

TABLE 1
GROUNDWATER ANALYTICAL RESULTS

MILLER SOUTH #1 SPREAD FIELD
COGCC REMEDIATION #7412
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Bromide (mg/L)	Chloride/Bromide*	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
Background 01	9/12/2012	15.36	95.02	236	NA	NA	514	1,600
Background 02	9/12/2012	17.40	94.91	217	NA	NA	433	1,400
SB01	3/8/2012	3.30	NM	1,260	NA	NA	1,070	4,600
SB01R	9/11/2012	4.24	90.72	181	NA	NA	372	1,300
	1/8/2013	2.75	92.21	2,820	NA	NA	1,010	4,700
	4/1/2013	NM	NM	No Sample - Under water				
	7/12/2013	2.57	92.39	1,360	NA	NA	448	2,800
	10/31/2013	NM	NM	No Sample - Under water				
SB01R2	11/5/2013	9.56	85.40	208	NA	NA	553	2,180
	3/31/2014	9.25	85.71	193	0.725	266	440	1,780
	9/22/2014	NM	NM	No Sample - Under water				
	9/3/2015	5.62	90.28	325	2.09	156	801	2,740
	3/10/2016	4.41	91.49	259	2.26	115	1,960	3,540
	9/29/2016	5.27	90.63	308	1.15	268	459	1,660
	4/13/2017	5.46	90.44	275	1.05	262	476	1,760
SB02	3/8/2012	6.46	NM	220	NA	NA	584	1,700
SB02R	9/11/2012	8.03	91.30	214	NA	NA	300	1,100
	1/8/2013	6.72	92.61	241	NA	NA	366	830
	4/1/2013	7.18	92.15	241	NA	NA	378	880
	7/12/2013	6.49	92.84	196	NA	NA	365	900
	10/31/2013	5.60	93.73	203	NA	NA	392	980
	4/1/2014	6.25	93.08	192	0.741	259	425	1,380
	9/22/2014	NM	NM	No Sample - Under water				
				Removed from monitoring program per COGCC document #2314191				
SB03	3/8/2012	6.22	NM	348	NA	NA	1,070	3,100
SB03R	9/11/2012	7.50	90.33	278	NA	NA	646	2,300
	1/8/2013	5.90	91.93	252	NA	NA	741	1,500
	4/1/2013	6.15	91.68	223	NA	NA	611	1,400
	7/12/2013	6.45	91.38	202	NA	NA	463	1,300

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SB03R	10/31/2013	6.14	91.69	348	NA	NA	1,310	2,500
	4/1/2014	6.30	91.53	275	1.37	201	1,030	2,930
	9/22/2014	NM	NM	No Sample - Under water				
	Removed from monitoring program per COGCC document #2314191							
SB04	3/8/2012	7.08	NM	296	NA	NA	1,220	3,100
SB04R	9/11/2012	7.94	89.73	488	NA	NA	1,600	4,800
	1/8/2013	6.83	90.84	388	NA	NA	1,330	2,400
	4/1/2013	6.30	91.37	356	NA	NA	1,330	2,400
	7/12/2013	6.11	91.56	328	NA	NA	1,170	2,500
	10/31/2013	NM	NM	No Sample - Monitoring well damaged				
	11/5/2013	4.28	93.39	1,420	NA	NA	1,010	6,030
	3/31/2014	4.15	93.52	2,000	2.77	722	948	5,790
	9/22/2014	NM	NM	No Sample - Under water				
	3/27/2015	6.23	91.44	170	0.823	207	1,270	2,760
	9/3/2015	NM	NM	Monitoring well destroyed by landowner grading activity				
SB04R2	4/13/2017	5.97	90.54	649	3.45	188	1,640	4,780
SB05	3/8/2012	7.94	NM	208	NA	NA	896	2,400
SB05R	9/11/2012	6.51	88.62	291	NA	NA	1,060	3,000
SB05R2	1/8/2013	4.65	NM	6,170	NA	NA	1,570	10,000
	4/1/2013	6.55	90.37	1,630	NA	NA	2,790	4,800
	7/12/2013	7.95	88.97	489	NA	NA	862	2,100
	10/31/2013	6.70	90.22	436	NA	NA	1,650	2,800
	3/31/2014	6.68	90.24	853	3.60	237	1,830	4,500
	9/22/2014	NM	NM	No Sample - Under water				
	3/27/2015	6.35	90.57	380	2.64	144	1,110	4,410
	9/3/2015	7.06	89.86	256	2.59	99	1,090	2,840
	3/10/2016	6.10	90.82	1,300	8.05	161	2,250	6,110
	9/29/2016	6.53	90.39	432	3.66	118	1,320	3,740
	4/13/2017	6.56	90.36	255	2.22	115	1,000	2,940
SB06	3/8/2012	7.82	NM	147	NA	NA	280	890
SB06R	9/11/2012	7.45	89.68	186	NA	NA	325	1,200

