Gunter, Jason

From: Nations, Mark <mnations@doerun.com>
Sent: Tuesday, July 15, 2014 4:53 PM
To: Gunter, Jason
Cc: Yingling, Mark; James, Kevin; Neaville, Chris; Montgomery, Michael; 'Kevin Lombardozzi' (kevinl@VALHI.NET); Norman Lucas (cityhall@i1.net); robert.hinkson@dnr.mo.gov; brandon.wiles@dnr.mo.gov; Ty Morris (TMorris@barr.com); Sanders, Amy B.; Hedrick, Samantha K.
Subject: National June 2014 Progress Report
Attachments: NATL_06-14.doc; 2014-06-18 NAT AOC Pace Lab Report.pdf; Air results OLB May 2014.pdf

Jason, attached is the progress report with the OLB air results.
Mark

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07CR 40482414 4.2
Superfund
OU02

THE DOE RUN COMPANY

Remediation Group

Mark Nations
Mining Properties Manager
mnations@doerun.com

July 11, 2014

Mr. Jason Gunter
Remedial Project Manager
U.S. Environmental Protection Agency
Region 7 - Superfund Branch
11201 Renner Blvd.
Lenexa, KS 66219

Re: National Mine Tailings Site Progress Report

Dear Mr. Gunter:

As required by Article VI, Section 51 of the Unilateral Administrative Order (Docket No.CERCLA-07-2006-0231) for the referenced project and on behalf of The Doe Run Company and NL Industries, Inc., the progress report for the period June 1, 2014 through June 30, 2014 is enclosed. If you have any questions or comments, please call me at 573-518-0800.

Sincerely,

Mark Nations
Mining Properties Manager

Enclosure
c: Mark Yingling – TDRC (electronic only)
Kevin James – TDRC (electronic only)
Chris Neaville – TDRC (electronic only)
Michael Montgomery – TDRC (electronic only)
Kevin Lombardozzi – NL Industries, Inc.
Matt Whitwell – City of Park Hills
Norm Lucas – Park Hills – Leadington Chamber of Commerce
Robert Hinkson – MDNR
Brandon Wiles – MDNR
Ty Morris – Barr Engineering

1221 Mill Street, Leadwood, MO 63653
Telephone: (573) 562-7793

National Mine Tailings Site
Park Hills, Missouri
Removal Action - Monthly Progress Report
Period: June 1, 2014 – June 30, 2014

1. **Actions Performed and Problems Encountered This Period:**
   a. Work continued on the development of the Post Removal Site Control Plan for the site.

2. **Analytical Data and Results Received This Period:**
   a. During this period, water samples were collected at the sampling locations identified in Appendix C of the Removal Action Work Plan where water was present. Copies of the analytical results from the last sampling event are included with this progress report.
   b. During this period, the Ambient Air Monitoring Report for June 2014 was completed. Any issues identified in this report are discussed below. A copy of this document has been sent to your attention.

3. **Developments Anticipated and Work Scheduled for Next Period:**
   a. Continue developing the Post Removal Site Control Plan for the site.
   b. Continue developing the Removal Action Report and the record drawings.
   c. Complete monthly water sampling activities as described in the Removal Action Work Plan.
   d. Complete air monitoring activities as described in the Removal Action Work Plan.

4. **Changes in Personnel:**
   a. None.

5. **Issues or Problems Arising This Period:**
   a. None.

6. **Resolution of Issues or Problems Arising This Period:**
   a. None.

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9608 Loiret Blvd.
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(913)599-5665

June 27, 2014

Amy Sanders
The Doe Run Company
P. O. Box 500
Viburnum, MO 65566

RE: Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

Dear Amy Sanders:
Enclosed are the analytical results for sample(s) received by the laboratory on June 19, 2014. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Mary Jane Walls for
Jamie Church
jamie.church@pacelabs.com
Project Manager

Enclosures

Pace Analytical Services, Inc.
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Lenexa, KS 66219
(913)599-5665

CERTIFICATIONS

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

Kansas Certification IDs
9608 Loiret Boulevard, Lenexa, KS 66219
WY STR Certification #: 2456.01
Arkansas Certification #: 13-012-0
Illinois Certification #: 003097
Iowa Certification #: 118
Kansas/NELAP Certification #: E-10116
Louisiana Certification #: 03055
Nevada Certification #: KS000212008A
Oklahoma Certification #: 9205/9935
Texas Certification #: T104704407-13-4
Utah Certification #: KS000212013-3
Illinois Certification #: 003097

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SAMPLE SUMMARY

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

Lab ID	Sample ID	Matrix	Date Collected	Date Received
60171824001	**NAT EAST**	Water	06/18/14 08:26	06/19/14 08:30

