ANALYTICAL REPORT

Job Number: 180-22323-1

SDG Number: 69420

Job Description: Burns & McDonnell (Willow/Hawthorne)

For:
Natural Resource Technology, Inc.
300 S. Wacker Drive
Suite 2050
Chicago, IL 60606

Attention: Ms. Sarah L Meyer

Approved for release.
Carrie L Gamber
Customer Service Manager
6/24/2013 8:32 AM

Carrie L Gamber, Customer Service Manager
301 Alpha Drive, Pittsburgh, PA, 15238
(412)963-2428
carrie.gamber@testamericainc.com
06/24/2013

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Comments
No additional comments.

Receipt
The sample was received on 6/19/2013 8:40 AM; the sample arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 2.8º C.

General Chemistry
No analytical or quality issues were noted.

SAMPLE SUMMARY

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
Sdg Number: 69420

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
180-22323-1	061813074	Water	06/18/2013 0935	06/19/2013 0840

EXECUTIVE SUMMARY - Detections

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
Sdg Number: 69420

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method

No Detections

METHOD SUMMARY

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
Sdg Number: 69420

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Cyanide, Available (Flow Injection)	TAL PIT	OI CORP OIA-1677	

Lab References:

TAL PIT = TestAmerica Pittsburgh

Method References:

OI CORP = OI Corporation Instrument Manual.

METHOD / ANALYST SUMMARY

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
Sdg Number: 69420

Method	Analyst	Analyst ID
OI CORP OIA-1677	Johnson, Paul	PGJ

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
Sdg Number: 69420

General Chemistry

Client Sample ID: **061813074**

Lab Sample ID: 180-22323-1
Client Matrix: Water

Date Sampled: 06/18/2013 0935
Date Received: 06/19/2013 0840

Analyte	Result	Qual	Units	RL	Dil	Method
Available cyanide	0.0020	U	mg/L	0.0020	1.0	OIA-1677

Analysis Batch: 180-75392 Analysis Date: 06/20/2013 1304

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
Sdg Number: 69420

Method Blank - Batch: 180-75392

Method: OIA-1677
Preparation: N/A

Lab Sample ID:	MB 180-75392/37	Analysis Batch:	180-75392	Instrument ID:	ALPKEM2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\062013A.R
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	06/20/2013 1300	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL
Available cyanide	0.0020	U	0.0020

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 180-75392

Method: OIA-1677
Preparation: N/A

LCS Lab Sample ID:	LCS 180-75392/35	Analysis Batch:	180-75392	Instrument ID:	ALPKEM2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\062013A.R
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	06/20/2013 1257	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 180-75392/36	Analysis Batch:	180-75392	Instrument ID:	ALPKEM2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	C:\FLOW_4\062013A.R
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	06/20/2013 1258	Units:	mg/L	Final Weight/Volume:	10 mL
Prep Date:	N/A				
Leach Date:	N/A				

	% Rec.						
Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Available cyanide	101	103	82 - 132	2	20		

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 180-75392

Method: OIA-1677
Preparation: N/A

LCS Lab Sample ID:	LCS 180-75392/35	Units: mg/L	LCSD Lab Sample ID: LCSD 180-75392/36
Client Matrix:	Water		Client Matrix: Water
Dilution:	1.0		Dilution: 1.0
Analysis Date:	06/20/2013 1257		Analysis Date: 06/20/2013 1258
Prep Date:	N/A		Prep Date: N/A
Leach Date:	N/A		Leach Date: N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Available cyanide	0.100	0.100	0.101	0.103

DATA REPORTING QUALIFIERS

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
Sdg Number: 69420

Lab Section	Qualifier	Description
General Chemistry		
	U	Indicates the analyte was analyzed for but not detected.

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
Sdg Number: 69420

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
General Chemistry					
Analysis Batch:180-75392					
LCS 180-75392/35	Lab Control Sample	T	Water	OIA-1677	
LCSD 180-75392/36	Lab Control Sample Duplicate	T	Water	OIA-1677	
MB 180-75392/37	Method Blank	T	Water	OIA-1677	
180-22323-1	061813074	T	Water	OIA-1677	

Report Basis
T = Total

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
SDG: 69420

Laboratory Chronicle

Lab ID: **180-22323-1** **Client ID:** **061813074**

Sample Date/Time: 06/18/2013 09:35 Received Date/Time: 06/19/2013 08:40

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:OIA-1677	180-22323-A-1		180-75392		06/20/2013 13:04	1	TAL PIT	PGJ

Lab ID: **MB** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:OIA-1677	MB 180-75392/37		180-75392		06/20/2013 13:00	1	TAL PIT	PGJ

Lab ID: **LCS** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:OIA-1677	LCS 180-75392/35		180-75392		06/20/2013 12:57	1	TAL PIT	PGJ

Lab ID: **LCSD** **Client ID:** **N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
A:OIA-1677	LCSD 180-75392/36		180-75392		06/20/2013 12:58	1	TAL PIT	PGJ

Lab References:
TAL PIT = TestAmerica Pittsburgh

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Pittsburgh Job No.: 180-22323-1