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SB06R	1/8/2013	6.32	90.81	218	NA	NA	401	770
	4/1/2013	6.99	90.14	199	NA	NA	366	780
	7/12/2013	4.78	92.35	171	NA	NA	307	750
	10/31/2013	5.89	91.24	223	NA	NA	242	730
	4/1/2014	7.70	89.43	221	1.03	215	308	1,090
	9/22/2014	6.53	90.60	184	0.452	407	318	1,010
	3/27/2015	6.94	90.19	946	1.06	892	585	3,560
SB06R2	9/3/2015	4.12	92.40	274	0.705	389	388	1,650
	3/10/2016	3.82	92.70	199	0.939	212	318	1,150
	9/29/2016	4.21	92.31	252	1.16	217	340	1,330
	4/13/2017	5.17	91.35	307	1.55	198	431	1,570
SB07	3/8/2012	6.93	NM	1,020	NA	NA	1,620	4,700
SB07R	9/11/2012	9.68	84.95	773	NA	NA	896	3,400
	1/8/2013	7.89	86.74	1,150	NA	NA	2,930	4,900
	4/1/2013	8.49	86.14	1,050	NA	NA	3,170	5,000
	7/12/2013	6.98	87.65	551	NA	NA	3,020	3,900
	10/31/2013	7.48	87.15	839	NA	NA	2,530	4,000
	4/1/2014	7.78	86.85	189	3.86	49	502	5,650
	9/22/2014	7.44	87.19	677	3.31	205	2,040	5,590
SB07R2	9/3/2015	6.03	90.38	816	3.40	240	950	3,670
	3/10/2016	5.50	90.91	556	3.60	154	2,020	4,440
	9/29/2016	5.85	90.56	158	0.859	184	203	724
	4/13/2017	6.18	90.23	456	2.30	198	586	2,300
SB08	3/8/2012	9.73	NM	182	NA	NA	395	1,100
SB08R	9/11/2012	11.77	89.27	2,140	NA	NA	500	1,600
	1/8/2013	9.39	91.65	247	NA	NA	736	1,100
	4/1/2013	9.79	91.25	202	NA	NA	391	860
	7/12/2013	8.80	92.24	370	NA	NA	816	1,600
	10/31/2013	8.22	92.82	277	NA	NA	475	1,100
	4/1/2014	9.07	91.97	272	0.764	356	348	1,270
	9/22/2014	NM	NM	No Sample - Monitoring well damaged				
Removed from monitoring program per COGCC document #2314191								

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SB09 (background)	3/8/2012	8.09	NM	270	NA	NA	573	2,000
SB10	3/9/2012	9.64	NM	157	NA	NA	414	1,100
	9/12/2012	10.39	89.90	146	NA	NA	203	1,000
	1/8/2013	8.42	91.87	195	NA	NA	356	970
	4/1/2013	8.97	91.32	202	NA	NA	642	1,100
	7/12/2013	8.67	91.62	168	NA	NA	308	780
	10/31/2013	8.20	92.09	196	NA	NA	212	760
	4/1/2014	9.13	91.16	219	0.496	442	267	960
	9/22/2014	7.85	92.44	144	0.365	395	236	834
Removed from monitoring program per COGCC document #2314191								
SB11	3/9/2012	8.58	NM	267	NA	NA	717	1,900
	9/12/2012	9.78	89.05	263	NA	NA	639	1,900
	1/8/2013	7.72	91.11	309	NA	NA	808	1,300
	4/1/2013	7.89	90.94	306	NA	NA	695	1,300
	7/12/2013	8.68	90.15	382	NA	NA	775	1,600
	10/31/2013	7.69	91.14	300	NA	NA	686	1,300
	3/31/2014	7.90	90.93	272	0.796	342	593	1,780
	9/22/2014	6.55	92.28	458	1.33	344	791	2,370
	3/27/2015	6.21	92.62	566	1.31	432	756	2,710
	9/3/2015	NM	NM	No sample - Unable to locate				
	3/10/2016	NM	NM	No sample - Unable to locate				
	9/29/2016	9.25	89.58	337	1.38	244	659	1,970
	4/13/2017	9.08	89.75	337	1.82	185	577	1,990
SB12	3/9/2012	6.16	NM	300	NA	NA	1,230	2,500
	9/12/2012	8.70	88.03	270	NA	NA	643	1,900
	1/8/2013	6.45	90.28	424	NA	NA	921	1,600
	4/1/2013	6.25	90.48	366	NA	NA	1,650	2,200
	4/4/2013	6.24	90.49	371	NA	NA	1,650	2,200
	7/12/2013	7.94	88.79	393	NA	NA	1,100	2,000
	10/31/2013	6.53	90.20	311	NA	NA	1,210	2,100

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SB12	3/31/2014	6.20	90.53	1,150	5.29	217	3,000	6,510
	9/22/2014	4.61	92.12	392	1.48	265	1,330	3,370
	3/27/2015	6.10	90.63	675	1.74	388	1,490	4,130
	9/3/2015	NM	NM	No sample - Unable to locate				
	3/10/2016	6.10	90.63	357	1.27	281	646	2,090
	9/29/2016	7.21	89.52	598	1.22	490	673	2,220
	4/13/2017	6.98	89.75	372	0.908	410	647	2,090
SB13	3/9/2012	5.61	NM	439	NA	NA	1,210	2,900
	9/12/2012	7.43	87.40	314	NA	NA	902	2,400
	1/8/2013	5.02	89.81	352	NA	NA	1,010	1,700
	4/1/2013	4.83	90.00	1,800	NA	NA	3,500	5,400
	7/12/2013	7.03	87.80	373	NA	NA	937	1,800
	10/31/2013	5.17	89.66	596	NA	NA	1,380	2,500
	3/31/2014	4.60	90.23	656	2.15	305	1,460	3,970
	9/22/2014	1.96	92.87	175	0.447	391	279	836
Removed from monitoring program per COGCC document #2314191								
SB14	3/9/2012	6.15	NM	125	NA	NA	991	1,900
	9/12/2012	8.32	88.83	246	NA	NA	1,010	2,500
	1/8/2013	6.28	90.87	246	NA	NA	999	1,500
	4/1/2013	6.18	90.97	1,060	NA	NA	862	2,600
	7/12/2013	7.60	89.55	666	NA	NA	752	2,100
	10/31/2013	6.20	90.95	1,430	NA	NA	843	3,200
	3/31/2014	6.20	90.95	599	1.52	394	714	2,750
	9/22/2014	3.83	93.32	86.2	0.433	199	247	843
	3/27/2015	6.13	91.02	170	0.496	343	273	939
	9/3/2015	NM	NM	No sample - Unable to locate				
	3/10/2016	6.10	91.05	474	1.45	327	354	1,740
	9/29/2016	7.12	90.03	264	0.674	392	420	1,400
	4/13/2017	7.03	90.12	221	0.744	297	581	1,660
SB15	3/9/2012	10.97	NM	No Sample - Dry				
	9/12/2012	7.89	87.88	292	NA	NA	900	2,500

