Proyecto Minera Escobal

San Rafael Las Flores, Santa Rosa

Informe de Monitoreo Ambiental

01 - 2012

Minera San Rafael™
GUATEMALA

Preparado para:

Ministerio de Ambiente y Recursos Naturales (MARN)

Informe Semestral de Monitoreo Ambiental

Preparado por:

Departamento de Ambiente

San Rafael Las Flores, Santa Rosa, Guatemala

Abril de 2012

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1. Introducción

El presente informe ilustra al Ministerio de Ambiente y Recursos Naturales (**MARN**), los resultados obtenidos durante el monitoreo ambiental trimestral referente a la calidad del aire (material particulado, gases de combustión y niveles de presión sonora), calidad de agua, vibraciones y geoquímica de roca llevados a cabo durante los meses de noviembre 2011 a abril 2012.

Esto como parte de los compromisos ambientales de Minera San Rafael, S.A. (**la empresa**) con su proyecto Minero Escobal (**el proyecto**) ante el MARN con base en la resolución 262-2011/ECM/caml, compromisos número III y número XXII; los cuales se leen: "La Empresa deberá de implementar el plan de monitoreo ambiental descrito en capítulo 13 y cumplirá con los límites establecidos por el MARN, además de lineamientos internacionales como Banco Mundial, Corporación Financiera internacional (CFI), Agencia de Protección Ambiental de los Estados Unidos (USEPA), Organización Mundial de la Salud (OMS) y Administración de la Salud y Seguridad Ocupacional (OSHA), según el componente que sea monitoreado…" y "Los resultados de los monitoreos deberán de ser presentados al Ministerio de Ambiente y Recursos Naturales en un informe semestral con los parámetros evaluados durante el mismo,…".

El contenido del presente informe corresponde a la evaluación de los siguientes componentes ambientales:

- Calidad de Aire: Se monitorearon siete estaciones ubicadas dentro del AID del proyecto para medir la concentración de material particulado igual o menor a 10 micrómetros (**PM_{10}**), en microgramos por metro cúbico (**$\mu g/m^3$**). También se monitorearon dos estaciones para medir la concentración de sólidos sedimentables totales (**PST**), y gases de combustión: dióxido de azufre (**SO_2**) y óxidos nitrosos (**NO_x**).

- Calidad de Presión Sonora: Se monitorearon siete estaciones ubicadas dentro del AID del proyecto, para determinar los niveles de ruido, en decibeles escala A (**dBA**). y respuesta lenta.

- Calidad de Agua: Se tomaron muestras en 9 estaciones de agua superficial y sedimentos, 4 estaciones de agua subterránea (manantiales), 1 estación de pozos de producción, 1 estación de pozos artesanales y 11 estaciones de agua en pozos de monitoreo ubicadas en el AID del proyecto

- Sedimentos: Se tomaron muestras de sedimentos en las misma 9 estaciones de agua superficial ubicadas en el AID del proyecto.

- Calidad de Efluente: Se tomaron muestras mensuales en piletas provisionales de tratamiento de agua de enero a marzo 2012 y en abril 2012 en la Planta de tratamiento de aguas residuales de agua proveniente de túneles.

- Vibraciones: Se instalaron tres medidores de vibraciones, los cuales registraron la velocidad de partícula durante cada una de las voladuras. En total se registraron 359 voladuras durante los meses de noviembre 2011 a abril 2012.

- Geoquímica de roca estéril: Se analizó el pH en pasta de 14 muestras de material extraído de los túneles, 9 muestras provenientes de la rampa Oeste y 5 de la rampa Este

2. Condiciones Ambientales

En el Cuadro 2-1 se enlistan algunos parámetros meteorológicos imperantes en el área del Proyecto correspondientes a los meses de noviembre 2011 a abril 2012; y en la Figura 2-1 se represente la dirección del viento durante los diferentes meses de estudio.

Cuadro 2-1. Información meteorológica correspondiente a los meses de noviembre 2011 a abril 2012, Proyecto Minero Escobal.

TEMPERATURA (°C)			VELOCIDAD DEL VIENTO (km/h)			RAFAGAS (km/h)	HUMEDAD RELATIVA (%)			EVAPORACIÓN (mm)			PRECIPITACIÓN PLUVIAL (mm)
Max	Min	Media	Max	Min	Media	Max	Max	Min	Media	Max	Min	Media	TOTAL
NOVIEMBRE													
28.91	9.56	19.31	70.47	0.32	16.41	94.22	99.99	29.81	70.82	263.74	109.08	187.91	2.53
DICIEMBRE													
28.33	11.22	18.69	57.89	0.31	16.59	76.61	99.99	34.79	68.75	177.82	10.27	83.47	2.02
ENERO													
25.90	15.30	19.20	68.30	0.30	26.6	92.18	92.2	82.2	38.3	61.3	306.7	169.2	0.00
FEBRERO													
30.47	9.95	19.71	82.90	0.31	16.23	100.67	99.99	14.86	66.36	186.41	53.23	119.67	0.00
MARZO													
31.10	7.10	20.10	121.7	0.30	15.10	129.80	99.90	14.10	62.40	207.90	31.80	110.60	10.88
ABRIL													
31.30	9.90	20.20	64.90	0.30	9.00	83.70	99.90	14.20	71.50	91.90	5.90	52.40	111.60

Donde Max = valor máximo; Min = valor mínimo; °C = grados centígrados; Km/h = kilómetros por hora; % = porcentaje; mm = milímetros.
Fuente: Estación Meteorológica Escobal, 2011 y 2012.

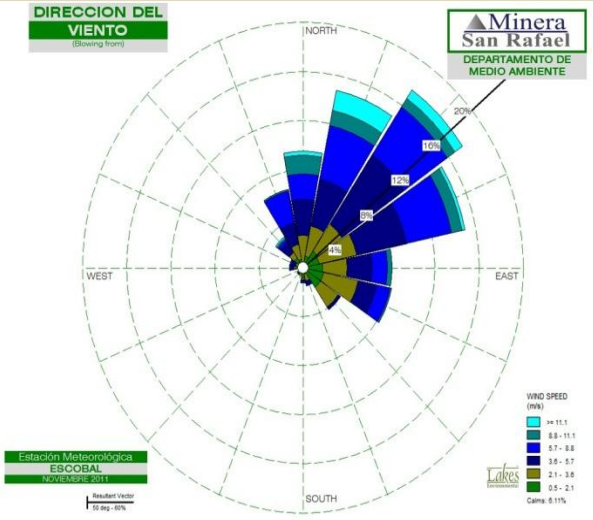
Fotografía: Gustavo E. Díaz Corzo, 2011.

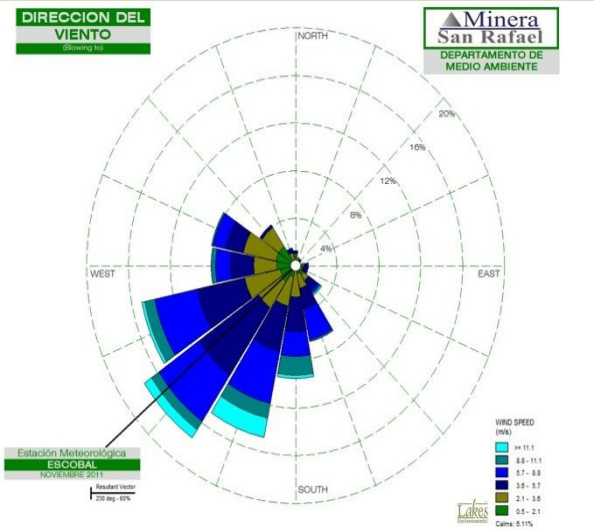
Fotografía 2-1 Estación meteorológica Escobal durante los meses de noviembre y diciembre 2011 (UTM NAD27 zona 15 805600, 1601050), San Rafael Las Flores, Santa Rosa.

Fotografía: Gustavo E. Díaz Corzo, 2012.

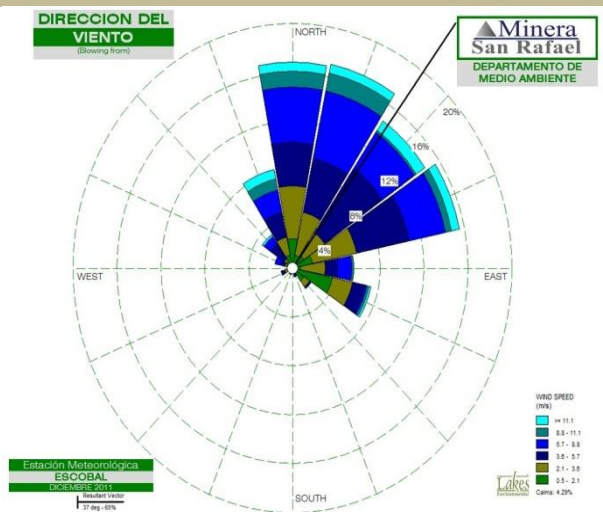
Fotografía 2-2 Estación meteorológica Escobal desde el 27 de enero a la fecha (UTM NAD27 zona 15 804812, 1601042), San Rafael Las Flores, Santa Rosa.

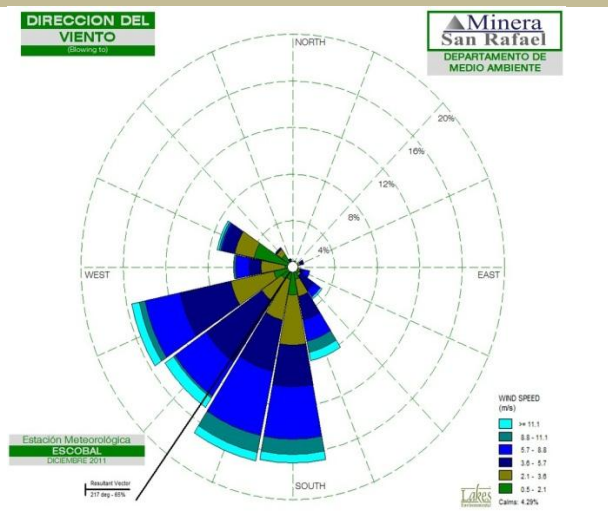
Noviembre 2011



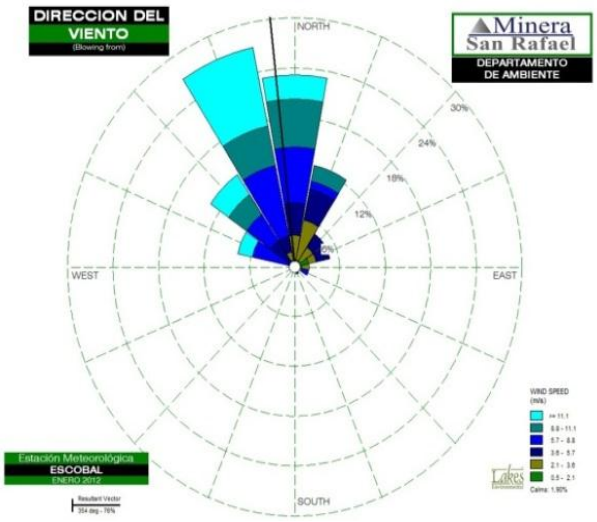


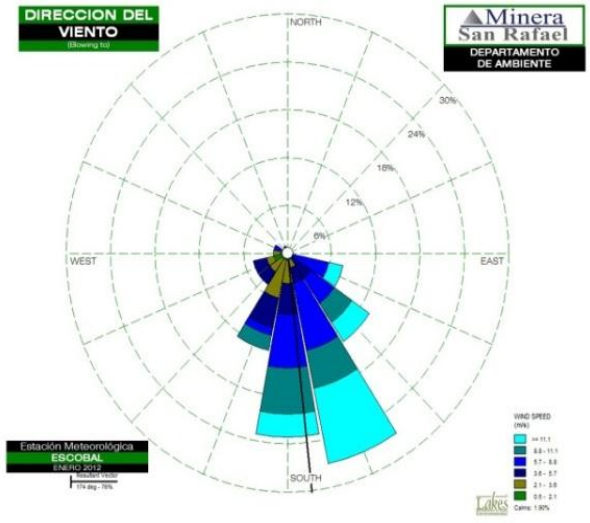
Diciembre 2011



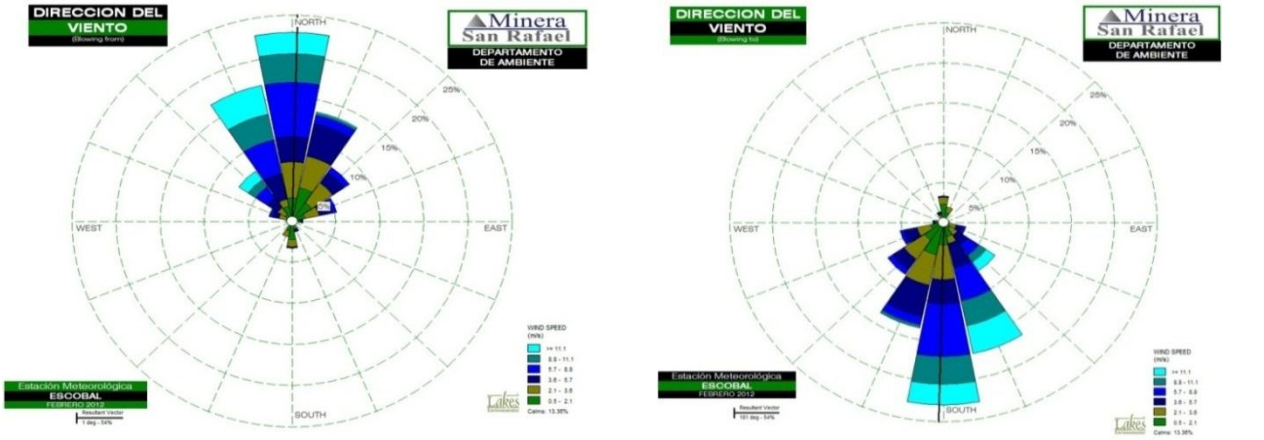


Enero 2012

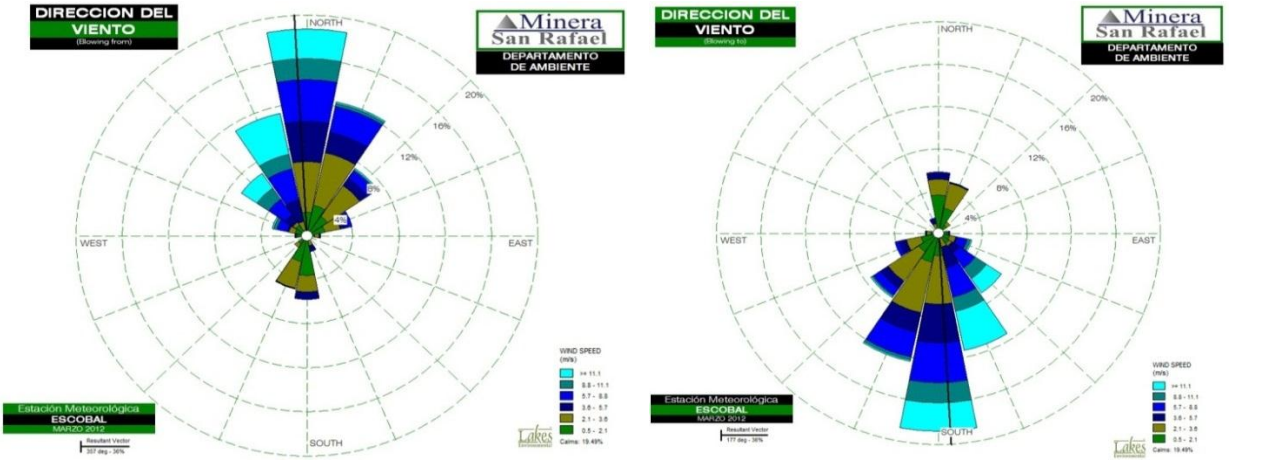




Febrero 2012



Marzo 2012



Abril 2012

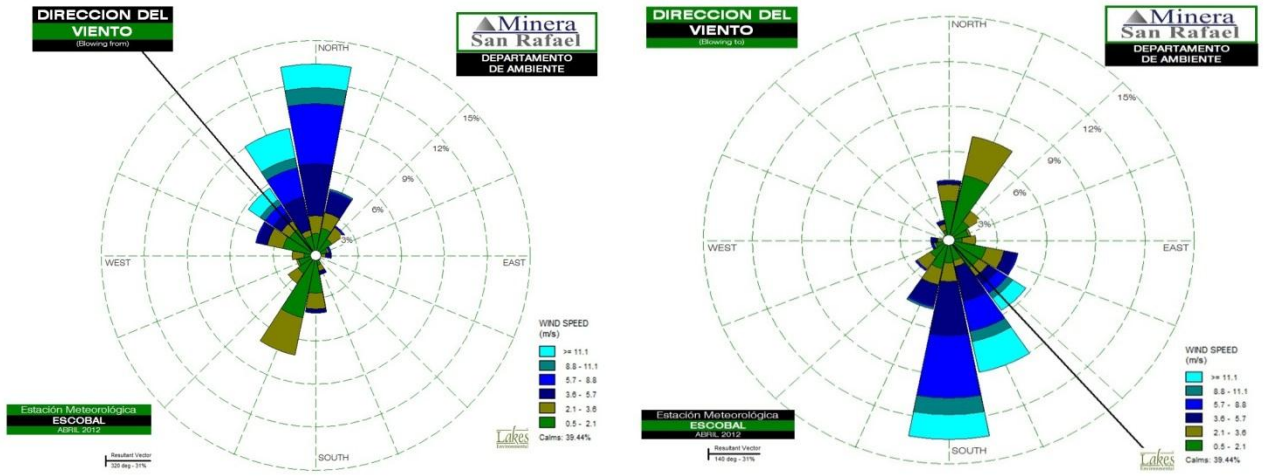


Figura 2-1 Dirección de Viento durante los meses de noviembre 2011 a abril 2012. Proyecto Minero Escobal

3. Calidad de Aire

3.1 Material Particulado

3.1.1. Sitios de Monitoreo

En el Cuadro 3-1 se enlistan las estaciones de monitoreo de material particulado menor o igual a 10 micrómetros (PM_{10}) localizadas en la jurisdicción de los centros poblados: Los Planes, La Cuchilla, El Fucio, Sabana Redonda, Puerta de los Ángeles y San Rafael Las Flores ubicados en el área de influencia directa (AID) del Proyecto. Su ubicación se presenta en la Figura 3-1.

Cuadro 3-1. Sitios de Monitoreo de PM_{10} en el AID del Proyecto.

ESTACIÓN	PARÁMETRO	SISTEMA DE COORDENADAS PROYECTADAS UTM, NAD27 ZONA 15		ALTITUD (msnm)	SITIO
EA-1B	Calidad de Aire	803894	1601727	1328	Poblado San Rafael Las Flores, cercano a Escuela
EA-2A	Calidad de Aire	806425	1601605	1564	Comunidad La Cuchilla
EA-3A	Calidad de Aire	805892	1600161	1416	Aldea El Fucio
EA-4A	Calidad de Aire	805142	1599903	1360	Caserío La Puerta de los Ángeles
EA-5	Calidad de Aire	804216	1600508	1339	Aldea Sabana Redonda, al sur-oeste del proyecto
EA-6	Calidad de Aire	805168	1603247	1434	Al norte del Proyecto, ruta a Mataquescuintla
EA-7	Calidad de Aire	805191	1601762	1336	Aldea Los Planes

Fuente: Departamento de ambiente, Minera San Rafael.

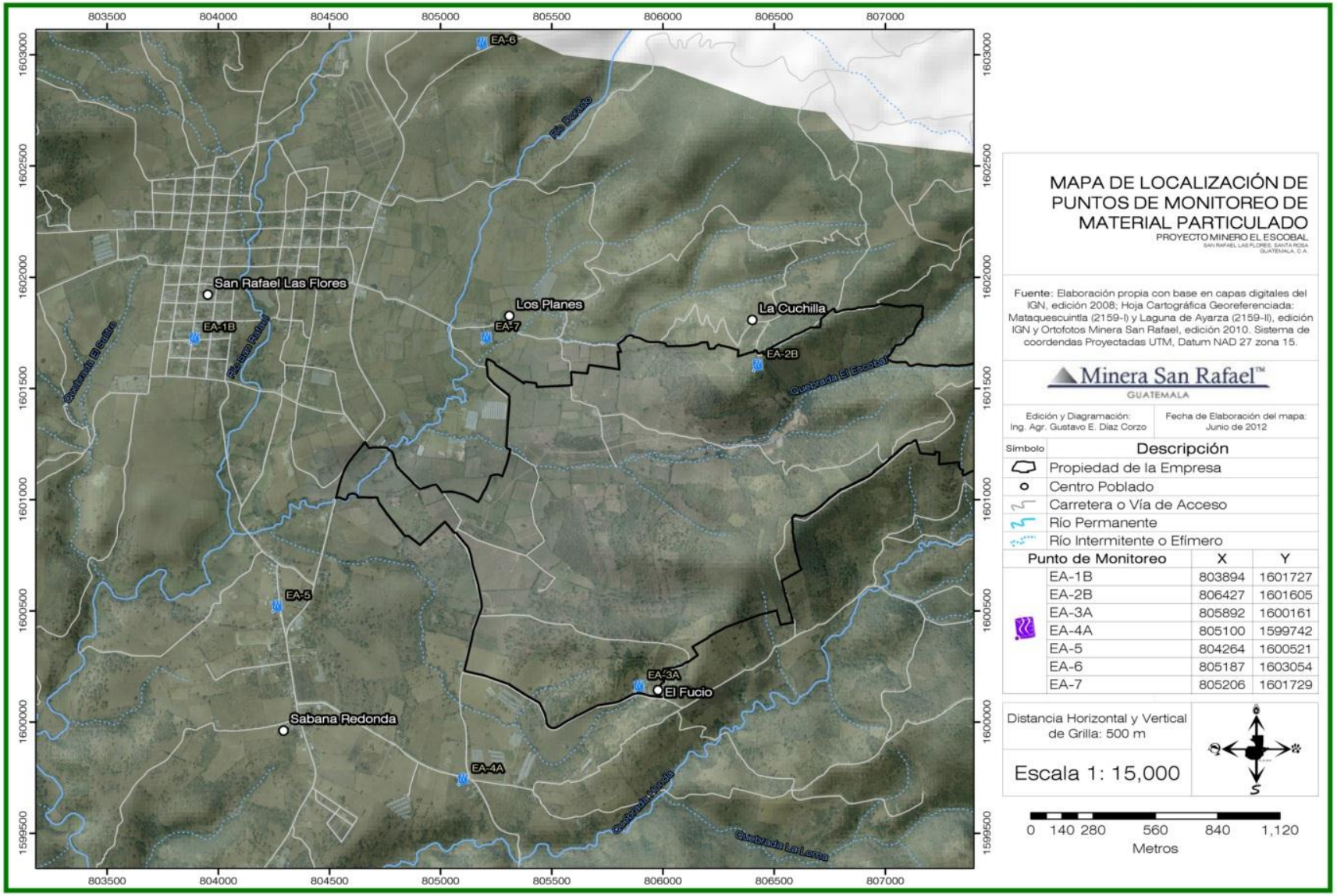


Figura 3-1 Mapa de localización de las estaciones de monitoreo de material particulado, Proyecto Minero Escobal.

3.1.2. Metodología

En el Cuadro 3-2 se describe el procedimiento, parámetros y equipo utilizados en la medición de PM_{10}.

Cuadro 3-2. Procedimiento y equipo utilizado para la medición de material particulado, Proyecto Minero Escobal

PARÁMETROS ANALIZADOS	
PM_{10}	Material particulado igual o menor a 10 micrómetros (≤10 µm).
PROCEDIMIENTO	
La medición se realiza haciendo pasar un flujo continuo de aire durante 24 horas por un filtro de cuarzo que ha sido pesado inicialmente en un laboratorio equipado para realizar el análisis gravimétrico correspondiente; luego de la toma de muestra, el filtro es enviado de nuevo al mismo laboratorio para determinar su peso final, Con los datos obtenidos del muestreo y del análisis gravimétrico, se determina la concentración de PM_{10}. El equipo de medición utilizado cumple con las especificaciones de la Agencia de Protección Ambiental de los Estados Unidos (EPA).	
EQUIPO UTILIZADO	
Nombre	PM_{10} Air Sampler
Modelo	PQ 200
Fabricante	BGI INSTRUMENTS

3.1.3. Resultados

En el Cuadro 3-3 se presentan los resultados de PM_{10} durante el primer trimestre 2012, los resultados de laboratorio del análisis gravimétrico de filtros y los cálculos realizados para determinar el PM_{10} se presentan en el anexo 10.1.1.

Se observa que la estación EA-2A presentó el menor valor de PM_{10} de las siete estaciones monitoreadas en el primer trimestre del 2012 (28.22 µg/m^3). El mayor valor de PM_{10} se observó en la estación EA-4A con 117.53 µg/m^3, valor que se

encuentra dentro de los valores mínimos y máximos registrados dentro del establecimiento de la línea base (86.70 y 120.40.µg/m^3 respectivamente).

Cuadro 3-3. Resultados de PM_{10} en estaciones de monitoreo durante 1er trimestre de 2012, Proyecto Minero Escobal.

Estación	Norma*	Guías*		Línea Base			Resultado Monitoreo
	USEPA[1]	Banco Mundial[2]	OMS[3]	Promedio	Mínimo	Máximo	feb-12
	(µg/m3)						
EA-1B	150	150**	50	NR	NR	NR	35.21
EA-2A				19.31	2.74	46.99	28.22
EA-3A				NR	NR	NR	95.54
EA-4A				103.55	86.70	120.40	117.53
EA-5				50.73	11.80	104.80	116.40
EA-6				23.05	1.70	57.90	30.65
EA-7				46.48	13.40	115.90	30.69

Nota: µg/m^3 = microgramos por metro cúbico; NR = Cálculo No Realizado por falta de datos de línea base.

[1]Guía USEPA, 2006. Normas nacionales de calidad de aire ambiental (NAAQS), 40 CFR parte 50 (US). [2]Guías Generales sobre Medio Ambiente, Salud y Seguridad, Corporación Financiera Internacional, Grupo del Banco Mundial 2007. [3]Guía de Calidad del Aire, OMS 2005.

* Las normas de calidad de aire ambiental son los niveles de calidad del aire fijados y publicados a partir de procesos legislativos nacionales y procesos regulatorios, mientras que las guías sobre calidad del aire ambiental hacen referencia a niveles de calidad del aire obtenidos principalmente a través de datos clínicos, toxicológicos y epidemiológicos; ** este valor corresponde al límite provisional 1 dado por esta guía.

Al igual que la estación EA-4A, los valores de PM_{10} registrados en las estaciones EA-1B, EA-2A, EA-3A, EA-6 y EA-7 se encuentras también dentro de los valores mínimos y máximos registrados durante el establecimiento de la línea bases.

En la estación EA-5 se obtuvo un valor de PM_{10} de 116.40 µg/m^3, el cual es poco mayor al valor máximo registrado durante el establecimiento de la línea base (104.80 µg/m^3). Este incremento pudo generarse debido a que en dicha estación se observó, comparado con mediciones efectuadas con anterioridad, un aumento en el paso de vehículos pesados que transportan material para la construcción como arena y piedrín, así como el almacenaje de block más cerca al equipo de medición, tal como se observa en la Fotografía 3-1.

Fotografía: Susana Aroche, febrero 2012.

Fotografía 3-1 Estación EA-5 durante monitoreo correspondiente al 1er trimestre 2012, Sabana Redonda, San Rafael las Flores, Santa Rosa.

Los valores de PM_{10} registrados para las siete estaciones monitoreadas fueron menores a los valores establecidas por la EPA y el Banco Mundial.

Los valores de PM_{10} registrados en las estaciones EA-1B, EA-2A, EA-6 y EA-7 fueron menores a los valores establecidos por las guías de OMS; mientras que las estaciones EA-4A y EA-5 presentaron valores mayores a los establecidos por dichas guías, lo que representa un incremento normal el cual ha sido registrado en años anteriores, según los resultados de la línea base de calidad de aire (Cuadro 3-3). No se estableció línea base para la estación EA-3A; cabe recalcar que esta estación está ubicada muy cerca de un camino vecinal de terracería que generaba la presencia de polvo en el aire como se indica en la Fotografía 3-2, y lo cual pudo contribuir en el valor de PM_{10} registrado (95.54 $\mu g/m^3$).

En conclusión, los valores de PM_{10} detectados durante los monitoreos realizados, se mantienen dentro de los valores esperados para las diferentes localidades, conforme a la línea base de calidad del aire. Los valores detectados son esperables para un sitio de construcción activa y en ningún momento superan la normativa establecida por la USEPA ni las recomendaciones del Banco Mundial para la actividad minera.

Fotografía: Susana Aroche, febrero 2012.

Fotografía 3-2 Estación EA-3A durante monitoreo correspondiente al 1er trimestre 2012, El Fucio, San Rafael las Flores, Santa Rosa.

3.2 Partículas Sedimentables Totales (PST)

3.2.1. Sitios de Monitoreo

En el Cuadro 3-4 se enlistan las estaciones de monitoreo de PST ubicada en el área de influencia directa (AID) del Proyecto. Su ubicación se presenta en la Figura 3-1.

Cuadro 3-4. Sitios de Monitoreo de PST en el AID del Proyecto.

ESTACIÓN	PARÁMETRO	SISTEMA DE COORDENADAS PROYECTADAS UTM, NAD27 ZONA 15		ALTITUD (msnm)	SITIO
EA-4A	Calidad de Aire	805142	1599903	1360	Caserío La Puerta de los Ángeles
EA-5	Calidad de Aire	804216	1600508	1339	Aldea Sabana Redonda, al sur-oeste del proyecto

Fuente: Departamento de ambiente, Minera San Rafael.

3.2.2. Metodología

En el Cuadro 3-5 se describe el procedimiento, parámetros y equipo utilizados en la medición de PST.

Cuadro 3-5. Procedimiento y equipo utilizado para la medición de PST, Proyecto Minero Escobal

PARÁMETROS ANALIZADOS	
PST	Partículas Sedimentables Totales
PROCEDIMIENTO	
Los muestreos fueron realizados por personal de la empresa Consultoría y Tecnología Ambiental (CTA), siguiendo la metodología ASTM D 1739-98 (re-aprobación 2004). La medición se realiza dejando reposar un recipiente limpio y de dimensiones conocidas en la estación de monitoreo durante un lapso de tiempo de 30 ± 2 días. El recipiente es enviado al laboratorio donde se determina los sólidos insolubles, sólidos solubles y sólidos totales que sedimentaron dentro de dicho recipiente.	

EQUIPO UTILIZADO	
Nombre	High Altitude Ambient Particulate Sampler
Modelo	Diseño establecido en norma ASTM D 1739-98
Fabricante	CTA

3.2.3. Resultados

En el Cuadro 3-6 se presentan los resultados de Partículas Sedimentables Totales (PST) durante 4to trimestre 2011 y el primer trimestre 2012. El resumen del informe de resultados presentado por el contratista se presenta en el anexo 10.1.2

Se observa que la estación EA-4A presentó el menor valor de PST durante los dos muestreos efectuados en este semestre. (2.4 y 4.2 g/(m^2 x 30 días) respectivamente). Los valores de Partículas insolubles, solubles y totales registrados en las dos estaciones se encuentras dentro de los valores mínimos y máximos registrados durante el establecimiento de la línea bases, y en algunas ocasiones fue incluso menor al valor mínimo registrado.

En conclusión, durante el semestre reportado no se detectó ninguna variación significativa en los niveles de PSTs, superiores a los niveles de línea base, lo que indica las actividades de la empresa no han causado alteraciones en este parámetro.

Cuadro 3-6. Resultados de PST en estaciones de monitoreo durante 4to. Trimestre 2011 y 1er. Trimestre de 2012, Proyecto Minero Escobal.

Parámetro	Norma	Guías	EA-4A					EA-5				
			Línea Base			Resultado Monitoreo		Línea Base			Resultado Monitoreo	
	USEPA	Banco Mundial y OMS	Promedio	Mínimo	Máximo	dic-11	mar-11	Promedio	Mínimo	Máximo	dic-11	mar-11
	g/(m^2 x 30 días)		g/(m^2 x 30 días)					g/(m^2 x 30 días)				
Partículas Insolubles	NL	NL	7.5	2.6	14.9	1.7	0.8	6.5	0.8	16.0	2.5	3.0
Partículas Solubles	NL	NL	2.6	0.9	5.7	0.7	3.5	11.3	2.0	37.0	0.3	2.5
PST	NL	NL	10.1	4.6	20.6	2.4	4.2	17.6	3.2	50.0	2.8	5.5

Nota: g/(m^2 x 30 días)= gramos por metro cuadrado durante 30 días. NL: estas normas y guías no establecen un límite para estos parámetros

3.3 Gases de Combustión (SO_2 y NO_2)

3.3.1. Sitios de Monitoreo

En el Cuadro 3-7 se enlistan las estaciones de monitoreo de dióxido de azufre (SO_2) y de dióxido de nitrógeno (NO_2) ubicada en el área de influencia directa (AID) del Proyecto. Su ubicación se presenta en la Figura 3-1

Cuadro 3-7. Sitios de Monitoreo de SO_2 y NO_2 en el AID del Proyecto.

ESTACIÓN	PARÁMETRO	SISTEMA DE COORDENADAS PROYECTADAS UTM, NAD27 ZONA 15		ALTITUD (msnm)	SITIO
EA-5	Calidad de Aire	804216	1600508	1339	Aldea Sabana Redonda, al sur-oeste del proyecto
EA-7	Calidad de Aire	805191	1601762	1336	Aldea Los Planes

Fuente: Departamento de ambiente, Minera San Rafael.

3.3.2. Metodología

En el Cuadro 3-5 se describe el procedimiento, parámetros y equipo utilizados en la medición de gases de combustión.

Cuadro 3-8. Procedimiento y equipo utilizado para la medición de gases de combustión, Proyecto Minero Escobal

PARÁMETROS ANALIZADOS	
SO_2	Partículas Sedimentables Totales
NO_2	
PROCEDIMIENTO	
Los muestreos fueron realizados por personal de la empresa Consultoría y Tecnología Ambiental siguiendo la siguiente metodología: **SO_2:** Metodología descrita en el CFR, del título 40, parte 50, apéndice A de la	

USEPA.

NO_2: Metodología descrita en el método de referencia designado por la USEPA No. EQN-1277-026.

La medición se realiza haciendo pasar un flujo continuo de aire durante 24 horas por una solución absorbente que ha sido preparada en un laboratorio equipado para realizar los análisis correspondiente; luego de la toma de muestra, las soluciones son enviadas de nuevo al mismo laboratorio para determinar su concentración utilizando análisis espectrofotométricos descrito en las metodologías USEPA anteriormente mencionadas.

EQUIPO UTILIZADO	
Nombre	RAC3 Gas Sampler
Modelo	209063
Fabricante	Andersen Instrument´s

3.3.3. Resultados

Cuadro 3-9. Resultados de Gases de combustión en estaciones de monitoreo durante 4to. Trimestre 2011 y 1er. Trimestre de 2012, Proyecto Minero Escobal.

Parámetro	Norma*	Guías*		EA-5					EA-7				
				Línea Base			Resultado Monitoreo		Línea Base			Resultado Monitoreo	
	USEPA[1]	Banco Mundial[2]	OMS[3]	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12
	($\mu g/m^3$)			($\mu g/m^3$)					($\mu g/m^3$)				
SO_2	370	20	20	<13	<13	<13	<13	<13	<13	<13	<13	<13	<13
NO_2	100**	40**	40**	<9	<9	<9	<9	<9	<9	<9	<9	<9	<9

Nota: µg/m3 = microgramos por metro cúbico; SO_2= dióxido de azufre, NO_2= dióxido de nitrógeno.

[1]Guía USEPA, 2006. Normas nacionales de calidad de aire ambiental (NAAQS), 40 CFR parte 50 (US). [2]Guías Generales sobre Medio Ambiente, Salud y Seguridad, Corporación Financiera Internacional, Grupo del Banco Mundial 2007. [3]Guía de Calidad del Aire, OMS 2005.

* Las normas de calidad de aire ambiental son los niveles de calidad del aire fijados y publicados a partir de procesos legislativos nacionales y procesos regulatorios, mientras que las guías sobre calidad del aire ambiental hacen referencia a niveles de calidad del aire obtenidos principalmente a través de datos clínicos, toxicológicos y epidemiológicos; ** este valor corresponde a la concentración promedio anual.

En el Cuadro 3-9 se presentan los resultados de las mediciones de SO_2 y NO_2 realizadas en dos estaciones de Calidad de Aire. En las dos mediciones efectuados durante este semestre se obtuvieron valores por debajo del límite de detección del método en ambas estaciones, 13µg/m^3 para SO_2 y 9µg/m^3 para NO_2, los cuales son inferiores a los valores guías establecidos por el Banco Mundial, la OMS y la USEPA. Lo anterior indica que las actividades realizadas durante el período reportado no han originado variaciones significativas en los parámetros reportados.

3.4 Niveles de Presión Sonora

3.4.1. Sitios de Monitoreo

En el Cuadro 3-10 se enlistan las estaciones de monitoreo de presión sonora localizadas en la jurisdicción de los centros poblados: Los Planes, La Cuchilla, El Fucio, Sabana Redonda, Puesta de los Ángeles y San Rafael Las Flores ubicados en del AID del Proyecto.

Cuadro 3-10. Sitios de Monitoreo de Presión Sonora en el AID del Proyecto.

ESTACIÓN	PARÁMETRO	SISTEMA DE COORDENADAS PROYECTADAS UTM, NAD27 ZONA 15		ALTITUD (msnm)	SITIO
ER-1A	Presión sonora ambiental	803894	1601727	1328	Poblado San Rafael Las Flores, cercano a Escuela
ER-2	Presión sonora ambiental	806425	1601605	1564	Comunidad La Cuchilla
ER-3A	Presión sonora ambiental	805892	1600161	1416	Aldea El Fucio
ER-4A	Presión sonora ambiental	805142	1599903	1360	Caserío La Puerta de los Ángeles
ER-5	Presión sonora ambiental	804216	1600508	1339	Aldea Sabana Redonda, al sur-oeste del proyecto
ER-6	Presión sonora ambiental	805168	1603247	1434	Al norte del Proyecto, ruta a Mataquescuintla
ER-7	Presión sonora ambiental	805191	1601762	1336	Aldea Los Planes

Fuente: Departamento de ambiente, Minera San Rafael.

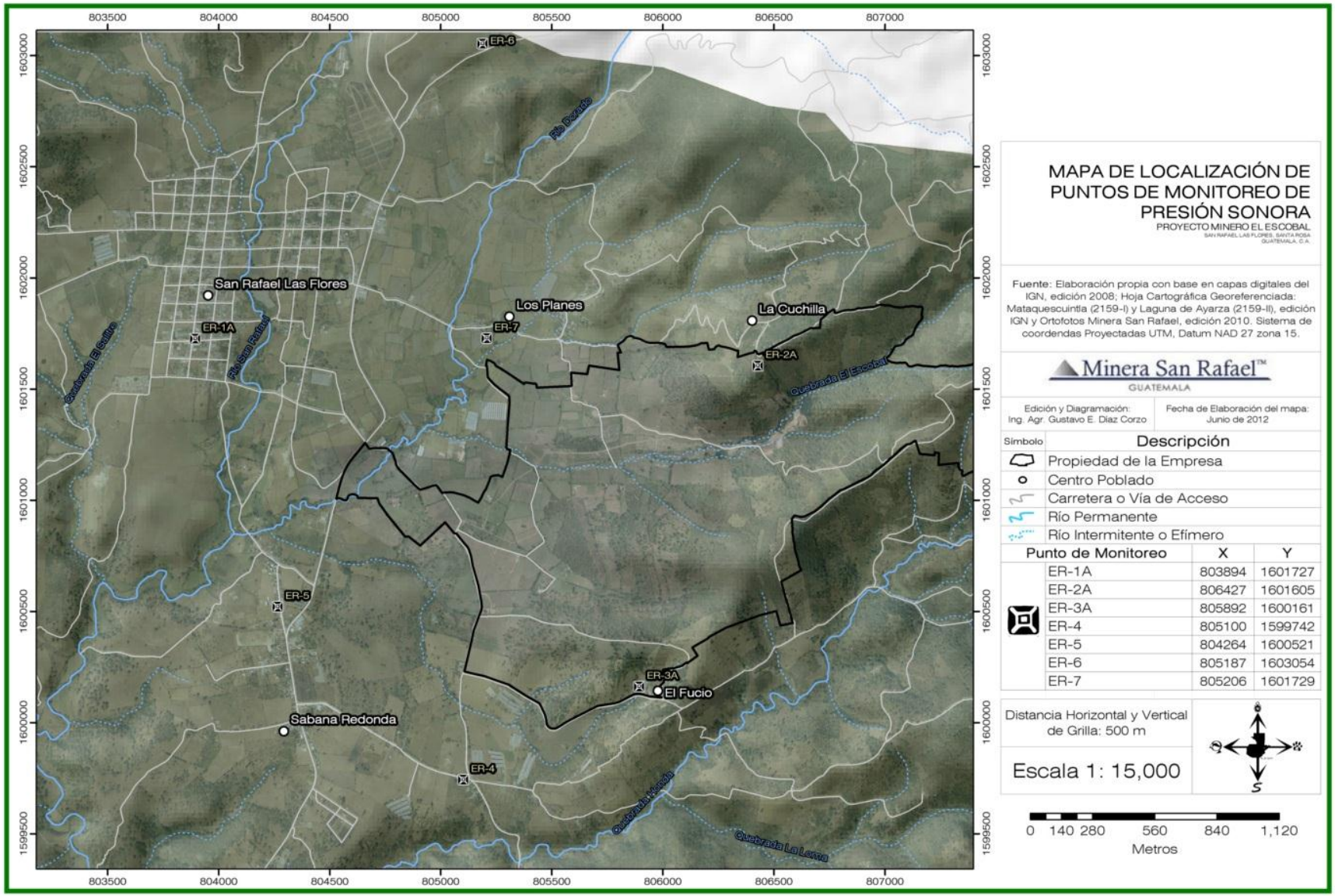


Figura 3-2 Mapa de localización estaciones de monitoreo de presión sonora en el Proyecto. Proyecto Minero Escobal

3.4.2. Metodología

En el Cuadro 3-11 se describe el procedimiento, parámetros y equipo utilizado en la medición de los niveles de presión sonora ubicados dentro del AID del Proyecto.

Cuadro 3-11. Procedimiento y equipo utilizado para la medición de presión sonora, Proyecto Minero Escobal

PARÁMETROS ANALIZADOS	
L_{MAX}	Dato máximo durante 24 horas.
L_{MIN}	Dato mínimo durante 24 horas.
L_{EQ}	Promedio ponderado equivalente de datos.
Promedio Diurno	Promedio de 07:00 am a 10:00 pm
Promedio Nocturno	Promedio de 10:00 pm a 07:00 am
PROCEDIMIENTO	
La medición del nivel de presión sonora se realiza durante 24 horas, efectuando lecturas de decibeles en escala A en respuesta lenta en intervalo de 10 minutos. Los datos obtenidos en las mediciones son crudos y automáticamente grabados en el equipo, los cuales se descargan a una computadora utilizando el programa Quest Professional II. Solamente el promedio diurno y nocturno son calculados separadamente.	
EQUIPO UTILIZADO	
Nombre	Sound Pro
Modelo	SE/DL
Fabricante	Quest Technologies, Inc.

3.2.1. Resultados

En el Cuadro 3-12 se observan los niveles de presión sonora (NPS) registrados en el 1er trimestre 2012. Las gráficas de los datos registrados por los equipos se presentan en el anexo 10.1.3

Los resultados obtenidos de NPS en los siete puntos de monitoreo respecto al parámetro de Leq están dentro del rango de 45.2 dB y 60.6 dB.

La estación ER-3A es la estación que presenta menor Leq, promedio diurno y promedio nocturno (45.2 dBa, 46.8 dBa y 39.6 dBa respectivamente). Por el contrario, la estación ER-5 es la que presenta mayor Leq, promedio diurno y promedio nocturno (60.6 dBa, 60.6 dBa y 60.8 dBa respectivamente); aun así dichos valores se encuentra dentro de los valores mínimos y máximos registrados en el establecimiento de la línea base (de 51.6 a 67.6 para Leq, 50.2 a 63.8 para PD y de 45.9 a 65.0 para PN).

Al igual que la estación ER-5, las estaciones ER-6 y ER-7 presentaron valores de Leq, promedio diurno y nocturno dentro de los valores mínimos y máximos registrados en el establecimiento de la línea base.

En la estación ER-2 se obtuvieron valores de Leq y promedio diurno dentro de los valores mínimos y máximos registrados en el establecimiento de la línea base; más en el promedio nocturno se obtuvo un ligero aumento de 1.4 dBa con respecto al valor máximo de línea base. Comportamiento similar se observa en la estación ER-4A con valores de Leq y promedio diurno dentro de los valores mínimos y máximos de línea base y un aumento en el promedio nocturno. Debido a que se desconoce la fuente de dicho incremento, se dará seguimiento a la tendencia que tengan estos parámetros en futuros muestreos para comprobar o descartar que sea un valor aberrante. De descartarse un valor aberrante se procederá a tomar las medidas necesarias para su corrección.

Los promedios obtenidos en la estación ER-3A cumplen con los valores para jornada diurna y nocturna en zona residencial dado por la USEPA (55 dBa), por la OMS (55dBa y 50 dBa respectivamente) y por el Banco Mundial (55dBa y 45 dBa respectivamente. En contraste, los promedios obtenidos en las estaciones ER-2 y ER-5 no cumplen con estos mismos valores para jornada diurna y nocturna en zona residencial dado por la USEPA, OMS y Banco Mundial, lo cual representa un comportamiento normal en dichas estaciones y el cual fue registrado durante el establecimiento de la línea base (ver Cuadro 3-12).

Cuadro 3-12. Resultados de los niveles de presión sonora en estaciones de monitoreo durante 1er trimestre de 2012, Proyecto Minero Escobal.

Parámetro	Norma	Guías		ER-1A				ER-2				ER-3A				ER-4A			
				Linea Base			feb-12	Linea Base			feb-12	Linea Base			feb-12	Linea Base			feb-12
	USEPA	Banco Mundial	OMS	Promedio	Mínimo	Máximo		Promedio	Mínimo	Máximo		Promedio	Mínimo	Máximo		Promedio	Mínimo	Máximo	
	dBa			dBa				dBa				dBa				dBa			
Lmax	NL	NL	NL	NR	NR	NR	74.1	85.2	64.9	97.8	79.1	NR	NR	NR	74.5	80.6	78.2	82.1	83.2
Lmin	NL	NL	NL	NR	NR	NR	42.7	35.2	26.5	42.8	49.6	NR	NR	NR	29.5	NR	NR	NR	36.5
Leq	NL	NL	NL	NR	NR	NR	50.8	48.8	39.7	58.7	55.4	NR	NR	NR	45.2	50.2	49.3	50.9	50.4
PD	55	55	55	NR	NR	NR	52.2	48.8	39.8	57.1	55.1	NR	NR	NR	46.8	49.5	48.4	50.4	48.8
PN	55	45	50	NR	NR	NR	46.8	46.6	37.9	54.5	55.9	NR	NR	NR	39.6	48.6	48.2	48.9	52.4

Parámetro	Norma	Guías		ER-5				ER-6				ER-7			
				Linea Base			feb-12	Linea Base			feb-12	Linea Base			feb-12
	USEPA	Banco Mundial	OMS	Promedio	Mínimo	Máximo		Promedio	Mínimo	Máximo		Promedio	Mínimo	Máximo	
	dBa			dBa				dBa				dBa			
Lmax	NL	NL	NL	91.7	85.1	92.2	95.2	82.2	82.2	82.2	81.9	87.5	82.1	89.0	79.8
Lmin	NL	NL	NL	NR	NR	NR	48.5	NR	NR	NR	29.8	NR	NR	NR	38.6
Leq	NL	NL	NL	65.8	51.6	67.6	60.6	56.2	56.2	56.2	50.4	52.8	50.9	54.5	48.3
PD	55	55	55	61.1	50.2	63.8	60.6	57.1	57.1	57.1	51.7	52.1	50.4	53.5	48.4
PN	55	45	50	62.8	45.9	65.0	60.8	48.4	48.4	48.4	46.9	49.6	48.8	50.9	48.4

Nota: dBA = decibeles en escala A; PD = promedio diurno (de 07:00 a 22:00); PN = promedio nocturno (de 22:00 a 7:00); Lmax = lectura máxima registrada de dBA; Lmin= lectura mínima registrada de dBA; NL = no hay límite establecido para este parámetro; NR = Cálculo No Realizado por falta de datos de línea base.

4. Calidad del Agua

4.1. Sitios de Monitoreo

En el Cuadro 4-1 se enlistan las estaciones de monitoreo de calidad de agua superficial y subterránea localizadas en las quebradas, ríos, manantiales, pozos de monitoreo y pozos mecánicos ubicados en el AID del Proyecto. Su ubicación se presenta en la Figura 4-1, Figura 4-2 y Figura 4-3

Cuadro 4-1. Sitios de Monitoreo de Calidad de Agua en el AID del Proyecto.

ESTACIÓN	SISTEMA DE COORDENADAS PROYECTADAS UTM, NAD27 ZONA 15		TIPO	SITIO
SW-1	807053	1601682	Agua Superficial	Quebrada El Escobal, aguas arriba.
SW-2	805811	1601164	Agua Superficial	Quebrada El Escobal, en medio de la propiedad
SW-2A	805295	1601230	Agua Superficial	Quebrada El Escobal, Salida de la propiedad
SW-3	805337	1602453	Agua Superficial	Rio El Dorado, aguas arriba
SW-4	804781	1601228	Agua Superficial	Rio El Dorado, aguas abajo
SW-4A	804629	1601052	Agua Superficial	Río El Dorado, por puente de acceso al Proyecto (Suandys)
SW-5	810882	1603313	Agua Superficial	Rio Tapalapa, aguas arriba
SW-6	808391	1597689	Agua Superficial	Rio Los Vados, aguas abajo
SW-7	806989	1600618	Agua Superficial	Quebrada La Honda.
SW-8	804054	1600834	Agua Superficial	Unión Río San Rafael y El Dorado
SW-9	803772	1597635	Agua Superficial	Río Tapalapa, aguas abajo (cercano a la Ceibita)
GW-1A	808670	1599754	Agua Subterránea	Nacimiento de agua permanente, Aldea El Volcancito
GW-2	807515	1601059	Agua Subterránea	Nacimiento de agua permanente, Aldea El Fucio
GW-3	806193	1601194	Agua Subterránea	El Mora, zona central del proyecto (frente a portal Oeste)
GW-4	805992	1600533	Agua Subterránea	Aguas arriba del depósito de colas y de GW4
GW-5	805962	1600525	Agua	Aguas arriba del depósito de

ESTACIÓN	SISTEMA DE COORDENADAS PROYECTADAS UTM, NAD27 ZONA 15		TIPO	SITIO
			Subterránea	colas.
MW-1	806309	1601203	Agua Subterránea	cerca del área de vestidores de mina
MW-2	805206	1600565	Agua Subterránea	al sur de pileta área de escombrera y depósito de colas
MW-3	805153		Agua Subterránea	al norte de pileta área de escombre y depósito de colas
MW-4	805186	1601009	Agua Subterránea	Al sur del Sitio Arqueológico San Rafael
MW-5	805304	1601277	Agua Subterránea	al sur del área de talleres
MW-6	805457	1601454	Agua Subterránea	Al oeste del depósito de suelo norte
MW-7	805796	1601582	Agua Subterránea	Al este del depósito de suelo norte
MW-8	805304	1601277	Agua Subterránea	Al sur del área de talleres, aproximadamente 20m de MW-5
MW-9	805198	1601019	Agua Subterránea	10m de MW4
MW-10	806601	1601397	Agua Subterránea	Al norte del Portal Este (final calle Proyecto)
MW-11	805612	1601064	Agua Subterránea	Terreno de Isaac Pérez, cerca de clarificador.
PSA-SR	803678	1602044	Agua Subterránea	Pozo mecánico ubicado en las piscinas de San Rafael las Flores
RW-1	804809	1600972	Agua Subterránea	Pozo artesanal ubicado en Finca Suandys

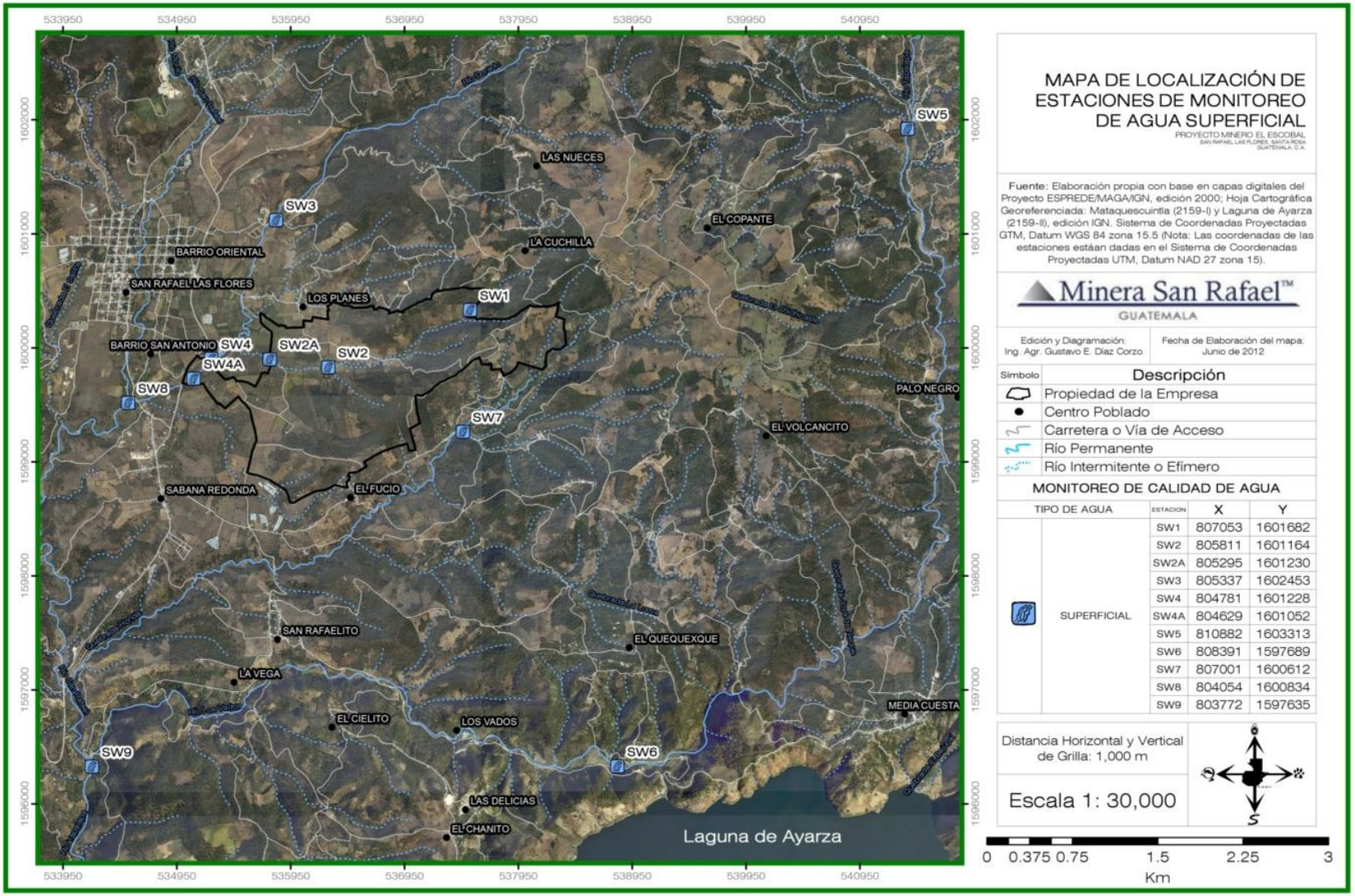


Figura 4-1 Mapa de localización de las estaciones de monitoreo de agua superficial, Proyecto Minero Escobal

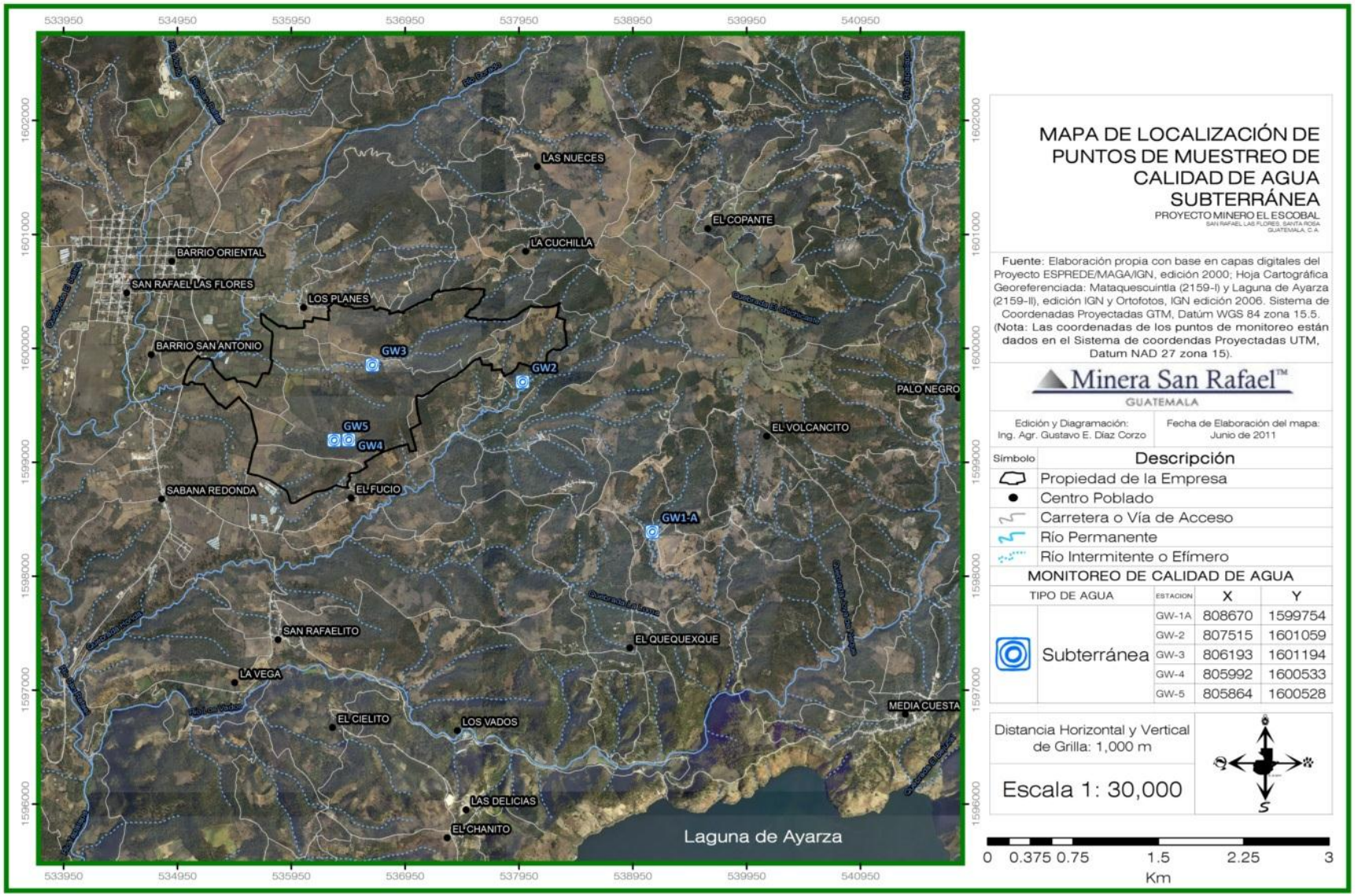


Figura 4-2 Mapa de localización estaciones de monitoreo de agua subterránea (Manantiales), Proyecto Minero Escobal

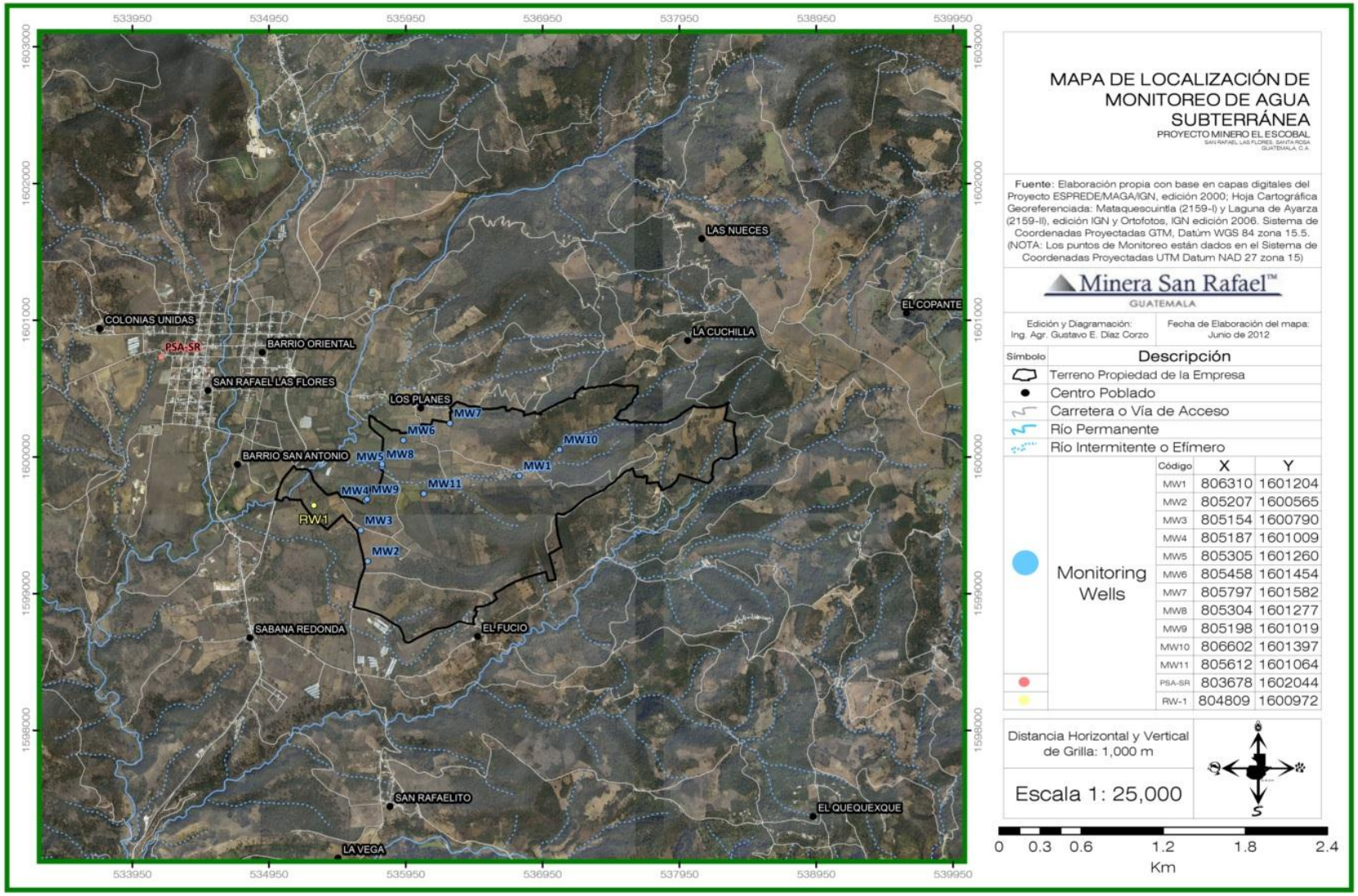


Figura 4-3 Mapa de localización pozos de monitoreo, pozo artesanal y pozo de producción. Proyecto Minero Escobal

4.2. Metodología

En el Cuadro 4-2 se describe el procedimiento y equipo utilizado para la toma de muestras de agua

Cuadro 4-2 Procedimiento y equipo utilizado para medir parámetros In Situ de muestras de agua, Proyecto Minero Escobal.

PARÁMETROS ANALIZADOS	
In Situ	pH, conductividad eléctrica, oxígeno disuelto, temperatura y sólidos disueltos totales
Laboratorio	Metales Totales y Disueltos, Aceites y Grasas, Hidrocarburos Totales de Petróleo, Cationes, Aniones y demás parámetros fisicoquímicos. Sedimentos únicamente Metales Totales y porcentaje de Solidos.
PROCEDIMIENTO	
Basado en el procedimiento de toma de muestra dado por Water Management Consultants y el laboratorio ACZ para las muestras del perfil SW y GW. Y en el procedimiento dado por *Standard Methods for the Examination of Water and Wastewater, part 1060 B* para las muestras de agua residual.	
EQUIPO UTILIZADO	
Nombre	multiparámetros
Modelo	PCD650
Fabricante	OAKTON

Laboratorio empleado y valores de referencia: Las muestras fueron analizadas en el laboratorio ACZ, 2773 Downhill Drive Steamboat Springs, Colorado USA, el cual se encuentra acreditado y avalado por la USEPA.

4.3. Resultados

4.3.1. Control de Calidad

En el monitoreo correspondiente al mes de marzo 2012 se implementó el uso de muestras control para determinar la confiabilidad de los parámetros analizados por el laboratorio empleado. En total se efectuaron 3 muestras blanco y dos muestras duplicado; los resultados obtenidos se presentan en Cuadro 4-3

Cuadro 4-3. Resultados de control de calidad para los análisis de agua superficial y subterránea, 1er trimestre de 2012, Proyecto Minero Escobal.