SDG No.: 69420

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
WAvCN.1StdCCV_00120	06/20/13	06/18/13	DI Water, Lot NA	1000 mL	WAvCN10Pi_00185	10 mL	Available cyanide	0.1 mg/L
.WAvCN10Pi_00185	06/20/13	06/18/13	DI Water, Lot DI Water	100 mL	WAvCN1000P_00008	1 mL	Available cyanide	10 mg/L
..WAvCN1000P_00008	08/01/13	LabChem Inc, Lot C030-16			(Purchased Reagent)		Available cyanide	1000 mg/L
WAvCN0.1ICV_00120	06/20/13	06/18/13	DI Water, Lot NA	200 mL	WAvCN10Si_00187	2 mL	Available cyanide	0.1 mg/L
.WAvCN10Si_00187	06/20/13	06/18/13	DI Water, Lot DI Water	100 mL	WAvCN1000S_00011	1 mL	Available cyanide	10 mg/L
..WAvCN1000S_00011	07/31/13	Ricca Chemical Co., Lot 2301579			(Purchased Reagent)		Available cyanide	1000 mg/L
WAvCN0.1LCS_00124	06/20/13	06/18/13	DI Water, Lot NA	1000 mL	WHg210Pi_00192	10 mL	Available cyanide	0.100116 mg/L
.WHg210Pi_00192	06/20/13	06/18/13	DI Water, Lot DI water	100 mL	WHg2CN1000P_00010	1 mL	Available cyanide	10.0116 mg/L
..WHg2CN1000P_00010	08/18/13	02/18/13	DI Water, Lot DI Water	500 mL	WHg(II) CNP_00003	2.43 g	Available cyanide	1001.16 mg/L
...WHg(II) CNP_00003	03/18/14	Sigma-Aldrich, Lot 030M1156V			(Purchased Reagent)		Available cyanide	0.206 g/g

789036
ID WCN1000P_00018
Exp 08/01/13 Prpd PJ Opn 04/09/13
Cyanide 1000 ppm Primary

789037
ID WAvCN1000P_00008
Exp:08/01/13 Prpd:PJ Opn:04/09/13
Available Cyanide 1000 PP

LabChem
performance through chemistry
200 William Pitt Way, Pittsburgh, PA 15238
Ph: 412- 826-5230 | Fax: 412-826-5234

CERTIFICATE OF ANALYSIS

Description: CYANIDE STANDARD, 1000ppm (1ml = 1mg CN)

Catalog Number: LC13545
Lot Number: C030-16

Mfg Date: 02/01/2013
Expiration Date: 08/01/2013

ANALYTICAL SECTION

Test	Specification	Test Result
Appearance	clear, colorless solution	Pass Test
Concentration ppm CN	1000ppm +/- 10ppm	1007ppm
Concentration mg CN/mL	1.000mg/mL +/- 0.010 mg CN/mL	1.007mg CN/mL
Traceable to NIST	Potassium Chloride	999b

Submitted By: Greg Albright, Chemist Supervisor

Greg Albright

An ISO9001:2008 certified company. Registration # 0306-01

04/05/2013 8:23:12 AM

Form #17.12 06/19/2012

Page 1 of 1

793111
ID: WCN1000S_00011
Exp:07/31/13 Prpd:PJ Opn:04/12/13
Cyanide 1000 ppm Secondar

793112
ID: WAvCN1000S_00011
Exp:07/31/13 Prpd:PJ Opn:04/12/13
Available Cyanide 1000 pp

RICCA ICAL PANY

Arlington, TX 76012
Pocomoke City, MD 21851
Batesville, IN 47006
http://www.riccachemical.com
1-888-GO-RICCA
customerservice@riccachemical.com

Certificate of Analysis

Cyanide Standard, 1 mL = 1 mg CN, 1000 ppm CN

Lot Number: 2301579 Product Number: 2543 Expiration Date: JUL 2013 Manufacture Date:1/21/2013

This standard is prepared using accurate volumetric techniques from material that has been assayed against Silver Nitrate solution certified traceable to NIST Standard Reference Material 999. The certified value reported is the prepared value based upon the method of preparation of the material. The uncertainty in the prepared value is the combined uncertainty based on the stability of the assayed Potassium Cyanide, and the uncertainty in the mass and volume measurements.
Use 0.16% (w/v) (0.04 N) Sodium Hydroxide or 0.225 % (w/v) (0.04 N) Potassium Hydroxide to make dilutions of this standard.
Restandardize weekly if extreme accuracy is required.

Contains:

Name	CAS#	Grade
Potassium Cyanide, KCN	151-50-8	ACS
Sodium Hydroxide, NaOH	1310-73-2	ACS
Water, Deionized, H2O	7732-18-5	ACS, ASTM D 1193 (Type I), EP, USP

Test Name	Assay Method	Specification	Result
Appearance	Clarity, Color, Odor	Clear, colorless, cyanide odor	Passed Test
Certified Concentration	Based on accurate volumetric preparation	1000 ± 5 ppm CN-	1000 ppm CN-

Specification	Reference	Method Number
Stock Standard Cyanide Solution	APHA	4500-CN- F
Stock Cyanide Solution	APHA	4500-CN- E
Stock Cyanide Solution	APHA	4500-CN- K
Stock Cyanide Solution	APHA	4500-CN- H
Cyanide Reference Solution (1000 mg/L)	EPA (SW-846)	7.3.3.2
Cyanide Calibration Stock Solution (1,000 mg/L CN-)	EPA (SW-846)	9213
Stock Cyanide Solution	EPA	335.3
Stock Cyanide Solution	EPA	335.2
Cyanide Solution Stock	ASTM	D 4282
Simple Cyanide Solution, Stock (1.0 g/L CN)	ASTM	D 4374

Volumetric glassware complies with Class A tolerance requirements of ASTM E 288 and NIST Circular 434; it is calibrated before first use and recalibrated regularly in accordance with ASTM E 542 and NIST Procedure NBSIR 74-461. Balances are calibrated regularly with weights certified traceable to the NIST national mass standard. Thermometers and temperature probes are calibrated before first use and recalibrated regularly with a thermometer traceable to NIST standards. All products are prepared according to master documents that assure manufacture according to validated methods. Batch records document raw material traceability and production and testing history for each lot manufactured.

