



GROUNDWATER MONITORING REPORT AND NO FURTHER ACTION REQUEST NOVEMBER 2013

MILLER SOUTH #1 SPREAD FIELD COGCC TRACKING #2223090 & REMEDIATION #7412

LT Environmental, Inc. (LTE), under the direction of Noble Energy, Inc. (Noble), conducted groundwater monitoring activities at the Miller South #1 Spread Field (Site). This work has been conducted per the Conditions of Approval (COA) (Document #2614122) following the submission of the Form 27 Site Investigation and Remediation Workplan (Document #200370331).

The COA requires the following actions to document the extent of chloride impact in groundwater and to determine whether sulfate and chloride concentrations will stabilize and decline:

1. Conduct quarterly groundwater monitoring of all monitoring wells at the site (SB01R through SB08R and SB10 through SB23) for four consecutive quarters. The number of monitoring wells sampled may be reduced after additional data is collected.
2. Analyze groundwater samples for chloride, sulfate, and total dissolved solids (TDS).
3. If site conditions change or potential receptors at this Site appear at risk of impact by chloride in groundwater, additional remediation activities may be required.
4. Correctly label and plot groundwater monitoring points and estimate groundwater flow direction based on groundwater elevations to a 0.01 foot resolution.

In order to satisfy the Colorado Oil and Gas Conservation Commission (COGCC) request, LTE, on behalf of Noble, conducted the following work. On March 8 and 9, 2012, LTE advanced a total of 16 soil borings. Soil borings (SB01 through SB16) were installed using a direct-push rig operated by High Plains Drilling of Denver, Colorado. Soil boring SB01 was installed using a hand auger due to drilling rig access restrictions. Soil boring SB09 was located up-gradient from the release area to obtain background concentrations. On September 10 and 11, 2012, LTE advanced a total of 24 additional soil borings. Soil borings (Background 01, Background 02, SB01R through SB08R, and SB10 through SB23) were installed using a direct-push drill rig operated by ACI Services of Denver, Colorado. The soil borings advanced on September 10 and 11, 2012 replaced all of the monitoring wells installed in March 2012. On April 1, 2013, LTE installed three replacement monitoring wells (SB19R through SB21R) that were destroyed during expansion of the landowner's irrigation pond on site. Soil boring SB09 was advanced to establish background conditions; however, it was located within the permitted spread field boundaries. Therefore, samples were collected from the Background 01 and Background 02

locations both up-gradient and outside of the permitted spread field and those results were used to calculate the COGCC standard for chloride, sulfate, and TDS. A site map with the soil boring locations that are part of the current monitoring activities is provided as Figure 1.

Twenty-two groundwater samples (SB01R through SB04R, SB05R2, SB06R through SB08R, SB10 through SB18, SB19R through SB21R, SB22, and SB23) were collected on October 31 and November 5, 2013. Samples collected on October 31, 2013, were submitted to Summit Scientific, of Golden, Colorado, and samples collected on November 5, 2013, were submitted to Origins Laboratory of Denver, Colorado. All samples were submitted for analysis of chloride and sulfate by United States Environmental Protection Agency (EPA) Method 300.0 and TDS by Standard Method 2540C or EPA Method 160.1. During sampling, depth to groundwater ranged from 4.28 feet below top of casing (btoc) in soil boring SB04R to 10.23 feet btoc in SB19R. Within the boundaries of the defined area of impact, the groundwater is calculated to generally flow inward towards the containment pond. Locally, the southeast portion of the Site flows southeast and northwest portion of the Site flows northwest with an average gradient of approximately 0.006 feet per foot (ft/ft). A relative groundwater elevation map is presented as Figure 2.

Groundwater analytical results are illustrated on Figures 3 through 5 and summarized in Table 1. The laboratory analytical report is provided as the attachment. The COGCC Table 910-1 groundwater standards for chloride, sulfate, and TDS are based on 1.25 times the background concentrations from samples collected at monitoring wells Background 01 and Background 02. It is apparent from the analytical results that natural site variability exists in the groundwater for these constituents. Due to the composition of the release (calcium-chloride-enriched water), chloride is the best indicator to determine the extent of impact. However, all waters contain varying concentrations of chloride depending on the mineral content of the earth and regional activities in a given area. Chloride can occur in surface water as a result of several sources including road salting, agricultural runoff, and mineral accumulation due to water evaporation, precipitation of chloride, and other constituents.

Analytical results do not reveal obvious trends in chloride, sulfate, and TDS concentrations in groundwater. The conditions of the COA have been satisfied and the data indicates that the extent of impact has been defined and is not expanding beyond those defined boundaries. Fluctuations are likely the result of natural variability and seasonal fluctuations in the alluvial water table. As seen by the data collected in this report, groundwater impacts are generally confined to near the release area, and monitoring locations at the extent of the investigated area are stable or decreasing, indicating that the source has been removed and the groundwater plume is in the decreasing phase of its life cycle. The inorganic impacts identified are not migrating, receptors are not present in close proximity to the site, and the plume does not present a risk to public health or the environment. As a result, Noble respectfully requests a No Further Action Status for the Miller South #1 Spread Field.