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SAMPLE ANALYTE COUNT

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
60171824001	**NAT EAST**	EPA 200.7	JGP	6	PASI-K
		EPA 200.7	NDJ	3	PASI-K
		SM 2540C	ESM	1	PASI-K
		SM 2540D	ESM	1	PASI-K
		SM 2540F	JML	1	PASI-K
		SM 4500-H+B	NDL	1	PASI-K
		EPA 300.0	OL	1	PASI-K
		SM 5310C	JMC1	1	PASI-K

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ANALYTICAL RESULTS

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

Sample: NAT EAST **Lab ID: 60171824001** Collected: 06/18/14 08:26 Received: 06/19/14 08:30 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
200.7 Metals, Total	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium	ND	ug/L	5.0	0.56	1	06/21/14 16:20	06/24/14 20:55	7440-43-9	
Calcium	**108000**	ug/L	100	7.8	1	06/21/14 16:20	06/24/14 20:55	7440-70-2	
Lead	**4.7J**	ug/L	5.0	2.2	1	06/21/14 16:20	06/24/14 20:55	7439-92-1	
Magnesium	**56500**	ug/L	50.0	17.0	1	06/21/14 16:20	06/24/14 20:55	7439-95-4	
Total Hardness by 2340B	**503000**	ug/L	500		1	06/21/14 16:20	06/24/14 20:55		
Zinc	**132**	ug/L	50.0	12.5	1	06/21/14 16:20	06/24/14 20:55	7440-66-6	
200.7 Metals, Dissolved (LF)	Analytical Method: EPA 200.7 Preparation Method: EPA 200.7								
Cadmium, Dissolved	ND	ug/L	5.0	0.56	1	06/24/14 18:10	06/25/14 12:39	7440-43-9	
Lead, Dissolved	ND	ug/L	5.0	2.2	1	06/24/14 18:10	06/25/14 12:39	7439-92-1	
Zinc, Dissolved	**98.7**	ug/L	50.0	12.5	1	06/24/14 18:10	06/25/14 12:39	7440-66-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**630**	mg/L	5.0	5.0	1		06/24/14 09:32		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	ND	mg/L	5.0	5.0	1		06/20/14 13:27		
2540F Total Settleable Solids	Analytical Method: SM 2540F								
Total Settleable Solids	ND	mL/L/hr	0.20	0.20	1		06/19/14 14:00		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
pH at 25 Degrees C	**8.2**	Std. Units	0.10	0.10	1		06/25/14 14:10		H6
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Sulfate	**245**	mg/L	20.0	2.0	20		06/23/14 02:59	14808-79-8	
5310C TOC	Analytical Method: SM 5310C								
Total Organic Carbon	**0.98J**	mg/L	1.0	0.50	1		06/23/14 18:56	7440-44-0	

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QUALITY CONTROL DATA

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

QC Batch: MPRP/27731 | Analysis Method: EPA 200.7
QC Batch Method: EPA 200.7 | Analysis Description: 200.7 Metals, Total
Associated Lab Samples: 60171824001

METHOD BLANK: 1398298 | Matrix: Water
Associated Lab Samples: 60171824001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium	ug/L	ND	5.0	06/24/14 20:00	
Calcium	ug/L	ND	100	06/24/14 20:00	
Lead	ug/L	ND	5.0	06/24/14 20:00	
Magnesium	ug/L	ND	50.0	06/24/14 20:00	
Total Hardness by 2340B	ug/L	ND	500	06/24/14 20:00	
Zinc	ug/L	ND	50.0	06/24/14 20:00	

LABORATORY CONTROL SAMPLE: 1398299

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	1000	989	99	85-115	
Calcium	ug/L	10000	9870	99	85-115	
Lead	ug/L	1000	1030	103	85-115	
Magnesium	ug/L	10000	10100	101	85-115	
Total Hardness by 2340B	ug/L		66400			
Zinc	ug/L	1000	1010	101	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1398300 1398301

Parameter	Units	60171821001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium	ug/L	1.9J	1000	1000	1010	1020	101	101	70-130	1	10	
Calcium	ug/L	278000	10000	10000	277000	288000	-3	103	70-130	4	9	M1
Lead	ug/L	3.6J	1000	1000	1000	1020	100	102	70-130	2	10	
Magnesium	ug/L	83500	10000	10000	90400	94000	70	106	70-130	4	9	
Total Hardness by 2340B	ug/L	1040000			1060000	1110000				4		
Zinc	ug/L	10600	1000	1000	11300	11500	73	96	70-130	2	11	