Shelf Life (unopened container):

Part Number	Shelf Life
2543-4	6 months
2543-32	6 months
2543-16	6 months

Recommended Storage: 2°C - 8°C (36°F - 46°F)

LaNelle Ohlhausen
Quality Assurance

This Certificate of Analysis is designed to comply with ISO Guide 31 "Reference Materials -- Contents of Certificates and Labels."

Version: 2

Certification Summary

Client: Natural Resource Technology, Inc.
Project/Site: Burns & McDonnell (Willow/Hawthorne)

TestAmerica Job ID: 180-22323-1
SDG: 69420

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Pittsburgh	Arkansas DEQ	State Program	6	88-0690
TestAmerica Pittsburgh	California	NELAP	9	4224CA
TestAmerica Pittsburgh	Connecticut	State Program	1	PH-0688
TestAmerica Pittsburgh	Florida	NELAP	4	E871008
TestAmerica Pittsburgh	Illinois	NELAP	5	002602
TestAmerica Pittsburgh	Kansas	NELAP	7	E-10350
TestAmerica Pittsburgh	L-A-B	DoD ELAP		L2314
TestAmerica Pittsburgh	Louisiana	NELAP	6	04041
TestAmerica Pittsburgh	New Hampshire	NELAP	1	203011
TestAmerica Pittsburgh	New Jersey	NELAP	2	PA005
TestAmerica Pittsburgh	New York	NELAP	2	11182
TestAmerica Pittsburgh	North Carolina DENR	State Program	4	434
TestAmerica Pittsburgh	Pennsylvania	NELAP	3	02-00416
TestAmerica Pittsburgh	South Carolina	State Program	4	89014
TestAmerica Pittsburgh	US Fish & Wildlife	Federal		LE94312A-1
TestAmerica Pittsburgh	USDA	Federal		P330-10-00139
TestAmerica Pittsburgh	USDA	Federal		P-Soil-01
TestAmerica Pittsburgh	Utah	NELAP	8	STLP
TestAmerica Pittsburgh	Virginia	NELAP	3	460189
TestAmerica Pittsburgh	West Virginia DEP	State Program	3	142
TestAmerica Pittsburgh	Wisconsin	State Program	5	998027800

Accreditation may not be offered or required for all methods and analytes reported in this package Please contact your project manager for the laboratory's current list of certified methods and analytes.

GENERAL CHEMISTRY

COVER PAGE
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job Number: 180-22323-1

SDG No.: 69420

Project: Burns & McDonnell (Willow/Hawthorne)

Client Sample ID	Lab Sample ID
061813074	180-22323-1

Comments:

1B-IN
INORGANIC ANALYSIS DATA SHEET
GENERAL CHEMISTRY

Client Sample ID: 061813074
Lab Sample ID: 180-22323-1
Lab Name: TestAmerica Pittsburgh
Job No.: 180-22323-1
SDG ID.: 69420
Matrix: Water
Date Sampled: 06/18/2013 09:35
Reporting Basis: WET
Date Received: 06/19/2013 08:40

CAS No.	Analyte	Result	RL	MDL	Units	C	Q	DIL	Method
	Available cyanide	0.0020	0.0020	0.0018	mg/L	U		1	OIA-1677

2-IN
CALIBRATION QUALITY CONTROL
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-22323-1

SDG No.: 69420

Analyst: PGJ Batch Start Date: 06/20/2013

Reporting Units: mg/L Analytical Batch No.: 75392

Sample Number	QC Type	Time	Analyte	Result	Spike Amount	(%) Recovery	Limits	Qual	Reagent
14	ICV	12:21	Available cyanide	0.102	0.100	102	85-115		WAvCN0.1ICV_00120
15	ICB	12:23	Available cyanide	0.0020				U	
32	CCV	12:52	Available cyanide	0.106	0.100	106	86-118		WAvCN.1StdCCV_00120
33	CCB	12:54	Available cyanide	0.0020				U	
42	CCV	13:07	Available cyanide	0.103	0.100	103	86-118		WAvCN.1StdCCV_00120
43	CCB	13:09	Available cyanide	0.0020				U	

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

FORM II-IN

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-22323-1

SDG No.: 69420

Method	Lab Sample ID	Analyte	Result	Qual	Units	RL	Dil
Batch ID: 75392	Date: 06/20/2013 13:00						
OIA-1677	MB 180-75392/37	Available cyanide	0.0020	U	mg/L	0.0020	1

FORM III-IN

7A-IN
LAB CONTROL SAMPLE
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-22323-1

SDG No.: 69420

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 75392		Date: 06/20/2013 12:57									
						LCS Source:	WAvCN0.1LCS_00124				
OIA-1677	LCS 180-75392/35	Available cyanide	0.101		mg/L	0.100	101	82-132	2	20	

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

FORM VIIA-IN

7A-IN
LAB CONTROL SAMPLE DUPLICATE
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-22323-1

SDG No.: 69420

Matrix: Water

Method	Lab Sample ID	Analyte	Result	C	Unit	Spike Amount	Pct. Rec.	Limits	RPD	RPD Limit	Q
Batch ID: 75392		Date: 06/20/2013 12:58									
						LCSD Source: WAvCN0.1LCS_00124					
OIA-1677	LCSD 180-75392/36	Available cyanide	0.103		mg/L	0.100	103	82-132	2	20	