FIGURES

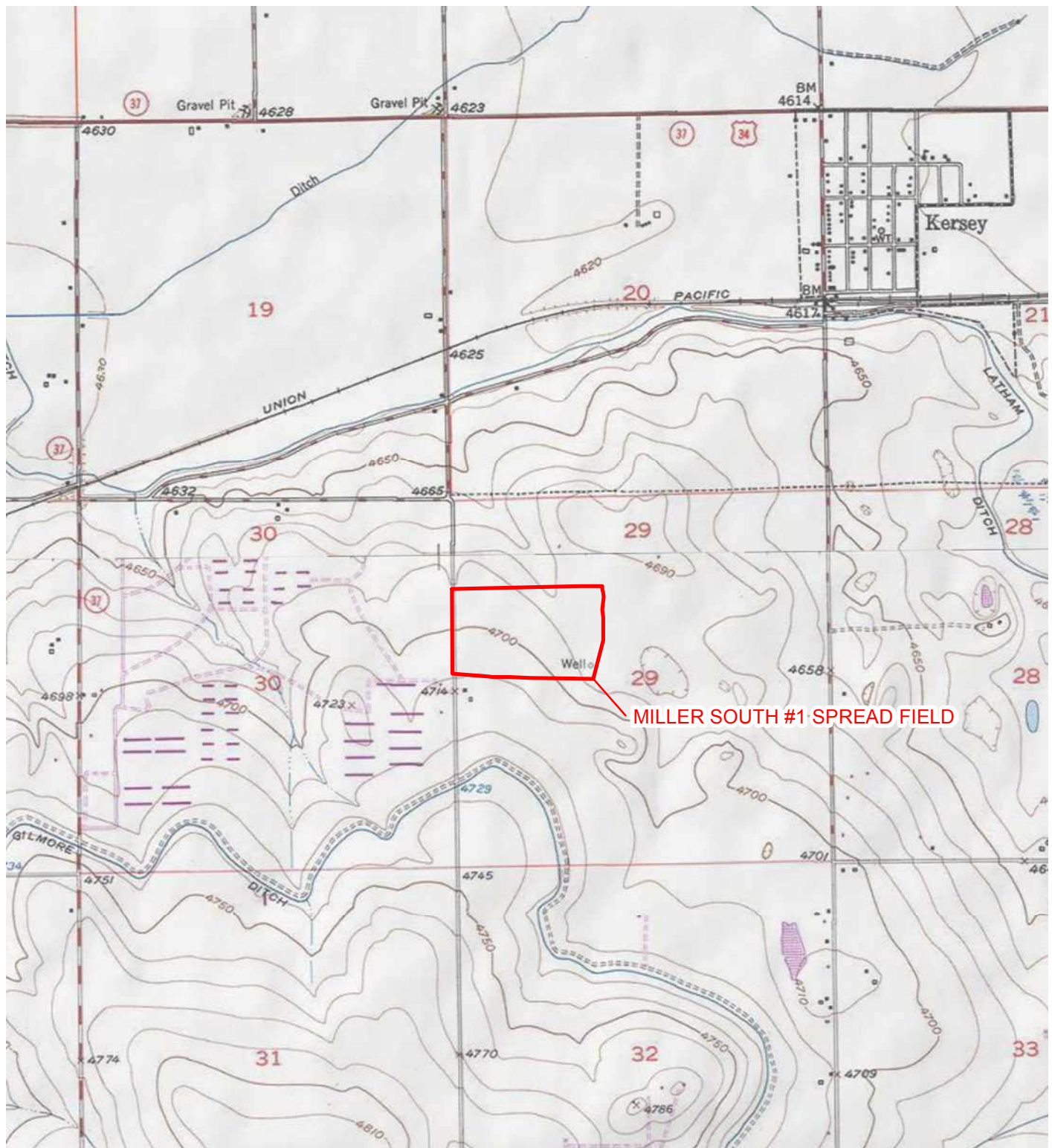


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION



COLORADO

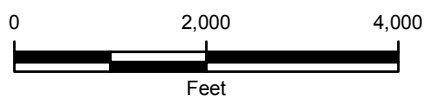


FIGURE 1
SITE LOCATION MAP
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.