Parámetros	Unidades	Blancos de Campo			Muestra Duplicado			
		Agua EMSURE (metales) y Agua Desmineralizada (FisQ)			Original	Duplicado	Original	Duplicado
		SW-10	GW-10	MW-20	PSASR	PSASR2	MW-9	MW-21
Alcalinidad Total	mg/L	<2	<2	<2	178	177	141	140
Cloruros	mg/L	<1	<1	<1	4	4	39	39
Fluoruros	mg/L	<0.1	<0.1	<0.1	0.7	0.7	2.6	2.6
Fosfatos	mg/L	<0.03	<0.03	<0.03	0.06	0.06	0.06	0.06
Cianuro Total	mg/L	0.014	0.014	0.012	<0.003	<0.003	0.009	0.009
Amonio	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitratos/Nitritos como N	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Nitrogeno Kjeldahl (TKN)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfatos	mg/L	<1	<1	3.0	220.0	220.0	410.0	410.0
Fósforo Disuelto (Orto)	mg/L	<0.01	<0.01	<0.01	0.02	0.02	0.01	0.01
Fósforo Total	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
STD (TDS)	mg/L	<10	<10	<10	540	530	870	880
SST (TSS)	mg/L	<5	<5	<5	<5	<5	16	13
ST (TS)	mg/L	<10	<10	<10	540.0	540.0	910.0	910.0
Hidrocarburos totales (TPH)	mg/L	<0.01	NA	NA	NA	NA	NA	NA
Grasas y Aceites	mg/L	<2.02	NA	NA	NA	NA	NA	NA
DQO	mg/L	<10	NA	NA	NA	NA	NA	NA
Aluminio Disuelto	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Aluminio Total	mg/L	<0.03	NA	NA	NA	NA	NA	NA
Antimonio Disuelto	mg/L	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Antimonio Total	mg/L	<0.0004	NA	NA	NA	NA	NA	NA
Arsénico Disuelto	mg/L	<0.0005	<0.0005	<0.0005	0.01480	0.01470	0.00350	0.00330
Arsénico Total	mg/L	<0.0005	NA	NA	NA	NA	NA	NA
Bario Disuelto	mg/L	<0.003	<0.003	<0.003	0.1650	0.1660	0.0250	0.0250
Bario Total	mg/L	<0.003	NA	NA	NA	NA	NA	NA
Berillio Disuelto	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Berillio Total	mg/L	<0.01	NA	NA	NA	NA	NA	NA
Boro Disuelto	mg/L	<0.01	<0.01	<0.01	0.09	0.09	0.1	0.1
Boro Total	mg/L	<0.01	NA	NA	NA	NA	NA	NA

Parámetros	Unidades	Blancos de Campo			Muestra Duplicado			
		Agua EMSURE (metales) y Agua Desmineralizada (FisQ)			Original	Duplicado	Original	Duplicado
		SW-10	GW-10	MW-20	PSASR	PSASR2	MW-9	MW-21
Cadmio Disuelto	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cadmio Total	mg/L	<0.0001	NA	NA	NA	NA	NA	NA
Calcio Disuelto	mg/L	<0.2	<0.2	<0.2	87.0	87.2	167.0	166.0
Calcio Total	mg/L	<0.2	NA	NA	NA	NA	NA	NA
Cobalto Disuelto	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalto Total	mg/L	<0.01	NA	NA	NA	NA	NA	NA
Cobre Disuelto	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobre Total	mg/L	<0.01	NA	NA	NA	NA	NA	NA
Cromo Disuelto	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cromo Total	mg/L	<0.01	NA	NA	NA	NA	NA	NA
Hierro Disuelto	mg/L	<0.02	<0.02	<0.02	0.200	0.210	7.730	6.650
Hierro Total	mg/L	<0.02	NA	NA	NA	NA	NA	NA
Magnesio Disuelto	mg/L	<0.2	<0.2	<0.2	7.1	7.1	33.1	33.0
Magnesio Total	mg/L	<0.2	NA	NA	NA	NA	NA	NA
Manganeso Disuelto	mg/L	<0.005	<0.005	<0.005	0.0370	0.0360	0.1000	0.0990
Manganeso Total	mg/L	<0.005	NA	NA	NA	NA	NA	NA
Mercurio Disuelto	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Mercurio Total	mg/L	<0.0002	NA	NA	NA	NA	NA	NA
Molibdeno Disuelto	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Molibdeno Total	mg/L	<0.01	NA	NA	NA	NA	NA	NA
Níquel Disuelto	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Níquel Total	mg/L	<0.01	NA	NA	NA	NA	NA	NA
Plata Disuelta	mg/L	<0.0003	<0.0003	<0.0003	<0.00005	<0.00005	<0.00005	<0.00005
Plata Total	mg/L	<0.0003	NA	NA	NA	NA	NA	NA
Plomo Disuelto	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Plomo Total	mg/L	<0.0001	NA	NA	NA	NA	NA	NA
Potasio Disuelto	mg/L	<0.3	<0.3	<0.3	2.8	2.8	4.7	4.7
Potasio Total	mg/L	<0.3	NA	NA	NA	NA	NA	NA
Selenio Disuelto	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Selenio Total	mg/L	<0.0001	NA	NA	NA	NA	NA	NA
Sodio Disuelto	mg/L	<0.3	<0.3	<0.3	79.80	80.40	45.30	45.80
Sodio Total	mg/L	<0.3	NA	NA	NA	NA	NA	NA
Zinc Disuelto	mg/L	0.01	<0.01	<0.01	0.070	0.040	0.020	0.010
Zinc Total	mg/L	<0.01	NA	NA	NA	NA	NA	NA

El cianuro (CN) fue el único elemento detectado en los tres blancos preparados; pero no se detectó en ninguno de los dos análisis efectuados en la estación PSASR donde se utilizó una nueva solución preservante de hidróxido de sodio (NaOH); lo cual nos da la pauta de que la solución de NaOH utilizada para preservar las muestras para análisis de CN, desde el muestreo efectuado en marzo 2011 hasta marzo 2012, podría haber estado contaminada con este elemento. Durante este período de tiempo, todos los resultados obtenidos de CN total, libre o WAD están en los rangos de 0.009 a

0.018 mg/L, debido a que siempre se utiliza el mismo volumen de solución preservante para los 500ml de muestra solicitados por el laboratorio.

Como acción inmediata se implementara el análisis obligatorio de una muestra blanco por cada lote de muestras enviadas al laboratorio, para verificar la correcta manipulación de las muestras de agua analizadas y por consiguiente de los resultados de calidad de agua reportados.

Todos los demás parámetros analizados por el laboratorio son confiables tanto en manipulación de las muestras como en precisión del análisis.

4.3.2. Agua Superficial

En el Cuadro 4-4 se presentan los resultados de la calidad del agua superficial para el cuarto trimestre 2011 y el primer trimestre 2012 en las nueve estaciones de monitoreo y un resumen estadístico (promedio, valor máximo y valor mínimo) de la línea base establecida para cada estación. Los resultados del laboratorio se presentan en el anexo 10.3.1

Las estaciones de monitoreo presentaron un pH levemente alcalino (7.6 a 8.5); en ninguna de las estaciones se reportaron valores de grasas y aceites ni de DQO, a excepción de la estación SW-8 que presentó una concentración de 20 mg/L de DQO, cumpliendo con los límites establecidos por la USEPA para la salud humana, y el IFC y Acuerdo Gubernativo 236-2006 (Acuerdo) para aguas residuales.

Las nueve estaciones presentaron concentraciones por debajo de los límites establecidos por la USEPA para la salud humana de Cloruros (250 mg/L), Fluoruros (4 mg/L), sulfatos (250 mg/L) y de sólidos disueltos (500 mg/L). También presentaron concentraciones de sólidos suspendidos totales por debajo de los límites establecidos por la IFC (50 mg/L) y el acuerdo (100 mg/L).

También se reportaron concentraciones bajos de fósforo total a excepción del muestreo efectuado en marzo 2012, donde la concentración de fósforo total en la estación SW6-E está por debajo del límite de detección del método. También se reportaron valores bajos de cianuro total los cuales se deben a un problema analítico, ya que fue detectado en las muestras blanco enviadas al laboratorio como control de calidad (ver inciso 4.3.1).

El Berilio, Cadmio, Cromo, Mercurio, Níquel y Zinc no fueron detectados en ninguna de las nueve estaciones monitoreadas; el cobre fue detectado únicamente en diciembre 2011 en la estación SW1 mientras que el Bario y Selenio fueron detectados en concentraciones menores a los límites establecidos en la USEPA.

El Antimonio no fue detectado en SW5 y SW6, en las demás estaciones fue detectado en pequeñas concentraciones pero no superan el límite establecido por la USEPA

(0.006 mg/L). El Plomo fue detectado en pequeñas concentraciones pero no superan los límites establecidos por la USEPA (0.015 mg/L) y por el Acuerdo (0.4 mg/L).

Las concentraciones de Arsénico Total para la mayoría de estaciones están dentro de las concentraciones mínimas y máximas registradas dentro del establecimiento de la línea base, a excepción de la concentración 0.00063 mg/L registrada en marzo 2012 en el río Tapalapa aguas arriba (SW5) la cual fue mayor al máximo registrado en su línea base (0.00280 mg/L).

En la estación ubicada en el rio El Dorado aguas arriba del proyecto (SW-3), se registraron concentraciones de Arsénico de 0.01150 mg/L y 0.01220 mg/L en los muestreos efectuados en diciembre 2011 y marzo 2012, las cuales están por arriba de los límites dados por la USEPA (0.01mg/L), las cuales son normales en esta estación ya que están dentro de las concentraciones mínimas y máximas registradas durante el establecimiento de la línea base (0.006 a 0.0137 mg/L). Las demás estaciones cumplen con los límites dados por el Acuerdo (0.1mg/L) y la USEPA (0.01mg/L).

En todas las estaciones el Aluminio Total se encuentra en concentraciones mayores al límite establecido por la USEPA (0.20 mg/L), pero todas se encuentran dentro de las concentraciones mínimas y máximas registradas durante el establecimiento de la línea base, tal como se observa en el Cuadro 4-4

Cuadro 4-4. Resultados de la calidad del agua superficial 1er. trimestre 2012, Proyecto Minero Escobal (1/2).

Parámetros	Unidades	USEPA Salud Humana	IFC Agua Residual Tratada	Acuerdo 236-2006	SW1-E Quebrada Escobal - aguas arriba					SW2A-E Quebrada Escobal - aguas abajo					SW3-E Río El Dorado - Aguas Arriba					SW4A-E Río El Dorado - aguas abajo					SW5-E Río Tapalapa - aguas arriba				
					Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos	
					Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12
pH de campo	u.e.	5.0-9.0	6.0-9.0	6.0-9.0	7.6	7.1	8.1	7.7	8.3	NR	NR	NR	8.1	10.6	7.6	7.2	8.2	7.9	8.3	NR	NR	NR	NA	8.3	7.5	7.1	8.0	8.5	8.1
Temperatura campo	°C			+/- 7	17.4	13.0	19.8	15.4	22.1	NR	NR	NR	19.6	25.8	19.8	17.0	24.0	19.0	21.0	NR	NR	NR	NA	25.2	17.4	14.5	21.5	20.4	19.2
Conductividad de campo	uS/cm				277.9	66.3	566.6	183.4	436.1	NR	NR	NR	426.3	631.7	219.7	80.0	374.5	141.3	319.0	NR	NR	NR	NA	559.7	72.1	0.1	160.2	61.0	375.1
Oxígeno Disuelto campo	mg/L				3.6	0.09	6.37	0.2	5.81	NR	NR	NR	NA	5.59	3.75571	0.05	6.76	0.42	6.31	NR	NR	NR	NA	5.26	3.99	0.03	8.01	0.12	6.02
Alcalinidad Total	mg/L				104	38	161	110	181	NR	NR	NR	127	148	83	38	118	86	127	NR	NR	NR	93	121	25	13	43	25	60
Cloruros	mg/L	250			5	4	7	5	4	NR	NR	NR	11	3	2.72727	2	3	3	2	NR	NR	NR	9	9	1.8	1	3	2	56
Fluoruros	mg/L	4			0.15	0.1	0.2	0.2	0.2	NR	NR	NR	0.7	0.6	0.15	<0.1	0.2	0.2	0.2	NR	NR	NR	0.3	0.4	<0.1	<0.1	<0.1	<0.1	0.2
Fosfatos	mg/L				0.185	0.09	0.31	0.12	0.16	NR	NR	NR	0.06	0.03	0.11545	0.06	0.37	0.06	0.06	NR	NR	NR	0.25	2.88	0.0435	<0.03	0.18	0.03	0.09
Cianuro Total	mg/L	0.14		1.00	0.004	<0.003	0.015	0.014	0.018	NR	NR	NR	0.014	0.014	<0.003	<0.003	0.015	0.014	0.010	NR	NR	NR	0.014	0.013	0.003	<0.003	0.014	0.013	0.012
Amonio	mg/L				<0.005	<0.005	0.070	<0.05	<0.05	NR	NR	NR	<0.05	0.88	0.050	<0.05	0.210	<0.05	<0.05	NR	NR	NR	<0.05	0.10	<0.05	<0.05	<0.05	<0.05	<0.05
Nitratos/Nitritos como N	mg/L				1.61	0.08	4.87	0.86	0.65	NR	NR	NR	4.71	2.49	0.59	<0.02	1.51	0.46	0.30	NR	NR	NR	4.57	5.37	0.13	0.03	0.42	0.07	<0.02
Nitrogeno Kjeldahl (TKN)	mg/L				4.03	0.20	25.90	0.20	0.2	NR	NR	NR	<0.1	1.1	0.38	<0.1	0.60	0.10	<0.1	NR	NR	NR	0.30	0.2	0.21	<0.1	0.40	<0.1	<0.1
Sulfatos	mg/L	250.0			26.3	10.0	42.0	24.0	35	NR	NR	NR	174.0	156	16.9	4.0	25.0	17.0	24	NR	NR	NR	68.0	114	16.5	<10	47.0	13.0	26
Fósforo Disuelto (Orto)	mg/L				0.06	0.03	0.10	0.03	0.05	NR	NR	NR	0.02	0.01	0.04	0.02	0.12	0.02	0.02	NR	NR	NR	0.08	0.93	0.15	<0.01	0.06	<0.01	0.03
Fósforo Total	mg/L		2.00	10.00	0.37	0.04	2.51	0.04	0.05	NR	NR	NR	0.02	0.01	0.05	0.02	0.14	0.03	0.02	NR	NR	NR	0.10	0.97	0.02	<0.01	0.05	0.01	0.03
STD (TDS)	mg/L	500			225	170	280	170	290	NR	NR	NR	460	420	183.636	140	220	150	230	NR	NR	NR	310	380	84	60	110	100	240
SST (TSS)	mg/L		50	100	164	5	780	<5	<5	NR	NR	NR	<5	12	74	5	340	5	15	NR	NR	NR	12	64	95	<5	32	<5	<5
ST (TS)	mg/L				346.3	200.0	1080.0	220.0	280	NR	NR	NR	490.0	430	231.8	140.0	500.0	190.0	230	NR	NR	NR	350.0	460	97.0	70.0	130.0	80.0	240
Hidrocarburos totales (TPH)	mg/L				<0.1	<0.09	<0.1	<0.1	<0.01	NR	NR	NR	<0.1	0.2	<0.1	<0.09	<0.2	<0.1	<0.01	NR	NR	NR	<0.1	<0.01	<0.09	<0.09	<0.1	<0.1	<0.01
Grasas y Aceites	mg/L		10	10	<2.062	<2.062	<2.248	<2	<0.01	NR	NR	NR	<2	<2.04	<2.062	<2.04	<2.326	<2.02	<2.062	NR	NR	NR	<2.02	<2.02	<2.062	<2.02	<2.084	<2.04	<2.02
DQO	mg/L		125.0		15.7	<10	40.0	<10	<10	NR	NR	NR	<10	<10	10.9	<10	40.0	30.0	20	NR	NR	NR	<10	40	6.5	<10	20.0	<10	<10
Aluminio Disuelto	mg/L				0.077	<0.03	0.090	<0.03	<0.03	NR	NR	NR	<0.03	<0.03	0.061	<0.03	0.150	<0.03	<0.03	NR	NR	NR	<0.03	<0.03	0.055	<0.03	0.140	0.070	<0.03
Aluminio Total	mg/L	0.20			5.02	<0.03	35.10	0.33	0.05	NR	NR	NR	0.16	0.22	3.25	<0.03	17.40	1.12	0.42	NR	NR	NR	0.69	3.52	1.09	<0.03	3.69	0.48	0.09
Antimonio Disuelto	mg/L				<0.0004	<0.0004	0.0006	0.0007	0.0006	NR	NR	NR	0.0057	0.0035	<0.0004	<0.0004	<0.0004	0.0005	0.0005	NR	NR	NR	0.0014	0.002	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Antimonio Total	mg/L	0.006			<0.0004	<0.0004	0.0007	0.0005	0.0007	NR	NR	NR	0.0048	0.0036	<0.0004	<0.0004	<0.0004	<0.0004	0.0005	NR	NR	NR	0.0012	0.0021	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
Arsénico Disuelto	mg/L				0.00216	0.00050	0.00340	0.00320	0.00400	NR	NR	NR	0.00450	0.00700	0.00797	0.00410	0.01390	0.01270	0.00730	NR	NR	NR	0.00500	0.00580	0.00139	0.00050	0.00240	0.00140	0.00470
Arsénico Total	mg/L	0.010		0.100	0.00339	0.00150	0.00940	0.00390	0.00500	NR	NR	NR	0.00410	0.00820	0.00888	0.00600	0.01370	0.01150	0.01220	NR	NR	NR	0.00510	0.00780	0.00177	0.00130	0.00280	0.00250	0.00630
Bario Disuelto	mg/L				0.1361	0.0860	0.2070	0.1460	0.219	NR	NR	NR	0.0940	0.146	0.0915	0.0510	0.1180	0.0840	0.073	NR	NR	NR	0.1590	0.176	0.0447	0.0230	0.0720	0.0480	0.083
Bario Total	mg/L	1			0.186	0.1	0.434	0.162	0.225	NR	NR	NR	0.101	0.162	0.12445	0.098	0.253	0.095	0.138	NR	NR	NR	0.176	0.223	0.0556	0.039	0.069	0.052	0.087
Berillio Disuelto	mg/L				<0.002	<0.002	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.002	<0.0002	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.002	<0.002	<0.01	<0.01	<0.01
Berillio Total	mg/L	0.004			<0.002	<0.002	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.002	<0.0002	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.002	<0.002	<0.01	<0.01	<0.01
Boro Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	0.01	NR	NR	NR	0.03	0.02	<0.01	<0.01	0.02	<0.01	0.01	NR	NR	NR	<0.01	0.03	0.01	<0.01	0.01	<0.01	0.47
Boro Total	mg/L				<0.01	<0.01	0.02	<0.01	<0.01	NR	NR	NR	0.03	0.01	<0.01	<0.01	0.02	<0.01	0.01	NR	NR	NR	<0.01	0.03	0.01	<0.01	0.02	0.02	0.46
Cadmio Disuelto	mg/L				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NR	NR	NR	<0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001	NR	NR	NR	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cadmio Total	mg/L	0.003		0.1	<0.0001	<0.0001	0.0007	<0.0001	<0.0001	NR	NR	NR	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	NR	NR	NR	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcio Disuelto	mg/L				45.2	18.9	74.5	43.6	69.2	NR	NR	NR	95.1	82.0	27.8	11.7	39.9	29.0	23.9	NR	NR	NR	54.5	69.2	7.9	3.4	13.7	7.1	19.7
Calcio Total	mg/L				45.5	20.9	70.5	45	71.5	NR	NR	NR	96.2	88.6	27.9273	12.3	38.7	28.3	43.2	NR	NR	NR	55	72.1	7.73	3.4	13.1	6.8	20.2
Cobalto Disuelto	mg/L				<0.01	<0.01	0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobalto Total	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01
Cobre Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobre Total	mg/L	1.3		3	<0.01	<0.01	0.01	0.02	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.1	<0.01	<0.01	<0.01	0.04	<0.01	<0.01
Cromo Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cromo Total	mg/L	0.1		0.1	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.01	<0.01	0.02	<0.01	<0.01
Hierro Disuelto	mg/L				<0.02	<0.02	0.040	<0.02	<0.02	NR	NR	NR	<0.02	<0.02	0.033	<0.02	0.060	<0.02	<0.02	NR	NR	NR	<0.02	<0.02	0.055	0.030	0.090	0.080	0.09
Hierro Total	mg/L	0.3			2.7	<0.02	19.5	0.2	0.04	NR	NR	NR	0.1	0.12	1.9	0.1	10.2	0.5	0.26	NR	NR	NR	0.5	1.88	0.7	0.2	1.8	0.3	0.23
Magnesio Disuelto	mg/L				3.9	2.6	5.3	3.4	5.2	NR	NR	NR	11.0	11.3	2.6	1.3	3.5	2.3	2.0	NR	NR	NR	6.1	10.1	1.5	0.8	2.5	1.1	4.0
Magnesio Total	mg/L				4.2	2.8	5.2	3.8	5.4	NR	NR	NR	11.4	12.4	2.7	1.6	3.5	2.4	3.6	NR	NR	NR	6.4	10.8	1.5	0.9	2.5	1.2	4.2
Manganeso Disuelto	mg/L				0.0051	<0.005	0.0200	0.0200	0.029	NR	NR	NR	<0.005	0.021	0.0742	0.0100	0.3810	0.0280	0.011	NR	NR	NR	0.0590	0.097	0.0250	0.0060	0.0470	0.0100	0.066
Manganeso Total	mg/L	0.05			0.1041	<0.005	0.7210	0.0300	0.027	NR	NR	NR	<0.005	0.033	0.1475	0.0250	0.4030	0.0480	0.056	NR	NR	NR	0.1020	0.162	0.0406	0.0140	0.0620	0.0130	0.071
Mercurio Disuelto	mg/L				<0.0002	<0.0002	<0.0002	<0.0002	0.0003	NR	NR	NR	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NR	NR	NR	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Mercurio Total	mg/L	0.002		0.01	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NR	NR	NR	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NR	NR	NR	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molibdeno Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Molibdeno Total	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.01	<0.01	0.01	<0.01	<0.01	NR	NR	NR	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Níquel Disuelto	mg/L				<0.01	<0.01	0.030	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	0.010	<0.01	<0.01
Níquel Total	mg/L	0.61		2.00	<0.01	<0.01	0.040	<0.01	<0.01	NR	NR	NR	<0.1	<0.01	<0.01	<0.01	0.050	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.013	<0.01	0.030	<0.01	<0.01
Plata Disuelta	mg/L				<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	NR	NR	NR	<0.00005	<0.0003	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	NR	NR	NR	<0.00005	<0.0003	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003
Plata Total	mg/L				<0.00005	<0.00005	0.000	<0.00005	<0.0003	NR	NR	NR	<0.00005	<0.0003	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	NR	NR	NR	<0.00005	<0.0003	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003
Plomo Disuelto	mg/L				<0.0001	<0.0001	0.000	<0.0001	<0.0001	NR	NR	NR	<0.0001	<0.0001	<0.0001	<0.0001	0.000	<0.0001	<0.0001	NR	NR	NR	<0.0001	0.0001	<0.0001	<0.0001	0.000	0.000	<0.0001
Plomo Total	mg/L	0.015		0.400	0.0025	<0.0001	0.0191	0.0001	<0.0001	NR	NR	NR	<0.0001	0.0003	0.0013	<0.0001	0.0072	0.0004	0.0003	NR	NR	NR	0.0005	0.0016	0.0003	<0.0001	0.0012	0.0003	<0.0001
Potasio Disuelto	mg/L				4.4	3.5	5.1	3.8	4.9	NR	NR	NR	5.3	5.3	4.2	3.5	5.5	3.7	2.8	NR	NR	NR	5.5	9.0	3.0	2.5	3.7	2.7	4.6
Potasio Total	mg/L				5.3	3.5	13.0	4.1	4.7	NR	NR	NR	5.5	5.6	4.5	3.6	7.0	3.8	4.8	NR	NR	NR	5.7	9.7	3.0	2.2	4.1	2.8	4.6
Selenio Disuelto	mg/L				<0.0001	<0.0001	0.0001	0.0002	<0.0001	NR	NR	NR	0.0002	0.0002	<0.0001	<0.0001	0.0001	0.0001	<0.0001	NR	NR	NR	0.0002	0.0002	<0.0001	<0.0001	0.0003	<0.0001	<0.0001
Selenio Total	mg/L	0.170			0.00010	<0.0001	0.00030	0.00010	0.0002	NR	NR	NR	0.00020	0.0002	<0.0001	<0.0001	0.00010	<0.0001	0.0002	NR	NR	NR	0.00010	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodio Disuelto	mg/L				9.81	8.30	11.60	8.30	9.8	NR	NR	NR	26.60	23.0	12.65	7.70	16.60	11.10	8.5	NR	NR	NR	16.10	19.5	6.34	3.70	10.80	5.30	40.4
Sodio Total	mg/L				9.46	7.80	11.80	8.60	9.4	NR	NR	NR	27.00	24.4	12.17	7.50	15.40	10.80	14.3	NR	NR	NR	16.20	19.9	5.99	3.40	9.40	5.20	40.2
Zinc Disuelto	mg/L				0.053	<0.01	0.100	0.010	<0.01	NR	NR	NR	<0.01	<0.01	0.068	<0.01	0.140	<0.01	<0.01	NR	NR	NR	<0.01	0.01	0.040	<0.01	0.100	0.030	<0.01
Zinc Total	mg/L	7.40		10.00	0.064	<0.01	0.120	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.174	<0.01	1.010	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	0.197	<0.01	1.600	<0.01	<0.01

Cuadro 4-4. Resultados de la calidad del agua superficial 4to trimestre 2011 y 1er. trimestre 2012, Proyecto Minero Escobal (2/2).

Parámetros	Unidades	USEPA Salud Humana	IFC Agua Residual Tratada	Acuerdo 236-2006	SW6-E Río Los Vados - aguas abajo					SW7-E Quebrada Onda					SW8-E Aguas debajo de la unión Río San Rafael y El Dorado					SW9-E Río Tapalapa, aguas debajo de la union Rio San Rafael, Los Vados y Quebrada Onda				
					Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos	
					Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12
pH de campo	u.e.	**5.0-9.0**	**6.0-9.0**	**6.0-9.0**	7.4	7.1	7.8	7.6	7.7	7.5	6.9	8.0	7.8	8.3	NR	NR	NR	8.1	8.0	NR	NR	NR	7.5	8.5
Temperatura campo	°C			**+/- 7**	19.4	12.2	27.3	21.6	17.9	18.7	15.0	21.3	19.0	17.4	NR	NR	NR	22.0	25.1	NR	NR	NR	23.4	19.1
Conductividad de campo	uS/cm				259.0	60.0	948.0	102.8	103.7	216.0	120.0	416.2	127.6	308.7	NR	NR	NR	186.8	385.9	NR	NR	NR	244.0	398.4
Oxígeno Disuelto campo	mg/L				4.02667	0.02	8.31	0.71	6.95	3.92833	0.06	7.54	0.61	4.83	NR	NR	NR	0.28	5.49	NR	NR	NR	0.78	6.37
Alcalinidad Total	mg/L				48	22	108	37	15	66	30	101	67	103	NR	NR	NR	77	83	NR	NR	NR	88	76
Cloruros	mg/L	**250**			43.9	3	230	14	2	3.7	3	5	3	3	NR	NR	NR	12	9	NR	NR	NR	10	17
Fluoruros	mg/L	**4**			0.11	<0.1	0.3	0.1	<0.1	0.1	<0.1	0.2	0.1	0.2	NR	NR	NR	0.2	0.2	NR	NR	NR	0.2	0.2
Fosfatos	mg/L				0.0765	<0.03	0.27	0.06	<0.03	0.132	0.09	0.24	0.09	0.09	NR	NR	NR	0.28	0.56	NR	NR	NR	1.3	0.28
Cianuro Total	mg/L	**0.14**		**1.00**	<0.003	<0.003	0.014	0.013	0.013	<0.003	<0.003	0.015	0.009	0.009	NR	NR	NR	0.013	0.013	NR	NR	NR	0.013	0.013
Amonio	mg/L				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.100	<0.05	<0.05	NR	NR	NR	0.050	<0.05	NR	NR	NR	0.220	0.19
Nitratos/Nitritos como N	mg/L				0.30	<0.02	1.22	0.15	<0.02	1.07	<0.1	3.53	0.37	<0.02	NR	NR	NR	2.09	5.23	NR	NR	NR	3.85	2.12
Nitrogeno Kjeldahl (TKN)	mg/L				0.20	0.10	0.50	0.20	<0.1	0.36	<0.1	0.70	0.20	<0.1	NR	NR	NR	0.50	<0.1	NR	NR	NR	0.70	0.4
Sulfatos	mg/L	**250.0**			14.0	<10	23.0	15.0	23	25.6	9.0	38.0	24.0	36	NR	NR	NR	35.0	59	NR	NR	NR	39.0	67
Fósforo Disuelto (Orto)	mg/L				0.03	<0.01	0.09	0.02	<0.01	0.04	0.03	0.08	0.03	0.03	NR	NR	NR	0.09	0.18	NR	NR	NR	0.49	0.09
Fósforo Total	mg/L		**2.00**	**10.00**	0.04	0.02	0.08	0.03	<0.01	0.07	0.03	0.19	0.03	0.04	NR	NR	NR	0.15	0.12	NR	NR	NR	0.58	0.32
STD (TDS)	mg/L	**500**			187	90	540	100	90	174	140	240	160	220	NR	NR	NR	210	280	NR	NR	NR	250	290
SST (TSS)	mg/L		**50**	**100**	21	<5	105	<5	8	52	<5	330	<5	7	NR	NR	NR	12	<5	NR	NR	NR	19	31
ST (TS)	mg/L				221.0	120.0	550.0	150.0	90	258.9	150.0	610.0	180.0	230	NR	NR	NR	280.0	310	NR	NR	NR	310.0	320
Hidrocarburos totales (TPH)	mg/L				11.5438	<0.1	92	<0.1	<0.01	<0.1	<0.09	<0.1	<0.1	<0.01	NR	NR	NR	<0.1	<0.01	NR	NR	NR	0.2	<0.01
Grasas y Aceites	mg/L		**10**	**10**	<2.062	<2.02	<2.084	<2.02	<2.02	<2.062	<2.02	<2.084	<2.02	<2.062	NR	NR	NR	<2.02	<2.04	NR	NR	NR	<2.04	<2.062
DQO	mg/L		**125.0**		<10	<10	30.0	<10	<10	10.0	<10	40.0	<10	20	NR	NR	NR	<10	20	NR	NR	NR	<10	<10
Aluminio Disuelto	mg/L				0.031	<0.03	0.080	0.090	<0.03	0.033	<0.03	0.130	<0.03	<0.03	NR	NR	NR	0.050	<0.03	NR	NR	NR	0.030	<0.03
Aluminio Total	mg/L	**0.20**			1.89	<0.03	8.13	1.26	0.09	3.05	0.05	16.40	0.78	0.17	NR	NR	NR	1.24	0.04	NR	NR	NR	0.69	0.52
Antimonio Disuelto	mg/L				<0.0004	<0.0004	0.0013	<0.0004	<0.0004	<0.0004	<0.0004	0.0009	0.0007	0.0004	NR	NR	NR	0.0005	0.0008	NR	NR	NR	0.0011	0.0005
Antimonio Total	mg/L	**0.006**			<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.00046	<0.0004	0.0007	0.0006	0.0006	NR	NR	NR	0.0005	0.0011	NR	NR	NR	0.001	0.0007
Arsénico Disuelto	mg/L				0.00320	0.00070	0.00760	0.00260	<0.0005	0.00382	0.00220	0.00540	0.00440	0.00470	NR	NR	NR	0.00390	0.00430	NR	NR	NR	0.00570	0.00430
Arsénico Total	mg/L	**0.010**		**0.100**	0.00387	0.00250	0.00740	0.00300	0.00120	0.00446	0.00300	0.00610	0.00390	0.00550	NR	NR	NR	0.00410	0.00500	NR	NR	NR	0.00530	0.00510
Bario Disuelto	mg/L				0.0618	0.0270	0.1360	0.0440	0.055	0.0946	0.0520	0.1430	0.0870	0.152	NR	NR	NR	0.0850	0.130	NR	NR	NR	0.1350	0.109
Bario Total	mg/L	**1**			0.0806	0.055	0.136	0.054	0.058	0.2142	0.088	0.99	0.1	0.158	NR	NR	NR	0.11	0.126	NR	NR	NR	0.154	0.117
Berillio Disuelto	mg/L				<0.002	<0.002	<0.01	<0.01	<0.01	<0.002	<0.002	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Berillio Total	mg/L	**0.004**			<0.002	<0.002	0.003	<0.01	<0.01	<0.002	<0.002	0.003	<0.1	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Boro Disuelto	mg/L				0.361	<0.01	1.82	0.09	0.01	<0.01	<0.01	0.01	<0.01	0.02	NR	NR	NR	0.04	0.01	NR	NR	NR	<0.01	0.09
Boro Total	mg/L				0.3785	<0.01	1.93	0.09	<0.01	0.0125	<0.01	0.02	<0.01	0.01	NR	NR	NR	<0.01	0.02	NR	NR	NR	<0.01	0.05
Cadmio Disuelto	mg/L				<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NR	NR	NR	<0.0001	<0.0001	NR	NR	NR	<0.0001	<0.0001
Cadmio Total	mg/L	**0.003**		**0.1**	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	0.0003	<0.0001	<0.0001	NR	NR	NR	<0.0001	<0.0001	NR	NR	NR	<0.0001	<0.0001
Calcio Disuelto	mg/L				15.1	5.4	38.9	10.5	7.4	23.1	11.2	38.1	21.6	34.3	NR	NR	NR	26.3	38.0	NR	NR	NR	36.5	38.4
Calcio Total	mg/L				14.81	5.9	37.5	10.7	7.5	23.04	11.5	36.7	22.1	35.0	NR	NR	NR	29.1	43.9	NR	NR	NR	37.9	37.3
Cobalto Disuelto	mg/L				<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Cobalto Total	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Cobre Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.1	<0.01	NR	NR	NR	<0.01	<0.01
Cobre Total	mg/L	**1.3**		**3**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Cromo Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Cromo Total	mg/L	**0.1**		**0.1**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Hierro Disuelto	mg/L				0.097	<0.02	0.280	0.060	<0.02	0.022	<0.02	0.070	<0.02	0.02	NR	NR	NR	0.060	0.07	NR	NR	NR	0.150	<0.02
Hierro Total	mg/L	**0.3**			1.3	0.3	4.8	0.5	0.12	1.8	0.1	9.5	0.4	0.19	NR	NR	NR	0.7	0.05	NR	NR	NR	0.7	0.36
Magnesio Disuelto	mg/L				3.0	1.4	7.4	2.0	1.6	4.1	2.2	6.4	3.6	6.2	NR	NR	NR	5.1	5.7	NR	NR	NR	5.3	7.9
Magnesio Total	mg/L				3.1	1.8	7.5	2.2	1.6	4.3	2.6	6.5	3.9	6.4	NR	NR	NR	5.6	6.1	NR	NR	NR	5.8	7.4
Manganeso Disuelto	mg/L				0.1143	<0.005	0.5510	0.0120	0.013	0.0317	0.0140	0.0740	0.0220	0.106	NR	NR	NR	0.0090	0.118	NR	NR	NR	0.1480	0.023
Manganeso Total	mg/L	**0.05**			0.1482	0.0400	0.5430	0.0230	0.013	0.0981	0.0190	0.3420	0.0550	0.128	NR	NR	NR	0.0470	0.058	NR	NR	NR	0.1870	0.087
Mercurio Disuelto	mg/L				<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NR	NR	NR	<0.0002	<0.0002	NR	NR	NR	<0.0002	<0.0002
Mercurio Total	mg/L	**0.002**		**0.01**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NR	NR	NR	<0.0002	<0.0002	NR	NR	NR	<0.0002	<0.0002
Molibdeno Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Molibdeno Total	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	0.01	NR	NR	NR	<0.01	<0.01
Níquel Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Níquel Total	mg/L	**0.61**		**2.00**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.040	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Plata Disuelta	mg/L				<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	NR	NR	NR	<0.00005	<0.0003	NR	NR	NR	<0.00005	<0.0003
Plata Total	mg/L				<0.00005	<0.00005	<0.00005	<0.00005	<0.0003	<0.00005	<0.00005	0.000	<0.00005	<0.0003	NR	NR	NR	<0.00005	<0.0003	NR	NR	NR	<0.00005	<0.0003
Plomo Disuelto	mg/L				0.000	<0.0001	0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NR	NR	NR	<0.0001	0.0002	NR	NR	NR	0.000	<0.0001
Plomo Total	mg/L	**0.015**		**0.400**	0.0007	<0.0001	0.0028	0.0003	<0.0001	0.0015	<0.0001	0.0083	0.0003	0.0001	NR	NR	NR	0.0006	<0.0001	NR	NR	NR	0.0006	0.0004
Potasio Disuelto	mg/L				4.1	3.2	7.1	3.5	3.0	4.1	3.6	5.4	3.9	5.0	NR	NR	NR	5.8	7.3	NR	NR	NR	8.1	6.0
Potasio Total	mg/L				4.2	3.1	7.5	3.5	3.1	4.5	3.6	7.0	3.9	5.0	NR	NR	NR	6.4	6.7	NR	NR	NR	8.5	5.8
Selenio Disuelto	mg/L				<0.0001	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NR	NR	NR	<0.0001	0.0001	NR	NR	NR	0.0001	0.0001
Selenio Total	mg/L	**0.170**			<0.0001	<0.0001	0.00010	0.00040	<0.0001	<0.0001	<0.0001	0.00020	<0.0001	<0.0001	NR	NR	NR	<0.0001	0.0002	NR	NR	NR	<0.0001	<0.0001
Sodio Disuelto	mg/L				32.16	6.00	135.00	13.70	5.4	11.69	8.70	15.40	10.40	13.8	NR	NR	NR	17.60	20.0	NR	NR	NR	16.10	24.0
Sodio Total	mg/L				31.11	5.30	124.00	14.00	5.3	11.45	8.30	15.50	10.50	13.8	NR	NR	NR	16.00	17.7	NR	NR	NR	16.60	20.6
Zinc Disuelto	mg/L				<0.1	<0.1	0.400	<0.01	<0.01	0.131	<0.01	0.810	<0.01	0.02	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Zinc Total	mg/L	**7.40**		**10.00**	<0.1	<0.1	0.220	<0.01	<0.01	0.339	<0.01	1.870	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01

Dónde: **u.e**.: unidades exponenciales; **mg/L**: miligramos por litro; **µS/cm**: microsiemens por centímetro; **°C:** grados centígrados; **NA**: no analizado; **NR** = Cálculo No Realizado por falta de datos de línea base. .

4.3.3. Agua Subterránea

En el Cuadro 4-5, se presentan los resultados de la calidad del agua subterránea (manantiales) para el cuarto trimestre 2011 y el primer trimestre 2012 en las cuatro estaciones de monitoreo.

En el cuarto trimestre 2011 no fue posible monitorear la estación GW1-A ubicado en la aldea El Volcancito, debido a que no se tuvo autorización de los pobladores. En el primer trimestre 2012 no fue posible monitorear la estación GW-3 debido a trabajos efectuados en dicho nacimiento para canalizar el agua de brote hacia la quebrada el Escobal por medio de un drenaje francés fabricado con piedra de bola y geotextil, al finalizarse los trabajos de construcción se procederá a tomar la muestra de agua, los resultados obtenidos serán reportado en el próximo informe trimestral. En la Fotografía 4-1 se puede apreciar dicho drenaje en construcción.

Fotografía 4-1. Canalización nacimiento GW-3 hacia la quebrada Escobal.

La temperatura de las estaciones muestreadas se encontró entre 18.2 y 22.2 °C. Los valores de pH se encontraron dentro de los rangos estadístico de la línea base, a excepción de la estación GW4 donde se presentó un leve incremento (7.5 u.e) al igual que en la estación GW-2 (7.7 u.e..).

Se reportaron valores entre 5 y 17 mg/L de Sólidos Suspendidos Totales (SST) en todas las estaciones.

Las concentraciones registradas de Cloruros, Fluoruros, Sulfatos y Sólidos Disueltos Totales están por debajo de los límites dados por la USEPA.

El Berilio, Cadmio, Cobalto, Cobre, Cromo, Mercurio, Molibdeno, Níquel y Plata no fueron detectadas en ninguna de las estaciones; el Plomo y Selenio fue detectado

solo en la estación GW5 en concentraciones muy bajas; el Antimonio fue detectado únicamente en las estaciones GW2 y GW3 en concentraciones muy bajas.

Las concentraciones de Arsénico, Bario y Berilio registradas se encuentran dentro de los valores mínimos y máximos establecidos durante la elaboración de línea base, y para las estaciones GW4 y GW5 las concentraciones están por debajo de los límites establecidos por la USEPA y el Acuerdo.

El Aluminio no se detectaron en las estaciones GW2 y GW3; pero si se detectaron en las estaciones GW1-A y GW5 en concentraciones por debajo del límite establecido por la USEPA (0.2 mg/L), la estación GW4 registró valores por arriba de dicho límite en los dos muestreos efectuados. El Hierro no fue detectado o la concentración registrada fue menor al límite establecido por la USEPA (0.3 mg/L) en las estaciones GW2, GW3 y GW5; en las estaciones GW1A y GW4 se registraron concentraciones mayores a dicho límite. Debido a que se desconoce la fuente de dicho incremento, se dará seguimiento a la tendencia que tengan estos parámetros en futuros muestreos para comprobar o descartar que sea un valor aberrante, de descartarse un valor aberrante se procederá a tomar las medidas necesarias para su corrección.

Todos los parámetros cumplieron con el Acuerdo 236-2006 y los valores en general se encuentran dentro del rango estadístico de la línea base.

En todas las estaciones se reportaron valores bajos de Cianuro total debido a que la solución preservante que se empleó en estos muestreos no era la adecuada, ya que el Cianuro fue detectado en las muestras blanco enviada al laboratorio como control de calidad, más no en las muestras donde se utilizó una nueva solución preservante (ver inciso 4.3.1)

Los resultados de laboratorio se presentan en el Anexo 10.3.2.

Cuadro 4-5 Resultados de la calidad de agua subterránea (manantiales) 4to trimestre 2011 y 1er. trimestre 2012, Proyecto Minero Escobal.

Parámetros	Unidades	USEPA Salud Humana	Acuerdo 236-2006	GW1-A Nacimiento-Aldea El Volcancito					GW-2 Nacimiento- Aldea El Fucio					GW-3 Nacimiento - Zona central del Proyecto (frente portal Oeste)					GW-4 Manantial - Aguas arriba de depósito de colas					GW-5 Manantial - Aguas arriba de depósito de colas, debajo de GW-4				
				Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos	
				Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12
pH de campo	u.e.	**5.0-9.0**	**6.0-9.0**	7.1	6.9	7.3	NA	6.5	6.5	6.0	7.2	6.3	7.7	6.5	6.2	7.1	6.2	NA	NR	NR	NR	6.0	7.5	NR	NR	NR	6.1	7.4
Temp de campo	°C		**+/- 7**	15.2	14.8	15.6	NA	19.1	21.4	19.0	23.7	21.8	22.2	19.4	18.5	21.0	19.3	NA	NR	NR	NR	19.0	18.2	NR	NR	NR	19.8	20.1
Conductividad de campo	uS/cm			229.8	223.0	236.5	NA	425.0	323.4	111.3	500.5	166.3	352.0	315.3	236.7	501.1	227.3	NA	NR	NR	NR	116.0	160.3	NR	NR	NR	98.5	142.7
Oxígeno Disuelto de campo	mg/L			0.1	0.0	0.2	NA	2.13	1.1825	0.13	2.35	0.28	3.15	0.68	0.03	1.26	0.72	NA	NR	NR	NR	0.39	1.35	NR	NR	NR	0.43	2.64
Alcalinidad Total	mg/L			31.0	31.0	31.0	NA	60	83	35	153	64	88	83	71	97	91	NA	NR	NR	NR	42	56	NR	NR	NR	32	42
Cloruros	mg/L	**250**		15.0	14.0	16.0	NA	30	3.75	2	7	2	3	5.25	3	6	5	NA	NR	NR	NR	3	<10	NR	NR	NR	4	5
Fluoruros	mg/L	**4**		<0.1	<0.1	<0.1	NA	<0.1	<0.1	<0.1	<0.1	0.2	0.2	0.15	0.1	0.2	0.1	NA	NR	NR	NR	<0.1	0.1	NR	NR	NR	0.1	0.1
Fosfatos	mg/L			0.2	0.1	0.2	NA	2.29	0.36	0.12	0.74	0.16	0.12	0.265	0.12	0.52	0.19	NA	NR	NR	NR	0.06	0.06	NR	NR	NR	0.06	0.09
Cianuro Total	mg/L	**0.14**	**1.00**	0.0	<0.003	0.0	NA	0.006	0.004	<0.003	0.012	0.014	0.013	0.005	<0.003	0.014	0.014	NA	NR	NR	NR	0.012	0.008	NR	NR	NR	0.011	0.014
Amonio	mg/L			<0.05	<0.05	0.1	NA	<0.05	0.059	<0.05	0.160	<0.05	<0.05	0.065	<0.05	0.140	<0.05	NA	NR	NR	NR	0.060	0.07	NR	NR	NR	<0.05	<0.05
Nitratos/Nitritos como N	mg/L			2.2	1.9	2.5	NA	0.09	0.74	0.14	1.10	0.07	<0.02	1.19	0.05	3.16	2.44	NA	NR	NR	NR	0.06	<0.02	NR	NR	NR	0.43	0.59
Nitrogeno Kjeldahl (TKN)	mg/L			0.7	0.3	1.1	NA	3.5	0.63	0.20	0.90	0.10	<0.1	0.46	<0.05	1.20	<0.1	NA	NR	NR	NR	1.50	1.3	NR	NR	NR	0.30	<0.1
Sulfatos	mg/L	**250.0**		12.5	11.0	14.0	NA	<10	43.0	7.0	90.0	47.0	71	30.0	16.0	71.0	42.0	NA	NR	NR	NR	7.0	<10	NR	NR	NR	8.0	7
Fósforo Total	mg/L		**10.00**	0.1	0.0	0.2	NA	0.70	0.18	0.09	0.27	0.07	0.10	0.10	0.05	0.15	0.06	NA	NR	NR	NR	0.04	0.17	NR	NR	NR	0.05	0.03
STD (TDS)	mg/L	**500.00**		190.0	190.0	190.0	NA	470	222.50	130.00	350.00	200.00	250	212.50	190.00	260.00	250.00	NA	NR	NR	NR	180.00	220	NR	NR	NR	180.00	170
SST (TSS)	mg/L		**100**	6.5	6.0	7.0	NA	12	7.66667	6	9	<5	5	39	5	105	<5	NA	NR	NR	NR	118	17	NR	NR	NR	169	5
ST (TS)	mg/L			200.0	180.0	220.0	NA	340	238	140	380	220	260	218	170	270	260	NA	NR	NR	NR	550	390	NR	NR	NR	320	230
Aluminio Disuelto	mg/L	**0.200**		<0.03	<0.03	<0.03	NA	0.040	0.075	<0.03	0.240	<0.03	<0.03	<0.03	<0.03	0.040	<0.03	NA	NR	NR	NR	0.520	0.340	NR	NR	NR	<0.03	0.110
Antimonio Disuelto	mg/L	**0.01**		<0.0004	<0.0004	<0.0004	NA	<0.004	0.00	<0.0004	0.00	0.00	0.0007	0.0004	<0.0004	0.0010	0.0007	NA	NR	NR	NR	<0.0004	<0.004	NR	NR	NR	<0.0004	<0.0004
Arsénico Disuelto	mg/L	**0.01**	**0.1**	0.001	0.001	0.001	NA	<0.005	0.01563	0.0043	0.0299	0.0102	0.0098	0.0059	0.0037	0.0115	0.0032	NA	NR	NR	NR	0.0008	<0.005	NR	NR	NR	<0.0005	0.0009
Bario Disuelto	mg/L	**1**		0.025	0.022	0.028	NA	0.100	0.24025	0.125	0.451	0.216	0.295	0.1855	0.12	0.328	0.182	NA	NR	NR	NR	0.173	0.149	NR	NR	NR	0.024	0.057
Berillio Disuelto	mg/L	**0.00400**		<0.01	<0.002	<0.01	NA	<0.01	<0.01	<0.002	<0.01	<0.01	<0.01	<0.01	<0.002	<0.01	<0.01	NA	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Boro Disuelto	mg/L			<0.01	<0.01	<0.01	NA	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NR	NR	NR	<0.01	0.01	NR	NR	NR	<0.01	<0.01
Cadmio Disuelto	mg/L	**0.0030**	**0.1000**	<0.0001	<0.0001	<0.0001	NA	<0.001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NA	NR	NR	NR	<0.0001	<0.001	NR	NR	NR	<0.0001	<0.0001
Calcio Disuelto	mg/L			5.7	5.1	6.2	NA	14.7	33.45	9.6	65.3	26.1	37.7	31.6	25.7	43.4	39.2	NA	NR	NR	NR	5.7	6.8	NR	NR	NR	2	4.0
Cobalto Disuelto	mg/L			<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Cobre Disuelto	mg/L	**1.3**	**3**	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Cromo Disuelto	mg/L	**0.1**	**0.1**	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Hierro Disuelto	mg/L	**0.3**		0.02	<0.02	0.03	NA	1.15	0.1025	0.03	0.17	<0.02	0.04	0.1025	<0.02	0.33	<0.02	NA	NR	NR	NR	1.33	1.72	NR	NR	NR	<0.02	0.05
Magnesio Disuelto	mg/L			3.1	2.9	3.3	NA	10.2	5.875	1.8	12	4.9	7.1	4.85	3.3	8.3	5.6	NA	NR	NR	NR	3	3.5	NR	NR	NR	1.1	2.5
Manganeso Disuelto	mg/L	**0.05**		<0.005	<0.005	<0.005	NA	0.499	0.123	0.02	0.356	0.024	0.042	0.05713	<0.005	0.133	0.009	NA	NR	NR	NR	0.52	0.710	NR	NR	NR	<0.005	0.014
Mercurio Disuelto	mg/L	**0.0**	**0.0**	<0.0002	<0.0002	<0.0002	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA	NR	NR	NR	<0.0002	<0.0002	NR	NR	NR	<0.0002	<0.0002
Molibdeno Disuelto	mg/L			<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Níquel Disuelto	mg/L	**0.61**	**2**	<0.01	<0.01	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NR	NR	NR	<0.01	<0.01	NR	NR	NR	<0.01	<0.01
Plata Disuelta	mg/L			<0.00005	<0.00005	<0.00005	NA	0.0021	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NA	NR	NR	NR	<0.00005	<0.0005	NR	NR	NR	<0.00005	<0.00005
Plomo Disuelto	mg/L	**0.015**	**0.4**	<0.0001	<0.0001	0.0	NA	<0.001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	NA	NR	NR	NR	0.0015	<0.001	NR	NR	NR	0.0002	0.0002
Potasio Disuelto	mg/L			7.3	5.9	8.6	NA	42.5	2.9	1.3	4.3	2.2	2.7	3.775	2.5	5	4.9	NA	NR	NR	NR	5	8.3	NR	NR	NR	3.7	6.0
Selenio Disuelto	mg/L	**0.17**		0.0002	<0.0001	0.0003	NA	<0.001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	NA	NR	NR	NR	<0.0001	<0.001	NR	NR	NR	<0.0001	0.0002
Sodio Disuelto	mg/L			17.6	16.9	18.2	NA	25.9	13.475	7.2	22	13.3	15.2	11.5	9.3	16.4	12.3	NA	NR	NR	NR	9.9	9.4	NR	NR	NR	6.3	11.6
Zinc Disuelto	mg/L	**7.4**	**10**	<0.01	<0.01	<0.01	NA	0.01	<0.1	<0.1	0.1	<0.01	0.04	0.93625	<0.1	3.47	<0.01	NA	NR	NR	NR	0.16	<0.01	NR	NR	NR	<0.01	0.02

Dónde: **u.e**.: unidades exponenciales; **mg/L**: miligramos por litro; **µS/cm**: microsiemens por centímetro; **°C:** grados centígrados; **NA**: no analizado; **NR** = Cálculo No Realizado por falta de datos de línea base.
Fuente ACZ Laboratories, Inc.

Cuadro 4-6 Resultados de la medición de calidad de agua subterránea (Pozos de Monitoreo, Producción y Artesanal), 4to trimestre 2011 y 1er. trimestre 2012, Proyecto Minero Escobal. (1/3)

Parámetros	Unidades	USEPA Salud Humana	IFC Agua Residual Tratada	Acuerdo 236-2006	MW-1					MW-2					MW-3					MW-4					MW-5				
					Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos	
					Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12
pH de campo	u.e.	**5.0-9.0**	**6.0-9.0**	**6.0-9.0**	6.2	6.2	6.3	6.1	6.8	6.6	6.4	6.8	6.4	7.6	6.4	6.3	6.5	6.5	6.9	6.3	6.2	6.4	6.4	6.7	6.2	6.0	6.3	6.0	6.6
Temp de campo	℃			**+/- 7**	21.8	21.3	22.5	21.3	19.4	24.4	23.4	25.1	23.2	24.2	24.1	23.7	24.5	24.9	23.8	23.3	22.2	24.4	23.4	24.0	23.4	23.0	24.6	23.2	22.5
Conductividad de campo	uS/cm				254.4	235.9	271.2	110.5	188.5	427.5	211.9	1001.3	122.3	176.9	803.9	741.6	829.1	341.3	542.1	916.9	872.1	944.8	450.4	725.3	469.7	401.4	494.1	353.9	601.6
Oxígeno Disuelto de campo	mg/L				0.6	0.2	1.4	1.5	4.06	0.75333	0.3	1.21	0.28	4.94	0.65	0.11	1.44	0.9	3.64	0.97333	0.48	1.93	0.22	3.52	0.815	0.185	1.77	0.09	3.97
Alcalinidad Total	mg/L				60.0	52.0	69.0	53.0	53	64	56	80	52	52	84	82	86	83	80	85	83	88	84	85	66	61	68	76	81
Cloruros	mg/L	**250**			4.0	3.0	5.0	4.0	4	11.5	3	28	3	3	16.25	16	17	15	13	20	19	21	21	21	8.5	8	9	19	19
Fluoruros	mg/L	**4**			0.2	0.1	0.2	0.2	0.1	0.35	0.2	0.7	0.2	0.2	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.175	0.1	0.2	0.1	0.1
Fosfatos	mg/L				0.3	0.2	0.3	0.3	0.25	0.2325	0.21	0.27	0.25	0.25	0.315	0.27	0.37	0.28	0.31	0.2475	0.24	0.27	0.22	0.25	0.2025	0.15	0.24	0.16	0.19
Cianuro Total	mg/L	**0.14**		**1.00**	0.0	<0.003	0.0	0.0	0.013	0.004	<0.003	0.011	0.014	0.014	0.005	<0.003	0.014	0.013	0.014	0.005	<0.003	0.015	0.014	0.013	0.005	<0.003	0.015	0.013	0.013
Amonio	mg/L				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitratos/Nitritos como N	mg/L				2.7	2.2	3.1	2.2	3.14	2.48	2.04	2.93	2.52	2.60	2.20	2.08	2.26	2.27	2.25	2.13	1.98	2.32	2.02	2.14	3.32	3.00	3.57	3.20	3.11
Nitrogeno Kjeldahl (TKN)	mg/L				0.2	<0.1	0.3	0.5	0.4	0.56	<0.1	1.10	<0.1	<0.1	<0.1	<0.1	0.20	<0.1	<0.1	<0.1	<0.1	0.30	<0.1	<0.1	<0.1	<0.1	0.30	<0.1	<0.1
Sulfatos	mg/L	**250.0**			13.0	10.0	14.0	10.0	12	28.5	4.0	97.0	4.0	4	166.0	162.0	169.0	137.0	141	212.5	210.0	220.0	220.0	230	72.3	64.0	76.0	149.0	168
Fósforo Total	mg/L		**2.00**	**10.00**	0.1	0.1	0.2	0.3	0.35	0.24	0.06	0.44	0.12	0.12	0.09	0.08	0.10	0.08	0.08	0.07	0.06	0.08	0.06	0.06	0.06	0.05	0.07	0.04	0.04
STD (TDS)	mg/L	**500.00**			202.5	180.0	210.0	190.0	190	252.50	190.00	360.00	190.00	190	470.00	460.00	480.00	450.00	410	552.50	540.00	560.00	540.00	560	305.00	290.00	320.00	430.00	450
SST (TSS)	mg/L		**50**	**100**	142.0	40.0	264.0	487.0	550	345.75	137	584	193	153	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
ST (TS)	mg/L				415.0	280.0	600.0	750.0	780	598	350	810	330	310	488	450	510	410	420	555	520	580	540	560	325	280	350	440	470
Aluminio Disuelto	mg/L	**0.200**			0.1	<0.03	0.2	0.5	<0.03	0.038	<0.03	0.070	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Antimonio Disuelto	mg/L	**0.01**			<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	0.0006
Arsénico Disuelto	mg/L	**0.01**		**0.1**	0.0040	0.0029	0.0047	0.0053	0.0047	0.00105	0.0008	0.0014	0.0011	0.0010	0.00228	0.0021	0.0027	0.0026	0.0026	0.00233	0.0021	0.0028	0.0023	0.0025	0.0013	0.001	0.0016	0.0009	0.0010
Bario Disuelto	mg/L	**1**			0.0675	0.0540	0.0840	0.0870	0.064	0.03025	0.024	0.039	0.026	0.026	0.03575	0.032	0.041	0.04	0.032	0.04225	0.038	0.047	0.037	0.042	0.162	0.157	0.166	0.24	0.245
Berillio Disuelto	mg/L	**0.00400**			<0.002	<0.002	0.0	<0.01	<0.01	<0.002	<0.002	0.00300	<0.01	<0.01	<0.002	<0.002	0.00300	<0.01	<0.01	<0.002	<0.002	0.00300	<0.01	<0.01	<0.002	<0.002	0.00300	<0.01	<0.01
Boro Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	0.01	0.01375	<0.01	0.04000	<0.01	0.02	0.06000	0.05000	0.07000	0.07000	0.07	0.07750	0.06000	0.09000	0.08000	0.08	0.01500	<0.01	0.03000	0.04000	0.04
Cadmio Disuelto	mg/L	**0.0030**		**0.1000**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcio Disuelto	mg/L				10.8	8.2	13.2	8.5	8.3	20.6	9.4	48.7	9.2	8.5	80.3	76.4	83.3	66.1	62.6	100	93	107	95.3	93.7	40.825	39.2	42.2	68.5	71.7
Cobalto Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobre Disuelto	mg/L	**1.3**		**3**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cromo Disuelto	mg/L	**0.1**		**0.1**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hierro Disuelto	mg/L	**0.3**			0.02	<0.02	0.04	0.6	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Magnesio Disuelto	mg/L				5.2	4.8	5.8	5.3	5.1	3.45	2.4	6.1	2.5	2.6	10.3	10.1	10.7	8.7	8.0	11.25	10.9	11.6	10.9	10.7	7.325	6.8	7.6	11.8	12.1
Manganeso Disuelto	mg/L	**0.05**			0.02	<0.005	0.05	0.1	0.108	0.108	0.03	0.308	<0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	0.009	<0.005	0.021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Mercurio Disuelto	mg/L	**0.0**		**0.0**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molibdeno Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Níquel Disuelto	mg/L	**0.61**		**2**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Plata Disuelta	mg/L				<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Plomo Disuelto	mg/L	**0.015**		**0.4**	0.0002	<0.0001	0.0003	0.0026	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001
Potasio Disuelto	mg/L				3.9	3.6	4.2	3.7	3.8	2.175	1.9	2.4	2	1.9	4.15	3.9	4.6	4	3.7	4.725	4.5	5.2	4.7	4.6	5.975	5.5	6.5	7.5	7.2
Selenio Disuelto	mg/L	**0.17**			0.0003	0.0002	0.0003	0.0002	0.0003	0.00018	0.0001	0.0002	0.0001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.00028	0.0002	0.0003	0.0002	0.0003	0.00038	0.0003	0.0004	0.0003	0.0003
Sodio Disuelto	mg/L				18.0	15.8	22.1	15.9	14.8	21.975	17.4	33.6	16.7	15.8	29.45	28.2	30.9	26.9	25.4	32.325	30.4	35.8	31.8	30.8	16.85	15.6	19.1	19.7	19.6
Zinc Disuelto	mg/L	**7.4**		**10**	0.09	<0.01	0.24	0.02	0.01	0.03	<0.01	0.11	0.01	0.01	0.05	<0.01	0.10	<0.01	<0.01	<0.01	<0.01	0.10	0.01	<0.01	<0.01	<0.01	0.10	0.02	0.01

Cuadro 4-6. Resultados de la medición de calidad de agua subterránea (Pozos de Monitoreo, Producción y Artesanal), 4to trimestre 2011 y 1er. trimestre 2012, Proyecto Minero Escobal. (2/3)

Parámetros	Unidades	USEPA Salud Humana	IFC Agua Residual Tratada	Acuerdo 236-2006	MW-6					MW-7					MW-8					MW-9				
					Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos	
					Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12
pH de campo	u.e.	5.0-9.0	6.0-9.0	6.0-9.0	6.2	6.2	6.3	6.1	6.7	6.4	6.1	7.0	7.0	6.5	6.2	6.1	6.3		7.5	7.2	6.9	7.4	7.0	7.5
Temp de campo	°C			+/- 7	22.3	21.6	22.8	23.2	22.3	22.4	22.0	23.1	22.2	21.6	23.3	23.2	23.4		24.1	27.5	25.9	29.0	29.2	28.2
Conductividad de campo	uS/cm				538.2	342.9	752.6	206.1	339.2	299.6	285.9	323.8	125.9	217.3	426.8	424.6	428.1		398.9	1595.0	1569.0	1621.0	735.0	1216.0
Oxígeno Disuelto de campo	mg/L				0.69	0.19	1.67	0.63	3.62	0.61	0.25	1.19	1.29	2.94	0.72167	0.155	1.45		4.31	0.38	0.35	0.41	0.2	2.16
Alcalinidad Total	mg/L				65	62	68	75	77	48	41	60	49	54	68	66	70	75	72	147	136	157	154	141
Cloruros	mg/L	250			11	6	17	6	6	11	9	12	8	7	6	6	6	9	9	36.5	36	37	38	39
Fluoruros	mg/L	4			0.175	0.1	0.2	0.2	0.2	0.125	0.1	0.2	0.1	0.1	0.16667	0.1	0.2	0.2	0.2	2.55	2.5	2.6	2.6	2.6
Fosfatos	mg/L				0.1725	0.15	0.21	0.16	0.19	0.1125	0.09	0.18	0.06	0.09	0.23	0.21	0.24	0.19	0.22	<0.03	<0.03	<0.03	<0.03	0.03
Cianuro Total	mg/L	0.14		1.00	0.005	<0.003	0.015	0.014	0.014	0.005	<0.003	0.015	0.011	0.012	0.005	<0.003	0.015	0.014	0.013	0.007	<0.003	0.012	0.011	0.009
Amonio	mg/L				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitratos/Nitritos como N	mg/L				5.08	4.42	6.15	4.66	4.90	4.75	4.08	5.24	4.47	5.12	2.76	2.63	2.83	2.98	2.76	<0.02	<0.02	<0.02	0.03	<0.02
Nitrogeno Kjeldahl (TKN)	mg/L				<0.1	<0.1	0.20	<0.1	<0.1	0.21	<0.1	0.40	<0.1	0.1	0.09	<0.1	0.20	<0.1	<0.1	0.23	<0.1	0.40	<0.1	<0.1
Sulfatos	mg/L	250.0			85.3	33.0	153.0	41.0	46	19.3	17.0	23.0	9.0	9	54.7	54.0	55.0	78.0	82	440.0	440.0	440.0	440.0	410
Fósforo Total	mg/L		2.00	10.00	0.05	0.04	0.06	0.05	0.04	0.04	0.01	0.07	0.01	0.02	0.07	0.06	0.08	0.06	0.06	<0.01	<0.01	0.02	0.01	<0.01
STD (TDS)	mg/L	500.00			340.00	260.00	440.00	260.00	260	232.50	220.00	250.00	210.00	210	276.67	270.00	290.00	290.00	310	905.00	890.00	920.00	890.00	870
SST (TSS)	mg/L		50	100	<5	<5	<5	<5	<5	19.75	7	45	26	19	9	6	14	<5	<5	27	25	29	29	16
ST (TS)	mg/L				345	240	450	260	280	260	230	280	230	230	300	290	310	320	320	940	910	970	960	910
Aluminio Disuelto	mg/L	0.200			<0.03	<0.03	0.050	<0.03	<0.03	0.053	<0.03	0.070	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
Antimonio Disuelto	mg/L	0.01			0.0005	<0.0004	0.0012	<0.0004	<0.0004	0.00063	0.00050	0.00080	0.00060	0.0008	0.00100	0.00090	0.00110	0.00110	0.0014	<0.0004	<0.0004	<0.0004	<0.0004	0.0057
Arsénico Disuelto	mg/L	0.01		0.1	0.0028	0.0024	0.0032	0.003	0.0029	0.00338	0.0029	0.0041	0.0028	0.0033	0.0021	0.0019	0.0024	0.0026	0.0026	0.00295	0.0007	0.0052	0.0058	0.0035
Bario Disuelto	mg/L	1			0.19775	0.134	0.281	0.172	0.179	0.1555	0.129	0.176	0.163	0.184	0.125	0.122	0.129	0.158	0.161	0.031	0.028	0.034	0.02	0.025
Berillio Disuelto	mg/L	0.00400			<0.002	<0.002	0.00300	<0.01	<0.01	<0.002	<0.002	0.00300	<0.01	<0.01	<0.002	<0.002	0.00300	<0.01	<0.01	<0.01	<0.002	<0.01	<0.01	<0.01
Boro Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01000	0.01000	0.02	0.09000	0.08000	0.10000	0.10000	0.10
Cadmio Disuelto	mg/L	0.0030		0.1000	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Calcio Disuelto	mg/L				52.5	35.1	71.9	37.3	37.0	16.675	13.9	19.6	13.7	14.5	34.6	32.5	36.3	41.6	41.8	185.5	170	201	180	167
Cobalto Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cobre Disuelto	mg/L	1.3		3	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Cromo Disuelto	mg/L	0.1		0.1	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Hierro Disuelto	mg/L	0.3			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	5.52	1.53	9.51	3.14	7.73
Magnesio Disuelto	mg/L				7.475	4.9	10.5	5.5	5.5	4.8	4.6	5	4	4.4	6.43333	6.3	6.7	7.7	7.8	35.8	34.4	37.2	33.4	33.1
Manganeso Disuelto	mg/L	0.05			<0.005	<0.005	0.006	<0.005	<0.005	0.0065	<0.005	0.012	<0.005	0.013	0.019	0.012	0.029	<0.005	<0.005	0.203	0.149	0.257	0.059	0.100
Mercurio Disuelto	mg/L	0.0		0.0	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molibdeno Disuelto	mg/L				<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01
Níquel Disuelto	mg/L	0.61		2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Plata Disuelta	mg/L				<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	7E-05	<0.00005	<0.00005
Plomo Disuelto	mg/L	0.015		0.4	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.00013	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.001	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Potasio Disuelto	mg/L				5.675	5	6.5	5.4	5.2	6.175	5.4	6.8	5.5	5.8	4.8	4.6	5.1	4.8	4.7	4.8	4.6	5	4.7	4.7
Selenio Disuelto	mg/L	0.17			0.00048	0.0004	0.0005	0.0004	0.0005	0.00015	0.0001	0.0002	0.0001	0.0001	0.00043	0.0003	0.0006	0.0004	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sodio Disuelto	mg/L				13.95	12.3	17	11.9	11.2	19.125	15.4	27.5	13.3	14.0	15.2	15	15.6	16.6	16.3	45.05	44.7	45.4	46.1	45.3
Zinc Disuelto	mg/L	7.4		10	0.03375	<0.01	0.1	<0.01	<0.01	0.03375	<0.01	0.1	0.01	0.02	<0.01	<0.01	<0.01	0.33	0.15	<0.01	<0.01	0.01	<0.01	0.02

Cuadro 4-6 Resultados de la medición de calidad de agua subterránea (Pozos de Monitoreo, Producción y Artesanal), 4to trimestre 2011 y 1er. trimestre 2012, Proyecto Minero Escobal. (3/3)

Parámetros	Unidades	USEPA Salud Humana	IFC Agua Residual Tratada	Acuerdo 236-2006	MW-10					MW-11					PSA-SR					RW-1				
					Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos		Línea Base¤			Muestreos	
					Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12	Promedio	Mínimo	Máximo	dic-11	mar-12
pH de campo	u.e.	**5.0-9.0**	**6.0-9.0**	**6.0-9.0**	7.1	7.0	7.1	NA	7.3	NR	NR	NR	NA	8.0	7.5	7.5	7.5	NA	7.1	NR	NR	NR	NA	NA
Temp de campo	°C			**+/- 7**	24.2	23.9	24.4	NA	25.4	NR	NR	NR	NA	30.9	27.8	27.8	27.8	NA	28.4	NR	NR	NR	NA	NA
Conductividad de campo	uS/cm				828.4	825.0	831.7	NA	881.2	NR	NR	NR	NA	1777.0	663.9	663.9	663.9	NA	771.5	NR	NR	NR	NA	NA
Oxígeno Disuelto de campo	mg/L				0.2575	0.21	0.305	NA	1.67	NR	NR	NR	NA	1.79	0.05	0.05	0.05	NA	1.59	NR	NR	NR	NA	NA
Alcalinidad Total	mg/L				237	234	240	229	230	NR	NR	NR	84	133	186	186	186	NA	178	NR	NR	NR	NA	99
Cloruros	mg/L	**250**			2.5	2	3	3	2	NR	NR	NR	52	71	32	32	32	NA	4	NR	NR	NR	NA	7
Fluoruros	mg/L	**4**			0.3	0.3	0.3	0.4	0.5	NR	NR	NR	2.9	2.7	0.7	0.7	0.7	NA	0.7	NR	NR	NR	NA	0.2
Fosfatos	mg/L				0.06	0.06	0.06	0.03	0.06	NR	NR	NR	0.03	0.03	0.06	0.06	0.06	NA	0.06	NR	NR	NR	NA	1.98
Cianuro Total	mg/L	**0.14**		**1.00**	0.007	<0.003	0.012	0.013	0.009	NR	NR	NR	0.004	0.011	0.003	0.003	0.003	NA	<0.003	NR	NR	NR	NA	<0.003
Amonio	mg/L				<0.05	<0.05	<0.05	<0.05	<0.05	NR	NR	NR	<0.05	<0.05	0.060	0.060	0.060	NA	<0.05	NR	NR	NR	NA	<0.05
Nitratos/Nitritos como N	mg/L				<0.02	<0.02	0.03	<0.02	<0.02	NR	NR	NR	0.03	0.02	<0.02	<0.02	<0.02	NA	<0.02	NR	NR	NR	NA	6.08
Nitrogeno Kjeldahl (TKN)	mg/L				<0.1	<0.1	<0.1	0.30	<0.1	NR	NR	NR	0.20	0.1	<0.1	<0.1	<0.1	NA	<0.1	NR	NR	NR	NA	0.30
Sulfatos	mg/L	**250.0**			75.0	73.0	77.0	113.0	220.0	NR	NR	NR	520.0	770	45.0	45.0	45.0	NA	220.0	NR	NR	NR	NA	17.0
Fósforo Total	mg/L		**2.00**	**10.00**	0.02	0.01	0.03	0.03	0.02	NR	NR	NR	<0.01	<0.01	0.02	0.02	0.02	NA	<0.01	NR	NR	NR	NA	0.62
STD (TDS)	mg/L	**500.00**			395.00	390.00	400.00	420.00	600.00	NR	NR	NR	940.00	1410	320.00	320.00	320.00	NA	540.00	NR	NR	NR	NA	260.00
SST (TSS)	mg/L		**50**	**100**	<5	<5	<5	<5	<5	NR	NR	NR	17	5	<5	<5	<5	NA	<5	NR	NR	NR	NA	7
ST (TS)	mg/L				410	410	410	440	590	NR	NR	NR	920	1430	300	300	300	NA	540	NR	NR	NR	NA	260
Aluminio Disuelto	mg/L	**0.200**			<0.03	<0.03	<0.03	0.040	<0.03	NR	NR	NR	<0.03	<0.03	0.060	0.060	0.060	NA	<0.03	NR	NR	NR	NA	<0.03
Antimonio Disuelto	mg/L	**0.01**			0.01	0.01	0.01	0.01	0.00	NR	NR	NR	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	NA	<0.0004	NR	NR	NR	NA	<0.0004
Arsénico Disuelto	mg/L	**0.01**		**0.1**	0.01005	0.0099	0.0102	0.0091	0.0106	NR	NR	NR	0.0017	0.0034	0.0136	0.0136	0.0136	NA	0.0148	NR	NR	NR	NA	0.001
Bario Disuelto	mg/L	**1**			0.0875	0.084	0.091	0.094	0.111	NR	NR	NR	0.043	0.030	0.125	0.125	0.125	NA	0.165	NR	NR	NR	NA	0.451
Berillio Disuelto	mg/L	**0.00400**			<0.01	<0.002	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	NR	NR	NR	NA	<0.01
Boro Disuelto	mg/L				0.01250	<0.01	0.02000	<0.01	0.01000	NR	NR	NR	0.10000	0.17	0.07000	0.07000	0.07000	NA	0.09000	NR	NR	NR	NA	0.01000
Cadmio Disuelto	mg/L	**0.0030**		**0.1000**	0.0008	0.0007	0.0009	0.0002	<0.0001	NR	NR	NR	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NA	<0.0001	NR	NR	NR	NA	<0.0001
Calcio Disuelto	mg/L				100.9	97.8	104	108	146	NR	NR	NR	178	275	47.5	47.5	47.5	NA	87	NR	NR	NR	NA	29.4
Cobalto Disuelto	mg/L				<0.01	<0.01	<0.01	0.01	<0.01	NR	NR	NR	<0.1	<0.01	<0.01	<0.01	<0.01	NA	<0.01	NR	NR	NR	NA	<0.01
Cobre Disuelto	mg/L	**1.3**		**3**	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	NR	NR	NR	NA	<0.01
Cromo Disuelto	mg/L	**0.1**		**0.1**	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	NR	NR	NR	NA	0.01
Hierro Disuelto	mg/L	**0.3**			0.8	0.16	1.44	0.57	0.94	NR	NR	NR	3.32	1.03	0.05	0.05	0.05	NA	0.2	NR	NR	NR	NA	<0.02
Magnesio Disuelto	mg/L				12.85	12.4	13.3	12.9	17	NR	NR	NR	28.6	42.3	4.1	4.1	4.1	NA	7.1	NR	NR	NR	NA	3.7
Manganeso Disuelto	mg/L	**0.05**			0.7165	0.682	0.751	0.68	0.807	NR	NR	NR	0.07	0.027	0.03	0.03	0.03	NA	0.037	NR	NR	NR	NA	<0.005
Mercurio Disuelto	mg/L	**0.0**		**0.0**	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NR	NR	NR	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	NA	<0.0002	NR	NR	NR	NA	<0.0002
Molibdeno Disuelto	mg/L				<0.01	<0.01	0.01	<0.01	<0.01	NR	NR	NR	0.01	0.01	<0.01	<0.01	<0.01	NA	<0.01	NR	NR	NR	NA	<0.01
Níquel Disuelto	mg/L	**0.61**		**2**	<0.01	<0.01	<0.01	<0.01	<0.01	NR	NR	NR	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	NR	NR	NR	NA	<0.01
Plata Disuelta	mg/L				<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	NR	NR	NR	<0.0005	<0.00005	<0.00005	<0.00005	<0.00005	NA	<0.00005	NR	NR	NR	NA	<0.00005
Plomo Disuelto	mg/L	**0.015**		**0.4**	0.0222	0.0219	0.0225	0.0054	0.0005	NR	NR	NR	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	NA	<0.0001	NR	NR	NR	NA	<0.0001
Potasio Disuelto	mg/L				3.65	3.6	3.7	3.7	4.1	NR	NR	NR	4.2	5.0	2.5	2.5	2.5	NA	2.8	NR	NR	NR	NA	20.6
Selenio Disuelto	mg/L	**0.17**			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	NR	NR	NR	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	NA	<0.0001	NR	NR	NR	NA	<0.0001
Sodio Disuelto	mg/L				16.75	16.2	17.3	0.73	20.9	NR	NR	NR	61.2	78.7	55.2	55.2	55.2	NA	79.8	NR	NR	NR	NA	17.1
Zinc Disuelto	mg/L	**7.4**		**10**	0.165	0.16	0.17	0.1	0.02	NR	NR	NR	0.02	0.1	0.12	0.12	0.12	NA	0.07	NR	NR	NR	NA	<0.01

Dónde: **u.e**.: unidades exponenciales; **mg/L**: miligramos por litro; **µS/cm**: microsiemens por centímetro; **°C:** grados centígrados; **NA**: no analizado; **NR** = Cálculo No Realizado por falta de datos de línea base.
Fuente ACZ Laboratories Inc

En el Cuadro 4-6, se presentan los resultados de la calidad del agua subterránea (Pozos de Monitoreo, Producción y Artesanal), para el 4to trimestre 2011 y 1er. trimestre 2012.