MATRIX SPIKE SAMPLE: 1398302

Parameter	Units	60171826004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Cadmium	ug/L	ND	1000	992	99	70-130	
Calcium	ug/L	47200	10000	57600	104	70-130	
Lead	ug/L	4.0J	1000	1040	104	70-130	
Magnesium	ug/L	27400	10000	37300	99	70-130	
Total Hardness by 2340B	ug/L	230000		297000			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

MATRIX SPIKE SAMPLE: 1398302

Parameter	Units	60171826004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Zinc	ug/L	27.4J	1000	1050	102	70-130	

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QUALITY CONTROL DATA

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

QC Batch: MPRP/27791
QC Batch Method: EPA 200.7
Analysis Method: EPA 200.7
Analysis Description: 200.7 Metals, Dissolved
Associated Lab Samples: 60171824001

METHOD BLANK: 1400395
Matrix: Water
Associated Lab Samples: 60171824001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Cadmium, Dissolved	ug/L	ND	5.0	06/25/14 12:24	
Lead, Dissolved	ug/L	ND	5.0	06/25/14 12:24	
Zinc, Dissolved	ug/L	ND	50.0	06/25/14 12:24	

LABORATORY CONTROL SAMPLE: 1400396

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Cadmium, Dissolved	ug/L	1000	960	96	85-115	
Lead, Dissolved	ug/L	1000	980	98	85-115	
Zinc, Dissolved	ug/L	1000	968	97	85-115	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1400397 1400398

Parameter	Units	60171821002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cadmium, Dissolved	ug/L	ND	1000	1000	954	967	95	97	70-130	1	10	
Lead, Dissolved	ug/L	ND	1000	1000	966	982	97	98	70-130	2	10	
Zinc, Dissolved	ug/L	ND	1000	1000	937	950	94	95	70-130	1	11	

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QUALITY CONTROL DATA

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

QC Batch: WET/48644
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 60171824001

METHOD BLANK: 1399705
Matrix: Water
Associated Lab Samples: 60171824001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	5.0	06/24/14 09:26	

LABORATORY CONTROL SAMPLE: 1399706

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	1000	951	95	80-120	

SAMPLE DUPLICATE: 1399707

Parameter	Units	60171847001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1010	1000	0	10	

SAMPLE DUPLICATE: 1399708

Parameter	Units	60171936003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	34100	33600	1	10	

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QUALITY CONTROL DATA

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

QC Batch: WET/48586
QC Batch Method: SM 2540D
Analysis Method: SM 2540D
Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 60171824001

METHOD BLANK: 1397881
Matrix: Water
Associated Lab Samples: 60171824001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Suspended Solids	mg/L	ND	5.0	06/20/14 13:26	

SAMPLE DUPLICATE: 1397882

Parameter	Units	60171818001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	3160	2560	21	10	D6

SAMPLE DUPLICATE: 1397883

Parameter	Units	60171826004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	6.0	6.0	0	10	

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QUALITY CONTROL DATA

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

QC Batch: WET/48675
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Associated Lab Samples: 60171824001

SAMPLE DUPLICATE: 1400387

Parameter	Units	60171920001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.6	7.6	1	5	H6

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QUALITY CONTROL DATA

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

QC Batch: WETA/29934 | Analysis Method: EPA 300.0
QC Batch Method: EPA 300.0 | Analysis Description: 300.0 IC Anions
Associated Lab Samples: 60171824001

METHOD BLANK: 1398939 | Matrix: Water
Associated Lab Samples: 60171824001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Sulfate	mg/L	0.30J	1.0	06/22/14 16:54	

LABORATORY CONTROL SAMPLE: 1398940

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	5	5.2	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1398941 1398942

Parameter	Units	60171254001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Sulfate	mg/L	25.4	10	10	35.5	35.5	101	101	80-120	0	15	

MATRIX SPIKE SAMPLE: 1398943

Parameter	Units	60171243003 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfate	mg/L	246	100	346	100	80-120	

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QUALITY CONTROL DATA

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

QC Batch: WETA/29936
QC Batch Method: SM 5310C
Analysis Method: SM 5310C
Analysis Description: 5310C Total Organic Carbon
Associated Lab Samples: 60171824001

METHOD BLANK: 1399066
Matrix: Water
Associated Lab Samples: 60171824001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Organic Carbon	mg/L	ND	1.0	06/23/14 10:10	

LABORATORY CONTROL SAMPLE: 1399067

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	5	5.0	100	80-120	

MATRIX SPIKE SAMPLE: 1399068

Parameter	Units	60171634035 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	ND	25	25.4	85	80-120	

SAMPLE DUPLICATE: 1399069

Parameter	Units	60171634036 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Organic Carbon	mg/L	173	173	0	25	

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to changes in sample preparation, dilution of the sample aliquot, or moisture content.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine (8270 listed analyte) decomposes to Azobenzene.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

LOD - Limit of Detection.