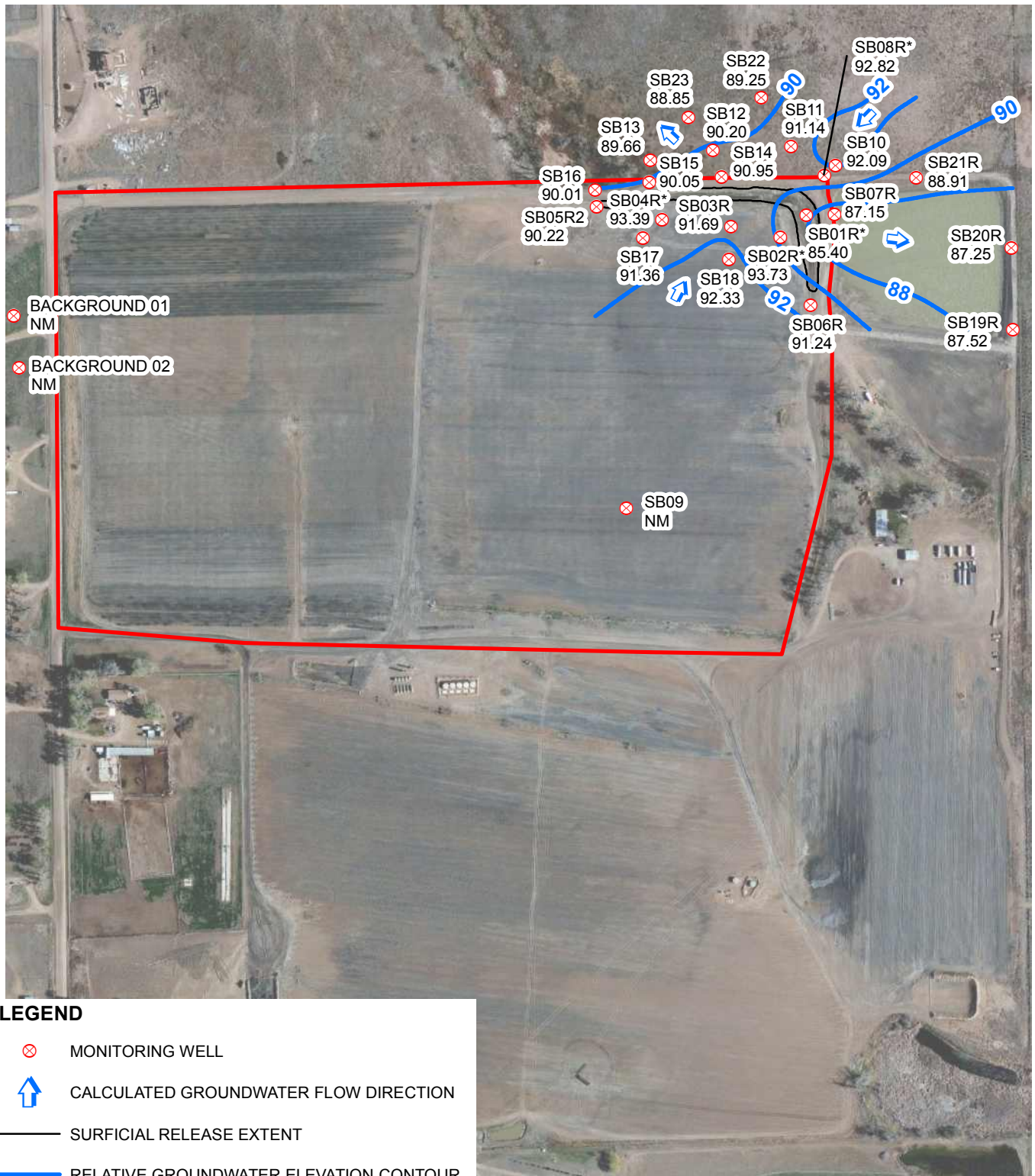


IMAGE COURTESY OF ESRI/BING MAPS

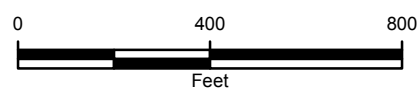
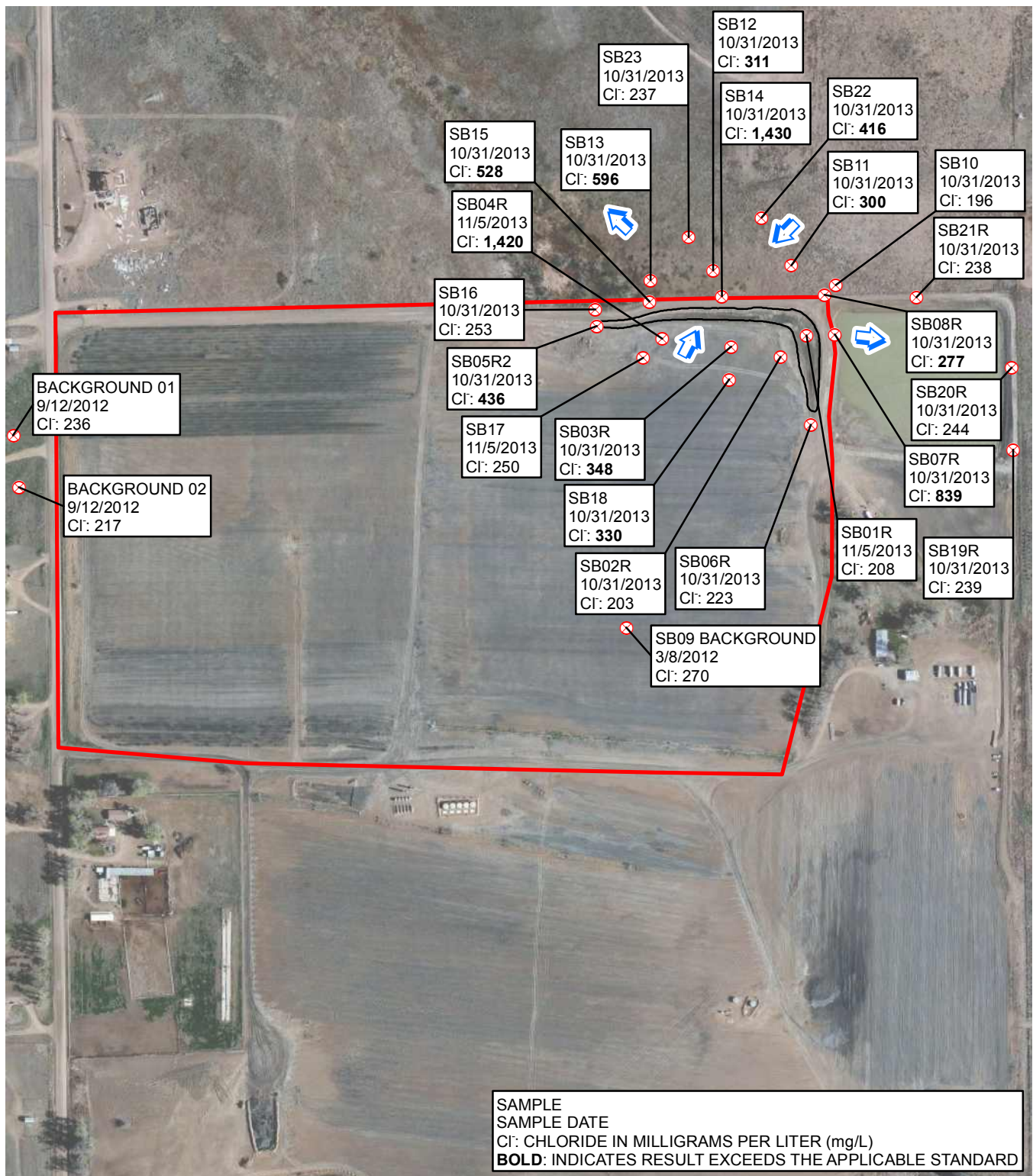


FIGURE 2
RELATIVE GROUNDWATER ELEVATION MAP
OCTOBER 31, & NOVEMBER 5, 2013
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.



*GROUNDWATER ELEVATIONS FROM MONITORING WELLS SB01R, SB02R, SB04R AND SB08R WERE NOT USED TO GENERATE CONTOURS.
 NM: NOT MEASURED