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SB15	1/8/2013	5.65	90.12	654	NA	NA	3,520	4,800
	4/1/2013	5.49	90.28	588	NA	NA	2,720	4,400
	7/12/2013	7.52	88.25	465	NA	NA	1,020	2,300
	10/31/2013	5.72	90.05	528	NA	NA	1,790	4,000
	4/1/2014	5.50	90.27	No sample - Insufficient water				
	9/22/2014	3.15	92.62	485	4.04	120	2,340	5,320
	Removed from monitoring program per COGCC document #2314191							
SB16	3/9/2012	7.36	NM	297	NA	NA	730	2,200
	9/12/2012	9.15	88.52	194	NA	NA	597	2,000
	1/8/2013	7.60	90.07	264	NA	NA	734	1,500
	4/4/2013	7.58	90.09	305	NA	NA	720	1,600
	7/12/2013	9.12	88.55	251	NA	NA	654	1,600
	10/31/2013	7.66	90.01	253	NA	NA	582	1,400
	3/31/2014	7.62	90.05	238	1.03	231	644	2,070
	9/22/2014	6.85	90.82	280	1.25	224	680	2,140
Removed from monitoring program per COGCC document #2314191								
SB17	9/11/2012	5.55	90.14	237	NA	NA	584	2,100
	1/8/2013	4.33	91.36	262	NA	NA	621	1,400
	4/1/2013	4.29	91.40	253	NA	NA	635	1,500
	7/12/2013	5.24	90.45	281	NA	NA	986	2,100
	11/5/2013	4.33	91.36	250	NA	NA	873	2,510
	3/31/2014	4.45	91.24	262	1.19	220	903	2,480
	9/22/2014	NM	NM	No Sample - Under water				
Removed from monitoring program per COGCC document #2314191								
SB18	9/11/2012	7.75	90.85	290	NA	NA	920	3,000
	1/8/2013	6.50	92.10	313	NA	NA	866	1,800
	4/1/2013	6.73	91.87	284	NA	NA	772	1,800
	7/12/2013	7.11	91.49	265	NA	NA	714	2,000
	10/31/2013	6.27	92.33	330	NA	NA	699	1,900
	4/1/2014	6.95	91.65	282	0.979	288	623	2,260
	9/22/2014	NM	NM	No Sample - Under water				

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SB18	3/27/2015	6.68	91.92	256	0.935	274	747	2,650
	9/3/2015	NM	NM	Monitoring well destroyed by landowner grading activity				
SB18R	4/13/2017	6.20	91.51	372	2.46	151	1,340	3,760
SB19	9/11/2012	8.56	91.77	196	NA	NA	317	1,300
	1/8/2013	6.85	93.48	390	NA	NA	831	1,600
SB19R	4/1/2013	12.65	85.10	190	NA	NA	324	680
	7/12/2013	6.78	90.97	211	NA	NA	368	810
	10/31/2013	10.23	87.52	239	NA	NA	317	860
	4/1/2014	12.00	85.75	No sample - Insufficient water				
	9/22/2014	NM	NM	No sample - Monitoring well destroyed				
				Removed from monitoring program per COGCC document #2314191				
SB20	9/11/2012	10.33	89.50	183	NA	NA	180	1,000
	1/8/2013	9.40	90.43	209	NA	NA	329	710
SB20R	4/1/2013	11.23	84.71	234	NA	NA	301	750
	7/12/2013	7.56	88.38	234	NA	NA	342	880
	10/31/2013	8.69	87.25	244	NA	NA	283	700
	4/1/2014	11.42	84.52	No sample - Insufficient water				
	9/22/2014	9.39	86.55	155	0.404	384	149	650
	3/27/2015	NM	NM	Monitoring well destroyed by landowner grading activity				
SB20R2	9/3/2015	7.19	88.91	89.5	0.359	249	466	927
	3/10/2016	7.23	88.87	169	0.677	250	176	804
	9/29/2016	8.00	88.10	207	0.602	344	315	1,090
	4/13/2017	8.26	87.84	203	0.506	401	226	1,080
SB21	9/11/2012	10.17	90.62	162	NA	NA	490	1,200
	1/8/2013	8.36	92.43	196	NA	NA	350	660
SB21R	4/1/2013	9.95	86.89	190	NA	NA	163	650
	7/12/2013	5.81	91.03	223	NA	NA	369	880
	10/31/2013	7.93	88.91	238	NA	NA	239	710
	4/1/2014	11.13	85.71	No sample - Insufficient water				
	9/22/2014	NM	NM	No sample - Monitoring well destroyed				
				Removed from monitoring program per COGCC document #2314191				
SB22	9/12/2012	11.14	87.53	355	NA	NA	815	2,200
	1/8/2013	9.14	89.53	378	NA	NA	884	1,400
	4/1/2013	9.06	89.61	337	NA	NA	815	1,500