LOQ - Limit of Quantitation.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-K	Pace Analytical Services - Kansas City

ANALYTE QUALIFIERS

D6	The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
H6	Analysis initiated outside of the 15 minute EPA recommended holding time.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: NATIONAL (MONTHLY)
Pace Project No.: 60171824

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
60171824001	**NAT EAST**	EPA 200.7	MPRP/27731	EPA 200.7	ICP/20973
60171824001	**NAT EAST**	EPA 200.7	MPRP/27791	EPA 200.7	ICP/21010
60171824001	**NAT EAST**	SM 2540C	WET/48644		
60171824001	**NAT EAST**	SM 2540D	WET/48586		
60171824001	**NAT EAST**	SM 2540F	WET/48558		
60171824001	**NAT EAST**	SM 4500-H+B	WET/48675		
60171824001	**NAT EAST**	EPA 300.0	WETA/29934		
60171824001	**NAT EAST**	SM 5310C	WETA/29936		

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Sample Condition Upon Receipt

WO#: 60171824
60171824

Optional
Proj Due Date:
Proj Name:

Client Name: The Dye Run Company

Courier: Fed Ex ☑ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace ☐ Other ☐

Tracking #: 7703 4254 3625 Pace Shipping Label Used? Yes ☐ No ☑

Custody Seal on Cooler/Box Present: Yes ☑ No ☐ Seals intact: Yes ☑ No ☐

Packing Material: Bubble Wrap ☐ Bubble Bags ☐ Foam ☐ None ☐ Other ☑ zipc

Thermometer Used: T-239 / T-194 **Type of Ice:** Wet Blue None ☐ Samples received on ice, cooling process has begun.
(circle one)

Cooler Temperature: 3.8

Temperature should be above freezing to 6°C

Date and initials of person examining contents: OH 6/19

Chain of Custody present:	☑Yes	☐No	☐N/A	1.
Chain of Custody filled out:	☑Yes	☐No	☐N/A	2.
Chain of Custody relinquished:	☑Yes	☐No	☐N/A	3.
Sampler name & signature on COC:	☑Yes	☐No	☐N/A	4.
Samples arrived within holding time:	☑Yes	☐No	☐N/A	5.
Short Hold Time analyses (<72hr):	☑Yes	☐No	☐N/A	6. S.S., pH
Rush Turn Around Time requested:	☐Yes	☑No	☐N/A	7.
Sufficient volume:	☑Yes	☐No	☐N/A	8.
Correct containers used:	☑Yes	☐No	☐N/A	
Pace containers used:	☑Yes	☐No	☐N/A	9.
Containers intact:	☑Yes	☐No	☐N/A	10.
Unpreserved 5035A soils frozen w/in 48hrs?	☐Yes	☐No	☑N/A	11.
Filtered volume received for dissolved tests?	☐Yes	☐No	☑N/A	12.
Sample labels match COC: Includes date/time/ID/analyses Matrix: WT	☑Yes	☐No	☐N/A	13.
All containers needing preservation have been checked.	☑Yes	☐No	☐N/A	
All containers needing preservation are found to be in compliance with EPA recommendation.	☑Yes	☐No	☐N/A	14.
Exceptions: VOA, coliform, TOC, O&G, WI-DRO (water), Phenolics	☐Yes	☑No		Initial when completed / Lot # of added preservative
Trip Blank present: Pace Trip Blank lot # (if purchased):	☐Yes	☐No	☑N/A	15.
Headspace in VOA vials (>6mm):	☐Yes	☐No	☑N/A	16.
Project sampled in USDA Regulated Area:	☐Yes	☐No	☑N/A	17. List State:

Client Notification/ Resolution: Copy COC to Client? Y / N Field Data Required? Y / N

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: Jami Church Date: 6/19/14

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Section A
Required Client Information:

Company:	The Doe Run Company
Address:	PO Box 500
	Viburnum, MO 65566
Email To:	asanders@doerun.com
Phone: 573-689-4535	Fax: 573-244-8179
Requested Due Date/TAT:	5 - 7 Days

Section B
Required Project Information:

Report To:	Amy Sanders
Copy To:	
Purchase Order No.:	
Project Name:	National (Monthly)
Project Number:	

Section C
Invoice Information:

Attention:	Amy Sanders
Company Name:	The Doe Run Company
Address:	PO Box 500, Viburnum, MO 65566
Pace Quote Reference:	
Pace Project Manager:	Jamie Church
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER _____

Site Location STATE: MO

Section D
Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
	WP
	AR
	OT
	TS

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N): TSS/TDS	Sulfate	Settleable Solids	TOC	Cd, Pb, Zn (T&D)*	Hardness	pH	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D. 60171824
																		N								
1	Nat East	W	G			06/18/14	0826		4	2	1							x	x	x	X	x	x	x	N	1(BP)1(BPAN)1(BPAN)5(NAT) 19
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* 200.7 Total Recoverableand Dissovled Metals (Lab Filter for dissolved)	Larry Hopkins	6/18/14	1330	[illegible] (PAS)	6/19	8:30	3.8	Y	Y	Y
**analyzed within 24 hours with flagged data										

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Larry Hopkins		
SIGNATURE of SAMPLER:	Larry Hopkins [signature]	DATE Signed (MM/DD/YY):	6/18/14

Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Monthly Ambient Air Monitoring Report

The Doe Run Company
Old Lead Belt Sites:
Federal, Rivermines, National, and Leadwood

May-2014

THE DOE RUN COMPANY | 150 YEARS

SUITE 300
1801 PARK 270 DRIVE
ST. LOUIS, MO 63146

Federal Site

Sample Results for **May-2014**

	St. Joe (Ballfields)		Big River#4		Water Treatment Plant	
Sample Date	**TSP** ug/m3	**Lead** ug/m3	**TSP** ug/m3	**Lead** ug/m3	**TSP** ug/m3	**Lead** ug/m3
5/1/14	22	0.020	29	0.020	25	0.068
5/2/14	39	0.014	60	0.040	51	0.062
5/5/14	131	0.176	103	0.007	97	0.042
5/6/14	144	0.086	136	0.028	110	0.021
5/7/14	113	0.106	113	0.021	135	0.021
5/8/14	55	0.028	50	0.007	56	0.028
5/9/14	33	0.007	37	0.007	37	0.007
5/12/14	28	0.014	25	0.014	33	0.021
5/13/14	21	0.007	20	0.007	13	0.007
5/14/14	15	0.007	11	0.000	invalid	invalid
5/15/14	invalid	invalid	25	0.007	23	0.020
5/16/14	25	0.014	28	0.026	21	0.040
5/19/14	84	0.096	45	0.027	47	0.007
5/20/14	86	0.084	48	0.007	52	0.007
5/21/14	54	0.035	64	0.055	51	0.035
5/22/14	45	0.007	72	0.061	58	0.028
5/23/14	38	0.007	40	0.007	35	0.007
5/27/14	26	0.021	26	0.014	46	0.007
5/28/14	19	0.014	21	0.014	23	0.034
5/29/14	19	0.007	20	0.007	20	0.007
5/30/14	26	0.007	20	0.007	20	0.007

Monthly Avg. TSP	51	47	48
Monthly Avg. Pb	0.038	0.018	0.024
Apr-14	0.025	0.011	0.023
Mar-14	0.023	0.011	0.019
Rolling 3-Month	**0.029**	**0.013**	**0.022**

Three month rolling average must be less than 0.15 ug/m3

NOTES: 5/14 Water Treatment Plant: <23hr run time
5/15 St. Joe: <23hr run time, GFI breaker tripped.

	Big River QA	
Sample Date	**TSP** ug/m3	**Lead** ug/m3
5/1/14	27	0.020
5/6/14	166	0.035
5/8/14	48	0.007
5/13/14	19	0.000
5/15/14	28	0.007
5/20/14	51	0.007
5/22/14	74	0.069
5/27/14	28	0.014
5/29/14	19	0.007