Los valores de pH presentaron un ligero aumento con respecto a los rangos estadístico de la línea base, a excepción del pozo MW7 que presentó un valor de pH dentro de dicho rango. Se registraron valores de pH en el rango de 6.0 y 7.6 i.e.

Las concentraciones registradas de Cloruros, Fluoruros y Sulfatos están por debajo de los límites dados por la USEPA; a excepción de las concentraciones registradas en las estaciones MW9 y MW11 las cuales se encuentran dentro del rango de los 400 a 770 mg/L; concentraciones similares se registraron durante la determinación de línea base para MW9. No se tiene datos de línea base para MW11.

En los pozos de monitoreo MW3, MW4, MW5, MW6, MW7, MW8 y MW9; todos los parámetros cumplieron con el Acuerdo 236-2006 y los valores en general se encuentran dentro del rango estadístico de la línea base.

Se reportaron valores no detectables de Sólidos Suspendidos Totales (SST) en los pozos MW4, MW5, MW6, MW3, MW8, MW10 y PSASR. En los pozos MW7, MW9, MW11 y RW1 se obtuvieron valores dentro de los rangos establecidos en la línea base; comportamiento similar se observa en MW2 donde las concentraciones obtenidas (193 y 153 mg/L) no cumple con el límite establecido en el Acuerdo, pero es una concentración que está dentro del rango establecido de la línea base (137 a 584 mg/L). En el pozo MW1 se obtuvieron concentraciones de 487 y 550mg/L, debido a que se desconoce la fuente de dicho incremento, se dará seguimiento a la tendencia que tenga este parámetro en futuros muestreos para comprobar o descartar que sea un valor aberrante, de descartarse un valor aberrante se procederá a tomar las medidas necesarias para su corrección.

El Berilio, Cobre, Cromo, Mercurio, Níquel y Plata no fueron detectados en ninguno de los pozos monitoreados. El Cadmio fue detectado únicamente en el pozo MW10 en diciembre 2011 pero dicha concentración (0.002 mg/L) se encuentra dentro de los mínimos y máximos establecidos en la línea base y por debajo del límite establecido por la USEPA (0.003 mg/L).

El Aluminio no fue detectado en la mayoría de los pozos, la excepción se da en diciembre 2011 para los pozos MW1 y MW10 donde se registraron respectivamente concentraciones de 0.5 y 0.040 mg/L pero en marzo 2012 este parámetro no se detecta en ninguno de los dos pozos.

El Antimonio se detecta en los pozos MW7 y MW10 en concentraciones que están dentro de las concentraciones mínimas y máximas establecidas en la línea base. En marzo 2012 se registraron concentraciones de 0.0006, 0.0014 y 0.0057 mg/L para los

pozos MW5, MW8 y MW9 respectivamente. Dichos valores están por debajo del límite establecido por la USEPA para este parámetro (0.01 mg/L).

El Arsénico fue detectado en todas las estaciones, la mayoría en concentraciones dentro de los mínimos y máximos establecidos en la línea base; en las estaciones MW8 y MW9 presentaron un ligero aumento respecto a la concentración máxima de línea base, pero se encuentran por debajo del límite establecido por la USEPA (0.01mg/L).

El Bario fue detectado en todas las estaciones en concentraciones menores al límite establecido por la USEPA (1 mg/L).

El Hiero no fue detectado en la mayoría de los pozos; a excepción de los pozos MW9, MW10 y PSASR donde se detectaron concentraciones que están dentro de los límites máximos y mínimos establecidos en la línea base; en el pozo MW1 se detectó 0.6mg/L en diciembre 2011 pero en marzo 2012 ya no fue detectado. En el pozo MW11 se registraron concentraciones de 3.32 y 1.03 mg/L de hierro, los cuales son mayores a los límites dados por la USEPA (0.3 mg/L); no se cuenta con datos de línea base para esta estación.

El Plomo fue detectado en el pozo MW10 en concentraciones dentro de las concentraciones mínimas y máximas establecidas en línea base; en los pozos MW1, MW8 y MW11 se detectaron concentraciones por arriba de la concentración máxima establecida en la línea base, pero que están por debajo del límite establecido por la USEPA (0.015 mg/L).

En todas las estaciones MW se reportaron valores bajos de Cianuro total debido a que la solución preservante que se empleó en estos muestreos no era la adecuada, ya que el Cianuro fue detectado en las muestras blanco enviada al laboratorio como control de calidad, más no se detecta en las muestras de los pozos PSASR y RW1 donde se utilizó una nueva solución preservante (ver inciso 4.3.1).

Los resultados de laboratorio se presentan en el Anexo 10.3.3.

5. Sedimentos

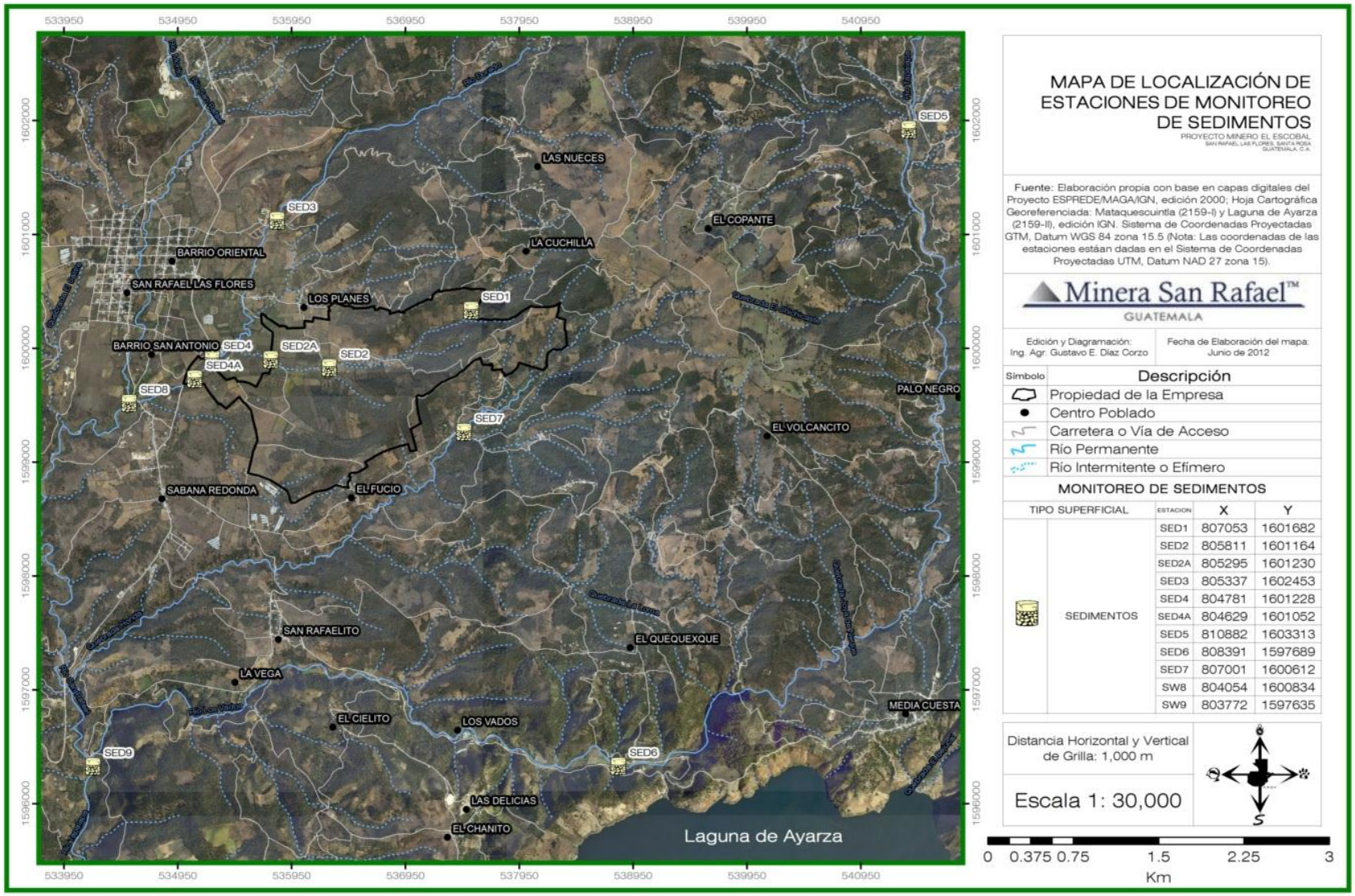
5.1. Sitios de Monitoreo

En el Cuadro 5-1 se enlistan las estaciones de monitoreo de sedimentos de las quebradas y ríos ubicados dentro o cercanas al AID del Proyecto. Su ubicación se presenta en la Figura 5-1.

Cuadro 5-1. Sitios de Monitoreo de Sedimento cercanos y dentro del AID del Proyecto.

ESTACIÓN	SISTEMA DE COORDENADAS PROYECTADAS UTM, NAD27 ZONA 15		TIPO	SITIO
SED1	807053	1601682	Sedimento	Quebrada El Escobal, aguas arriba.
SED2	805811	1601164	Sedimento	Quebrada El Escobal, en medio del proyecto.
SED2A	805295	1601230	Sedimento	Quebrada El Escobal, Salida de la Propiedad
SED3	805337	1602453	Sedimento	Rio El Dorado, aguas arriba
SED4	804781	1601228	Sedimento	Rio El Dorado, aguas abajo
SED4A	804629	1601052	Sedimento	Río El Dorado, por puente de acceso al Proyecto (Suandys)
SED5	810882	1603313	Sedimento	Rio Tapalapa, aguas arriba
SED6	808391	1597689	Sedimento	Rio Los Vados, aguas abajo
SED7	806989	1600618	Sedimento	Quebrada La Honda.
SED8	804054	1600834	Sedimento	Unión Río San Rafael y El Dorado
SED9	803772	1597635	Sedimento	Río Tapalapa, aguas abajo (cercano a la Ceibita)

Figura 5-1 Mapa de localización de las estaciones de monitoreo de sedimentos



5.2. Metodología

En el Cuadro 5-2 se describe los parámetros analizados en las muestras de sedimento.

Cuadro 5-2. Parámetros analizados en sedimentos, Proyecto Minero Escobal.

PARÁMETROS ANALIZADOS	
Laboratorio	Metales Totales, Cianuro Total, Fósforo Total y Porcentaje de Sólidos.

Laboratorio empleado y valores de referencia: Las muestras fueron analizadas en el laboratorio ACZ, 2773 Downhill Drive Steamboat Springs, Colorado USA, el cual se encuentra acreditado y avalado por la USEPA

5.3. Resultados

En el Cuadro 5-3 se presenta los resultados de metales registrados para los meses de diciembre 2011 y marzo 2012. Los resultados del laboratorio se presentan en el Anexo 10.4

Las concentraciones de Arsénico, Cadmio, Cromo, Plomo y Mercurio registradas durante los meses de diciembre 2011 y marzo 2012 están por debajo de los Límites Máximos Permisibles (LMP) para lodos, establecidos por el Acuerdo 236-2006 para disponer en el suelo. La mayor concentración de Arsénico se registró en la estación SED-5 con valores de 26.8 mg/Kg y 12.8mg/Kg.

En ninguna muestra se detectó Cianuro total, y el porcentaje de fósforo total se encuentra en el rango de 0.0039% a 0.0321%

Cuadro 5-3. Resultados de sedimentos, 4to trimestre 2011 y 1er. trimestre 2012, Proyecto Minero Escobal.

Parámetro	Unidades	Acuerdo 236-2006 Aplicación al suelo*	SED-1		SED-2A		SED-3		SED-4A		SED-5	
			dic-11	may-12	dic-11	may-12	dic-11	may-12	dic-11	may-12	dic-11	may-12
Arsenico Total	mg/Kg**	50	12.8	11.1	16.1	12.5	16.9	7.8	14.1	11.4	26.8	12.8
Cadmio Total	mg/Kg**	50	0.2	0.3	0.1	0.8	0.2	0.2	0.3	0.3	0.3	0.11
Cromo Total	mg/Kg**	1500	3.1	4.8	3.1	5.3	2.2	1.5	5.8	7.1	4.1	4.9
Plomo Total	mg/Kg**	500	9.5	12.3	6.5	17.2	8.3	4.7	NA	10.2	10.1	6.23
Mercurio Total	mg/Kg**	25	<0.05	<0.6	<0.05	<0.09	0.06	0.3	<0.06	<0.2	0.08	<0.07
Porcentaje de sólidos	%		71.7	5.5	76.2	37.4	70.8	29.1	74.3	19.4	65.4	53.5
Cianuro Total	mg/Kg**		<0.09	<2	<0.09	<0.3	<0.1	<0.3	<0.2	<0.4	<0.2	<0.2
Fósforo Total	%		0.0321	0.33	0.0061	0.024	0.0062	0.02	0.0227	0.089	0.0097	0.011

Parámetro	Unidades	Acuerdo 236-2006 Aplicación al suelo*	SED-6		SED-7		SED-8		SED-9	
			dic-11	may-12	dic-11	may-12	dic-11	may-12	dic-11	may-12
Arsenico Total	mg/Kg**	50	7.1	11.4	8.4	6.8	12.2	16.9	12.1	4.3
Cadmio Total	mg/Kg**	50	0.1	0.1	0.1	<0.09	0.2	0.17	0.2	0.1
Cromo Total	mg/Kg**	1500	4.7	1.8	2.2	1.3	3.1	3.6	2.6	1.6
Plomo Total	mg/Kg**	500	4.4	8.6	5.1	2.35	8.5	5.98	35.8	6.6
Mercurio Total	mg/Kg**	25	<0.05	0.16	<0.1	<0.07	<0.05	<0.06	<0.05	0.58
Porcentaje de sólidos	%		74.3	49.4	75.1	54.1	67.5	63.6	65.5	56.5
Cianuro Total	mg/Kg**		<0.1	<0.2	<0.1	<0.2	<0.09	<0.2	<0.1	<0.2
Fósforo Total	%		0.0053	0.011	0.0039	0.0098	0.0084	0.015	0.0076	0.0156

mg/Kg: miligramo por kilogramo; %: porcentaje; *LMP para suelos con pH < 7 unidades. En los suelos que posean pH>7 se podrán disponer lodos hasta un 50% mayor de los valores presentados como LMP; ** mg/kg de materia seca a 104°C

6. Calidad del Efluente de Planta de Tratamiento

6.1. Sitios de Monitoreo

En el Cuadro 6-1 se enlistan las estaciones de monitoreo de efluente de los túneles a la quebrada El Escobal. Su ubicación se presenta en la Figura 6-1

Cuadro 6-1. Sitios de Monitoreo de Calidad de Agua de Efluentes de Planta de Tratamiento del Proyecto.

ESTACIÓN	SISTEMA DE COORDENADAS PROYECTADAS UTM, NAD27 ZONA 15		SITIO	OBSERVACIÓN
WW2	806499	1601305	Descarga de piletas portal Este	Piletas en operación hasta el mes de marzo 2012
WW3	806336	1601252	Descarga de piletas portal Oeste	
WW7	805714	1601058	Descarga de planta de tratamiento agua de portales	Planta inicia operaciones en el mes de abril 2012.

6.2. Metodología

En el Cuadro 6-2 se describe el procedimiento y equipo utilizado para la toma de muestras de agua

Cuadro 6-2 Procedimiento y equipo utilizado para medir parámetros *In Situ* de muestras de agua residual, Proyecto Minero Escobal.

PARÁMETROS ANALIZADOS	
In Situ	pH, conductividad eléctrica, oxígeno disuelto, temperatura y sólidos disueltos totales
Laboratorio	Metales pesados Totales y Disueltos, Aceites y Grasas, DQO, DBO, Coliformes totales, Color, Sólidos Disueltos, Sólidos Sedimentables, Cianuro Total.

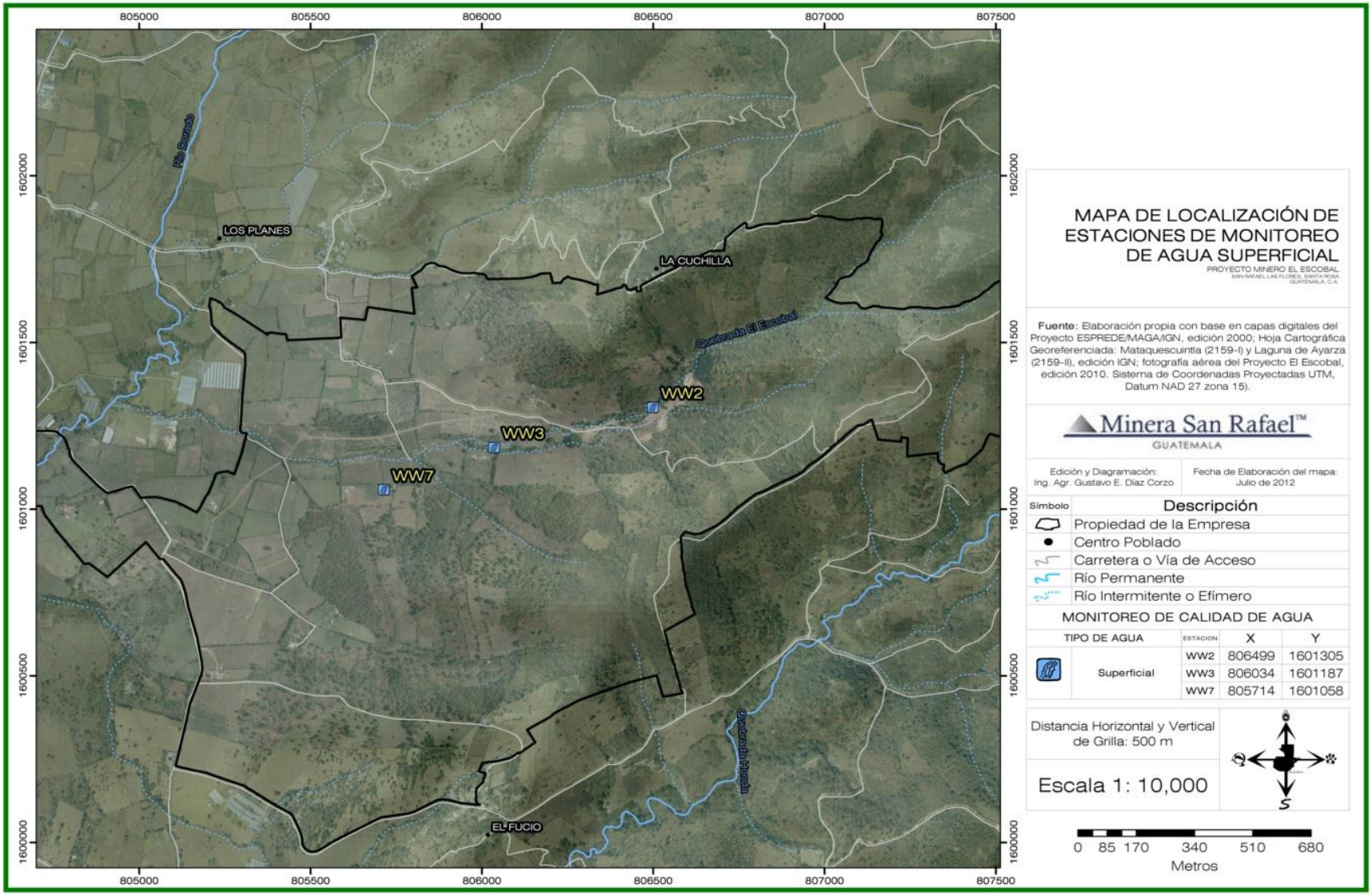
PROCEDIMIENTO	
Basado en el procedimiento de toma de muestra dado por Water Management Consultants y el laboratorio ACZ para el análisis de Cianuto, y en el procedimiento dado por *Standard Methods for the Examination of Water and Wastewater, part 1060 B* para los demás parámetros	
EQUIPO UTILIZADO	
Nombre	multiparámetros
Modelo	PCD650
Fabricante	OAKTON

Laboratorio empleado y valores de referencia: De Enero a Marzo las muestras fueron analizadas en el laboratorio Soluciones Analíticas. A partir de Abril las muestras de cianuro fueron analizadas en el laboratorio ACZ, 2773 Downhill Drive Steamboat Springs, Colorado USA, el cual se encuentra acreditado y avalado por la USEPA. Las muestras de agua residual fueron analizadas en el laboratorio Ecosistemas Proyectos Ambientales, S.A., laboratorio respaldado por un Sistema de Calidad ISO 17025, otorgado por la Oficina Guatemalteca de Acreditación (OGA); y con ello los análisis acreditados cuentan con validez internacional según OGA-LE 006-04.

6.3. Resultados

En el monitoreo correspondiente al mes de febrero 2012 se implementó el uso de muestras control para determinar la confiabilidad de los resultados de parámetros analizados por el laboratorio empleado. En total se efectuaron 3 muestras blanco y una muestra duplicado; los resultados obtenidos se presentan en Cuadro 6-3.

Figura 6-1 Mapa de localización de las estaciones de monitoreo de Efluentes de Planta de Tratamiento del Proyecto.



Cuadro 6-3. Resultados de control de calidad para muestras de Efluentes de Planta de Tratamiento, 1er trimestre de 2012, Proyecto Minero Escobal.

Laboratorio	Unidades	ACUERDO 236-2006	Soluciones Analíticas		Ecosistemas Proyectos Ambientales		
Mes			Febrero	Marzo	Abril		
control calidad			Blanco		Blanco	Muestra Duplicado	
ID muestra			WW10	WW10	WW10	WW7	WW11
Grasas y Aceites	mg/L	10	<6	<6	<5	<5	<5
Materia Flotante		Ausente	Ausente	Ausente	Ausente	Ausente	Ausente
DBO	mg/L	200	<6	<6	<10	<10	11
SST (TSS)	mg/L	100	<6	<6	<10	17	18
Sól. Sedimentables	ml/L		<0.1	<0.1	<0.1	<0.1	<0.1
Nitrógeno Total	mg/L	20	18	29	<1	1.8	2.5
Fósforo Total	mg/L	10	<0.2	<0.2	<0.05	0.06	0.09
Arsénico	mg/L	0.1	<0.098	<0.098	<0.002	0.007	0.007
Cadmio	mg/L	0.1	<0.0019	<0.0019	<0.02	<0.02	<0.02
Cobre	mg/L	3	0.0173	<0.0106	<0.03	<0.03	<0.03
Cromo Total	mg/L	0.1	0.013	<0.0018	<0.05	<0.05	<0.05
Cianuro Total	mg/L	1	0.012	0.0083	<0.003	<0.003	<0.003
Mercurio	mg/L	0.01	0.023	<0.00032	<0.004	<0.004	<0.004
Níquel	mg/L	2	<0.0035	<0.0035	<0.05	<0.05	<0.05
Plomo	mg/L	0.4	<0.0221	<0.0221	<0.05	<0.05	<0.05
Zinc	mg/L	10	0.019	0.1	<0.01	<0.01	<0.01
Color Aparente	u Pt/Co	500	<1	<1	<1	103	110
Color Real			NA	NA	<1	<1	<1
Coliformes Fecales	NMP/100ml	<1x10^4	40	4	<2	<2	<2

NA: no analizado. u.e. unidades electroquímicas. °C: grados centígrados. mg/L: miligramos por litro. U Pt/Co: unidades de Platino-Cobalto. NMP/100ml: número más probable en 100 mililitros. **Naranja**: resultados no cumplen con estándares de calidad de MSR. Azul: análisis efectuados en laboratorio ACZ.

Para la preparación de blancos analíticos de los parámetros fisicoquímicos y microbiológicos se utilizó agua desmineralizada, mientras que para el análisis de metales se utilizó agua EMSURE certificada.

Según los resultados obtenidos en dos blancos enviados al laboratorio Soluciones Analíticas en los meses de febrero y marzo 2011, no se obtuvo una adecuada manipulación y/o análisis de las muestras, debido a que se detectó Nitrógeno total,

Cobre, Cromo Total, Cianuro, Mercurio, Zinc y Coliformes Fecales en agua que no contiene estos elementos; por lo tanto estos parámetros no son confiables.

Como acción inmediata, a partir de los muestreos efectuados en abril 2012 se enviaron las muestras a un nuevo laboratorio (Ecosistemas Proyectos Ambientales), y se enviaron muestras control para determinar la confiabilidad de los resultados. Se envió una muestra blanco, para verificar la correcta manipulación de las muestras de agua analizadas y una muestra duplicado para verificar la precisión. Según los resultados obtenidos, todos los demás parámetros analizados por el laboratorio son confiables tanto en manipulación de las muestras como en precisión del análisis.

En el Cuadro 6-4 se pueden observar los resultados de la calidad del efluente de la planta de tratamiento del Proyecto Minero Escobal. En él se resaltan algunos valores en naranja, los cuales son resultados que fueron descartados porque no cumplieron con los controles de calidad establecidos.

Según los resultados confiable, se cumplió con la mayoría de los límites máximos permisibles dados por el Acuerdo Gubernativo 236-2006 para entes generadores nuevos, a excepción del pH en las estación WW3 en los meses de febrero y marzo 2012 (9.81 y 10.31 respectivamente) y el pH de la estación WW7 del mes de abril (9.46).

Los valores de pH de la estación WW3 pudieron ser consecuencia de que el agua tratada antes de abril 2012 se realizaba en piletas de sedimentación temporales localizadas muy cerca de la entrada de cada portal del túnel, mientras se construía la planta de tratamiento adecuada. Estas piletas no contaban con una descarga continua de los lodos generados por el proceso de clarificación de las agua, lo cual permitía que los carbonatos presentes en los lodos interactuaran en mayor cantidad y tiempo con el agua ya clarificada, lo cual producía un aumento de pH. Las piletas temporales ya no son utilizadas en la actualidad, ya que la planta de tratamiento empezó operaciones en abril de 2012.

Los valores de pH en la estación WW7 pudieron ser consecuencia del proceso de estabilización de la planta de tratamientos el cual abarcó todo el mes de abril y parte del mes da mayo 2012, donde fue necesario efectuar varias pruebas con los floculantes y coagulantes empleados, hasta encontrar la dosificación óptima para lograr una adecuada clarificación.

Como acción inmediata se efectuarán lecturas de pH cada 4 horas en diferentes secciones de la planta de tratamiento, para tener un control adecuado. Si luego de la etapa de estabilización, los valores de pH siguen mayores a 9.00, se tomarán medidas correctivas que podrían incluir el cambio de coagulantes y floculantes, o implementar el proceso de neutralización del pH en la planta de tratamiento.

Los resultados de laboratorio se presentan en el Anexo 10.5

Cuadro 6-4. Calidad del Efluente de la Planta de Tratamiento 1er trimestre de 2012, Proyecto Minero Escobal.

Mes	Unidades	LMP ACUERDO 236-2006	Enero		Febrero		Marzo		Abril
Estación			WW2	WW3	WW2	WW3	WW2	WW3	WW7
Laboratorio			Soluciones Analíticas		Soluciones Analíticas		Soluciones Analíticas		Ecosistemas
pH de campo	u.e.	6.0-9.0	8.95	8.7	8.01	9.81	7.85	10.31	9.46
Temp de campo	°C	+/- 7	21.5	24.5	23.3	25.7	22.3	24.5	24.4
Grasas y Aceites	mg/L	10	<6	<6	<6	<6	<6	<6	<5
Materia Flotante		Ausente	Ausente	Ausente	Ausente	Ausente	Ausente	Ausente	Ausente
DBO	mg/L	200	7	<6	<6	<6	<6	<6	<10
SST (TSS)	mg/L	100	<6	41	24	<6	27	15	17
Sól.Sedimentables	ml/L		<0.1	0.1	<0.1	0.3	<0.1	<0.1	<0.1
Nitrógeno Total	mg/L	20	18	19	16	23	18	16	1.8
Fósforo Total	mg/L	10	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.06
Arsénico	mg/L	0.1	<0.098	<0.098	<0.098	<0.098	<0.098	<0.098	0.007
Cadmio	mg/L	0.1	0.14	0.15	0.094	0.04	0.092	0.051	<0.02
Cobre	mg/L	3	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.0106	<0.03
Cromo Total	mg/L	0.1	0.017	0.0063	0.12	0.074	<0.0018	<0.0018	<0.05
Cianuro Total	mg/L	1	<0.0050	<0.0050	0.014	0.013	0.0057	0.018	<0.003
Mercurio	mg/L	0.01	<0.00032	<0.00032	<0.00032	<0.00032	<0.00032	<0.00032	<0.004
Níquel	mg/L	2	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.0035	<0.05
Plomo	mg/L	0.4	<0.0221	0.0373	<0.0221	<0.0221	<0.0221	<0.0221	<0.05
Zinc	mg/L	10	0.03	<0.0076	0.0098	0.012	0.089	0.055	<0.01
Color Aparente	u Pt/Co	500	88	15	19	5	22	11	103
Color Real			NA	NA	NA	NA	NA	NA	<1
Col. Fecales	NMP/100ml	<1x10^4	40	<3	<3	<3	4	<3	<2

NA: no analizado. u.e. unidades electroquímicas. °C: grados centígrados. mg/L: miligramos por litro. U Pt/Co: unidades de Platino-Cobalto. NMP/100ml: número más probable en 100 mililitros. **Naranja**: resultados no cumplen con estándares de calidad de MSR. Azul: análisis efectuados en laboratorio ACZ.

7. Vibraciones

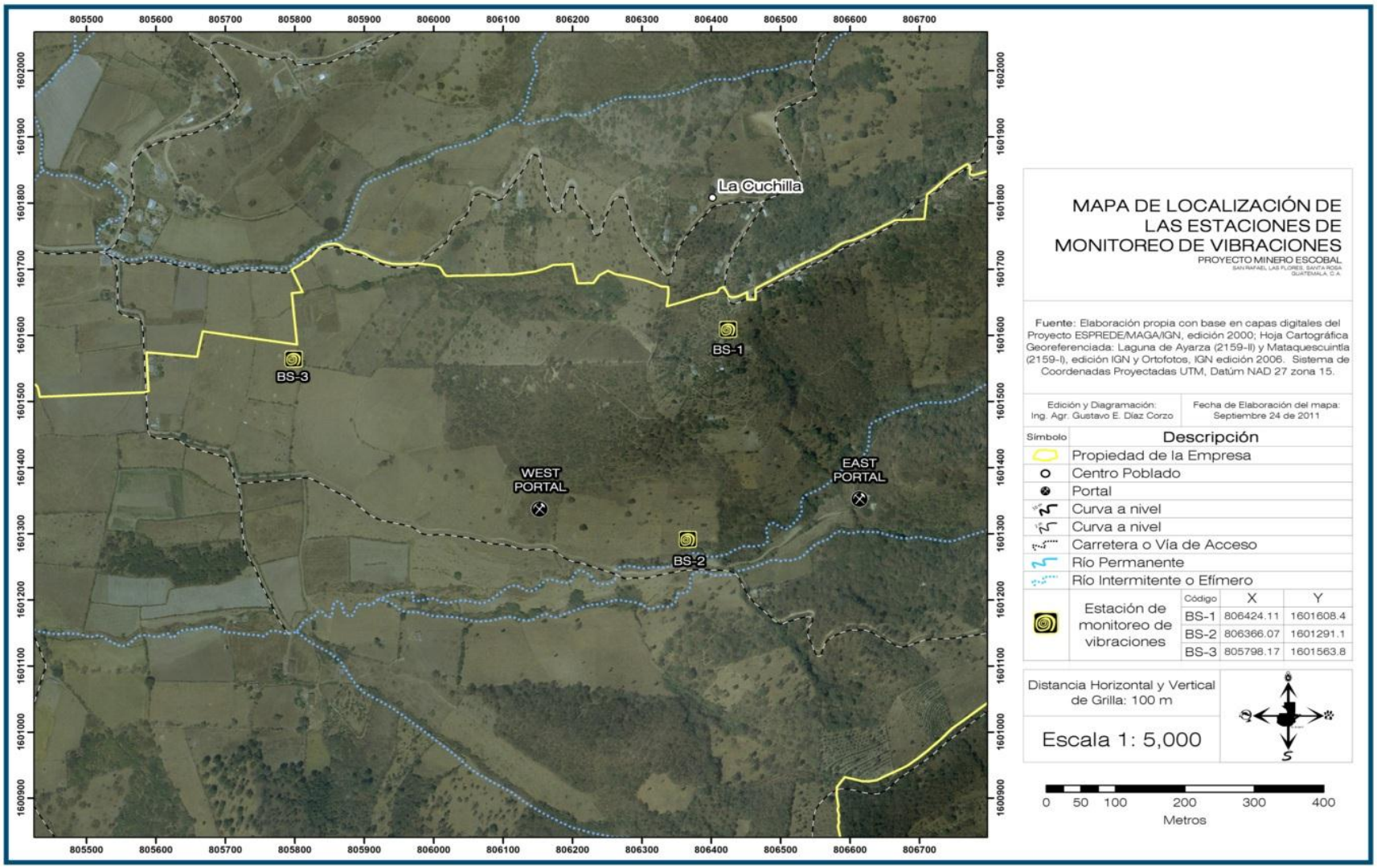
7.1. Sitios de Monitoreo

La Empresa, instaló tres medidores de vibraciones eXPeak Seismograph modelo eXAD-8 de la empresa Physical Measurement Technologies, Inc. Estos equipos son automatizados y registran la velocidad (pulgadas/segundo) y la frecuencia (Hz) de forma constante. La ubicación de las estaciones de monitoreo se presenta en el Cuadro 7-1 y en la Figura 7-1

Cuadro 7-1: Estaciones de monitoreo de vibraciones, Proyecto Minero Escobal

ESTACIÓN	SISTEMA DE COORDENADAS PROYECTADAS UTM, NAD27 ZONA 15		SITIO
BS-1	806424.11	1601608.4	Colindancia con Aldea La Cuchilla
BS-2	806366.07	1601291.1	Entre ambos portales
BS-3	805798.17	1601563.8	Depósito de Suelo

Figura 7-1 Mapa de localización de las estaciones de monitoreo de vibraciones



7.2. Metodología

En el Cuadro 7-2 se describe el procedimiento y equipo utilizado para la toma de muestras de agua y sedimentos

Cuadro 7-2. Procedimiento y equipo utilizado para medir vibraciones. Proyecto Minero Escobal

PARAMETROS ANALIZADOS	
Velocidad	Velocidad de partícula
PROCEDIMIENTO	
Se registraron todas las voladuras realizadas en ambos portales durante los meses de noviembre 2011 a abril 2012.	
EQUIPO UTILIZADO	
Equipo	eXPeak Seismograph modelo eXAD-8
Fabricante	Physical Measurement Technologies, Inc.

7.3. Resultados

La construcción de los túneles, inició en el mes de julio 2011 y para ello se han realizado varias voladuras. Se instalaron tres medidores de vibraciones, los cuales registraron la velocidad de partícula durante cada una de las voladuras.

Como se observa en el Cuadro 7-3, todas las mediciones de las voladuras revisados en los instrumentos, dieron resultados por debajo del límite de detección del equipo (1.3 mm/s) y según la norma del United States Bureau of Mines, el limite a partir del cual, las vibraciones inducidas por una voladura pueden ocasionar daños a estructuras, es de 50.8 mm/s. Por lo que se puede determinar que las mismas no son sensibles y por lo tanto no representan un impacto para el medio ambiente. Además, vale la pena mencionar que conforme los trabajos de construcción de los túneles avancen, las voladuras se realizarán cada vez más distantes de la superficie.

Cuadro 7-3 Resultados de medición de vibraciones durante los meses de noviembre 2011 a abril 2012, Proyecto Minero Escobal.

MES	PORTAL OESTE			PORTAL ESTE			U. S. BUREAU OF MINES
	Día	Hora	Velocidad de Partícula (mm/s)	Día	Hora	Velocidad de Partícula (mm/s)	(Límite antes de ocasionar daños)
NOVIEMBRE 2011	2	14:55	<1.3	1	03:50	<1.3	50.8
	2	02:20	<1.3	3	18:05	<1.3	50.8
	2	16:10	<1.3	8	16:17	<1.3	50.8
	7	10:45	<1.3	9	10:20	<1.3	50.8
	10	15:30	<1.3	11	06:50	<1.3	50.8
	13	13:00	<1.3	12	03:45	<1.3	50.8
	14	05:20	<1.3	17	17:30	<1.3	50.8
	15	08:30	<1.3	9	15:50	<1.3	50.8
	16	13:30	<1.3	26	03:00	<1.3	50.8
	23	03:45	<1.3	26	01:20	<1.3	50.8
	26	12:15	<1.3	27	07:15	<1.3	50.8
	27	04:05	<1.3	28	06:40	<1.3	50.8
	28	23:50	<1.3	29	05:55	<1.3	50.8
	29	12:05	<1.3	30	05:55	<1.3	50.8
	29	02:45	<1.3	30	02:10	<1.3	50.8
	30	12:20	<1.3	30	02:10	<1.3	50.8
DICIEMBRE 2011	2	11:00	<1.3	1	17:00	<1.3	50.8
	2	17:00	<1.3	2	11:30	<1.3	50.8
	3	09:20	<1.3	3	16:30	<1.3	50.8
	3	06:30	<1.3	4	02:45	<1.3	50.8
	4	04:10	<1.3	4	17:00	<1.3	50.8
	4	08:50	<1.3	5	18:00	<1.3	50.8
	6	23:20	<1.3	7	05:52	<1.3	50.8
	8	14:20	<1.3	7	16:30	<1.3	50.8
	10	17:40	<1.3	8	13:30	<1.3	50.8
	12	14:20	<1.3	8	23:00	<1.3	50.8
	13	17:15	<1.3	9	15:00	<1.3	50.8
	15	06:00	<1.3	10	18:30	<1.3	50.8
	19	01:25	<1.3	10	06:45	<1.3	50.8
	20	01:00	<1.3	11	18:45	<1.3	50.8
	22	14:00	<1.3	11	00:05	<1.3	50.8
	23	16:00	<1.3	12	06:45	<1.3	50.8
	26	06:00	<1.3	12	18:20	<1.3	50.8
	28	05:00	<1.3	13	07:00	<1.3	50.8
	30	00:30	<1.3	13	23:50	<1.3	50.8
				15	05:00	<1.3	50.8
				16	06:15	<1.3	50.8
ENERO 2012	3	17:30	<1.3	2	04:30	<1.3	50.8
	5	04:00	<1.3				50.8
	8	02:30	<1.3				50.8
	8	23:20	<1.3				50.8
	11	02:25	<1.3				50.8
	13	05:35	<1.3				50.8

MES	PORTAL OESTE			PORTAL ESTE			U. S. BUREAU OF MINES
	Día	Hora	Velocidad de Partícula (mm/s)	Día	Hora	Velocidad de Partícula (mm/s)	(Límite antes de ocasionar daños)
	14	13:35	<1.3				50.8
	14	04:45	<1.3				50.8
	15	13:20	<1.3				50.8
	15	02:20	<1.3				50.8
	16	02:00	<1.3				50.8
	16	17:20	<1.3				50.8
	17	05:36	<1.3				50.8
	17	16:20	<1.3				50.8
	18	20:00	<1.3				50.8
	19	04:20	<1.3				50.8
	19	04:25	<1.3				50.8
	20	01:25	<1.3				50.8
	21	04:00	<1.3				50.8
	22	04:30	<1.3				50.8
	22	09:55	<1.3				50.8
	23	04:00	<1.3				50.8
	23	23:30	<1.3				50.8
	25	03:30	<1.3				50.8
	26	04:30	<1.3				50.8
	26	04:30	<1.3				50.8
	27	10:28	<1.3				50.8
	28	03:45	<1.3				50.8
	29	03:45	<1.3				50.8
	30	05:45	<1.3				50.8
	30	02:30	<1.3				50.8
	30	16:29	<1.3				50.8
	31	04:50	<1.3				50.8
FEBRERO 2012	1	11:40	<1.3	7	03:02	<1.3	50.8
	1	16:40	<1.3	7	16:20	<1.3	50.8
	3	05:46	<1.3	8	02:10	<1.3	50.8
	3	15:00	<1.3	10	18:30	<1.3	50.8
	5	04:50	<1.3	11	17:30	<1.3	50.8
	5	17:15	<1.3	12	05:40	<1.3	50.8
	6	04:08	<1.3	12	18:40	<1.3	50.8
	6	05:15	<1.3	13	05:00	<1.3	50.8
	7	01:10	<1.3	13	17:55	<1.3	50.8
	7	15:00	<1.3	14	05:00	<1.3	50.8
	8	06:10	<1.3	15	18:00	<1.3	50.8
	8	17:00	<1.3	15	05:45	<1.3	50.8
	9	06:10	<1.3	16	11:45	<1.3	50.8
	10	05:30	<1.3	17	05:30	<1.3	50.8
	10	05:30	<1.3	18	06:30	<1.3	50.8
	11	05:00	<1.3	18	05:30	<1.3	50.8
	11	17:20	<1.3	19	05:05	<1.3	50.8
	11	21:20	<1.3	19	06:00	<1.3	50.8
	12	05:00	<1.3	25	11:40	<1.3	50.8
	12	17:40	<1.3	25	03:05	<1.3	50.8
	13	05:00	<1.3	26	17:20	<1.3	50.8

MES	PORTAL OESTE			PORTAL ESTE			U. S. BUREAU OF MINES
	Día	Hora	Velocidad de Partícula (mm/s)	Día	Hora	Velocidad de Partícula (mm/s)	(Límite antes de ocasionar daños)
	14	03:00	<1.3	27	17:20	<1.3	50.8
	14	22:00	<1.3	27	06:00	<1.3	50.8
	14	17:30	<1.3	29	16:00	<1.3	50.8
	14	17:30	<1.3				50.8
	15	05:05	<1.3				50.8
	15	05:05	<1.3				50.8
	15	05:45	<1.3				50.8
	15	05:45	<1.3				50.8
	16	05:15	<1.3				50.8
	16	05:10	<1.3				50.8
	17	05:10	<1.3				50.8
	17	05:05	<1.3				50.8
	17	22:00	<1.3				50.8
	18	06:00	<1.3				50.8
	18	10:35	<1.3				50.8
	19	01:30	<1.3				50.8
	19	06:35	<1.3				50.8
	19	06:30	<1.3				50.8
	19	03:30	<1.3				50.8
	19	03:30	<1.3				50.8
	24	14:05	<1.3				50.8
	25	05:45	<1.3				50.8
	25	05:40	<1.3				50.8
	26	04:41	<1.3				50.8
	26	02:50	<1.3				50.8
	27	05:30	<1.3				50.8
	27	05:45	<1.3				50.8
	28	05:45	<1.3				50.8
	28	06:00	<1.3				50.8
	28	17:30	<1.3				50.8
	28	17:45	<1.3				50.8
	29	06:00	<1.3				50.8
	29	06:05	<1.3				50.8
MARZO 2012	1	14:30	<1.3	1	17:30	<1.3	50.8
	1	14:30	<1.3	2	05:00	<1.3	50.8
	2	05:00	<1.3	2	05:00	<1.3	50.8
	2	05:00	<1.3	4	17:00	<1.3	50.8
	3	12:15	<1.3	4	04:00	<1.3	50.8
	3	06:00	<1.3	8	03:00	<1.3	50.8
	4	15:00	<1.3	8	05:25	<1.3	50.8
	4	01:00	<1.3	9	05:25	<1.3	50.8
	7	23:00	<1.3	10	06:20	<1.3	50.8
	9	05:25	<1.3	10	12:15	<1.3	50.8
	10	01:30	<1.3	11	06:20	<1.3	50.8
	11	03:30	<1.3	11	03:30	<1.3	50.8
	11	01:40	<1.3	13	05:40	<1.3	50.8
	12	23:00	<1.3	14	06:00	<1.3	50.8
	13	03:45	<1.3	15	10:50	<1.3	50.8

MES	PORTAL OESTE			PORTAL ESTE			U. S. BUREAU OF MINES
	Día	Hora	Velocidad de Partícula (mm/s)	Día	Hora	Velocidad de Partícula (mm/s)	(Límite antes de ocasionar daños)
	14	06:00	<1.3	15	12:30	<1.3	50.8
	14	05:45	<1.3	16	15:45	<1.3	50.8
	15	06:30	<1.3	17	13:00	<1.3	50.8
	16	02:00	<1.3	18	16:00	<1.3	50.8
	16	18:25	<1.3	19	16:00	<1.3	50.8
	17	03:05	<1.3	21	18:00	<1.3	50.8
	18	04:00	<1.3	21	01:15	<1.3	50.8
	19	01:30	<1.3	24	17:30	<1.3	50.8
	19	18:00	<1.3	26	17:06	<1.3	50.8
	20	03:15	<1.3	27	13:15	<1.3	50.8
	21	16:30	<1.3	29	05:00	<1.3	50.8
	21	16:30	<1.3	29	05:00	<1.3	50.8
	21	05:35	<1.3				50.8
	22	11:50	<1.3				50.8
	22	17:50	<1.3				50.8
	23	06:30	<1.3				50.8
	23	13:30	<1.3				50.8
	24	13:30	<1.3				50.8
	25	10:00	<1.3				50.8
	25	06:00	<1.3				50.8
	25	06:00	<1.3				50.8
	25	10:00	<1.3				50.8
	26	06:30	<1.3				50.8
	27	14:15	<1.3				50.8
	28	14:15	<1.3				50.8
	29	10:40	<1.3				50.8
ABRIL 2012	1	NR	<1.3	1	NR	<1.3	50.8
	1	NR	<1.3	1	NR	<1.3	50.8
	2	NR	<1.3	2	NR	<1.3	50.8
	2	NR	<1.3	2	NR	<1.3	50.8
	3	NR	<1.3	2	NR	<1.3	50.8
	3	NR	<1.3	2	NR	<1.3	50.8
	4	NR	<1.3	2	NR	<1.3	50.8
	4	NR	<1.3	2	NR	<1.3	50.8
	5	NR	<1.3	3	NR	<1.3	50.8
	6	NR	<1.3	4	NR	<1.3	50.8
	6	NR	<1.3	4	NR	<1.3	50.8
	7	NR	<1.3	5	NR	<1.3	50.8
	7	NR	<1.3	5	NR	<1.3	50.8
	8	NR	<1.3	6	NR	<1.3	50.8
	8	NR	<1.3	6	NR	<1.3	50.8
	9	NR	<1.3	7	NR	<1.3	50.8
	10	NR	<1.3	10	NR	<1.3	50.8
	10	NR	<1.3	11	NR	<1.3	50.8
	11	NR	<1.3	12	NR	<1.3	50.8
	11	NR	<1.3	12	NR	<1.3	50.8
	12	NR	<1.3	13	NR	<1.3	50.8
	12	NR	<1.3	14	NR	<1.3	50.8

MES	PORTAL OESTE			PORTAL ESTE			U. S. BUREAU OF MINES
	Día	Hora	Velocidad de Partícula (mm/s)	Día	Hora	Velocidad de Partícula (mm/s)	(Límite antes de ocasionar daños)
	13	NR	<1.3	14	NR	<1.3	50.8
	14	NR	<1.3	14	NR	<1.3	50.8
	14	NR	<1.3	15	NR	<1.3	50.8
	15	NR	<1.3	16	NR	<1.3	50.8
	15	NR	<1.3	16	NR	<1.3	50.8
	15	NR	<1.3	17	NR	<1.3	50.8
	16	NR	<1.3	17	NR	<1.3	50.8
	16	NR	<1.3	18	NR	<1.3	50.8
	17	NR	<1.3	19	NR	<1.3	50.8
	18	NR	<1.3	19	NR	<1.3	50.8
	19	NR	<1.3	20	NR	<1.3	50.8
	19	NR	<1.3	20	NR	<1.3	50.8
	19	NR	<1.3	21	NR	<1.3	50.8
	20	NR	<1.3	21	NR	<1.3	50.8
	20	NR	<1.3	22	NR	<1.3	50.8
	20	NR	<1.3	23	NR	<1.3	50.8
	21	NR	<1.3	23	NR	<1.3	50.8
	21	NR	<1.3	23	NR	<1.3	50.8
	22	NR	<1.3	25	NR	<1.3	50.8
	22	NR	<1.3	27	NR	<1.3	50.8
	23	NR	<1.3	28	NR	<1.3	50.8
	23	NR	<1.3	28	NR	<1.3	50.8
	23	NR	<1.3	28	NR	<1.3	50.8
	24	NR	<1.3	29	NR	<1.3	50.8
	25	NR	<1.3	29	NR	<1.3	50.8
	25	NR	<1.3	30	NR	<1.3	50.8
	26	NR	<1.3	30	NR	<1.3	50.8
	26	NR	<1.3				50.8
	26	NR	<1.3				50.8
	27	NR	<1.3				50.8
	28	NR	<1.3				50.8
	28	NR	<1.3				50.8
	29	NR	<1.3				50.8
	29	NR	<1.3				50.8
	29	NR	<1.3				50.8
	30	NR	<1.3				50.8

Donde mm/s: milímetros por segundo; NR: no registrado
Fuente: Base de datos Departamento de Ambiente, Minera San Rafael, S.A.

8. Geoquímica de Roca Estéril

8.1. Sitios de Monitoreo

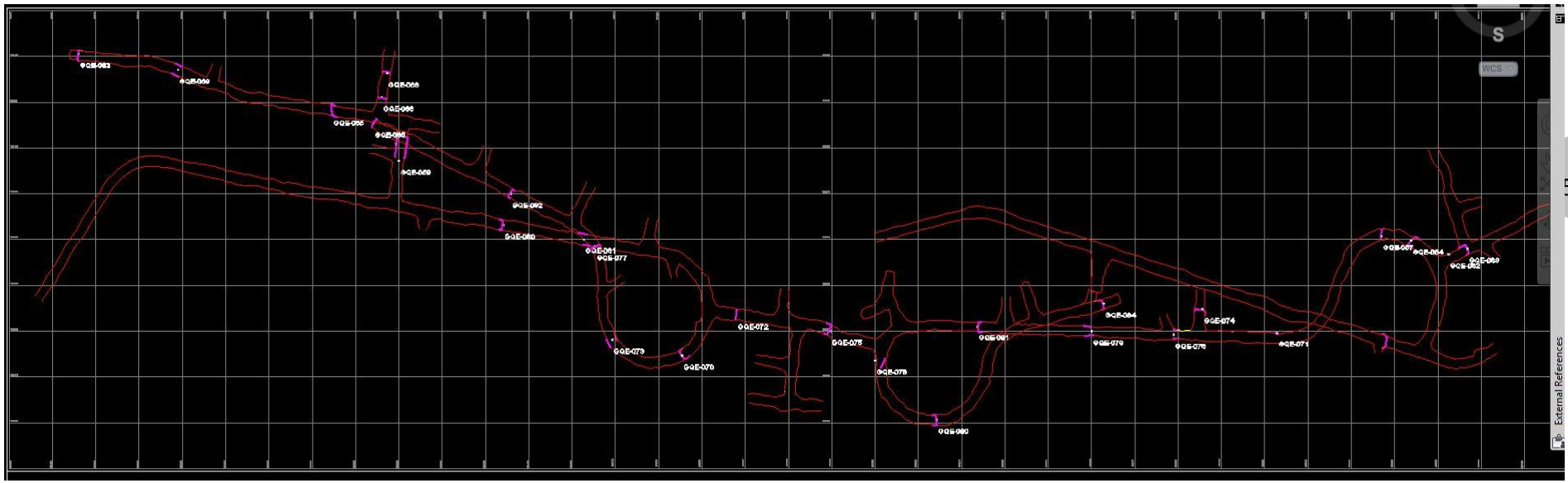
En el cuadro Cuadro 8-1 se enlistan las muestras analizadas de material extraído de los túneles del proyecto, rampa oeste y rampa este, durante los meses de enero a abril del 2012. Su ubicación se presenta en laFigura 8-1.

Cuadro 8-1: Sitios de Material Extraído de los Túneles, Proyecto Minero Escobal

Código de Muestra	Sitio	Ubicación	Fecha Voladura	Coordenadas		
				X	Y	Z
Rampa Oeste y obras Auxiliares						
GQE-059	CF 1365	0 12.00 m frente Acc 1365	10/01/2012	806350.00	1601393.00	1361.00
GQE-060	Rampa Oeste	a 13.50 m de ROE + 38.40	11/01/2012	806410.00	1601355.00	1351.00
GQE-061	Rampa Oeste	a 29.00 m de ROE24 + 16.2	01/02/2012	806458.00	1601347.00	1344.00
GQE-065	1365-CF-O	a 12.00 m de A6 + 22.63	23/02/2012	806311.50	1601420.00	1364.60
GQE-066	1365-XCO-6340	a 15.00 m de Ls14	24/02/2012	806342.00	1601427.50	1363.00
GQE-068	135-XCO-6340	a 27.00 m de Ls14	26/02/2012	806344.50	1601439.50	1364.50
GQE-069	1365-CF-W	a 10.40 m de B17	23/03/2012	806223.00	1601444.00	1365.00
GQE-070	Rampa Oeste	a 15.00 de Ls23	24/03/2012	806515.00	1601285.00	1328.50
GQE-072	1329-RC-O	a 21.75 m de Ls24	29/03/2012	806544.50	1601305.00	1330.00
GQE-073	Rampa Oeste	a 12.00 m de LS 31	12/04/2012	806470.00	1601293.00	1320.85
GQE-075	1329-RC-O	a 15.00 m de ROE47	20/04/2012	806597.50	1601295.00	1333.29
Rampa Este y obras Auxiliares						
GQE-062	Rampa Este 1386 Falla	a 12.80 m de Ls8	22/02/2012	806956.00	1601342.00	1388.60
GQE-063	Rampa Este 1386	a 24.00 m de Ls8	22/02/2012	806967.00	1601345.00	1389.00
GQE-064	Rampa Este Central	a 15.0 m de Ls9	22/02/2012	806934.50	1601349.50	1384.00
GQE-067	Rampa Este Central	a 26.00 m de RE26+17.2	24/02/2012	806917.50	1601352.00	1397.60
GQE-071	Rampa Este Central	a 28.00 m de Ls15	24/03/2012	806857.00	1601299.00	1369.50
GQE-074	1365-ACC-EC	a 17.50 m de Ls 21	15/04/2012	806814.00	1601312.00	1365.00
GQE-076	Rampa Este Central	a 11.00 m de Ls21	21/04/2012	806797.50	1601298.00	1359.00

Fuente: Departamento de Geología de Mina, Minera San Rafael

Figura 8-1 Mapa de localización de Sitios de Material Extraído de los Túneles



Fuente: Departamento de Geología de Mina, Minera San Rafael

8.2. Metodología

Cuadro 8-2. Procedimiento y equipo utilizado para monitorear de pH en pasta de material extraído de los túneles. Proyecto Minero Escobal

PARÁMETROS ANALIZADOS	
pH	pH en pasta.
PROCEDIMIENTO	
Basados en el método ASTM D4972-01(2007) Standard Test Method for pH of Soils. Se determinó el pH en suspensión de Roca-Agua 1:1 p/v: esto se logró tomando 50 gramos de roca pulverizada y agregándole 50 ml de agua desmineralizada, se agita por 1 minuto y se deja reposar por 5 minutos más, luego se hace lectura directa de pH sobre la suspensión con la ayuda de un potenciómetro previamente calibrado.	
EQUIPO UTILIZADO	
Nombre	Potenciómetro portátil pH & EC
Modelo	Combo HI98129
Fabricante	HANNA

8.3. Resultados

La determinación del pH en pasta involucra un procedimiento simple humedeciendo una pequeña cantidad de roca pulverizada con agua desmineralizada seguida de la medición del pH en la pasta. El pH resultante es un indicador del pH de equilibrio controlado por las reacciones rápidas de hidrólisis y no considera reacciones de largo plazo relacionadas con la oxidación del mineral sulfuroso. La oxidación previa de los minerales de sulfuro puede, sin embargo, dar como resultado minerales de sulfato ácido residual que puede controlar el resultado del pH en la pasta

Cuadro 8-3 Resultados de pH en Pasta en muestras de material extraído de Túneles, enero a abril 2011, Proyecto Minero Escobal.

Código de Muestra	Fecha Voladura	pH pasta	Temperatura (°C)
GQE-059	10/01/2012	8.69	24.7
GQE-060	11/01/2012	9.39	24.4
GQE-061	01/02/2012	8.72	26.0
GQE-062	22/02/2012	8.45	26.8
GQE-063	22/02/2012	9.06	27.4
GQE-064	22/02/2012	8.89	27.1
GQE-065	23/02/2012	9.68	27.2
GQE-066	24/02/2012	8.50	27.5
GQE-067	24/02/2012	8.95	28.0
GQE-068	26/02/2012	7.64	28.3
GQE-069	23/03/2012	9.14	25.3
GQE-070	24/03/2012	9.25	24.8
GQE-071	24/03/2012	9.04	25.1
GQE-072	29/03/2012	9.32	25.0
GQE-073	12/04/2012	8.86	25.0
GQE-074	15/04/2012	9.07	24.3
GQE-075	20/04/2012	8.97	24.5
GQE-076	21/04/2012	9.19	24.5

Fuente: registros departamento de medio ambiente, Minera San Rafael.

En el Cuadro 8-3 se puede observar, que los resultados obtenidos no dieron indicios de un potencial de generación ácida, por lo que no fue necesario realizar pruebas de laboratorio para el cálculo de ácido base modificado (ABA por sus siglas en inglés) para descartar o confirmar resultados.

9. Conclusiones

- Las concentraciones de PM_{10} registrados durante el primer trimestre 2012 fueron menores a las concentraciones establecidas por la EPA y el Banco Mundial (150 $\mu g/m^3$) para las siete estaciones monitoreadas; y se encuentran dentro de los valores mínimos y máximos registrados durante el establecimiento de la línea base para las estaciones EA-1B, EA-2A, EA-3A, EA-4A, EA-6 y EA-7.

- Los valores de partículas insolubles, partículas solubles y partículas sedimentables totales registrados en las estaciones EA-4A y EA-5 se encuentras dentro de los valores mínimos y máximos registrados durante el establecimiento de la línea bases.

- No se detectó dióxido de azufre y dióxido de nitrógeno en las estaciones EA-5 y EA-7 durante los dos muestreos efectuados.

