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Glient Matrix	Method	Prep Batch
Metals					
Prep Batch: 220-22804					
LCS 220-22804/2-A	Lab Control Spike	T	Water	3010A	
MB 220-22804/1-A	Method Blank	T	Water	3010A	
220-7481-A-1-B DU	Duplicate	T	Water	3010A	
220-7481-A-1-C MS	Matrix Spike	T	Water	3010A	
220-7492-1	NRL0012-01	T	Water	3010A	
220-7492-2	NRL0012-01-DISSOLVED	D	Water	3010A	
Analysis Batch, 220-2293	2				
LCS 220-22804 2-A	Lab Control Spike	T	Water	6020	220-22804
MB 220-2280411-A	Method Blank	T	Water	6020	220-22804
Analysis Batch: 220-2293	3				
220 42' A 15 DU	Duplicate	Ť	Water	6020	220-22804
220 7481 A F C M5	Matrix Spike	T	Water	6020	220-22804
220.7497.7	석유L0612-01	T	Water	6020	220-22804
720-7492-2	NRL0012-01-DISSOLVED	D	Water	6020	220-22804

Report Basis D = Dissolved

T = Total

Client: TestAmerica Laboratories, Inc Job Number 220-7492-1 Sdg Number: 220-7492

Method Blank - Batch: 220-22804 Method: 6020 Preparation: 3010A

reparation, so to

 Lab Sample ID
 MB 220-22804/I-A
 Analysis Batch
 220-22932
 Instrument ID
 Agrient ICPMS

 Client Matrix
 Water
 Prep Batch
 220-22804
 Lab File ID
 N/A

 Dilution
 1 0
 Units
 ug/L
 Initial Weight/Volume
 50 mL

 Date Analyzed
 12/16/2008
 1557
 Final Weight/Volume
 500 mL

 Date Prepared
 12/12/2008
 1524
 The property of the prope

Analyte Result Qual MDL Rt Zr 10 U 3.0 10 Sulfur 10000 U 3000 10000

Lab Control Spike - Batch: 220-22804 Method: 6020 Preparation: 3010A

Date Prepared 12/12/2008 1524

Date Prepared 12/12/2008 1524

 Lab Sample ID
 LCS 220-22804/2-A
 Analysis Batch
 220-22932
 Instrument ID
 Against ICPMS

 Client Matrix
 Water
 Prep Batch
 220-22804
 Lab File ID
 N/A

 Dilution
 1.0
 Units: ug/L
 Initial Weight/Volume 50 mL

 Date Analyzed:
 12/16/2008 1600
 Final Weight/Volume 500 mL

 Analyte
 Spike Amount
 Result
 % Rec
 Limit
 Qual

 Sulfur
 4000
 43020
 108
 50 - 120

Matrix Spike - Batch: 220-22804 Method: 6020 Preparation: 3010A

 Lab Sample ID
 220-7481-A-1-C MS
 Analysis Batch
 220-22933
 Instrument ID
 Agrient ICPMS

 Client Matrix
 Water
 Prep Batch:
 220-22804
 Lats File ID
 N/A

 Dilution
 1.0
 Units:
 ug/L
 Initial Weight/Volume 5 ml

 Date Analyzed
 12/15/2008 1628
 Final Weight/Volume 5 ml

 Analyte
 Sample Result/Qual
 Spike Amount
 Result.
 In Rin
 Lot
 Out

 Sulfur
 71800
 J
 400000
 502300
 IIII
 75 - 1/5

Calculations are performed before rounding to avoid round-off errors in calculated results

Client: TestAmerica Laboratories, Inc.

Job Number: 220-7492-1 Sdg Number: 220-7492

Duplicate - Batch: 220-22804

Method: 6020 Preparation: 3010A

Lan Sample ID | 220-7485-A-1-3 DU Crient Matrix | Water

Dillion T.C.

Date Analyzeu 13:15/2008 1624 Date Preparett 12:13:2008 1624 Analysis Batch. 220-22933 Prep Batch. 220-22804

Units ug/L

Instrument ID, Agilent ICPMS Lab File ID; N/A

Initial Weight/Volume: 5 mL Final Weight/Volume: 500 mL

Analyle	Sample Result	/Qual	Result	RPD	Limit	Qual
Zr	37	J	100	NC	20	U
Sollur	71800	4	72750	1	20	2

F8L030326

NRL0012

INTER-COMPANY LOG

COMMENTS:

Project Manager:

4100810701

Chesepeake Shale Project

Dals Received:

2008-12-03

Project: Report Type: .