LEGEND

- MONITORING WELL
- CALCULATED GROUNDWATER FLOW DIRECTION
- SURFICIAL RELEASE EXTENT
- SPREAD FIELD BOUNDARY

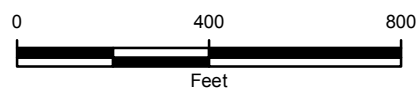
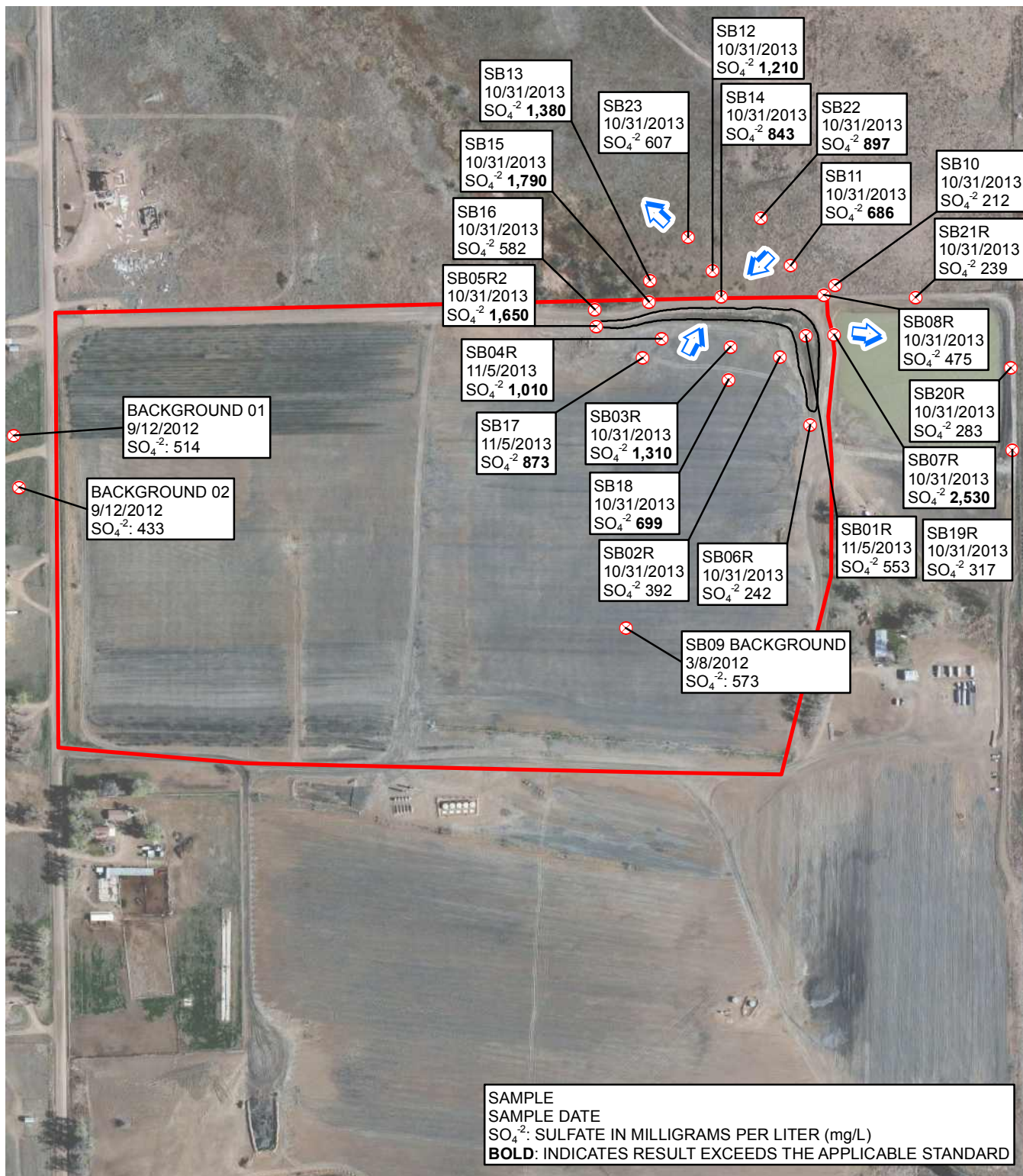


FIGURE 3
 CHLORIDE GROUNDWATER ANALYTICAL RESULTS
 MILLER SOUTH #1 SPREAD FIELD
 WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





LEGEND

- ⊗ MONITORING WELL
- ↑ CALCULATED GROUNDWATER FLOW DIRECTION
- SURFICIAL RELEASE EXTENT
- SPREAD FIELD BOUNDARY

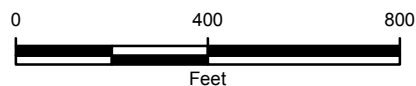
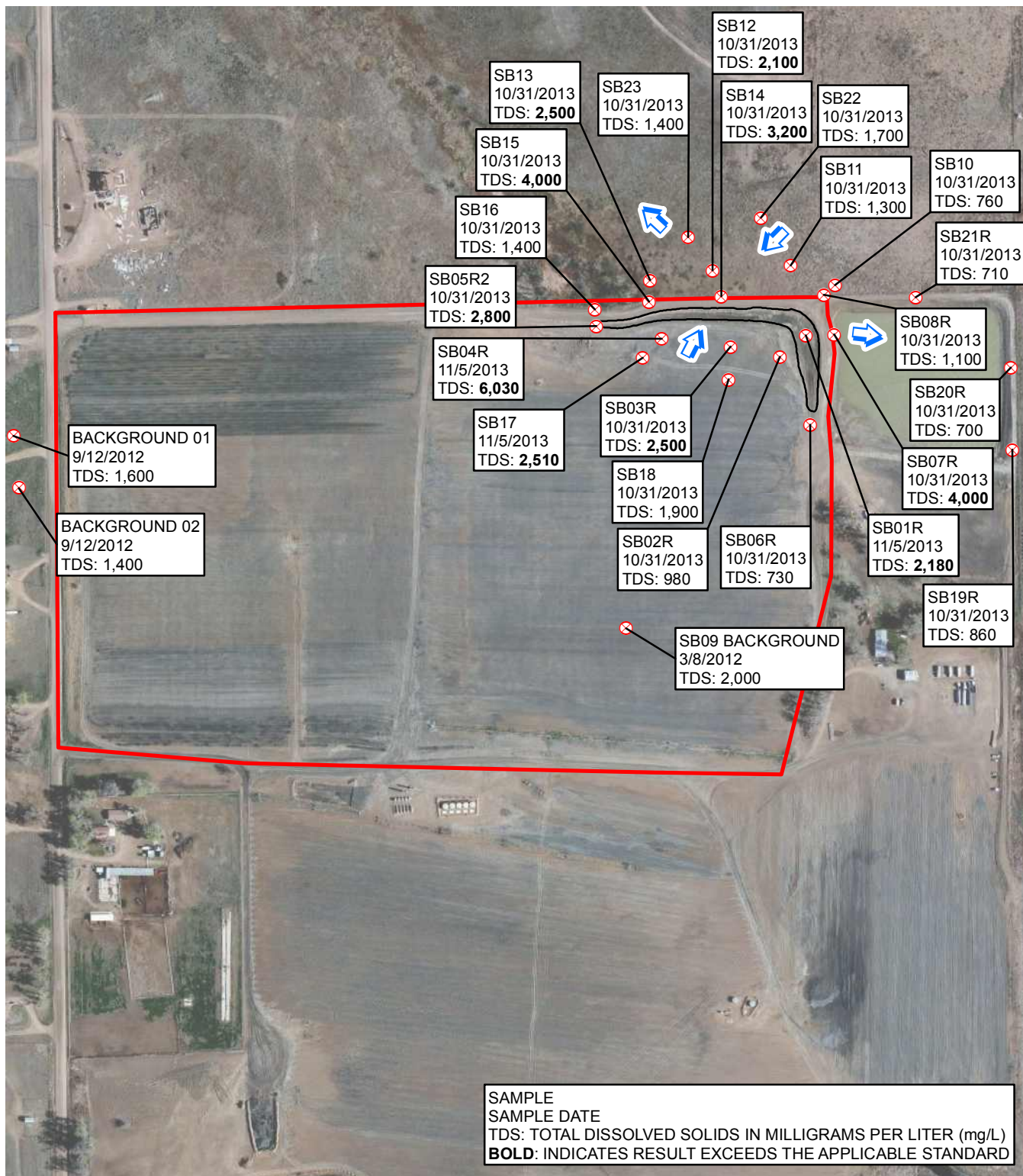


FIGURE 4
SULFATE GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO

NOBLE ENERGY, INC.