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

FORM VIIA-IN

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job Number: 180-22323-1

SDG Number: 69420

Matrix: Water Instrument ID: ALPKEM2

Method: OIA-1677 MDL Date: 01/10/2013 08:36

Analyte	Wavelength/ Mass	RL (mg/L)	MDL (mg/L)
Available cyanide		0.002	0.0018

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job Number: 180-22323-1

SDG Number: 69420

Matrix: Water Instrument ID: ALPKEM2

Method: OIA-1677 XMDL Date: 01/10/2013 08:36

Analyte	Wavelength/ Mass	XRL (mg/L)	XMDL (mg/L)
Available cyanide		0.002	0.0018

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Pittsburgh Job No.: 180-22323-1

SDG No.: 69420

Instrument ID: ALPKEM2 Method: OIA-1677

Start Date: 06/20/2013 12:02 End Date: 06/20/2013 15:12

Lab Sample ID	D/F	Type	Time	Analytes																			
				CNAm																			
ICV 180-75392/14	1		12:21	X																			
ICB 180-75392/15	1		12:23	X																			
CCV 180-75392/32	1		12:52	X																			
CCB 180-75392/33	1		12:54	X																			
LCS 180-75392/35	1	T	12:57	X																			
LCSD 180-75392/36	1	T	12:58	X																			
MB 180-75392/37	1	T	13:00	X																			
180-22323-1	1	T	13:04	X																			
CCV 180-75392/42	1		13:07	X																			
CCB 180-75392/43	1		13:09	X																			

Prep Types
T = Total/NA

Peak Table:Cyanide, Amenable

File name: C:\FLOW_4\062013A.RST
Date: 20-Jun-13
Operator: P.JOHNSON

D. Johnson 6/20/13

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppm)	Flags
1	1	SYNC	1	SYNC	1	1	408100	0.185246	
2	0	BLANK	1	BLNK	1	1	5142	0.001551	
3	0	BLANK	2	BLNK	1	1	1254	-0.000221	LO
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
5	2	Cal 0.000 ppm	1	C	1	1	705	-0.000472	LO
6	3	Cal 0.002 ppm	1	C	1	1	4228	0.001134	
7	4	Cal 0.005 ppm	1	C	1	1	11196	0.004311	
~~8~~	~~5~~	~~Cal 0.010 ppm~~	~~1~~	~~C~~	~~1~~	~~1~~	~~23364~~	~~0.009858~~	
9	6	Cal 0.020 ppm	1	C	1	1	47660	0.020933	
10	7	Cal 0.100 ppm	1	C	1	1	226788	0.102592	
11	8	Cal 0.200 ppm	1	C	1	1	437490	0.198644	
12	0	BLANK	1	BLNK	1	1	2765	0.000468	
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
14	9	ICV	1	U	1	1	225891	0.102183	
15	10	ICB	1	U	1	1	2052	0.000142	
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
17	11	LCS	1	U	1	1	224128	0.101379	
18	12	LCSD	1	U	1	1	227916	0.103106	
19	13	MB	1	U	1	1	2368	0.000286	
20	14	240-25751-C-2	1	U	1	1	919	-0.000374	LO
21	15	240-25781-C-2	1	U	1	1	337	-0.000640	LO
22	16	180-22308-A-1	1	U	1	1	-819	-0.001166	LO
23	17	180-22311-A-1	1	U	1	1	233	-0.000687	LO
24	18	180-22312-A-1	1	U	1	1	1952	0.000097	
~~25~~	~~19~~	~~180-22312-A-2~~	~~1~~	~~U~~	~~1~~	~~1~~	~~58639~~	~~0.025939~~	
26	20	180-22314-A-1	1	U	1	1	1413	-0.000149	LO
27	21	CCV	1	U	1	1	232321	0.105114	
28	22	CCB	1	U	1	1	2033	0.000133	
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
31	19	180-22312-A-2	1	U	1	1	100603	0.045068	
32	21	CCV	1	U	1	1	235057	0.106361	
33	22	CCB	1	U	1	1	2359	0.000282	
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
35	23	LCS	1	U	1	1	224101	0.101367	
36	24	LCSD	1	U	1	1	227793	0.103050	
37	25	MB	1	U	1	1	2303	0.000257	
38	26	180-22317-A-1	1	U	1	1	348	-0.000634	LO
39	27	180-22320-A-1	1	U	1	1	1462	-0.000127	LO
40	28	180-22323-A-1	1	U	1	1	712	-0.000469	LO
41	29	180-22324-A-1	1	U	1	1	4076	0.001065	
42	30	CCV	1	U	1	1	227639	0.102980	
43	31	CCB	1	U	1	1	1888	0.000067	
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
45	32	LCS	1	U	1	1	227966	0.103129	
46	33	LCSD	1	U	1	1	231407	0.104697	
47	34	MB	1	U	1	1	2375	0.000290	
48	35	190-1091-C-1	1	U	10	1	845	-0.004079	LO
49	36	190-1092-B-1	1	U	10	1	9030	0.033235	
50	37	190-1096-B-2	1	U	1	1	1481	-0.000118	LO
~~51~~	~~38~~	~~190-1097-C-1~~	~~1~~	~~U~~	~~1~~	~~1~~	~~8436~~	~~0.003052~~	
52	39	190-1097-C-2	1	U	1	1	8830	0.003232	
53	40	190-1097-C-4	1	U	1	1	2840	0.000502	
~~54~~	~~41~~	~~190-1097-C-5~~	~~1~~	~~U~~	~~1~~	~~1~~	~~10523~~	~~0.004004~~	
55	42	190-1111-A-2	1	U	1	1	1451	-0.000132	LO
~~56~~	~~43~~	~~190-1104-B-1~~	~~1~~	~~U~~	~~1~~	~~1~~	~~6704~~	~~0.002263~~	
57	44	190-1107-B-2	1	U	1	1	2171	0.000196	
58	45	CCV	1	U	1	1	226667	0.102537	
59	46	CCB	1	U	1	1	2205	0.000212	
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
62	38	190-1097-C-1	1	U	1	1	23518	0.009928	
63	39	190-1097-C-2	1	U	1	1	25244	0.010715	