B Standard Report Analytical Due Date: Report Due Dale:

2008-12-17

Client:

490 - TeslAmerica Nashville

2008-12-22

WORK LOCATION: TestAmerica Connecticut SMP#: 1 CLIENT ID: NRL0012-01 DATE SAMPLED: MATRIX: 1 SAMPLE COMMENTS. METHOD: ZZ NONE NONE Archive NO SAMPLE PREPARATION PERFORMED / OCTYPE: 01 STANDARD TEST SET EXTRACTION: 88 WORKORDER K31FQ1AE METAL XX WATER SMP# CLIENTID: NRL0012-31-DISSOLVED 2 DATE SAMPLED: 20081201 MATRIX: 1

SAMPLE COMMENTS:

METHOD: ZZ EXTRACTION, 88

NONE NONE Archive

NO SAMPLE PREPARATION PERFORMED / OCTYPE: 01 STANDARD TEST SET

METAL XX

The sample(s) listed on this form are being sent to your location for the specified analysis. If you have any questions please contact the Project Manager listed above. PLEASE RETURN THE ORIGINAL SIGNED FORM WITH THE REPORT AT THE COMPLETION OF ANALYSIS.

K31PF1AC

Thank You

TA- St. Louis

Sample Receiving

RELINQUISHED BY:

RECEIVED FOR LAB BY

NO Inside The cooler wh

WORKORDER

PASSED RAD SCREEN

Page 1

TESTAMERICA CONNECTICUT PRESERVATIVE RECORD

Job Number: 220 7492 Client: PESTAMINIC TENNESSE Client Project: St LOUIS CONSTANCE

Lab Number	Preservative	рН	Adjustment (mLs)	pH after Adjustment	Preservative Lot Number	Chlorine Residual	Initials	Date
F483	4403	13	NH	NA	NA	NA	12	12-11-08
41								
			4					
	1	0						
				1 +				
							- 1	
						3		
					H			

TestAmerica Form# SMF00206,CT

()
Ξ	С
2	2
č	ร
2	2
ò	3
-	4
C	"

	stAmerica - Conne ternal Chain-of-Cu - ::				St-Louis worksnow						
PB: Soil:	Astr:	er:# (- D-				Date Received: Sample #s: 1		81	-		
Laborate Sample		Accepted by	Date	Time	Reason	Relinquished by	Accepted by	Date	Time		
1,2		, JV	13/12	1400	MZ		Aw -	12/12	1537		
	ica Fonn# SMF00508.CT										



TestAmerica Laboratories, Inc.

ANALYTICAL REPORT

PROJECT NO. 4100810701

Chesepeake Shale Project

Lot #: P8L030325

Mark Hollingsworth

TestAmerica Nashville 2960 Foster Creighton Drive Nashville, TN 37204

TESTAMERICA LABORATORIES, INC.

Sherryl Adam Project Manager

January 13, 2009

Case Narrative LOT NUMBER: F8L030325

This report contains the analytical results for the sample received under chain of custody by TestAmerica St. Louis on December 3, 2008. This sample is associated with your Chesepeake Shale Project NRL0012.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted on the following page.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by TestAmerica St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise All radiochemistry results are based upon sample as dried and ground with the exception of trittum, unless requested wet weight by the client.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Gross Alpha/Beta by GFPC

The Gross Alphe Beta reporting limit was not met due to a reduction of sample size attributed to the sample's high residual mass. The analytical results are reported with the MDC achieved.

Affected Samples:

F8L030325 (1). NRL0012-01

Gamma Spectroscopy - Radium - 226 & Hits

- The Pb-210 energy, 46.54 keV, is below the tower end of the laboratory's calibration range for the applicable geometry for this sample. The reported results for Pb-210 are estimated.
- Ra-226 is reported based upon the Bi-214 daughter: Due to the potential loss of Rn-222, the
 first decay daughter of Ra226, the results may be biased low. This is especially true if the samples have
 not been allowed to Ingrow for a minimum of 21 days (to reach potential equilibrium).
- The Cesium 137 and Radium 228 by gamma spec reporting limit was not met due to the activity
 of the sample. The analytical results are reported with the MDC achieved.
- Pb-214 exhibited elevated levels of activity in the samples. The Pb-214 242 keV gamma emission occurs very close to the Ra-224 241 keV gamma emission, causing interference. The analysis software assigned the observable peak to both Pb-214 and Ra-224 in some of the samples (did not split the peak). Based upon visual inspection of the spectra and other knowledge of the samples (based upon the Th-228 concentration seen in the sample, Ra-224 would not be expected to be seen above the calculated MDC), it was determined correction for the Pb-214 contribution to the peak would be necessary to properly report Ra-224 for these samples.

The activity (Bq) reported for Pb-214 for each sample was utilized to determine the corresponding peak size that would be present at the 242 keV region based upon the Pb-214 abundance at that energy (7.43%). This peak size was then converted to activity (Bq) that would contribute to the Ra-224 peak at 241 keV based upon the Ra-224 abundance at that energy (4.1%). This value was then subtracted from the initial Ra-224 activity to determine the corrected Ra-224 activity. The activity concentration reported is derived from this corrected activity.