- Los promedios diurnos y nocturnos de las estaciones ER-5, ER-6 y ER-7, así como los promedios diurnos de ER-2 y ER-4A se encuentran dentro de los valores mínimos y máximos registrados durante el establecimiento de la línea base. Todas las estaciones monitoreadas cumplen con los límites para promedios diurnos y nocturnos dados por la USEPA (55 dBa).

- En la mayoría de las estaciones de monitoreo de calidad de agua superficial no se detectaron concentraciones de Aceites y Grasas, Demanda química de oxígeno, Berilio, Cadmio, Cromo, Mercurio, Níquel, Cobre, Zinc. Las concentraciones de Cloruros, Fluoruros, Sulfatos, Sólidos Disueltos, Antimonio, Bario, Selenio y Plata están por debajo de los límites establecidos por la USEPA para la salud humana, y el Fósforo total y Sólidos solubles por debajo de los límites establecidos por el Acuerdo 236-2006. El Arsénico y Aluminio se detectaron en concentraciones dentro de las concentraciones mínimas y máximas en el establecimiento de línea base en la mayoría de las estaciones.

- Todas las estaciones de monitoreo de agua subterránea presentan valores mínimos de de arsénico disuelto únicamente en las estaciones GW2 y GW5; y de plomo disuelto únicamente en la estación GW5. Ninguno de estos valores sobrepasó los valores del Acuerdo.

- En general todos los parámetros analizados en los pozos de monitoreo cumplieron con el Acuerdo 236-2006 y los valores en general se encuentran dentro del rango estadístico de la línea base.

- la solución de NaOH utilizada para preservar las muestras para análisis de CN, desde el muestreo efectuado en marzo 2011 hasta marzo 2012, podría haber estado contaminada con esta sustancia. Durante este período de tiempo, todos los resultados obtenidos de CN total, libre o WAD están en los rangos de 0.009 a 0.018 mg/L, debido a que siempre se utiliza el mismo volumen de solución preservante para los 500ml de muestra solicitados por el laboratorio.

- Los valores bajos de Cianuro total registrados en las estaciones SW, GW y MW se generaron debido a que la solución de NaOH utilizada para preservar las muestras para análisis de Cianuro podría haber estado contaminada con esta sustancia. Este compuesto fue detectado en las muestras blanco enviada al laboratorio como control de calidad, y no fue detectado en las estaciones PSASR y RW1 donde se utilizó una nueva solución de NaOH. Ninguno de estos valores sobrepasó los valores dados por el la USEPA y el Acuerdo. .

- Según los resultados confiable, se cumplió con la mayoría de los límites máximos permisibles dados por el Acuerdo Gubernativo 236-2006 para entes generadores nuevos, a excepción del pH en las estación WW3 en los meses de febrero y marzo (9.81 y 10.31 respectivamente) y el pH de la estación WW7 del mes de abril (9.46).

- Se implementará efectuar cada 4 horas lecturas de pH en diferentes secciones de la planta de tratamiento, para tener un control adecuado. Si luego de la etapa de estabilización, los valores de pH siguen mayores a 9.00, se tomarán medidas correctivas que podrían incluir desde el cambio de coagulantes y

floculantes hasta la implementación del proceso de neutralización del agua en la planta de tratamiento.

- Los valores registrados de metales pesados, en las 9 estaciones de sedimentos, se encuentran por debajo de los límites máximos permisibles dados por el Acuerdo 236-2006.

- Todas vibración inducidas por las voladuras registradas están por debajo del límite de detección del equipo empleado (1.3 mm/s), el cual es menor al límite a partir del cual las vibraciones inducidas por una voladura puede ocasionar daños (50.8 mm/s) según la norma del United States Bureau of Mines.

- Los valores de pH en Pasta obtenidos de las Muestras de Material Extraído de los túneles. no dieron indicios de un potencial de generación ácida.

10. Anexos

10.1. Resultados crudos de calidad de aire

10.1.1. Material Particulado (PM_{10})

BGI PQ200 Air Sampling System — Downloaded Febrero 2012

Job Details:						
Job Name:	EA-2A			Job Code:	EA-2A	
Version:	PQ200			Site Name:	La Cuchilla.	
Serial No:				Station Code:		
Pump Time:				Operators:	SA	
Flags:	NA			User1:	NA	
				User2:	NA	

	Max	Min	Avg	Units
BP	NA	NA	632	mmHg
TA	NA	NA	22.4	°C
Q	---	---	16.72	Lpm
QCV			NA	%
Max overheat			NA	°C
occured	NA			

Timer Information:	Date	Time
	dd-mmm	hh:mm:ss
Start:	11-Feb-12	10:25:00
Stop:	12-Feb-12	10:25:00
ET:	23:59:00	

Mass Concentration Data:		
Filter ID:	1801-0418	
Final Wt:	150.290	mg
Initial Wt:	149.720	mg
Delta Wt:	0.570	mg
Total Vol:	20.20	m^3
Mass Conc:	28.22	µg/m³

Notes 1: Aldea La Cuchilla, San Rafael Las Flores, Santa Rosa.
Notes 2: Minera San Rafael

BGI PQ200 Air Sampling System — Downloaded Febrero 2012

Job Details:						
Job Name:	EA-4A			Job Code:	EA-4A	
Version:	PQ200			Site Name:	Los Ángeles	
Serial No:				Station Code:		
Pump Time:				Operators:	SA	
Flags:	NA			User1:	NA	
				User2:	NA	

	Max	Min	Avg	Units
BP	650	646	648	mmHg
TA	30.5	14.2	20.3	°C
Q	---	---	16.71	Lpm
QCV			NA	%
Max overheat			NA	°C
occured	NA			

Timer Information:	Date	Time
	dd-mmm	hh:mm:ss
Start:	5-Feb-12	10:10:00
Stop:	6-Feb-12	10:10:00
ET:	23:59	

Mass Concentration Data:		
Filter ID:	1745-0507	
Final Wt:	155.600	mg
Initial Wt:	153.150	mg
Delta Wt:	2.450	mg
Total Vol:	20.85	m^3
Mass Conc:	117.53	µg/m³

Notes 1: Aldea Los Ángeles, San Rafael Las Flores, Santa Rosa.
Notes 2: Minera San Rafael

BGI PQ200 Air Sampling System — Downloaded Febrero 2012

Job Details:						
Job Name:	EA-5			Job Code:	EA-5	
Version:	PQ200			Site Name:	Sabana Redonda	
Serial No:				Station Code:		
Pump Time:				Operators:	SA	
Flags:	NA			User1:	NA	
				User2:	NA	

	Max	Min	Avg	Units
BP	651	647	648	mmHg
TA	28	20	16.3	°C
Q	---	---	16.71	Lpm
QCV			NA	%
Max overheat			NA	°C
occured	NA			

Timer Information:	Date	Time
	dd-mmm	hh:mm:ss
Start:	5-Feb-12	10:45:00
Stop:	6-Feb-12	10:45:00
ET:	23:59:00	

Mass Concentration Data:		
Filter ID:	1746-0608	
Final Wt:	153.050	mg
Initial Wt:	150.590	mg
Delta Wt:	2.460	mg
Total Vol:	21.13	m^3
Mass Conc:	116.40	µg/m³

Notes 1: Aldea Sabana Redonda, San Rafael Las Flores, Santa Rosa.
Notes 2: Minera San Rafael

BGI PQ200 Air Sampling System — Downloaded Febrero 2012

Job Details:						
Job Name:	EA-6			Job Code:	EA-6	
Version:	PQ200			Site Name:		
Serial No:				Station Code:		
Pump Time:				Operators:	SA	
Flags:	NA			User1:	NA	
				User2:	NA	

	Max	Min	Avg	Units
BP	644	639	642	mmHg
TA	22.3	15.1	17.1	°C
Q	---	---	16.71	Lpm
QCV			NA	%
Max overheat			NA	°C
occured	NA			

Timer Information:	Date	Time
	dd-mmm	hh:mm:ss
Start:	7-Feb-12	15:45:00
Stop:	8-Feb-12	15:45:00
ET:	23:53:00	

Mass Concentration Data:		
Filter ID:	1747-0909	
Final Wt:	150.800	mg
Initial Wt:	150.160	mg
Delta Wt:	0.640	mg
Total Vol:	20.88	m^3
Mass Conc:	30.65	µg/m³

Notes 1: Aldea El Fucio, San Rafael Las Flores, Santa Rosa.
Notes 2: Minera San Rafael

BGI PQ200 Air Sampling System — Downloaded Febrero 2012

Job Details:						
Job Name:	EA-7			Job Code:	EA-7	
Version:	PQ200			Site Name:	Los Planes	
Serial No:				Station Code:		
Pump Time:				Operators:	SA	
Flags:	NA			User1:	NA	
				User2:	NA	

	Max	Min	Avg	Units
BP	649	646	647	mmHg
TA	29.6	13.8	19.7	°C
Q	---	---	16.71	Lpm
QCV			NA	%
Max overheat			NA	°C
occured	NA			

Timer Information:	Date	Time
	dd-mmm	hh:mm:ss
Start:	3-Feb-12	13:00:00
Stop:	4-Feb-12	13:00:00
ET:	23:59:00	

Mass Concentration Data:		
Filter ID:	1744-0406	
Final Wt:	148.750	mg
Initial Wt:	148.110	mg
Delta Wt:	0.640	mg
Total Vol:	20.86	m^3
Mass Conc:	30.69	µg/m³

Notes 1: Aldea Los Planes, San Rafael Las Flores, Santa Rosa.
Notes 2: Minera San Rafael

BGI PQ200 Air Sampling System — Downloaded Febrero 2012

Job Details:						
Job Name:	EA-8			Job Code:	EA-1B (EA-8)	
Version:	PQ200			Site Name:	San Rafael las Flores	
Serial No:				Station Code:		
Pump Time:				Operators:	SA	
Flags:	NA			User1:	NA	
				User2:	NA	

	Max	Min	Avg	Units
BP	652	646	650	mmHg
TA	21.9	16.4	18.8	°C
Q	---	---	16.71	Lpm
QCV			NA	%
Max overheat			NA	°C
occured	NA			

Timer Information:	Date	Time
	dd-mmm	hh:mm:ss
Start:	7-Feb-12	16:45:00
Stop:	8-Feb-12	16:45:00
ET:	23:53:00	

Mass Concentration Data:		
Filter ID:	1748-0810	
Final Wt:	151.810	mg
Initial Wt:	151.070	mg
Delta Wt:	0.740	mg
Total Vol:	21.02	m^3
Mass Conc:	35.21	µg/m³

Notes 1: San Rafael Las Flores, Santa Rosa.
Notes 2: Minera San Rafael

BGI PQ200 Air Sampling System — Downloaded Febrero 2012

Job Details:						
Job Name:	EA-3A			Job Code:	EA-3A	
Version:	PQ200			Site Name:	El Fucio	
Serial No:				Station Code:		
Pump Time:				Operators:	SA	
Flags:	NA			User1:	NA	
				User2:	NA	

	Max	Min	Avg	Units
BP	646	641	644	mmHg
TA	29.4	13.9	20.2	°C
Q	---	---	16.71	Lpm
QCV			NA	%
Max overheat			NA	°C
occured	NA			

Timer Information:	Date	Time
	dd-mmm	hh:mm:ss
Start:	3-Feb-12	14:15:00
Stop:	4-Feb-12	14:15:00
ET:	23:59:00	

Mass Concentration Data:		
Filter ID:	1806-0884	
Final Wt:	151.100	mg
Initial Wt:	149.120	mg
Delta Wt:	1.980	mg
Total Vol:	20.72	m^3
Mass Conc:	95.54	µg/m³

Notes 1: Aldea El Fucio, San Rafael Las Flores, Santa Rosa.
Notes 2: Reportado como EA-9 en RA-12-10854 de reporte de lab. Para los pesados iniciales y finales.

www.laboratorio-ambiental.com
enquire@laboratorio-ambiental.com

Reporte Analítico
RA-12-10854

Laboratorio AMBIENTAL

Cliente:	Minera San Rafael
Proyecto:	178-017
Procedencia:	El Escobal
Dirección:	Km 8.6 carretera antigua al Salvador, Muxbal, centro Corporativo Muxbal, Torre oeste apto 503 y 504.
Fecha de análisis:	Febrero, 21-22 de 2012
Emisión del Reporte:	Febrero, 27 de 2012

Tipo de Muestra:	Pesos Finales de filtros de cuarzo utilizados para colección de Material Particulado ≤10 micras (PM_{10}) en el Aire.
Método Analítico:	Método Designado en Conformidad con 40 CFR, Apéndice J, Parte 50, Capítulo 1, Edición 07/07/97, EPA.

Pesos Finales de Filtros.

No.	Identificación de la muestra	Código del Filtro[1]	Peso Inicial[2] (gramos)	Peso Final(gramos)
1	E1-A	1743-0305	0.14914	0.15040
2	EA-7	1744-0406	0.14811	0.14875
3	EA-4A	1745-0507	0.15315	0.15560
4	EA-5	1746-0608	0.15059	0.15305
5	EA-6	1747-0709	0.15016	0.15080
6	EA-8	1748-0810	0.15107	0.15181
7	EA-2	1801-0418	0.14972	0.15029
8	EA-3	1805-0783	0.14999	0.15108
9	EA-9	1806-0884	0.14912	0.15110

[1]: Los filtros fueron identificados con códigos correlativos asignados por el Laboratorio Ambiental, S. A.
[2]: Corresponde al peso inicial reportado al cliente en reporte analítico RA-11-10828 Y RA-10844

Anexos:
Anexo 1. Cadena de Custodia R-02-000135

MSc. BSc. Ana Gabriela Juarez,
Especialista ambiental, Director de Laboratorio

Redacción Reporte:	Fecha:	Revisiones de calidad:	Fecha:	Versión Cliente:
CM	Febrero, 27/12	A.G.J.	Febrero, 27/12	01

10.1.2. Informe sobre PST y Gases de Combustión.

MONITOREO DE NO_2, SO_2 Y PARTÍCULAS SEDIMENTABLES TOTALES
PROYECTO MINERO EL ESCOBAL

Diciembre, 2011 – Marzo, 2012
San Rafael Las Flores, Santa Rosa, Guatemala

Julio de 2012

Este resumen presenta los resultados del monitoreo de la calidad del aire realizado para el proyecto minero El Escobal (**el Proyecto**). El monitoreo fue realizado por Consultoría y Tecnología Ambiental, S.A. (**CTA**) en diciembre del 2011 y marzo de 2012 en San Rafael Las Flores, Santa Rosa, localidad donde se ubica el Proyecto. El propósito del monitoreo consistió en determinar:

- La calidad de aire ambiental en comunidades aledañas mediante la medición de la concentración de gases de combustión (**SO_2** y **NO_2**).
- La calidad de aire ambiental en comunidades aledañas mediante la medición de la concentración de Partículas Sedimentables Totales (**PST**).

Las estaciones de medición se presentan en el Cuadro 1 y la metodología utilizada en el Cuadro 2.

Cuadro 1: Estaciones de monitoreo de SO_2 y NO_2 y PST

Diciembre 2011 y marzo 2012	
PST	**SO_2 y NO_2**
EA4[a] y EA5	**EA5 y EA7**
EA4a: Caserío la Puerta de los Ángeles E (m): 805,140 N (m): 1,599,877 EA5: Aldea Sabana Redonda Coordenadas: E (m): 804,216 N (m): 1,600,508	EA5: Aldea Sabana Redonda Coordenadas: E (m): 804,216 N (m): 1,600,508 EA7: Aldea Los Planes Coordenadas: E (m): 805,184 N (m): 1,601,962

Coordenadas en metros (**m**). Datum: WGS84 UTM zona 16 N. Fuente: CTA, 2011-2012.

Cuadro 2: Metodologías utilizadas para SO_2 y NO_2 y PST

Gases de Combustión	**SO_2:** Se utilizó el análisis espectrofotométrico, descrito en el Título 40, Parte 50, Apéndice A de la USEPA. **NO_2:** Se utilizó el análisis espectrofotométrico. Método de referencia designado por la USEPA: No. EQN-1277-026.
PST	ASTM D 1739-98 (re-aprobación 2004).

Fuente: CTA, 2012.

Los resultados obtenidos para los gases de combustión se compararon con los valores guía reportados en: Calidad de Aire Ambiental: Guías del Banco Mundial (**el Banco**)[1] para SO_2 y NO_2, tomadas de International Finance Corporation (**IFC**) Industry Sector Guidelines for Mining, December 10, 2007 y General Environment Health and Safety Guidelines, December 19/2008.

En el cuadro 3 se comparan los resultados de las mediciones de gases de combustión en los meses de diciembre de 2011 y marzo de 2012; y en el cuadro 4 se comparan los resultados de la medición de PST, para las mismas fechas.

Cuadro 3: Resultados de la medición de gases de combustión en µg/m³

Estaciones de Muestreo	EA-5 12/2011	EA-5 03/2012	EA-7 12/2011	EA-7 03/2012	Guías del Banco
Lectura SO_2	< 13	< 13	< 13	< 13	20 µg/m³
Lectura NO_2	< 9	< 9	< 9	< 9	**40 µg/m³

12/2012: diciembre del año 2012. 03/2012: marzo del año 2012. SO_2: dióxido de azufre. NO_2: dióxido de nitrógeno. **: Promedio anual. Fuente: Laboratorio Ambiental, S. A., 2012.

Cuadro 4: Resultados de la medición de PST (g/m^2 x 30 días)

Estaciones de Muestreo	EA-4[a] 12/2011	EA-4[a] 03/2012	EA-5 12/2011	EA-5 03/2012
Sólidos Insolubles	1.7	0.76	2.5	2.99
Sólidos Solubles	0.7	3.45	0.3	2.46
Sólidos Totales	2.4	4.21	2.8	5.45

Fuente: Laboratorio Ambiental, S. A., 2012.

Como resultado de los monitoreos que se realizaron en los meses de diciembre de 2011 y marzo de 2012, concluimos que ninguna de las estaciones presentó valores de concentración detectables de NO_2 y SO_2 y por debajo de las guías del Banco.

Como resultado del monitoreo correspondiente al mes de diciembre de 2011, se encontraron valores detectables de PST. Se puede observar también que en marzo los resultados obtenidos fueron más altos.

[1] Guías del Banco Mundial: www.ifc.org/ifcext/EnvironmentalGuidelines

10.1.3. **Presión Sonora**

ER-2

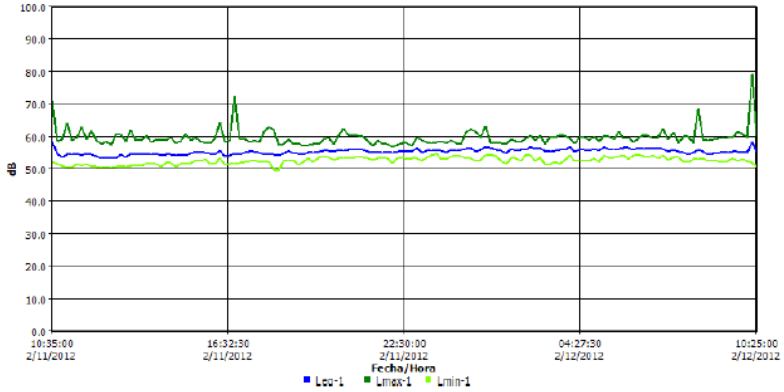
Panel de información

Ubicación	Aldea la Cuchilla
Nombre	ER-2
Sesión padre	S041
Hora de inicio	Saturday, February 11, 2012 10:25:00
Hora de paro	Sunday, February 12, 2012 10:25:00
Nombre del usuario	Ing. Susana Aroche

Panel general de datos

Descripción	Medidor/SensorValor		Descripción	Medidor/SensorValor	
Indice de intercambio	1	3 dB	Umbral int.	1	80 dB
Ponderación	1	A	Respuesta	1	SLOW
Lmin	1	49.6 dB	Lmax	1	79.1 dB
Lpk	1	106.8 dB	Leq	1	55.4 dB

Gráfica de datos de registro



1

ER-3A

3/1/2012

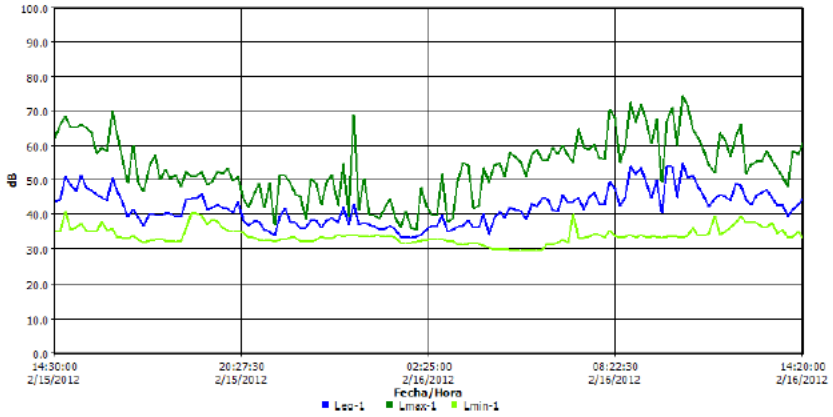
Panel de información

Ubicación	Aldea El Fucio
Nombre	ER-3A
Hora de inicio	Wednesday, February 15, 2012 14:20:00
Hora de paro	Thursday, February 16, 2012 14:20:00
Nombre del usuario	Ing. Susana Aroche

Panel general de datos

Descripción	Medidor/SensorValor		Descripción	Medidor/SensorValor	
Indice de intercambio	1	3 dB	Umbral int.	1	80 dB
Respuesta	1	SLOW	Ponderación	1	A
Lmin	1	29.5 dB	Lmax	1	74.5 dB
Lpk	1	102.3 dB	Leq	1	45.2 dB

Gráfica de datos de registro



1

ER-4A

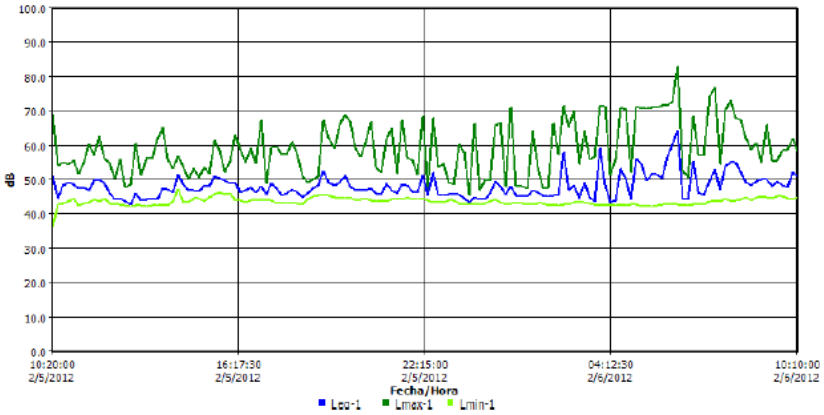
Panel de información

Ubicación	aldea La Puerta de los Angeles
Nombre	ER-4A
Sesión padre	S008
Hora de inicio	Sunday, February 05, 2012 10:10:00
Hora de paro	Monday, February 06, 2012 10:10:00
Nombre del usuario	Ing Susana Aroche

Panel general de datos

Descripción	Medidor/Sensor	Valor	Descripción	Medidor/Sensor	Valor
Indice de intercambio	1	3 dB	Umbral int.	1	80 dB
Respuesta	1	SLOW	Ponderación	1	A
Lmin	1	36.5 dB	Lmax	1	83.2 dB
Lpk	1	101.8 dB	Leq	1	50.4 dB

Gráfica de datos de registro



ER-5

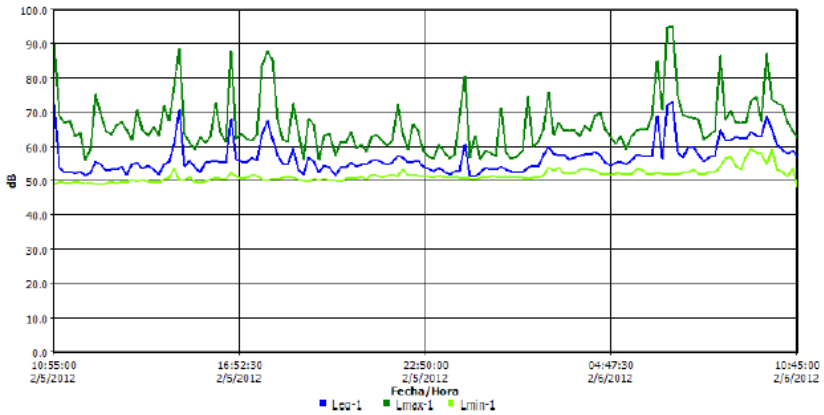
Panel de información

Ubicación	Aldea Sabana Redonda
Nombre	ER-5
Sesión padre	S039
Hora de inicio	Sunday, February 05, 2012 10:45:00
Hora de paro	Monday, February 06, 2012 10:45:00
Nombre del usuario	Ing. Susana Aroche

Panel general de datos

Descripción	Medidor/Sensor	Valor	Descripción	Medidor/Sensor	Valor
Indice de intercambio	1	3 dB	Umbral int.	1	80 dB
Respuesta	1	SLOW	Ponderación	1	A
Lmin	1	48.5 dB	Lmax	1	95.2 dB
Lpk	1	114.9 dB	Leq	1	60.6 dB

Gráfica de datos de registro



ER-6

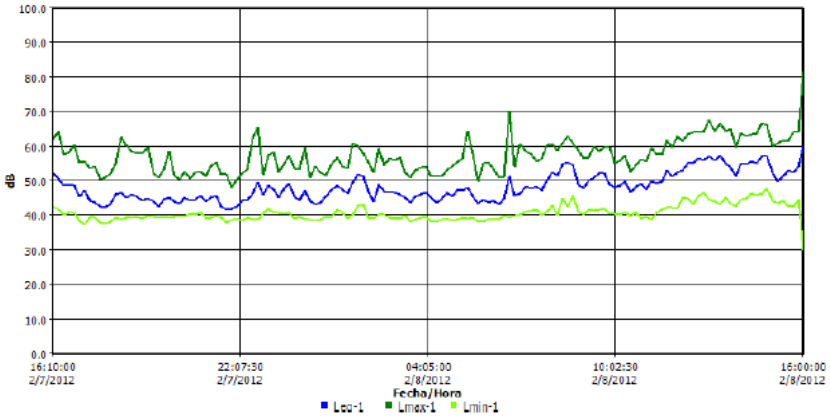
Panel de información

Ubicación	Granja cercana a San Miguel las Flores, por Aserradero.
Nombre	ER-6
Sesión padre	S040
Hora de inicio	Tuesday, February 07, 2012 16:00:00
Hora de paro	Wednesday, February 08, 2012 16:00:00
Nombre del usuario	Ing. Susana Aroche

Panel general de datos

Descripción	Medidor/Sensor	Valor	Descripción	Medidor/Sensor	Valor
Indice de intercambio	1	3 dB	Umbral int.	1	80 dB
Ponderación	1	A	Ancho de banda	1	OFF
Lmin	1	29.8 dB	Lmax	1	81.9 dB
Lpk	1	111.8 dB	Leq	1	50.4 dB

Gráfica de datos de registro



ER-7

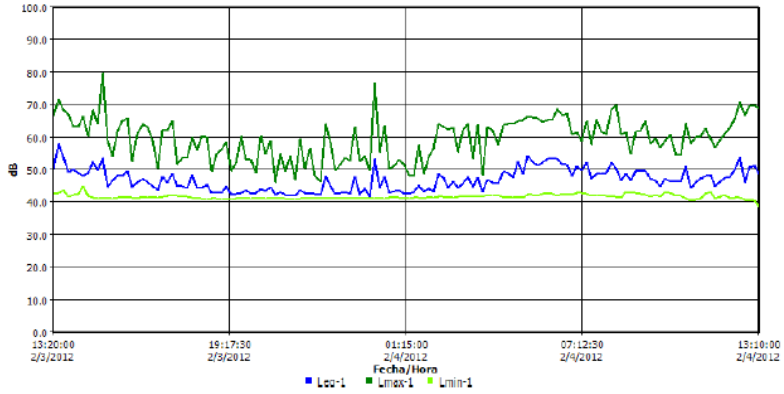
Panel de información

Ubicación	Aldea los Planes
Nombre	ER-7
Sesión padre	S038
Hora de inicio	Friday, February 03, 2012 13:10:00
Hora de paro	Saturday, February 04, 2012 13:10:00
Nombre del usuario	Ing. Susana Aroche

Panel general de datos

Descripción	Medidor/Sensor	Valor	Descripción	Medidor/Sensor	Valor
Indice de intercambio	1	3 dB	Umbral int.	1	80 dB
Respuesta	1	SLOW	Ponderación	1	A
Lmin	1	38.6 dB	Lmax	1	79.8 dB
Lpk	1	104.8 dB	Leq	1	48.3 dB

Gráfica de datos de registro



ER-8

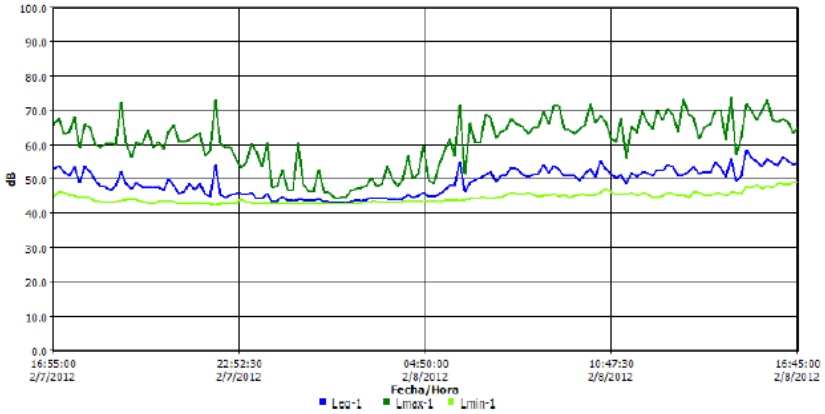
Panel de información

Ubicación	San Rafael las Flores
Nombre	ER-8
Sesión padre	FEBRERO_ER8_070212
Hora de inicio	Tuesday, February 07, 2012 16:45:00
Hora de paro	Wednesday, February 08, 2012 16:45:00
Nombre del usuario	Ing. Susana Aroche

Panel general de datos

Descripción	Medidor/Sensor	Valor	Descripción	Medidor/Sensor	Valor
Indice de intercambio	1	3 dB	Umbral int.	1	80 dB
Respuesta	1	SLOW	Ponderación	1	A
Lmin	1	42.7 dB	Lmax	1	74.1 dB
Lpk	1	102.7 dB	Leq	1	50.8 dB

Gráfica de datos de registro



10.2. Certificados de calibración de los equipos utilizados

10.2.1. Material Particulado (PM_{10})

Minera San Rafael

Certificado de Verificación de Calibración de Equipos
Para medición de TSP, PM_{10} y $PM_{2.5}$

Febrero-2011

CARACTERÍSTICAS DE

NOMBRE DEL EQUIPO	
MODELO	
FABRICANTE	
UNIDADES DE MEDICIÓN	
RANGO DE FLUJO	1.00-16.67
DESCRIPCIÓN	Para verificar la calibración de este equipo se utiliza el Calibrador TetraCal (BGI Instruments). El proceso consiste en hacer pasar el flujo de aire, el cual es ajustado a valores específicos de presión y temperatura (760 mmHg y 25 ºC) hasta alcanzar el volumen de flujo de aire deseado.

NOTA: EL FABRICANTE ESTABLECE QUE EL EQUIPO NO REQUIERE RE-CALIBRACIÓN DE FÁBRICA, POR LO QUE MINERA SAN RAFAEL HA ESTABLECIDO UN CALENDARIO PARA EL MANTENIMIENTO Y CALIBRACIÓN.

INFORMACIÓN DE LA CALIBRACIÓN

No. DE EQUIPO	1	FECHA DE VERIFICACIÓN DE CALIBRACIÓN	22/02/2011
NÚMERO DE SERIE	7621	VIGENCIA	30 Días

VALORES AMBIENTALES		LECTURA DE CALIBRACIÓN PQ200 (LPM)	LECTURA DE CALIBRACIÓN EN TETRACAL (LPM)
TEMPERATURA ºC	27.3	5.00	5.02
PRESIÓN (mmHg)	628.35	10.00	9.98
HORA	9:43	16.71	16.68

RESPONSABLES

ING. GUSTAVO DÍAZ CORZO

ING. MIGUEL BERGANZA

10.2.2. **Presión Sonora**

QUEST TECHNOLOGIES
a 3M company

3M

Certificate of Calibration

Certificate Number: 252155BGJ100009

Model: SoundPro SP DL-2 **Date Issued:** 11-November-2010

S/N: BGJ100009

Quest Technologies, Inc. certifies that the above listed product meets or exceeds the requirements of the following standard(s):

IEC 61672-1-2002 Class 2 Sound Level Meter Type 2

ANSI S1.4-1983 (R2001) Octave-Band Filters Class 1

IEC61260:2001 Octave Band Filters Class 1

ANSI S1.43-1997 (R2002) for Sound Level Meters Type 2

Test Conditions: Temp: 18-25°C Humidity: 20-80% R.H. Barometer: 950-1050 mBar

Test Procedure: S053-899

Subassemblies:

QE7052	S/N: 37398 - QE7052
SPro Preamp	S/N: 11105179

Reference Standard(s):

Device	Cal Due Date	Uncertainty - Estimated at 95% Confidence Level (k=2)
B&K Ensemble	26-February-2011	+/- 2.2% Acoustic (0.19dB)
Fluke 45	3-March-2011	+/- 1.4% AC Voltage, +/-0.1% DC Voltage

Calibrated By: Carol Brenning Assembler

In order to maintain best instrument performance over time and in the event of inspection, audit or litigation, we recommend the instrument be recalibrated annually. Any number of factors may cause the calibration item to drift out of calibration before the recommended interval has expired.

All equipment used in this test is traceable to NIST, and applies only to the unit identified above.
This report must not be reproduced except in its entirety without the written approval of Quest Technologies, Inc.

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QUEST TECHNOLOGIES
a 3M company
1060 Corporate Center Drive • Oconomowoc WI 53066 • USA • Toll Free 800.245.0779 • Tel 262.567.9157 • Fax 262.567.4047
An ISO 9001 Registered Company • ISO 17025 Accredited Calibration Laboratory
www.questtechnologies.com

10.3. Informe Original de los Resultados Analíticos Obtenidos de Muestras de Agua (SW) y muestras de manantiales (GW) en el Laboratorio ACZ Laboratories, INC. Correspondiente al Monitoreo Trimestral de Diciembre 2011 y Marzo 2012.

10.3.1. Muestras de Agua Superficial (SW)

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 18, 2012

Report to:
Miguel Berganza
Tahoe Resources, Inc.
Km 8.6 carrtera Antigua a El Salvador Centro cor
Torre Oeste.Apto 503y504 Guatemala, GT

Bill to:
Miguel Berganza
Tahoe Resources, Inc.
5190 Neil Road #310
Reno, NV 89502

cc: Charlie Muerhoff

Project ID: El Escobal
ACZ Project ID: L92526

Miguel Berganza:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 29, 2011. This project has been assigned to ACZ's project number, L92526. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92526. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 18, 2012. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

ACCREDITED IN ACCORDANCE WITH nelac

ACIL

REPAD.01.06.05.02

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

Tahoe Resources, Inc. January 18, 2012

Project ID: El Escobal
ACZ Project ID: L92526

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 10 miscellaneous samples from Tahoe Resources, Inc. on December 29, 2011. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L92526. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic and organic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-1

ACZ Sample ID: ***L92526-01***
Date Sampled: *12/16/11 08:56*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 12:49	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 14:16	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/03/12 11:03	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/04/12 9:34	tcd/jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/04/12 9:32	tcd/jlf
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 15:00	scp
Total Hot Plate Digestion	M200.2 ICP							01/05/12 12:00	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-1

ACZ Sample ID: ***L92526-01***
Date Sampled: *12/18/11 08:56*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	01/03/12 12:44	mfm
Aluminum, total	M200.7 ICP	0.33			mg/L	0.03	0.2	01/06/12 10:45	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	01/10/12 2:27	pmc
Antimony, total	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	01/05/12 5:00	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0032			mg/L	0.0005	0.002	01/10/12 2:27	pmc
Arsenic, total	M200.8 ICP-MS	0.0039			mg/L	0.0005	0.002	01/05/12 5:00	pmc
Barium, dissolved	M200.7 ICP	0.146			mg/L	0.003	0.02	01/03/12 12:44	mfm
Barium, total	M200.7 ICP	0.162			mg/L	0.003	0.02	01/06/12 10:45	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:44	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:45	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 12:44	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 10:45	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:44	mfm
Boron, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:45	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:27	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/05/12 5:00	pmc
Calcium, dissolved	M200.7 ICP	43.6			mg/L	0.2	1	01/03/12 12:44	mfm
Calcium, total	M200.7 ICP	45.0			mg/L	0.2	1	01/06/12 10:45	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:44	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:45	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:44	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:45	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:44	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:45	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 12:44	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 10:45	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	01/03/12 12:44	mfm
Iron, total	M200.7 ICP	0.16			mg/L	0.02	0.05	01/06/12 10:45	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:27	pmc
Lead, total	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	01/05/12 5:00	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 12:44	mfm
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	01/06/12 10:45	jjc
Magnesium, dissolved	M200.7 ICP	3.4			mg/L	0.2	1	01/03/12 12:44	mfm
Magnesium, total	M200.7 ICP	3.8			mg/L	0.2	1	01/06/12 10:45	jjc
Manganese, dissolved	M200.7 ICP	0.020	B		mg/L	0.005	0.03	01/03/12 12:44	mfm
Manganese, total	M200.7 ICP	0.030	B		mg/L	0.005	0.03	01/06/12 10:45	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/10/12 23:01	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:23	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:44	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:45	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:44	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:45	jjc
Potassium, dissolved	M200.7 ICP	3.8			mg/L	0.3	2	01/03/12 12:44	mfm

REPIN.02.06.05.01

** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-1

ACZ Sample ID: ***L92526-01***
Date Sampled: *12/18/11 08:56*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	4.1			mg/L	0.3	2	01/06/12 10:45	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 12:44	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 10:45	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	01/10/12 2:27	pmc
Selenium, total	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	01/05/12 5:00	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 2:27	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/05/12 5:00	pmc
Sodium, dissolved	M200.7 ICP	8.3			mg/L	0.3	2	01/03/12 12:44	mfm
Sodium, total	M200.7 ICP	8.6			mg/L	0.3	2	01/06/12 10:45	jjc
Strontium, dissolved	M200.7 ICP	0.16			mg/L	0.01	0.05	01/03/12 12:44	mfm
Strontium, total	M200.7 ICP	0.18			mg/L	0.01	0.05	01/06/12 10:45	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:27	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/05/12 5:00	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 12:44	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 10:45	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 12:44	mfm
Titanium, total	M200.7 ICP	0.006	B		mg/L	0.005	0.03	01/06/12 10:45	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	01/10/12 2:27	pmc
Uranium, total	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	01/05/12 5:00	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 12:44	mfm
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	01/06/12 10:45	jjc
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	01/03/12 12:44	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:45	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-1

ACZ Sample ID: ***L92526-01***
Date Sampled: *12/18/11 08:56*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		110			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		110			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			01/18/12 0:00	calc
Sum of Anions		2.9			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		2.9			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	12/30/11 10:51	abm
Chloride	SM4500Cl-E	5	B	*	mg/L	1	5	01/05/12 16:42	lhb
Conductivity @25C	SM2510B	275			umhos/cm	1	10	12/30/11 18:55	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/29/11 23:34	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.015		*	mg/L	0.003	0.01	12/30/11 16:58	jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	12/30/11 16:21	abm
Hardness as CaCO3	SM2340B - Calculation	123			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.86			mg/L	0.02	0.1	01/06/12 22:44	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/05/12 12:06	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.2	B	*	mg/L	0.1	0.5	01/04/12 23:39	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.12	B		mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.03	B		mg/L	0.01	0.05	01/04/12 17:33	tcd
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.04	BH	*	mg/L	0.01	0.05	12/29/11 21:22	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	01/04/12 16:34	tcd
Residue, Filterable (TDS) @180C	SM2540C	170	H	*	mg/L	10	20	12/30/11 15:16	abm
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	01/04/12 16:43	mla
Residue, Total (TS) @ 105C	SM2540B	220	H	*	mg/L	10	20	01/11/12 15:50	abm
Sulfate	D516-02 - Turbidimetric	24		*	mg/L	1	5	01/05/12 11:17	ocp
TDS (calculated)	Calculation	154			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.10						01/18/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2

ACZ Sample ID: ***L92526-02***
Date Sampled: *12/18/11 10:02*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 12:56	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 14:31	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/03/12 11:03	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/04/12 9:34	tod/jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/04/12 9:32	tod/jlf
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 11:18	sop
Total Hot Plate Digestion	M200.2 ICP							01/05/12 12:13	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2

ACZ Sample ID: ***L92526-02***
Date Sampled: *12/18/11 10:02*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.09	B		mg/L	0.03	0.2	01/03/12 12:47	mfm
Aluminum, total	M200.7 ICP	0.49			mg/L	0.03	0.2	01/06/12 10:48	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0088			mg/L	0.0004	0.002	01/10/12 2:36	pmc
Antimony, total	M200.8 ICP-MS	0.0074			mg/L	0.0004	0.002	01/06/12 1:19	msh
Arsenic, dissolved	M200.8 ICP-MS	0.0073			mg/L	0.0005	0.002	01/10/12 2:36	pmc
Arsenic, total	M200.8 ICP-MS	0.0107			mg/L	0.0005	0.002	01/06/12 1:19	msh
Barium, dissolved	M200.7 ICP	0.083			mg/L	0.003	0.02	01/03/12 12:47	mfm
Barium, total	M200.7 ICP	0.105			mg/L	0.003	0.02	01/06/12 10:48	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:47	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:48	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 12:47	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 10:48	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:47	mfm
Boron, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:48	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:36	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:19	msh
Calcium, dissolved	M200.7 ICP	86.7			mg/L	0.2	1	01/03/12 12:47	mfm
Calcium, total	M200.7 ICP	90.4			mg/L	0.2	1	01/06/12 10:48	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:47	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:48	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:47	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:48	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:47	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:48	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 12:47	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 10:48	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	01/03/12 12:47	mfm
Iron, total	M200.7 ICP	0.54			mg/L	0.02	0.05	01/06/12 10:48	jjc
Lead, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/10/12 2:36	pmc
Lead, total	M200.8 ICP-MS	0.0013			mg/L	0.0001	0.0005	01/07/12 2:32	pmc
Lithium, dissolved	M200.7 ICP	0.03	B		mg/L	0.02	0.1	01/03/12 12:47	mfm
Lithium, total	M200.7 ICP	0.03	B		mg/L	0.02	0.1	01/06/12 10:48	jjc
Magnesium, dissolved	M200.7 ICP	9.8			mg/L	0.2	1	01/03/12 12:47	mfm
Magnesium, total	M200.7 ICP	10.5			mg/L	0.2	1	01/06/12 10:48	jjc
Manganese, dissolved	M200.7 ICP	0.102			mg/L	0.005	0.03	01/03/12 12:47	mfm
Manganese, total	M200.7 ICP	0.164			mg/L	0.005	0.03	01/06/12 10:48	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/10/12 23:03	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:26	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:47	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:48	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:47	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:48	jjc
Potassium, dissolved	M200.7 ICP	5.4			mg/L	0.3	2	01/03/12 12:47	mfm

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2

ACZ Sample ID: ***L92526-02***
Date Sampled: *12/18/11 10:02*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	6.1			mg/L	0.3	2	01/06/12 10:48	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 12:47	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 10:48	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	01/10/12 2:36	pmc
Selenium, total	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	01/06/12 1:19	msh
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 2:36	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/06/12 1:19	msh
Sodium, dissolved	M200.7 ICP	21.0			mg/L	0.3	2	01/03/12 12:47	mfm
Sodium, total	M200.7 ICP	21.1			mg/L	0.3	2	01/06/12 10:48	jjc
Strontium, dissolved	M200.7 ICP	0.61			mg/L	0.01	0.05	01/03/12 12:47	mfm
Strontium, total	M200.7 ICP	0.66			mg/L	0.01	0.05	01/06/12 10:48	jjc
Thallium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/10/12 2:36	pmc
Thallium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/06/12 1:19	msh
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 12:47	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 10:48	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 12:47	mfm
Titanium. total	M200.7 ICP	0.009	B		mg/L	0.005	0.03	01/06/12 10:48	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0004	B		mg/L	0.0001	0.0005	01/10/12 2:36	pmc
Uranium, total	M200.8 ICP-MS	0.0004	B		mg/L	0.0001	0.0005	01/06/12 1:19	msh
Vanadium, dissolved	M200.7 ICP	0.011	B		mg/L	0.005	0.03	01/03/12 12:47	mfm
Vanadium, total	M200.7 ICP	0.013	B		mg/L	0.005	0.03	01/06/12 10:48	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:47	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:48	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2

ACZ Sample ID: ***L92526-02***
Date Sampled: *12/18/11 10:02*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		136			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		136			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		8.9			%			01/18/12 0:00	calc
Sum of Anions		5.6			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		6.7			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	12/30/11 11:08	abm
Chloride	SM4500Cl-E	6		*	mg/L	1	5	01/05/12 16:42	lhb
Conductivity @25C	SM2510B	631			umhos/cm	1	10	12/30/11 19:12	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.024		*	mg/L	0.003	0.01	12/29/11 23:35	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.020		*	mg/L	0.003	0.01	12/30/11 17:00	jlf
Fluoride	SM4500F-C	0.5		*	mg/L	0.1	0.5	12/30/11 16:24	abm
Hardness as CaCO3	SM2340B - Calculation	257			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	14.3			mg/L	0.2	1	01/06/12 23:31	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	6.6		*	mg/L	0.3	3	01/05/12 12:25	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	6.2		*	mg/L	0.1	0.5	01/04/12 23:41	pjb
pH (lab)	SM4500H+ B								
pH		8.2	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus		U		mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U		mg/L	0.01	0.05	01/04/12 17:34	tcd
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid		UH	*	mg/L	0.01	0.05	12/29/11 21:26	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	01/04/12 16:35	tcd
Residue, Filterable (TDS) @180C	SM2540C	430	H	*	mg/L	10	20	12/30/11 15:16	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	19	BH	*	mg/L	5	20	01/04/12 16:44	mla
Residue, Total (TS) @ 105C	SM2540B	480	H	*	mg/L	10	20	01/11/12 15:50	abm
Sulfate	D516-02 - Turbidimetric	126		*	mg/L	5	30	01/05/12 11:26	ccp
TDS (calculated)	Calculation	344			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.25						01/18/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2A

ACZ Sample ID: ***L92526-03***
Date Sampled: *12/18/11 10:20*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 13:03	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 14:39	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/03/12 11:03	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/04/12 9:34	tod/jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/04/12 9:32	tod/jlf
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 11:34	scp
Total Hot Plate Digestion	M200.2 ICP							01/05/12 12:25	jjc

REPIN.02.06.05.01

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2A

ACZ Sample ID: ***L92526-03***
Date Sampled: *12/18/11 10:20*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	01/03/12 12:50	mfm
Aluminum, total	M200.7 ICP	0.16	B		mg/L	0.03	0.2	01/06/12 10:51	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0057			mg/L	0.0004	0.002	01/10/12 2:39	pmc
Antimony, total	M200.8 ICP-MS	0.0048			mg/L	0.0004	0.002	01/06/12 1:30	msh
Arsenic, dissolved	M200.8 ICP-MS	0.0045			mg/L	0.0005	0.002	01/10/12 2:39	pmc
Arsenic, total	M200.8 ICP-MS	0.0041			mg/L	0.0005	0.002	01/06/12 1:30	msh
Barium, dissolved	M200.7 ICP	0.094			mg/L	0.003	0.02	01/03/12 12:50	mfm
Barium, total	M200.7 ICP	0.101			mg/L	0.003	0.02	01/06/12 10:51	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:50	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:51	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 12:50	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 10:51	jjc
Boron, dissolved	M200.7 ICP	0.03	B		mg/L	0.01	0.05	01/03/12 12:50	mfm
Boron, total	M200.7 ICP	0.03	B		mg/L	0.01	0.05	01/06/12 10:51	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:39	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:30	msh
Calcium, dissolved	M200.7 ICP	95.1			mg/L	0.2	1	01/03/12 12:50	mfm
Calcium, total	M200.7 ICP	96.2			mg/L	0.2	1	01/06/12 10:51	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:50	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:51	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:50	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:51	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:50	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:51	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 12:50	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 10:51	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	01/03/12 12:50	mfm
Iron, total	M200.7 ICP	0.09			mg/L	0.02	0.05	01/06/12 10:51	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:39	pmc
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/07/12 2:34	pmc
Lithium, dissolved	M200.7 ICP	0.03	B		mg/L	0.02	0.1	01/03/12 12:50	mfm
Lithium, total	M200.7 ICP	0.03	B		mg/L	0.02	0.1	01/06/12 10:51	jjc
Magnesium, dissolved	M200.7 ICP	11.0			mg/L	0.2	1	01/03/12 12:50	mfm
Magnesium, total	M200.7 ICP	11.4			mg/L	0.2	1	01/06/12 10:51	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 12:50	mfm
Manganese, total	M200.7 ICP		U		mg/L	0.005	0.03	01/06/12 10:51	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 17:07	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:28	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:50	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:51	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:50	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:51	jjc
Potassium, dissolved	M200.7 ICP	5.3			mg/L	0.3	2	01/03/12 12:50	mfm

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2A

ACZ Sample ID: ***L92526-03***
Date Sampled: *12/18/11 10:20*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	5.5			mg/L	0.3	2	01/06/12 10:51	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 12:50	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 10:51	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	01/10/12 2:39	pmc
Selenium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	01/06/12 1:30	msh
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 2:39	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/06/12 1:30	msh
Sodium, dissolved	M200.7 ICP	26.6			mg/L	0.3	2	01/03/12 12:50	mfm
Sodium, total	M200.7 ICP	27.0			mg/L	0.3	2	01/06/12 10:51	jjc
Strontium, dissolved	M200.7 ICP	0.78			mg/L	0.01	0.05	01/03/12 12:50	mfm
Strontium, total	M200.7 ICP	0.82			mg/L	0.01	0.05	01/06/12 10:51	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:39	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:30	msh
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 12:50	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 10:51	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 12:50	mfm
Titanium, total	M200.7 ICP	0.006	B		mg/L	0.005	0.03	01/06/12 10:51	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0004	B		mg/L	0.0001	0.0005	01/10/12 2:39	pmc
Uranium, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	01/06/12 1:30	msh
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 12:50	mfm
Vanadium, total	M200.7 ICP	0.007	B		mg/L	0.005	0.03	01/06/12 10:51	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:50	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:51	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2A

ACZ Sample ID: ***L92526-03***
Date Sampled: *12/18/11 10:20*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		121			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3		6	B		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		127			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.7			%			01/18/12 0:00	calc
Sum of Anions		6.5			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		7			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	12/30/11 11:14	abm
Chloride	SM4500Cl-E	11		*	mg/L	1	5	01/05/12 16:42	lhb
Conductivity @25C	SM2510B	631			umhos/cm	1	10	12/30/11 19:21	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/29/11 23:35	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.015		*	mg/L	0.003	0.01	12/30/11 17:00	jlf
Fluoride	SM4500F-C	0.7		*	mg/L	0.1	0.5	12/30/11 16:28	abm
Hardness as CaCO3	SM2340B - Calculation	283			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	4.71			mg/L	0.06	0.3	01/06/12 23:33	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/05/12 12:08	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	01/04/12 23:42	pjb
pH (lab)	SM4500H+ B								
pH		8.4	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.06	B		mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.02	B		mg/L	0.01	0.05	01/04/12 17:35	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.02	BH	*	mg/L	0.01	0.05	12/29/11 21:27	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	01/04/12 16:36	tod
Residue, Filterable (TDS) @180C	SM2540C	460	H	*	mg/L	10	20	01/03/12 15:42	mla
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	01/04/12 16:46	mla
Residue, Total (TS) @ 105C	SM2540B	490	H	*	mg/L	10	20	01/11/12 15:51	abm
Sulfate	D516-02 - Turbidimetric	174		*	mg/L	5	30	01/05/12 11:26	ccp
TDS (calculated)	Calculation	401			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.15						01/18/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-3

ACZ Sample ID: ***L92526-04***
Date Sampled: *12/21/11 11:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 13:10	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 14:47	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/03/12 11:04	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/04/12 9:35	tod/jlf
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/06/12 10:43	mpb
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 12:22	scp
Total Hot Plate Digestion	M200.2 ICP							01/05/12 12:37	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-3

ACZ Sample ID: ***L92526-04***
Date Sampled: *12/21/11 11:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	01/03/12 12:53	mfm
Aluminum, total	M200.7 ICP	1.12			mg/L	0.03	0.2	01/06/12 10:54	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	01/10/12 2:42	pmc
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	01/06/12 1:41	msh
Arsenic, dissolved	M200.8 ICP-MS	0.0127			mg/L	0.0005	0.002	01/10/12 2:42	pmc
Arsenic, total	M200.8 ICP-MS	0.0115			mg/L	0.0005	0.002	01/06/12 1:41	msh
Barium, dissolved	M200.7 ICP	0.084			mg/L	0.003	0.02	01/03/12 12:53	mfm
Barium, total	M200.7 ICP	0.095			mg/L	0.003	0.02	01/06/12 10:54	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:53	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:54	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 12:53	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 10:54	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:53	mfm
Boron, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:54	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:42	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:41	msh
Calcium, dissolved	M200.7 ICP	29.0			mg/L	0.2	1	01/03/12 12:53	mfm
Calcium, total	M200.7 ICP	28.3			mg/L	0.2	1	01/06/12 10:54	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:53	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:54	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:53	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:54	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:53	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:54	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 12:53	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 10:54	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	01/03/12 12:53	mfm
Iron, total	M200.7 ICP	0.45			mg/L	0.02	0.05	01/06/12 10:54	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:42	pmc
Lead, total	M200.8 ICP-MS	0.0004	B		mg/L	0.0001	0.0005	01/07/12 2:39	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 12:53	mfm
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	01/06/12 10:54	jjc
Magnesium, dissolved	M200.7 ICP	2.3			mg/L	0.2	1	01/03/12 12:53	mfm
Magnesium, total	M200.7 ICP	2.4			mg/L	0.2	1	01/06/12 10:54	jjc
Manganese, dissolved	M200.7 ICP	0.028	B		mg/L	0.005	0.03	01/03/12 12:53	mfm
Manganese, total	M200.7 ICP	0.048			mg/L	0.005	0.03	01/06/12 10:54	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 17:09	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:30	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:53	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:54	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:53	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:54	jjc
Potassium, dissolved	M200.7 ICP	3.7			mg/L	0.3	2	01/03/12 12:53	mfm

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-3

ACZ Sample ID: ***L92526-04***
Date Sampled: *12/21/11 11:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	3.8			mg/L	0.3	2	01/06/12 10:54	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 12:53	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 10:54	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	01/10/12 2:42	pmc
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	01/06/12 1:41	msh
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 2:42	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/06/12 1:41	msh
Sodium, dissolved	M200.7 ICP	11.1			mg/L	0.3	2	01/03/12 12:53	mfm
Sodium, total	M200.7 ICP	10.8			mg/L	0.3	2	01/06/12 10:54	jjc
Strontium, dissolved	M200.7 ICP	0.20			mg/L	0.01	0.05	01/03/12 12:53	mfm
Strontium, total	M200.7 ICP	0.20			mg/L	0.01	0.05	01/06/12 10:54	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:42	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:41	msh
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 12:53	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 10:54	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 12:53	mfm
Titanium, total	M200.7 ICP	0.023	B		mg/L	0.005	0.03	01/06/12 10:54	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/10/12 2:42	pmc
Uranium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/06/12 1:41	msh
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 12:53	mfm
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	01/06/12 10:54	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 12:53	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 10:54	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-3

ACZ Sample ID: L92526-04
Date Sampled: 12/21/11 11:40
Date Received: 12/29/11
Sample Matrix: Surface Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		84			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		86			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.3			%			01/18/12 0:00	calc
Sum of Anions		2.1			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		2.2			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4	30		*	mg/L	10	20	12/30/11 11:20	abm
Chloride	SM4500Cl-E	3	B	*	mg/L	1	5	01/05/12 16:42	lhb
Conductivity @25C	SM2510B	209			umhos/cm	1	10	12/30/11 19:30	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/29/11 23:36	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/30/11 17:01	jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	01/04/12 14:44	abm
Hardness as CaCO3	SM2340B - Calculation	82			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.46			mg/L	0.02	0.1	01/06/12 22:50	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/05/12 12:09	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.1	B	*	mg/L	0.1	0.5	01/04/12 23:45	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.06	B		mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.02	B		mg/L	0.01	0.05	01/04/12 17:36	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.02	BH	*	mg/L	0.01	0.05	12/29/11 21:28	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B		mg/L	0.01	0.05	01/06/12 14:15	mpb
Residue, Filterable (TDS) @180C	SM2540C	150	H	*	mg/L	10	20	01/03/12 15:43	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	5	BH	*	mg/L	5	20	01/04/12 16:47	mla
Residue, Total (TS) @ 105C	SM2540B	190	H	*	mg/L	10	20	01/11/12 15:52	abm
Sulfate	D516-02 - Turbidimetric	17			mg/L	1	5	01/05/12 11:17	ccp
TDS (calculated)	Calculation	118			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.27						01/18/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4

ACZ Sample ID: ***L92526-05***
Date Sampled: *12/21/11 12:10*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 13:25	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 14:55	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/03/12 11:04	tcd
Phosphorus, dissolved	M365.1 - Auto Asorbic Acid Digestion							01/05/12 19:38	mpb
Phosphorus, total	M365.1 - Auto Asorbic Acid Digestion							01/06/12 10:56	mpb
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 12:37	scp
Total Hot Plate Digestion	M200.2 ICP							01/05/12 12:50	jjc

ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4

ACZ Sample ID: L92526-05
Date Sampled: 12/21/11 12:10
Date Received: 12/29/11
Sample Matrix: Surface Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.09	B		mg/L	0.03	0.2	01/03/12 13:02	mfm
Aluminum, total	M200.7 ICP	2.54			mg/L	0.03	0.2	01/06/12 11:03	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0035			mg/L	0.0004	0.002	01/10/12 2:45	pmc
Antimony, total	M200.8 ICP-MS	0.0031			mg/L	0.0004	0.002	01/06/12 1:44	msh
Arsenic, dissolved	M200.8 ICP-MS	0.0056			mg/L	0.0005	0.002	01/10/12 2:45	pmc
Arsenic, total	M200.8 ICP-MS	0.0060			mg/L	0.0005	0.002	01/06/12 1:44	msh
Barium, dissolved	M200.7 ICP	0.164			mg/L	0.003	0.02	01/03/12 13:02	mfm
Barium, total	M200.7 ICP	0.191			mg/L	0.003	0.02	01/06/12 11:03	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:02	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:03	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 13:02	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 11:03	jjc
Boron, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	01/03/12 13:02	mfm
Boron, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:03	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:45	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:44	msh
Calcium, dissolved	M200.7 ICP	63.7			mg/L	0.2	1	01/03/12 13:02	mfm
Calcium, total	M200.7 ICP	63.9			mg/L	0.2	1	01/06/12 11:03	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:02	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:03	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:02	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:03	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:02	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:03	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:02	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:03	jjc
Iron, dissolved	M200.7 ICP	0.10			mg/L	0.02	0.05	01/03/12 13:02	mfm
Iron, total	M200.7 ICP	1.53			mg/L	0.02	0.05	01/06/12 11:03	jjc
Lead, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/10/12 2:45	pmc
Lead, total	M200.8 ICP-MS	0.0014			mg/L	0.0001	0.0005	01/07/12 2:44	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 13:02	mfm
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	01/06/12 11:03	jjc
Magnesium, dissolved	M200.7 ICP	7.7			mg/L	0.2	1	01/03/12 13:02	mfm
Magnesium, total	M200.7 ICP	8.0			mg/L	0.2	1	01/06/12 11:03	jjc
Manganese, dissolved	M200.7 ICP	0.062			mg/L	0.005	0.03	01/03/12 13:02	mfm
Manganese, total	M200.7 ICP	0.146			mg/L	0.005	0.03	01/06/12 11:03	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 17:16	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:36	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:02	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:03	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:02	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:03	jjc
Potassium, dissolved	M200.7 ICP	7.6			mg/L	0.3	2	01/03/12 13:02	mfm

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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4

ACZ Sample ID: ***L92526-05***
Date Sampled: *12/21/11 12:10*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	7.3			mg/L	0.3	2	01/06/12 11:03	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:02	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:03	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	01/10/12 2:45	pmc
Selenium, total	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	01/06/12 1:44	msh
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 2:45	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/06/12 1:44	msh
Sodium, dissolved	M200.7 ICP	17.4			mg/L	0.3	2	01/03/12 13:02	mfm
Sodium, total	M200.7 ICP	17.5			mg/L	0.3	2	01/06/12 11:03	jjc
Strontium, dissolved	M200.7 ICP	0.42			mg/L	0.01	0.05	01/03/12 13:02	mfm
Strontium, total	M200.7 ICP	0.44			mg/L	0.01	0.05	01/06/12 11:03	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:45	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:44	msh
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 13:02	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 11:03	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:02	mfm
Titanium, total	M200.7 ICP	0.082			mg/L	0.005	0.03	01/06/12 11:03	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0005			mg/L	0.0001	0.0005	01/10/12 2:45	pmc
Uranium, total	M200.8 ICP-MS	0.0006			mg/L	0.0001	0.0005	01/06/12 1:44	msh
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:02	mfm
Vanadium, total	M200.7 ICP	0.008	B		mg/L	0.005	0.03	01/06/12 11:03	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:02	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:03	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4

ACZ Sample ID: ***L92526-05***
Date Sampled: *12/21/11 12:10*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		113			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		113			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.2			%			01/18/12 0:00	calc
Sum of Anions		4.5			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		4.8			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4	10	B	*	mg/L	10	20	12/30/11 11:25	abm
Chloride	SM4500Cl-E	11		*	mg/L	1	5	01/05/12 16:42	lhb
Conductivity @25C	SM2510B	454			umhos/cm	1	10	12/30/11 19:38	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/29/11 23:38	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.015		*	mg/L	0.003	0.01	12/30/11 17:02	jlf
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	01/04/12 14:53	abm
Hardness as CaCO3	SM2340B - Calculation	191			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	3.60			mg/L	0.02	0.1	01/06/12 22:51	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/05/12 12:10	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.5		*	mg/L	0.1	0.5	01/04/12 23:47	pjb
pH (lab)	SM4500H+ B								
pH		8.2	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	1.80			mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.58		*	mg/L	0.01	0.05	01/06/12 10:08	mpb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.58	H	*	mg/L	0.03	0.2	12/29/11 22:02	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.47			mg/L	0.01	0.05	01/06/12 14:17	mpb
Residue, Filterable (TDS) @180C	SM2540C	310	H	*	mg/L	10	20	01/03/12 15:44	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	41	H	*	mg/L	5	20	01/04/12 16:49	mla
Residue, Total (TS) @ 105C	SM2540B	410	H	*	mg/L	10	20	01/11/12 15:53	abm
Sulfate	D516-02 - Turbidimetric	91			mg/L	5	30	01/05/12 11:56	ccp
TDS (calculated)	Calculation	267			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.16						01/18/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4A

ACZ Sample ID: ***L92526-06***
Date Sampled: *12/18/11 10:50*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 13:39	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 15:03	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/03/12 11:04	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/05/12 19:43	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/06/12 11:02	mpb
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 12:53	scp
Total Hot Plate Digestion	M200.2 ICP							01/05/12 13:02	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4A

ACZ Sample ID: ***L92526-06***
Date Sampled: *12/18/11 10:50*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	01/03/12 13:05	mfm
Aluminum, total	M200.7 ICP	0.69			mg/L	0.03	0.2	01/06/12 11:06	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0014	B		mg/L	0.0004	0.002	01/10/12 2:48	pmc
Antimony, total	M200.8 ICP-MS	0.0012	B		mg/L	0.0004	0.002	01/06/12 1:48	msh
Arsenic, dissolved	M200.8 ICP-MS	0.0050			mg/L	0.0005	0.002	01/10/12 2:48	pmc
Arsenic, total	M200.8 ICP-MS	0.0051			mg/L	0.0005	0.002	01/06/12 1:48	msh
Barium, dissolved	M200.7 ICP	0.159			mg/L	0.003	0.02	01/03/12 13:05	mfm
Barium, total	M200.7 ICP	0.176			mg/L	0.003	0.02	01/06/12 11:06	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:05	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:06	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 13:05	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 11:06	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:05	mfm
Boron, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:06	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:48	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:48	msh
Calcium, dissolved	M200.7 ICP	54.5			mg/L	0.2	1	01/03/12 13:05	mfm
Calcium, total	M200.7 ICP	55.0			mg/L	0.2	1	01/06/12 11:06	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:05	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:06	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:05	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:06	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:05	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:06	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:05	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:06	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	01/03/12 13:05	mfm
Iron, total	M200.7 ICP	0.51			mg/L	0.02	0.05	01/06/12 11:06	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:48	pmc
Lead, total	M200.8 ICP-MS	0.0005	B		mg/L	0.0001	0.0005	01/07/12 2:46	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 13:05	mfm
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	01/06/12 11:06	jjc
Magnesium, dissolved	M200.7 ICP	6.1			mg/L	0.2	1	01/03/12 13:05	mfm
Magnesium, total	M200.7 ICP	6.4			mg/L	0.2	1	01/06/12 11:06	jjc
Manganese, dissolved	M200.7 ICP	0.059			mg/L	0.005	0.03	01/03/12 13:05	mfm
Manganese, total	M200.7 ICP	0.102			mg/L	0.005	0.03	01/06/12 11:06	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 17:18	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:38	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:05	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:06	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:05	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:06	jjc
Potassium, dissolved	M200.7 ICP	5.5			mg/L	0.3	2	01/03/12 13:05	mfm

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4A

ACZ Sample ID: ***L92526-06***
Date Sampled: *12/18/11 10:50*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	5.7			mg/L	0.3	2	01/06/12 11:06	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:05	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:06	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	01/10/12 2:48	pmc
Selenium, total	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	01/06/12 1:48	msh
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 2:48	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/06/12 1:48	msh
Sodium, dissolved	M200.7 ICP	16.1			mg/L	0.3	2	01/03/12 13:05	mfm
Sodium, total	M200.7 ICP	16.2			mg/L	0.3	2	01/06/12 11:06	jjc
Strontium, dissolved	M200.7 ICP	0.35			mg/L	0.01	0.05	01/03/12 13:05	mfm
Strontium, total	M200.7 ICP	0.37			mg/L	0.01	0.05	01/06/12 11:06	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:48	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:48	msh
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 13:05	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 11:06	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:05	mfm
Titanium, total	M200.7 ICP	0.024	B		mg/L	0.005	0.03	01/06/12 11:06	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/10/12 2:48	pmc
Uranium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/06/12 1:48	msh
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:05	mfm
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	01/06/12 11:06	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:05	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:06	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4A