TABLE

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
Background 01	9/12/2012	15.36	95.02	236	514	1,600	<1.0	<1.0	<1.0	<1.0
Background 02	9/12/2012	17.40	94.91	217	433	1,400	<1.0	<1.0	<1.0	<1.0
SB01	3/8/2012	3.30	NM	1,260	1,070	4,600	NA	NA	NA	NA
						Monitoring well destroyed/removed				
	9/11/2012	4.24	90.72	181	372	1,300	<1.0	<1.0	<1.0	<1.0
	1/8/2013	2.75	92.21	2,820	1,010	4,700	NA	NA	NA	NA
SB01R	4/1/2013	NM	NM			No Sample - Under Water				
	7/12/2013	2.57	92.39	1,360	448	2,800	NA	NA	NA	NA
	10/31/2013	NM	NM			No Sample - Under Water				
	11/5/2013	9.56	85.40	208	553	2,180	NA	NA	NA	NA
SB02	3/8/2012	6.46	NM	220	584	1,700	NA	NA	NA	NA
						Monitoring well destroyed/removed				
	9/11/2012	8.03	91.30	214	300	1,100	<1.0	<1.0	<1.0	<1.0
SB02R	1/8/2013	6.72	92.61	241	366	830	NA	NA	NA	NA
	4/1/2013	7.18	92.15	241	378	880	NA	NA	NA	NA
	7/12/2013	6.49	92.84	196	365	900	NA	NA	NA	NA
	10/31/2013	5.60	93.73	203	392	980	NA	NA	NA	NA
SB03	3/8/2012	6.22	NM	348	1,070	3,100	NA	NA	NA	NA
						Monitoring well destroyed/removed				
	9/11/2012	7.50	90.33	278	646	2,300	<1.0	<1.0	<1.0	<1.0
	1/8/2013	5.90	91.93	252	741	1,500	NA	NA	NA	NA
SB03R	4/1/2013	6.15	91.68	223	611	1,400	NA	NA	NA	NA
	7/12/2013	6.45	91.38	202	463	1,300	NA	NA	NA	NA
	10/31/2013	6.14	91.69	348	1,310	2,500	NA	NA	NA	NA
SB04	3/8/2012	7.08	NM	296	1,220	3,100	NA	NA	NA	NA
						Monitoring well destroyed/removed				
	9/11/2012	7.94	89.73	488	1,600	4,800	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.83	90.84	388	1,330	2,400	NA	NA	NA	NA
SB04R	4/1/2013	6.30	91.37	356	1,330	2,400	NA	NA	NA	NA
	7/12/2013	6.11	91.56	328	1,170	2,500	NA	NA	NA	NA
	10/31/2013	NM	NM			Monitoring well damaged - No Sample				
	11/5/2013	4.28	93.39	1,420	1,010	6,030	NA	NA	NA	NA
SB05	3/8/2012	7.94	NM	208	896	2,400	NA	NA	NA	NA
						Monitoring well destroyed/removed				
SB05R	9/11/2012	6.51	88.62	291	1,060	3,000	<1.0	<1.0	<1.0	<1.0
						Monitoring well destroyed/removed				
	1/8/2013	4.65	NM	6,170	1,570	10,000	NA	NA	NA	NA
SB05R2	4/1/2013	6.55	90.37	1,630	2,790	4,800	NA	NA	NA	NA
	7/12/2013	7.95	88.97	489	862	2,100	NA	NA	NA	NA
	10/31/2013	6.70	90.22	436	1,650	2,800	NA	NA	NA	NA
SB06	3/8/2012	7.82	NM	147	280	890	NA	NA	NA	NA
						Monitoring well destroyed/removed				
	9/11/2012	7.45	89.68	186	325	1,200	<1.0	<1.0	<1.0	<1.0
SB06R	1/8/2013	6.32	90.81	218	401	770	NA	NA	NA	NA
	4/1/2013	6.99	90.14	199	366	780	NA	NA	NA	NA
	7/12/2013	4.78	92.35	171	307	750	NA	NA	NA	NA
	10/31/2013	5.89	91.24	223	242	730	NA	NA	NA	NA
SB07	3/8/2012	6.93	NM	1,020	1,620	4,700	NA	NA	NA	NA
						Monitoring well destroyed/removed				
	9/11/2012	9.68	84.95	773	896	3,400	<1.0	<1.0	<1.0	<1.0
	1/8/2013	7.89	86.74	1,150	2,930	4,900	NA	NA	NA	NA
SB07R	4/1/2013	8.49	86.14	1,050	3,170	5,000	NA	NA	NA	NA
	7/12/2013	6.98	87.65	551	3,020	3,900	NA	NA	NA	NA
	10/31/2013	7.48	87.15	839	2,530	4,000	NA	NA	NA	NA
SB08	3/8/2012	9.73	NM	182	395	1,100	NA	NA	NA	NA
						Monitoring well destroyed/removed				
	9/11/2012	11.77	89.27	2,140	500	1,600	<1.0	<1.0	<1.0	<1.0
SB08R	1/8/2013	9.39	91.65	247	736	1,100	NA	NA	NA	NA
	4/1/2013	9.79	91.25	202	391	860	NA	NA	NA	NA
	7/12/2013	8.80	92.24	370	816	1,600	NA	NA	NA	NA
	10/31/2013	8.22	92.82	277	475	1,100	NA	NA	NA	NA
SB09 (background)	3/8/2012	8.09	NM	270	573	2,000	NA	NA	NA	NA