Protectinium 234m was identified at the 766 line by the software. Upon further data review, it is
determined that an interference is causing the identification. The result was re-calculated using only the
1001 keV line. The results are reported with this narrative.

Affected Samples: F8L030325 (1); NRL0012-01

METHODS SUMMARY

F81.030325

PARAMETE	ER.	ANALYTICAL METHOD	PREPARATION NETFOR
	pectroscopy - Cesium-137 & Hits Lpha/Beta by GFPC	EPA 901.1 MOD SW846 9310 MOD	
Reference	ces;		
EPA	"EASTERN ENVIRONMENTAL RADIATION FA- PROCEDURES MANUAL" US EPA EPA 520/		
SW846	"Test Methods for Evaluating Solid Methods", Third Edition, November 1:		pal

SAMPLE SUMMARY

F81.030325

WG # SAMPLE# CLIENT SAMPLE ID	SAMPLED SAMP DATE TIME
K31PC 001 NRL001Z-01	12/01/08 11:00
NOTE(S):	

⁻ The analytical reacits of the samples listed above are presented on the following pages.

⁻All calculations are performed before rounding to avoid round-off errors in calculated results.

⁻ Results noted as 1921 were not detected at or above the stated Hintis.

[.] This repair must not be reproduced, except in Alb, without the written approval of the laboratory.

⁻ Readles for the following paremeters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity premure, rescrivity, redux potential, specific gravity, apor tests, solids, doubliley, temperature, viscosity, and weight.

TestAmerica Nashville

Client Sample ID: NRL0012-01

Radiochemistry

Lab Sample ID: F3L030325-301

Date Collected: 12/01/08 1100 Date Recsived: 12/03/08 0915

Work Order: K31PJ Watrix: WATER Matrix:

	Total
	Uncert.

Parameter	Result	Qual	(2 o+/-)	RE	ndc	Prop	Analysis Date
GROSS A/B BY GFFC SW	846 9310 MO	D		oCi/L	Batch #	8338145	Yld &
Gross Alpha	25200		5200	3	2900	12/03/08	12/06/08
Gross Beta	5900		1900	4	2100	15/02/08	75/09/06
Garma Cs-137 & Hits	by EPA 901.	1 MOD		oCi/L	Batch #	9005172	Yid t
Actinium 227 (assumes equilibrium w/ Th-227)	-50		:50		256	61,705,719	/25/0ž
Actinium 226	960		520		116	01/05/05	01/05/09
Sismoth 211 sq Th-227	-50	D	160	-	250	725 V25 VCS	c restas
Bismuth 212	150	Ü	270		270	D1/25/02	50705709
Bismuth 214	6780		410		70	01/05/09	F2/D5/09
Cesiam 137	-39	2	28	12	45	01/00/09	90/40/19
Lead 210	-430	U	770		1300	C1/03/09	11/05/03
Lead 212	0.7	t	98		1.60	01/05/00	60/63%10
Lead 214	6850		430		80	01/05/09	01/05/09
Potassium 40	840		380		320	01/05/09	01/65/09
Protactinium 234M	-2	U	2403		4150	03.405.75	01/65/09
Protecticium 231	-70	U	590		989	01/05/09	01/03/05
Radium (226)	67BC		410		70	01/05/09	01/01/02
Radium 228	950		120	50	120	01/05/39	01/05/09
Radium 223 (assumes equilibrium w/ Th-227)	-50	U	150		255	01/05/05	007000DB
Radium 224	310		0,0		0.0	01/05/09	01/05/09
Thallium 208	-0.7	U	24		40	01/05/09	01/05/69
Thorium 223	-50	U	150		25C	01/07/09	01/05/05
Thorium 234	-70	U	1000		1260	31/05/09	01/05/09
Dranium 235	50	II	160		270	01/05/09	01/05/09
Granium 238	-70	t	1000		1200	01/05/09	31/05/05

Data are incomplete without the case marrative.

MDC is determined by instrument performance only. Bold results are greater than the MDC.

Result is less than the sample detection limit.

