



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Mr Jared Black
Quicksilver Resources, Inc.
801 Cherry Street, Suite 3700
Fort Worth, TX 76102

Report Summary

Friday October 14, 2011

Report Number: L540320

Samples Received: 10/07/11

Client Project: 2011054032

Description: Bret Groundbouche 24-02H

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Craig Cothron , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,
TX - T104704245, OK-9915, PA - 68-02979

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REPORT OF ANALYSIS

Mr Jared Black
Quicksilver Resources, Inc.
801 Cherry Street, Suite 3700
Fort Worth, TX 76102

October 14, 2011

Date Received : October 07, 2011
Description : Bret Groundbouché 24-02H
Sample ID : SURFACE CUTTINGS RESERVE PIT
Collected By : Jared Black
Collection Date : 10/05/11 17:30

ESC Sample # : L540320-01

Site ID : CO

Project # : 2011054032

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chloride	230	10.	mg/kg	9056	10/13/11	1
Sulfate	390	50.	mg/kg	9056	10/13/11	1
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	10/11/11	1
Chromium, Trivalent	9.5	2.0	mg/kg	Calc.	10/10/11	1
ORP	-49.		mV	2580	10/12/11	1
pH	12.		su	9045D	10/11/11	1
Sodium Adsorption Ratio	29.			Calc.	10/10/11	1
Specific Conductance	2200		umhos/cm	9050AMod	10/10/11	1
Total Solids	59.		%	2540G	10/11/11	1
Mercury	BDL	0.020	mg/kg	7471	10/10/11	1
Arsenic	3.5	1.0	mg/kg	6010B	10/10/11	1
Barium	550	0.25	mg/kg	6010B	10/10/11	1
Boron	BDL	10.	mg/kg	6010B	10/10/11	1
Cadmium	BDL	0.25	mg/kg	6010B	10/10/11	1
Chromium	9.5	0.50	mg/kg	6010B	10/10/11	1
Copper	7.1	1.0	mg/kg	6010B	10/10/11	1
Lead	6.8	0.25	mg/kg	6010B	10/10/11	1
Nickel	6.9	1.0	mg/kg	6010B	10/10/11	1
Selenium	1.2	1.0	mg/kg	6010B	10/10/11	1
Silver	BDL	0.50	mg/kg	6010B	10/10/11	1
Zinc	30.	1.5	mg/kg	6010B	10/10/11	1
TPH (GC/FID) Low Fraction	1.6	0.50	mg/kg	8015D/GRO	10/08/11	5
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	96.4		% Rec.	602/8015	10/08/11	5
Benzene	BDL	0.0050	mg/kg	8260B	10/07/11	5
Toluene	0.027	0.025	mg/kg	8260B	10/07/11	5
Ethylbenzene	0.040	0.0050	mg/kg	8260B	10/07/11	5
Total Xylenes	0.24	0.015	mg/kg	8260B	10/07/11	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	10/07/11	5
Dibromofluoromethane	88.9		% Rec.	8260B	10/07/11	5
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	10/07/11	5
4-Bromofluorobenzene	123.		% Rec.	8260B	10/07/11	5

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
L540320-01 (PH) - 11.75@21.4c

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Sample ID : SURFACE CUTTINGS RESERVE PIT
Collected By : Jared Black
Collection Date : 10/05/11 17:30

ESC Sample # : L540320-01

Site ID : CO

Project # : 2011054032

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) High Fraction	88.	20.	mg/kg	3546/DRO	10/10/11	5
Surrogate recovery(%)						
o-Terphenyl	70.9		% Rec.	3546/DRO	10/10/11	5
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Acenaphthene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Acenaphthylene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Benzo(a)anthracene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Benzo(a)pyrene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Benzo(b)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Benzo(g,h,i)perylene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Benzo(k)fluoranthene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Chrysene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Dibenz(a,h)anthracene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Fluoranthene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Fluorene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Indeno(1,2,3-cd)pyrene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Naphthalene	0.089	0.060	mg/kg	8270C-SIM	10/10/11	10
Phenanthrene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Pyrene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
1-Methylnaphthalene	0.14	0.060	mg/kg	8270C-SIM	10/10/11	10
2-Methylnaphthalene	0.18	0.060	mg/kg	8270C-SIM	10/10/11	10
2-Chloronaphthalene	BDL	0.060	mg/kg	8270C-SIM	10/10/11	10
Surrogate Recovery						
Nitrobenzene-d5	61.4		% Rec.	8270C-SIM	10/10/11	10
2-Fluorobiphenyl	85.0		% Rec.	8270C-SIM	10/10/11	10
p-Terphenyl-d14	72.2		% Rec.	8270C-SIM	10/10/11	10

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 10/14/11 12:40 Printed: 10/14/11 12:41
L540320-01 (PH) - 11.75@21.4c



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October 14, 2011

Date Received : October 07, 2011
Description : Bret Groundbouché 24-02H
Sample ID : BGL 0-1IN
Collected By : Jared Black
Collection Date : 10/05/11 17:02

ESC Sample # : L540320-02

Site ID : CO

Project # : 2011054032

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.3	1.0	mg/kg	6010B	10/10/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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October 14, 2011

Date Received : October 07, 2011
Description : Bret Groundbouché 24-02H
Sample ID : BG2 0-1IN
Collected By : Jared Black
Collection Date : 10/05/11 17:07

ESC Sample # : L540320-03

Site ID : CO

Project # : 2011054032

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	4.7	1.0	mg/kg	6010B	10/10/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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October 14, 2011

Date Received : October 07, 2011
Description : Bret Groundbouché 24-02H
Sample ID : BG3 0-1IN
Collected By : Jared Black
Collection Date : 10/05/11 17:11

ESC Sample # : L540320-04

Site ID : CO

Project # : 2011054032

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	4.1	1.0	mg/kg	6010B	10/10/11	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 10/14/11 12:40 Printed: 10/14/11 12:41

Summary of Remarks For Samples Printed
10/14/11 at 12:41:17

TSR Signing Reports: 034
R4 - Rush: Three Day

Sample: L540320-01 Account: QUIFWTX Received: 10/07/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 12:40
Sample: L540320-02 Account: QUIFWTX Received: 10/07/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 12:40
Sample: L540320-03 Account: QUIFWTX Received: 10/07/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 12:40
Sample: L540320-04 Account: QUIFWTX Received: 10/07/11 09:00 Due Date: 10/13/11 00:00 RPT Date: 10/14/11 12:40