Rivermines

Sample Results for **May-2014**

	Big River #4		Rivermines South #1		Rivermines North #2		Rivermines East #3	
Sample Date	**TSP** ug/m3	**Lead** ug/m3	**TSP** ug/m3	**Lead** ug/m3	**TSP** ug/m3	**Lead** ug/m3	**TSP** ug/m3	**Lead** ug/m3
5/1/14	29	0.020	16	0.007	14	0.007	25	0.068
5/2/14	60	0.040	42	0.027	31	0.007	51	0.062
5/5/14	103	0.007	83	0.007	67	0.128	97	0.042
5/6/14	136	0.028	128	0.007	111	0.085	110	0.021
5/7/14	113	0.021	123	0.007	107	0.149	135	0.021
5/8/14	50	0.007	57	0.007	48	0.113	56	0.028
5/9/14	37	0.007	36	0.007	32	0.021	37	0.007
5/12/14	25	0.014	34	0.007	30	0.077	33	0.021
5/13/14	20	0.007	15	0.067	17	0.000	13	0.007
5/14/14	11	0.000	12	0.013	12	0.007	invalid	invalid
5/15/14	25	0.007	23	0.007	26	0.014	23	0.020
5/16/14	28	0.026	23	0.027	16	0.007	21	0.040
5/19/14	45	0.027	50	0.007	46	0.131	47	0.007
5/20/14	48	0.007	50	0.007	61	0.182	52	0.007
5/21/14	64	0.055	49	0.028	48	0.084	51	0.035
5/22/14	72	0.061	67	0.118	49	0.007	58	0.028
5/23/14	40	0.007	33	0.014	43	0.007	35	0.007
5/27/14	26	0.014	41	0.123	13	0.035	46	0.007
5/28/14	21	0.014	23	0.062	14	0.007	23	0.034
5/29/14	20	0.007	20	0.007	18	0.007	20	0.007
5/30/14	20	0.007	19	0.007	18	0.014	20	0.007

Monthly Avg. TSP	47	45	39	48
Monthly Avg. Pb	0.018	0.027	0.052	0.024
Apr-14	0.011	0.077	0.023	0.023
Mar-14	0.014	0.035	0.067	0.031
Rolling 3-Month	**0.014**	**0.046**	**0.047**	**0.026**

Three month rolling average must be less than 0.15 ug/m3

NOTES: 5/14 Rivermines East #3: <23hr run time

	Big River QA	
Sample Date	**TSP** ug/m3	**Lead** ug/m3
5/1/14	27	0.020
5/6/14	166	0.035
5/8/14	48	0.007
5/13/14	19	0.000
5/15/14	28	0.007
5/20/14	51	0.007
5/22/14	74	0.069
5/27/14	28	0.014
5/29/14	19	0.007

National Site

Sample Results for **May-2014**

	Big River #4		Ozark #1		Soccer Park #2		Water Treatment Plant	
Sample Date	**TSP** ug/m3	**Lead** ug/m3	**TSP** ug/m3	**Lead** ug/m3	**TSP** ug/m3	**Lead** ug/m3	**TSP** ug/m3	**Lead** ug/m3
5/1/14	29	0.020	36	0.014	78	0.007	25	0.068
5/2/14	60	0.040	invalid	invalid	49	0.014	51	0.062
5/5/14	103	0.007	107	0.027	118	0.035	97	0.042
5/6/14	136	0.028	127	0.028	129	0.043	110	0.021
5/7/14	113	0.021	120	0.035	117	0.042	135	0.021
5/8/14	50	0.007	57	0.014	58	0.014	56	0.028
5/9/14	37	0.007	33	0.007	34	0.014	37	0.007
5/12/14	25	0.014	25	0.007	35	0.014	33	0.021
5/13/14	20	0.007	13	0.000	21	0.007	13	0.007
5/14/14	11	0.000	19	0.000	7	0.000	invalid	invalid
5/15/14	25	0.007	26	0.007	29	0.007	23	0.020
5/16/14	28	0.026	19	0.007	22	0.020	21	0.040
5/19/14	45	0.027	59	0.021	74	0.041	47	0.007
5/20/14	48	0.007	63	0.028	62	0.056	52	0.007
5/21/14	64	0.055	53	0.014	51	0.014	51	0.035
5/22/14	72	0.061	47	0.007	48	0.007	58	0.028
5/23/14	40	0.007	37	0.007	41	0.014	35	0.007
5/27/14	26	0.014	26	0.014	39	0.021	46	0.007
5/28/14	21	0.014	23	0.007	22	0.014	23	0.034
5/29/14	20	0.007	25	0.007	24	0.014	20	0.007
5/30/14	20	0.007	27	0.007	23	0.014	20	0.007

Monthly Avg. TSP	47	47	51	48
Monthly Avg. Pb	0.018	0.013	0.020	0.024
Apr-14	0.011	0.010	0.013	0.023
Mar-14	0.014	0.025	0.067	0.031
Rolling 3-Month	**0.014**	**0.016**	**0.033**	**0.026**

Three month rolling average must be less than 0.15 ug/m3

NOTES: 5/2 Ozark #1: <23hr run time
5/14 Water Treatment Plant: <23hr run time

	Big River QA	
Sample Date	**TSP** ug/m3	**Lead** ug/m3
5/1/14	27	0.020
5/6/14	166	0.035
5/8/14	48	0.007
5/13/14	19	0.000
5/15/14	28	0.007
5/20/14	51	0.007
5/22/14	74	0.069
5/27/14	28	0.014
5/29/14	19	0.007