LOT # F61030325-NRL0012

6 SE 1

TestAmerica Nashville

Client Sample ID: NRL0012-01 DUP

Radiochemistry

Lab Sample Tin F81030325-301%

Marylm: MATER

Date Collected: Date Received:

12/01/08 1100

12/03/08 0915

Param+Dar	Pastit	Dual	Total Uncert. (2 g+/-)	RI.	mdc	Prep	Analysis
Gamma Cs-137 6 Hits	by EPA 901	1 MOD		pC1/L		9005172	ATG &
Actinium 227 (assumes	DY DEN SON	ti ti	120	PLLIA	236	31/03/09	01/06/09
eguiilbasun w: Th-927)		50	130		250	42700705	04700703
Antinum 228	2000		130		140	01/05/09	01/06/09
Blamuth 711 eq Th-227	(-	9	140		230	01/05/09	01/06/09
atsauth 112	5.5	0	190		30C	01/05/09	01/06/09
Basmuth 214	€750		450		70	01/05/09	01/06/09
Cesian 137	-7. Ex	O	28	1.2	≑ €	01/05/09	C1/0e/09
Lead 216	-35	U	430		500	01/05/09	01/08/09
Lead 201	-48	U	55		72	01/05/09	01/06/09
Lead 214	7230		440		80	01/05/09	01/06/09
Potassium 40	105	σ	290		490	01/05/09	01/06/09
Protactinium 234M	-540.	U	0.0		0.0	01/05/09	01/06/09
Protectinium 231	- 90	Ţ)	580		970	01/05/09	01/06/09
Radium (226)	6750		410		70	01/05/09	01/06/09
Radium 228	2000		130	50	140	01/05/09	01/06/09
Radium 209 (assumes equilibrium w/ Th-227)	-20	U	140		235	01/05/09	01/06/09
Radium 234	359		0.0		0.0	01/05/09	01/06/09
Inallium 208	~ J.	D.	25		42	01/05/09	01/06/09
Thorton 70	-2C	71	140		235	01/05/09	01/05/03
horium 23.	247	2	490		820	P1/05/09	01/05/09
Signiar 225	20	- J	2100		202	01/05/05	01/06/09
Transvio 238	747	ti.	490		820	31/05/09	01/05/09

NOTE (E)

Data are incomplete without the case marrative.

MDC is determined by instrument performance only. Bold results are greater than the MDC.

U Result is less than the sample detection limit.

METHOD BLANK REPORT

Radiochemistry

Client Lot ID: F8L030325

Karrix: KATER

			Total Uncert				Prop	Analysis
Paramotor	Result Qual	Qual.	(2 a+/-)	RL	MOC		Dura	Deta
GROSS A/B BY GFPC	SW846 9310	MOD	pCi/L	Batch #	8338145	Yld &	F.	8LG3D00G-145F
Gross Alpha	-0.11	U	0.24	3.00	3.76		12/37:03	12/05/09
Gross Beta	-0.25	G	0.87	4.00	1.5		12/03/03	12,02/09
Gamma Cs-137 ≈ Hit:	by EPA 90	01.1 MOD	pCi/L	Batch #	9005172	Yld 8	F	9A050000-1725
Accinium 227 (assumes equilibrium w/ Th-227)	-28	Φ.	30		50		01/05/09	C1/09/09
Actinium 228	3.0	υ	25		9.5		01/05/09	01/09/09
Bismuth 211 eq Th-227	-18	D	30		50		J1/05/59	01/05/09
Bismuth 212	0,0	U	54		97		01/05/09	61/09/09
Bismuth 214	-4	บ	27		22		01/05/09	01/09/09
Cesium 137	205	U	5,3	12.0	9.4		01/05/09	02/03/09
Lead 310	60	T.	140		230		01/05/09	01/09/09
Lead 212	0.5	T.	7.2		25		01/05/09	01/09/09
Sead 214	6.9	2	3.5		2.9		05/03/09	01/29/09
Potassium 40	-70	2	530		260		*1 : 2 = 2 (19)	31/12/20
Protactinium 234M	75	41	550		2000		01/00/09	01/09:09
Protactinium 231	5.5	T.F	130		292		61/25/09	01 05/15
Radium (226)	-4	Ú.	17		22		60/05/09	0-729 35
Radium 228	6.0	CI.	25	50	4.6		11/65:16	11/10 14
Radium 223 (assumes equilibrium W/ Th-227)	-13	n n	3.9		= (12755700	E1200-13
Radium 224	0.13		0.0		0.0		51/05/05	01/09/09
Thallium 208	7.2	0	5.1		7.6		11/05/05	01/09/09
Thorium 227	-16	T.	3 C		50		01/05/69	91/09/09
Thorium 234	4	ts	160		260		\$1/05/55	01/09/65
Uranium 235	~19	U	82		50		21/05/69	01/05/09
Dranium 238	9	U	160		260		01/05/09	01/09/09

NOTE (S)

Data are incomplete without the case narrative.

MDC is determined using instrument performance only Bold results are greater than the MDC.