Peak	Cup	Name	R	Type	Dil	Wt	Height	Calc. (ppm)	Flags
64	40	190-1097-C-4	1	U	1	1	14890	0.005995	
65	41	190-1097-C-5	1	U	1	1	38662	0.016832	
66	43	190-1104-B-1	1	U	1	1	32967	0.014235	
67	45	CCV	1	U	1	1	235720	0.106663	
68	46	CCB	1	U	1	1	2438	0.000318	
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
71	47	LCS	1	U	1	1	236611	0.107070	
72	48	LCSD	1	U	1	1	238496	0.107929	
73	49	MB	1	U	1	1	2871	0.000516	
74	50	180-22383-A-1	1	U	1	1	357	-0.000630	LO
75	51	180-22383-A-2	1	U	1	1	404	-0.000609	LO
~~76~~	~~52~~	~~180-22383-A-3~~	~~1~~	~~U~~	~~1~~	~~1~~	~~-190~~	~~-0.000880~~	~~LO~~
77	53	CCV	1	U	1	1	238826	0.108080	
78	54	CCB	1	U	1	1	2046	0.000140	
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
B	0	BASELINE	1	RB	1	1	0	-0.000793	BL
81	55	180-22391-A-1	1	U	1	1	-311	-0.000935	LO
82	56	CCV	1	U	1	1	199310	0.090066	
83	57	CCB	1	U	1	1	1896	0.000071	
B	58	BASELINE	1	RB	1	1	0	-0.000793	BL

Run Results Report

Facility Name
Facility Location
Department
Operator Name P.JOHNSON
Operator ID P.JOHNSON
Platform FS 3000
Software Rev Code 222
Data system ID 57

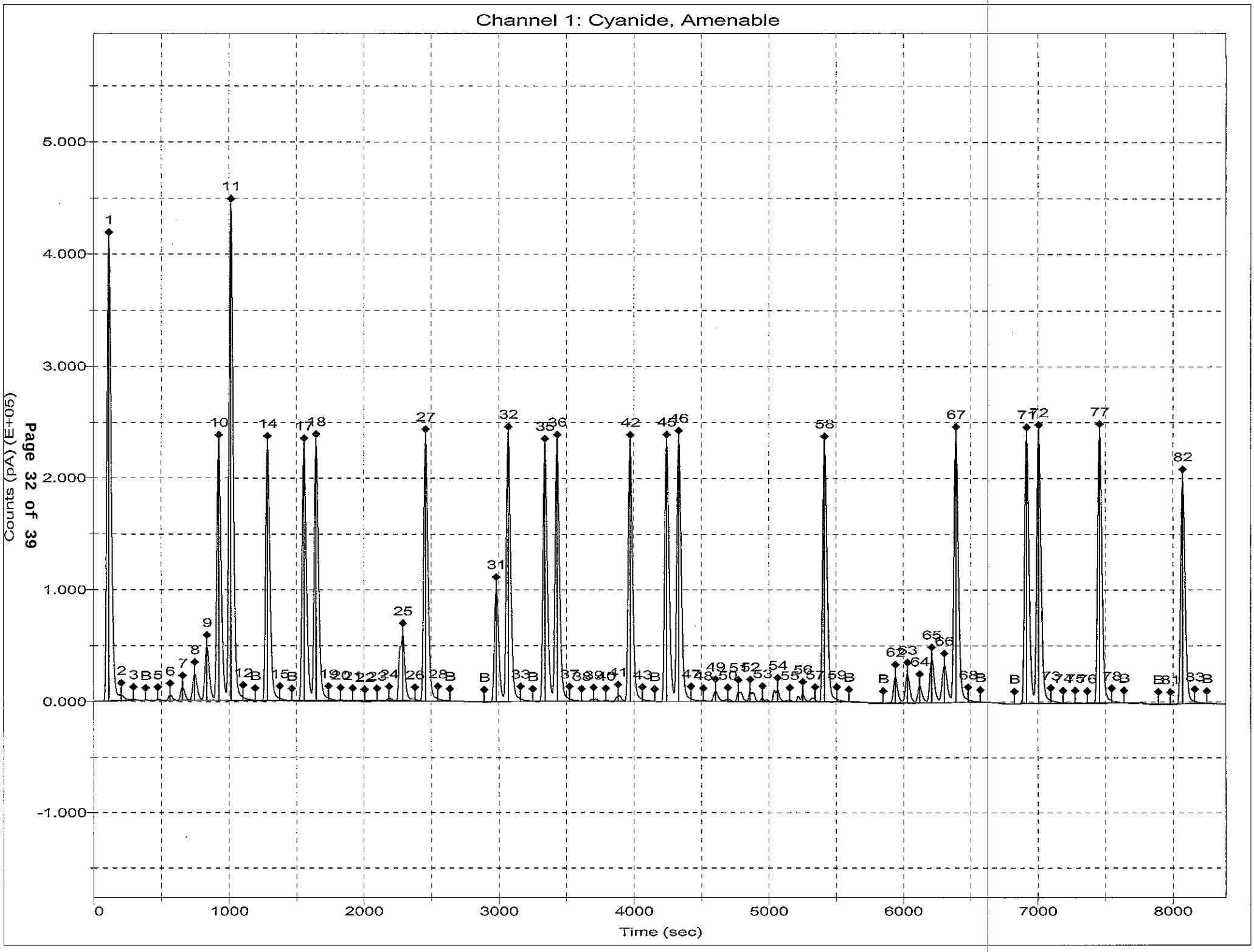
P. Johnson 6/20/13

Result path C:\FLOW_4\062013A.RST
Sample table path C:\FLOW_4\CYANIDE.TBL
Method path C:\FLOW_4\CN-AM.MTH
Date acquired 20-Jun-13
Time acquired 15:16