Leadwood

Sample Results for **May-2014**

	Big River #4		Leadwood South #1		Leadwood East #2		Leadwood North #3	
	TSP	**Lead**	**TSP**	**Lead**	**TSP**	**Lead**	**TSP**	**Lead**
Sample Date	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3	ug/m3
5/1/14	29	0.020	32	0.013	17	0.000	18	0.000
5/2/14	60	0.040	61	0.020	32	0.007	39	0.007
5/5/14	103	0.007	147	0.014	76	0.007	83	0.007
5/6/14	136	0.028	127	0.014	92	0.007	95	0.007
5/7/14	113	0.021	128	0.007	98	0.007	116	0.007
5/8/14	50	0.007	71	0.007	42	0.007	47	0.000
5/9/14	37	0.007	44	0.007	34	0.007	invalid	invalid
5/12/14	25	0.014	36	0.000	28	0.007	26	0.000
5/13/14	20	0.007	15	0.007	65	0.000	12	0.000
5/14/14	11	0.000	13	0.000	12	0.000	10	0.000
5/15/14	25	0.007	32	0.007	29	0.000	31	0.000
5/16/14	28	0.026	27	0.013	18	0.007	20	0.007
5/19/14	45	0.027	55	0.007	39	0.007	41	0.000
5/20/14	48	0.007	102	0.020	45	0.007	44	0.000
5/21/14	64	0.055	81	0.028	60	0.077	47	0.007
5/22/14	72	0.061	60	0.034	75	0.005	51	0.007
5/23/14	40	0.007	44	0.027	38	0.001	34	0.007
5/27/14	26	0.014	34	0.020	20	0.007	invalid	invalid
5/28/14	21	0.014	19	0.014	invalid	invalid	14	0.007
5/29/14	20	0.007	15	0.014	18	0.007	16	0.007
5/30/14	20	0.007	24	0.014	23	0.007	18	0.000

Monthly Avg. TSP	47	55	43	40
Monthly Avg. Pb	0.018	0.014	0.009	0.004
Apr-14	0.011	0.013	0.007	0.004
Mar-14	0.014	0.018	0.009	0.006
Rolling 3-Month	**0.014**	**0.015**	**0.008**	**0.004**

Three month rolling average must be less than 0.15 ug/m3

NOTES:

5/9 Leadwood #3: bearing failure
5/27 Leadwood #3: <23hr run time
5/28 Leadwood #2: <23hr run time

	Big River QA	
	TSP	**Lead**
Sample Date	ug/m3	ug/m3
5/1/14	27	0.020
5/6/14	166	0.035
5/8/14	48	0.007
5/13/14	19	0.000
5/15/14	28	0.007
5/20/14	51	0.007
5/22/14	74	0.069
5/27/14	28	0.014
5/29/14	19	0.007

Federal Site

Sample Results for **May-2014**

Sample Date	St. Joe (Ballfields) **PM10** (ug/m3)	Big River#4 **PM10** (ug/m3)	Water Treatment **PM10** (ug/m3)
5/2/14	26	28	27
5/5/14	74	54	48
5/8/14	50	35	invalid
5/11/14	26	40	25
5/14/14	9	14	15
5/17/14	12	13	17
5/20/14	invalid	25	30
5/23/14	invalid	22	22
5/29/14	15	16	18

Compliance with NAAQS is less than 150 ug/m3

Monthly Avg. PM10	30	27	25

NOTES:

5/8 WTP: <23hr run time - bearing failure
5/20 St. Joe: >25hr run time
5/23 St. Joe: <23hr run time

Sample Date	Big River QA **PM10** (ug/m3)
5/5/14	36
5/11/14	26
5/17/14	15
5/23/14	19
5/29/14	18

National Site

Sample Results for **May-2014**

Sample Date	Big River #4 **PM10** (ug/m3)	Ozark #1 **PM10** (ug/m3)	Soccer Park #2 **PM10** (ug/m3)	Water Treatment **PM10** (ug/m3)
5/2/14	28	27	26	27
5/5/14	54	41	54	48
5/8/14	35	36	40	invalid
5/11/14	40	25	27	25
5/14/14	14	10	12	15
5/17/14	13	15	17	17
5/20/14	25	25	29	30
5/23/14	22	20	25	22
5/29/14	16	14	16	18

Compliance with NAAQS is less than 150 ug/m3

Monthly Avg. PM10	27	24	27	25

NOTES: 5/8 WTP: <23hr run time - bearing failure

Sample Date	Big River QA **PM10** (ug/m3)
5/5/14	36
5/11/14	26
5/17/14	15
5/23/14	19
5/29/14	18