It becate so ther then any exects deterring tonit

LOT # F81030325-NRL0012

Laboratory Control Sample Report

Radiochemistry

Client Lct ID:

FELOSOB25 WATER

Matera:

			Total	Lab Sample ID				
Parameter	Spika Amount	Result	Uncert. (2 c+/-)	HDC	& Yld & Rec	QC Control Limits		
GROSS A/B BY GEPC	SW846 5310 MOD		pCi/L	9310 MOD	FSL	030000-1450		
GECSS Beca	67-3	70.6	6.0	1	104	(72 - 117)		
	Sacch 4:	8335145		Analysis Date:	12/05/08			
GROSS A/B BY GFFC	SW846 9310 MOD		pCi/L	9310 MOD	F8L030000-145C			
Gress Alpha	49.4	55.2	€.0	0.9	112	(77 - 138)		
	Satch it	8338145		Analysis Date:	12/05/08			
Garma Cs-137 & Hit	ts by EPA 901.1	MOL	pCi/L	901.1 MOD	F9A	050000-172C		
Americann 201	151000	135000	11000	500	36	(60 - 210)		
Gesius 137	53146	51600	3000	200	97	(90 - 110)		
Corelt 60	# 180L	85500	4800	200	97	(90 - 110)		
	Basch #:	9008172		Analysis Date:	01/08/23			

DUPLICATE EVALUATION REPORT

Radiochamistry

Client Lot ID:

F8L930325

WATER

Date Sampled: 12703208

Date Received: 17/63/05

	SAPPLE Result		Total				Total		9C Sample ID		
Parameter			Uncert, (2d+/-) % %1d		DUPLICATE Result		(2 g+/-)	4 714	Precisi	on	
Gamma Cs-137 & Hits	by EPA	901.1	MOD	PCi/L	901	. 1 MOD		F	81030325-00	1	
Actinium 227 (assumes equilibrium W/ Th-227)	-50	ŋ	150		- 20	1	140		63	ERES	
Actinium 225	960		120		:000		130			1350	
Bismath 211 eq Th-227	-50	t	150		-20	C	140		39	+390	
Sismuch 212	150	Ð	272		60	=	180		- B	1.392	
Bismuth 214 -	£780		420		6750		420		4	1557	
Costum 137	-39	$\overline{A}_{i}^{ \mu}$	≤8		25	1.00	28		He L	7000	
Lead 210	-430	t	770		-33	- 1	282			4887	
Load 212	0.7	ū	98		- 48	1	65			Marri	
Lead 21a	6550		430		7330		550		- デ	3820	
Potassium 40	840		380		100	C.	290		425	ARET	
Protactimium 231	-70	U	590		-70	U	580		4	A PATE	
Protactinium 234M	-2	U	2400		-940	- 11	0.0		195	WAPE	
Redium (226)	6780		-10		6750		41.0		0.9	6PFD	
Radium 223 (assumes equilibrium w/ Th-227)	-50	Ţ	150		-20	U	140		69	199C	
Radium 224	310		0.0		359		0.0		1.5	APPL	
Redium 228 Thellium 206	950	U	24		1000		25		122	AEFC AEFC	
Thorium 207		U			-20	0	140		59		
Thorium 134	-50 -70	U	150		140	U	190		227	ARPE ARPE	
Uranium 235	50	0	160		-20	-17	2100		571	PEST.	
Uranium 238	-70	3	1000		140	3	490		621	1920	
CLANIUM 130		atch #:		120 - 200					257	2 722 E	
			9305172	(Sample)		_	Duplicate)				
GROSS A/B BY GFPC SV	1846 93	TO WOD		pCi/L	931	DOM O		ž	BL030114-00)1	
Gross Alpha	8800		3200		7900		2900		10	1687	
Grass Bata	1300	1.	1620		500	C	1300		30	SEPT	
	157	atch #:	6338145	(Sample)	8339	146 1	2.pt:Scate:				

NOTE (S)

Data are incomplete without the case narrative.

Calculations are performed before rounding to avoid round-off error in calculated results

MATRIX SPIKE REPORT

Radiochemistry

(leaf flat od) FELOSCOC

MATES

Date Sampled: 11/20/08

Date Received: 11/25/08

		Spike Result	Total Uncert. (2g+/-)		Eample Result	CHCC.	QC Sample ID		
Parameter	Spike Amount						SYLD	AREC	QC Control Limits
GROSS A/R BY GFPC SW846	9310 MOD		pC1/1 9310 MOD			FSL030114-001			
From Beta	156000	145000	12000		1300	C251		107	(56 - 147)
	Satch #:	8338145	Ar	arysis 1	Date:	12/06/08			
GROSS A/E BY GFPC SW845	9310 MOD		pCi/L	93	10 MOD		F8L030114-001		
Gress Alpha	55900	113000	13000		8800	2200		105	(44 - 250)
	Baton 4:	8338145	Ar	alysis i	Date:	12/08/08			

have are incomplete without the case mercative.

deliquiations are performed before rounding to avoid round-off errors in calculated results-