				|------ Cyanide, Amenable -----|	
Date	Time	Cup	Name	Response	Calc [ppm]	Flags
20-Jun-13	12:02	1	SYNC	408100	0.185	
20-Jun-13	12:03	0	BLANK	5142	0.002	
20-Jun-13	12:05	0	BLANK	1254	0.000	LO
20-Jun-13	12:06	0	BASELINE	0	-0.001	BL
20-Jun-13	12:08	2	Cal 0.000 ppm	705	0.000	LO
20-Jun-13	12:09	3	Cal 0.002 ppm	4228	0.001	
20-Jun-13	12:11	4	Cal 0.005 ppm	11196	0.004	
20-Jun-13	12:12	5	Cal 0.010 ppm	23364	0.010	
20-Jun-13	12:14	6	Cal 0.020 ppm	47660	0.021	
20-Jun-13	12:15	7	Cal 0.100 ppm	226788	0.103	
20-Jun-13	12:17	8	Cal 0.200 ppm	437490	0.199	
20-Jun-13	12:18	0	BLANK	2765	0.000	
20-Jun-13	12:20	0	BASELINE	0	-0.001	BL
20-Jun-13	12:21	9	ICV	225891	0.102	
20-Jun-13	12:23	10	ICB	2052	0.000	
20-Jun-13	12:24	0	BASELINE	0	-0.001	BL
20-Jun-13	12:26	11	LCS	224128	0.101	
20-Jun-13	12:27	12	LCSD	227916	0.103	
20-Jun-13	12:29	13	MB	2368	0.000	
20-Jun-13	12:30	14	240-25751-C-2	919	0.000	LO
20-Jun-13	12:32	15	240-25781-C-2	337	-0.001	LO
20-Jun-13	12:33	16	180-22308-A-1	-819	-0.001	LO
20-Jun-13	12:35	17	180-22311-A-1	233	-0.001	LO
20-Jun-13	12:36	18	180-22312-A-1	1952	0.000	
~~20-Jun-13~~	~~12:38~~	~~19~~	~~180-22312-A-2~~	~~58639~~	~~0.026~~	
20-Jun-13	12:39	20	180-22314-A-1	1413	0.000	LO
20-Jun-13	12:41	21	CCV	232321	0.105	
20-Jun-13	12:42	22	CCB	2033	0.000	
20-Jun-13	12:44	0	BASELINE	0	-0.001	BL
20-Jun-13	12:49	0	BASELINE	0	-0.001	BL
20-Jun-13	12:51	19	180-22312-A-2	100603	0.045	
20-Jun-13	12:52	21	CCV	235057	0.106	
20-Jun-13	12:54	22	CCB	2359	0.000	
20-Jun-13	12:55	0	BASELINE	0	-0.001	BL
20-Jun-13	12:57	23	LCS	224101	0.101	
20-Jun-13	12:58	24	LCSD	227793	0.103	
20-Jun-13	13:00	25	MB	2303	0.000	
20-Jun-13	13:01	26	180-22317-A-1	348	-0.001	LO
20-Jun-13	13:03	27	180-22320-A-1	1462	0.000	LO
20-Jun-13	13:04	28	180-22323-A-1	712	0.000	LO
20-Jun-13	13:06	29	180-22324-A-1	4076	0.001	

Result path C:\FLOW_4\062013A.RST
Sample table path C:\FLOW_4\CYANIDE.TBL
Method path C:\FLOW_4\CN-AM.MTH
Date acquired 20-Jun-13
Time acquired 15:16

				|------ Cyanide, Amenable -----|	
Date	Time	Cup	Name	Response	Calc [ppm]	Flags
20-Jun-13	13:07	30	CCV	227639	0.103	
20-Jun-13	13:09	31	CCB	1888	0.000	
20-Jun-13	13:10	0	BASELINE	0	-0.001	BL
20-Jun-13	13:12	32	LCS	227966	0.103	
20-Jun-13	13:13	33	LCSD	231407	0.105	
20-Jun-13	13:15	34	MB	2375	0.000	
20-Jun-13	13:16	35	190-1091-C-1	845	-0.004	LO
20-Jun-13	13:18	36	190-1092-B-1	9030	0.033	
20-Jun-13	13:19	37	190-1096-B-2	1481	0.000	LO
~~20-Jun-13~~	~~13:21~~	~~38~~	~~190-1097-C-1~~	~~8436~~	~~0.003~~	
20-Jun-13	13:22	39	190-1097-C-2	8830	0.003	
20-Jun-13	13:24	40	190-1097-C-4	2840	0.001	
~~20-Jun-13~~	~~13:25~~	~~41~~	~~190-1097-C-5~~	~~10523~~	~~0.004~~	
20-Jun-13	13:27	42	190-1111-A-2	1451	0.000	LO
~~20-Jun-13~~	~~13:28~~	~~43~~	~~190-1104-B-1~~	~~6704~~	~~0.002~~	
20-Jun-13	13:30	44	190-1107-B-2	2171	0.000	
20-Jun-13	13:31	45	CCV	226667	0.103	
20-Jun-13	13:33	46	CCB	2205	0.000	
20-Jun-13	13:34	0	BASELINE	0	-0.001	BL
20-Jun-13	13:52	0	BASELINE	0	-0.001	BL
20-Jun-13	13:53	38	190-1097-C-1	23518	0.010	
20-Jun-13	13:55	39	190-1097-C-2	25244	0.011	
20-Jun-13	13:56	40	190-1097-C-4	14890	0.006	
20-Jun-13	13:58	41	190-1097-C-5	38662	0.017	
20-Jun-13	13:59	43	190-1104-B-1	32967	0.014	
20-Jun-13	14:01	45	CCV	235720	0.107	
20-Jun-13	14:02	46	CCB	2438	0.000	
20-Jun-13	14:04	0	BASELINE	0	-0.001	BL
20-Jun-13	14:38	0	BASELINE	0	-0.001	BL
20-Jun-13	14:39	47	LCS	236611	0.107	
20-Jun-13	14:41	48	LCSD	238496	0.108	
20-Jun-13	14:42	49	MB	2871	0.001	
20-Jun-13	14:44	50	180-22383-A-1	357	-0.001	LO
20-Jun-13	14:45	51	180-22383-A-2	404	-0.001	LO
20-Jun-13	14:47	52	180-22383-A-3	-190	-0.001	LO
20-Jun-13	14:48	53	CCV	238826	0.108	
20-Jun-13	14:50	54	CCB	2046	0.000	
20-Jun-13	14:51	0	BASELINE	0	-0.001	BL
20-Jun-13	15:06	0	BASELINE	0	-0.001	BL
20-Jun-13	15:08	55	180-22391-A-1	-311	-0.001	LO
20-Jun-13	15:09	56	CCV	199310	0.090	
20-Jun-13	15:11	57	CCB	1896	0.000	
20-Jun-13	15:12	58	BASELINE	0	-0.001	BL