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB10	3/9/2012	9.64	NM	157	414	1,100	NA	NA	NA	NA
	9/12/2012	10.39	89.90	146	203	1,000	<1.0	<1.0	<1.0	<1.0
	1/8/2013	8.42	91.87	195	356	970	NA	NA	NA	NA
	4/1/2013	8.97	91.32	202	642	1,100	NA	NA	NA	NA
	7/12/2013	8.67	91.62	168	308	780	NA	NA	NA	NA
	10/31/2013	8.20	92.09	196	212	760	NA	NA	NA	NA
SB11	3/9/2012	8.58	NM	267	717	1,900	NA	NA	NA	NA
	9/12/2012	9.78	89.05	263	639	1,900	<1.0	<1.0	<1.0	<1.0
	1/8/2013	7.72	91.11	309	808	1,300	NA	NA	NA	NA
	4/1/2013	7.89	90.94	306	695	1,300	NA	NA	NA	NA
	7/12/2013	8.68	90.15	382	775	1,600	NA	NA	NA	NA
	10/31/2013	7.69	91.14	300	686	1,300	NA	NA	NA	NA
SB12	3/9/2012	6.16	NM	300	1,230	2,500	NA	NA	NA	NA
	9/12/2012	8.70	88.03	270	643	1,900	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.45	90.28	424	921	1,600	NA	NA	NA	NA
	4/1/2013	6.25	90.48	366	1,650	2,200	NA	NA	NA	NA
	4/4/2013	6.24	90.49	371	1,650	2,200	NA	NA	NA	NA
	7/12/2013	7.94	88.79	393	1,100	2,000	NA	NA	NA	NA
SB13	10/31/2013	6.53	90.20	311	1,210	2,100	NA	NA	NA	NA
	3/9/2012	5.61	NM	439	1,210	2,900	NA	NA	NA	NA
	9/12/2012	7.43	87.40	314	902	2,400	<1.0	<1.0	<1.0	<1.0
	1/8/2013	5.02	89.81	352	1,010	1,700	NA	NA	NA	NA
	4/1/2013	4.83	90.00	1,800	3,500	5,400	NA	NA	NA	NA
	7/12/2013	7.03	87.80	373	937	1,800	NA	NA	NA	NA
SB14	10/31/2013	5.17	89.66	596	1,380	2,500	NA	NA	NA	NA
	3/9/2012	6.15	NM	125	991	1,900	NA	NA	NA	NA
	9/12/2012	8.32	88.83	246	1,010	2,500	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.28	90.87	246	999	1,500	NA	NA	NA	NA
	4/1/2013	6.18	90.97	1,060	862	2,600	NA	NA	NA	NA
	7/12/2013	7.60	89.55	666	752	2,100	NA	NA	NA	NA
SB15	10/31/2013	6.20	90.95	1,430	843	3,200	NA	NA	NA	NA
	3/9/2012	10.97	NM				No Sample - Dry			
	9/12/2012	7.89	87.88	292	900	2,500	<1.0	<1.0	<1.0	<1.0
	1/8/2013	5.65	90.12	654	3,520	4,800	NA	NA	NA	NA
	4/1/2013	5.49	90.28	588	2,720	4,400	NA	NA	NA	NA
	7/12/2013	7.52	88.25	465	1,020	2,300	NA	NA	NA	NA
SB16	10/31/2013	5.72	90.05	528	1,790	4,000	NA	NA	NA	NA
	3/9/2012	7.36	NM	297	730	2,200	NA	NA	NA	NA
	9/12/2012	9.15	88.52	194	597	2,000	<1.0	<1.0	<1.0	<1.0
	1/8/2013	7.60	90.07	264	734	1,500	NA	NA	NA	NA
	4/4/2013	7.58	90.09	305	720	1,600	NA	NA	NA	NA
	7/12/2013	9.12	88.55	251	654	1,600	NA	NA	NA	NA
SB17	10/31/2013	7.66	90.01	253	582	1,400	NA	NA	NA	NA
	9/11/2012	5.55	90.14	237	584	2,100	<1.0	<1.0	<1.0	<1.0
	1/8/2013	4.33	91.36	262	621	1,400	NA	NA	NA	NA
	4/1/2013	4.29	91.40	253	635	1,500	NA	NA	NA	NA
	7/12/2013	5.24	90.45	281	986	2,100	NA	NA	NA	NA
	10/31/2013	4.33	91.36				Not Sampled			
SB18	11/5/2013	4.33	91.36	250	873	2,510	NA	NA	NA	NA
	9/11/2012	7.75	90.85	290	920	3,000	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.50	92.10	313	866	1,800	NA	NA	NA	NA
	4/1/2013	6.73	91.87	284	772	1,800	NA	NA	NA	NA
	7/12/2013	7.11	91.49	265	714	2,000	NA	NA	NA	NA
	10/31/2013	6.27	92.33	330	699	1,900	NA	NA	NA	NA
SB19	9/11/2012	8.56	91.77	196	317	1,300	<1.0	<1.0	<1.0	<1.0
	1/8/2013	6.85	93.48	390	831	1,600	NA	NA	NA	NA
SB19R						Monitoring well destroyed/removed				
	4/1/2013	12.65	85.10	190	324	680	NA	NA	NA	NA
	7/12/2013	6.78	90.97	211	368	810	NA	NA	NA	NA
	10/31/2013	10.23	87.52	239	317	860	NA	NA	NA	NA

TABLE 1 (Continued)

GROUNDWATER ANALYTICAL RESULTS
MILLER SOUTH #1 SPREAD FIELD
WELD COUNTY, COLORADO
NOBLE ENERGY, INC.

Sample Location	Date Sampled	Depth to Water (feet btoc)	Relative Groundwater Elevation (feet)	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
SB20	9/11/2012	10.33	89.50	183	180	1,000	<1.0	<1.0	<1.0	<1.0
	1/8/2013	9.40	90.43	209	329	710	NA	NA	NA	NA
Monitoring well destroyed/removed										
SB20R	4/1/2013	11.23	84.71	234	301	750	NA	NA	NA	NA
	7/12/2013	7.56	88.38	234	342	880	NA	NA	NA	NA
	10/31/2013	8.69	87.25	244	283	700	NA	NA	NA	NA
SB21	9/11/2012	10.17	90.62	162	490	1,200	<1.0	<1.0	<1.0	<1.0
	1/8/2013	8.36	92.43	196	350	660	NA	NA	NA	NA
Monitoring well destroyed/removed										
SB21R	4/1/2013	9.95	86.89	190	163	650	NA	NA	NA	NA
	7/12/2013	5.81	91.03	223	369	880	NA	NA	NA	NA
	10/31/2013	7.93	88.91	238	239	710	NA	NA	NA	NA
SB22	9/12/2012	11.14	87.53	355	815	2,200	<1.0	<1.0	<1.0	<1.0
	1/8/2013	9.14	89.53	378	884	1,400	NA	NA	NA	NA
	4/1/2013	9.06	89.61	337	815	1,500	NA	NA	NA	NA
	7/12/2013	10.08	88.59	359	808	1,700	NA	NA	NA	NA
	10/31/2013	9.42	89.25	416	897	1,700	NA	NA	NA	NA
SB23	9/12/2012	11.25	86.21	212	515	1,500	<1.0	<1.0	<1.0	<1.0
	1/8/2013	8.26	89.20	268	712	1,100	NA	NA	NA	NA
	4/1/2013	7.95	89.51	354	1,100	1,600	NA	NA	NA	NA
	7/12/2013	9.65	87.81	368	1,120	1,900	NA	NA	NA	NA
	10/31/2013	8.61	88.85	237	607	1,400	NA	NA	NA	NA
COGCC Table 910-1 Standard				295	642.5	2,000	5	560	700	1,400

NOTES:

btoc - below top of casing

µg/L - micrograms per liter

mg/L - milligrams per liter

NA - not analyzed

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

Benzene, toluene, ethylbenzene, and total xylenes analyzed by EPA Method 8260B

Chloride, sulfate and total dissolved solids standards are less than 1.25 times background concentrations

Chloride and sulfate analyzed by EPA Method 300.0

COGCC - Colorado Oil and Gas Conservation Commission

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

BOLD indicates result exceeds the applicable standard

ATTACHMENT
LABORATORY ANALYTICAL REPORTS

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 11, 2013

Chris Roy
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: NEP - Miller S #1 CaCl

Enclosed are the results of analyses for samples received by Summit Scientific on 11/01/13 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to be 'BS' or 'Shrewsbury', written in a cursive style.