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SB22	7/12/2013	10.08	88.59	359	NA	NA	808	1,700
	10/31/2013	9.42	89.25	416	NA	NA	897	1,700
	3/31/2014	8.90	89.77	380	1.22	311	874	2,330
	9/22/2014	NM	NM	No sample - Could not locate				
	Removed from monitoring program per COGCC document #2314191							
SB23	9/12/2012	11.25	86.21	212	NA	NA	515	1,500
	1/8/2013	8.26	89.20	268	NA	NA	712	1,100
	4/1/2013	7.95	89.51	354	NA	NA	1,100	1,600
	7/12/2013	9.65	87.81	368	NA	NA	1,120	1,900
	10/31/2013	8.61	88.85	237	NA	NA	607	1,400
	3/31/2014	7.72	89.74	604	2.38	254	1,830	3,950
	9/22/2014	6.84	90.62	1,290	4.18	309	2,940	6,850
	3/27/2015	6.38	91.08	1,150	2.64	436	2,060	5,300
	9/3/2015	NM	NM	No sample - Unable to locate				
	3/10/2016	7.60	89.86	1,280	5.43	236	2,430	5,980
	9/29/2016	8.83	88.63	997	2.15	464	1,760	4,680
	4/13/2017	5.32	92.14	704	1.74	405	1,380	3,890
COGCC Table 910-1 Standard				295	--	250*	642.5	2,000

NOTES:

btoc - below top of casing

COGCC - Colorado Oil and Gas Conservation Commission

mg/L - milligrams per liter

NA - not analyzed

NM - not measured

< - indicates result is less than the stated laboratory reporting limit

-- - indicates there is no standard

Chloride, sulfate, and total dissolved solids standards are calculated based on 1.25 times background concentrations

Chloride, bromide, and sulfate analyzed by EPA Method 300.0

Total dissolved solids analyzed by Standard Method 2540C and EPA Method 160.1

BOLD indicates result exceeds the applicable standard

* - This value is not a regulatory limit and is included for reference purposes only. Unimpacted groundwater would not be expected to exhibit a ratio of chloride to bromide that exceeds this naturally occurring value.