Leadwood

Sample Results for **May-2014**

Sample Date	Big River #4 **PM10** (ug/m3)	Leadwood South #1 **PM10** (ug/m3)	Leadwood East #2 **PM10** (ug/m3)	Leadwood North #3 **PM10** (ug/m3)
5/2/14	28	18	39	16
5/5/14	54	50	invalid	41
5/8/14	35	29	33	31
5/11/14	40	19	25	26
5/14/14	14	9	11	10
5/17/14	13	17	invalid	14
5/20/14	25	38	23	26
5/23/14	22	22	21	21
5/29/14	16	15	18	19

Compliance with NAAQS is less than 150 ug/m3

Monthly Avg. PM10	27	24	24	23

NOTES: 5/5 East #2: >25hr run time
5/20 East #2: <23hr run time

Sample Date	Big River QA **PM10** (ug/m3)
5/5/14	36
5/11/14	26
5/17/14	15
5/23/14	19
5/29/14	18

Rivermines

Sample Results for **May-2014**

Sample Date	Big River #4 **PM10** (ug/m3)	Rivermines South #1 **PM10** (ug/m3)	Rivermines North #2 **PM10** (ug/m3)	Rivermines East #3 **PM10** (ug/m3)
5/2/14	28	25	23	27
5/5/14	54	57	46	48
5/8/14	35	35	33	invalid
5/11/14	40	24	19	25
5/14/14	14	16	10	15
5/17/14	13	16	14	17
5/20/14	25	27	25	30
5/23/14	22	20	19	22
5/29/14	16	19	14	18

Compliance with NAAQS is less than 150 ug/m3

Monthly Avg. PM10	27	27	23	25

NOTES: 5/8 East #3: <23hr run time - bearing failure

Sample Date	Big River QA **PM10** (ug/m3)
5/5/14	36
5/11/14	26
5/17/14	15
5/23/14	19
5/29/14	18

Meterological Data - Old Lead Belt
May-2014

24hr average

Date	Wind Speed (MPH)	Wind Direction	Sigma-Theta	Temperature (C)	Air Pressure (mmHg)	Rain (Inches)	Power Supply (Volts)
01-May-14	2.412	355.1	0.664	9.76	744	0	13.41
02-May-14	1.076	355.1	0.72	11.18	742	0	13.38
03-May-14	0.832	355.1	1.123	17.69	742	0	13.3
04-May-14	2.09	355.1	0.055	22.51	742	0	13.24
05-May-14	4.217	355.2	0.883	25.27	738	0	13.2
06-May-14	4.509	355.1	0.059	24.05	738	0	13.19
07-May-14	7.93	355.1	0.1	23.72	740	0	13.21
08-May-14	7.04	355.1	0.111	23.15	741	0.05	13.21
09-May-14	2.746	355.1	1.146	20.48	740	0.45	13.23
10-May-14	2.308	355.1	1.005	22.13	741	0	13.22
11-May-14	4.324	355.1	1.352	24.14	742	0.02	13.2
12-May-14	6.45	355.1	0.097	23.8	742	0.42	13.2
13-May-14	2.622	327.9	20.96	14.13	746	1.21	13.22
14-May-14	5.269	337.4	21.86	9.14	747	0.61	13.24
15-May-14	2.607	265.1	33.59	10.6	746	0.07	13.29
16-May-14	2.79	261.9	33.37	9.31	747	0	13.42
17-May-14	1.958	130.8	41.2	10.9	748	0	13.38
18-May-14	2.723	133.4	38.39	13.13	749	0	13.35
19-May-14	6.933	176.5	23.12	18.04	746	0	13.32
20-May-14	6.846	203.7	21.62	23.86	743	0	13.22
21-May-14	4.182	226	26.17	25.11	744	0	13.19
22-May-14	2.485	339.5	33.07	23.9	746	0	13.18
23-May-14	2.244	49.42	38.45	20.61	748	0.03	13.21
24-May-14	2.376	110.5	27.77	20.2	747	0	13.25
25-May-14	2.646	108.8	32.17	22.52	745	0	13.21
26-May-14	2.464	208	26.91	22.87	745	0.1	13.19
27-May-14	1.745	212.2	34.61	21.5	744	0.14	13.17
28-May-14	1.937	190.2	37.87	20.85	744	0	13.23
29-May-14	1.968	111.5	28.78	21.29	744	0.05	13.24
30-May-14	2.192	102	33.6	23.12	745	0.07	13.2