Ben Shrewsbury
President / Laboratory Manager



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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB02R	R311012-01	Water	10/31/13 14:55	11/01/13 17:00
SB03R	R311012-02	Water	10/31/13 15:12	11/01/13 17:00
SB05R2	R311012-03	Water	10/31/13 15:25	11/01/13 17:00
SB06R	R311012-04	Water	10/31/13 14:48	11/01/13 17:00
SB07R	R311012-05	Water	10/31/13 14:30	11/01/13 17:00
SB08R	R311012-06	Water	10/31/13 13:26	11/01/13 17:00
SB10	R311012-07	Water	10/31/13 13:35	11/01/13 17:00
SB11	R311012-08	Water	10/31/13 13:48	11/01/13 17:00
SB12	R311012-09	Water	10/31/13 13:57	11/01/13 17:00
SB13	R311012-10	Water	10/31/13 15:35	11/01/13 17:00
SB14	R311012-11	Water	10/31/13 15:45	11/01/13 17:00
SB15	R311012-12	Water	10/31/13 14:15	11/01/13 17:00
SB16	R311012-13	Water	10/31/13 15:30	11/01/13 17:00
SB18	R311012-14	Water	10/31/13 15:05	11/01/13 17:00
SB19R	R311012-15	Water	10/31/13 15:55	11/01/13 17:00
SB20R	R311012-16	Water	10/31/13 16:05	11/01/13 17:00
SB21R	R311012-17	Water	10/31/13 16:15	11/01/13 17:00
SB22	R311012-18	Water	10/31/13 16:25	11/01/13 17:00
SB23	R311012-19	Water	10/31/13 16:35	11/01/13 17:00

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

11/10/12

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Page 1 of 2

Client: LT Environmental, Inc.
Address: 4600 West 60th Avenue
City/State/Zip: Arvada, CO 80003
Phone: (303) 433-9788
Fax: (303) 433-1432
Project Manager: ~~Bob Doherty~~ Chris Roy
E-Mail: ~~rdoherty@ltenv.com~~ croy@ltenv.com
Project Name: Miller S #1 50th CaCl
Project Number: 0083-12061
Sampler Name: D. Strobach

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:	Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)			
SB22R	10/21/13	1455	1			X								
SB03R		1512				X								
SB05R		1525				X								
SB06R		1448				X								
SB07R		1430				X								
SB09R		1326				X								
SB10		1335				X								
SB11		1348				X								
SB12		1357				X								
SB13		1535				X								

Received by:	Date/Time:	Turn Around Time (Check):	Notes:
<i>[Signature]</i>	10/11/13 1700	Same Day <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>	
Requisitioned by:	Date/Time:	Sample Integrity:	
		Temperature Upon Receipt: <i>28</i>	
		Intact: <i>Yes</i> No <input type="checkbox"/>	

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[Signature]



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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

R311012.2

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Page 2 of 2

Client: LT Environmental, Inc.
Address: 4600 West 60th Avenue
City/State/Zip: Arvada, CO 80003
Phone: (303) 433-9788
Fax: (303) 433-1432
Project Manager: ~~Chris Roy~~
E-Mail: ~~chris.roy@summit-sc.com~~
Project Name: Miller S #1 CaCl
Project Number: 0083-12061
Sampler Name: D. Stachura

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:	Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)			
SB14	10/31/8	1545	1											
SB15		1415												
SB16		1530												
SB18		1505												
SB19		1555												
SB20		1605												
SB21		1615												
SB22		1625												
SB23		1635												

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check):	Notes:
D. Stachura	11/13 1700	[Signature]	11/13 1700	<input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input checked="" type="checkbox"/> Standard	

Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Sample Integrity:
				Temperature Upon Receipt: <u>24</u> Impact: <u>Yes</u> No

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB02R
R311012-01 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	203	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	392	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 14:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	980	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB03R
R311012-02 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	348	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	1310	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 15:12**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	2500	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB05R2
R311012-03 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 15:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	436	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 15:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	1650	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 15:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	2800	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB06R
R311012-04 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	223	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	242	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	730	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061

Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB07R
R311012-05 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	839	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	2530	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	4000	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB08R
R311012-06 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	277	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	475	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 13:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1100	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB10
R311012-07 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	196	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	212	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	760	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB11
R311012-08 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	300	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	686	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 13:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1300	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB12
R311012-09 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	311	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	1210	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 13:57**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	2100	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB13
R311012-10 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	596	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	1380	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 15:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	2500	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB14
R311012-11 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	1430	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	843	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 15:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	3200	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB15
R311012-12 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	528	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	1790	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	4000	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB16
R311012-13 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	253	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	582	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1400	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB18
R311012-14 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	330	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	699	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 15:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1900	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB19R
R311012-15 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	239	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	317	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	860	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB20R
R311012-16 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	244	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	283	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 16:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	700	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB21R
R311012-17 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 16:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	238	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 16:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	239	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 16:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	710	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061

Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB22
R311012-18 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	416	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	897	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1700	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

SB23
R311012-19 (Water)

Summit Scientific

Anions by EPA Method 300.0

Date Sampled: **10/31/13 16:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chloride	237	1.00	mg/L	1	3110303	11/03/13	11/11/13	EPA 300.0	

Date Sampled: **10/31/13 16:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	607	1.00	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/31/13 16:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1400	1.0	mg/L	1	3110704	11/07/13	11/07/13	TDS Meter	

Summit Scientific

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

Project: NEP - Miller S #1 CaCl
Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

Anions by EPA Method 300.0 - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 3110303 - General Preparation

Blank (3110303-BLK1)

Prepared: 11/03/13 Analyzed: 11/11/13

Sulfate	ND	1.00	mg/L
Chloride	ND	1.00	"

LCS (3110303-BS1)