ACZ Sample ID: ***L92526-06***
Date Sampled: *12/18/11 10:50*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		93			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		93			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		6.5			%			01/18/12 0:00	calc
Sum of Anions		3.6			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		4.1			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	12/30/11 11:31	abm
Chloride	SM4500Cl-E	9		*	mg/L	1	5	01/05/12 16:42	lhb
Conductivity @25C	SM2510B	393			umhos/cm	1	10	12/30/11 19:47	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/29/11 23:40	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/30/11 17:05	jlf
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	01/04/12 14:57	abm
Hardness as CaCO3	SM2340B - Calculation	161			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	4.57			mg/L	0.06	0.3	01/06/12 23:34	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/09/12 17:47	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.3	B	*	mg/L	0.1	0.5	01/04/12 23:48	pjb
pH (lab)	SM4500H+ B								
pH		8.2	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.25			mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.08		*	mg/L	0.01	0.05	01/06/12 10:09	mpb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.08	H	*	mg/L	0.01	0.05	12/29/11 21:31	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.10			mg/L	0.01	0.05	01/06/12 14:18	mpb
Residue, Filterable (TDS) @180C	SM2540C	310	H	*	mg/L	10	20	01/03/12 15:45	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	12	BH	*	mg/L	5	20	01/04/12 16:50	mla
Residue, Total (TS) @ 105C	SM2540B	350	H	*	mg/L	10	20	01/11/12 15:54	abm
Sulfate	D516-02 - Turbidimetric	68			mg/L	5	30	01/05/12 11:57	ccp
TDS (calculated)	Calculation	216			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.44						01/18/12 0:00	calc

REPIN.02.06.05.01

** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-6

ACZ Sample ID: ***L92526-07***
Date Sampled: *12/21/11 14:01*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 13:46	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 15:10	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/03/12 11:04	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/05/12 19:48	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/06/12 11:15	mpb
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 13:09	scp
Total Hot Plate Digestion	M200.2 ICP							01/05/12 13:14	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-6

ACZ Sample ID: ***L92526-07***
Date Sampled: *12/21/11 14:01*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.09	B		mg/L	0.03	0.2	01/03/12 13:08	mfm
Aluminum, total	M200.7 ICP	1.26			mg/L	0.03	0.2	01/06/12 11:09	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	01/10/12 2:58	pmc
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	01/06/12 1:52	msh
Arsenic, dissolved	M200.8 ICP-MS	0.0026			mg/L	0.0005	0.002	01/10/12 2:58	pmc
Arsenic, total	M200.8 ICP-MS	0.0030			mg/L	0.0005	0.002	01/06/12 1:52	msh
Barium, dissolved	M200.7 ICP	0.044			mg/L	0.003	0.02	01/03/12 13:08	mfm
Barium, total	M200.7 ICP	0.054			mg/L	0.003	0.02	01/06/12 11:09	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:08	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:09	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 13:08	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 11:09	jjc
Boron, dissolved	M200.7 ICP	0.09			mg/L	0.01	0.05	01/03/12 13:08	mfm
Boron, total	M200.7 ICP	0.09			mg/L	0.01	0.05	01/06/12 11:09	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:58	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:52	msh
Calcium, dissolved	M200.7 ICP	10.5			mg/L	0.2	1	01/03/12 13:08	mfm
Calcium, total	M200.7 ICP	10.7			mg/L	0.2	1	01/06/12 11:09	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:08	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:09	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:08	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:09	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:08	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:09	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:08	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:09	jjc
Iron, dissolved	M200.7 ICP	0.06			mg/L	0.02	0.05	01/03/12 13:08	mfm
Iron, total	M200.7 ICP	0.52			mg/L	0.02	0.05	01/06/12 11:09	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:58	pmc
Lead, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	01/07/12 2:48	pmc
Lithium, dissolved	M200.7 ICP	0.03	B		mg/L	0.02	0.1	01/03/12 13:08	mfm
Lithium, total	M200.7 ICP	0.03	B		mg/L	0.02	0.1	01/06/12 11:09	jjc
Magnesium, dissolved	M200.7 ICP	2.0			mg/L	0.2	1	01/03/12 13:08	mfm
Magnesium, total	M200.7 ICP	2.2			mg/L	0.2	1	01/06/12 11:09	jjc
Manganese, dissolved	M200.7 ICP	0.012	B		mg/L	0.005	0.03	01/03/12 13:08	mfm
Manganese, total	M200.7 ICP	0.023	B		mg/L	0.005	0.03	01/06/12 11:09	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 17:51	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:44	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:08	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:09	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:08	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:09	jjc
Potassium, dissolved	M200.7 ICP	3.5			mg/L	0.3	2	01/03/12 13:08	mfm

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-6

ACZ Sample ID: **L92526-07**
Date Sampled: 12/21/11 14:01
Date Received: 12/29/11
Sample Matrix: Surface Water

Potassium, total	M200.7 ICP	3.5			mg/L	0.3	2	01/06/12 11:09	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:08	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:09	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	01/10/12 2:58	pmc
Selenium, total	M200.8 ICP-MS	0.0004			mg/L	0.0001	0.0003	01/06/12 1:52	msh
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 2:58	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/06/12 1:52	msh
Sodium, dissolved	M200.7 ICP	13.7			mg/L	0.3	2	01/03/12 13:08	mfm
Sodium, total	M200.7 ICP	14.0			mg/L	0.3	2	01/06/12 11:09	jjc
Strontium, dissolved	M200.7 ICP	0.07			mg/L	0.01	0.05	01/03/12 13:08	mfm
Strontium, total	M200.7 ICP	0.08			mg/L	0.01	0.05	01/06/12 11:09	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:58	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:52	msh
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 13:08	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 11:09	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:08	mfm
Titanium. total	M200.7 ICP	0.028	B		mg/L	0.005	0.03	01/06/12 11:09	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 2:58	pmc
Uranium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:52	msh
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:08	mfm
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	01/06/12 11:09	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:08	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:09	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-6

ACZ Sample ID: **L92526-07**
Date Sampled: 12/21/11 14:01
Date Received: 12/29/11
Sample Matrix: Surface Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		37			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		37			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-3.4			%			01/18/12 0:00	calc
Sum of Anions		1.5			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		1.4			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	12/30/11 11:37	abm
Chloride	SM4500Cl-E	14		*	mg/L	1	5	01/05/12 16:43	lhb
Conductivity @25C	SM2510B	149			umhos/cm	1	10	12/30/11 19:54	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	12/29/11 23:41	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/30/11 17:05	jlf
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	01/04/12 15:00	abm
Hardness as CaCO3	SM2340B - Calculation	35			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.15			mg/L	0.02	0.1	01/06/12 22:53	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/09/12 17:49	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.2	B	*	mg/L	0.1	0.5	01/04/12 23:49	pjb
pH (lab)	SM4500H+ B								
pH		8.0	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		20.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.06	B		mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	01/06/12 10:13	mpb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.02	BH	*	mg/L	0.01	0.05	12/29/11 21:33	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B		mg/L	0.01	0.05	01/06/12 14:20	mpb
Residue, Filterable (TDS) @180C	SM2540C	100	H	*	mg/L	10	20	01/03/12 15:46	mla
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	01/04/12 16:52	mla
Residue, Total (TS) @ 105C	SM2540B	150	H	*	mg/L	10	20	01/11/12 15:54	abm
Sulfate	D516-02 - Turbidimetric	15			mg/L	1	5	01/05/12 11:50	ocp
TDS (calculated)	Calculation	81			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.23						01/18/12 0:00	calc

REPIN.02.06.05.01

** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-7

ACZ Sample ID: ***L92526-08***
Date Sampled: *12/21/11 14:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 13:54	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 15:18	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/03/12 11:04	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/05/12 19:52	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/06/12 11:22	mpb
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 13:25	scp
Total Hot Plate Digestion	M200.2 ICP							01/05/12 13:27	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-7

ACZ Sample ID: ***L92526-08***
Date Sampled: *12/21/11 14:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	01/03/12 13:11	mfm
Aluminum, total	M200.7 ICP	0.78			mg/L	0.03	0.2	01/06/12 11:12	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	01/10/12 3:01	pmc
Antimony, total	M200.8 ICP-MS	0.0006	B		mg/L	0.0004	0.002	01/06/12 1:55	msh
Arsenic, dissolved	M200.8 ICP-MS	0.0044			mg/L	0.0005	0.002	01/10/12 3:01	pmc
Arsenic, total	M200.8 ICP-MS	0.0039			mg/L	0.0005	0.002	01/06/12 1:55	msh
Barium, dissolved	M200.7 ICP	0.087			mg/L	0.003	0.02	01/03/12 13:11	mfm
Barium, total	M200.7 ICP	0.100			mg/L	0.003	0.02	01/06/12 11:12	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:11	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:12	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 13:11	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 11:12	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:11	mfm
Boron, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:12	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 3:01	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:55	msh
Calcium, dissolved	M200.7 ICP	21.6			mg/L	0.2	1	01/03/12 13:11	mfm
Calcium, total	M200.7 ICP	22.1			mg/L	0.2	1	01/06/12 11:12	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:11	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:12	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:11	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:12	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:11	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:12	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:11	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:12	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	01/03/12 13:11	mfm
Iron, total	M200.7 ICP	0.37			mg/L	0.02	0.05	01/06/12 11:12	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 3:01	pmc
Lead, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	01/07/12 2:50	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 13:11	mfm
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	01/06/12 11:12	jjc
Magnesium, dissolved	M200.7 ICP	3.6			mg/L	0.2	1	01/03/12 13:11	mfm
Magnesium, total	M200.7 ICP	3.9			mg/L	0.2	1	01/06/12 11:12	jjc
Manganese, dissolved	M200.7 ICP	0.022	B		mg/L	0.005	0.03	01/03/12 13:11	mfm
Manganese, total	M200.7 ICP	0.055			mg/L	0.005	0.03	01/06/12 11:12	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 17:54	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:46	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:11	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:12	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:11	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:12	jjc
Potassium, dissolved	M200.7 ICP	3.9			mg/L	0.3	2	01/03/12 13:11	mfm

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-7

ACZ Sample ID: ***L92526-08***
Date Sampled: *12/21/11 14:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	3.9			mg/L	0.3	2	01/06/12 11:12	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:11	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:12	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	01/10/12 3:01	pmc
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	01/06/12 1:55	msh
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 3:01	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/06/12 1:55	msh
Sodium, dissolved	M200.7 ICP	10.4			mg/L	0.3	2	01/03/12 13:11	mfm
Sodium, total	M200.7 ICP	10.5			mg/L	0.3	2	01/06/12 11:12	jjc
Strontium, dissolved	M200.7 ICP	0.17			mg/L	0.01	0.05	01/03/12 13:11	mfm
Strontium, total	M200.7 ICP	0.18			mg/L	0.01	0.05	01/06/12 11:12	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 3:01	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:55	msh
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 13:11	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 11:12	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:11	mfm
Titanium. total	M200.7 ICP	0.019	B		mg/L	0.005	0.03	01/06/12 11:12	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 3:01	pmc
Uranium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:55	msh
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:11	mfm
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	01/06/12 11:12	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:11	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:12	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-7

ACZ Sample ID: ***L92526-08***
Date Sampled: *12/21/11 14:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		67			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		67			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			01/18/12 0:00	calc
Sum of Anions		1.9			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		1.9			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	12/30/11 11:54	abm
Chloride	SM4500Cl-E	3	B	*	mg/L	1	5	01/05/12 16:43	lhb
Conductivity @25C	SM2510B	190			umhos/cm	1	10	12/30/11 20:02	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.009	B	*	mg/L	0.003	0.01	12/29/11 23:43	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.009	B	*	mg/L	0.003	0.01	12/30/11 17:06	jlf
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	01/04/12 15:04	abm
Hardness as CaCO3	SM2340B - Calculation	69			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.37			mg/L	0.02	0.1	01/06/12 22:57	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/09/12 17:51	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.2	B	*	mg/L	0.1	0.5	01/04/12 23:50	pjb
pH (lab)	SM4500H+ B								
pH		8.2	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		20.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.09	B		mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.03	B	*	mg/L	0.01	0.05	01/06/12 10:14	mpb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.03	BH	*	mg/L	0.01	0.05	12/29/11 21:35	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.05			mg/L	0.01	0.05	01/06/12 14:21	mpb
Residue, Filterable (TDS) @180C	SM2540C	160	H	*	mg/L	10	20	01/03/12 15:49	mla
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	01/04/12 16:53	mla
Residue, Total (TS) @ 105C	SM2540B	180	H	*	mg/L	10	20	01/11/12 15:55	abm
Sulfate	D516-02 - Turbidimetric	24			mg/L	1	5	01/05/12 11:50	ccp
TDS (calculated)	Calculation	107			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.50						01/18/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-8

ACZ Sample ID: ***L92526-09***
Date Sampled: *12/21/11 13:00*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 14:01	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 15:26	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/03/12 11:05	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/05/12 19:57	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/06/12 11:28	mpb
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 13:40	scp
Total Hot Plate Digestion	M200.2 ICP							01/05/12 13:39	jjc

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-8

ACZ Sample ID: L92526-09
Date Sampled: 12/21/11 13:00
Date Received: 12/29/11
Sample Matrix: Surface Water

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.05	B		mg/L	0.03	0.2	01/03/12 13:21	mfm
Aluminum, total	M200.7 ICP	1.24			mg/L	0.03	0.2	01/06/12 11:16	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	01/10/12 3:04	pmc
Antimony, total	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	01/06/12 1:59	msh
Arsenic, dissolved	M200.8 ICP-MS	0.0039			mg/L	0.0005	0.002	01/10/12 3:04	pmc
Arsenic, total	M200.8 ICP-MS	0.0041			mg/L	0.0005	0.002	01/06/12 1:59	msh
Barium, dissolved	M200.7 ICP	0.085			mg/L	0.003	0.02	01/03/12 13:21	mfm
Barium, total	M200.7 ICP	0.110			mg/L	0.003	0.02	01/06/12 11:16	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:21	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:16	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 13:21	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 11:16	jjc
Boron, dissolved	M200.7 ICP	0.04	B		mg/L	0.01	0.05	01/03/12 13:21	mfm
Boron, total	M200.7 ICP		U	*	mg/L	0.01	0.05	01/06/12 11:16	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 3:04	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:59	msh
Calcium, dissolved	M200.7 ICP	26.3			mg/L	0.2	1	01/03/12 13:21	mfm
Calcium, total	M200.7 ICP	29.1			mg/L	0.2	1	01/06/12 11:16	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:21	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:16	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:21	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:16	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:21	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:16	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:21	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:16	jjc
Iron, dissolved	M200.7 ICP	0.06			mg/L	0.02	0.05	01/03/12 13:21	mfm
Iron, total	M200.7 ICP	0.67			mg/L	0.02	0.05	01/06/12 11:16	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 3:04	pmc
Lead, total	M200.8 ICP-MS	0.0006			mg/L	0.0001	0.0005	01/07/12 2:51	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 13:21	mfm
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	01/06/12 11:16	jjc
Magnesium, dissolved	M200.7 ICP	5.1			mg/L	0.2	1	01/03/12 13:21	mfm
Magnesium, total	M200.7 ICP	5.6			mg/L	0.2	1	01/06/12 11:16	jjc
Manganese, dissolved	M200.7 ICP	0.009	B		mg/L	0.005	0.03	01/03/12 13:21	mfm
Manganese, total	M200.7 ICP	0.047			mg/L	0.005	0.03	01/06/12 11:16	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 17:57	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:49	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:21	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:16	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:21	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:16	jjc
Potassium, dissolved	M200.7 ICP	5.8			mg/L	0.3	2	01/03/12 13:21	mfm

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-8

ACZ Sample ID: ***L92526-09***
Date Sampled: *12/21/11 13:00*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	6.4			mg/L	0.3	2	01/06/12 11:16	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:21	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:16	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	01/10/12 3:04	pmc
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	01/06/12 1:59	msh
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 3:04	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/06/12 1:59	msh
Sodium, dissolved	M200.7 ICP	17.6			mg/L	0.3	2	01/03/12 13:21	mfm
Sodium, total	M200.7 ICP	16.0			mg/L	0.3	2	01/06/12 11:16	jjc
Strontium, dissolved	M200.7 ICP	0.19			mg/L	0.01	0.05	01/03/12 13:21	mfm
Strontium, total	M200.7 ICP	0.21			mg/L	0.01	0.05	01/06/12 11:16	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 3:04	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 1:59	msh
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 13:21	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 11:16	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:21	mfm
Titanium, total	M200.7 ICP	0.037			mg/L	0.005	0.03	01/06/12 11:16	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	01/10/12 3:04	pmc
Uranium, total	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	01/06/12 1:59	msh
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:21	mfm
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	01/06/12 11:16	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:21	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:16	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-8

ACZ Sample ID: ***L92526-09***
Date Sampled: *12/21/11 13:00*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		77			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		77			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.9			%			01/18/12 0:00	calc
Sum of Anions		2.6			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		2.7			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	12/30/11 12:00	abm
Chloride	SM4500Cl-E	12		*	mg/L	1	5	01/05/12 16:43	lhb
Conductivity @25C	SM2510B	277			umhos/cm	1	10	12/30/11 20:10	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	12/29/11 23:44	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	12/30/11 17:07	jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	01/04/12 15:08	abm
Hardness as CaCO3	SM2340B - Calculation	87			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	2.09			mg/L	0.02	0.1	01/06/12 22:58	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05	B	*	mg/L	0.05	0.5	01/09/12 17:53	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.5	B	*	mg/L	0.1	0.5	01/04/12 23:51	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		20.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.28			mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.09		*	mg/L	0.01	0.05	01/06/12 10:15	mpb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.09	H	*	mg/L	0.01	0.05	12/29/11 21:36	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.15			mg/L	0.01	0.05	01/06/12 14:22	mpb
Residue, Filterable (TDS) @180C	SM2540C	210	H	*	mg/L	10	20	01/03/12 15:50	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	12	BH	*	mg/L	5	20	01/04/12 16:55	mla
Residue, Total (TS) @ 105C	SM2540B	280	H	*	mg/L	10	20	01/11/12 15:56	abm
Sulfate	D516-02 - Turbidimetric	35			mg/L	1	5	01/05/12 11:50	ccp
TDS (calculated)	Calculation	149			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.41						01/18/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-9

ACZ Sample ID: ***L92526-10***
Date Sampled: *12/21/11 15:19*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 14:08	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 15:34	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/09/12 11:43	mpb
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/05/12 20:02	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/06/12 11:35	mpb
Total Hot Plate Digestion	M200.2 ICP-MS							01/03/12 13:56	scp
Total Hot Plate Digestion	M200.2 ICP							01/05/12 13:51	jjc

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-9

ACZ Sample ID: ***L92526-10***
Date Sampled: *12/21/11 15:19*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.03	B		mg/L	0.03	0.2	01/03/12 13:24	mfm
Aluminum, total	M200.7 ICP	0.69			mg/L	0.03	0.2	01/06/12 11:19	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0011	B		mg/L	0.0004	0.002	01/10/12 3:07	pmc
Antimony, total	M200.8 ICP-MS	0.0010	B		mg/L	0.0004	0.002	01/06/12 2:03	msh
Arsenic, dissolved	M200.8 ICP-MS	0.0057			mg/L	0.0005	0.002	01/16/12 23:05	pmc
Arsenic, total	M200.8 ICP-MS	0.0053			mg/L	0.0005	0.002	01/06/12 2:03	msh
Barium, dissolved	M200.7 ICP	0.135			mg/L	0.003	0.02	01/03/12 13:24	mfm
Barium, total	M200.7 ICP	0.154			mg/L	0.003	0.02	01/06/12 11:19	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:24	mfm
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:19	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 13:24	mfm
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	01/06/12 11:19	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:24	mfm
Boron, total	M200.7 ICP		U	*	mg/L	0.01	0.05	01/06/12 11:19	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 3:07	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 2:03	msh
Calcium, dissolved	M200.7 ICP	36.5			mg/L	0.2	1	01/03/12 13:24	mfm
Calcium, total	M200.7 ICP	37.9			mg/L	0.2	1	01/06/12 11:19	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:24	mfm
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:19	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:24	mfm
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:19	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:24	mfm
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:19	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:24	mfm
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:19	jjc
Iron, dissolved	M200.7 ICP	0.15			mg/L	0.02	0.05	01/03/12 13:24	mfm
Iron, total	M200.7 ICP	0.65			mg/L	0.02	0.05	01/06/12 11:19	jjc
Lead, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/10/12 3:07	pmc
Lead, total	M200.8 ICP-MS	0.0006			mg/L	0.0001	0.0005	01/07/12 2:53	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 13:24	mfm
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	01/06/12 11:19	jjc
Magnesium, dissolved	M200.7 ICP	5.3			mg/L	0.2	1	01/03/12 13:24	mfm
Magnesium, total	M200.7 ICP	5.8			mg/L	0.2	1	01/06/12 11:19	jjc
Manganese, dissolved	M200.7 ICP	0.148			mg/L	0.005	0.03	01/03/12 13:24	mfm
Manganese, total	M200.7 ICP	0.187			mg/L	0.005	0.03	01/06/12 11:19	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 17:59	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 22:51	mfm
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:24	mfm
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:19	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:24	mfm
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:19	jjc
Potassium, dissolved	M200.7 ICP	8.1			mg/L	0.3	2	01/03/12 13:24	mfm

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-9

ACZ Sample ID: ***L92526-10***
Date Sampled: *12/21/11 15:19*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	8.5			mg/L	0.3	2	01/06/12 11:19	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 13:24	mfm
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	01/06/12 11:19	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	01/10/12 3:07	pmc
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	01/06/12 2:03	msh
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/10/12 3:07	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/06/12 2:03	msh
Sodium, dissolved	M200.7 ICP	16.1			mg/L	0.3	2	01/03/12 13:24	mfm
Sodium, total	M200.7 ICP	16.6			mg/L	0.3	2	01/06/12 11:19	jjc
Strontium, dissolved	M200.7 ICP	0.24			mg/L	0.01	0.05	01/03/12 13:24	mfm
Strontium, total	M200.7 ICP	0.26			mg/L	0.01	0.05	01/06/12 11:19	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/10/12 3:07	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/06/12 2:03	msh
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 13:24	mfm
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	01/06/12 11:19	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 13:24	mfm
Titanium. total	M200.7 ICP	0.026	B		mg/L	0.005	0.03	01/06/12 11:19	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/10/12 3:07	pmc
Uranium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/06/12 2:03	msh
Vanadium, dissolved	M200.7 ICP	0.005	B		mg/L	0.005	0.03	01/03/12 13:24	mfm
Vanadium, total	M200.7 ICP	0.007	B		mg/L	0.005	0.03	01/06/12 11:19	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 13:24	mfm
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	01/06/12 11:19	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-9

ACZ Sample ID: ***L92526-10***
Date Sampled: *12/21/11 15:19*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		88			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		88			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.9			%			01/18/12 0:00	calc
Sum of Anions		2.9			meq/L	0.1	0.5	01/18/12 0:00	calc
Sum of Cations		3.2			meq/L	0.1	0.5	01/18/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	12/30/11 12:06	abm
Chloride	SM4500Cl-E	10		*	mg/L	1	5	01/05/12 16:43	lhb
Conductivity @25C	SM2510B	320			umhos/cm	1	10	12/30/11 20:19	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	12/29/11 23:45	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	12/30/11 17:08	jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	01/04/12 15:11	abm
Hardness as CaCO3	SM2340B - Calculation	113			mg/L	1	7	01/18/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	3.85			mg/L	0.02	0.1	01/06/12 22:59	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	0.22	B	*	mg/L	0.05	0.5	01/09/12 17:54	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.7		*	mg/L	0.1	0.5	01/10/12 12:35	mpb
pH (lab)	SM4500H+ B								
pH		7.9	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	1.30			mg/L	0.03	0.15	01/18/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.49		*	mg/L	0.01	0.05	01/06/12 10:16	mpb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.42	H	*	mg/L	0.01	0.05	12/29/11 21:39	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.58			mg/L	0.01	0.05	01/06/12 14:26	mpb
Residue, Filterable (TDS) @180C	SM2540C	250	H	*	mg/L	10	20	01/03/12 15:51	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	19	BH	*	mg/L	5	20	01/04/12 16:56	mla
Residue, Total (TS) @ 105C	SM2540B	310	H	*	mg/L	10	20	01/11/12 15:56	abm
Sulfate	D516-02 - Turbidimetric	39			mg/L	5	30	01/05/12 11:57	ccp
TDS (calculated)	Calculation	169			mg/L	10	50	01/18/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.48						01/18/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-1

ACZ Sample ID: ***L92526-01***
Date Sampled: *12/18/11 8:56*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:03
Analysis Date: 01/05/12 10:54

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	82.7		1	*	%	70	130

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-1

ACZ Sample ID: ***L92526-01***
Date Sampled: *12/18/11 8:56*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:31

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1		mg/L	2	10

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ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2

ACZ Sample ID: ***L92526-02***
Date Sampled: *12/18/11 10:02*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:04
Analysis Date: 01/05/12 11:50

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		.3	JH	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	82.2		1	*	%	70	130

ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2

ACZ Sample ID: L92526-02
Date Sampled: 12/18/11 10:02
Date Received: 12/29/11
Sample Matrix: Surface Water

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:33

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1		mg/L	2	10

ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2A

ACZ Sample ID: ***L92526-03***
Date Sampled: *12/18/11 10:20*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:05
Analysis Date: 01/05/12 12:16

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	81.9		1	*	%	70	130

ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-2A

ACZ Sample ID: L92526-03
Date Sampled: 12/18/11 10:20
Date Received: 12/29/11
Sample Matrix: Surface Water

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:34

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1		mg/L	2	10

ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-3

ACZ Sample ID: ***L92526-04***
Date Sampled: *12/21/11 11:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:06
Analysis Date: 01/05/12 12:42

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	79.7		1	*	%	70	130

ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-3

ACZ Sample ID: L92526-04
Date Sampled: 12/21/11 11:40
Date Received: 12/29/11
Sample Matrix: Surface Water

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:36

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.01		mg/L	2.02	10.1

ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4

ACZ Sample ID: ***L92526-05***
Date Sampled: *12/21/11 12:10*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:07
Analysis Date: 01/05/12 13:08

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1.01	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	82.7		1.01	*	%	70	130

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4

ACZ Sample ID: ***L92526-05***
Date Sampled: *12/21/11 12:10*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:37

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.01		mg/L	2.02	10.1

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4A

ACZ Sample ID: ***L92526-06***
Date Sampled: *12/18/11 10:50*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:08
Analysis Date: 01/05/12 13:34

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	83		1	*	%	70	130

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-4A

ACZ Sample ID: ***L92526-06***
Date Sampled: *12/18/11 10:50*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:39

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1		mg/L	2	10

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-6

ACZ Sample ID: ***L92526-07***
Date Sampled: *12/21/11 14:01*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:09
Analysis Date: 01/05/12 14:01

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1.01	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	78.6		1.01	*	%	70	130

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-6

ACZ Sample ID: ***L92526-07***
Date Sampled: *12/21/11 14:01*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:41

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.01	*	mg/L	2.02	10.1

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-7

ACZ Sample ID: ***L92526-08***
Date Sampled: *12/21/11 14:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:10
Analysis Date: 01/06/12 10:55

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	82.8		1	*	%	70	130

ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-7

ACZ Sample ID: ***L92526-08***
Date Sampled: *12/21/11 14:40*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:42

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.01		mg/L	2.02	10.1

ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-8

ACZ Sample ID: ***L92526-09***
Date Sampled: *12/21/11 13:00*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:11
Analysis Date: 01/06/12 11:21

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	78.7		1	*	%	70	130

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-8

ACZ Sample ID: L92526-09
Date Sampled: 12/21/11 13:00
Date Received: 12/29/11
Sample Matrix: Surface Water

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:44

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.01		mg/L	2.02	10.1

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-9

ACZ Sample ID: ***L92526-10***
Date Sampled: *12/21/11 15:19*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG316208
Analyst: pml
Extract Date: 01/03/11 13:12
Analysis Date: 01/06/12 11:48

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		.2	JH	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	70.3		1	*	%	70	130

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-9

ACZ Sample ID: ***L92526-10***
Date Sampled: *12/21/11 15:19*
Date Received: *12/29/11*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG316476
Analyst: LWT
Extract Date:
Analysis Date: 01/10/12 7:45

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.02		mg/L	2.04	10.2

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of Interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
LCL	Lower Control Limit
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
UCL	Upper Control Limit
Sample	Value of the Sample of Interest

QC Sample Types

SURR	Surrogate	*LFM*	Laboratory Fortified Matrix
INTS	Internal Standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
LCSS	Laboratory Control Sample - Soil	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSW	Laboratory Control Sample - Water	*PBS*	Prep Blank - Soil
LFB	Laboratory Fortified Blank	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
E	Analyte concentration is estimated due to result exceeding calibration range.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
J	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
L	Target analyte response was below the laboratory defined negative threshold.
M	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
V	High blank data accepted because sample concentration is 10 times higher than blank concentration.
X	Quality control sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3)	EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for inorganic analyses are reported on a dry weight basis.
(3)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

REPIN11.10.10.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L92526***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L92526-01	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.
			M3520	Q9	Insufficient sample received to meet method QC requirements.
L92526-02	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.
			M3520	Q9	Insufficient sample received to meet method QC requirements.
L92526-03	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.
			M3520	Q9	Insufficient sample received to meet method QC requirements.
L92526-04	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.
			M3520	Q9	Insufficient sample received to meet method QC requirements.
L92526-05	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.
			M3520	Q9	Insufficient sample received to meet method QC requirements.
L92526-06	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.
			M3520	Q9	Insufficient sample received to meet method QC requirements.
L92526-07	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316476		1664A - Gravimetric	Q5	Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.
			M3520	Q9	Insufficient sample received to meet method QC requirements.
L92526-08	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.
			M3520	Q9	Insufficient sample received to meet method QC requirements.
L92526-09	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.

REPAD.15.06.05.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L92526***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
			M3520	Q9	Insufficient sample received to meet method QC requirements.
L92526-10	WG316208	"All Compounds"	M8015D GC/FID	H3	Sample was received and analyzed past holding time.
			M8015D GC/FID	Q9	Insufficient sample received to meet method QC requirements.
	WG316086		M3520	H3	Sample was received and analyzed past holding time.
			M3520	Q9	Insufficient sample received to meet method QC requirements.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Certification Qualifiers

Tahoe Resources, Inc. ACZ Project ID: ***L92526***

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP

REPAD.05.06.05.01

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
El Escobal

ACZ Project ID: L92526
Date Received: 12/29/2011 09:51
Received By: ksj
Date Printed: 12/29/2011

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?		X	
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?		X	
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

Some parameters were received past hold time.

Contact (For any discrepancies, the client must be contacted)

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
2324, 2536		12.2, 10.9	15, 15
2600		10.9	15
2278		13.8	15
2696		11.5	15

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

REPAD.03.11.00.01

L92526 Chain of Custody

L92526

ACZ Laboratories, Inc. CHAIN of CUSTODY
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:
Name: Miguel Berganza
Company: Tahoe Resources
E-mail: mberganza@sanrafael.com.gt
Address: Km 8.6 Centro corporativo muxbal, torre oeste apto. 503 y 504
Telephone: (502) 5951-5248

Copy of Report to:
Name: Charlie Muerhoff
Company: Tahoe Resources
E-mail: cmuerhoff@tahoeresourcesinc.com
Telephone:

Invoice to:
Name: Miguel Berganza
Company: Tahoe Resources
E-mail: mberganza@sanrafael.com.gt
Address: Km 8.6 Centro corporativo muxbal, torre oeste apto. 503 y 504
Telephone: (502) 5951-5248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES / NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION
Quote #: Water Quality
Project/PO #: El Escobal
Reporting state for compliance testing:
Sampler's Name: Environmental department MSR
Are any samples NRC licensable material?

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE	TIME	Matrix	# of Containers	SW
SW - 1	18/12/2011	08:56	SW	9	x
SW - 2	18/12/2011	10:02	SW	9	x
SW - 2A	18/12/2011	10:20	SW	9	x
SW - 3	21/12/2011	11:40	SW	9	x
SW - 4	21/12/2011	12:10	SW	9	x
SW - 4A	18/12/2011	10:50	SW	9	x
SW - 6	21/12/2011	14:01	SW	9	x
SW - 7	21/12/2011	14:40	SW	9	x
SW - 8	21/12/2011	13:00	SW	9	x
SW - 9	21/12/2011	15:19	SW	9	x

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE TIME	RECEIVED BY	DATE TIME
Reynold Perez	22/12/11 12:35	Luis Santos	27/12 12:55
			12291 9:51

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

Minera San Rafael

COMMERCIAL INVOICE

COMERCIAL INVOICE No.
01-E

DATE: December/27/2011	AWB No.

SHIPPER	CONSIGNEE
Tahoe Resources, Inc. Km. 8.6 Muxbal Centro corporativo Muxbal. Torre Oeste Apto. 503 y 504 GUATEMALA CITY, GUATEMALA	ACZ Laboratories, Inc. 2773 Downhill Drive, Steamboat Springs, Colorado, USA

CODE	UNITS	DESCRIPTION OF GOODS	WEIGHT	UNIT VALUE	TOTAL VALUE
*****	1	Water samples		USD$5.00	USD$ 5.00
TOTAL					USD$ 5.00

REASON FOR EXPORTATION: for analysis

COUNTRY OF ORIGIN OF THE ABOVE DESCRIBED GOODS: GUATEMALA

Miguel Berganza **SIGNATURE OF SHIPER/EXPORTER**	December/27/2011 **DATE OF EXPORTATION:**

Guatemala December 27, 2010

To whom it may concern:

Minera San Rafael, S.A is sending one case with samples of water, which is not contaminated, that are going to be analyzed by the ACZ Laboratories in Steamboat Springs, Colorado, USA.

If you have any question or doubt, please contact Miguel Berganza at Minera San Rafael, S.A. (502 – 5951-5248) or Tony Antalek at ACZ Laboratories (970-879-6590).

Sincerely yours,

Miguel Berganza
Evironment Department.
Proyecto Escobal, S. A.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 05, 2012

Report to:
Miguel Berganza
Tahoe Resources, Inc.
Km 8.6 carrtera Antigua a El Salvador Centro cor
Torre Oeste.Apto 503y504 Guatemala, GT

Bill to:
Miguel Berganza
Tahoe Resources, Inc.
5190 Neil Road #310
Reno, NV 89502

cc: Charlie Muerhoff

Project ID: Escobal Project
ACZ Project ID: L93703

Miguel Berganza:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 22, 2012. This project has been assigned to ACZ's project number, L93703. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L93703. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 05, 2012. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

REPAD.01.06.05.02

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW1

ACZ Sample ID: ***L93703-01***
Date Sampled: *03/10/12 15:28*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H					04/02/12 12:16	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/24/12 20:36	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:33	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:03	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:01	tod
Total Hot Plate Digestion	M200.2 ICP							03/27/12 17:35	jjc
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 14:48	mfm

REPIN.02.06.05.01

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW1

ACZ Sample ID: ***L93703-01***
Date Sampled: *03/10/12 15:28*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:46	jjc
Aluminum, total	M200.7 ICP	0.05	B	*	mg/L	0.03	0.2	03/28/12 13:53	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0006	B		mg/L	0.0004	0.002	03/30/12 4:46	pmc
Antimony, total	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	03/27/12 18:20	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0040			mg/L	0.0005	0.002	03/30/12 4:46	pmc
Arsenic, total	M200.8 ICP-MS	0.0050			mg/L	0.0005	0.002	03/28/12 21:55	pmc
Barium, dissolved	M200.7 ICP	0.219			mg/L	0.003	0.02	03/23/12 20:46	jjc
Barium, total	M200.7 ICP	0.225			mg/L	0.003	0.02	03/28/12 13:53	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:46	jjc
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:53	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:46	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 13:53	jjc
Boron, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 20:46	jjc
Boron, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:53	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 4:46	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:20	pmc
Calcium, dissolved	M200.7 ICP	69.2		*	mg/L	0.2	1	03/23/12 20:46	jjc
Calcium, total	M200.7 ICP	71.5			mg/L	0.2	1	03/28/12 13:53	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:46	jjc
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:53	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:46	jjc
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:53	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:46	jjc
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:53	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:46	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 13:53	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 20:46	jjc
Iron, total	M200.7 ICP	0.04	B	*	mg/L	0.02	0.05	03/28/12 13:53	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 4:46	pmc
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:20	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 20:46	jjc
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 13:53	jjc
Magnesium, dissolved	M200.7 ICP	5.2			mg/L	0.2	1	03/23/12 20:46	jjc
Magnesium, total	M200.7 ICP	5.4			mg/L	0.2	1	03/28/12 13:53	jjc
Manganese, dissolved	M200.7 ICP	0.029	B		mg/L	0.005	0.03	03/23/12 20:46	jjc
Manganese, total	M200.7 ICP	0.027	B		mg/L	0.005	0.03	03/28/12 13:53	jjc
Mercury, dissolved	M245.1 CVAA	0.0003	B		mg/L	0.0002	0.001	04/02/12 23:33	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 0:03	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:46	jjc
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:53	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:46	jjc
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:53	jjc
Potassium, dissolved	M200.7 ICP	4.9			mg/L	0.3	2	03/23/12 20:46	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW1

ACZ Sample ID: ***L93703-01***
Date Sampled: *03/10/12 15:28*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	4.7			mg/L	0.3	2	03/28/12 13:53	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:46	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 13:53	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 4:46	pmc
Selenium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/27/12 18:20	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 4:46	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 18:20	pmc
Sodium, dissolved	M200.7 ICP	9.8			mg/L	0.3	2	03/23/12 20:46	jjc
Sodium, total	M200.7 ICP	9.4			mg/L	0.3	2	03/28/12 13:53	jjc
Strontium, dissolved	M200.7 ICP	0.26		*	mg/L	0.01	0.05	03/23/12 20:46	jjc
Strontium, total	M200.7 ICP	0.27			mg/L	0.01	0.05	03/28/12 13:53	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 4:46	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:20	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:46	jjc
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 13:53	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:46	jjc
Titanium. total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 13:53	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/30/12 4:46	pmc
Uranium, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/27/12 18:20	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:46	jjc
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 13:53	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:46	jjc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:53	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW1

ACZ Sample ID: ***L93703-01***
Date Sampled: *03/10/12 15:28*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		178			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3		3	B		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		181			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			04/05/12 0:00	calc
Sum of Anions		4.5			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		4.5			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	03/26/12 11:11	las
Chloride	SM4500Cl-E	4	B	*	mg/L	1	5	03/30/12 9:04	ocp
Conductivity @25C	SM2510B	412			umhos/cm	1	10	03/23/12 20:27	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.018	H	*	mg/L	0.003	0.01	04/03/12 13:00	lhb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 19:38	mpb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/27/12 14:38	abm
Hardness as CaCO3	SM2340B - Calculation	194			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.65		*	mg/L	0.02	0.1	03/31/12 14:28	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 17:56	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.2	B	*	mg/L	0.1	0.5	04/03/12 23:39	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		20.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.16			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.05		*	mg/L	0.01	0.05	03/30/12 23:38	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.05	BH	*	mg/L	0.01	0.05	03/22/12 23:40	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.05		*	mg/L	0.01	0.05	03/31/12 0:12	pjb
Residue, Filterable (TDS) @180C	SM2540C	290	H	*	mg/L	10	20	03/22/12 16:15	abm
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	03/22/12 14:52	abm
Residue, Total (TS) @ 105C	SM2540B	280	H	*	mg/L	10	20	03/22/12 13:32	mla
Sulfate	D516-02 - Turbidimetric	35		*	mg/L	1	5	04/02/12 8:57	ocp
TDS (calculated)	Calculation	237			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.22						04/05/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2

ACZ Sample ID: ***L93703-02***
Date Sampled: *03/10/12 13:55*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 16:40	lhb
Cyanide, WAD	SM4500-CN I- distillation							03/24/12 23:29	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:34	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:04	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:01	tod
Total Hot Plate Digestion	M200.2 ICP-MS			*				03/26/12 15:01	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 17:49	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2

ACZ Sample ID: ***L93703-02***
Date Sampled: *03/10/12 13:55*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.38			mg/L	0.03	0.2	03/23/12 20:49	jjc
Aluminum, total	M200.7 ICP	26.20		*	mg/L	0.03	0.2	03/28/12 13:56	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0068			mg/L	0.0004	0.002	03/30/12 4:49	pmc
Antimony, total	M200.8 ICP-MS	0.0068			mg/L	0.0008	0.004	03/27/12 18:29	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0071			mg/L	0.0005	0.002	03/30/12 4:49	pmc
Arsenic, total	M200.8 ICP-MS	0.018			mg/L	0.001	0.004	03/28/12 21:57	pmc
Barium, dissolved	M200.7 ICP	0.176			mg/L	0.003	0.02	03/23/12 20:49	jjc
Barium, total	M200.7 ICP	0.370			mg/L	0.003	0.02	03/28/12 13:56	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:49	jjc
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:56	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:49	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 13:56	jjc
Boron, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/23/12 20:49	jjc
Boron, total	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/28/12 13:56	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 4:49	pmc
Cadmium, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0002	0.001	03/27/12 18:29	pmc
Calcium, dissolved	M200.7 ICP	63.1		*	mg/L	0.2	1	03/23/12 20:49	jjc
Calcium, total	M200.7 ICP	68.2			mg/L	0.2	1	03/28/12 13:56	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:49	jjc
Chromium, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/28/12 13:56	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:49	jjc
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:56	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:49	jjc
Copper, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/28/12 13:56	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:49	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 13:56	jjc
Iron, dissolved	M200.7 ICP	0.21			mg/L	0.02	0.05	03/23/12 20:49	jjc
Iron, total	M200.7 ICP	15.30		*	mg/L	0.02	0.05	03/28/12 13:56	jjc
Lead, dissolved	M200.8 ICP-MS	0.0013			mg/L	0.0001	0.0005	03/30/12 4:49	pmc
Lead, total	M200.8 ICP-MS	0.0146			mg/L	0.0002	0.001	03/27/12 18:29	pmc
Lithium, dissolved	M200.7 ICP	0.04	B		mg/L	0.02	0.1	03/23/12 20:49	jjc
Lithium, total	M200.7 ICP	0.05	B		mg/L	0.02	0.1	03/28/12 13:56	jjc
Magnesium, dissolved	M200.7 ICP	7.4			mg/L	0.2	1	03/23/12 20:49	jjc
Magnesium, total	M200.7 ICP	9.4			mg/L	0.2	1	03/28/12 13:56	jjc
Manganese, dissolved	M200.7 ICP	0.060			mg/L	0.005	0.03	03/23/12 20:49	jjc
Manganese, total	M200.7 ICP	0.722			mg/L	0.005	0.03	03/28/12 13:56	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:35	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 0:05	erf
Molybdenum, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 20:49	jjc
Molybdenum, total	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/28/12 13:56	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:49	jjc
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:56	jjc
Potassium, dissolved	M200.7 ICP	6.2			mg/L	0.3	2	03/23/12 20:49	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2

ACZ Sample ID: ***L93703-02***
Date Sampled: *03/10/12 13:55*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	8.4			mg/L	0.3	2	03/28/12 13:56	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:49	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 13:56	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0003			mg/L	0.0001	0.0003	03/30/12 4:49	pmc
Selenium, total	M200.8 ICP-MS	0.0004	B		mg/L	0.0002	0.0005	03/27/12 18:29	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 4:49	pmc
Silver, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/27/12 18:29	pmc
Sodium, dissolved	M200.7 ICP	28.3			mg/L	0.3	2	03/23/12 20:49	jjc
Sodium, total	M200.7 ICP	28.4			mg/L	0.3	2	03/28/12 13:56	jjc
Strontium, dissolved	M200.7 ICP	0.50		*	mg/L	0.01	0.05	03/23/12 20:49	jjc
Strontium, total	M200.7 ICP	0.54			mg/L	0.01	0.05	03/28/12 13:56	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 4:49	pmc
Thallium, total	M200.8 ICP-MS	0.0004	B		mg/L	0.0002	0.001	03/27/12 18:29	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:49	jjc
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 13:56	jjc
Titanium, dissolved	M200.7 ICP	0.012	B		mg/L	0.005	0.03	03/23/12 20:49	jjc
Titanium, total	M200.7 ICP	0.704			mg/L	0.005	0.03	03/28/12 13:56	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0005			mg/L	0.0001	0.0005	03/30/12 4:49	pmc
Uranium, total	M200.8 ICP-MS	0.0009	B		mg/L	0.0002	0.001	03/27/12 18:29	pmc
Vanadium, dissolved	M200.7 ICP	0.024	B		mg/L	0.005	0.03	03/23/12 20:49	jjc
Vanadium, total	M200.7 ICP	0.056			mg/L	0.005	0.03	03/28/12 13:56	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:49	jjc
Zinc, total	M200.7 ICP	0.05	B		mg/L	0.01	0.05	03/28/12 13:56	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2

ACZ Sample ID: ***L93703-02***
Date Sampled: *03/10/12 13:55*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		71			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		71			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.8			%			04/05/12 0:00	calc
Sum of Anions		5			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		5.4			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4	60		*	mg/L	10	20	03/26/12 11:13	las
Chloride	SM4500Cl-E	2	B	*	mg/L	1	5	03/30/12 9:04	ccp
Conductivity @25C	SM2510B	541			umhos/cm	1	10	03/23/12 20:35	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 17:20	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.016		*	mg/L	0.003	0.01	03/23/12 19:39	mpb
Fluoride	SM4500F-C	0.8		*	mg/L	0.1	0.5	03/27/12 14:41	abm
Hardness as CaCO3	SM2340B - Calculation	188			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	5.72		*	mg/L	0.06	0.3	03/31/12 15:31	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	2.66		*	mg/L	0.05	0.5	04/02/12 17:57	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	2.3		*	mg/L	0.1	0.5	04/03/12 23:42	pjb
pH (lab)	SM4500H+ B								
pH		8.2	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		20.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.03	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	03/30/12 23:41	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.01	BH	*	mg/L	0.01	0.05	03/22/12 23:41	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.06		*	mg/L	0.01	0.05	03/31/12 0:14	pjb
Residue, Filterable (TDS) @180C	SM2540C	400	H	*	mg/L	10	20	03/22/12 16:15	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	560	H	*	mg/L	10	40	03/22/12 14:53	abm
Residue, Total (TS) @ 105C	SM2540B	960	H	*	mg/L	10	20	03/22/12 13:33	mla
Sulfate	D516-02 - Turbidimetric	164		*	mg/L	5	30	04/02/12 9:06	ccp
TDS (calculated)	Calculation	318			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.26						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2A

ACZ Sample ID: ***L93703-03***
Date Sampled: *03/10/12 13:25*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 16:55	lhb
Cyanide, WAD	SM4500-CN I- distillation		H					03/25/12 2:22	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:34	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:04	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:01	tod
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 15:14	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 18:02	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2A

ACZ Sample ID: ***L93703-03***
Date Sampled: *03/10/12 13:25*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:58	jjc
Aluminum, total	M200.7 ICP	0.22		*	mg/L	0.03	0.2	03/28/12 13:59	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0035			mg/L	0.0004	0.002	03/30/12 4:52	pmc
Antimony, total	M200.8 ICP-MS	0.0036			mg/L	0.0004	0.002	03/27/12 18:32	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0070			mg/L	0.0005	0.002	03/30/12 4:52	pmc
Arsenic, total	M200.8 ICP-MS	0.0082			mg/L	0.0005	0.002	03/28/12 21:58	pmc
Barium, dissolved	M200.7 ICP	0.146			mg/L	0.003	0.02	03/23/12 20:58	jjc
Barium, total	M200.7 ICP	0.162			mg/L	0.003	0.02	03/28/12 13:59	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:58	jjc
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:59	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:58	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 13:59	jjc
Boron, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/23/12 20:58	jjc
Boron, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/28/12 13:59	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 4:52	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:32	pmc
Calcium, dissolved	M200.7 ICP	82.0		*	mg/L	0.2	1	03/23/12 20:58	jjc
Calcium, total	M200.7 ICP	88.6			mg/L	0.2	1	03/28/12 13:59	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:58	jjc
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:59	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:58	jjc
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:59	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:58	jjc
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:59	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:58	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 13:59	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 20:58	jjc
Iron, total	M200.7 ICP	0.12			mg/L	0.02	0.05	03/28/12 13:59	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 4:52	pmc
Lead, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/27/12 18:32	pmc
Lithium, dissolved	M200.7 ICP	0.04	B		mg/L	0.02	0.1	03/23/12 20:58	jjc
Lithium, total	M200.7 ICP	0.04	B		mg/L	0.02	0.1	03/28/12 13:59	jjc
Magnesium, dissolved	M200.7 ICP	11.3			mg/L	0.2	1	03/23/12 20:58	jjc
Magnesium, total	M200.7 ICP	12.4			mg/L	0.2	1	03/28/12 13:59	jjc
Manganese, dissolved	M200.7 ICP	0.021	B		mg/L	0.005	0.03	03/23/12 20:58	jjc
Manganese, total	M200.7 ICP	0.033			mg/L	0.005	0.03	03/28/12 13:59	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:37	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 0:15	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:58	jjc
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:59	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:58	jjc
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:59	jjc
Potassium, dissolved	M200.7 ICP	5.3			mg/L	0.3	2	03/23/12 20:58	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2A

ACZ Sample ID: ***L93703-03***
Date Sampled: *03/10/12 13:25*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	5.6			mg/L	0.3	2	03/28/12 13:59	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:58	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 13:59	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/30/12 4:52	pmc
Selenium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/27/12 18:32	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 4:52	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 18:32	pmc
Sodium, dissolved	M200.7 ICP	23.0			mg/L	0.3	2	03/23/12 20:58	jjc
Sodium, total	M200.7 ICP	24.4			mg/L	0.3	2	03/28/12 13:59	jjc
Strontium, dissolved	M200.7 ICP	0.62		*	mg/L	0.01	0.05	03/23/12 20:58	jjc
Strontium, total	M200.7 ICP	0.67			mg/L	0.01	0.05	03/28/12 13:59	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 4:52	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:32	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:58	jjc
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 13:59	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:58	jjc
Titanium, total	M200.7 ICP	0.009	B		mg/L	0.005	0.03	03/28/12 13:59	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0008			mg/L	0.0001	0.0005	03/30/12 4:52	pmc
Uranium, total	M200.8 ICP-MS	0.0008			mg/L	0.0001	0.0005	03/27/12 18:32	pmc
Vanadium, dissolved	M200.7 ICP	0.011	B		mg/L	0.005	0.03	03/23/12 20:58	jjc
Vanadium, total	M200.7 ICP	0.010	B		mg/L	0.005	0.03	03/28/12 13:59	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:58	jjc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 13:59	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2A

ACZ Sample ID: ***L93703-03***
Date Sampled: *03/10/12 13:25*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		144			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3		4	B		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		148			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.8			%			04/05/12 0:00	calc
Sum of Anions		6.4			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		6.3			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	03/26/12 11:14	las
Chloride	SM4500Cl-E	3	B	*	mg/L	1	5	03/30/12 9:05	ccp
Conductivity @25C	SM2510B	607			umhos/cm	1	10	03/23/12 20:43	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 17:22	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.015		*	mg/L	0.003	0.01	03/23/12 19:40	mpb
Fluoride	SM4500F-C	0.6		*	mg/L	0.1	0.5	03/27/12 14:44	abm
Hardness as CaCO3	SM2340B - Calculation	251			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	2.49		*	mg/L	0.02	0.1	03/31/12 14:32	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	0.88		*	mg/L	0.05	0.5	04/02/12 17:58	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	1.1		*	mg/L	0.1	0.5	04/03/12 23:43	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		20.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.03	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/30/12 23:43	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.01	BH	*	mg/L	0.01	0.05	03/22/12 23:42	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.01	B	*	mg/L	0.01	0.05	03/31/12 0:15	pjb
Residue, Filterable (TDS) @180C	SM2540C	420	H	*	mg/L	10	20	03/22/12 16:16	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	12	BH	*	mg/L	5	20	03/22/12 14:54	abm
Residue, Total (TS) @ 105C	SM2540B	430	H	*	mg/L	10	20	03/22/12 13:34	mla
Sulfate	D516-02 - Turbidimetric	156		*	mg/L	5	30	04/02/12 9:06	ccp
TDS (calculated)	Calculation	372			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.13						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW3

ACZ Sample ID: ***L93703-04***
Date Sampled: *03/10/12 11:05*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 17:09	lhb
Cyanide, WAD	SM4500-CN I- distillation		H					03/25/12 8:08	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:34	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:04	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:01	tod
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 15:53	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 18:16	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW3

ACZ Sample ID: ***L93703-04***
Date Sampled: *03/10/12 11:05*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 21:02	jjc
Aluminum, total	M200.7 ICP	0.42		*	mg/L	0.03	0.2	03/28/12 14:02	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	03/30/12 5:01	pmc
Antimony, total	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	03/27/12 18:41	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0073			mg/L	0.0005	0.002	03/30/12 5:01	pmc
Arsenic, total	M200.8 ICP-MS	0.0122			mg/L	0.0005	0.002	03/28/12 22:02	pmc
Barium, dissolved	M200.7 ICP	0.073			mg/L	0.003	0.02	03/23/12 21:02	jjc
Barium, total	M200.7 ICP	0.138			mg/L	0.003	0.02	03/28/12 14:02	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:02	jjc
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:02	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 21:02	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 14:02	jjc
Boron, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 21:02	jjc
Boron, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/28/12 14:02	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:01	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:41	pmc
Calcium, dissolved	M200.7 ICP	23.9		*	mg/L	0.2	1	03/23/12 21:02	jjc
Calcium, total	M200.7 ICP	43.2			mg/L	0.2	1	03/28/12 14:02	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:02	jjc
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:02	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:02	jjc
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:02	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:02	jjc
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:02	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 21:02	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:02	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 21:02	jjc
Iron, total	M200.7 ICP	0.26			mg/L	0.02	0.05	03/28/12 14:02	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:01	pmc
Lead, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/27/12 18:41	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 21:02	jjc
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 14:02	jjc
Magnesium, dissolved	M200.7 ICP	2.0			mg/L	0.2	1	03/23/12 21:02	jjc
Magnesium, total	M200.7 ICP	3.6			mg/L	0.2	1	03/28/12 14:02	jjc
Manganese, dissolved	M200.7 ICP	0.011	B		mg/L	0.005	0.03	03/23/12 21:02	jjc
Manganese, total	M200.7 ICP	0.056			mg/L	0.005	0.03	03/28/12 14:02	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:39	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 0:17	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:02	jjc
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:02	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:02	jjc
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:02	jjc
Potassium, dissolved	M200.7 ICP	2.8			mg/L	0.3	2	03/23/12 21:02	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW3

ACZ Sample ID: L93703-04
Date Sampled: 03/10/12 11:05
Date Received: 03/22/12
Sample Matrix: Surface Water

Potassium, total	M200.7 ICP	4.8			mg/L	0.3	2	03/28/12 14:02	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 21:02	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:02	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 5:01	pmc
Selenium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/27/12 18:41	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 5:01	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 18:41	pmc
Sodium, dissolved	M200.7 ICP	8.5			mg/L	0.3	2	03/23/12 21:02	jjc
Sodium, total	M200.7 ICP	14.3			mg/L	0.3	2	03/28/12 14:02	jjc
Strontium, dissolved	M200.7 ICP	0.17		*	mg/L	0.01	0.05	03/23/12 21:02	jjc
Strontium, total	M200.7 ICP	0.30			mg/L	0.01	0.05	03/28/12 14:02	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:01	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:41	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 21:02	jjc
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 14:02	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 21:02	jjc
Titanium, total	M200.7 ICP	0.013	B		mg/L	0.005	0.03	03/28/12 14:02	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/30/12 5:01	pmc
Uranium, total	M200.8 ICP-MS	0.0004	B		mg/L	0.0001	0.0005	03/27/12 18:41	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 21:02	jjc
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:02	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:02	jjc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:02	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW3

ACZ Sample ID: ***L93703-04***
Date Sampled: *03/10/12 11:05*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		124			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3		3	B		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		127			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-26.5			%			04/05/12 0:00	calc
Sum of Anions		3.1			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		1.8			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4	20		*	mg/L	10	20	03/26/12 11:16	las
Chloride	SM4500Cl-E	2	B	*	mg/L	1	5	03/30/12 9:05	ccp
Conductivity @25C	SM2510B	298			umhos/cm	1	10	03/23/12 20:52	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.010		*	mg/L	0.003	0.01	03/23/12 17:23	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.012		*	mg/L	0.003	0.01	03/23/12 19:41	mpb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/27/12 14:58	abm
Hardness as CaCO3	SM2340B - Calculation	68			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.30		*	mg/L	0.02	0.1	03/31/12 14:33	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 18:01	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:44	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.06	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	03/30/12 23:44	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.02	BH	*	mg/L	0.01	0.05	03/22/12 23:43	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	03/31/12 0:16	pjb
Residue, Filterable (TDS) @180C	SM2540C	230	H	*	mg/L	10	20	03/22/12 16:17	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	15	BH	*	mg/L	5	20	03/22/12 14:55	abm
Residue, Total (TS) @ 105C	SM2540B	230	H	*	mg/L	10	20	03/22/12 13:35	mla
Sulfate	D516-02 - Turbidimetric	24		*	mg/L	1	5	04/02/12 8:57	ccp
TDS (calculated)	Calculation	140			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.64						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4

ACZ Sample ID: ***L93703-05***
Date Sampled: *03/10/12 11:20*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 17:16	lhb
Cyanide, WAD	SM4500-CN I- distillation		H					03/25/12 13:54	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:34	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:04	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tod
Total Hot Plate Digestion	M200.2 ICP-MS							03/28/12 16:06	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 18:56	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4

ACZ Sample ID: ***L93703-05***
Date Sampled: *03/10/12 11:20*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 21:05	jjc
Aluminum, total	M200.7 ICP	0.67		*	mg/L	0.03	0.2	03/28/12 14:11	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0015	B		mg/L	0.0004	0.002	03/30/12 5:04	pmc
Antimony, total	M200.8 ICP-MS	0.0015	B		mg/L	0.0004	0.002	03/27/12 18:44	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0045			mg/L	0.0005	0.002	03/30/12 5:04	pmc
Arsenic, total	M200.8 ICP-MS	0.0062			mg/L	0.0005	0.002	03/28/12 22:03	pmc
Barium, dissolved	M200.7 ICP	0.123			mg/L	0.003	0.02	03/23/12 21:05	jjc
Barium, total	M200.7 ICP	0.165			mg/L	0.003	0.02	03/28/12 14:11	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:05	jjc
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:11	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 21:05	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 14:11	jjc
Boron, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/23/12 21:05	jjc
Boron, total	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/28/12 14:11	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:04	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:44	pmc
Calcium, dissolved	M200.7 ICP	48.2		*	mg/L	0.2	1	03/23/12 21:05	jjc
Calcium, total	M200.7 ICP	62.1			mg/L	0.2	1	03/28/12 14:11	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:05	jjc
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:11	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:05	jjc
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:11	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:05	jjc
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:11	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 21:05	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:11	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 21:05	jjc
Iron, total	M200.7 ICP	0.29			mg/L	0.02	0.05	03/28/12 14:11	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:04	pmc
Lead, total	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/27/12 18:44	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 21:05	jjc
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 14:11	jjc
Magnesium, dissolved	M200.7 ICP	6.3			mg/L	0.2	1	03/23/12 21:05	jjc
Magnesium, total	M200.7 ICP	8.2			mg/L	0.2	1	03/28/12 14:11	jjc
Manganese, dissolved	M200.7 ICP	0.073			mg/L	0.005	0.03	03/23/12 21:05	jjc
Manganese, total	M200.7 ICP	0.101			mg/L	0.005	0.03	03/28/12 14:11	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:41	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 0:19	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:05	jjc
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:11	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:05	jjc
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:11	jjc
Potassium, dissolved	M200.7 ICP	5.3			mg/L	0.3	2	03/23/12 21:05	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4

ACZ Sample ID: ***L93703-05***
Date Sampled: *03/10/12 11:20*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	6.8			mg/L	0.3	2	03/28/12 14:11	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 21:05	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:11	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/30/12 5:04	pmc
Selenium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/27/12 18:44	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 5:04	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 18:44	pmc
Sodium, dissolved	M200.7 ICP	14.5			mg/L	0.3	2	03/23/12 21:05	jjc
Sodium, total	M200.7 ICP	17.9			mg/L	0.3	2	03/28/12 14:11	jjc
Strontium, dissolved	M200.7 ICP	0.32		*	mg/L	0.01	0.05	03/23/12 21:05	jjc
Strontium, total	M200.7 ICP	0.42			mg/L	0.01	0.05	03/28/12 14:11	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:04	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:44	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 21:05	jjc
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 14:11	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 21:05	jjc
Titanium, total	M200.7 ICP	0.019	B		mg/L	0.005	0.03	03/28/12 14:11	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/30/12 5:04	pmc
Uranium, total	M200.8 ICP-MS	0.0004	B		mg/L	0.0001	0.0005	03/27/12 18:44	pmc
Vanadium, dissolved	M200.7 ICP	0.007	B		mg/L	0.005	0.03	03/23/12 21:05	jjc
Vanadium, total	M200.7 ICP	0.009	B		mg/L	0.005	0.03	03/28/12 14:11	jjc
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 21:05	jjc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:11	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4

ACZ Sample ID: ***L93703-05***
Date Sampled: *03/10/12 11:20*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		109			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		109			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-9.8			%			04/05/12 0:00	calc
Sum of Anions		4.5			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		3.7			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	03/26/12 11:25	las
Chloride	SM4500Cl-E	7		*	mg/L	1	5	03/30/12 9:18	ccp
Conductivity @25C	SM2510B	452			umhos/cm	1	10	03/23/12 21:00	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 17:24	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 19:43	mpb
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	03/27/12 15:08	abm
Hardness as CaCO3	SM2340B - Calculation	146			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	3.23		*	mg/L	0.02	0.1	03/31/12 14:35	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	0.05	B	*	mg/L	0.05	0.5	04/02/12 18:03	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.2	B	*	mg/L	0.1	0.5	04/03/12 23:45	pjb
pH (lab)	SM4500H+ B								
pH		8.2	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.65			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.21		*	mg/L	0.01	0.05	03/30/12 23:45	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.21	H	*	mg/L	0.01	0.05	03/22/12 23:44	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.24		*	mg/L	0.01	0.05	03/31/12 0:19	pjb
Residue, Filterable (TDS) @180C	SM2540C	340	H	*	mg/L	10	20	03/22/12 16:18	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	14	BH	*	mg/L	5	20	03/22/12 14:56	abm
Residue, Total (TS) @ 105C	SM2540B	360	H	*	mg/L	10	20	03/22/12 13:36	mla
Sulfate	D516-02 - Turbidimetric	98		*	mg/L	5	30	04/02/12 9:06	ccp
TDS (calculated)	Calculation	245			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.39						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4A

ACZ Sample ID: ***L93703-06***
Date Sampled: *03/10/12 14:16*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 17:24	lhb
Cyanide, WAD	SM4500-CN I- distillation		H					03/25/12 16:47	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:34	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:04	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tcd
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 16:19	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 19:09	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4A

ACZ Sample ID: ***L93703-06***
Date Sampled: *03/10/12 14:16*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 21:08	jjc
Aluminum, total	M200.7 ICP	3.52		*	mg/L	0.03	0.2	03/28/12 14:14	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0020			mg/L	0.0004	0.002	03/30/12 5:07	pmc
Antimony, total	M200.8 ICP-MS	0.0021			mg/L	0.0004	0.002	03/27/12 18:47	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0058			mg/L	0.0005	0.002	03/30/12 5:07	pmc
Arsenic, total	M200.8 ICP-MS	0.0078			mg/L	0.0005	0.002	03/28/12 22:07	pmc
Barium, dissolved	M200.7 ICP	0.176			mg/L	0.003	0.02	03/23/12 21:08	jjc
Barium, total	M200.7 ICP	0.223			mg/L	0.003	0.02	03/28/12 14:14	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:08	jjc
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:14	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 21:08	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 14:14	jjc
Boron, dissolved	M200.7 ICP	0.03	B		mg/L	0.01	0.05	03/23/12 21:08	jjc
Boron, total	M200.7 ICP	0.03	B		mg/L	0.01	0.05	03/28/12 14:14	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:07	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:47	pmc
Calcium, dissolved	M200.7 ICP	69.2		*	mg/L	0.2	1	03/23/12 21:08	jjc
Calcium, total	M200.7 ICP	72.1			mg/L	0.2	1	03/28/12 14:14	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:08	jjc
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:14	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:08	jjc
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:14	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:08	jjc
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:14	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 21:08	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:14	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 21:08	jjc
Iron, total	M200.7 ICP	1.88			mg/L	0.02	0.05	03/28/12 14:14	jjc
Lead, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/30/12 5:07	pmc
Lead, total	M200.8 ICP-MS	0.0016			mg/L	0.0001	0.0005	03/27/12 18:47	pmc
Lithium, dissolved	M200.7 ICP	0.02	B		mg/L	0.02	0.1	03/23/12 21:08	jjc
Lithium, total	M200.7 ICP	0.02	B		mg/L	0.02	0.1	03/28/12 14:14	jjc
Magnesium, dissolved	M200.7 ICP	10.1			mg/L	0.2	1	03/23/12 21:08	jjc
Magnesium, total	M200.7 ICP	10.8			mg/L	0.2	1	03/28/12 14:14	jjc
Manganese, dissolved	M200.7 ICP	0.097			mg/L	0.005	0.03	03/23/12 21:08	jjc
Manganese, total	M200.7 ICP	0.162			mg/L	0.005	0.03	03/28/12 14:14	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:43	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 0:21	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:08	jjc
Molybdenum, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/28/12 14:14	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:08	jjc
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:14	jjc
Potassium, dissolved	M200.7 ICP	9.0			mg/L	0.3	2	03/23/12 21:08	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4A

ACZ Sample ID: ***L93703-06***
Date Sampled: *03/10/12 14:16*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	9.7			mg/L	0.3	2	03/28/12 14:14	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 21:08	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:14	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/30/12 5:07	pmc
Selenium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/27/12 18:47	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 5:07	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 18:47	pmc
Sodium, dissolved	M200.7 ICP	19.5			mg/L	0.3	2	03/23/12 21:08	jjc
Sodium, total	M200.7 ICP	19.9			mg/L	0.3	2	03/28/12 14:14	jjc
Strontium, dissolved	M200.7 ICP	0.48		*	mg/L	0.01	0.05	03/23/12 21:08	jjc
Strontium, total	M200.7 ICP	0.50			mg/L	0.01	0.05	03/28/12 14:14	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:07	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:47	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 21:08	jjc
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 14:14	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 21:08	jjc
Titanium, total	M200.7 ICP	0.107			mg/L	0.005	0.03	03/28/12 14:14	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0007			mg/L	0.0001	0.0005	03/30/12 5:07	pmc
Uranium, total	M200.8 ICP-MS	0.0008			mg/L	0.0001	0.0005	03/27/12 18:47	pmc
Vanadium, dissolved	M200.7 ICP	0.007	B		mg/L	0.005	0.03	03/23/12 21:08	jjc
Vanadium, total	M200.7 ICP	0.011	B		mg/L	0.005	0.03	03/28/12 14:14	jjc
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 21:08	jjc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:14	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4A