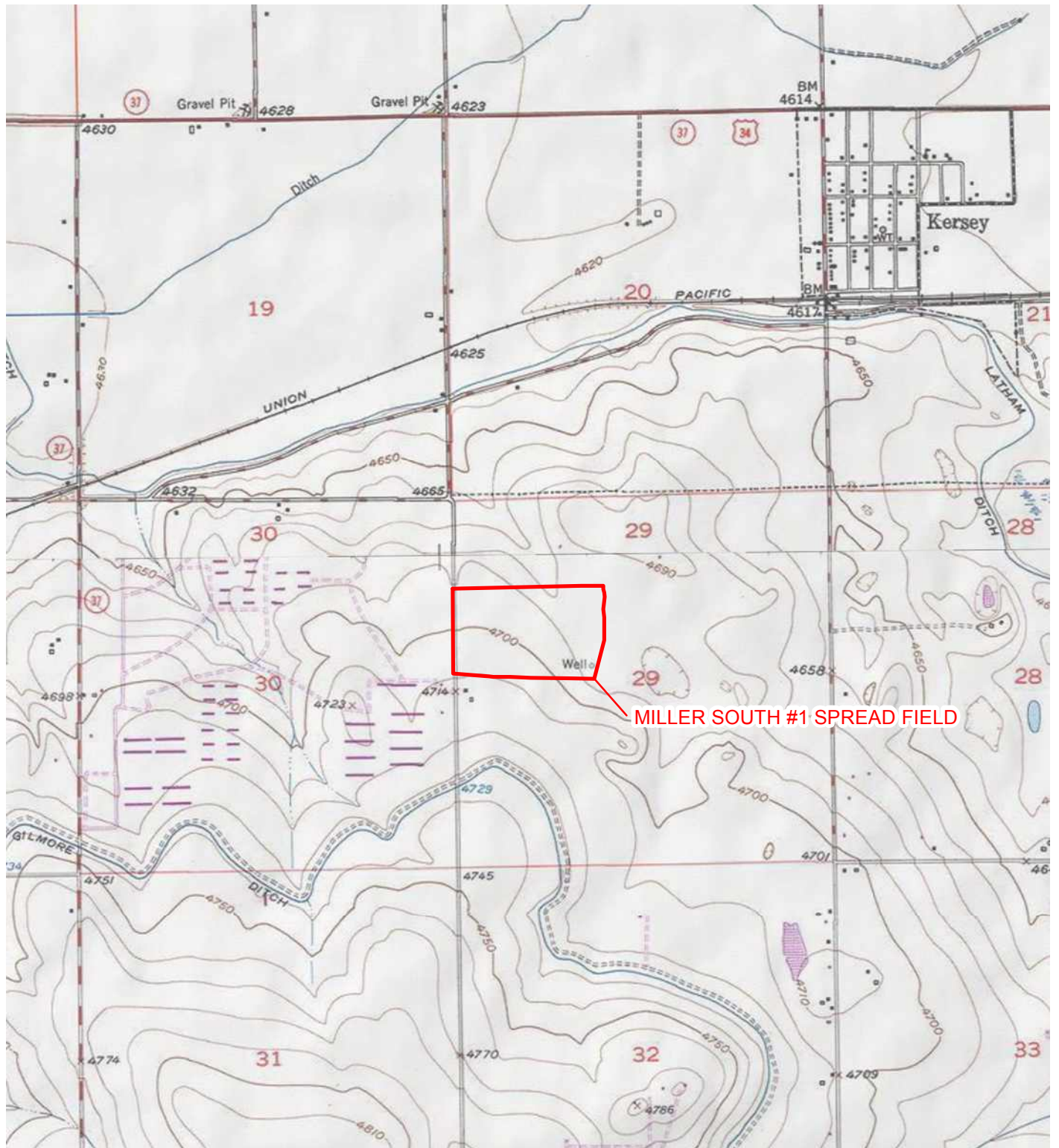


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

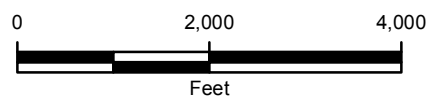
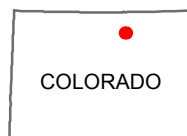
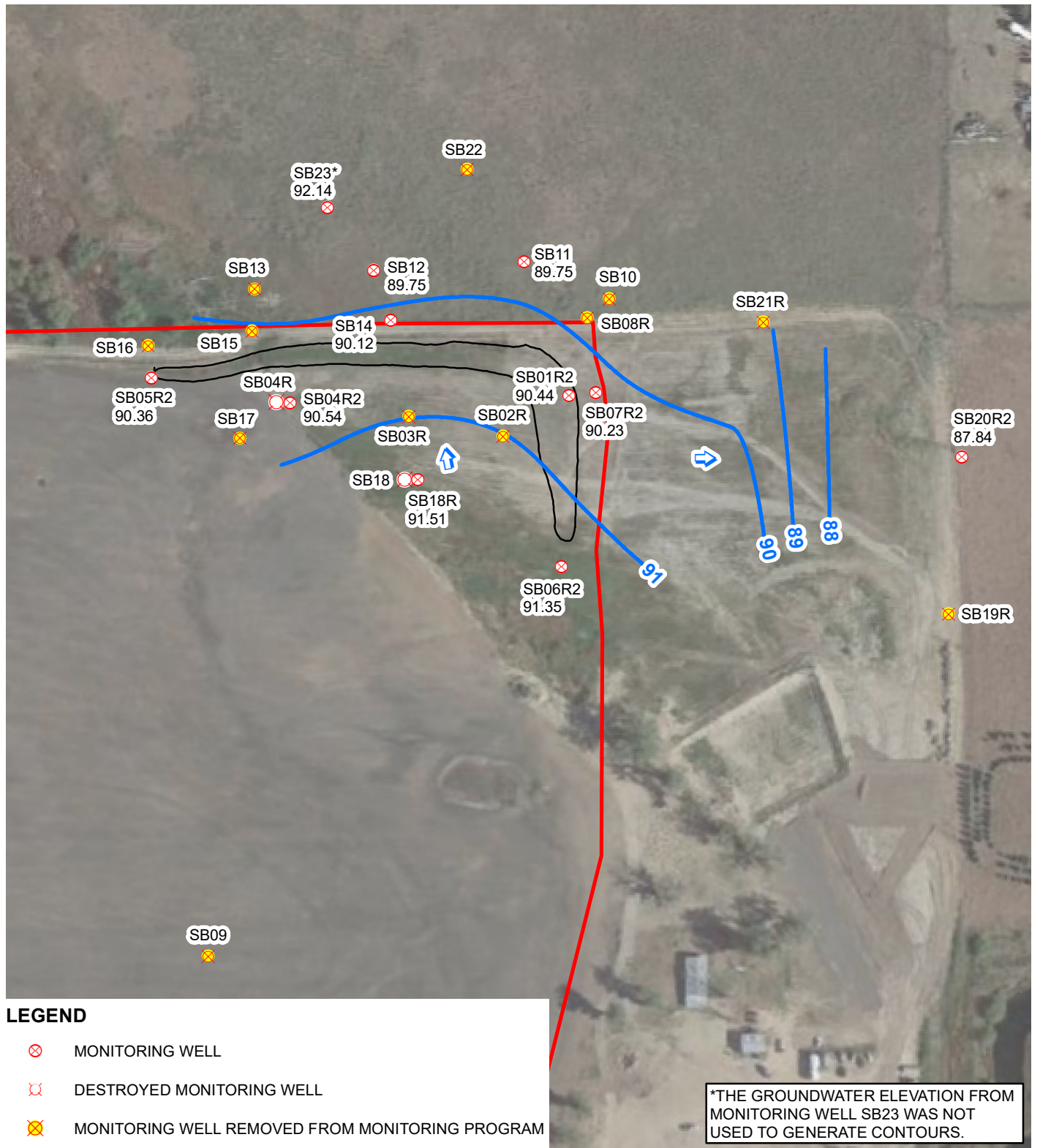


FIGURE 1
SITE LOCATION MAP
MILLER SOUTH #1 SPREAD FIELD
S/2NW Sec29 T5N R64W
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.