Channel 1: Cyanide, Amenable
Counts (pA) (E+05)
Time (sec)
5.000
4.000
3.000
2.000
1.000
0.000
-1.000
0
1000
2000
3000
4000
5000
6000
7000
8000

Cyanide, Amenable:Calibration 1: Peak 5-84

File name: C:\FLOW_4\062013A.RST
Date: 20-Jun-13
Operator: P.JOHNSON

P Johnson 6/20/13

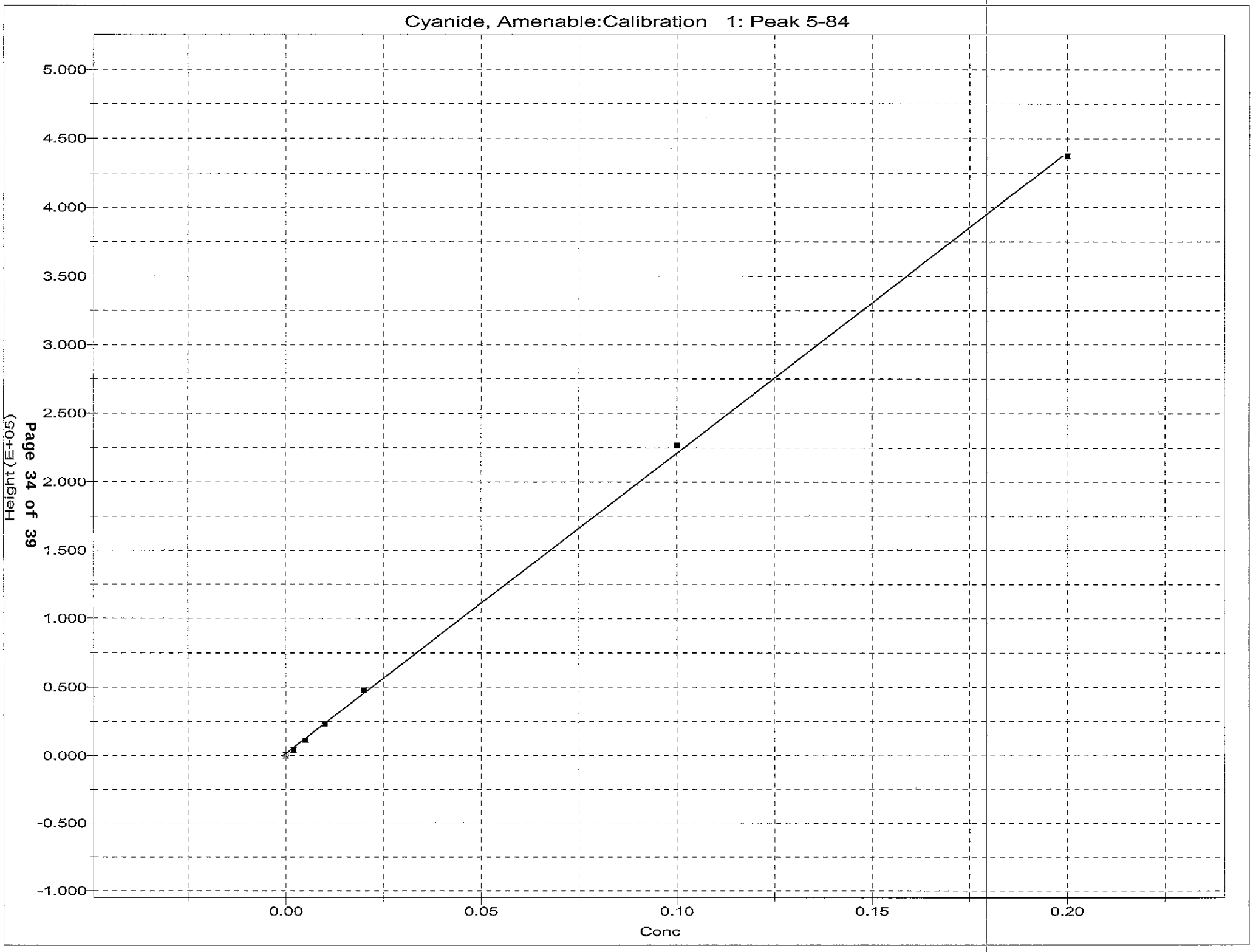
*	Name	Conc	Height
*	Cal 0.000 ppm	0.000000	704.875732
*	Cal 0.002 ppm	0.002000	4227.541016
*	Cal 0.005 ppm	0.005000	11196.494141
*	Cal 0.010 ppm	0.010000	23364.468750
*	Cal 0.020 ppm	0.020000	47659.886719
*	Cal 0.100 ppm	0.100000	226787.937500
*	Cal 0.200 ppm	0.200000	437490.406250