ACZ Sample ID: ***L93703-06***
Date Sampled: *03/10/12 14:16*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		121			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		121			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.9			%			04/05/12 0:00	calc
Sum of Anions		5.1			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		5.4			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4	40		*	mg/L	10	20	03/26/12 11:27	las
Chloride	SM4500Cl-E	9		*	mg/L	1	5	03/30/12 9:18	ccp
Conductivity @25C	SM2510B	525			umhos/cm	1	10	03/23/12 21:09	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	03/23/12 17:27	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 19:44	mpb
Fluoride	SM4500F-C	0.4	B	*	mg/L	0.1	0.5	03/27/12 15:12	abm
Hardness as CaCO3	SM2340B - Calculation	215			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	5.37		*	mg/L	0.06	0.3	03/31/12 15:26	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	0.10	B	*	mg/L	0.05	0.5	04/02/12 18:04	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.2	B	*	mg/L	0.1	0.5	04/03/12 23:47	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		18.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	2.88			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.88		*	mg/L	0.01	0.05	03/30/12 23:46	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.93	H	*	mg/L	0.05	0.3	03/23/12 0:10	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.97		*	mg/L	0.01	0.05	03/31/12 0:20	pjb
Residue, Filterable (TDS) @180C	SM2540C	380	H	*	mg/L	10	20	03/22/12 16:19	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	64	H	*	mg/L	5	20	03/22/12 14:57	abm
Residue, Total (TS) @ 105C	SM2540B	460	H	*	mg/L	10	20	03/22/12 13:37	mla
Sulfate	D516-02 - Turbidimetric	114		*	mg/L	5	30	04/02/12 9:06	ccp
TDS (calculated)	Calculation	304			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.25						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW5

ACZ Sample ID: ***L93703-07***
Date Sampled: *03/10/12 08:57*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 17:31	lhb
Cyanide, WAD	SM4500-CN I- distillation		H					03/25/12 19:40	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:35	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:05	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tod
Total Hot Plate Digestion	M200.2 ICP							03/27/12 19:23	jjc
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 16:32	mfm

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW5

ACZ Sample ID: ***L93703-07***
Date Sampled: *03/10/12 08:57*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 21:11	jjc
Aluminum, total	M200.7 ICP	0.09	B	*	mg/L	0.03	0.2	03/28/12 14:24	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 5:16	pmc
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/27/12 18:50	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0047			mg/L	0.0005	0.002	03/30/12 5:16	pmc
Arsenic, total	M200.8 ICP-MS	0.0063			mg/L	0.0005	0.002	03/28/12 22:09	pmc
Barium, dissolved	M200.7 ICP	0.083			mg/L	0.003	0.02	03/23/12 21:11	jjc
Barium, total	M200.7 ICP	0.087			mg/L	0.003	0.02	03/28/12 14:24	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:11	jjc
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:24	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 21:11	jjc
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 14:24	jjc
Boron, dissolved	M200.7 ICP	0.47			mg/L	0.01	0.05	03/23/12 21:11	jjc
Boron, total	M200.7 ICP	0.46			mg/L	0.01	0.05	03/28/12 14:24	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:16	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:50	pmc
Calcium, dissolved	M200.7 ICP	19.7		*	mg/L	0.2	1	03/23/12 21:11	jjc
Calcium, total	M200.7 ICP	20.2			mg/L	0.2	1	03/28/12 14:24	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:11	jjc
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:24	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:11	jjc
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:24	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:11	jjc
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:24	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 21:11	jjc
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:24	jjc
Iron, dissolved	M200.7 ICP	0.09			mg/L	0.02	0.05	03/23/12 21:11	jjc
Iron, total	M200.7 ICP	0.23			mg/L	0.02	0.05	03/28/12 14:24	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:16	pmc
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:50	pmc
Lithium, dissolved	M200.7 ICP	0.16			mg/L	0.02	0.1	03/23/12 21:11	jjc
Lithium, total	M200.7 ICP	0.17			mg/L	0.02	0.1	03/28/12 14:24	jjc
Magnesium, dissolved	M200.7 ICP	4.0			mg/L	0.2	1	03/23/12 21:11	jjc
Magnesium, total	M200.7 ICP	4.2			mg/L	0.2	1	03/28/12 14:24	jjc
Manganese, dissolved	M200.7 ICP	0.066			mg/L	0.005	0.03	03/23/12 21:11	jjc
Manganese, total	M200.7 ICP	0.071			mg/L	0.005	0.03	03/28/12 14:24	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:45	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 0:24	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:11	jjc
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:24	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:11	jjc
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:24	jjc
Potassium, dissolved	M200.7 ICP	4.6			mg/L	0.3	2	03/23/12 21:11	jjc

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW5

ACZ Sample ID: ***L93703-07***
Date Sampled: *03/10/12 08:57*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	4.6			mg/L	0.3	2	03/28/12 14:24	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 21:11	jjc
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:24	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 5:16	pmc
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/27/12 18:50	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 5:16	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 18:50	pmc
Sodium, dissolved	M200.7 ICP	40.4			mg/L	0.3	2	03/23/12 21:11	jjc
Sodium, total	M200.7 ICP	40.2			mg/L	0.3	2	03/28/12 14:24	jjc
Strontium, dissolved	M200.7 ICP	0.15		*	mg/L	0.01	0.05	03/23/12 21:11	jjc
Strontium, total	M200.7 ICP	0.15			mg/L	0.01	0.05	03/28/12 14:24	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:16	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:50	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 21:11	jjc
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 14:24	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 21:11	jjc
Titanium. total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:24	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:16	pmc
Uranium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:50	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 21:11	jjc
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:24	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 21:11	jjc
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:24	jjc

ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW5

ACZ Sample ID: ***L93703-07***
Date Sampled: *03/10/12 08:57*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		60			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		60			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.5			%			04/05/12 0:00	calc
Sum of Anions		3.3			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		3.2			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	03/26/12 11:29	las
Chloride	SM4500Cl-E	56		*	mg/L	1	5	03/30/12 9:18	ccp
Conductivity @25C	SM2510B	350			umhos/cm	1	10	03/23/12 21:18	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.012		*	mg/L	0.003	0.01	03/23/12 17:28	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 19:47	mpb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/27/12 15:15	abm
Hardness as CaCO3	SM2340B - Calculation	66			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U	*	mg/L	0.02	0.1	03/31/12 14:37	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 18:05	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:48	pjb
pH (lab)	SM4500H+ B								
pH		8.0	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.09	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	03/30/12 23:47	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.03	BH	*	mg/L	0.01	0.05	03/22/12 23:49	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B	*	mg/L	0.01	0.05	03/31/12 0:22	pjb
Residue, Filterable (TDS) @180C	SM2540C	240	H	*	mg/L	10	20	03/22/12 16:19	abm
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	03/22/12 14:58	abm
Residue, Total (TS) @ 105C	SM2540B	240	H	*	mg/L	10	20	03/22/12 13:38	mla
Sulfate	D516-02 - Turbidimetric	26		*	mg/L	1	5	04/02/12 9:24	ccp
TDS (calculated)	Calculation	187			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.28						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW6

ACZ Sample ID: ***L93703-08***
Date Sampled: *03/10/12 07:45*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 17:38	lhb
Cyanide, WAD	SM4500-CN I- distillation		H					03/25/12 22:33	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:30	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:00	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tod
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 16:44	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 19:36	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW6

ACZ Sample ID: ***L93703-08***
Date Sampled: *03/10/12 07:45*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/26/12 15:14	aeb
Aluminum, total	M200.7 ICP	0.09	B	*	mg/L	0.03	0.2	03/28/12 14:27	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 5:20	pmc
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/27/12 18:53	pmc
Arsenic, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	03/30/12 5:20	pmc
Arsenic, total	M200.8 ICP-MS	0.0012	B		mg/L	0.0005	0.002	03/28/12 22:10	pmc
Barium, dissolved	M200.7 ICP	0.055			mg/L	0.003	0.02	03/26/12 15:14	aeb
Barium, total	M200.7 ICP	0.058			mg/L	0.003	0.02	03/28/12 14:27	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:14	aeb
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:27	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/26/12 15:14	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 14:27	jjc
Boron, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/26/12 15:14	aeb
Boron, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:27	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:20	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:53	pmc
Calcium, dissolved	M200.7 ICP	7.4			mg/L	0.2	1	03/26/12 15:14	aeb
Calcium, total	M200.7 ICP	7.5			mg/L	0.2	1	03/28/12 14:27	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:14	aeb
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:27	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:14	aeb
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:27	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:14	aeb
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:27	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:14	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:27	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/26/12 15:14	aeb
Iron, total	M200.7 ICP	0.12			mg/L	0.02	0.05	03/28/12 14:27	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:20	pmc
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:53	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/26/12 15:14	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 14:27	jjc
Magnesium, dissolved	M200.7 ICP	1.6			mg/L	0.2	1	03/26/12 15:14	aeb
Magnesium, total	M200.7 ICP	1.6			mg/L	0.2	1	03/28/12 14:27	jjc
Manganese, dissolved	M200.7 ICP	0.013	B		mg/L	0.005	0.03	03/26/12 15:14	aeb
Manganese, total	M200.7 ICP	0.013	B		mg/L	0.005	0.03	03/28/12 14:27	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:56	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 0:26	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:14	aeb
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:27	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:14	aeb
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:27	jjc
Potassium, dissolved	M200.7 ICP	3.0			mg/L	0.3	2	03/26/12 15:14	aeb

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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW6

ACZ Sample ID: L93703-08
Date Sampled: 03/10/12 07:45
Date Received: 03/22/12
Sample Matrix: Surface Water

Potassium, total	M200.7 ICP	3.1			mg/L	0.3	2	03/28/12 14:27	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:14	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:27	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 5:20	pmc
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/27/12 18:53	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 5:20	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 18:53	pmc
Sodium, dissolved	M200.7 ICP	5.4			mg/L	0.3	2	03/26/12 15:14	aeb
Sodium, total	M200.7 ICP	5.3			mg/L	0.3	2	03/28/12 14:27	jjc
Strontium, dissolved	M200.7 ICP	0.07			mg/L	0.01	0.05	03/26/12 15:14	aeb
Strontium, total	M200.7 ICP	0.06			mg/L	0.01	0.05	03/28/12 14:27	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:20	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:53	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/26/12 15:14	aeb
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 14:27	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:14	aeb
Titanium. total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:27	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:20	pmc
Uranium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:53	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:14	aeb
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:27	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:14	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:27	jjc

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** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW6

ACZ Sample ID: ***L93703-08***
Date Sampled: *03/10/12 07:45*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		15	B		mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		15	B		mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-1.2			%			04/05/12 0:00	calc
Sum of Anions		0.839			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		0.819			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	03/26/12 11:31	las
Chloride	SM4500Cl-E	2	B	*	mg/L	1	5	03/30/12 9:18	ccp
Conductivity @25C	SM2510B	86			umhos/cm	1	10	03/23/12 21:25	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	03/23/12 17:29	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.015		*	mg/L	0.003	0.01	03/23/12 19:48	mpb
Fluoride	SM4500F-C		U	*	mg/L	0.1	0.5	03/27/12 15:19	abm
Hardness as CaCO3	SM2340B - Calculation	25			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U	*	mg/L	0.02	0.1	03/31/12 14:39	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 18:09	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/04/12 0:01	pjb
pH (lab)	SM4500H+ B								
pH		7.7	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus		U		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	04/03/12 15:56	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid		UH	*	mg/L	0.01	0.05	03/22/12 23:53	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/31/12 0:23	pjb
Residue, Filterable (TDS) @180C	SM2540C	90	H	*	mg/L	10	20	03/22/12 16:20	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	8	BH	*	mg/L	5	20	03/22/12 15:05	abm
Residue, Total (TS) @ 105C	SM2540B	90	H	*	mg/L	10	20	03/23/12 16:52	las
Sulfate	D516-02 - Turbidimetric	23		*	mg/L	1	5	04/02/12 9:24	ccp
TDS (calculated)	Calculation	51			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.76						04/05/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW7

ACZ Sample ID: ***L93703-09***
Date Sampled: *03/10/12 10:33*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 17:45	lhb
Cyanide, WAD	SM4500-CN I- distillation		H					03/26/12 1:26	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:30	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:00	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tod
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 16:57	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 19:49	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW7

ACZ Sample ID: ***L93703-09***
Date Sampled: *03/10/12 10:33*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/26/12 15:17	aeb
Aluminum, total	M200.7 ICP	0.17	B	*	mg/L	0.03	0.2	03/28/12 14:30	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0004	B		mg/L	0.0004	0.002	03/30/12 5:23	pmc
Antimony, total	M200.8 ICP-MS	0.0006	B		mg/L	0.0004	0.002	03/27/12 18:56	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0047			mg/L	0.0005	0.002	03/30/12 5:23	pmc
Arsenic, total	M200.8 ICP-MS	0.0055			mg/L	0.0005	0.002	03/28/12 22:11	pmc
Barium, dissolved	M200.7 ICP	0.152			mg/L	0.003	0.02	03/26/12 15:17	aeb
Barium, total	M200.7 ICP	0.158			mg/L	0.003	0.02	03/28/12 14:30	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:17	aeb
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:30	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/26/12 15:17	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 14:30	jjc
Boron, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/26/12 15:17	aeb
Boron, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/28/12 14:30	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:23	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:56	pmc
Calcium, dissolved	M200.7 ICP	34.3			mg/L	0.2	1	03/26/12 15:17	aeb
Calcium, total	M200.7 ICP	35.0			mg/L	0.2	1	03/28/12 14:30	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:17	aeb
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:30	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:17	aeb
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:30	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:17	aeb
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:30	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:17	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:30	jjc
Iron, dissolved	M200.7 ICP	0.02	B		mg/L	0.02	0.05	03/26/12 15:17	aeb
Iron, total	M200.7 ICP	0.19			mg/L	0.02	0.05	03/28/12 14:30	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:23	pmc
Lead, total	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/27/12 18:56	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/26/12 15:17	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 14:30	jjc
Magnesium, dissolved	M200.7 ICP	6.2			mg/L	0.2	1	03/26/12 15:17	aeb
Magnesium, total	M200.7 ICP	6.4			mg/L	0.2	1	03/28/12 14:30	jjc
Manganese, dissolved	M200.7 ICP	0.106			mg/L	0.005	0.03	03/26/12 15:17	aeb
Manganese, total	M200.7 ICP	0.128			mg/L	0.005	0.03	03/28/12 14:30	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:59	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 0:28	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:17	aeb
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:30	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:17	aeb
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:30	jjc
Potassium, dissolved	M200.7 ICP	5.0			mg/L	0.3	2	03/26/12 15:17	aeb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW7

ACZ Sample ID: ***L93703-09***
Date Sampled: *03/10/12 10:33*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	5.0			mg/L	0.3	2	03/28/12 14:30	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:17	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:30	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 5:23	pmc
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/27/12 18:56	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 5:23	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 18:56	pmc
Sodium, dissolved	M200.7 ICP	13.8			mg/L	0.3	2	03/26/12 15:17	aeb
Sodium, total	M200.7 ICP	13.8			mg/L	0.3	2	03/28/12 14:30	jjc
Strontium, dissolved	M200.7 ICP	0.26			mg/L	0.01	0.05	03/26/12 15:17	aeb
Strontium, total	M200.7 ICP	0.27			mg/L	0.01	0.05	03/28/12 14:30	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:23	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 18:56	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/26/12 15:17	aeb
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 14:30	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:17	aeb
Titanium, total	M200.7 ICP	0.008	B		mg/L	0.005	0.03	03/28/12 14:30	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/30/12 5:23	pmc
Uranium, total	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/27/12 18:56	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:17	aeb
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:30	jjc
Zinc, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/26/12 15:17	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:30	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW7

ACZ Sample ID: ***L93703-09***
Date Sampled: *03/10/12 10:33*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		102			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		103			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.7			%			04/05/12 0:00	calc
Sum of Anions		2.9			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		3			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4	20	B	*	mg/L	10	20	03/26/12 11:33	las
Chloride	SM4500Cl-E	3	B	*	mg/L	1	5	03/30/12 9:18	ocp
Conductivity @25C	SM2510B	275			umhos/cm	1	10	03/23/12 21:33	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.009	B	*	mg/L	0.003	0.01	03/23/12 17:30	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.010		*	mg/L	0.003	0.01	03/23/12 19:49	mpb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/27/12 15:23	abm
Hardness as CaCO3	SM2340B - Calculation	111			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U	*	mg/L	0.02	0.1	03/31/12 14:42	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 18:10	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/04/12 0:03	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.09	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	04/03/12 15:58	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.03	BH	*	mg/L	0.01	0.05	03/22/12 23:54	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	03/31/12 0:24	pjb
Residue, Filterable (TDS) @180C	SM2540C	220	H	*	mg/L	10	20	03/22/12 16:21	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	7	BH	*	mg/L	5	20	03/22/12 15:06	abm
Residue, Total (TS) @ 105C	SM2540B	230	H	*	mg/L	10	20	03/23/12 16:54	las
Sulfate	D516-02 - Turbidimetric	36		*	mg/L	1	5	04/02/12 9:24	ocp
TDS (calculated)	Calculation	161			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.37						04/05/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW8

ACZ Sample ID: ***L93703-10***
Date Sampled: *03/10/12 12:50*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 17:52	lhb
Cyanide, WAD	SM4500-CN I- distillation		H					03/26/12 4:19	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:31	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:01	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:03	tod
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 17:10	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 20:03	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW8

ACZ Sample ID: ***L93703-10***
Date Sampled: *03/10/12 12:50*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/26/12 15:20	aeb
Aluminum, total	M200.7 ICP	0.04	B	*	mg/L	0.03	0.2	03/28/12 14:33	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0004	0.002	03/30/12 5:26	pmc
Antimony, total	M200.8 ICP-MS	0.0011	B		mg/L	0.0004	0.002	03/27/12 19:05	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0043			mg/L	0.0005	0.002	03/30/12 5:26	pmc
Arsenic, total	M200.8 ICP-MS	0.0050			mg/L	0.0005	0.002	03/28/12 22:12	pmc
Barium, dissolved	M200.7 ICP	0.130			mg/L	0.003	0.02	03/26/12 15:20	aeb
Barium, total	M200.7 ICP	0.126			mg/L	0.003	0.02	03/28/12 14:33	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:20	aeb
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:33	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/26/12 15:20	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 14:33	jjc
Boron, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/26/12 15:20	aeb
Boron, total	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/28/12 14:33	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:26	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 19:05	pmc
Calcium, dissolved	M200.7 ICP	38.0			mg/L	0.2	1	03/26/12 15:20	aeb
Calcium, total	M200.7 ICP	43.9			mg/L	0.2	1	03/28/12 14:33	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:20	aeb
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:33	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:20	aeb
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:33	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:20	aeb
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:33	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:20	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:33	jjc
Iron, dissolved	M200.7 ICP	0.07			mg/L	0.02	0.05	03/26/12 15:20	aeb
Iron, total	M200.7 ICP	0.05			mg/L	0.02	0.05	03/28/12 14:33	jjc
Lead, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/30/12 5:26	pmc
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 19:05	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/26/12 15:20	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 14:33	jjc
Magnesium, dissolved	M200.7 ICP	5.7			mg/L	0.2	1	03/26/12 15:20	aeb
Magnesium, total	M200.7 ICP	6.1			mg/L	0.2	1	03/28/12 14:33	jjc
Manganese, dissolved	M200.7 ICP	0.118			mg/L	0.005	0.03	03/29/12 17:17	jjc
Manganese, total	M200.7 ICP	0.058			mg/L	0.005	0.03	03/28/12 14:33	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/03/12 0:01	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 20:52	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:20	aeb
Molybdenum, total	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/28/12 14:33	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:20	aeb
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:33	jjc
Potassium, dissolved	M200.7 ICP	7.3			mg/L	0.3	2	03/26/12 15:20	aeb

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW8

ACZ Sample ID: ***L93703-10***
Date Sampled: *03/10/12 12:50*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	6.7			mg/L	0.3	2	03/28/12 14:33	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:20	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:33	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	03/30/12 5:26	pmc
Selenium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/27/12 19:05	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 5:26	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 19:05	pmc
Sodium, dissolved	M200.7 ICP	20.0			mg/L	0.3	2	03/26/12 15:20	aeb
Sodium, total	M200.7 ICP	17.7			mg/L	0.3	2	03/28/12 14:33	jjc
Strontium, dissolved	M200.7 ICP	0.29			mg/L	0.01	0.05	03/26/12 15:20	aeb
Strontium, total	M200.7 ICP	0.29			mg/L	0.01	0.05	03/28/12 14:33	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:26	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 19:05	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/26/12 15:20	aeb
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 14:33	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:20	aeb
Titanium. total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:33	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/30/12 5:26	pmc
Uranium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/27/12 19:05	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:20	aeb
Vanadium, total	M200.7 ICP	0.008	B		mg/L	0.005	0.03	03/28/12 14:33	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:20	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:33	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW8

ACZ Sample ID: ***L93703-10***
Date Sampled: *03/10/12 12:50*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		83			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		83			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		4.5			%			04/05/12 0:00	calc
Sum of Anions		3.2			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		3.5			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4	20		*	mg/L	10	20	03/26/12 11:34	las
Chloride	SM4500Cl-E	9		*	mg/L	1	5	03/30/12 9:18	ccp
Conductivity @25C	SM2510B	363			umhos/cm	1	10	03/23/12 21:41	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	03/23/12 17:30	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 19:50	mpb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/27/12 15:27	abm
Hardness as CaCO3	SM2340B - Calculation	118			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	5.23		*	mg/L	0.06	0.3	03/31/12 15:27	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 18:11	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/04/12 0:06	pjb
pH (lab)	SM4500H+ B								
pH		8.0	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.56			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.21		*	mg/L	0.01	0.05	04/03/12 16:00	tcd
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.18	H	*	mg/L	0.01	0.05	03/22/12 23:55	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.12		*	mg/L	0.01	0.05	03/31/12 0:26	pjb
Residue, Filterable (TDS) @180C	SM2540C	280	H	*	mg/L	10	20	03/22/12 16:21	abm
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	03/22/12 15:06	abm
Residue, Total (TS) @ 105C	SM2540B	310	H	*	mg/L	10	20	03/23/12 16:55	las
Sulfate	D516-02 - Turbidimetric	59		*	mg/L	5	30	04/02/12 9:31	ccp
TDS (calculated)	Calculation	189			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.48						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW9

ACZ Sample ID: ***L93703-11***
Date Sampled: *03/10/12 09:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/22/12 18:00	lhb
Cyanide, WAD	SM4500-CN I- distillation		H					03/26/12 7:12	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:31	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:01	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:03	tcd
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 17:23	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 20:16	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW9

ACZ Sample ID: ***L93703-11***
Date Sampled: *03/10/12 09:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/26/12 15:23	aeb
Aluminum, total	M200.7 ICP	0.52		*	mg/L	0.03	0.2	03/28/12 14:36	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	03/30/12 5:29	pmc
Antimony, total	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	03/27/12 19:08	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0043			mg/L	0.0005	0.002	03/30/12 5:29	pmc
Arsenic, total	M200.8 ICP-MS	0.0051			mg/L	0.0005	0.002	03/28/12 22:14	pmc
Barium, dissolved	M200.7 ICP	0.109			mg/L	0.003	0.02	03/26/12 15:23	aeb
Barium, total	M200.7 ICP	0.117			mg/L	0.003	0.02	03/28/12 14:36	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:23	aeb
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:36	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/26/12 15:23	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 14:36	jjc
Boron, dissolved	M200.7 ICP	0.09			mg/L	0.01	0.05	03/26/12 15:23	aeb
Boron, total	M200.7 ICP	0.05	B		mg/L	0.01	0.05	03/28/12 14:36	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:29	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 19:08	pmc
Calcium, dissolved	M200.7 ICP	38.4			mg/L	0.2	1	03/26/12 15:23	aeb
Calcium, total	M200.7 ICP	37.3			mg/L	0.2	1	03/28/12 14:36	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:23	aeb
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:36	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:23	aeb
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:36	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:23	aeb
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:36	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:23	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:36	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/26/12 15:23	aeb
Iron, total	M200.7 ICP	0.36			mg/L	0.02	0.05	03/28/12 14:36	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:29	pmc
Lead, total	M200.8 ICP-MS	0.0004	B		mg/L	0.0001	0.0005	03/27/12 19:08	pmc
Lithium, dissolved	M200.7 ICP	0.03	B		mg/L	0.02	0.1	03/26/12 15:23	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 14:36	jjc
Magnesium, dissolved	M200.7 ICP	7.9			mg/L	0.2	1	03/26/12 15:23	aeb
Magnesium, total	M200.7 ICP	7.4			mg/L	0.2	1	03/28/12 14:36	jjc
Manganese, dissolved	M200.7 ICP	0.023	B		mg/L	0.005	0.03	03/26/12 15:23	aeb
Manganese, total	M200.7 ICP	0.087			mg/L	0.005	0.03	03/28/12 14:36	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/03/12 0:03	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 20:54	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:23	aeb
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:36	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:23	aeb
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:36	jjc
Potassium, dissolved	M200.7 ICP	6.0			mg/L	0.3	2	03/26/12 15:23	aeb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW9

ACZ Sample ID: ***L93703-11***
Date Sampled: *03/10/12 09:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP	5.8			mg/L	0.3	2	03/28/12 14:36	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:23	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:36	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	03/30/12 5:29	pmc
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/27/12 19:08	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 5:29	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 19:08	pmc
Sodium, dissolved	M200.7 ICP	24.0			mg/L	0.3	2	03/26/12 15:23	aeb
Sodium, total	M200.7 ICP	20.6			mg/L	0.3	2	03/28/12 14:36	jjc
Strontium, dissolved	M200.7 ICP	0.31			mg/L	0.01	0.05	03/26/12 15:23	aeb
Strontium, total	M200.7 ICP	0.29			mg/L	0.01	0.05	03/28/12 14:36	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:29	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 19:08	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/26/12 15:23	aeb
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 14:36	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:23	aeb
Titanium. total	M200.7 ICP	0.019	B		mg/L	0.005	0.03	03/28/12 14:36	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/30/12 5:29	pmc
Uranium, total	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/27/12 19:08	pmc
Vanadium, dissolved	M200.7 ICP	0.006	B		mg/L	0.005	0.03	03/26/12 15:23	aeb
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:36	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:23	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:36	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW9

ACZ Sample ID: ***L93703-11***
Date Sampled: *03/10/12 09:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		70			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3		6	B		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		76			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		5.6			%			04/05/12 0:00	calc
Sum of Anions		3.4			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		3.8			meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	03/26/12 11:36	las
Chloride	SM4500Cl-E	17		*	mg/L	1	5	03/30/12 9:18	ccp
Conductivity @25C	SM2510B	356			umhos/cm	1	10	03/23/12 22:19	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	03/23/12 17:31	mpb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	03/23/12 19:50	mpb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/27/12 15:30	abm
Hardness as CaCO3	SM2340B - Calculation	128			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	2.12		*	mg/L	0.02	0.1	03/31/12 15:09	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	0.19	B	*	mg/L	0.05	0.5	04/02/12 18:12	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.4	B	*	mg/L	0.1	0.5	04/04/12 0:07	pjb
pH (lab)	SM4500H+ B								
pH		8.5	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.28			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.12		*	mg/L	0.01	0.05	04/03/12 16:01	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.09	H	*	mg/L	0.01	0.05	03/22/12 23:57	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.32		*	mg/L	0.01	0.05	03/31/12 0:28	pjb
Residue, Filterable (TDS) @180C	SM2540C	290	H	*	mg/L	10	20	03/22/12 16:22	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	31	H	*	mg/L	5	20	03/22/12 15:07	abm
Residue, Total (TS) @ 105C	SM2540B	320	H	*	mg/L	10	20	03/23/12 16:57	las
Sulfate	D516-02 - Turbidimetric	67		*	mg/L	5	30	04/02/12 9:31	ccp
TDS (calculated)	Calculation	207			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.40						04/05/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW20

ACZ Sample ID: ***L93703-12***
Date Sampled: *03/12/12 10:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/26/12 14:00	lhb
Cyanide, WAD	SM4500-CN I- distillation							03/26/12 10:05	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:31	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:01	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:03	tod
Total Hot Plate Digestion	M200.2 ICP-MS							03/26/12 17:36	mfm
Total Hot Plate Digestion	M200.2 ICP							03/27/12 20:30	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW20

ACZ Sample ID: ***L93703-12***
Date Sampled: *03/12/12 10:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/26/12 15:26	aeb
Aluminum, total	M200.7 ICP		U	*	mg/L	0.03	0.2	03/28/12 14:39	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 5:32	pmc
Antimony, total	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/27/12 19:11	pmc
Arsenic, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	03/30/12 5:32	pmc
Arsenic, total	M200.8 ICP-MS		U		mg/L	0.0005	0.002	03/29/12 22:23	pmc
Barium, dissolved	M200.7 ICP		U		mg/L	0.003	0.02	03/26/12 15:26	aeb
Barium, total	M200.7 ICP		U		mg/L	0.003	0.02	03/28/12 14:39	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:26	aeb
Beryllium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:39	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/26/12 15:26	aeb
Bismuth, total	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 14:39	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:26	aeb
Boron, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:39	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:32	pmc
Cadmium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 19:11	pmc
Calcium, dissolved	M200.7 ICP		U		mg/L	0.2	1	03/26/12 15:26	aeb
Calcium, total	M200.7 ICP		U		mg/L	0.2	1	03/28/12 14:39	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:26	aeb
Chromium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:39	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:26	aeb
Cobalt, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:39	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:26	aeb
Copper, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:39	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:26	aeb
Gallium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:39	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/26/12 15:26	aeb
Iron, total	M200.7 ICP		U		mg/L	0.02	0.05	03/28/12 14:39	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:32	pmc
Lead, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 19:11	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/26/12 15:26	aeb
Lithium, total	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 14:39	jjc
Magnesium, dissolved	M200.7 ICP		U		mg/L	0.2	1	03/26/12 15:26	aeb
Magnesium, total	M200.7 ICP		U		mg/L	0.2	1	03/28/12 14:39	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:26	aeb
Manganese, total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:39	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/03/12 0:05	erf
Mercury, total	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 21:05	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:26	aeb
Molybdenum, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:39	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:26	aeb
Nickel, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:39	jjc
Potassium, dissolved	M200.7 ICP		U		mg/L	0.3	2	03/26/12 15:26	aeb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW20

ACZ Sample ID: ***L93703-12***
Date Sampled: *03/12/12 10:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Potassium, total	M200.7 ICP		U		mg/L	0.3	2	03/28/12 14:39	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/26/12 15:26	aeb
Scandium, total	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 14:39	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 5:32	pmc
Selenium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/27/12 19:11	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 5:32	pmc
Silver, total	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/27/12 19:11	pmc
Sodium, dissolved	M200.7 ICP		U		mg/L	0.3	2	03/26/12 15:26	aeb
Sodium, total	M200.7 ICP		U		mg/L	0.3	2	03/28/12 14:39	jjc
Strontium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/26/12 15:26	aeb
Strontium, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:39	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:32	pmc
Thallium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 19:11	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/26/12 15:26	aeb
Tin, total	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 14:39	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:26	aeb
Titanium. total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:39	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 5:32	pmc
Uranium, total	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/27/12 19:11	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/26/12 15:26	aeb
Vanadium, total	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 14:39	jjc
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/26/12 15:26	aeb
Zinc, total	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 14:39	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW20

ACZ Sample ID: ***L93703-12***
Date Sampled: *03/12/12 10:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity			U		mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		n/a			%			04/05/12 0:00	calc
Sum of Anions		N/A			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations			U		meq/L	0.1	0.5	04/05/12 0:00	calc
Chemical Oxygen Demand	M410.4		U	*	mg/L	10	20	03/26/12 11:38	las
Chloride	SM4500Cl-E		U	*	mg/L	1	5	03/30/12 9:18	ccp
Conductivity @25C	SM2510B	1	B		umhos/cm	1	10	03/23/12 22:24	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/26/12 18:09	tod
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 19:51	mpb
Fluoride	SM4500F-C		U	*	mg/L	0.1	0.5	03/27/12 15:48	abm
Hardness as CaCO3	SM2340B - Calculation		U		mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U	*	mg/L	0.02	0.1	03/31/12 15:10	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 18:13	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/04/12 0:08	pjb
pH (lab)	SM4500H+ B								
pH		6.2	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus		U		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	04/03/12 16:02	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid		UH	*	mg/L	0.01	0.05	03/22/12 23:58	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/31/12 0:30	pjb
Residue, Filterable (TDS) @180C	SM2540C		UH	*	mg/L	10	20	03/22/12 16:23	abm
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	03/22/12 15:08	abm
Residue, Total (TS) @ 105C	SM2540B		UH	*	mg/L	10	20	03/23/12 16:58	las
Sulfate	D516-02 - Turbidimetric		U	*	mg/L	1	5	04/02/12 9:26	ccp
TDS (calculated)	Calculation		U		mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	n/a						04/05/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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Inorganic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

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Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93703*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-01	WG320225	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320225	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320036	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: L93703

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-01	WG320086	Chemical Oxygen Demand	M410.4	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320502	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93703*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-02	WG320110	Total Hot Plate Digestion	M200.2 ICP-MS	DF	Sample required dilution due to high sediment.
	WG320225	Aluminum, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320225	Iron, total	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320036	Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93703*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-03	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93703*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-04	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93703*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-05	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-06	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-07	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320411	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-08	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320523	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319975	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320047	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
			SM2540B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320411	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-09	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320523	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319975	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320047	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
			SM2540B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320411	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-10	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320523	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319975	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320047	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
			SM2540B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320411	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-11	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320055	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320523	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319975	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320047	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
			SM2540B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320411	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-12	WG320225	Aluminum, total	M200.7 ICP	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320086	Chemical Oxygen Demand	M410.4	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320133	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320463	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320523	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319982	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319975	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320047	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
			SM2540B	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320411	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW1

ACZ Sample ID: ***L93703-01***
Date Sampled: *03/10/12 15:28*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:10
Analysis Date: 03/27/12 9:02

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1.01	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	88.1		1.01	*	%	70	130

REPOR.01.01.01.02

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW1

ACZ Sample ID: ***L93703-01***
Date Sampled: *03/10/12 15:28*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:08

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.02		mg/L	2.04	10.2

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2

ACZ Sample ID: ***L93703-02***
Date Sampled: *03/10/12 13:55*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:11
Analysis Date: 03/27/12 9:28

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1.02	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	87.9		1.02	*	%	70	130

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2

ACZ Sample ID: ***L93703-02***
Date Sampled: *03/10/12 13:55*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:10

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.02		mg/L	2.04	10.2

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2A

ACZ Sample ID: ***L93703-03***
Date Sampled: *03/10/12 13:25*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:12
Analysis Date: 03/27/12 9:54

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28		.2	J	1.03	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	87.4		1.03	*	%	70	130

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW2A

ACZ Sample ID: ***L93703-03***
Date Sampled: *03/10/12 13:25*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:12

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.02		mg/L	2.04	10.2

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW3

ACZ Sample ID: ***L93703-04***
Date Sampled: *03/10/12 11:05*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:13
Analysis Date: 03/27/12 10:20

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	89.8		1	*	%	70	130

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW3

ACZ Sample ID: ***L93703-04***
Date Sampled: *03/10/12 11:05*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:14

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.031		mg/L	2.062	10.31

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4

ACZ Sample ID: ***L93703-05***
Date Sampled: *03/10/12 11:20*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:14
Analysis Date: 03/27/12 10:46

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	1.02	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	78.5		1.02	*	%	70	130

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4

ACZ Sample ID: ***L93703-05***
Date Sampled: *03/10/12 11:20*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:16

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.02		mg/L	2.04	10.2

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4A

ACZ Sample ID: ***L93703-06***
Date Sampled: *03/10/12 14:16*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:15
Analysis Date: 03/27/12 11:12

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	86.4		1	*	%	70	130

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW4A

ACZ Sample ID: ***L93703-06***
Date Sampled: *03/10/12 14:16*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:18

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.01		mg/L	2.02	10.1

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW5

ACZ Sample ID: ***L93703-07***
Date Sampled: *03/10/12 8:57*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:16
Analysis Date: 03/27/12 12:04

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	1.02	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	83.6		1.02	*	%	70	130

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW5

ACZ Sample ID: ***L93703-07***
Date Sampled: *03/10/12 8:57*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:20

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.01		mg/L	2.02	10.1

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW6

ACZ Sample ID: ***L93703-08***
Date Sampled: *03/10/12 7:45*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:17
Analysis Date: 03/27/12 12:30

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	1.02	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	86.7		1.02	*	%	70	130

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW6

ACZ Sample ID: ***L93703-08***
Date Sampled: *03/10/12 7:45*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:22

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.01		mg/L	2.02	10.1

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW7

ACZ Sample ID: ***L93703-09***
Date Sampled: *03/10/12 10:33*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:18
Analysis Date: 03/27/12 12:56

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	1.03	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	78.7		1.03	*	%	70	130

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW7

ACZ Sample ID: ***L93703-09***
Date Sampled: *03/10/12 10:33*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:24

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.031		mg/L	2.062	10.31

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW8

ACZ Sample ID: ***L93703-10***
Date Sampled: *03/10/12 12:50*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:19
Analysis Date: 03/27/12 13:22

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	74.1		1	*	%	70	130

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW8

ACZ Sample ID: ***L93703-10***
Date Sampled: *03/10/12 12:50*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:26

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.02		mg/L	2.04	10.2

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW9

ACZ Sample ID: ***L93703-11***
Date Sampled: *03/10/12 9:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:20
Analysis Date: 03/27/12 13:48

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			U	1.01	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	80		1.01	*	%	70	130

REPOR.01.01.01.02 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW9

ACZ Sample ID: ***L93703-11***
Date Sampled: *03/10/12 9:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:28

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.031		mg/L	2.062	10.31

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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW20

ACZ Sample ID: ***L93703-12***
Date Sampled: *03/12/12 10:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Diesel Range Organics (C10-C28)

Analysis Method: **M8015D GC/FID**
Extract Method: **M3520**

Workgroup: WG320099
Analyst: pml
Extract Date: 03/23/12 11:21
Analysis Date: 03/27/12 14:15

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
TPH C10 to C28			UH	1	*	mg/L	0.1	0.5
Surrogate Recoveries	**CAS**	**% Recovery**		**Dilution**	**XQ**	**Units**	**LCL**	**UCL**
OTP	84-15-1	79.1		1	*	%	70	130

ACZ Laboratories, Inc.
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Organic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SW20

ACZ Sample ID: ***L93703-12***
Date Sampled: *03/12/12 10:30*
Date Received: *03/22/12*
Sample Matrix: *Surface Water*

Oil & Grease, Total Recoverable

Analysis Method: **1664A - Gravimetric**
Extract Method:

Workgroup: WG320301
Analyst: LWT
Extract Date:
Analysis Date: 03/29/12 14:30

Compound	CAS	Result	QUAL	Dilution	XQ	Units	MDL	PQL
Oil and Grease			U	1.01		mg/L	2.02	10.1

REPOR.01.01.01.02

** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Organic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
LCL	Lower Control Limit
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
UCL	Upper Control Limit
Sample	Value of the Sample of interest

QC Sample Types

SURR	Surrogate	*LFM*	Laboratory Fortified Matrix
INTS	Internal Standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
LCSS	Laboratory Control Sample - Soil	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSW	Laboratory Control Sample - Water	*PBS*	Prep Blank - Soil
LFB	Laboratory Fortified Blank	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
E	Analyte concentration is estimated due to result exceeding calibration range.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
J	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
L	Target analyte response was below the laboratory defined negative threshold.
M	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.
P	Analyte concentration differs from second detector by more than 40%.
R	Poor spike recovery accepted because the other spike in the set fell within the given limits.
T	High Relative Percent Difference (RPD) accepted because sample concentrations are less than 10x the MDL.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
V	High blank data accepted because sample concentration is 10 times higher than blank concentration.
X	Quality control sample is out of control.
Z	Poor spike recovery is accepted because sample concentration is four times greater than spike concentration.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3)	EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for inorganic analyses are reported on a dry weight basis.
(3)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

REPIN11.10.10.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93703*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93703-01	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-02	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-03	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-04	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-05	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-06	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-07	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-08	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-09	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-10	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Organic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93703*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
					validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-11	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.
L93703-12	WG320099	"All Compounds"	M8015D GC/FID	H4	Sample was extracted past required extraction holding time, but analyzed within analysis holding time.
			M8015D GC/FID	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320011		M3520	H3	Sample was received and analyzed past holding time.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Certification Qualifiers

Tahoe Resources, Inc. ACZ Project ID: ***L93703***

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Bismuth, total	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Gallium, total	M200.7 ICP
Scandium, dissolved	M200.7 ICP
Scandium, total	M200.7 ICP

REPAD.05.06.05.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
Escobal Project

ACZ Project ID: L93703
Date Received: 03/22/2012 09:13
Received By: ksj
Date Printed: 3/22/2012

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?		X	
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?		X	
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

Some parameters were received past hold time.

Contact (For any discrepancies, the client must be contacted)

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
2905, 3112		9.5, 11.8	12, 14
2301, Na1501		9.4, 8.7	12, 15
3111		6.9	13
2687		8.1	15

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

REPAD.03.11.00.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
Escobal Project

ACZ Project ID: L93703
Date Received: 03/22/2012 09:13
Received By: ksj
Date Printed: 3/22/2012

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L93703-01	SW1	Y	Y		Y		Y					
L93703-02	SW2	Y	Y		Y		Y					
L93703-03	SW2A	Y	Y		Y		Y					
L93703-04	SW3	Y	Y		Y		Y					
L93703-05	SW4	Y	Y		Y		Y					
L93703-06	SW4A	Y	Y		Y		Y					
L93703-07	SW5	Y	Y		Y		Y					
L93703-08	SW6	Y	Y		Y		Y					
L93703-09	SW7	Y	Y		Y		Y					
L93703-10	SW8	Y	Y		Y		Y					
L93703-11	SW9	Y	Y		Y		Y					
L93703-12	SW20	Y	Y		Y		Y					

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

REPAD.03.11.00.01

L93703

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:
Name: MIGUEL BERGANZA
Company: TAHOE RESOURCES INC
E-mail: MBERGANZA@SANRAFAEL.COM.GT
Address: KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE APTO. 503 Y 504
Telephone: 5951-5248

Copy of Report to:
Name: CHARLIE MUERHOFF
Company: TAHOE RESOURCES INC
E-mail: CMUERHOFF@TAHOERESOURCESINC.COM
Telephone:

Invoice to:
Name: MIGUEL BERGANZA
Company: TAHOE RESOURCES INC
E-mail: MBERGANZA@SANRAFAEL.COM.GT
Address: KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE APTO. 503 Y 504
Telephone: 5951-5248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES / NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION
Quote #: WATER QUALITY
Project/PO #: ESCOBAL
Reporting state for compliance testing:
Sampler's Name: ENVIRONMENTAL DEPARTAMENT MSR
Are any samples NRC licensable material?

ANALYSES REQUESTED (Preservative found in parentheses)

SAMPLE IDENTIFICATION	DATE TIME	Matrix	# of Containers	SW
SW1	10/3/2012 15:28	SW	9	X
SW2	10/3/2012 13:55	SW	9	X
SW2A	10/3/2012 13:25	SW	9	X
SW3	10/3/2012 11:05	SW	9	X
SW4	10/3/2012 11:20	SW	9	X
SW4A	10/3/2012 14:16	SW	9	X
SW5	10/3/2012 8:57	SW	9	X
SW6	10/3/2012 7:45	SW	9	X
SW7	10/3/2012 10:33	SW	9	X
SW8	10/3/2012 12:50	SW	9	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE TIME:	RECEIVED BY:	DATE TIME
Miguel Berganza MS	20/3/12 19:30		

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

L93703 Chain of Custody

L93703

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:
Name: MIGUEL BERGANZA
Company: TAHOE RESOURCES INC
E-mail: MBERGANZA@SANRAFAEL.COM.GT
Address: KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE APTO. 503 Y 504
Telephone: 5951-5248

Copy of Report to:
Name: CHARLIE MUERHOFF
Company: TAHOE RESOURCES INC
E-mail: CMUERHOFF@TAHOERESOURCESINC.COM
Telephone:

Invoice to:
Name: MIGUEL BERGANZA
Company: TAHOE RESOURCES INC
E-mail: MBERGANZA@SANRAFAEL.COM.GT
Address: KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE APTO. 503 Y 504
Telephone: 5951-5248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES / NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION — ANALYSIS REQUESTED (attach list or use quote number)

Quote #: WATER QUALITY
Project/PO #: ESCOBAL
Reporting state for compliance testing:
Sampler's Name: ENVIRONMENTAL DEPARTAMENT MSR
Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE/TIME	Matrix	# of Containers	SW
SW9	10/3/2012 9:30	SW	9	X
SW20	12/3/2012 10:30	SW	9	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
Miguel Berganza MB	20/3/12 18:38		
			19:40

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

2

Guatemala March 20, 2012

To whom it may concern:

Minera San Rafael, S.A is sending one case with samples of water, which is not contaminated, that are going to be analyzed by the ACZ Laboratories in Steamboat Springs, Colorado, USA.

If you have any question or doubt, please contact Miguel Berganza at Minera San Rafael, S.A. (502 – 5951-5248) or Tony Antalek at ACZ Laboratories (970-879-6590).

Sincerely yours,

Miguel Berganza
Evironment Department.
Proyecto Escobal, S. A.

Minera San Rafael

COMMERCIAL INVOICE

COMERCIAL INVOICE No.
01-E

DATE: March/20/2012	AWB No.

SHIPPER	CONSIGNEE
Tahoe Resources, Inc. Km. 8.6 Muxbal Centro corporativo Muxbal. Torre Oeste Apto. 503 y 504 GUATEMALA CITY, GUATEMALA	ACZ Laboratories, Inc. 2773 Downhill Drive, Steamboat Springs, Colorado, USA

CODE	UNITS	DESCRIPTION OF GOODS	WEIGHT	UNIT VALUE	TOTAL VALUE
*****	1	Water samples		USD$5.00	USD$ 5.00
TOTAL					USD$ 5.00

REASON FOR EXPORTATION: for analysis

COUNTRY OF ORIGIN OF THE ABOVE DESCRIBED GOODS: GUATEMALA

Miguel Berganza **SIGNATURE OF SHIPER/EXPORTER**	March/20/2012 **DATE OF EXPORTATION:**

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10.3.2. Muestras de Agua Subterranea (GW) 3.4.1

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 16, 2012

Report to:
Miguel Berganza
Tahoe Resources, Inc.
Km 8.6 carrtera Antigua a El Salvador Centro cor
Torre Oeste.Apto 503y504 Guatemala, GT

Bill to:
Miguel Berganza
Tahoe Resources, Inc.
5190 Neil Road #310
Reno, NV 89502

cc: Charlie Muerhoff

Project ID: El Escobal
ACZ Project ID: L92529

Miguel Berganza:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 29, 2011. This project has been assigned to ACZ's project number, L92529. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92529. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 16, 2012. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

ACCREDITED IN ACCORDANCE WITH nelac

ACIL

REPAD.01.06.05.02

Page 1 of 22

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

Tahoe Resources, Inc. January 16, 2012

Project ID: El Escobal
ACZ Project ID: L92529

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 ground water samples from Tahoe Resources, Inc. on December 29, 2011. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L92529. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: GW-2

ACZ Sample ID: ***L92529-01***
Date Sampled: *12/18/11 13:46*
Date Received: *12/29/11*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 18:06	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 16:36	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/09/12 15:34	mpb
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/09/12 15:30	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/05/12 15:36	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	01/03/12 15:22	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0004	0.002	01/11/12 3:59	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0102			mg/L	0.0005	0.002	01/11/12 3:59	pmc
Barium, dissolved	M200.7 ICP	0.216			mg/L	0.003	0.02	01/03/12 15:22	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:22	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 15:22	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:22	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 3:59	pmc
Calcium, dissolved	M200.7 ICP	26.1			mg/L	0.2	1	01/03/12 15:22	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:22	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:22	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:22	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 15:22	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	01/03/12 15:22	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 3:59	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 15:22	jjc
Magnesium, dissolved	M200.7 ICP	4.9			mg/L	0.2	1	01/03/12 15:22	jjc
Manganese, dissolved	M200.7 ICP	0.024	B		mg/L	0.005	0.03	01/03/12 15:22	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 21:04	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:22	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:22	jjc
Potassium, dissolved	M200.7 ICP	2.2			mg/L	0.3	2	01/03/12 15:22	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 15:22	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	01/11/12 3:59	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/11/12 3:59	pmc
Sodium, dissolved	M200.7 ICP	13.3			mg/L	0.3	2	01/03/12 15:22	jjc
Strontium, dissolved	M200.7 ICP	0.22			mg/L	0.01	0.05	01/03/12 15:22	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 3:59	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 15:22	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 15:22	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/13/12 19:39	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 15:22	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:22	jjc

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: GW-2

ACZ Sample ID: ***L92529-01***
Date Sampled: *12/18/11 13:46*
Date Received: *12/29/11*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		64			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		64			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.1			%			01/16/12 0:00	calc
Sum of Anions		2.3			meq/L	0.1	0.5	01/16/12 0:00	calc
Sum of Cations		2.4			meq/L	0.1	0.5	01/16/12 0:00	calc
Chloride	SM4500Cl-E	2	B		mg/L	1	5	01/05/12 16:58	lhb
Conductivity @25C	SM2510B	234			umhos/cm	1	10	12/30/11 22:35	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/30/11 0:20	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/30/11 17:17	jlf
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	01/04/12 16:18	abm
Hardness as CaCO3	SM2340B - Calculation	85			mg/L	1	7	01/16/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.07	B	*	mg/L	0.02	0.1	01/06/12 23:20	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/09/12 18:13	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.1	B	*	mg/L	0.1	0.5	01/10/12 13:21	mpb
pH (lab)	SM4500H+ B								
pH		7.6	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		20.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.16			mg/L	0.03	0.15	01/16/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	01/10/12 23:11	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.05	BH	*	mg/L	0.01	0.05	12/29/11 21:57	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.07		*	mg/L	0.01	0.05	01/06/12 11:07	mpb
Residue, Filterable (TDS) @180C	SM2540C	200	H	*	mg/L	10	20	01/03/12 15:54	mla
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	01/04/12 17:08	mla
Residue, Total (TS) @ 105C	SM2540B	220	H	*	mg/L	10	20	01/11/12 15:59	abm
Sulfate	D516-02 - Turbidimetric	47			mg/L	5	30	01/06/12 10:06	ocp
TDS (calculated)	Calculation	134			mg/L	10	50	01/16/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.49						01/16/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: GW-3

ACZ Sample ID: ***L92529-02***
Date Sampled: *12/18/11 09:44*
Date Received: *12/29/11*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 18:14	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 16:44	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/09/12 15:48	mpb
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/09/12 15:45	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/05/12 15:48	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	01/03/12 15:25	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	01/11/12 4:08	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0032			mg/L	0.0005	0.002	01/11/12 4:08	pmc
Barium, dissolved	M200.7 ICP	0.182			mg/L	0.003	0.02	01/03/12 15:25	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:25	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 15:25	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:25	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 4:08	pmc
Calcium, dissolved	M200.7 ICP	39.2			mg/L	0.2	1	01/03/12 15:25	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:25	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:25	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:25	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 15:25	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	01/03/12 15:25	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 4:08	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 15:25	jjc
Magnesium, dissolved	M200.7 ICP	5.6			mg/L	0.2	1	01/03/12 15:25	jjc
Manganese, dissolved	M200.7 ICP	0.009	B		mg/L	0.005	0.03	01/03/12 15:25	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 21:07	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:25	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:25	jjc
Potassium, dissolved	M200.7 ICP	4.9			mg/L	0.3	2	01/03/12 15:25	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 15:25	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	01/11/12 4:08	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/11/12 4:08	pmc
Sodium, dissolved	M200.7 ICP	12.3			mg/L	0.3	2	01/03/12 15:25	jjc
Strontium, dissolved	M200.7 ICP	0.20			mg/L	0.01	0.05	01/03/12 15:25	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 4:08	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 15:25	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 15:25	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/13/12 19:48	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 15:25	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:25	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: GW-3

ACZ Sample ID: ***L92529-02***
Date Sampled: *12/18/11 09:44*
Date Received: *12/29/11*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		91			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		91			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.3			%			01/16/12 0:00	calc
Sum of Anions		2.9			meq/L	0.1	0.5	01/16/12 0:00	calc
Sum of Cations		3.1			meq/L	0.1	0.5	01/16/12 0:00	calc
Chloride	SM4500Cl-E	5	B		mg/L	1	5	01/05/12 16:58	lhb
Conductivity @25C	SM2510B	307			umhos/cm	1	10	12/30/11 22:44	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/30/11 0:21	pjt
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	12/30/11 17:17	jl
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	01/04/12 16:22	abm
Hardness as CaCO3	SM2340B - Calculation	121			mg/L	1	7	01/16/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	2.44		*	mg/L	0.02	0.1	01/06/12 23:25	pjt
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/09/12 18:14	toc
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	01/10/12 13:22	mpb
pH (lab)	SM4500H+ B								
pH		7.8	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.19			mg/L	0.03	0.15	01/16/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.05	B	*	mg/L	0.01	0.05	01/10/12 23:13	pjt
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.06	H	*	mg/L	0.01	0.05	12/29/11 21:58	pjt
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.06		*	mg/L	0.01	0.05	01/06/12 11:09	mpb
Residue, Filterable (TDS) @180C	SM2540C	250	H	*	mg/L	10	20	01/03/12 15:55	mla
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	01/04/12 17:10	mla
Residue, Total (TS) @ 105C	SM2540B	260	H	*	mg/L	10	20	01/05/12 13:34	las
Sulfate	D516-02 - Turbidimetric	42		*	mg/L	5	30	01/06/12 10:06	ccp
TDS (calculated)	Calculation	164			mg/L	10	50	01/16/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.52						01/16/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: GW-4

ACZ Sample ID: ***L92529-03***
Date Sampled: *12/18/11 14:22*
Date Received: *12/29/11*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 18:22	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 16:52	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/09/12 16:03	mpb
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/09/12 15:52	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/05/12 16:00	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.52			mg/L	0.03	0.2	01/03/12 15:28	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	01/11/12 4:12	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0005	0.002	01/11/12 4:12	pmc
Barium, dissolved	M200.7 ICP	0.173			mg/L	0.003	0.02	01/03/12 15:28	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:28	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 15:28	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:28	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 4:12	pmc
Calcium, dissolved	M200.7 ICP	5.7			mg/L	0.2	1	01/03/12 15:28	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:28	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:28	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:28	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 15:28	jjc
Iron, dissolved	M200.7 ICP	1.33			mg/L	0.02	0.05	01/03/12 15:28	jjc
Lead, dissolved	M200.8 ICP-MS	0.0015			mg/L	0.0001	0.0005	01/11/12 4:12	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 15:28	jjc
Magnesium, dissolved	M200.7 ICP	3.0			mg/L	0.2	1	01/03/12 15:28	jjc
Manganese, dissolved	M200.7 ICP	0.520			mg/L	0.005	0.03	01/03/12 15:28	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 21:09	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:28	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:28	jjc
Potassium, dissolved	M200.7 ICP	5.0			mg/L	0.3	2	01/03/12 15:28	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 15:28	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	01/11/12 4:12	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/11/12 4:12	pmc
Sodium, dissolved	M200.7 ICP	9.9			mg/L	0.3	2	01/03/12 15:28	jjc
Strontium, dissolved	M200.7 ICP	0.05			mg/L	0.01	0.05	01/03/12 15:28	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 4:12	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 15:28	jjc
Titanium. dissolved	M200.7 ICP	0.024	B		mg/L	0.005	0.03	01/03/12 15:28	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0004	B		mg/L	0.0001	0.0005	01/13/12 19:51	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 15:28	jjc
Zinc, dissolved	M200.7 ICP	0.16			mg/L	0.01	0.05	01/03/12 15:28	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: GW-4

ACZ Sample ID: ***L92529-03***
Date Sampled: *12/18/11 14:22*
Date Received: *12/29/11*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		42			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		42			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		8.3			%			01/16/12 0:00	calc
Sum of Anions		1.1			meq/L	0.1	0.5	01/16/12 0:00	calc
Sum of Cations		1.3			meq/L	0.1	0.5	01/16/12 0:00	calc
Chloride	SM4500Cl-E	3	B		mg/L	1	5	01/05/12 16:59	lhb
Conductivity @25C	SM2510B	110			umhos/cm	1	10	12/30/11 22:52	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.012		*	mg/L	0.003	0.01	12/30/11 0:22	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.012		*	mg/L	0.003	0.01	12/30/11 17:18	jlf
Fluoride	SM4500F-C		U	*	mg/L	0.1	0.5	01/04/12 16:28	abm
Hardness as CaCO3	SM2340B - Calculation	27			mg/L	1	7	01/16/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.06	B	*	mg/L	0.02	0.1	01/06/12 23:26	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate	0.06	B	*	mg/L	0.05	0.5	01/09/12 18:48	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	1.5		*	mg/L	0.1	0.5	01/10/12 14:12	mpb
pH (lab)	SM4500H+ B								
pH		7.4	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.06	B		mg/L	0.03	0.15	01/16/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.01	B	*	mg/L	0.01	0.05	01/10/12 23:14	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.02	BH	*	mg/L	0.01	0.05	12/29/11 21:59	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	01/06/12 11:12	mpb
Residue, Filterable (TDS) @180C	SM2540C	180	H	*	mg/L	10	20	01/03/12 15:56	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	118	H	*	mg/L	5	20	01/04/12 17:11	mla
Residue, Total (TS) @ 105C	SM2540B	550	H	*	mg/L	10	20	01/05/12 13:35	las
Sulfate	D516-02 - Turbidimetric	7		*	mg/L	1	5	01/06/12 10:21	ccp
TDS (calculated)	Calculation	61			mg/L	10	50	01/16/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	2.95						01/16/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: GW-5

ACZ Sample ID: ***L92529-04***
Date Sampled: *12/18/11 14:40*
Date Received: *12/29/11*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							12/29/11 18:30	mpb
Cyanide, WAD	SM4500-CN I- distillation							12/29/11 17:00	mpb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							01/09/12 16:17	mpb
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							01/09/12 16:00	lhb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/05/12 16:12	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	01/03/12 15:37	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	01/11/12 4:21	pmc
Arsenic, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	01/11/12 4:21	pmc
Barium, dissolved	M200.7 ICP	0.024			mg/L	0.003	0.02	01/03/12 15:37	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:37	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	01/03/12 15:37	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:37	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 4:21	pmc
Calcium, dissolved	M200.7 ICP	2.0			mg/L	0.2	1	01/03/12 15:37	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:37	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:37	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:37	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 15:37	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	01/03/12 15:37	jjc
Lead, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	01/11/12 4:21	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	01/03/12 15:37	jjc
Magnesium, dissolved	M200.7 ICP	1.1			mg/L	0.2	1	01/03/12 15:37	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 15:37	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	01/11/12 21:11	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:37	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:37	jjc
Potassium, dissolved	M200.7 ICP	3.7			mg/L	0.3	2	01/03/12 15:37	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	01/03/12 15:37	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	01/11/12 4:21	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	01/11/12 4:21	pmc
Sodium, dissolved	M200.7 ICP	6.3			mg/L	0.3	2	01/03/12 15:37	jjc
Strontium, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	01/03/12 15:37	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/11/12 4:21	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	01/03/12 15:37	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 15:37	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	01/13/12 20:01	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	01/03/12 15:37	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	01/03/12 15:37	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: GW-5

ACZ Sample ID: ***L92529-04***
Date Sampled: *12/18/11 14:40*
Date Received: *12/29/11*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		32			mg/L	2	20	12/30/11 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	12/30/11 0:00	las
Total Alkalinity		32			mg/L	2	20	12/30/11 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-24.2			%			01/16/12 0:00	calc
Sum of Anions		0.925			meq/L	0.1	0.5	01/16/12 0:00	calc
Sum of Cations		0.564			meq/L	0.1	0.5	01/16/12 0:00	calc
Chloride	SM4500Cl-E	4	B		mg/L	1	5	01/05/12 16:59	lhb
Conductivity @25C	SM2510B	95			umhos/cm	1	10	12/30/11 22:59	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.011		*	mg/L	0.003	0.01	12/30/11 0:23	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.011		*	mg/L	0.003	0.01	12/30/11 17:19	jlf
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	01/04/12 16:48	abm
Hardness as CaCO3	SM2340B - Calculation	10			mg/L	1	7	01/16/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.43		*	mg/L	0.02	0.1	01/06/12 23:27	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	01/09/12 18:17	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.3	B		mg/L	0.1	0.5	01/13/12 0:34	pjb
pH (lab)	SM4500H+ B								
pH		7.7	H		units	0.1	0.1	12/30/11 0:00	las
pH measured at		19.0			C	0.1	0.1	12/30/11 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.06	B		mg/L	0.03	0.15	01/16/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	01/10/12 23:15	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.02	BH	*	mg/L	0.01	0.05	12/29/11 22:01	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.05	B	*	mg/L	0.01	0.05	01/06/12 11:13	mpb
Residue, Filterable (TDS) @180C	SM2540C	180	H	*	mg/L	10	20	01/03/12 15:57	mla
Residue, Non-Filterable (TSS) @105C	SM2540D	169	H	*	mg/L	5	20	01/04/12 17:13	mla
Residue, Total (TS) @ 105C	SM2540B	320	H	*	mg/L	10	20	01/05/12 13:38	las
Sulfate	D516-02 - Turbidimetric	8		*	mg/L	1	5	01/06/12 10:21	ocp
TDS (calculated)	Calculation	44	B		mg/L	10	50	01/16/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	4.09						01/16/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1)	EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2)	EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3)	EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4)	EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5)	Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).

Comments

(1)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2)	Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3)	Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L92529***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L92529-01	WG315995	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316041	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316172	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316373	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316459	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316511	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316549	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG315992	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316330	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316109	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG316206	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG316604	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.

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Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: L92529

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L92529-02	WG315995	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316041	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316172	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316373	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316459	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316511	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316549	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG315992	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316330	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316109	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG316206	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG316261	Residue, Total (TS) @ 105C	SM2540B	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
			SM2540B	H3	Sample was received and analyzed past holding time.
	WG316324	Sulfate	D516-02 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L92529***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L92529-03	WG315995	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316041	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316172	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316373	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316459	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316511	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316549	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG315992	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316330	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316109	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG316206	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG316261	Residue, Total (TS) @ 105C	SM2540B	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
			SM2540B	H3	Sample was received and analyzed past holding time.
	WG316324	Sulfate	D516-02 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L92529***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L92529-04	WG315995	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316041	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316172	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316373	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316459	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316549	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG315992	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316330	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316109	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG316206	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG316261	Residue, Total (TS) @ 105C	SM2540B	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
			SM2540B	H3	Sample was received and analyzed past holding time.
	WG316324	Sulfate	D516-02 - Turbidimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Certification Qualifiers

Tahoe Resources, Inc. ACZ Project ID: ***L92529***

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Scandium, dissolved	M200.7 ICP

REPAD.05.06.05.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
El Escobal

ACZ Project ID: L92529
Date Received: 12/29/2011 09:55
Received By: ksj
Date Printed: 12/29/2011

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?		X	
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			
11) Are the trip blanks (VOA and/or Cyanide) present?		X	
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

Some parameters were received past hold time.

Contact (For any discrepancies, the client must be contacted)

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
2865		9.5	15

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

REPAD.03.11.00.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
El Escobal

ACZ Project ID: L92529
Date Received: 12/29/2011 09:55
Received By: ksj
Date Printed: 12/29/2011

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L92529-01	GW-2		Y		Y		Y					
L92529-02	GW-3		Y		Y		Y					
L92529-03	GW-4		Y		Y		Y					
L92529-04	GW-5		Y		Y		Y					

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

REPAD.03.11.00.01

L92529

ACZ Laboratories, Inc. CHAIN of CUSTODY
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:
Name: Miguel Berganza
Company: Tahoe Resources
E-mail: mberganza@sanrafael.com.gt
Address: Km 8.6 Centro corporativo murabal, torre oeste apto. 503 y 504
Telephone: (502) 5951-5248

Copy of Report to:
Name: Charlie Muerhoff
Company: Tahoe Resources
E-mail: cmuerhoff@tahoeresourcesinc.com
Telephone:

Invoice to:
Name: Miguel Berganza
Company: Tahoe Resources
E-mail: mberganza@sanrafael.com.gt
Address: Km 8.6 Centro corporativo murabal, torre oeste apto. 503 y 504
Telephone: (502) 5951-5248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION
Quote #: Water Quality
Project/PO #: El Escobal
Reporting state for compliance testing:
Sampler's Name: Environmental department MSR
Are any samples NRC licensable material?

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE TIME	Matrix	# of Containers	GW
GW - 2	18/12/2011 13:46	GW	7	X
GW - 3	18/12/2011 09:44	GW	7	X
GW - 4	18/12/2011 14:22	GW	7	X
GW - 5	18/12/2011 14:40	GW	7	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY	DATE TIME	RECEIVED BY	DATE TIME
Ronald Xacaz	27/12/4 12:35	Luis Santos	27/12 12:35
			12.29.11 9955

L92529 Chain of Custody

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

Minera San Rafael

COMMERCIAL INVOICE

COMERCIAL INVOICE No.
01-E

DATE: December/27/2011	AWB No.

SHIPPER	CONSIGNEE
Tahoe Resources, Inc. Km. 8.6 Muxbal Centro corporativo Muxbal. Torre Oeste Apto. 503 y 504 GUATEMALA CITY, GUATEMALA	ACZ Laboratories, Inc. 2773 Downhill Drive, Steamboat Springs, Colorado, USA

CODE	UNITS	DESCRIPTION OF GOODS	WEIGHT	UNIT VALUE	TOTAL VALUE
*****	1	Water samples		USD$5.00	USD$ 5.00
TOTAL					USD$ 5.00

REASON FOR EXPORTATION: for analysis

COUNTRY OF ORIGIN OF THE ABOVE DESCRIBED GOODS: GUATEMALA

Miguel Berganza SIGNATURE OF SHIPER/EXPORTER	December/27/2011 DATE OF EXPORTATION:

Guatemala December 27, 2010

To whom it may concern:

Minera San Rafael, S.A is sending one case with samples of water, which is not contaminated, that are going to be analyzed by the ACZ Laboratories in Steamboat Springs, Colorado, USA.

If you have any question or doubt, please contact Miguel Berganza at Minera San Rafael, S.A. (502 – 5951-5248) or Tony Antalek at ACZ Laboratories (970-879-6590).