LEGEND

- ⊗ MONITORING WELL
- ⊗ DESTROYED MONITORING WELL
- ⊗ MONITORING WELL REMOVED FROM MONITORING PROGRAM
- ↑ CALCULATED GROUNDWATER FLOW DIRECTION
- HISTORICAL SPREAD FIELD BOUNDARY
- SURFICIAL RELEASE EXTENT
- RELATIVE GROUNDWATER ELEVATION CONTOUR
- CONTOUR INTERVAL = 1 FOOT
- GRADIENT = 0.006 FEET/FOOT

*THE GROUNDWATER ELEVATION FROM MONITORING WELL SB23 WAS NOT USED TO GENERATE CONTOURS.

IMAGE COURTESY OF GOOGLE EARTH 2016

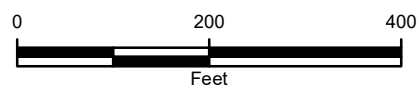
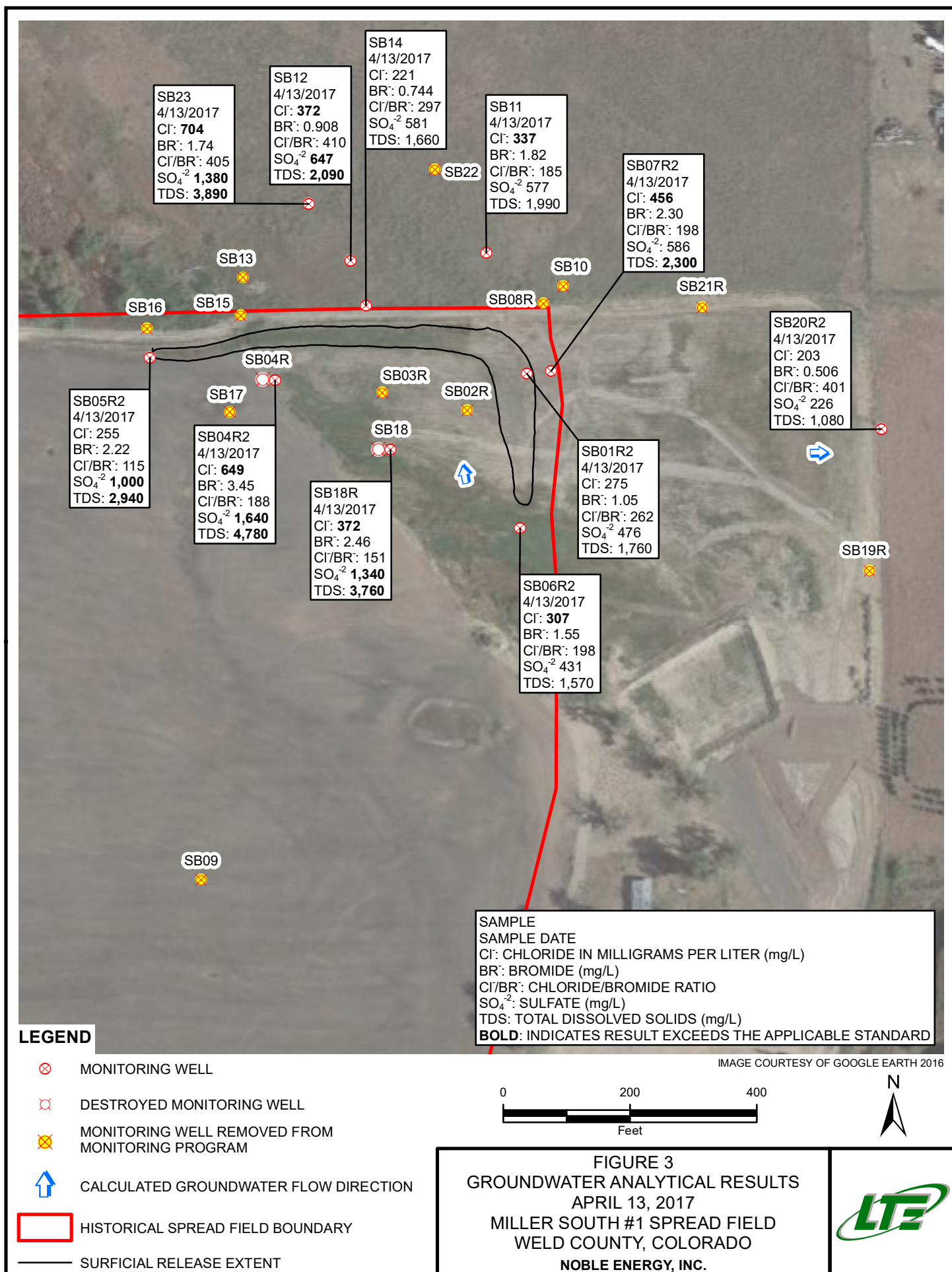


FIGURE 2
RELATIVE GROUNDWATER ELEVATION MAP
APRIL 13, 2017
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.







April 20, 2017

LT Environmental, Inc.