Calib Coef:
y=bx+a
a: (intercept) 1.7399e+03
b: 2.1936e+06

Corr Coef: 0.999841

Carryover: n/a

No Drift Peaks


Cyanide, Amenable:Calibration 1: Peak 5-84
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
-1.000
Height (E+05)
0.00
0.05
0.10
0.15
0.20
Conc

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Pittsburgh Job No.: 180-22323-1

SDG No.: 69420

Batch Number: 75392 Batch Start Date: 06/20/13 12:02 Batch Analyst: Johnson, Paul

Batch Method: OIA-1677 Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	WAvCN.1StdCCV 00120	WAvCN0.1ICV 00120	WAvCN0.1LCS 00124		
ICV 180-75392/14		OIA-1677		10 mL		10 mL			
CCV 180-75392/32		OIA-1677		10 mL	10 mL				
LCS 180-75392/35		OIA-1677		10 mL			10 mL		
LCSD 180-75392/36		OIA-1677		10 mL			10 mL		
CCV 180-75392/42		OIA-1677		10 mL	10 mL				

Batch Notes	
Ascorbic Acid Reagent ID Number	010373
Cadmiun Chloride Reagent ID number	476465
Sodium Hydroxide Reagent ID Number	856001
Pipette ID	D1203183U,D1203165U
WAD AR Solution Reagent ID	856003
WAD Carrier Solution Reagent ID	856002
WAD A Reagent ID	831530
WAD B Reagent ID	831531

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Shipping and Receiving Documents

Burns & McDonnell SINCE 1898

Request for Che[illegible] cord

1 of 1

180-22323 Chain of Custody

Burns & McDonnell Engineering
1431 Opus Place
Downers Grove, Illinois 60515
Phone: (630) 724-3200 Fax: (630) 724-3201
Attention: Sarah Meyer
Report to: Smeyer@naturalit.com

Laboratory: Test America
Address: 301 Alpha Drive
City/State/ZIP: Pittsburgh PA 15238
Telephone: 412-963-7058

Document Control No.: 69420-086-2013

Lab. Reference No. or Episode No.:

Project Number: 69420

Site Name: Peoples Gas - Willow Street/Hawthorne

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type			Number of Containers	Parameter/Method Code						Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Matrix: Liquid	Solid	Gas		Available Cyanide *						
061813074		—	—		—		6/18/13	0935	X			1	X						* Field Filtered and preserved

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JM 6/18/13

Sampler (signature): [signature]

Sampler (signature): M V. [signature]

Custody Seal Number: 69420-061813-003, 69420-061813-004

Special Instructions: 10 days TAT

Relinquished By (signature):	Date/Time	Received By (signature):	Date/Time
1. [signature]	6/18/13 1800	Fed Ex	
2.		Dellie Watson	6-19-13 8:40

Ice Present in Container: Yes ☐ No ☐

Temperature Upon Receipt:

Laboratory Comments:

061301 Form WCD-KC1-CHI

13 9 2

fedex.com 1.800.GoFe

180-22323 Waybill

fedex Express NEW

FedEx Tracking Number 8026 3357 4237

Form ID No. 0200

From

Date

Sender's Name

Phone

Company

Address

Dept./Floor/Suite/Room

City

State

ZIP

Your Internal Billing Reference 69420

3 To

Recipient's Name

Phone

Company

Address

Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes

Address

Use this line for the HOLD location address or for continuation of your shipping address

City

State PA

ZIP

HOLD Weekday
FedEx location address REQUIRED. NOT available for FedEx First Overnight

HOLD Saturday
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

8026 3357 4237

4 Express Package Service * To most locations

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs.
For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day

- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Priority Overnight — Next business morning * Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Standard Overnight — Next business afternoon * Saturday Delivery NOT available

2 or 3 Business Days

- [ ] FedEx 2Day A.M. — Second business morning * Saturday Delivery NOT available
- [ ] FedEx 2Day — Second business afternoon * Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day * Saturday Delivery NOT available

5 Packaging * Declared value limit $500.

- [ ] FedEx Envelope*
- [ ] FedEx Pak*
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other

6 Special Handling and Delivery Signature Options

- [ ] SATURDAY Delivery — NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver
- [ ] No Signature Required — Package may be left without obtaining a signature for delivery
- [x] Direct Signature — * Someone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry ice, 9, UN 1845 kg
- [ ] Cargo Aircraft Only

* Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

- [x] Sender — Acct. No. in Section 1 will be billed.
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages

Total Weight 10 lbs.

Credit Card Auth.

644

†Our liability is limited to US$100 unless you declare a higher value. See the current FedEx Service Guide for details

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fedex.com 1.800.GoFedEx 1.800.463.3339

Login Sample Receipt Checklist

Client: Natural Resource Technology, Inc.

Job Number: 180-22323-1
SDG Number: 69420

Login Number: 22323
List Number: 1
Creator: Watson, Debbie

List Source: TestAmerica Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	