Sincerely yours,

Miguel Berganza
Evironment Department.
Proyecto Escobal, S. A.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 06, 2012

Report to:
Miguel Berganza
Tahoe Resources, Inc.
Km 8.6 carrtera Antigua a El Salvador Centro cor
Torre Oeste.Apto 503y504 Guatemala, GT

Bill to:
Miguel Berganza
Tahoe Resources, Inc.
5190 Neil Road #310
Reno, NV 89502

cc: Charlie Muerhoff

Project ID: Escobal Project
ACZ Project ID: L93749

Miguel Berganza:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 26, 2012. This project has been assigned to ACZ's project number, L93749. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L93749. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 06, 2012. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

Tahoe Resources, Inc. April 06, 2012

Project ID: Escobal Project
ACZ Project ID: L93749

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 6 ground water samples from Tahoe Resources, Inc. on March 26, 2012. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L93749. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).

2. Regarding sample -01, the Cation / Anion Balance (CAB) disparity is due to cation and/or anion sums that were < 3.0 meq/L and therefore unable to calculate accurately. Also, please be advised that ACZ will re-test any suspect analyte at client request.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW1A

ACZ Sample ID: ***L93749-01***
Date Sampled: *03/11/12 07:00*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H	*				04/02/12 14:22	mpb
Cyanide, WAD	SM4500-CN I- distillation		H	*				03/27/12 11:19	tod
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:32	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:03	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:00	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.04	B		mg/L	0.03	0.2	03/28/12 0:25	aeb
Antimony, dissolved	M200.8 ICP-MS		U	*	mg/L	0.004	0.02	03/31/12 17:37	scp
Arsenic, dissolved	M200.8 ICP-MS		U	*	mg/L	0.005	0.02	03/31/12 17:37	scp
Barium, dissolved	M200.7 ICP	0.100			mg/L	0.003	0.02	03/28/12 0:25	aeb
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:25	aeb
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 0:25	aeb
Boron, dissolved	M200.7 ICP	0.05			mg/L	0.01	0.05	03/28/12 0:25	aeb
Cadmium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.005	03/31/12 17:37	scp
Calcium, dissolved	M200.7 ICP	14.7			mg/L	0.2	1	03/28/12 0:25	aeb
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:25	aeb
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:25	aeb
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:25	aeb
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:25	aeb
Iron, dissolved	M200.7 ICP	1.15			mg/L	0.02	0.05	03/28/12 0:25	aeb
Lead, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.005	03/31/12 17:37	scp
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 0:25	aeb
Magnesium, dissolved	M200.7 ICP	10.2			mg/L	0.2	1	03/28/12 0:25	aeb
Manganese, dissolved	M200.7 ICP	0.499			mg/L	0.005	0.03	03/28/12 0:25	aeb
Mercury, dissolved	M245.1 CVAA		U	*	mg/L	0.0002	0.001	04/04/12 18:42	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:25	aeb
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:25	aeb
Potassium, dissolved	M200.7 ICP	42.5			mg/L	0.3	2	03/28/12 0:25	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:25	aeb
Selenium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.003	03/31/12 17:37	scp
Silver, dissolved	M200.8 ICP-MS	0.0021	B	*	mg/L	0.0005	0.003	03/31/12 17:37	scp
Sodium, dissolved	M200.7 ICP	25.9			mg/L	0.3	2	03/28/12 0:25	aeb
Strontium, dissolved	M200.7 ICP	0.11			mg/L	0.01	0.05	03/28/12 0:25	aeb
Thallium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.005	03/31/12 17:37	scp
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 0:25	aeb
Titanium, dissolved	M200.7 ICP	0.009	B		mg/L	0.005	0.03	03/28/12 0:25	aeb
Uranium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.005	03/31/12 17:37	scp
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:25	aeb
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/28/12 0:25	aeb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW1A

ACZ Sample ID: ***L93749-01***
Date Sampled: *03/11/12 07:00*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		60	H	*	mg/L	2	20	03/26/12 0:00	las
Carbonate as CaCO3			UH	*	mg/L	2	20	03/26/12 0:00	las
Hydroxide as CaCO3			UH	*	mg/L	2	20	03/26/12 0:00	las
Total Alkalinity		60	H	*	mg/L	2	20	03/26/12 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		32.2			%			04/06/12 0:00	calc
Sum of Anions		2.0			meq/L	0.1	0.5	04/06/12 0:00	calc
Sum of Cations		3.9			meq/L	0.1	0.5	04/06/12 0:00	calc
Chloride	SM4500Cl-E	30	B	*	mg/L	20	100	04/03/12 9:43	ccp
Conductivity @25C	SM2510B	257			umhos/cm	1	10	03/26/12 23:42	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.006	BH	*	mg/L	0.003	0.01	04/03/12 12:49	lhb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.007	BH	*	mg/L	0.003	0.01	03/28/12 0:36	pjb
Fluoride	SM4500F-C		U	*	mg/L	0.1	0.5	03/28/12 15:35	las
Hardness as CaCO3	SM2340B - Calculation	79			mg/L	1	7	04/06/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.09	B		mg/L	0.02	0.1	04/05/12 14:11	tod
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 19:20	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	3.5		*	mg/L	0.1	0.5	04/04/12 0:13	pjb
pH (lab)	SM4500H+ B								
pH		7.0	H		units	0.1	0.1	03/26/12 0:00	las
pH measured at		18.0			C	0.1	0.1	03/26/12 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	2.29			mg/L	0.03	0.15	04/06/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.86			mg/L	0.01	0.05	04/03/12 16:13	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.74	H	*	mg/L	0.05	0.3	03/27/12 22:12	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.70			mg/L	0.02	0.1	04/03/12 17:10	tod
Residue, Filterable (TDS) @180C	SM2540C	470	H	*	mg/L	10	20	03/26/12 13:26	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	12	BH	*	mg/L	5	20	03/26/12 14:18	abm
Residue, Total (TS) @ 105C	SM2540B	340	H	*	mg/L	10	20	03/28/12 11:47	las
Sulfate	D516-02 - Turbidimetric		U	*	mg/L	10	50	04/04/12 14:27	tod
TDS (calculated)	Calculation	161			mg/L	10	50	04/06/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	2.92						04/06/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW3

ACZ Sample ID: ***L93749-02***
Date Sampled: *03/10/12 16:10*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H	*				04/02/12 14:39	mpb
Cyanide, WAD	SM4500-CN I- distillation		H	*				03/27/12 11:19	tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:32	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:03	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:00	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/28/12 0:28	aeb
Antimony, dissolved	M200.8 ICP-MS	0.0007	B		mg/L	0.0004	0.002	03/31/12 17:42	scp
Arsenic, dissolved	M200.8 ICP-MS	0.0098			mg/L	0.0005	0.002	03/31/12 17:42	scp
Barium, dissolved	M200.7 ICP	0.295			mg/L	0.003	0.02	03/28/12 0:28	aeb
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:28	aeb
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 0:28	aeb
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:28	aeb
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 17:42	scp
Calcium, dissolved	M200.7 ICP	37.7			mg/L	0.2	1	03/28/12 0:28	aeb
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:28	aeb
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:28	aeb
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:28	aeb
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:28	aeb
Iron, dissolved	M200.7 ICP	0.04	B		mg/L	0.02	0.05	03/28/12 0:28	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 17:42	scp
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 0:28	aeb
Magnesium, dissolved	M200.7 ICP	7.1			mg/L	0.2	1	03/28/12 0:28	aeb
Manganese, dissolved	M200.7 ICP	0.042			mg/L	0.005	0.03	03/28/12 0:28	aeb
Mercury, dissolved	M245.1 CVAA		U	*	mg/L	0.0002	0.001	04/04/12 18:44	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:28	aeb
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:28	aeb
Potassium, dissolved	M200.7 ICP	2.7			mg/L	0.3	2	03/28/12 0:28	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:28	aeb
Selenium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0003	03/31/12 17:42	scp
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/31/12 17:42	scp
Sodium, dissolved	M200.7 ICP	15.2			mg/L	0.3	2	03/28/12 0:28	aeb
Strontium, dissolved	M200.7 ICP	0.33			mg/L	0.01	0.05	03/28/12 0:28	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 17:42	scp
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 0:28	aeb
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:28	aeb
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 17:42	scp
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:28	aeb
Zinc, dissolved	M200.7 ICP	0.04	B		mg/L	0.01	0.05	03/28/12 0:28	aeb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW3

ACZ Sample ID: L93749-02
Date Sampled: 03/10/12 16:10
Date Received: 03/26/12
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		88	H	*	mg/L	2	20	03/26/12 0:00	las
Carbonate as CaCO3			UH	*	mg/L	2	20	03/26/12 0:00	las
Hydroxide as CaCO3			UH	*	mg/L	2	20	03/26/12 0:00	las
Total Alkalinity		88	H	*	mg/L	2	20	03/26/12 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-3.0			%			04/06/12 0:00	calc
Sum of Anions		3.4			meq/L	0.1	0.5	04/06/12 0:00	calc
Sum of Cations		3.2			meq/L	0.1	0.5	04/06/12 0:00	calc
Chloride	SM4500Cl-E	3	B	*	mg/L	1	5	04/03/12 9:43	ccp
Conductivity @25C	SM2510B	314			umhos/cm	1	10	03/26/12 23:50	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013	H	*	mg/L	0.003	0.01	04/03/12 12:51	lhb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.012	H	*	mg/L	0.003	0.01	03/28/12 0:37	pjb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/28/12 15:39	las
Hardness as CaCO3	SM2340B - Calculation	123			mg/L	1	7	04/06/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U		mg/L	0.02	0.1	04/05/12 14:12	tcd
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 19:21	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/04/12 0:14	pjb
pH (lab)	SM4500H+ B								
pH		7.7	H		units	0.1	0.1	03/26/12 0:00	las
pH measured at		18.0			C	0.1	0.1	03/26/12 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.12	B		mg/L	0.03	0.15	04/06/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.04	B		mg/L	0.01	0.05	04/03/12 16:16	tcd
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.04	BH	*	mg/L	0.01	0.05	03/27/12 22:14	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.10			mg/L	0.01	0.05	04/03/12 16:41	tcd
Residue, Filterable (TDS) @180C	SM2540C	250	H	*	mg/L	10	20	03/26/12 13:26	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	5	BH	*	mg/L	5	20	03/26/12 14:19	abm
Residue, Total (TS) @ 105C	SM2540B	260	H	*	mg/L	10	20	03/28/12 11:50	las
Sulfate	D516-02 - Turbidimetric	71		*	mg/L	5	30	04/04/12 14:34	tcd
TDS (calculated)	Calculation	190			mg/L	10	50	04/06/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.32						04/06/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW4

ACZ Sample ID: ***L93749-03***
Date Sampled: *03/10/12 16:30*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H	*				04/02/12 14:48	mpb
Cyanide, WAD	SM4500-CN I- distillation		H	*				03/27/12 11:19	tod
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:32	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:03	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:01	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.34			mg/L	0.03	0.2	03/28/12 0:37	aeb
Antimony, dissolved	M200.8 ICP-MS		U	*	mg/L	0.004	0.02	03/31/12 17:46	scp
Arsenic, dissolved	M200.8 ICP-MS		U	*	mg/L	0.005	0.02	03/31/12 17:46	scp
Barium, dissolved	M200.7 ICP	0.149			mg/L	0.003	0.02	03/28/12 0:37	aeb
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:37	aeb
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 0:37	aeb
Boron, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/28/12 0:37	aeb
Cadmium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.005	03/31/12 17:46	scp
Calcium, dissolved	M200.7 ICP	6.8			mg/L	0.2	1	03/28/12 0:37	aeb
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:37	aeb
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:37	aeb
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:37	aeb
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:37	aeb
Iron, dissolved	M200.7 ICP	1.72			mg/L	0.02	0.05	03/28/12 0:37	aeb
Lead, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.005	03/31/12 17:46	scp
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 0:37	aeb
Magnesium, dissolved	M200.7 ICP	3.5			mg/L	0.2	1	03/28/12 0:37	aeb
Manganese, dissolved	M200.7 ICP	0.710			mg/L	0.005	0.03	03/28/12 0:37	aeb
Mercury, dissolved	M245.1 CVAA		U	*	mg/L	0.0002	0.001	04/04/12 18:46	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:37	aeb
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:37	aeb
Potassium, dissolved	M200.7 ICP	8.3			mg/L	0.3	2	03/28/12 0:37	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:37	aeb
Selenium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.003	03/31/12 17:46	scp
Silver, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0005	0.003	03/31/12 17:46	scp
Sodium, dissolved	M200.7 ICP	9.4			mg/L	0.3	2	03/28/12 0:37	aeb
Strontium, dissolved	M200.7 ICP	0.06			mg/L	0.01	0.05	03/28/12 0:37	aeb
Thallium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.005	03/31/12 17:46	scp
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 0:37	aeb
Titanium, dissolved	M200.7 ICP	0.015	B		mg/L	0.005	0.03	03/28/12 0:37	aeb
Uranium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.001	0.005	03/31/12 17:46	scp
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:37	aeb
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:37	aeb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW4

ACZ Sample ID: ***L93749-03***
Date Sampled: *03/10/12 16:30*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		56	H	*	mg/L	2	20	03/27/12 0:00	las
Carbonate as CaCO3			UH	*	mg/L	2	20	03/27/12 0:00	las
Hydroxide as CaCO3			UH	*	mg/L	2	20	03/27/12 0:00	las
Total Alkalinity		56	H	*	mg/L	2	20	03/27/12 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		12.0			%			04/06/12 0:00	calc
Sum of Anions		1.1			meq/L	0.1	0.5	04/06/12 0:00	calc
Sum of Cations		1.4			meq/L	0.1	0.5	04/06/12 0:00	calc
Chloride	SM4500Cl-E		U	*	mg/L	10	50	04/03/12 9:43	ccp
Conductivity @25C	SM2510B	141			umhos/cm	1	10	03/27/12 0:28	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.008	BH	*	mg/L	0.003	0.01	04/03/12 12:53	lhb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.008	BH	*	mg/L	0.003	0.01	03/28/12 0:38	pjb
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	03/28/12 15:43	las
Hardness as CaCO3	SM2340B - Calculation	31			mg/L	1	7	04/06/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U		mg/L	0.02	0.1	04/05/12 14:13	tod
Nitrogen, ammonia	M350.1 - Automated Phenate	0.07	B	*	mg/L	0.05	0.5	04/02/12 19:25	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	1.3		*	mg/L	0.1	0.5	04/04/12 0:15	pjb
pH (lab)	SM4500H+ B								
pH		7.5	H		units	0.1	0.1	03/27/12 0:00	las
pH measured at		19.0			C	0.1	0.1	03/27/12 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.06	B		mg/L	0.03	0.15	04/06/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.03	B		mg/L	0.01	0.05	04/03/12 16:17	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.02	BH	*	mg/L	0.01	0.05	03/27/12 22:16	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.17			mg/L	0.01	0.05	04/03/12 16:43	tod
Residue, Filterable (TDS) @180C	SM2540C	220	H	*	mg/L	10	20	03/26/12 13:27	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	17	BH	*	mg/L	5	20	03/26/12 14:20	abm
Residue, Total (TS) @ 105C	SM2540B	390	H	*	mg/L	10	20	03/28/12 11:53	las
Sulfate	D516-02 - Turbidimetric		U	*	mg/L	10	50	04/04/12 14:27	tod
TDS (calculated)	Calculation	65			mg/L	10	50	04/06/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	3.38						04/06/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW5

ACZ Sample ID: ***L93749-04***
Date Sampled: *03/10/12 17:00*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H	*				04/02/12 14:56	mpb
Cyanide, WAD	SM4500-CN I- distillation		H	*				03/27/12 11:19	tod
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:32	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:04	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:01	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.11	B		mg/L	0.03	0.2	03/28/12 0:40	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/31/12 17:50	scp
Arsenic, dissolved	M200.8 ICP-MS	0.0009	B		mg/L	0.0005	0.002	03/31/12 17:50	scp
Barium, dissolved	M200.7 ICP	0.057			mg/L	0.003	0.02	03/28/12 0:40	aeb
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:40	aeb
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 0:40	aeb
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:40	aeb
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 17:50	scp
Calcium, dissolved	M200.7 ICP	4.0			mg/L	0.2	1	03/28/12 0:40	aeb
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:40	aeb
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:40	aeb
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:40	aeb
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:40	aeb
Iron, dissolved	M200.7 ICP	0.05	B		mg/L	0.02	0.05	03/28/12 0:40	aeb
Lead, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/31/12 17:50	scp
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 0:40	aeb
Magnesium, dissolved	M200.7 ICP	2.5			mg/L	0.2	1	03/28/12 0:40	aeb
Manganese, dissolved	M200.7 ICP	0.014	B		mg/L	0.005	0.03	03/28/12 0:40	aeb
Mercury, dissolved	M245.1 CVAA		U	*	mg/L	0.0002	0.001	04/04/12 18:54	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:40	aeb
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:40	aeb
Potassium, dissolved	M200.7 ICP	6.0			mg/L	0.3	2	03/28/12 0:40	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:40	aeb
Selenium, dissolved	M200.8 ICP-MS	0.0002	B	*	mg/L	0.0001	0.0003	03/31/12 17:50	scp
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/31/12 17:50	scp
Sodium, dissolved	M200.7 ICP	11.6			mg/L	0.3	2	03/28/12 0:40	aeb
Strontium, dissolved	M200.7 ICP	0.04	B		mg/L	0.01	0.05	03/28/12 0:40	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 17:50	scp
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 0:40	aeb
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:40	aeb
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 17:50	scp
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:40	aeb
Zinc, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/28/12 0:40	aeb

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW5

ACZ Sample ID: ***L93749-04***
Date Sampled: *03/10/12 17:00*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		42	H	*	mg/L	2	20	03/27/12 0:00	las
Carbonate as CaCO3			UH	*	mg/L	2	20	03/27/12 0:00	las
Hydroxide as CaCO3			UH	*	mg/L	2	20	03/27/12 0:00	las
Total Alkalinity		42	H	*	mg/L	2	20	03/27/12 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			04/06/12 0:00	calc
Sum of Anions		1.1			meq/L	0.1	0.5	04/06/12 0:00	calc
Sum of Cations		1.1			meq/L	0.1	0.5	04/06/12 0:00	calc
Chloride	SM4500Cl-E	5	B	*	mg/L	1	5	04/03/12 9:43	ccp
Conductivity @25C	SM2510B	116			umhos/cm	1	10	03/27/12 0:36	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014	H	*	mg/L	0.003	0.01	04/03/12 12:54	lhb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.011	H	*	mg/L	0.003	0.01	03/28/12 0:50	pjb
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	03/28/12 15:47	las
Hardness as CaCO3	SM2340B - Calculation	20			mg/L	1	7	04/06/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.59			mg/L	0.02	0.1	04/05/12 14:15	tod
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 19:26	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/04/12 0:16	pjb
pH (lab)	SM4500H+ B								
pH		7.4	H		units	0.1	0.1	03/27/12 0:00	las
pH measured at		18.0			C	0.1	0.1	03/27/12 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.09	B		mg/L	0.03	0.15	04/06/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.01	B		mg/L	0.01	0.05	04/03/12 16:20	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.03	BH	*	mg/L	0.01	0.05	03/27/12 22:17	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.03	B		mg/L	0.01	0.05	04/03/12 16:44	tod
Residue, Filterable (TDS) @180C	SM2540C	170	H	*	mg/L	10	20	03/26/12 13:28	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	5	BH	*	mg/L	5	20	03/26/12 14:21	abm
Residue, Total (TS) @ 105C	SM2540B	230	H	*	mg/L	10	20	03/28/12 11:56	las
Sulfate	D516-02 - Turbidimetric	7		*	mg/L	1	5	04/04/12 14:27	tod
TDS (calculated)	Calculation	62			mg/L	10	50	04/06/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	2.74						04/06/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW10

ACZ Sample ID: ***L93749-05***
Date Sampled: *03/12/12 11:30*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H					04/02/12 15:04	mpb
Cyanide, WAD	SM4500-CN I- distillation							03/26/12 17:10	lhb
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:32	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:04	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:01	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/28/12 0:43	aeb
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/31/12 18:03	scp
Arsenic, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	03/31/12 18:03	scp
Barium, dissolved	M200.7 ICP		U		mg/L	0.003	0.02	03/28/12 0:43	aeb
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:43	aeb
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 0:43	aeb
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:43	aeb
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 18:03	scp
Calcium, dissolved	M200.7 ICP		U		mg/L	0.2	1	03/28/12 0:43	aeb
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:43	aeb
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:43	aeb
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:43	aeb
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:43	aeb
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/28/12 0:43	aeb
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 18:03	scp
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/28/12 0:43	aeb
Magnesium, dissolved	M200.7 ICP		U		mg/L	0.2	1	03/28/12 0:43	aeb
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:43	aeb
Mercury, dissolved	M245.1 CVAA		U	*	mg/L	0.0002	0.001	04/04/12 19:02	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:43	aeb
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:43	aeb
Potassium, dissolved	M200.7 ICP		U		mg/L	0.3	2	03/28/12 0:43	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:43	aeb
Selenium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0003	03/31/12 18:03	scp
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/31/12 18:03	scp
Sodium, dissolved	M200.7 ICP		U		mg/L	0.3	2	03/28/12 0:43	aeb
Strontium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:43	aeb
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 18:03	scp
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 0:43	aeb
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:43	aeb
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 18:03	scp
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:43	aeb
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:43	aeb

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GW10

ACZ Sample ID: ***L93749-05***
Date Sampled: *03/12/12 11:30*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3			UH		mg/L	2	20	03/27/12 0:00	las
Carbonate as CaCO3			UH		mg/L	2	20	03/27/12 0:00	las
Hydroxide as CaCO3			UH		mg/L	2	20	03/27/12 0:00	las
Total Alkalinity			UH	*	mg/L	2	20	03/27/12 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		n/a			%			04/06/12 0:00	calc
Sum of Anions		N/A			meq/L	0.1	0.5	04/06/12 0:00	calc
Sum of Cations			U		meq/L	0.1	0.5	04/06/12 0:00	calc
Chloride	SM4500Cl-E		U	*	mg/L	1	5	04/03/12 9:43	ocp
Conductivity @25C	SM2510B	1	B		umhos/cm	1	10	03/27/12 0:41	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014	H	*	mg/L	0.003	0.01	04/03/12 12:55	lhb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	03/26/12 19:01	tod
Fluoride	SM4500F-C		U	*	mg/L	0.1	0.5	03/30/12 17:06	las
Hardness as CaCO3	SM2340B - Calculation		U		mg/L	1	7	04/06/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U		mg/L	0.02	0.1	04/05/12 14:16	tod
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	04/02/12 19:27	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/04/12 0:17	pjb
pH (lab)	SM4500H+ B								
pH		6.0	H		units	0.1	0.1	03/27/12 0:00	las
pH measured at		18.0			C	0.1	0.1	03/27/12 0:00	las
Phosphate	Calculation based on Ortho Phosphorus		U		mg/L	0.03	0.15	04/06/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U		mg/L	0.01	0.05	04/03/12 16:21	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid		UH	*	mg/L	0.01	0.05	03/27/12 22:18	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)		U		mg/L	0.01	0.05	04/03/12 16:45	tod
Residue, Filterable (TDS) @180C	SM2540C		UH	*	mg/L	10	20	03/26/12 13:28	abm
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	03/26/12 14:22	abm
Residue, Total (TS) @ 105C	SM2540B		UH	*	mg/L	10	20	03/28/12 11:59	las
Sulfate	D516-02 - Turbidimetric		U	*	mg/L	1	5	04/04/12 14:27	tod
TDS (calculated)	Calculation		U		mg/L	10	50	04/06/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	n/a						04/06/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GWE-ET

ACZ Sample ID: ***L93749-06***
Date Sampled: *03/18/12 16:45*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/29/12 14:02	ndj
Cyanide, WAD	SM4500-CN I- distillation							03/27/12 11:20	tod
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/03/12 12:33	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:04	mpb
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/03/12 10:01	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP	0.05	B		mg/L	0.03	0.2	03/28/12 0:47	aeb
Antimony, dissolved	M200.8 ICP-MS	0.0090			mg/L	0.0004	0.002	03/31/12 18:07	scp
Arsenic, dissolved	M200.8 ICP-MS	0.0113			mg/L	0.0005	0.002	03/31/12 18:07	scp
Barium, dissolved	M200.7 ICP	0.047			mg/L	0.003	0.02	03/28/12 0:47	aeb
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:47	aeb
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/28/12 0:47	aeb
Boron, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/28/12 0:47	aeb
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/31/12 18:07	scp
Calcium, dissolved	M200.7 ICP	137			mg/L	0.2	1	03/28/12 0:47	aeb
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:47	aeb
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:47	aeb
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:47	aeb
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:47	aeb
Iron, dissolved	M200.7 ICP	1.30			mg/L	0.02	0.05	03/28/12 0:47	aeb
Lead, dissolved	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/31/12 18:07	scp
Lithium, dissolved	M200.7 ICP	0.06	B		mg/L	0.02	0.1	03/28/12 0:47	aeb
Magnesium, dissolved	M200.7 ICP	12.5			mg/L	0.2	1	03/28/12 0:47	aeb
Manganese, dissolved	M200.7 ICP	0.638			mg/L	0.005	0.03	03/28/12 0:47	aeb
Mercury, dissolved	M245.1 CVAA		U	*	mg/L	0.0002	0.001	04/04/12 19:04	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:47	aeb
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/28/12 0:47	aeb
Potassium, dissolved	M200.7 ICP	3.5			mg/L	0.3	2	03/28/12 0:47	aeb
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/28/12 0:47	aeb
Selenium, dissolved	M200.8 ICP-MS		U	*	mg/L	0.0001	0.0003	03/31/12 18:07	scp
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/31/12 18:07	scp
Sodium, dissolved	M200.7 ICP	25.8			mg/L	0.3	2	03/28/12 0:47	aeb
Strontium, dissolved	M200.7 ICP	1.02			mg/L	0.01	0.05	03/28/12 0:47	aeb
Thallium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/31/12 18:07	scp
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/28/12 0:47	aeb
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:47	aeb
Uranium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/31/12 18:07	scp
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/28/12 0:47	aeb
Zinc, dissolved	M200.7 ICP	0.03	B		mg/L	0.01	0.05	03/28/12 0:47	aeb

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: GWE-ET

ACZ Sample ID: ***L93749-06***
Date Sampled: *03/18/12 16:45*
Date Received: *03/26/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		296			mg/L	2	20	03/27/12 0:00	las
Carbonate as CaCO3			U		mg/L	2	20	03/27/12 0:00	las
Hydroxide as CaCO3			U		mg/L	2	20	03/27/12 0:00	las
Total Alkalinity		296			mg/L	2	20	03/27/12 0:00	las
Cation-Anion Balance	Calculation								
Cation-Anion Balance		1.1			%			04/06/12 0:00	calc
Sum of Anions		9.1			meq/L	0.1	0.5	04/06/12 0:00	calc
Sum of Cations		9.3			meq/L	0.1	0.5	04/06/12 0:00	calc
Chloride	SM4500Cl-E	2	B	*	mg/L	1	5	04/03/12 9:43	ocp
Conductivity @25C	SM2510B	783			umhos/cm	1	10	03/27/12 0:50	las
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.010		*	mg/L	0.003	0.01	03/29/12 22:09	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.012		*	mg/L	0.003	0.01	03/28/12 0:40	pjb
Fluoride	SM4500F-C	0.3	B	*	mg/L	0.1	0.5	03/30/12 17:10	las
Hardness as CaCO3	SM2340B - Calculation	394			mg/L	1	7	04/06/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.03	B		mg/L	0.02	0.1	04/05/12 14:17	tod
Nitrogen, ammonia	M350.1 - Automated Phenate	0.82		*	mg/L	0.05	0.5	04/02/12 19:28	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	2.8		*	mg/L	0.1	0.5	04/04/12 0:19	pjb
pH (lab)	SM4500H+ B								
pH		8.3	H		units	0.1	0.1	03/27/12 0:00	las
pH measured at		18.0			C	0.1	0.1	03/27/12 0:00	las
Phosphate	Calculation based on Ortho Phosphorus	0.03	B		mg/L	0.03	0.15	04/06/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.02	B		mg/L	0.01	0.05	04/03/12 16:23	tod
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.01	BH	*	mg/L	0.01	0.05	03/27/12 22:19	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.20			mg/L	0.01	0.05	04/03/12 16:46	tod
Residue, Filterable (TDS) @180C	SM2540C	560	H	*	mg/L	10	20	03/26/12 13:29	abm
Residue, Non-Filterable (TSS) @105C	SM2540D	196	H	*	mg/L	5	20	03/26/12 14:23	abm
Residue, Total (TS) @ 105C	SM2540B	800	H	*	mg/L	10	20	03/28/12 12:02	las
Sulfate	D516-02 - Turbidimetric	146		*	mg/L	5	30	04/04/12 14:35	tod
TDS (calculated)	Calculation	509			mg/L	10	50	04/06/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.10						04/06/12 0:00	calc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L93749***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93749-01	WG320431	Cyanide, total	M335.4 - Manual Distillation	H3	Sample was received and analyzed past holding time.
	WG320153	Cyanide, WAD	SM4500-CN I- distillation	H3	Sample was received and analyzed past holding time.
	WG320401	Antimony, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Arsenic, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Lead, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG320519	Mercury, dissolved	M245.1 CVAA	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG320401	Selenium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Silver, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Thallium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Uranium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG320117	Bicarbonate as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
		Carbonate as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
	WG320480	Chloride	SM4500Cl-E	D1	Sample required dilution due to matrix.
			SM4500Cl-E	DD	Sample required dilution due to matrix color or odor.
			SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320502	Cyanide, total	M335.4 - Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320211	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320231	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320117	Hydroxide as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
	WG320467	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320208	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320104	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG320112	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG320242	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320591	Sulfate	D516-02 - Turbidimetric	D1	Sample required dilution due to matrix.
			D516-02 - Turbidimetric	DD	Sample required dilution due to matrix color or odor.
			D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320117	Total Alkalinity	SM2320B - Titration	H3	Sample was received and analyzed past holding time.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93749*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93749-02	WG320431	Cyanide, total	M335.4 - Manual Distillation	H3	Sample was received and analyzed past holding time.
	WG320153	Cyanide, WAD	SM4500-CN I- distillation	H3	Sample was received and analyzed past holding time.
	WG320519	Mercury, dissolved	M245.1 CVAA	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG320401	Selenium, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG320117	Bicarbonate as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
		Carbonate as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
	WG320480	Chloride	SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320502	Cyanide, total	M335.4 - Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320211	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320231	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320117	Hydroxide as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
	WG320467	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320208	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320104	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG320112	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG320242	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320591	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320117	Total Alkalinity	SM2320B - Titration	H3	Sample was received and analyzed past holding time.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: L93749

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93749-03	WG320431	Cyanide, total	M335.4 - Manual Distillation	H3	Sample was received and analyzed past holding time.
	WG320153	Cyanide, WAD	SM4500-CN I- distillation	H3	Sample was received and analyzed past holding time.
	WG320401	Antimony, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Arsenic, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Cadmium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Lead, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG320519	Mercury, dissolved	M245.1 CVAA	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG320401	Selenium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
			M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
		Silver, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Thallium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
		Uranium, dissolved	M200.8 ICP-MS	DD	Sample required dilution due to matrix color or odor.
	WG320117	Bicarbonate as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
		Carbonate as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
	WG320480	Chloride	SM4500Cl-E	D1	Sample required dilution due to matrix.
			SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320502	Cyanide, total	M335.4 - Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320211	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320231	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320117	Hydroxide as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
	WG320467	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320208	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320104	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG320112	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG320242	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320591	Sulfate	D516-02 - Turbidimetric	D1	Sample required dilution due to matrix.
			D516-02 - Turbidimetric	DD	Sample required dilution due to matrix color or odor.
			D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320117	Total Alkalinity	SM2320B - Titration	H3	Sample was received and analyzed past holding time.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93749*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93749-04	WG320431	Cyanide, total	M335.4 - Manual Distillation	H3	Sample was received and analyzed past holding time.
	WG320153	Cyanide, WAD	SM4500-CN I- distillation	H3	Sample was received and analyzed past holding time.
	WG320519	Mercury, dissolved	M245.1 CVAA	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG320401	Selenium, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG320117	Bicarbonate as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
		Carbonate as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
	WG320480	Chloride	SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320502	Cyanide, total	M335.4 - Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320211	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	H3	Sample was received and analyzed past holding time.
			SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320231	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320117	Hydroxide as CaCO3	SM2320B - Titration	H3	Sample was received and analyzed past holding time.
	WG320467	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320208	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320104	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG320112	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG320242	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320591	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320117	Total Alkalinity	SM2320B - Titration	H3	Sample was received and analyzed past holding time.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93749*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93749-05	WG320519	Mercury, dissolved	M245.1 CVAA	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG320401	Selenium, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG320480	Chloride	SM4500Cl-E	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320502	Cyanide, total	M335.4 - Colorimetric w/ distillation	H1	Sample prep or analysis performed past holding time. See case narrative.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320135	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320371	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320467	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320208	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320104	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG320112	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG320242	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320591	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320117	Total Alkalinity	SM2320B - Titration	H1	Sample prep or analysis performed past holding time. See case narrative.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L93749***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93749-06	WG320519	Mercury, dissolved	M245.1 CVAA	LA	Recovery for target analyte in the control sample (LCS or LFB) exceeded the acceptance criteria. Target analyte was not detected in the sample [< MDL].
	WG320401	Selenium, dissolved	M200.8 ICP-MS	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG320480	Chloride	SM4500Cl-E	M1	Matrix spike recovery was high, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320328	Cyanide, total	M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320211	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320371	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320467	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320539	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320208	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320104	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG320112	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
	WG320242	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320591	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Certification Qualifiers

Tahoe Resources, Inc. ACZ Project ID: ***L93749***

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.	
Bismuth, dissolved	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Scandium, dissolved	M200.7 ICP

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
Escobal Project

ACZ Project ID: L93749
Date Received: 03/26/2012 09:32
Received By: ksj
Date Printed: 3/26/2012

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?		X	
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?		X	
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

Some Holddates are past.

Contact (For any discrepancies, the client must be contacted)

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
3472		16.9	15
3035		15.8	15

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

REPAD.03.11.00.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
Escobal Project

ACZ Project ID: L93749
Date Received: 03/26/2012 09:32
Received By: ksj
Date Printed: 3/26/2012

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L93749-01	GW1A		Y		Y		Y					
L93749-02	GW3		Y		Y		Y					
L93749-03	GW4		Y		Y		Y					
L93749-04	GW5		Y		Y		Y					
L93749-05	GW10		Y		Y		Y					
L93749-06	GWE-ET		Y		Y		Y					

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

REPAD.03.11.00.01

L93749

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to
Name: Miguel Berganza
Company: Tahoe Resources, Inc.
E-mail: MBerganza@sanrafael.com.gt
Address: Km 8.6 carretera Antigua a El Salvador, Centro corporativo Muxbal Torre Oeste. Apto 503 y 504, Guatemala, GT
Telephone: (502) 5951-5248

Copy of Report to
Name: Charlie Muerhoff
Company: Tahoe Resources Inc.
E-mail: CMuerhoff@tahoeresourcesinc.com
Telephone:

Invoice to
Name: Miguel Berganza
Company: Tahoe Resources Inc.
E-mail: MBerganza@sanrafael.com.gt
Address: Km 8.6 carretera Antigua a El Salvador, Centro Corporativo Muxbal Torre Oeste. Apto 503 y 504, Guatemal, GT
Telephone: (502) 5951-5248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES / NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION

Quote #: Water Quality
Project/PO #: Escobal
Reporting state for compliance testing:
Sampler's Name: Gustavo Diaz/Susana Aroche
Are any samples NRC licensable material?

ANALYSES REQUESTED

SAMPLE IDENTIFICATION	DATE TIME	Matrix	# of Containers	GW
GW1A	03/11/12 07:00	GW	1	x
GW3	03/10/12 16:10	GW	1	x
GW4	03/10/12 16:30	GW	1	x
GW5	03/10/12 17:00	GW	1	x
GW10	03/12/12 11:30	GW	1	x
GWE-ET	03/18/12 16:45	GW	1	x

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY	DATE TIME	RECEIVED BY	DATE TIME
Miguel Berganza MB	23/3/12 17:00	Fernando Garcia	17:07 23/3/12
			9:31

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

L93749 Chain of Custody

H922 1663 324

EXPEDICION 1

Guatemala March 22st, 2012

To whom it may concern:

Minera San Rafael, S.A is sending two cases with samples of water, which is not contaminated, that are going to be analyzed by the ACZ Laboratories in Steamboat Springs, Colorado, USA.

If you have any question or doubt, please contact Miguel Berganza at Minera San Rafael, S.A. (502 – 5951-5248) or Tony Antalek at ACZ Laboratories (970-879-6590).

Sincerely yours,

Miguel Berganza
Evironment Department.
Proyecto Escobal, S. A.

COMMERCIAL INVOICE

COMERCIAL INVOICE No.
GW-E

H922 1663 324

EXPORTACION 2

DATE: March 22/2012	AWB No.

SHIPPER	CONSIGNEE
Tahoe Resources, Inc. Km. 8.6 Muxbal Centro corporativo Muxbal. Torre Oeste Apto. 503 y 504 GUATEMALA CITY, GUATEMALA	ACZ Laboratories, Inc. 2773 Downhill Drive, Steamboat Springs, Colorado, USA

CODE	UNITS	DESCRIPTION OF GOODS	WEIGHT	UNIT VALUE	TOTAL VALUE
*****	6	Water samples		USD$5.00	USD$ 30.00
TOTAL					USD$ 30.00

REASON FOR EXPORTATION: for analysis

COUNTRY OF ORIGIN OF THE ABOVE DESCRIBED GOODS: GUATEMALA

Miguel Berganza **SIGNATURE OF SHIPER/EXPORTER**	22/03/2012 **DATE OF EXPORTATION:**

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10.3.3. Muestras de Agua Subterranea, pozos de monitoreo (MW)

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 05, 2012

Report to:
Miguel Berganza
Tahoe Resources, Inc.
Km 8.6 carrtera Antigua a El Salvador Centro cor
Torre Oeste.Apto 503y504 Guatemala, GT

Bill to:
Miguel Berganza
Tahoe Resources, Inc.
5190 Neil Road #310
Reno, NV 89502

cc: Charlie Muerhoff

Project ID: Escobal Project
ACZ Project ID: L93702

Miguel Berganza:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 22, 2012. This project has been assigned to ACZ's project number, L93702. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L93702. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 05, 2012. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

REPAD.01.06.05.02

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

Tahoe Resources, Inc. April 05, 2012

Project ID: Escobal Project
ACZ Project ID: L93702

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 13 ground water samples from Tahoe Resources, Inc. on March 22, 2012. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L93702. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses except those qualified with an ACZ 'H' flag were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW1

ACZ Sample ID: ***L93702-01***
Date Sampled: *03/16/12 08:05*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/27/12 13:12	tcd
Cyanide, WAD	SM4500-CN I- distillation			*				03/29/12 11:55	ndj
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:30	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:00	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 13:04	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 19:47	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 22:54	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0047			mg/L	0.0005	0.002	03/30/12 22:54	pmc
Barium, dissolved	M200.7 ICP	0.064			mg/L	0.003	0.02	03/23/12 19:47	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:47	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 19:47	jjc
Boron, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 19:47	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 22:54	pmc
Calcium, dissolved	M200.7 ICP	8.3			mg/L	0.2	1	03/23/12 19:47	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:47	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:47	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:47	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 19:47	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 19:47	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 22:54	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 19:47	jjc
Magnesium, dissolved	M200.7 ICP	5.1			mg/L	0.2	1	03/23/12 19:47	jjc
Manganese, dissolved	M200.7 ICP	0.108			mg/L	0.005	0.03	03/23/12 19:47	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 2:36	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:47	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:47	jjc
Potassium, dissolved	M200.7 ICP	3.8			mg/L	0.3	2	03/23/12 19:47	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 19:47	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0003	03/30/12 22:54	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 22:54	pmc
Sodium, dissolved	M200.7 ICP	14.8			mg/L	0.3	2	03/23/12 19:47	jjc
Strontium, dissolved	M200.7 ICP	0.06			mg/L	0.01	0.05	03/23/12 19:47	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 22:54	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 19:47	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 19:47	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 22:54	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 19:47	jjc
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 19:47	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW1

ACZ Sample ID: ***L93702-01***
Date Sampled: *03/16/12 08:05*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		53			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		53			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		6.7			%			04/05/12 0:00	calc
Sum of Anions		1.4			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		1.6			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	4	B	*	mg/L	1	5	03/30/12 8:49	ocp
Conductivity @25C	SM2510B	170			umhos/cm	1	10	03/23/12 18:01	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	03/28/12 1:31	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.013	B		mg/L	0.006	0.02	03/29/12 21:21	pjb
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	03/27/12 13:21	abm
Hardness as CaCO3	SM2340B - Calculation	42			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	3.14			mg/L	0.06	0.3	03/31/12 15:18	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:21	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.4	B	*	mg/L	0.1	0.5	04/03/12 23:17	pjb
pH (lab)	SM4500H+ B								
pH		7.5	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.25			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.07		*	mg/L	0.01	0.05	03/30/12 23:17	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.08	H	*	mg/L	0.01	0.05	03/22/12 23:18	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.35		*	mg/L	0.01	0.05	03/28/12 16:04	mpb
Residue, Filterable (TDS) @180C	SM2540C	190			mg/L	10	20	03/22/12 14:14	las
Residue, Non-Filterable (TSS) @105C	SM2540D	550		*	mg/L	10	40	03/22/12 14:37	abm
Residue, Total (TS) @ 105C	SM2540B	780			mg/L	10	20	03/22/12 13:17	mla
Sulfate	D516-02 - Turbidimetric	12			mg/L	1	5	04/02/12 8:44	ocp
TDS (calculated)	Calculation	80			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	2.38						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW2

ACZ Sample ID: ***L93702-02***
Date Sampled: *03/09/12 10:10*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H					03/27/12 13:12	tod
Cyanide, WAD	SM4500-CN I- distillation		H					03/24/12 9:04	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:30	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:00	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 13:14	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 19:56	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 22:57	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0010	B		mg/L	0.0005	0.002	03/30/12 22:57	pmc
Barium, dissolved	M200.7 ICP	0.026			mg/L	0.003	0.02	03/23/12 19:56	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:56	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 19:56	jjc
Boron, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/23/12 19:56	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 22:57	pmc
Calcium, dissolved	M200.7 ICP	8.5			mg/L	0.2	1	03/23/12 19:56	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:56	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:56	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:56	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 19:56	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 19:56	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 22:57	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 19:56	jjc
Magnesium, dissolved	M200.7 ICP	2.6			mg/L	0.2	1	03/23/12 19:56	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 19:56	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 2:38	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:56	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 19:56	jjc
Potassium, dissolved	M200.7 ICP	1.9	B		mg/L	0.3	2	03/23/12 19:56	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 19:56	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/30/12 22:57	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 22:57	pmc
Sodium, dissolved	M200.7 ICP	15.8			mg/L	0.3	2	03/23/12 19:56	jjc
Strontium, dissolved	M200.7 ICP	0.07			mg/L	0.01	0.05	03/23/12 19:56	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 22:57	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 19:56	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 19:56	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 22:57	pmc
Vanadium, dissolved	M200.7 ICP	0.010	B		mg/L	0.005	0.03	03/23/12 19:56	jjc
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 19:56	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW2

ACZ Sample ID: L93702-02
Date Sampled: 03/09/12 10:10
Date Received: 03/22/12
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		52			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		52			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		7.7			%			04/05/12 0:00	calc
Sum of Anions		1.2			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		1.4			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	3	B	*	mg/L	1	5	03/30/12 8:49	ocp
Conductivity @25C	SM2510B	145			umhos/cm	1	10	03/23/12 18:10	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014	H	*	mg/L	0.003	0.01	03/28/12 1:32	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 19:33	mpb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/27/12 13:35	abm
Hardness as CaCO3	SM2340B - Calculation	32			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	2.60			mg/L	0.02	0.1	03/31/12 14:07	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:22	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:20	pjb
pH (lab)	SM4500H+ B								
pH		7.6	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		20.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.25			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.06		*	mg/L	0.01	0.05	03/30/12 23:19	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.08	H	*	mg/L	0.01	0.05	03/22/12 23:19	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.12		*	mg/L	0.01	0.05	03/28/12 16:05	mpb
Residue, Filterable (TDS) @180C	SM2540C	190	H	*	mg/L	10	20	03/22/12 14:16	las
Residue, Non-Filterable (TSS) @105C	SM2540D	153	H	*	mg/L	5	20	03/22/12 14:38	abm
Residue, Total (TS) @ 105C	SM2540B	310	H	*	mg/L	10	20	03/22/12 13:18	mla
Sulfate	D516-02 - Turbidimetric	4	B		mg/L	1	5	04/02/12 8:44	ocp
TDS (calculated)	Calculation	67			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	2.84						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW3

ACZ Sample ID: ***L93702-03***
Date Sampled: *03/15/12 11:17*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/27/12 13:12	tod
Cyanide, WAD	SM4500-CN I- distillation							03/29/12 12:09	ndj
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:31	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:01	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 13:33	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:00	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 23:00	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0026			mg/L	0.0005	0.002	03/30/12 23:00	pmc
Barium, dissolved	M200.7 ICP	0.032			mg/L	0.003	0.02	03/23/12 20:00	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:00	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:00	jjc
Boron, dissolved	M200.7 ICP	0.07			mg/L	0.01	0.05	03/23/12 20:00	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:00	pmc
Calcium, dissolved	M200.7 ICP	62.6			mg/L	0.2	1	03/23/12 20:00	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:00	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:00	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:00	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:00	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 20:00	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:00	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 20:00	jjc
Magnesium, dissolved	M200.7 ICP	8.0			mg/L	0.2	1	03/23/12 20:00	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:00	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 2:40	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:00	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:00	jjc
Potassium, dissolved	M200.7 ICP	3.7			mg/L	0.3	2	03/23/12 20:00	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:00	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/30/12 23:00	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:00	pmc
Sodium, dissolved	M200.7 ICP	25.4			mg/L	0.3	2	03/23/12 20:00	jjc
Strontium, dissolved	M200.7 ICP	0.59			mg/L	0.01	0.05	03/23/12 20:00	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:00	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:00	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:00	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/30/12 23:00	pmc
Vanadium, dissolved	M200.7 ICP	0.007	B		mg/L	0.005	0.03	03/23/12 20:00	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:00	jjc

REPIN.02.06.05.01

** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW3

ACZ Sample ID: ***L93702-03***
Date Sampled: *03/15/12 11:17*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		80			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		80			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			04/05/12 0:00	calc
Sum of Anions		5			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		5.0			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	13		*	mg/L	1	5	03/30/12 8:49	ccp
Conductivity @25C	SM2510B	505			umhos/cm	1	10	03/23/12 18:18	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/28/12 1:33	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014			mg/L	0.003	0.01	03/29/12 21:23	pjb
Fluoride	SM4500F-C	0.8		*	mg/L	0.1	0.5	03/27/12 13:38	abm
Hardness as CaCO3	SM2340B - Calculation	189			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	2.25			mg/L	0.02	0.1	03/31/12 14:10	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:23	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:22	pjb
pH (lab)	SM4500H+ B								
pH		7.7	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.31			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.08		*	mg/L	0.01	0.05	03/30/12 23:21	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.10	H	*	mg/L	0.01	0.05	03/22/12 23:21	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.08		*	mg/L	0.01	0.05	03/28/12 16:07	mpb
Residue, Filterable (TDS) @180C	SM2540C	410			mg/L	10	20	03/22/12 14:17	las
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/22/12 14:39	abm
Residue, Total (TS) @ 105C	SM2540B	420			mg/L	10	20	03/22/12 13:19	mla
Sulfate	D516-02 - Turbidimetric	141			mg/L	5	30	04/02/12 8:51	ccp
TDS (calculated)	Calculation	303			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.35						04/05/12 0:00	calc

REPIN.02.06.05.01

** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW4

ACZ Sample ID: ***L93702-04***
Date Sampled: *03/15/12 10:37*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/27/12 13:12	tod
Cyanide, WAD	SM4500-CN I- distillation							03/29/12 12:16	ndj
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:31	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:01	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 13:52	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:03	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 23:03	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0025			mg/L	0.0005	0.002	03/30/12 23:03	pmc
Barium, dissolved	M200.7 ICP	0.042			mg/L	0.003	0.02	03/23/12 20:03	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:03	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:03	jjc
Boron, dissolved	M200.7 ICP	0.08			mg/L	0.01	0.05	03/23/12 20:03	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:03	pmc
Calcium, dissolved	M200.7 ICP	93.7			mg/L	0.2	1	03/23/12 20:03	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:03	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:03	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:03	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:03	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 20:03	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:03	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 20:03	jjc
Magnesium, dissolved	M200.7 ICP	10.7			mg/L	0.2	1	03/23/12 20:03	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:03	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 2:51	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:03	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:03	jjc
Potassium, dissolved	M200.7 ICP	4.6			mg/L	0.3	2	03/23/12 20:03	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:03	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0003	03/30/12 23:03	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:03	pmc
Sodium, dissolved	M200.7 ICP	30.8			mg/L	0.3	2	03/23/12 20:03	jjc
Strontium, dissolved	M200.7 ICP	0.86			mg/L	0.01	0.05	03/23/12 20:03	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:03	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:03	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:03	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/30/12 23:03	pmc
Vanadium, dissolved	M200.7 ICP	0.006	B		mg/L	0.005	0.03	03/23/12 20:03	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:03	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW4

ACZ Sample ID: ***L93702-04***
Date Sampled: *03/15/12 10:37*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		85			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		85			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.7			%			04/05/12 0:00	calc
Sum of Anions		7.2			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		7.1			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	21		*	mg/L	1	5	03/30/12 8:50	ccp
Conductivity @25C	SM2510B	695			umhos/cm	1	10	03/23/12 18:56	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	03/28/12 1:34	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.015			mg/L	0.003	0.01	03/29/12 21:23	pjb
Fluoride	SM4500F-C	0.8		*	mg/L	0.1	0.5	03/27/12 13:41	abm
Hardness as CaCO3	SM2340B - Calculation	278			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	2.14			mg/L	0.02	0.1	03/31/12 14:11	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:25	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:23	pjb
pH (lab)	SM4500H+ B								
pH		7.7	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.25			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.06		*	mg/L	0.01	0.05	03/30/12 23:22	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.08	H	*	mg/L	0.01	0.05	03/22/12 23:22	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.06		*	mg/L	0.01	0.05	03/28/12 16:10	mpb
Residue, Filterable (TDS) @180C	SM2540C	560			mg/L	10	20	03/22/12 14:19	las
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/22/12 14:40	abm
Residue, Total (TS) @ 105C	SM2540B	560			mg/L	10	20	03/22/12 13:20	mla
Sulfate	D516-02 - Turbidimetric	230			mg/L	20	100	04/02/12 9:01	ccp
TDS (calculated)	Calculation	443			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.26						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW5

ACZ Sample ID: ***L93702-05***
Date Sampled: *03/15/12 09:21*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/27/12 13:13	tcd
Cyanide, WAD	SM4500-CN I- distillation							03/29/12 12:24	ndj
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:31	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:01	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 14:02	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:06	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0006	B		mg/L	0.0004	0.002	03/30/12 23:12	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0010	B		mg/L	0.0005	0.002	03/30/12 23:12	pmc
Barium, dissolved	M200.7 ICP	0.245			mg/L	0.003	0.02	03/23/12 20:06	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:06	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:06	jjc
Boron, dissolved	M200.7 ICP	0.04	B		mg/L	0.01	0.05	03/23/12 20:06	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:12	pmc
Calcium, dissolved	M200.7 ICP	71.7			mg/L	0.2	1	03/23/12 20:06	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:06	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:06	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:06	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:06	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 20:06	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:12	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 20:06	jjc
Magnesium, dissolved	M200.7 ICP	12.1			mg/L	0.2	1	03/23/12 20:06	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:06	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	03/31/12 2:53	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:06	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:06	jjc
Potassium, dissolved	M200.7 ICP	7.2			mg/L	0.3	2	03/23/12 20:06	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:06	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0003			mg/L	0.0001	0.0003	03/30/12 23:12	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:12	pmc
Sodium, dissolved	M200.7 ICP	19.6			mg/L	0.3	2	03/23/12 20:06	jjc
Strontium, dissolved	M200.7 ICP	0.46			mg/L	0.01	0.05	03/23/12 20:06	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:12	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:06	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:06	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/30/12 23:12	pmc
Vanadium, dissolved	M200.7 ICP	0.005	B		mg/L	0.005	0.03	03/23/12 20:06	jjc
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 20:06	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW5

ACZ Sample ID: ***L93702-05***
Date Sampled: *03/15/12 09:21*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		81			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		81			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.9			%			04/05/12 0:00	calc
Sum of Anions		5.7			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		5.6			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	19		*	mg/L	1	5	03/30/12 8:50	ccp
Conductivity @25C	SM2510B	571			umhos/cm	1	10	03/23/12 19:05	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013		*	mg/L	0.003	0.01	03/28/12 1:35	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014			mg/L	0.003	0.01	03/29/12 21:26	pjb
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	03/27/12 13:44	abm
Hardness as CaCO3	SM2340B - Calculation	229			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	3.11			mg/L	0.02	0.1	03/31/12 14:12	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:27	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:24	pjb
pH (lab)	SM4500H+ B								
pH		7.5	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.19			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	03/30/12 23:23	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.06	H	*	mg/L	0.01	0.05	03/22/12 23:23	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	03/28/12 16:11	mpb
Residue, Filterable (TDS) @180C	SM2540C	450			mg/L	10	20	03/22/12 14:21	las
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/22/12 14:41	abm
Residue, Total (TS) @ 105C	SM2540B	470			mg/L	10	20	03/22/12 13:21	mla
Sulfate	D516-02 - Turbidimetric	168			mg/L	5	30	04/02/12 8:51	ccp
TDS (calculated)	Calculation	347			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.30						04/05/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW6

ACZ Sample ID: ***L93702-06***
Date Sampled: *03/15/12 08:45*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/27/12 13:13	tod
Cyanide, WAD	SM4500-CN I- distillation							03/29/12 12:31	ndj
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:31	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:01	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 14:12	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:09	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 23:15	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0029			mg/L	0.0005	0.002	03/30/12 23:15	pmc
Barium, dissolved	M200.7 ICP	0.179			mg/L	0.003	0.02	03/23/12 20:09	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:09	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:09	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:09	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:15	pmc
Calcium, dissolved	M200.7 ICP	37.0			mg/L	0.2	1	03/23/12 20:09	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:09	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:09	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:09	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:09	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 20:09	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:15	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 20:09	jjc
Magnesium, dissolved	M200.7 ICP	5.5			mg/L	0.2	1	03/23/12 20:09	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:09	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:07	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:09	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:09	jjc
Potassium, dissolved	M200.7 ICP	5.2			mg/L	0.3	2	03/23/12 20:09	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:09	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0005			mg/L	0.0001	0.0003	03/30/12 23:15	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:15	pmc
Sodium, dissolved	M200.7 ICP	11.2			mg/L	0.3	2	03/23/12 20:09	jjc
Strontium, dissolved	M200.7 ICP	0.20			mg/L	0.01	0.05	03/23/12 20:09	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:15	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:09	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:09	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/30/12 23:15	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:09	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:09	jjc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW6

ACZ Sample ID: ***L93702-06***
Date Sampled: *03/15/12 08:45*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		77			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		77			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.6			%			04/05/12 0:00	calc
Sum of Anions		2.7			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		2.9			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	6		*	mg/L	1	5	03/30/12 8:50	ccp
Conductivity @25C	SM2510B	308			umhos/cm	1	10	03/23/12 19:13	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/28/12 1:37	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.015			mg/L	0.003	0.01	03/29/12 21:27	pjb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/27/12 13:48	abm
Hardness as CaCO3	SM2340B - Calculation	115			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	4.90			mg/L	0.06	0.3	03/31/12 15:22	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:32	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:25	pjb
pH (lab)	SM4500H+ B								
pH		7.6	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.19			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	03/30/12 23:25	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.06	H	*	mg/L	0.01	0.05	03/22/12 23:26	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.04	B	*	mg/L	0.01	0.05	03/28/12 16:14	mpb
Residue, Filterable (TDS) @180C	SM2540C	260			mg/L	10	20	03/22/12 14:22	las
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/22/12 14:42	abm
Residue, Total (TS) @ 105C	SM2540B	280			mg/L	10	20	03/22/12 13:22	mla
Sulfate	D516-02 - Turbidimetric	46			mg/L	5	30	04/02/12 8:51	ccp
TDS (calculated)	Calculation	158			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.65						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW7

ACZ Sample ID: ***L93702-07***
Date Sampled: *03/16/12 08:36*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/27/12 13:13	tod
Cyanide, WAD	SM4500-CN I- distillation							03/29/12 12:38	ndj
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:32	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 14:21	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:12	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0008	B		mg/L	0.0004	0.002	03/30/12 23:18	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0033			mg/L	0.0005	0.002	03/30/12 23:18	pmc
Barium, dissolved	M200.7 ICP	0.184			mg/L	0.003	0.02	03/23/12 20:12	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:12	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:12	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:12	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:18	pmc
Calcium, dissolved	M200.7 ICP	14.5			mg/L	0.2	1	03/23/12 20:12	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:12	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:12	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:12	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:12	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 20:12	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:18	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 20:12	jjc
Magnesium, dissolved	M200.7 ICP	4.4			mg/L	0.2	1	03/23/12 20:12	jjc
Manganese, dissolved	M200.7 ICP	0.013	B		mg/L	0.005	0.03	03/23/12 20:12	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:09	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:12	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:12	jjc
Potassium, dissolved	M200.7 ICP	5.8			mg/L	0.3	2	03/23/12 20:12	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:12	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0003	03/30/12 23:18	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:18	pmc
Sodium, dissolved	M200.7 ICP	14.0			mg/L	0.3	2	03/23/12 20:12	jjc
Strontium, dissolved	M200.7 ICP	0.10			mg/L	0.01	0.05	03/23/12 20:12	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:18	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:12	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:12	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:18	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:12	jjc
Zinc, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/23/12 20:12	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW7

ACZ Sample ID: ***L93702-07***
Date Sampled: *03/16/12 08:36*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		54			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		54			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		11.8			%			04/05/12 0:00	calc
Sum of Anions		1.5			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		1.9			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	7		*	mg/L	1	5	03/30/12 8:50	ccp
Conductivity @25C	SM2510B	200			umhos/cm	1	10	03/23/12 19:21	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.012		*	mg/L	0.003	0.01	03/28/12 1:38	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.015			mg/L	0.003	0.01	03/29/12 21:28	pjb
Fluoride	SM4500F-C	0.1	B	*	mg/L	0.1	0.5	03/27/12 13:54	abm
Hardness as CaCO3	SM2340B - Calculation	54			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	5.12			mg/L	0.06	0.3	03/31/12 15:23	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:33	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.1	B	*	mg/L	0.1	0.5	04/03/12 23:29	pjb
pH (lab)	SM4500H+ B								
pH		7.4	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		20.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.09	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/30/12 23:28	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.03	BH	*	mg/L	0.01	0.05	03/22/12 23:27	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	03/28/12 16:15	mpb
Residue, Filterable (TDS) @180C	SM2540C	210			mg/L	10	20	03/22/12 14:23	las
Residue, Non-Filterable (TSS) @105C	SM2540D	19	B	*	mg/L	5	20	03/22/12 14:43	abm
Residue, Total (TS) @ 105C	SM2540B	230			mg/L	10	20	03/22/12 13:23	mla
Sulfate	D516-02 - Turbidimetric	9			mg/L	1	5	04/02/12 8:45	ccp
TDS (calculated)	Calculation	87			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	2.41						04/05/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW8

ACZ Sample ID: ***L93702-08***
Date Sampled: *03/09/12 11:01*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H					03/27/12 13:14	tod
Cyanide, WAD	SM4500-CN I- distillation		H					03/24/12 11:57	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:32	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 14:31	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:21	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0014	B		mg/L	0.0004	0.002	03/30/12 23:27	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0026			mg/L	0.0005	0.002	03/30/12 23:27	pmc
Barium, dissolved	M200.7 ICP	0.161			mg/L	0.003	0.02	03/23/12 20:21	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:21	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:21	jjc
Boron, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/23/12 20:21	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:27	pmc
Calcium, dissolved	M200.7 ICP	41.8			mg/L	0.2	1	03/23/12 20:21	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:21	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:21	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:21	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:21	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 20:21	jjc
Lead, dissolved	M200.8 ICP-MS	0.0003	B		mg/L	0.0001	0.0005	03/30/12 23:27	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 20:21	jjc
Magnesium, dissolved	M200.7 ICP	7.8			mg/L	0.2	1	03/23/12 20:21	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:21	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:16	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:21	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:21	jjc
Potassium, dissolved	M200.7 ICP	4.7			mg/L	0.3	2	03/23/12 20:21	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:21	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0004			mg/L	0.0001	0.0003	03/30/12 23:27	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:27	pmc
Sodium, dissolved	M200.7 ICP	16.3			mg/L	0.3	2	03/23/12 20:21	jjc
Strontium, dissolved	M200.7 ICP	0.27			mg/L	0.01	0.05	03/23/12 20:21	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:27	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:21	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:21	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/30/12 23:27	pmc
Vanadium, dissolved	M200.7 ICP	0.006	B		mg/L	0.005	0.03	03/23/12 20:21	jjc
Zinc, dissolved	M200.7 ICP	0.15			mg/L	0.01	0.05	03/23/12 20:21	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW8

ACZ Sample ID: ***L93702-08***
Date Sampled: *03/09/12 11:01*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		72			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		72			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		2.9			%			04/05/12 0:00	calc
Sum of Anions		3.4			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		3.6			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	9		*	mg/L	1	5	03/30/12 9:04	ccp
Conductivity @25C	SM2510B	362			umhos/cm	1	10	03/23/12 19:29	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.013	H	*	mg/L	0.003	0.01	03/28/12 1:41	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.014		*	mg/L	0.003	0.01	03/23/12 19:33	mpb
Fluoride	SM4500F-C	0.2	B	*	mg/L	0.1	0.5	03/27/12 14:15	abm
Hardness as CaCO3	SM2340B - Calculation	137			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	2.76			mg/L	0.02	0.1	03/31/12 14:18	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:34	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:30	pjb
pH (lab)	SM4500H+ B								
pH		7.5	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		20.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.22			mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.05		*	mg/L	0.01	0.05	03/30/12 23:29	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.07	H	*	mg/L	0.01	0.05	03/22/12 23:28	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.06		*	mg/L	0.01	0.05	03/28/12 16:16	mpb
Residue, Filterable (TDS) @180C	SM2540C	310	H	*	mg/L	10	20	03/22/12 14:25	las
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	03/22/12 14:44	abm
Residue, Total (TS) @ 105C	SM2540B	320	H	*	mg/L	10	20	03/22/12 13:24	mla
Sulfate	D516-02 - Turbidimetric	82			mg/L	5	30	04/02/12 8:52	ccp
TDS (calculated)	Calculation	205			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.51						04/05/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW9

ACZ Sample ID: ***L93702-09***
Date Sampled: *03/15/12 10:04*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/27/12 13:14	tcd
Cyanide, WAD	SM4500-CN I- distillation							03/29/12 12:45	ndj
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:32	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 14:40	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:24	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 23:30	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0035			mg/L	0.0005	0.002	03/30/12 23:30	pmc
Barium, dissolved	M200.7 ICP	0.025			mg/L	0.003	0.02	03/23/12 20:24	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:24	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:24	jjc
Boron, dissolved	M200.7 ICP	0.10			mg/L	0.01	0.05	03/23/12 20:24	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:30	pmc
Calcium, dissolved	M200.7 ICP	167			mg/L	0.2	1	03/23/12 20:24	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:24	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:24	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:24	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:24	jjc
Iron, dissolved	M200.7 ICP	7.73			mg/L	0.02	0.05	03/23/12 20:24	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:30	pmc
Lithium, dissolved	M200.7 ICP	0.09	B		mg/L	0.02	0.1	03/23/12 20:24	jjc
Magnesium, dissolved	M200.7 ICP	33.1			mg/L	0.2	1	03/23/12 20:24	jjc
Manganese, dissolved	M200.7 ICP	0.100			mg/L	0.005	0.03	03/23/12 20:24	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:18	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:24	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:24	jjc
Potassium, dissolved	M200.7 ICP	4.7			mg/L	0.3	2	03/23/12 20:24	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:24	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 23:30	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:30	pmc
Sodium, dissolved	M200.7 ICP	45.3			mg/L	0.3	2	03/23/12 20:24	jjc
Strontium, dissolved	M200.7 ICP	1.72			mg/L	0.01	0.05	03/23/12 20:24	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:30	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:24	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:24	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/30/12 23:30	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:24	jjc
Zinc, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/23/12 20:24	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW9

ACZ Sample ID: ***L93702-09***
Date Sampled: *03/15/12 10:04*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		141			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		141			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.4			%			04/05/12 0:00	calc
Sum of Anions		12.7			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		13.6			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	39		*	mg/L	1	5	03/30/12 9:04	ccp
Conductivity @25C	SM2510B	1150			umhos/cm	1	10	03/23/12 19:38	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.009	B	*	mg/L	0.003	0.01	03/28/12 1:42	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.010	B		mg/L	0.003	0.01	03/29/12 21:29	pjb
Fluoride	SM4500F-C	2.6		*	mg/L	0.1	0.5	03/27/12 14:17	abm
Hardness as CaCO3	SM2340B - Calculation	554			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U		mg/L	0.02	0.1	03/31/12 14:19	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:35	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:31	pjb
pH (lab)	SM4500H+ B								
pH		8.0	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.03	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/30/12 23:30	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.01	BH	*	mg/L	0.01	0.05	03/22/12 23:29	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/28/12 16:18	mpb
Residue, Filterable (TDS) @180C	SM2540C	870			mg/L	10	20	03/22/12 14:26	las
Residue, Non-Filterable (TSS) @105C	SM2540D	16	B	*	mg/L	5	20	03/22/12 14:45	abm
Residue, Total (TS) @ 105C	SM2540B	910			mg/L	10	20	03/22/12 13:25	mla
Sulfate	D516-02 - Turbidimetric	410			mg/L	50	300	04/02/12 8:52	ccp
TDS (calculated)	Calculation	796			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.09						04/05/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW10