Charles Greeson

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - Miller #1 South CACL

Project Number - 008312061

Attached are your analytical results for Noble - Miller #1 South CACL received by Origins Laboratory, Inc. April 14, 2017. This project is associated with Origins project number Y704177-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01R2	Y704177-01	Water	April 13, 2017 11:00	04/14/2017 09:00
SB04R2	Y704177-02	Water	April 13, 2017 11:15	04/14/2017 09:00
SB05R2	Y704177-03	Water	April 13, 2017 11:30	04/14/2017 09:00
SB06R2	Y704177-04	Water	April 13, 2017 11:45	04/14/2017 09:00
SB07R2	Y704177-05	Water	April 13, 2017 12:00	04/14/2017 09:00
SB11	Y704177-06	Water	April 13, 2017 12:15	04/14/2017 09:00
SB12	Y704177-07	Water	April 13, 2017 12:30	04/14/2017 09:00
SB14	Y704177-08	Water	April 13, 2017 12:45	04/14/2017 09:00
SB18R	Y704177-09	Water	April 13, 2017 13:00	04/14/2017 09:00
SB20R	Y704177-10	Water	April 13, 2017 13:15	04/14/2017 09:00
SB23	Y704177-11	Water	April 13, 2017 13:30	04/14/2017 09:00

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

www.originslaboratory.com

page 1 of 2

7/14/17

ORIGINS LABORATORY, INC

Client: LT Environmental, Inc.
Address: 4600 West 60th Ave, Arvada, CO
Telephone Number: 303-433-9788
Email Address: Noble Remediation Team

Project Manager: Charles Greeson
Project Name: Miller South #1 CaCl
Project Number: 008312061
Samples Collected By: G. Mariz

Invoice: Jacob Evans

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Other		
SB01R2	4/13/17	1100	2	X				X			Chloride, Bromide, Sulfate TDS	Lab filter all
SB04R2		1115	2									
SB05R2		1130	2									
SB06R2		1145	2									
SB07R2		1200	2									
SB11		1215	1									
SB12		1230	2									
SB14		1245	2									
SB19R		1300	2									
SB20R		1315	1									
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:						
Relinquished By:	4-14-17	0900	Received By:	4/14/17	0900	Same Day						
						48 Hr						
						Standard						

Date Results Needed: 3.2

Origins Laboratory, Inc.

Jefe Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

ORIGINS

LABORATORY, INC

www.originslaboratory.com

page 2 of 2

Client: LT Environmental
Address: 4600 W 60th Ave
Avondale, CO 80015
Telephone Number: 303-438-9788
Email Address: Noble Remediation Team

Project Manager: Charles Green
Project Name: Miller Superfund C&C
Project Number: 008312061
Samples Collected By: G. Muir

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	As Surrogate Contaminant	Other	Chloride	
5823	4/13/17	1330	2	/				/			/	Lab Filter	1
													2
													3
													4
													5
													6
													7
													8
													9
													10
Relinquished By: <u>CMG</u>	Date: <u>4-14-17</u>	Time: <u>0800</u>	Received By: <u>gpm</u>	Date: <u>4/14/17</u>	Time: <u>0900</u>	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard							
Relinquished By: <u>CMG</u>	Date: <u>4-14-17</u>	Time: <u>0800</u>	Received By: <u>gpm</u>	Date: <u>4/14/17</u>	Time: <u>0900</u>	Standard <input checked="" type="checkbox"/>							

Temp Received- 32

Date Result Needed

Origins Laboratory, Inc.

Jeff Pellipini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 704177

Client: LT

Client Project ID: Miller South # CACL

Checklist Completed by: DL

Shipped Via: UPS
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4-19-12 1045

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____

Cooler Number/Temperature: 1 / 3.2 °C 1 °C 1 °C (Describe) 1 °C

Thermometer ID: 1003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Chloride
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/ (pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: DL (Project Manager)

Date/Time Reviewed: 4/17/12

Origins Laboratory, Inc.

Jen Pellegrini

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB01R2

4/13/2017 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
---------	--------	--------------------	-------	----------	-------	----------	----------	-------

GEL Laboratories, LLC
Y704177-01 (Water)

Anions by EPA 300.0

Bromide	1.05	0.200	mg/L	1	1656668		04/18/2017	
Chloride	275	10.0	"	50	"	"	04/19/2017	
Sulfate	476	20.0	"	"	"	"	"	

TDS by SM 2540C

Total Dissolved Solids	1760	14.3	mg/L	1	1656615	"	04/19/2017	
------------------------	------	------	------	---	---------	---	------------	--

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB04R2

4/13/2017 11:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-02 (Water)

Anions by EPA 300.0

Bromide	3.45	2.00	mg/L	10	1656668		04/18/2017	
Chloride	649	20.0	"	100	"	"	04/19/2017	
Sulfate	1640	40.0	"	"	"	"	"	

TDS by SM 2540C

Total Dissolved Solids	4780	14.3	mg/L	1	1656615	"	04/19/2017	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB05R2

4/13/2017 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-03 (Water)

Anions by EPA 300.0

Bromide	2.22	0.200	mg/L	1	1656668		04/18/2017	
Chloride	255	20.0	"	100	"	"	04/19/2017	
Sulfate	1000	40.0	"	"	"	"	"	

TDS by SM 2540C

Total Dissolved Solids	2940	14.3	mg/L	1	1656615	"	04/19/2017	
------------------------	------	------	------	---	---------	---	------------	--

Origins Laboratory, Inc.