SUBCONINACI URDER

TestAmerica Nashville NRL0012

SENDING LABORATORY:	RECEIVING LABORATORY:							
TestAmerica Nashville	TestAmerica St. Louis							
2950 Foster Creighton Road	13715 Rider Trall North							
Nashville, TN 37204	Earth City, MO 63045							
Phone: 800-765-0980	Phone :(314) 298-8566							
Fax: 615-726-3404	Fax: (314) 298-8566							
Project Manager: Mark Hollingsworth	Project Location: Pennsylvania							
Client: Chesapeake Energy Corporation	Receipt Temperature: °C	Ice:	Y	/ N				

Copy/Relog from NRJ2373. Copy/Relog from NRJ1829, Copy/Relog from NRJ1167, Copy/Relog from NRJ1186, Copy/Relog from NRJ0705, Copy/Relog from NRJ0546. Copy/Relog from NRJ0458,

Analysis	Units	Dup	Evniras	Interlah Price Surch	Comments

Sample ID: NRL0012-01	Water		Sampled:	12/01/08 11:00			
Subcontract - Gross Alpha	%	12/12/08	08/27/11 10:00	\$32.50	0%	sub to Tr	A St. Louis - Method 9310
Subcont act - Gross Beta	2/2	12/12/08	08/27/11 10:00	\$32.50	0%	sub to Ti	A St. Louis - Method 9310
Subcontract - Radium (total)	9/3	12/12/08	08/27/11 10:00	\$160.00	0%	sub to Ti	A St. Louis - Method 9315
Subcontract - Sulfur ASTM	21 %	12/12/08	08/27/11 10:00	\$25.00	0%	Method 8	8020 - send to St. Louis
Subcontract - Zircon um	%	12/12/08	08/27/11 10:00	\$50.00	0%	Method (6020 - To St. Louis (Total &
Containers Supplied:							
	R_1 L Plastic AB)		R_250 mL Plastic HNO3 (I)	R_250 HNO3		Plastic	R_1 L Plastic HNO3 (Y)

recided 12.03.09

Released By Date/Time

Received By

12/3/08 9:5

					TestAmerica St.			
estame	erica	***		323				
e leager in Environ	FENTAL TESTING			/325				
CONDITION	UPON RECEIPT FORM			326				
Client;	TA Nashville			-,,,,,				
Quote No:	81063							
COC/RFA No:	NRK2656/0012 2	282		1 -				
itiated By:	8	Da	nte: 12/3	08	Time: 9:15			
	Shipp	ing In	formation					
Shipper: (F	edex UPS DHL Courier Clien	nt Ot	ther:		Multiple Packages: Y			
:pping # (s):*				/	emperature (s):**			
9203 2	116 (058) 6.			1. U	mboot 6.			
	7.			_ 2	7			
l	8,			3	8.			
	9		1-1	4	9			
	10.			5,	10			
	correspond to Numbered Sample Temp lines	**Sa:r	nple must be receive se does NOT affect	d at 4°C±2°C- (f the following: My	not note gentents below, Temperature etais-Linguid or Rad tests, Elg., Id or Solids			
N N	for yet, "N" for no and "NA" for not applicable): Are there custody seals present on the cooler?	8.	YM	Are there custody seals present on bottl				
Y & NIA	Do custody seals on cooler appear to be tampered with?	9.	YNGWA	Do custody seals on bottles appear to be tempered with?				
N N	Were contents of cooler frisked after opening, but before unpacking?	10.	Y N NO	Was sample received with proper pit? (If not make note below)				
y N	Sample received with Chain of . Custody?	11.	(Y) N	Sample received in proper containers?				
O N N/A	Does the Chain of Custody match sample ID's on the container(s)?	12.	YNN	Headspace in VOA or TOX liquid samples? (If Yes, note sample ID's below)				
Y (5)	Was semple received broken?	13.	W N N/A	Was Internal	CON/Workshare received?			
Ø ×	Is sample volume sufficient for analysis?	14.	ØN N/A		n by original TestAmerica lab?			
	ANL, Sandia) sites, pH of ALL containers received in	nust be y	erified, EXCEPT V	OA, TOX and soil	3.			
ites:								
		_						
rrective Action								
Client Contact N		1	nformed by:					
Sample(s) processed "as is" Sample(s) on hold unit:			ased, notify:		4.			
communication in the	in white	TILLIGIE	datu, Hothy.		ef			

CHESAPEAKE ENERGY CORPORATION Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water