Prepared: 11/03/13 Analyzed: 11/11/13

Sulfate	9.17	1.00	mg/L	10.0	91.7	90-110
Chloride	9.54	1.00	"	10.0	95.4	90-110

Duplicate (3110303-DUP1)

Source: R310310-01

Prepared: 11/03/13 Analyzed: 11/11/13

Sulfate	704	1.00	mg/L	704	0.0507	10
Chloride	227	1.00	"	227	0.169	10

Matrix Spike (3110303-MS1)

Source: R310310-01

Prepared: 11/03/13 Analyzed: 11/11/13

Sulfate	647	1.00	mg/L	10.0	704	NR	90-110	QM-4X
Chloride	215	1.00	"	10.0	227	NR	90-110	QM-4X

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 3110704 - General Preparation

Blank (3110704-BLK1)

Prepared & Analyzed: 11/07/13

Total Dissolved Solids ND 1.0 mg/L

Duplicate (3110704-DUP1)

Source: R311012-01

Prepared & Analyzed: 11/07/13

Total Dissolved Solids 970 1.0 mg/L 980 1.24 20

Summit Scientific

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

Project: NEP - Miller S #1 CaCl

Project Number: 0083-12061
Project Manager: Chris Roy

Reported:
11/11/13 10:14

Notes and Definitions

QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

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.



November 13, 2013

LT Environmental, Inc.

Chris Roy

4600 West 60th Avenue

Arvada

CO 80003

Project Name - Noble - Miller 1 South

Project Number - 008312061

Attached are you analytical results for Noble - Miller 1 South received by Origins Laboratory, Inc. November 05, 2013. This project is associated with Origins project number X311030-01.

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

Chris Roy
Project Number: 008312061
Project: Noble - Miller 1 South

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB01R	X311030-01	Water	November 5, 2013 13:10	11/05/2013 16:00
SB04R	X311030-02	Water	November 5, 2013 13:20	11/05/2013 16:00
SB17	X311030-03	Water	November 5, 2013 13:40	11/05/2013 16:00

Origins Laboratory, Inc.



Noelle E Doyle, President

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

Chris Roy
Project Number: 008312061
Project: Noble - Miller 1 South

www.originslaboratory.com

X31030

page 1 of 1

Client: LTE
Address: 4600 W. 60th Ave.
Telephone Number: 303-433-9788
Email Address: C.Roy@Hew.com

Project Manager: Chris Roy
Project Name: Miller 1 South
Project Number: 008312061
Samples Collected By: Ryan K. Hargrett

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa			Other
SB01R	11/5/13	1316	2	X				X				1	
SB04R	11/5/13	1320	2	X				X				2	
SB17	11/5/13	1340	2	X				X				3	
												4	
												5	
												6	
												7	
												8	
												9	
												10	
Relinquished By: Ryan K. Hargrett	Date: 11/5/13	Time: 16:00											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: Ryan K. Hargrett	Date: 11/5/13	Time: 16:00											

Data Description

Origins Laboratory, Inc.

Noelle E Doyle

Noelle E Doyle, President

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

Chris Roy
Project Number: 008312061
Project: Noble - Miller 1 South

Origins Laboratory

Sample Receipt Checklist

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

Origins Work Order: X31103D

Client: LTE

Client Project ID: Miller 1 South

Checklist Completed by: Jeff Smith

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

Date/time completed: 11/5/13 16:05

Airbill #: NA

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

Cooler Number/Temperature: 15.3 °C / _____ °C / _____ °C (Describe) _____ °C

Thermometer ID: 1002

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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 type="checkbox"/>	<input checked="" 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 (Project Manager)

11.13.13 15:17
Date/Time Reviewed

Origins Laboratory, Inc.

Noelle E Doyle, President

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

Chris Roy
Project Number: 008312061
Project: Noble - Miller 1 South

SB01R

11/5/2013 1:10:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

GEL Laboratories, LLC
X311030-01 (Water)

Anions by EPA 300.0

Chloride	208	10.0	mg/L	50	1344575			11/08/2013	
Sulfate	553	20.0	"	"	"	"	"	"	"

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	2180	14.3	mg/L	1	1344418		"	11/06/2013	
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Origins Laboratory, Inc.



Noelle E Doyle, President

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

Chris Roy
Project Number: 008312061
Project: Noble - Miller 1 South

SB04R

11/5/2013 1:20:00PM

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Notes
		Limit							

GEL Laboratories, LLC
X311030-02 (Water)

Anions by EPA 300.0

Chloride	1420	50.0	mg/L	250	1344575		11/08/2013
Sulfate	1010	100	"	"	"	"	"

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	6030	34.5	mg/L	1	1344418	"	11/06/2013
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Origins Laboratory, Inc.



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Noelle E Doyle, President

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

Chris Roy
Project Number: 008312061
Project: Noble - Miller 1 South

SB17

11/5/2013 1:40:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
X311030-03 (Water)

Anions by EPA 300.0

Chloride	250	20.0	mg/L	100	1344575		11/08/2013	
Sulfate	873	40.0	"	"	"	"	"	"

Total Dissolved Solids by SM 2540C

Total Dissolved Solids	2510	14.3	mg/L	1	1344418	"	11/06/2013	
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Origins Laboratory, Inc.



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Noelle E Doyle, President

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

Chris Roy
Project Number: 008312061
Project: Noble - Miller 1 South

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 1344575 -										
BLANK (1202981298-BLK)					Prepared: Analyzed: 11/07/2013					
Sulfate	ND	0.133	mg/L		0		-			U
Chloride	ND	0.067	"		0		-			U
DUP (1202981299 D)					Source: X311030-01 Prepared: Analyzed: 11/08/2013					
Sulfate	549	6.65	mg/L		553		0-20	0.612	20	
Chloride	212	3.35	"		208		0-20	1.76	20	
PS (1202981300 S)					Source: X311030-01 Prepared: Analyzed: 11/08/2013					
Sulfate	1100	6.65	mg/L	10.0	553	108	90-110			
Chloride	485	3.35	"	5.00	208	110	90-110			
LCS (1202981301-BKS)					Prepared: Analyzed: 11/07/2013					
Sulfate	10.2	0.133	mg/L	10.0	0	102	90-110			
Chloride	5.01	0.067	"	5.00	0	100	90-110			

Origins Laboratory, Inc.



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Noelle E Doyle, President

LT Environmental, Inc.

4600 West 60th Avenue

Arvada CO 80003

Chris Roy

Project Number: 008312061

Project: Noble - Miller 1 South

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

Origins Laboratory, Inc.



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Noelle E Doyle, President