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LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB06R2

4/13/2017 11:45:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-04 (Water)

Anions by EPA 300.0

Bromide	1.55	0.200	mg/L	1	1656668		04/18/2017	
Chloride	307	10.0	"	50	"	"	04/19/2017	
Sulfate	431	20.0	"	"	"	"	"	

TDS by SM 2540C

Total Dissolved Solids	1570	14.3	mg/L	1	1656615	"	04/19/2017	
------------------------	------	------	------	---	---------	---	------------	--

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB07R2

4/13/2017 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-05 (Water)

Anions by EPA 300.0

Bromide	2.30	0.200	mg/L	1	1656668		04/18/2017	
Chloride	456	20.0	"	100	"	"	04/19/2017	
Sulfate	586	40.0	"	"	"	"	"	

TDS by SM 2540C

Total Dissolved Solids	2300	14.3	mg/L	1	1656615	"	04/19/2017	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB11

4/13/2017 12:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-06 (Water)

Anions by EPA 300.0

Bromide	1.82	0.200	mg/L	1	1656668		04/18/2017	
Chloride	337	10.0	"	50	"	"	04/19/2017	
Sulfate	577	20.0	"	"	"	"	"	

TDS by SM 2540C

Total Dissolved Solids	1990	14.3	mg/L	1	1656615	"	04/19/2017	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB12

4/13/2017 12:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-07 (Water)

Anions by EPA 300.0

Bromide	0.908	0.200	mg/L	1	1656668		04/18/2017	
Chloride	372	10.0	"	50	"	"	04/19/2017	
Sulfate	647	20.0	"	"	"	"	"	

TDS by SM 2540C

Total Dissolved Solids	2090	14.3	mg/L	1	1656615	"	04/19/2017	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB14

4/13/2017 12:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-08 (Water)

Anions by EPA 300.0

Bromide	0.744	0.200	mg/L	1	1656668		04/18/2017	
Chloride	221	10.0	"	50	"	"	04/19/2017	
Sulfate	581	20.0	"	"	"	"	"	

TDS by SM 2540C

Total Dissolved Solids	1660	14.3	mg/L	1	1656615	"	04/19/2017	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB18R
4/13/2017 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-09 (Water)

Anions by EPA 300.0

Bromide	2.46	0.200	mg/L	1	1656668		04/18/2017	
Chloride	372	20.0	"	100	"	"	04/19/2017	
Sulfate	1340	40.0	"	"	"	"	"	

TDS by SM 2540C

Total Dissolved Solids	3760	14.3	mg/L	1	1656615	"	04/19/2017	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB20R
4/13/2017 1:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-10 (Water)

Anions by EPA 300.0

Bromide	0.506	0.200	mg/L	1	1656668		04/19/2017	
Chloride	203	10.0	"	50	"	"	"	"
Sulfate	226	20.0	"	"	"	"	"	"

TDS by SM 2540C

Total Dissolved Solids	1080	14.3	mg/L	1	1656615	"	04/19/2017	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

SB23

4/13/2017 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
Y704177-11 (Water)

Anions by EPA 300.0

Bromide	1.74	0.200	mg/L	1	1656668		04/19/2017	
Chloride	704	20.0	"	100	"	"	"	"
Sulfate	1380	40.0	"	"	"	"	"	"

TDS by SM 2540C

Total Dissolved Solids	3890	14.3	mg/L	1	1656615	"	04/19/2017	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

Anions by EPA 300.0 - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1656668 -										
BLANK (1203769213-BLK)					Prepared: Analyzed: 04/18/2017					
Bromide	ND	0.200	mg/L				-			U
Chloride	ND	0.200	"				-			U
Sulfate	ND	0.400	"				-			U
LCS (1203769214-BKS)					Prepared: Analyzed: 04/18/2017					
Bromide	1.23	0.200	mg/L	1.25		98.4	90-110			
Chloride	4.58	0.200	"	5.00		91.6	90-110			
Sulfate	9.57	0.400	"	10.0		95.7	90-110			
DUP (1203769215 D)					Source: Y704177-01		Prepared: Analyzed: 04/19/2017			
Sulfate	464	20.0	mg/L		476		0-20	2.68	20	
Chloride	270	10.0	"		275		0-20	2.13	20	
Bromide	1.06	0.200	"		1.05		0-20	1.17	20	
DUP (1203769216 D)					Source: Y704177-11		Prepared: Analyzed: 04/19/2017			
Bromide	1.72	0.200	mg/L		1.74		0-20	0.99	20	
Chloride	704	20.0	"		704		0-20	0.0412	20	
Sulfate	1390	40.0	"		1380		0-20	0.113	20	
PS (1203769217 S)					Source: Y704177-01		Prepared: Analyzed: 04/18/2017			
Bromide	2.18	0.200	mg/L	1.25		90.4	90-110			
Chloride	536	10.0	"	5.00		104	90-110			
Sulfate	988	20.0	"	10.0		102	90-110			
PS (1203769218 S)					Source: Y704177-11		Prepared: Analyzed: 04/19/2017			
Sulfate	2470	40.0	mg/L	10.0		109	90-110			
Bromide	2.73	0.200	"	1.25		79.5	90-110			
Chloride	1250	20.0	"	5.00		110	90-110			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

TDS by SM 2540C - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1656615 -										
BLANK (1203769058-BLK)					Prepared: Analyzed: 04/19/2017					
Total Dissolved Solids	ND	14.3	mg/L				-			U
LCS (1203769059-BKS)					Prepared: Analyzed: 04/19/2017					
Total Dissolved Solids	297	14.3	mg/L	300		99	95-105			
DUP (1203769061 D)					Source: 420675003 Prepared: Analyzed: 04/19/2017					
Total Dissolved Solids	150	14.3	mg/L		157		0-5	4.65	5	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO 80003

Charles Greeson
Project Number: 008312061
Project: Noble - Miller #1 South CACL

Notes and Definitions

U Result not detected above the detection limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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