Wastewater Transporter	Address	County	State
TAW-000219	PO Box 2449, Alma, AR 72921	Crawford	AR
Smith Oilfield Service, Inc.	PO Box 615, Carrie, KY 41725	Knott	KY
Artexoma	874 Hunt Creed RD Nichols	Tioga	NY
DC Rauscher	162 NYS Rt. 414 Waterloo	Senaca	NY
Appalachian Oil Purchasers, Inc.	PO Box 430 Frazeysburg, Ohio 43822	Muskingum	ОН
BBU Services-326833	Po Box 2541, 2206 Horns Mill Road, Lancaster, OH 43130	Fairfield	ОН
Heavy Duty	2355 Watson Marshall RD Mcdonald	Chemung	ОН
Stallion-321577	3361 Baird Ave. SE, Paris, OH 44669	Stark	ОН
SUNPRO-327229	7640 Whipple Ave. NW, N. Canton, OH 44720	Stark	ОН
W. Pol Contracting-916235	8835 Fisher Road, Diamond, OH 44412	Portage	ОН
WVOG-857319	PO Box 698, Zanesville, OH 43702	Muskingum	ОН
ECS&R-327751	3237 US Hwy 19, Cochranton, PA 16314	Crawford	PA
Elcon	10534 Rt. 514 Suite 3 Monroeton	Bradford	PA
Excalibur	RR 2 Box 136A Towanda	Bradford	PA
Higgins Hauling-325459	338 Sy Huffman Hill, Waynesburg, PA 15370	Greene	PA
IBEX	13 Alpine DR. Athens	Bradford	PA
James Barron Trucking-327525	10314 Somerset Pike, Somerset, PA 15501	Somerset	PA
Mountain Energy	PO Box 766 Tunkhannock	Wyoming	PA
RNI	2832 Rt. 414 Canton	Bradford	PA
Romesberg Trucking (RTI)-943248	409 Broadway St. Suite #1, Berlin, PA 15530	Somerset	PA
Select	504 Main St. Towanda	Bradford	PA
SGFS .	150 Frantz RD. Suite 2 Meshoppen	Bradford	PA
Stallion Summit Environmental Services-3277741	297 Beautys Run Rd Williamsport	Lycoming	PA
Summit Environmental Services-327741	774 Pike Road, Johnstown, PA 15909	Cambria	PA
Key Energy Services-000862	PO Box 201858, Dallas, TX 75320	Dallas	TX
Central Environmental-326132	PO Box 1366, Parkersburg, WV 26102	Wood	WV
Devonian Industries-294406	297 Boy Scout Camp Road, Morgantown, WV 26508	Monongalia	WV
Energy Contractors-952591	1400 Aviation Way, Bridgeport, WV 26330	Harrison	WV
H & H Pit Disposal-923263	PO Box 146, Spencer, WV 25276	Roane	WV
Hawg Hauling & Disposal-999982	Po Box 1300, Jane Lew, WV 26378	Lewis	WV
K & N Contracting-928197	PO Box 607, Elkview, WV 25071	Kanawha	WV
eliable Environmental Transport (RET)-324046	PO Box 500, Bridgeport, WV 26330	Harrison	WV
Select Tanks-327707	7994 S. Pleasants Hwy, St. Mary's, WV 26170	Pleasants	WV

CHESAPEAKE ENERGY CORPORATION Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water

June 9, 2011

Facility Name	Address	County	State	Latitude	Longitude	Volume Ser (Gallons)
Sipple disposal well	Sipple Ridge Road, Beattyville, KY41311	Lee	KY			3,010
1 (832745)		Noble	ОН	39.77763	-81.54691	17,640
3.8 H		Carroll	ОН	40.672905	-81.5189	521,804
→ → → H 1		Noble	ОН	39.74657	-81.59999	269,346
1 (832984)		Athens	ОН	39.23322	-82.13851	3,360
Ohio Oil Gathering Corp. 1		Washington	ОН	39.37897	-81.2896	6,285
Ohio Oil Gathering Corp. 2		Washington	ОН	39.39206	-81.31725	6,285
Ohio Oil Gathering Corp. 3		Washington	ОН	39.39995	-81.31725	6,285
#2 Disposal Well	St Rt 88 Garrettsville, OH 44231	Portage	ОН	······································		287,490
STALLION WATER DISPOSAL		Portage	ОН	41.3458754	-81.08978215	9,660
WARREN DRILLING CO 1		Noble	ОН	39.65388	-81.47532	137,340
1000 5H		BRADFORD	PA	41.592417	-76.448359	12,600
1 2H		BRADFORD	PA	41.666349	-76.710095	99,187
ZH		BRADFORD	PA	41.814355	-76.333172	8,400
1H, 4H		SUSQUEHANNA	PA	41.77293	-76.030318	17,640
BROLLOW N 5H		TIOGA	PA	41.584793	-77.256751	26,090
1H, 2H		SUSQUEHANNA	PA	41.739029	-76.053981	33,684
2H, 5H		BRADFORD	PA	41.662796	-76.726398	102,15
CSI 2H, CSI 5H		BRADFORD	PA	41,793952	-76.571803	13,230
DGSM 5H		BRADFORD	PA	41.893559	-76.600796	12,600
Eureka	419 Second Street, Williamsport, PA 17701	Lycoming	PA	N 41.237842	W -77.008517	324,94
E 6H		WYOMING	PA	41.633814	-76,117954	9,030
6Н,8Н,10Н		Washington	PA	40,263346	-80,465571	137,97
5H	1	BRADFORD	PA	41.881655	-76.505595	13,500
Hershberger Processing Facility	1	Bradford	PA	***************************************	W -76.336679	903,36
2H, 5H		SUSQUEHANNA	PA	41.650714	-76.042909	26,376
3H		BRADFORD	PA	41.828842	-76,656077	8,904
RK 5H		SULLIVAN	PA	41.537765	-76.766645	29,064

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CHESAPEAKE ENERGY CORPORATION

Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water

	June 9, 201	1	10000				
Facility Name	Address	County	State	Latitude	Longitude	Volume Sent (Gallons)	
John Barrett Processing Facility	wetonous sound in our many popular pop	Bradford	PA	N 41.684103	W -76.357338	2,023,165	
2H, 2H, 5H		BRADFORD	PA	41.814172	-76.375395	55,650	
1H, 2H, 3H, 5H, 6H		SUSQUEHANNA	PA	41.738805	-76,029825	47,880	
M & M ESTATES 2H		SULLIVAN	PA	41.551929	-76.737523	11,970	
2 H		BRADFORD	PA	41,564478	-76.333815	16,280	
SH		WYOMING	PA	41.568578	-76.18185	22,680	
H H		BRADFORD	PA	41.662281	-76,716679	40,390	
6H		SULLIVAN	PA	41.560639	-76.614838	93,540	
Sharer Processing Facility		Bradford	PA	N 41.759727	W -76.149158	202,946	
STORMS 2H, STORMS 5H		BRADFORD	.PA	41.725942	-76.178861	18,480	
2H		BRADFORD	PA	41.808993	-76.529603	4,200	
SH		BRADFORD	PA	41.963678	-76.388483	28,110	
1 3H		Washington	PA	40.22908	-80.032171	208,400	
RT ZH, SH		BRADFORD	PA	41.621613	-76.45009	15,540	
7 KI 2H		BRADFORD	PA	41.715277	-76.356051	17,220	
10H (833221)	**************************************	Brooke	WV	40.191402	-80.635879	25,400	
3H (832805)		Brooke	WV	40.187616	-80.641404	6,720	
R 10H (832974)		Ohia	WV	40.147009	-80.575808	4,200	
D 1H, 3H. 4H, 8H		Wetzel	WV	39.709053	-80,640574	65,940	
DELLSLOW HUNTING & FISHING CLUB 3H		Preston	WV	39.622367	-79.740835	2,940	
6н, вн		Marion	WV	39.46207	-79.994702	685,482	
ELK VALLEY LAND CORP 1 SWD		Braxton	WV	38.674705	-80.85171	409,962	
EUREKA STATION		Pleasants	WV	39.4134538	-81.1889536	379,806	
Вн		Ohio	WV	40,04502	-80.600519	186,060	
8H		Ohio	WV	40,11401	-80,59242	142,990	
5Н, 10Н		Wetzel	WV	39.69448	-80.68492	43,680	
F1 SWD	destructive de la company	Monongalia	WV	39.5906	-79.8307	17,640	

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CHESAPEAKE ENERGY CORPORATION

Response to USEPA Region III May 12, 2011 RFI on Marcellus Shale Flowback Water

F	Facility Name	June 9, 2011 Address	County	State	Latitude	Longitude	Volume Sent (Gallons)
	6 1H, 3H, 5H, 8H		Wetzel	WV	39,6809	-80.70678	221,340
<u> </u>	N 1H, 3H, 5H		Upshur	WV	38.815467	-80.279933	338,100
	5H		Brooke	WV	40.231051	-80.522545	65,310
			Wetzel	WV	39.68855	-80.69818	3,780
	Л Н, 3Н, 5Н		Upshur	WV	38.847141	-80.300745	672,840
MARQUETTE SWD 1			Monongalia	WV	39.5546517	-79.8777291	5,880
North West Landfill		512 E Dry Run Road, Parkersburg, WV	Wood	WV			40,000
NORTHWESTERN LANDFILL (913578)			Wood	WV	39.246512	-81,50259	19,320
4	B 1H, 3H, 5H, 8H		Marshall	WV	39.737224	-80.670618	475,272
RELIANCE	MINERALS 3H (833041)		Monongalia	WV	39.523795	-79.976376	5,460
	вн, 5н, 6н		Wetzel	WV	39.7115	-80.60935	420
	3H, 6H, 10H		Wetzel	WV	39.70483	-80,68532	8,190
	N 1H, 3H, 5H, 10H		Marshall	WV	39.733804	-80.623496	349,356
White	Processing Facility		Susquehanna	1	N 41.719445	W -76.063117	654,350

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