ACZ Sample ID: ***L93702-10***
Date Sampled: *03/09/12 13:48*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H					03/27/12 13:14	tod
Cyanide, WAD	SM4500-CN I- distillation		H					03/24/12 14:50	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:32	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 14:50	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:27	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0057			mg/L	0.0004	0.002	03/30/12 23:33	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0103			mg/L	0.0005	0.002	03/30/12 23:33	pmc
Barium, dissolved	M200.7 ICP	0.105			mg/L	0.003	0.02	03/23/12 20:27	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:27	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:27	jjc
Boron, dissolved	M200.7 ICP	0.02	B		mg/L	0.01	0.05	03/23/12 20:27	jjc
Cadmium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/30/12 23:33	pmc
Calcium, dissolved	M200.7 ICP	138			mg/L	0.2	1	03/23/12 20:27	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:27	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:27	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:27	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:27	jjc
Iron, dissolved	M200.7 ICP	0.73			mg/L	0.02	0.05	03/23/12 20:27	jjc
Lead, dissolved	M200.8 ICP-MS	0.0059			mg/L	0.0001	0.0005	03/30/12 23:33	pmc
Lithium, dissolved	M200.7 ICP	0.04	B		mg/L	0.02	0.1	03/23/12 20:27	jjc
Magnesium, dissolved	M200.7 ICP	16.0			mg/L	0.2	1	03/23/12 20:27	jjc
Manganese, dissolved	M200.7 ICP	0.766			mg/L	0.005	0.03	03/23/12 20:27	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:20	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:27	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:27	jjc
Potassium, dissolved	M200.7 ICP	4.0			mg/L	0.3	2	03/23/12 20:27	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:27	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 23:33	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:33	pmc
Sodium, dissolved	M200.7 ICP	19.7			mg/L	0.3	2	03/23/12 20:27	jjc
Strontium, dissolved	M200.7 ICP	0.98			mg/L	0.01	0.05	03/23/12 20:27	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:33	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:27	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:27	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0005	03/30/12 23:33	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:27	jjc
Zinc, dissolved	M200.7 ICP	0.09			mg/L	0.01	0.05	03/23/12 20:27	jjc

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW10

ACZ Sample ID: ***L93702-10***
Date Sampled: *03/09/12 13:48*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		231			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		231			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		0.0			%			04/05/12 0:00	calc
Sum of Anions		9.3			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		9.3			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	2	B	*	mg/L	1	5	03/30/12 9:04	ccp
Conductivity @25C	SM2510B	801			umhos/cm	1	10	03/23/12 19:47	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.010	H	*	mg/L	0.003	0.01	03/28/12 1:43	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.011		*	mg/L	0.003	0.01	03/23/12 19:36	mpb
Fluoride	SM4500F-C	0.4	B	*	mg/L	0.1	0.5	03/27/12 14:20	abm
Hardness as CaCO3	SM2340B - Calculation	411			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U		mg/L	0.02	0.1	03/31/12 14:20	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:36	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:32	pjb
pH (lab)	SM4500H+ B								
pH		8.1	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.03	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	03/30/12 23:31	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.01	BH	*	mg/L	0.01	0.05	03/22/12 23:32	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.02	B	*	mg/L	0.01	0.05	03/28/12 16:19	mpb
Residue, Filterable (TDS) @180C	SM2540C	570	H	*	mg/L	10	20	03/22/12 14:27	las
Residue, Non-Filterable (TSS) @105C	SM2540D		UH	*	mg/L	5	20	03/22/12 14:46	abm
Residue, Total (TS) @ 105C	SM2540B	570	H	*	mg/L	10	20	03/22/12 13:26	mla
Sulfate	D516-02 - Turbidimetric	220		*	mg/L	10	50	04/02/12 9:11	ccp
TDS (calculated)	Calculation	541			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.05						04/05/12 0:00	calc

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW11

ACZ Sample ID: ***L93702-11***
Date Sampled: *03/09/12 13:26*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation		H					03/27/12 13:14	tcd
Cyanide, WAD	SM4500-CN I- distillation		H					03/24/12 17:43	mpb/tcd
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:32	tcd
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/28/12 15:00	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:30	jjc
Antimony, dissolved	M200.8 ICP-MS	0.0005	B		mg/L	0.0004	0.002	03/30/12 23:36	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0034			mg/L	0.0005	0.002	03/30/12 23:36	pmc
Barium, dissolved	M200.7 ICP	0.030			mg/L	0.003	0.02	03/23/12 20:30	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:30	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:30	jjc
Boron, dissolved	M200.7 ICP	0.17			mg/L	0.01	0.05	03/23/12 20:30	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:36	pmc
Calcium, dissolved	M200.7 ICP	275		*	mg/L	0.2	1	03/23/12 20:30	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:30	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:30	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:30	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:30	jjc
Iron, dissolved	M200.7 ICP	1.03			mg/L	0.02	0.05	03/23/12 20:30	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:36	pmc
Lithium, dissolved	M200.7 ICP	0.08	B		mg/L	0.02	0.1	03/23/12 20:30	jjc
Magnesium, dissolved	M200.7 ICP	42.3			mg/L	0.2	1	03/23/12 20:30	jjc
Manganese, dissolved	M200.7 ICP	0.027	B		mg/L	0.005	0.03	03/23/12 20:30	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:22	erf
Molybdenum, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 20:30	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:30	jjc
Potassium, dissolved	M200.7 ICP	5.0			mg/L	0.3	2	03/23/12 20:30	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:30	jjc
Selenium, dissolved	M200.8 ICP-MS	0.0002	B		mg/L	0.0001	0.0003	03/30/12 23:36	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:36	pmc
Sodium, dissolved	M200.7 ICP	78.7			mg/L	0.3	2	03/23/12 20:30	jjc
Strontium, dissolved	M200.7 ICP	2.39		*	mg/L	0.01	0.05	03/23/12 20:30	jjc
Thallium, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/30/12 23:36	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:30	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:30	jjc
Uranium, dissolved	M200.8 ICP-MS	0.0005			mg/L	0.0001	0.0005	03/30/12 23:36	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:30	jjc
Zinc, dissolved	M200.7 ICP	0.10			mg/L	0.01	0.05	03/23/12 20:30	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW11

ACZ Sample ID: L93702-11
Date Sampled: 03/09/12 13:26
Date Received: 03/22/12
Sample Matrix: Ground Water

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		133			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		133			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		-0.2			%			04/05/12 0:00	calc
Sum of Anions		21.0			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		20.9			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	71		*	mg/L	1	5	03/30/12 9:04	ccp
Conductivity @25C	SM2510B	1690			umhos/cm	1	10	03/23/12 19:55	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.011	H	*	mg/L	0.003	0.01	03/28/12 1:44	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.012		*	mg/L	0.003	0.01	03/23/12 19:37	mpb
Fluoride	SM4500F-C	2.7		*	mg/L	0.1	0.5	03/27/12 14:23	abm
Hardness as CaCO3	SM2340B - Calculation	861			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	0.02	B	*	mg/L	0.02	0.1	03/31/12 14:22	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:37	tcd
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	0.1	B	*	mg/L	0.1	0.5	04/03/12 23:33	pjb
pH (lab)	SM4500H+ B								
pH		8.0	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.03	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/30/12 23:32	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.01	BH	*	mg/L	0.01	0.05	03/22/12 23:34	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/28/12 16:20	mpb
Residue, Filterable (TDS) @180C	SM2540C	1410	H	*	mg/L	10	20	03/22/12 14:29	las
Residue, Non-Filterable (TSS) @105C	SM2540D	5	BH	*	mg/L	5	20	03/22/12 14:49	abm
Residue, Total (TS) @ 105C	SM2540B	1430	H	*	mg/L	10	20	03/22/12 13:29	mla
Sulfate	D516-02 - Turbidimetric	770		*	mg/L	30	100	04/02/12 9:06	ccp
TDS (calculated)	Calculation	1330			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.06						04/05/12 0:00	calc

REPIN.02.06.05.01

** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW20

ACZ Sample ID: ***L93702-12***
Date Sampled: *03/16/12 11:30*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/27/12 13:14	tod
Cyanide, WAD	SM4500-CN I- distillation							03/29/12 12:52	ndj
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:33	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:03	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:00	tod

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:40	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 23:39	pmc
Arsenic, dissolved	M200.8 ICP-MS		U		mg/L	0.0005	0.002	03/30/12 23:39	pmc
Barium, dissolved	M200.7 ICP		U		mg/L	0.003	0.02	03/23/12 20:40	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:40	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:40	jjc
Boron, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:40	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:39	pmc
Calcium, dissolved	M200.7 ICP		U	*	mg/L	0.2	1	03/23/12 20:40	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:40	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:40	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:40	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:40	jjc
Iron, dissolved	M200.7 ICP		U		mg/L	0.02	0.05	03/23/12 20:40	jjc
Lead, dissolved	M200.8 ICP-MS	0.0001	B		mg/L	0.0001	0.0005	03/30/12 23:39	pmc
Lithium, dissolved	M200.7 ICP		U		mg/L	0.02	0.1	03/23/12 20:40	jjc
Magnesium, dissolved	M200.7 ICP		U		mg/L	0.2	1	03/23/12 20:40	jjc
Manganese, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:40	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:29	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:40	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:40	jjc
Potassium, dissolved	M200.7 ICP		U		mg/L	0.3	2	03/23/12 20:40	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:40	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 23:39	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:39	pmc
Sodium, dissolved	M200.7 ICP		U		mg/L	0.3	2	03/23/12 20:40	jjc
Strontium, dissolved	M200.7 ICP		U	*	mg/L	0.01	0.05	03/23/12 20:40	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:39	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:40	jjc
Titanium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:40	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:39	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:40	jjc
Zinc, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:40	jjc

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** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW20

ACZ Sample ID: ***L93702-12***
Date Sampled: *03/16/12 11:30*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity			U		mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		n/a			%			04/05/12 0:00	calc
Sum of Anions			U		meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations			U		meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E		U	*	mg/L	1	5	03/30/12 9:04	ccp
Conductivity @25C	SM2510B	2	B		umhos/cm	1	10	03/23/12 20:00	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.012		*	mg/L	0.003	0.01	03/28/12 1:45	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.015			mg/L	0.003	0.01	03/29/12 21:30	pjb
Fluoride	SM4500F-C		U	*	mg/L	0.1	0.5	03/27/12 14:30	abm
Hardness as CaCO3	SM2340B - Calculation		U		mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U	*	mg/L	0.02	0.1	03/31/12 14:24	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:38	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:35	pjb
pH (lab)	SM4500H+ B								
pH		6.2	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus		U		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/30/12 23:35	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid		UH	*	mg/L	0.01	0.05	03/22/12 23:35	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/31/12 0:08	pjb
Residue, Filterable (TDS) @180C	SM2540C		U		mg/L	10	20	03/22/12 14:30	las
Residue, Non-Filterable (TSS) @105C	SM2540D		U	*	mg/L	5	20	03/22/12 14:50	abm
Residue, Total (TS) @ 105C	SM2540B		U		mg/L	10	20	03/22/12 13:30	mla
Sulfate	D516-02 - Turbidimetric	3	B	*	mg/L	1	5	04/02/12 8:57	ccp
TDS (calculated)	Calculation		U		mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	n/a						04/05/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW21

ACZ Sample ID: ***L93702-13***
Date Sampled: *03/15/12 10:04*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M335.4 - Manual Distillation							03/27/12 13:15	tod
Cyanide, WAD	SM4500-CN I- distillation							03/29/12 13:00	ndj
Nitrogen, total Kjeldahl	M351.2 - Block Digestor							04/02/12 15:33	tod
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:03	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							03/30/12 13:00	tod

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.7 ICP		U		mg/L	0.03	0.2	03/23/12 20:43	jjc
Antimony, dissolved	M200.8 ICP-MS		U		mg/L	0.0004	0.002	03/30/12 23:42	pmc
Arsenic, dissolved	M200.8 ICP-MS	0.0033			mg/L	0.0005	0.002	03/30/12 23:42	pmc
Barium, dissolved	M200.7 ICP	0.025			mg/L	0.003	0.02	03/23/12 20:43	jjc
Beryllium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:43	jjc
Bismuth, dissolved	M200.7 ICP		U	*	mg/L	0.04	0.2	03/23/12 20:43	jjc
Boron, dissolved	M200.7 ICP	0.10			mg/L	0.01	0.05	03/23/12 20:43	jjc
Cadmium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:42	pmc
Calcium, dissolved	M200.7 ICP	166		*	mg/L	0.2	1	03/23/12 20:43	jjc
Chromium, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:43	jjc
Cobalt, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:43	jjc
Copper, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:43	jjc
Gallium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:43	jjc
Iron, dissolved	M200.7 ICP	6.65			mg/L	0.02	0.05	03/23/12 20:43	jjc
Lead, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:42	pmc
Lithium, dissolved	M200.7 ICP	0.09	B		mg/L	0.02	0.1	03/23/12 20:43	jjc
Magnesium, dissolved	M200.7 ICP	33.0			mg/L	0.2	1	03/23/12 20:43	jjc
Manganese, dissolved	M200.7 ICP	0.099			mg/L	0.005	0.03	03/23/12 20:43	jjc
Mercury, dissolved	M245.1 CVAA		U		mg/L	0.0002	0.001	04/02/12 23:31	erf
Molybdenum, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:43	jjc
Nickel, dissolved	M200.7 ICP		U		mg/L	0.01	0.05	03/23/12 20:43	jjc
Potassium, dissolved	M200.7 ICP	4.7			mg/L	0.3	2	03/23/12 20:43	jjc
Scandium, dissolved	M200.7 ICP		U	*	mg/L	0.1	0.5	03/23/12 20:43	jjc
Selenium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0003	03/30/12 23:42	pmc
Silver, dissolved	M200.8 ICP-MS		U		mg/L	0.00005	0.0003	03/30/12 23:42	pmc
Sodium, dissolved	M200.7 ICP	45.8			mg/L	0.3	2	03/23/12 20:43	jjc
Strontium, dissolved	M200.7 ICP	1.73		*	mg/L	0.01	0.05	03/23/12 20:43	jjc
Thallium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:42	pmc
Tin, dissolved	M200.7 ICP		U		mg/L	0.1	0.5	03/23/12 20:43	jjc
Titanium. dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:43	jjc
Uranium, dissolved	M200.8 ICP-MS		U		mg/L	0.0001	0.0005	03/30/12 23:42	pmc
Vanadium, dissolved	M200.7 ICP		U		mg/L	0.005	0.03	03/23/12 20:43	jjc
Zinc, dissolved	M200.7 ICP	0.01	B		mg/L	0.01	0.05	03/23/12 20:43	jjc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: MW21

ACZ Sample ID: ***L93702-13***
Date Sampled: *03/15/12 10:04*
Date Received: *03/22/12*
Sample Matrix: *Ground Water*

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration								
Bicarbonate as CaCO3		140			mg/L	2	20	03/23/12 0:00	mla
Carbonate as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Hydroxide as CaCO3			U		mg/L	2	20	03/23/12 0:00	mla
Total Alkalinity		140			mg/L	2	20	03/23/12 0:00	mla
Cation-Anion Balance	Calculation								
Cation-Anion Balance		3.4			%			04/05/12 0:00	calc
Sum of Anions		12.6			meq/L	0.1	0.5	04/05/12 0:00	calc
Sum of Cations		13.5			meq/L	0.1	0.5	04/05/12 0:00	calc
Chloride	SM4500Cl-E	39		*	mg/L	1	5	03/30/12 9:04	ccp
Conductivity @25C	SM2510B	1140			umhos/cm	1	10	03/23/12 20:09	mla
Cyanide, total	M335.4 - Colorimetric w/ distillation	0.009	B	*	mg/L	0.003	0.01	03/28/12 1:45	pjb
Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	0.010			mg/L	0.003	0.01	03/29/12 21:30	pjb
Fluoride	SM4500F-C	2.6		*	mg/L	0.1	0.5	03/27/12 14:34	abm
Hardness as CaCO3	SM2340B - Calculation	551			mg/L	1	7	04/05/12 0:00	calc
Nitrate/Nitrite as N	M353.2 - H2SO4 preserved		U	*	mg/L	0.02	0.1	03/31/12 14:26	pjb
Nitrogen, ammonia	M350.1 - Automated Phenate		U	*	mg/L	0.05	0.5	03/29/12 17:39	tod
Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester		U	*	mg/L	0.1	0.5	04/03/12 23:38	pjb
pH (lab)	SM4500H+ B								
pH		8.0	H		units	0.1	0.1	03/23/12 0:00	mla
pH measured at		19.0			C	0.1	0.1	03/23/12 0:00	mla
Phosphate	Calculation based on Ortho Phosphorus	0.03	B		mg/L	0.03	0.15	04/05/12 0:00	calc
Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/30/12 23:37	pjb
Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	0.01	BH	*	mg/L	0.01	0.05	03/22/12 23:36	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)		U	*	mg/L	0.01	0.05	03/31/12 0:10	pjb
Residue, Filterable (TDS) @180C	SM2540C	880			mg/L	10	20	03/22/12 14:31	las
Residue, Non-Filterable (TSS) @105C	SM2540D	13	B	*	mg/L	5	20	03/22/12 14:51	abm
Residue, Total (TS) @ 105C	SM2540B	910			mg/L	10	20	03/22/12 13:31	mla
Sulfate	D516-02 - Turbidimetric	410		*	mg/L	50	300	04/02/12 9:06	ccp
TDS (calculated)	Calculation	794			mg/L	10	50	04/05/12 0:00	calc
TDS (ratio - measured/calculated)	Calculation	1.11						04/05/12 0:00	calc

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** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

REPIN11.10.10.01r

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L93702***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-01	WG320275	Cyanide, WAD	SM4500-CN I- distillation	D1	Sample required dilution due to matrix.
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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Tahoe Resources, Inc. ACZ Project ID: ***L93702***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-02	WG320341	Chloride	SM4500CI-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319962	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-03	WG320341	Chloride	SM4500CI-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-04	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-05	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-06	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-07	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-08	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319962	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-09	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-10	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319962	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-11	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320057	Cyanide, WAD	SM4500-CN I-Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320258	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319962	Residue, Filterable (TDS) @180C	SM2540C	H3	Sample was received and analyzed past holding time.
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	H3	Sample was received and analyzed past holding time.
			SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319958	Residue, Total (TS) @ 105C	SM2540B	H3	Sample was received and analyzed past holding time.
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93702*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-12	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L93702*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93702-13	WG320036	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
		Strontium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG320341	Chloride	SM4500Cl-E	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320213	Cyanide, total	M335.4 - Colorimetric w/ distillation	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M335.4 - Colorimetric w/ distillation	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320159	Fluoride	SM4500F-C	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320402	Nitrate/Nitrite as N	M353.2 - H2SO4 preserved	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320318	Nitrogen, ammonia	M350.1 - Automated Phenate	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320537	Nitrogen, total Kjeldahl	M351.2 - TKN by Block Digester	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M351.2 - TKN by Block Digester	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320393	Phosphorus, dissolved	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319999	Phosphorus, ortho dissolved	M365.1 - Automated Ascorbic Acid	H3	Sample was received and analyzed past holding time.
			M365.1 - Automated Ascorbic Acid	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320396	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG319974	Residue, Non-Filterable (TSS) @105C	SM2540D	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320410	Sulfate	D516-02 - Turbidimetric	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Certification Qualifiers

Tahoe Resources, Inc. ACZ Project ID: *L93702*

Metals Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Bismuth, dissolved	M200.7 ICP
Gallium, dissolved	M200.7 ICP
Scandium, dissolved	M200.7 ICP

REPAD.05.06.05.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
Escobal Project

ACZ Project ID: L93702
Date Received: 03/22/2012 09:09
Received By: ksj
Date Printed: 3/22/2012

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?		X	
9) Were all sample containers received intact?			
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?		X	
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?			X

Exceptions: If you answered no to any of the above questions, please describe

Some parameters were received past hold time.

Contact (For any discrepancies, the client must be contacted)

The client was not contacted.

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
2367		11.1	15
2533		11.3	17
2491		9.8	13
2610		11.7	12

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

REPAD.03.11.00.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
Escobal Project

ACZ Project ID: L93702
Date Received: 03/22/2012 09:09
Received By: ksj
Date Printed: 3/22/2012

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L93702-01	MW1		Y		Y		Y					
L93702-02	MW2		Y		Y		Y					
L93702-03	MW3		Y		Y		Y					
L93702-04	MW4		Y		Y		Y					
L93702-05	MW5		Y		Y		Y					
L93702-06	MW6		Y		Y		Y					
L93702-07	MW7		Y		Y		Y					
L93702-08	MW8		Y		Y		Y					
L93702-09	MW9		Y		Y		Y					
L93702-10	MW10		Y		Y		Y					
L93702-11	MW11		Y		Y		Y					
L93702-12	MW20		Y		Y		Y					
L93702-13	MW21		Y		Y		Y					

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

REPAD.03.11.00.01

L93702

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to
Name: MIGUEL BERGANZA
Company: TAHOE RESOURCES INC
E-mail: MBERGANZA@SANRAFAEL.COM.GT
Address: KM 8.6 CENTRO CORPORATIVO MIXBAL, TORRE OESTE APTO. 503 Y 504
Telephone: 5951-5248

Copy of Report to
Name: CHARLIE MUERHOFF
Company: TAHOE RESOURCES INC
E-mail: CMUERHOFF@TAHOERESOURCESINC.COM
Telephone:

Invoice to
Name: MIGUEL BERGANZA
Company: TAHOE RESOURCES INC
E-mail: MBERGANZA@SANRAFAEL.COM.GT
Address: KM 8.6 CENTRO CORPORATIVO MIXBAL, TORRE OESTE APTO. 503 Y 504
Telephone: 5951-5248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES / NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION
Quote #: WATER QUALITY
Project/PO #: ESCOBAL
Reporting state for compliance testing:
Sampler's Name: ENVIRONMENTAL DEPARTAMENT MSR
Are any samples NRC licensable material?

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE/TIME	Matrix	# of Containers	GW							
MW1	16/3/2012 8:05	GW	7	x							
MW2	9/3/2012 10:10	GW	7	x							
MW3	15/3/2012 11:17	GW	7	x							
MW4	15/3/2012 10:37	GW	7	x							
MW5	15/3/2012 9:21	GW	7	x							
MW6	15/3/2012 8:45	GW	7	x							
MW7	16/3/2012 8:36	GW	7	x							
MW8	9/3/2012 11:01	GW	7	x							
MW9	15/3/2012 10:04	GW	7	x							
MW10	9/3/2012 13:48	GW	7	x							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
Miguel Berganza MB	20/3/12 18:38		
		[illegible]	9:09

FRMAD050.03.05 02 White - Return with sample. Yellow - Retain for your records.

L93702 Chain of Custody

L93702

ACZ Laboratories, Inc. CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name:	MIGUEL BERGANZA	Address:	KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE
Company:	TAHOE RESOURCES INC		APTO. 503 Y 504
E-mail:	MBERGANZA@SANRAFAEL.COM.GT	Telephone:	5951-5248

Copy of Report to:

Name:	CHARLIE MUERHOFF	E-mail:	CMUERHOFF@TAHOERESOURCESINC.COM
Company:	TAHOE RESOURCES INC	Telephone:	

Invoice to:

Name:	MIGUEL BERGANZA	Address:	KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE
Company:	TAHOE RESOURCES INC		APTO. 503 Y 504
E-mail:	MBERGANZA@SANRAFAEL.COM.GT	Telephone:	5951-5248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ☐ NO ☐

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION — ANALYSES REQUESTED (attach list or use quote number)

Quote #:	WATER QUALITY
Project/PO #:	ESCOBAL
Reporting state for compliance testing:	
Sampler's Name:	ENVIRONMENTAL DEPARTAMENT MSR
Are any samples NRC licensable material?	

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	GW							
MW11	9/3/2012 13:26	GW	7	X							
MW20	16/3/2012 11:30	GW	7	X							
MW21	15/3/2012 10:04	GW	7	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Miguel Berganza	20/3/12 16:30	[illegible]	18:45
		MC 3-22-12	9:09

2

FRMAD050.03.05 02 White - Return with sample. Yellow - Retain for your records.

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Guatemala March 20, 2012

To whom it may concern:

Minera San Rafael, S.A is sending one case with samples of water, which is not contaminated, that are going to be analyzed by the ACZ Laboratories in Steamboat Springs, Colorado, USA.

If you have any question or doubt, please contact Miguel Berganza at Minera San Rafael, S.A. (502 - 5951-5248) or Tony Antalek at ACZ Laboratories (970-879-6590).

Sincerely yours,

Miguel Berganza
Evironment Department.
Proyecto Escobal, S. A.

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Minera San Rafael

COMMERCIAL INVOICE

COMERCIAL INVOICE No.
01-E

DATE: March/20/2012	AWB No.

SHIPPER	CONSIGNEE
Tahoe Resources, Inc. Km. 8.6 Muxbal Centro corporativo Muxbal. Torre Oeste Aplo. 503 y 504 GUATEMALA CITY, GUATEMALA	ACZ Laboratories, Inc. 2773 Downhill Drive, Steamboat Springs, Colorado, USA

CODE	UNITS	DESCRIPTION OF GOODS	WEIGHT	UNIT VALUE	TOTAL VALUE
*****	1	Water samples		USD$5.00	USD$ 5.00
TOTAL					USD$ 5.00

REASON FOR EXPORTATION: for analysis

COUNTRY OF ORIGIN OF THE ABOVE DESCRIBED GOODS: GUATEMALA

Miguel Berganza **SIGNATURE OF SHIPER/EXPORTER**	March/20/2012 **DATE OF EXPORTATION:**

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10.4. Informes Originales de los Resultados Analíticos Obtenidos del muestreo de sedimentos, diciembre 2011 y marzo 2012.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

January 18, 2012

Report to:
Miguel Berganza
Tahoe Resources, Inc.
Km 8.6 carrtera Antigua a El Salvador Centro cor
Torre Oeste.Apto 503y504 Guatemala, GT

cc: Charlie Muerhoff

Bill to:
Miguel Berganza
Tahoe Resources, Inc.
5190 Neil Road #310
Reno, NV 89502

Project ID: El Escobal
ACZ Project ID: L92535

Miguel Berganza:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on December 29, 2011. This project has been assigned to ACZ's project number, L92535. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L92535. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after February 18, 2012. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

ACCREDITED IN ACCORDANCE WITH nelac

ACIL

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

Tahoe Resources, Inc. January 18, 2012

Project ID: El Escobal
ACZ Project ID: L92535

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 10 sediment samples from Tahoe Resources, Inc. on December 29, 2011. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L92535. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SED-1

ACZ Sample ID: ***L92535-01***
Date Sampled: *12/18/11 08:56*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:00	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:30	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	12.8			mg/Kg	0.5	2	01/16/12 19:40	msh
Cadmium, total (3050)	M6020 ICP-MS	0.2	B		mg/Kg	0.1	0.5	01/16/12 19:40	msh
Chromium, total (3050)	M6020 ICP-MS	3.1			mg/Kg	0.5	2	01/16/12 19:40	msh
Lead, total (3050)	M6020 ICP-MS	9.5			mg/Kg	0.1	0.5	01/16/12 19:40	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.05	0.2	01/15/12 16:26	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	71.7		*	%	0.1	0.5	01/05/12 14:27	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 10:30	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.09	0.4	12/30/11 18:23	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0321		*	%	0.0003	0.002	01/13/12 23:34	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SED-2

ACZ Sample ID: ***L92535-02***
Date Sampled: *12/18/11 10:02*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:01	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:31	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	14.0			mg/Kg	0.5	2	01/16/12 19:51	msh
Cadmium, total (3050)	M6020 ICP-MS	0.2	B		mg/Kg	0.1	0.5	01/16/12 19:51	msh
Chromium, total (3050)	M6020 ICP-MS	4.5			mg/Kg	0.5	2	01/16/12 19:51	msh
Lead, total (3050)	M6020 ICP-MS	10.7			mg/Kg	0.1	0.5	01/16/12 19:51	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.05	0.2	01/15/12 16:28	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	78.9		*	%	0.1	0.5	01/05/12 23:21	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 12:00	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.1	0.5	12/30/11 18:25	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0065		*	%	0.0002	0.001	01/13/12 23:36	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SED-2A

ACZ Sample ID: ***L92535-03***
Date Sampled: *12/18/11 10:20*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:32	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	16.1			mg/Kg	0.5	2	01/16/12 20:01	msh
Cadmium, total (3050)	M6020 ICP-MS	0.1	B		mg/Kg	0.1	0.5	01/16/12 20:01	msh
Chromium, total (3050)	M6020 ICP-MS	3.1			mg/Kg	0.5	2	01/16/12 20:01	msh
Lead, total (3050)	M6020 ICP-MS	6.5			mg/Kg	0.1	0.5	01/16/12 20:01	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.05	0.2	01/15/12 16:30	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	76.2		*	%	0.1	0.5	01/06/12 3:49	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 12:30	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.09	0.5	12/30/11 18:26	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0061		*	%	0.0002	0.001	01/13/12 23:39	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SED-3

ACZ Sample ID: ***L92535-04***
Date Sampled: *12/21/11 11:40*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:02	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:32	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	16.9			mg/Kg	0.5	2	01/16/12 20:05	msh
Cadmium, total (3050)	M6020 ICP-MS	0.2	B		mg/Kg	0.1	0.5	01/16/12 20:05	msh
Chromium, total (3050)	M6020 ICP-MS	2.2			mg/Kg	0.5	2	01/16/12 20:05	msh
Lead, total (3050)	M6020 ICP-MS	8.3			mg/Kg	0.1	0.5	01/16/12 20:05	msh
Mercury, total	M7471A CVAA	0.06	B		mg/Kg	0.05	0.2	01/15/12 16:37	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	70.8		*	%	0.1	0.5	01/06/12 8:16	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 13:00	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.1	0.6	12/30/11 18:27	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0062		*	%	0.0003	0.002	01/13/12 23:40	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SED-4

ACZ Sample ID: ***L92535-05***
Date Sampled: *12/21/11 12:10*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:03	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:32	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	25.0			mg/Kg	0.5	2	01/16/12 20:08	msh
Cadmium, total (3050)	M6020 ICP-MS	0.1	B		mg/Kg	0.1	0.5	01/16/12 20:08	msh
Chromium, total (3050)	M6020 ICP-MS	4.3			mg/Kg	0.5	2	01/16/12 20:08	msh
Lead, total (3050)	M6020 ICP-MS	36.0			mg/Kg	0.1	0.5	01/16/12 20:08	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.05	0.2	01/15/12 16:39	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	73.1		*	%	0.1	0.5	01/06/12 12:43	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 13:30	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.1	0.5	12/30/11 18:28	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0069		*	%	0.0002	0.001	01/13/12 23:41	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SED-4A

ACZ Sample ID: ***L92535-06***
Date Sampled: *12/18/11 10:50*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:03	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:33	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	14.1			mg/Kg	0.5	2	01/16/12 20:12	msh
Cadmium, total (3050)	M6020 ICP-MS	0.3	B		mg/Kg	0.1	0.5	01/16/12 20:12	msh
Chromium, total (3050)	M6020 ICP-MS	5.8			mg/Kg	0.5	2	01/16/12 20:12	msh
Lead, total (3050)	M6020 ICP-MS	20.5			mg/Kg	0.1	0.5	01/16/12 20:12	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.06	0.3	01/15/12 16:46	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	55.7		*	%	0.1	0.5	01/06/12 17:10	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 14:00	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.2	0.8	12/30/11 18:29	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0227		*	%	0.0003	0.002	01/13/12 23:42	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-6

ACZ Sample ID: ***L92535-07***
Date Sampled: *12/21/11 14:01*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:03	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:33	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	7.1			mg/Kg	0.5	2	01/16/12 20:16	msh
Cadmium, total (3050)	M6020 ICP-MS	0.1	B		mg/Kg	0.1	0.5	01/16/12 20:16	msh
Chromium, total (3050)	M6020 ICP-MS	4.7			mg/Kg	0.5	2	01/16/12 20:16	msh
Lead, total (3050)	M6020 ICP-MS	4.4			mg/Kg	0.1	0.5	01/16/12 20:16	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.05	0.2	01/15/12 16:49	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	74.3		*	%	0.1	0.5	01/06/12 21:38	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 14:30	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.1	0.6	12/30/11 18:32	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0053		*	%	0.0002	0.001	01/13/12 23:45	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-7

ACZ Sample ID: ***L92535-08***
Date Sampled: *12/21/11 14:40*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:04	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:33	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	8.4			mg/Kg	0.5	2	01/16/12 20:19	msh
Cadmium, total (3050)	M6020 ICP-MS	0.1	B		mg/Kg	0.1	0.5	01/16/12 20:19	msh
Chromium, total (3050)	M6020 ICP-MS	2.2			mg/Kg	0.5	2	01/16/12 20:19	msh
Lead, total (3050)	M6020 ICP-MS	5.1			mg/Kg	0.1	0.5	01/16/12 20:19	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.05	0.2	01/15/12 16:51	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	75.1		*	%	0.1	0.5	01/07/12 2:05	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 15:00	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.1	0.5	12/30/11 18:32	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0039		*	%	0.0002	0.001	01/13/12 23:47	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-8

ACZ Sample ID: ***L92535-09***
Date Sampled: *12/21/11 13:00*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:04	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:34	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	12.2			mg/Kg	0.5	2	01/16/12 20:23	msh
Cadmium, total (3050)	M6020 ICP-MS	0.2	B		mg/Kg	0.1	0.5	01/16/12 20:23	msh
Chromium, total (3050)	M6020 ICP-MS	3.1			mg/Kg	0.5	2	01/16/12 20:23	msh
Lead, total (3050)	M6020 ICP-MS	8.5			mg/Kg	0.1	0.5	01/16/12 20:23	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.05	0.3	01/15/12 16:54	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	67.6		*	%	0.1	0.5	01/07/12 6:32	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 15:30	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.09	0.5	12/30/11 18:33	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0084		*	%	0.0003	0.002	01/13/12 23:48	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: El Escobal
Sample ID: SW-9

ACZ Sample ID: ***L92535-10***
Date Sampled: *12/21/11 15:19*
Date Received: *12/29/11*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							12/30/11 10:04	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							01/13/12 9:34	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	12.1			mg/Kg	0.5	2	01/16/12 20:27	msh
Cadmium, total (3050)	M6020 ICP-MS	0.2	B		mg/Kg	0.1	0.5	01/16/12 20:27	msh
Chromium, total (3050)	M6020 ICP-MS	2.6			mg/Kg	0.5	2	01/16/12 20:27	msh
Lead, total (3050)	M6020 ICP-MS	35.8			mg/Kg	0.1	0.5	01/16/12 20:27	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.05	0.3	01/15/12 16:57	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	65.5		*	%	0.1	0.5	01/07/12 10:59	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							01/10/12 16:00	bsu

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.1	0.5	12/30/11 18:34	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0076		*	%	0.0003	0.002	01/13/12 23:49	pjb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

REPIN11.10.10.01r

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: *L92535*

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L92535-01	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L92535-02	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L92535-03	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L92535-04	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L92535-05	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L92535-06	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L92535-07	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L92535-08	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L92535-09	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L92535-10	WG316047	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG316762	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

REPAD.15.06.05.01

ACZ Laboratories, Inc.
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Certification Qualifiers

Tahoe Resources, Inc. ACZ Project ID: ***L92535***

Soil Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Solids, Percent	CLPSOW390, PART F, D-98

Wet Chemistry

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)

ACZ Laboratories, Inc.
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Sample Receipt

Tahoe Resources, Inc.
El Escobal

ACZ Project ID: L92535
Date Received: 12/29/2011 09:50
Received By: ksj
Date Printed: 12/29/2011

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?	X		

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
2313		12.9	15

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
El Escobal

ACZ Project ID: L92535
Date Received: 12/29/2011 09:50
Received By: ksj
Date Printed: 12/29/2011

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L92535-01	SED-1									X		
L92535-02	SED-2									X		
L92535-03	SED-2A									X		
L92535-04	SED-3									X		
L92535-05	SED-4									X		
L92535-06	SED-4A									X		
L92535-07	SW-6									X		
L92535-08	SW-7									X		
L92535-09	SW-8									X		
L92535-10	SW-9									X		

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

REPAD.03.11.00.01

L92535

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:
Name: Miguel Berganza
Company: Tahoe Resources
E-mail: mberganza@sanrafael.com.gt
Address: Km 8.6 centro corporativo muxbal, torre oeste aplo. 503 y 504
Telephone: (502) 5951-5248

Copy of Report to:
Name: Charlie Muerhoff
Company: Tahoe Resources
E-mail: cmuerhoff@tahoeresourcesinc.com
Telephone:

Invoice to:
Name: Miguel Berganza
Company: Tahoe Resources
E-mail: mberganza@sanrafael.com.gt
Address: Km 8.6 centro corporativo muxbal, torre oeste aplo. 503 y 504
Telephone: (502) 5951-5248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES / NO
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION
Quote #: Water Quality
Project/PO #: El Escobal
Reporting state for compliance testing:
Sampler's Name: Evironmental department MSR
Are any samples NRC licensable material?

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE TIME	Matrix	# of Containers	SED
SED - 1	18/12/2011 08:56	SED	1	X
SED - 2	18/12/2011 10:02	SED	1	X
SED - 2A	18/12/2011 10:20	SED	1	X
SED - 3	21/12/2011 11:40	SED	1	X
SED - 4	21/12/2011 12:10	SED	1	X
SED - 4A	18/12/2011 10:50	SED	1	X
SW - 6	21/12/2011 14:01	SED	1	X
SW - 7	21/12/2011 14:40	SED	1	X
SW - 8	21/12/2011 13:00	SED	1	X
SW - 9	21/12/2011 15:19	SED	1	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE TIME	RECEIVED BY:	DATE TIME
Ronald Reyes	27/12/11 12:35	Luis Santos	27/12 13:35
		LDC	12:29:11 9:50

L92535 Chain of Custody

FRMAD050.03.05.02 White - Return with sample. Yellow - Retain for your records.

Minera San Rafael

COMMERCIAL INVOICE

Guatemala December 27, 2010

COMERCIAL INVOICE No.
01-E

DATE: December/27/2011	AWB No.

SHIPPER	CONSIGNEE
Tahoe Resources, Inc. Km. 8.6 Muxbal Centro corporativo Muxbal. Torre Oeste Apto. 503 y 504 GUATEMALA CITY, GUATEMALA	ACZ Laboratories, Inc. 2773 Downhill Drive, Steamboat Springs, Colorado, USA

CODE	UNITS	DESCRIPTION OF GOODS	WEIGHT	UNIT VALUE	TOTAL VALUE
*****	1	Water samples		USD$5.00	USD$ 5.00
TOTAL					USD$ 5.00

REASON FOR EXPORTATION: for analysis

COUNTRY OF ORIGIN OF THE ABOVE DESCRIBED GOODS: GUATEMALA

Miguel Berganza **SIGNATURE OF SHIPER/EXPORTER**	December/27/2011 **DATE OF EXPORTATION:**

To whom it may concern:

Minera San Rafael, S.A is sending one case with samples of water, which is not contaminated, that are going to be analyzed by the ACZ Laboratories in Steamboat Springs, Colorado, USA.

If you have any question or doubt, please contact Miguel Berganza at Minera San Rafael, S.A. (502 – 5951-5248) or Tony Antalek at ACZ Laboratories (970-879-6590).

Sincerely yours,

Miguel Berganza
Evironment Department.
Proyecto Escobal, S. A.

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

April 09, 2012

Report to:
Miguel Berganza
Tahoe Resources, Inc.
Km 8.6 carrtera Antigua a El Salvador Centro cor
Torre Oeste.Apto 503y504 Guatemala, GT

Bill to:
Miguel Berganza
Tahoe Resources, Inc.
5190 Neil Road #310
Reno, NV 89502

cc: Charlie Muerhoff

Project ID: Escobal Project
ACZ Project ID: L93726

Miguel Berganza:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on March 22, 2012. This project has been assigned to ACZ's project number, L93726. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L93726. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after May 09, 2012. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

Tony Antalek has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Case Narrative

Tahoe Resources, Inc. April 09, 2012

Project ID: Escobal Project
ACZ Project ID: L93726

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 12 sediment samples from Tahoe Resources, Inc. on March 22, 2012. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L93726. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

All analyses were performed within EPA recommended holding times.

Sample Analysis

These samples were analyzed for inorganic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

1. Client samples were received at a temperature outside of the acceptable range (See Sample Receipt Form).

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED1

ACZ Sample ID: ***L93726-01***
Date Sampled: *03/10/12 15:28*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:15	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 10:45	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	11.1		*	mg/Kg	0.5	2	04/03/12 15:53	msh
Cadmium, total (3050)	M6020 ICP-MS	0.3	B		mg/Kg	0.1	0.5	04/03/12 15:53	msh
Chromium, total (3050)	M6020 ICP-MS	4.8			mg/Kg	0.5	2	04/03/12 15:53	msh
Lead, total (3050)	M6020 ICP-MS	12.3			mg/Kg	0.1	0.5	04/03/12 15:53	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.6	3	04/06/12 21:01	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	5.5		*	%	0.1	0.5	03/26/12 11:50	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/28/12 13:41	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	2	8	03/23/12 20:39	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.33		*	%	0.02	0.09	04/06/12 12:13	mpb

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED2

ACZ Sample ID: ***L93726-02***
Date Sampled: *03/10/12 13:55*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:16	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 11:30	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	18.0		*	mg/Kg	0.5	2	04/03/12 16:02	msh
Cadmium, total (3050)	M6020 ICP-MS	0.8			mg/Kg	0.1	0.5	04/03/12 16:02	msh
Chromium, total (3050)	M6020 ICP-MS	7.9			mg/Kg	0.5	2	04/03/12 16:02	msh
Lead, total (3050)	M6020 ICP-MS	22.8			mg/Kg	0.1	0.5	04/03/12 16:02	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.1	0.5	04/06/12 21:04	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	32.2		*	%	0.1	0.5	03/26/12 13:41	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/28/12 18:22	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.3	2	03/23/12 20:41	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.024		*	%	0.001	0.007	04/06/12 12:15	mpb

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED2A

ACZ Sample ID: ***L93726-03***
Date Sampled: *03/10/12 13:25*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:17	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 12:15	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	12.5		*	mg/Kg	0.5	2	04/03/12 16:05	msh
Cadmium, total (3050)	M6020 ICP-MS	0.8			mg/Kg	0.1	0.5	04/03/12 16:05	msh
Chromium, total (3050)	M6020 ICP-MS	5.3			mg/Kg	0.5	2	04/03/12 16:05	msh
Lead, total (3050)	M6020 ICP-MS	17.2			mg/Kg	0.1	0.5	04/03/12 16:05	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.09	0.4	04/06/12 21:06	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	37.4		*	%	0.1	0.5	03/26/12 15:32	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/28/12 19:56	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.3	1	03/23/12 20:43	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.024		*	%	0.002	0.008	04/06/12 12:17	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED3

ACZ Sample ID: ***L93726-04***
Date Sampled: *03/10/12 11:05*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:17	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 12:37	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	7.8		*	mg/Kg	0.5	2	04/03/12 16:08	msh
Cadmium, total (3050)	M6020 ICP-MS	0.2	B		mg/Kg	0.1	0.5	04/03/12 16:08	msh
Chromium, total (3050)	M6020 ICP-MS	1.5	B		mg/Kg	0.5	2	04/03/12 16:08	msh
Lead, total (3050)	M6020 ICP-MS	4.7			mg/Kg	0.1	0.5	04/03/12 16:08	msh
Mercury, total	M7471A CVAA	0.3	B		mg/Kg	0.1	0.6	04/06/12 21:09	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	29.1		*	%	0.1	0.5	03/26/12 17:23	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/28/12 21:30	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.3	2	03/23/12 20:44	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.020		*	%	0.003	0.01	04/06/12 12:18	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED4

ACZ Sample ID: ***L93726-05***
Date Sampled: *03/10/12 11:20*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:17	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 13:00	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	22.8		*	mg/Kg	0.4	2	04/03/12 16:17	msh
Cadmium, total (3050)	M6020 ICP-MS	0.31	B		mg/Kg	0.08	0.4	04/03/12 16:17	msh
Chromium, total (3050)	M6020 ICP-MS	4.1			mg/Kg	0.4	2	04/03/12 16:17	msh
Lead, total (3050)	M6020 ICP-MS	8.77			mg/Kg	0.08	0.4	04/03/12 16:17	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.06	0.3	04/06/12 21:11	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	55.0		*	%	0.1	0.5	03/26/12 19:13	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/28/12 23:03	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.1	0.7	03/23/12 20:45	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.016	B	*	%	0.003	0.02	04/06/12 12:19	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED4A

ACZ Sample ID: ***L93726-06***
Date Sampled: *03/10/12 14:16*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:18	tod
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 13:22	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	11.4		*	mg/Kg	0.5	2	04/03/12 16:20	msh
Cadmium, total (3050)	M6020 ICP-MS	0.3	B		mg/Kg	0.1	0.5	04/03/12 16:20	msh
Chromium, total (3050)	M6020 ICP-MS	7.1			mg/Kg	0.5	2	04/03/12 16:20	msh
Lead, total (3050)	M6020 ICP-MS	10.2			mg/Kg	0.1	0.5	04/03/12 16:20	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.2	0.9	04/06/12 21:23	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	19.4		*	%	0.1	0.5	03/26/12 21:04	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/29/12 0:37	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.4	2	03/23/12 20:46	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.089		*	%	0.003	0.01	04/06/12 12:21	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED5

ACZ Sample ID: ***L93726-07***
Date Sampled: *03/10/12 08:57*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:18	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 13:45	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	12.8		*	mg/Kg	0.4	2	04/03/12 16:23	msh
Cadmium, total (3050)	M6020 ICP-MS	0.11	B		mg/Kg	0.08	0.4	04/03/12 16:23	msh
Chromium, total (3050)	M6020 ICP-MS	4.9			mg/Kg	0.4	2	04/03/12 16:23	msh
Lead, total (3050)	M6020 ICP-MS	6.23			mg/Kg	0.08	0.4	04/03/12 16:23	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.07	0.3	04/06/12 21:25	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	53.5		*	%	0.1	0.5	03/26/12 22:55	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/29/12 2:11	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.2	1	03/23/12 20:48	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.011		*	%	0.002	0.009	04/06/12 12:24	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED6

ACZ Sample ID: ***L93726-08***
Date Sampled: *03/10/12 07:45*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:18	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 14:07	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	11.4		*	mg/Kg	0.5	2	04/03/12 16:26	msh
Cadmium, total (3050)	M6020 ICP-MS	0.1	B		mg/Kg	0.1	0.5	04/03/12 16:26	msh
Chromium, total (3050)	M6020 ICP-MS	1.8	B		mg/Kg	0.5	2	04/03/12 16:26	msh
Lead, total (3050)	M6020 ICP-MS	8.6			mg/Kg	0.1	0.5	04/03/12 16:26	msh
Mercury, total	M7471A CVAA	0.16	B		mg/Kg	0.07	0.3	04/06/12 21:27	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	49.4		*	%	0.1	0.5	03/27/12 0:46	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/29/12 3:45	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.2	1	03/23/12 20:49	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.011		*	%	0.001	0.007	04/06/12 12:25	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED7

ACZ Sample ID: ***L93726-09***
Date Sampled: *03/10/12 10:33*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:19	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 14:30	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	6.8		*	mg/Kg	0.4	2	04/03/12 16:29	msh
Cadmium, total (3050)	M6020 ICP-MS		U		mg/Kg	0.09	0.4	04/03/12 16:29	msh
Chromium, total (3050)	M6020 ICP-MS	1.3	B		mg/Kg	0.4	2	04/03/12 16:29	msh
Lead, total (3050)	M6020 ICP-MS	2.35			mg/Kg	0.09	0.4	04/03/12 16:29	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.07	0.3	04/06/12 21:30	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	54.1		*	%	0.1	0.5	03/27/12 2:36	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/29/12 5:18	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.2	0.8	03/23/12 20:50	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0098		*	%	0.0009	0.005	04/06/12 12:26	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED8

ACZ Sample ID: ***L93726-10***
Date Sampled: *03/10/12 12:50*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:19	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 14:52	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	16.9		*	mg/Kg	0.4	2	04/03/12 16:32	msh
Cadmium, total (3050)	M6020 ICP-MS	0.17	B		mg/Kg	0.09	0.4	04/03/12 16:32	msh
Chromium, total (3050)	M6020 ICP-MS	3.6			mg/Kg	0.4	2	04/03/12 16:32	msh
Lead, total (3050)	M6020 ICP-MS	5.98			mg/Kg	0.09	0.4	04/03/12 16:32	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.06	0.3	04/06/12 21:32	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	63.6		*	%	0.1	0.5	03/27/12 4:27	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/29/12 6:52	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.2	0.8	03/23/12 20:51	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.015		*	%	0.001	0.005	04/06/12 12:27	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED9

ACZ Sample ID: ***L93726-11***
Date Sampled: *03/10/12 09:30*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:19	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 15:15	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	4.3		*	mg/Kg	0.5	2	04/03/12 16:35	msh
Cadmium, total (3050)	M6020 ICP-MS	0.1	B		mg/Kg	0.1	0.5	04/03/12 16:35	msh
Chromium, total (3050)	M6020 ICP-MS	1.6	B		mg/Kg	0.5	2	04/03/12 16:35	msh
Lead, total (3050)	M6020 ICP-MS	6.6			mg/Kg	0.1	0.5	04/03/12 16:35	msh
Mercury, total	M7471A CVAA	0.58			mg/Kg	0.06	0.3	04/06/12 21:35	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	56.5		*	%	0.1	0.5	03/27/12 6:18	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/29/12 8:26	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.2	0.8	03/23/12 20:52	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0156		*	%	0.0006	0.003	04/06/12 12:28	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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ACZ Laboratories, Inc.
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Inorganic Analytical Results

Tahoe Resources, Inc.
Project ID: Escobal Project
Sample ID: SED20

ACZ Sample ID: ***L93726-12***
Date Sampled: *03/12/12 10:30*
Date Received: *03/22/12*
Sample Matrix: *Sediment*

Inorganic Prep

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9013 - Manual Distillation							03/23/12 13:20	tcd
Phosphorus, total	M365.1 - Auto Ascorbic Acid Digestion							04/05/12 15:37	mpb

Metals Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Arsenic, total (3050)	M6020 ICP-MS	20.1		*	mg/Kg	0.5	2	04/03/12 16:38	msh
Cadmium, total (3050)	M6020 ICP-MS	0.2	B		mg/Kg	0.1	0.5	04/03/12 16:38	msh
Chromium, total (3050)	M6020 ICP-MS	4.5			mg/Kg	0.5	2	04/03/12 16:38	msh
Lead, total (3050)	M6020 ICP-MS	23.6			mg/Kg	0.1	0.5	04/03/12 16:38	msh
Mercury, total	M7471A CVAA		U		mg/Kg	0.06	0.3	04/06/12 21:37	erf

Soil Analysis

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Solids, Percent	CLPSOW390, PART F, D-98	60.2		*	%	0.1	0.5	03/27/12 8:09	nrc

Soil Preparation

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Digestion - Hot Plate	M3050B ICP-MS							03/29/12 10:00	nrc

Wet Chemistry

Parameter	EPA Method	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Cyanide, total	M9012B - Automated Colorimetric		U	*	mg/Kg	0.1	0.6	03/23/12 20:52	pjb
Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	0.0279		*	%	0.0009	0.005	04/06/12 12:30	mpb

REPIN.02.06.05.01 ** Please refer to Qualifier Reports for details.*

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Inorganic Reference

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit, typically 5 times the MDL.
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste, Third Edition with Update III, December 1996.
(5) Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995 & 20th edition (1998).

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

REPIN11.10.10.01r

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L93726***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93726-01	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-02	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-03	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-04	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-05	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-06	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-07	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

REPAD.15.06.05.01

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Inorganic Extended Qualifier Report

Tahoe Resources, Inc. ACZ Project ID: ***L93726***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L93726-08	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-09	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-10	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-11	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
L93726-12	WG320492	Arsenic, total (3050)	M6020 ICP-MS	ZB	The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.
	WG320061	Cyanide, total	M9012B - Automated Colorimetric	RA	Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL).
	WG320736	Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Certification Qualifiers

Tahoe Resources, Inc. ACZ Project ID: ***L93726***

Soil Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Solids, Percent	CLPSOW390, PART F, D-98

Wet Chemistry

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

Phosphorus, total	M365.1 - Auto Ascorbic Acid (digest)

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
Escobal Project

ACZ Project ID: L93726
Date Received: 03/22/2012 09:17
Received By: ksj
Date Printed: 3/23/2012

Receipt Verification

	YES	NO	NA
1) Does this project require special handling procedures such as CLP protocol?			X
2) Are the custody seals on the cooler intact?			X
3) Are the custody seals on the sample containers intact?			X
4) Is there a Chain of Custody or other directive shipping papers present?	X		
5) Is the Chain of Custody complete?	X		
6) Is the Chain of Custody in agreement with the samples received?	X		
7) Is there enough sample for all requested analyses?	X		
8) Are all samples within holding times for requested analyses?	X		
9) Were all sample containers received intact?	X		
10) Are the temperature blanks present?			X
11) Are the trip blanks (VOA and/or Cyanide) present?			X
12) Are samples requiring no headspace, headspace free?			X
13) Do the samples that require a Foreign Soils Permit have one?	X		

Exceptions: If you answered no to any of the above questions, please describe

N/A

Contact (For any discrepancies, the client must be contacted)

N/A

Shipping Containers

Cooler Id		Temp (°C)	Rad (µR/hr)
2687		8.1	15

Client must contact ACZ Project Manager if analysis should not proceed for samples received outside of thermal preservation acceptance criteria.

Notes

REPAD.03.11.00.01

Page 19 of 22

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Tahoe Resources, Inc.
Escobal Project

ACZ Project ID: L93726
Date Received: 03/22/2012 09:17
Received By: ksj
Date Printed: 3/23/2012

Sample Container Preservation

SAMPLE	CLIENT ID	R < 2	G < 2	BK < 2	Y< 2	YG< 2	B< 2	O < 2	T >12	N/A	RAD	ID
L93726-01	SED1									X		
L93726-02	SED2									X		
L93726-03	SED2A									X		
L93726-04	SED3									X		
L93726-05	SED4									X		
L93726-06	SED4A									X		
L93726-07	SED5									X		
L93726-08	SED6									X		
L93726-09	SED7									X		
L93726-10	SED8									X		
L93726-11	SED9									X		
L93726-12	SED20									X		

Sample Container Preservation Legend

Abbreviation	Description	Container Type	Preservative/Limits
R	Raw/Nitric	RED	pH must be < 2
B	Filtered/Sulfuric	BLUE	pH must be < 2
BK	Filtered/Nitric	BLACK	pH must be < 2
G	Filtered/Nitric	GREEN	pH must be < 2
O	Raw/Sulfuric	ORANGE	pH must be < 2
P	Raw/NaOH	PURPLE	pH must be > 12 *
T	Raw/NaOH Zinc Acetate	TAN	pH must be > 12
Y	Raw/Sulfuric	YELLOW	pH must be < 2
YG	Raw/Sulfuric	YELLOW GLASS	pH must be < 2
N/A	No preservative needed	Not applicable	
RAD	Gamma/Beta dose rate	Not applicable	must be < 250 µR/hr

* pH check performed by analyst prior to sample preparation

Sample IDs Reviewed By: ksj

REPAD.03.11.00.01

Page 20 of 22

ACZ Laboratories, Inc. L93726 — CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name:	MIGUEL BERGANZA	Address:	KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE APTO 503 Y 504
Company:	TAHOE RESOURCES INC		
E-mail:	MBERGANZA@SANRAFAEL.COM.GT	Telephone:	59515248

Copy of Report to:

Name:	CHARLIE MUERHOFF	E-mail:	CMUERHOFF@TAHOERESOURCESINC.COM
Company:	TAHOE RESOURCES INC	Telephone:	

Invoice to:

Name:	MIGUEL BERGANZA	Address:	KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE APTO 503 Y 504
Company:	TAHOE RESOURCES INC		
E-mail:	MBERGANZA@SANRAFAEL.COM.GT	Telephone:	59515248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ☐ NO ☐
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION — ANALYSES REQUESTED

Quote #: WATER QUALITY
Project/PO #: ESCOBAL
Reporting state for compliance testing:
Sampler's Name: ENVIRONMENTAL DEPARTAMENT MSR
Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE/TIME	Matrix	# of Containers	SED
SED1	10/3/2012 15:28	SED	1	X
SED2	10/3/2012 13:55	SED	1	X
SED2A	10/3/2012 13:25	SED	1	X
SED3	10/3/2012 11:05	SED	1	X
SED4	10/3/2012 11:20	SED	1	X
SED4A	10/3/2012 14:16	SED	1	X
SED5	10/3/2012 8:57	SED	1	X
SED6	10/3/2012 7:45	SED	1	X
SED7	10/3/2012 10:33	SED	1	X
SED8	10/3/2012 12:50	SED	1	X

Matrix: GW (Surface Water) GW (Ground Water) WW (Waste Water) DW (Drinking Water) SL (Sludge) SO (Soil) OL (Oil) Other (Specify)

REMARKS

L93726 Chain of Custody

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
MIGUEL BERGANZA	20/3/2012 18:38	SOLUCIONES LOGISTICAS S.A.	18:45
			3-22-12 9:17

ACZ Laboratories, Inc. — CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name:	MIGUEL BERGANZA	Address:	KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE APTO 503 Y 504
Company:	TAHOE RESOURCES INC		
E-mail:	MBERGANZA@SANRAFAEL.COM.GT	Telephone:	59515248

Copy of Report to:

Name:	CHARLIE MUERHOFF	E-mail:	CMUERHOFF@TAHOERESOURCESINC.COM
Company:	TAHOE RESOURCES INC	Telephone:	

Invoice to:

Name:	MIGUEL BERGANZA	Address:	KM 8.6 CENTRO CORPORATIVO MUXBAL, TORRE OESTE APTO 503 Y 504
Company:	TAHOE RESOURCES INC		
E-mail:	MBERGANZA@SANRAFAEL.COM.GT	Telephone:	59515248

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES ☐ NO ☐
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified.

PROJECT INFORMATION — ANALYSES REQUESTED

Quote #: WATER QUALITY
Project/PO #: ESCOBAL
Reporting state for compliance testing:
Sampler's Name: ENVIRONMENTAL DEPARTAMENT MSR
Are any samples NRC licensable material?

SAMPLE IDENTIFICATION	DATE/TIME	Matrix	# of Containers	SED
SED9	10/3/2012 9:30	SED	1	X
SED20	12/3/2012 10:30	SED	1	X

Matrix: GW (Surface Water) GW (Ground Water) WW (Waste Water) DW (Drinking Water) SL (Sludge) SO (Soil) OL (Oil) Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
MIGUEL BERGANZA	20/3/2012 18:38	SOLUCIONES LOGISTICAS S.A.	18:45
			3-22-12 9:17

10.5. Informes Originales de los Resultados Analíticos Obtenidos del Efluente de la Planta de Tratamiento en los meses de Enero a Abril de 2012.

Soluciones Analíticas
Agricultura • Industria • Ambiente

14 Avenida 19-50, Condado El Naranjo, Bodega #
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info@solucionesanaliticas.c
www.solucionesanaliticas.c

INFORME DE ANÁLISIS

Cliente	MINERA SAN RAFAEL, S.A.	**Número de orden**	74599
Dirección	Km 8.6 Antigua Carr El Salvador Muxbal, Corp Muxbal, Tor Oeste Of 504	**Código de Muestra**	12.01.26.06.13
Persona Responsable	MIGUEL BERGANZA	**Fecha de ingreso**	26-01-2012
Referencia Cliente	EQW7	**Fecha de informe**	09-02-2012
Paquete de análisis	AGUAS RESIDUALES	**Asesor**	EDGAR MENA

DATOS DE LA MUESTRA

Fecha de muestreo	26-01-2012	**Fecha Inicio de Análisis**	27-01-2012
Hora de muestreo	10:20 A.M.	**Temperatura de Ingreso**	REFRIGERADA
Recipiente	VIDRIO	**Temperatura de almacenaje**	4 ± 2 °C
Tipo de Muestra	AGUA RESIDUAL	**Responsable de Muestreo**	CLIENTE
Ubicación	MINERA SAN RAFAEL		

PARÁMETROS LABORATORIO

Parámetro	Dimensionales	Valor	Límite de detección	Metodología
ACIDEZ/ALCALINIDAD	unidades pH	7.82	0.01	Eletródo de vidrio
ACEITES Y GRASAS	mg/L	<6	6	EPA 1664
MATERIA FLOTANTE		AUSENTE		
*SOLIDOS EN SUSPENSION TOTALES	mg/L	41	6	SM 2540D
*SOLIDOS SEDIMENTALES	mg/L	0.1	0.1	SM 2540F
DEMANDA BIOQUIMICA DE OXIGENO	mg/L O2	< 6	6	SM 5210B 4500C
*DEMANDA QUIMICA DE OXIGENO	mg/L O2	29	3	HACH 8000
NITROGENO TOTAL	mg/L-N	19	2.5	SM Kjeldahl 4500B
FOSFORO TOTAL	mg/L-P	<0.2	0.2	SM 3030B 3120B
ARSENICO	mg/L As	< 0.098	0.098	SM 3030B 3120B
CADMIO	mg/L Cd	0.15	0.0019	SM 3030B 3120B
CIANURO	mg/L	< 0.0050	0.005	EPA 335.2
COBRE	mg/L	< 0.0106	0.0106	SM 3030B 3120B
CROMO TOTAL	mg/L Cr	0.0063	0.0018	SM 3030B 3120B
MERCURIO	µ/L Hg	< 0.32	0.32	EPA 245.1
NIQUEL	mg/L Ni	< 0.0035	0.0035	SM 3030B 3120B
PLOMO	mg/L Pb	0.0373	0.0221	SM 3030B 3120B
ZINC	mg/L Zn	< 0.0076	0.0076	SM 3030B 3120B
COLOR	u PtCo	15	1	HACH 8025
COLIFORMES FECALES	NMP/100 ml	< 3	3	SM 9223
RELACION DQO/DBO		5.49		
RELACION DBO/DQO		0.18		

**** ACREDITADO ISO 17025 según OGA-LE-031-09***

Metodología basada en:

EPA 'Oil and grease' and 'petroleum hydrocarbons ' n-Hexane extractable material (HEM) and silical gel treated n-hexane extractable material (SGT-HEM) by extraction and gravimetry.

US Enviromental Protection Agency

HACH Reactor digestion method for Chemical Oxigen Demand.

Standard Methods for the Examination of Water and Wastewater, APHA, AWWA, WWF. 21 ed. 2005.

Licda. Mariela Rendon
Química Bióloga
Colegiada No. 3514

Revisado: _____
Licda. Mariela Rendon
Química, Colegiado 3514
Jefe de Laboratorio de Microbiología

Licda. Barbara R. Cruz Cano
Colegiado 2113
Químico

Revisado: _____
Licda. Bárbara Cano
Química, Colegiado 2113
Gerente de Laboratorios

Los resultados de este informe son válidos únicamente para la muestra como fue recibida en el Laboratorio.
La reproducción parcial del mismo deberá ser autorizada por escrito por Soluciones Analíticas.
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info@solucionesanaliticas.
www.solucionesanaliticas.

INFORME DE ANÁLISIS

Cliente	MINERA SAN RAFAEL, S.A.	**Número de orden**	74598
Dirección	Km 8.6 Antigua Carr El Salvador Muxbal, Corp Muxbal, Tor Oeste Of 504	**Código de Muestra**	12.01.26.06.12
Persona Responsable	MIGUEL BERGANZA	**Fecha de ingreso**	26-01-2012
Referencia Cliente	EQW1	**Fecha de informe**	09-02-2012
Paquete de análisis	AGUAS RESIDUALES	**Asesor**	EDGAR MENA

DATOS DE LA MUESTRA

Fecha de muestreo	26-01-2012	**Fecha Inicio de Análisis**	27-01-2012
Hora de muestreo	07:51 A.M.	**Temperatura de Ingreso**	REFRIGERADA
Recipiente	VIDRIO	**Temperatura de almacenaje**	4 ± 2 °C
Tipo de Muestra	AGUA RESIDUAL	**Responsable de Muestreo**	CLIENTE
Ubicación	MINERA SAN RAFAEL		

PARÁMETROS LABORATORIO

Parámetro	Dimensionales	Valor	Límite de detección	Metodología
ACEITES Y GRASAS	mg/L	<6	6	EPA 1664
MATERIA FLOTANTE		AUSENTE		
*SOLIDOS EN SUSPENSION TOTALES	mg/L	<6	6	SM 2540D
*SOLIDOS SEDIMENTALES	mg/L	<0.1	0.1	SM 2540F
DEMANDA BIOQUIMICA DE OXIGENO	mg/L O2	7	6	SM 5210B 4500C
*DEMANDA QUIMICA DE OXIGENO	mg/L O2	26	3	HACH 8000
NITROGENO TOTAL	mg/L-N	18	2.5	SM Kjeldahl 4500B
FOSFORO TOTAL	mg/L-P	<0.2	0.2	SM 3030B 3120B
ARSENICO	mg/L As	<0.098	0.098	SM 3030B 3120B
CADMIO	mg/L Cd	0.14	0.0019	SM 3030B 3120B
CIANURO	mg/L	<0.0050	0.005	EPA 335.2
COBRE	mg/L	<0.0106	0.0106	SM 3030B 3120B
CROMO TOTAL	mg/L Cr	0.017	0.0018	SM 3030B 3120B
MERCURIO	µ/L Hg	<0.32	0.32	EPA 245.1
NIQUEL	mg/L Ni	<0.0035	0.0035	SM 3030B 3120B
PLOMO	mg/L Pb	<0.0221	0.0221	SM 3030B 3120B
ZINC	mg/L Zn	0.0300	0.0076	SM 3030B 3120B
COLOR	u PtCo	88	1	HACH 8025
COLIFORMES FECALES	NMP/100 ml	40	3	SM 9223
RELACION DQO/DBO		3.73		
RELACION DBO/DQO		0.27		

**** ACREDITADO ISO 17025 según OGA-LE-031-09***

Metodología basada en:

EPA 'Oil and grease' and 'petroleum hydrocarbons ' n-Hexane extractable material (HEM) and silical gel treated n-hexane extractable material (SGT-HEM) by extraction and gravimetry.

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Colegiada No. 3514

Revisado: _____
Licda. Mariela Rendon
Química, Colegiado 3514
Jefe de Laboratorio de Microbiología

Licda. Barbara R. Cruz Cano
Colegiado 2113
Químico

Revisado: _____
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Química, Colegiado 2113
Gerente de Laboratorios

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www.solucionesanaliticas.c

INFORME DE ANÁLISIS

Cliente	MINERA SAN RAFAEL, S.A.	**Número de orden**	74846
Dirección	Km 8.6 Antigua Carr El Salvador Muxbal, Corp Muxbal, Tor Oeste Of 504	**Código de Muestra**	12.02.15.03.02
Persona Responsable	MIGUEL BERGANZA	**Fecha de ingreso**	15-02-2012
Referencia Cliente	WW2	**Fecha de informe**	19-03-2012
Paquete de análisis	AGUAS RESIDUALES	**Asesor**	EDGAR MENA

DATOS DE LA MUESTRA

Fecha de muestreo	14-02-2012	**Fecha Inicio de Análisis**	15-02-2012
Hora de muestreo	09:04 A.M.	**Temperatura de Ingreso**	REFRIGERADA
Recipiente	PLASTICO, VIDRIO	**Temperatura de almacenaje**	4 ± 2 °C
Tipo de Muestra	AGUA EFLUENTE	**Responsable de Muestreo**	CLIENTE
Ubicación	EL ESCOBAL		

PARÁMETROS LABORATORIO

Parámetro	Dimensionales	Valor	Límite de detección	Metodología
ACIDEZ/ALCALINIDAD	unidades pH	8.05	0.01	Eletródo de vidrio
ACEITES Y GRASAS	mg/L	<6	6	EPA 1664
MATERIA FLOTANTE		AUSENTE		
*SOLIDOS EN SUSPENSION TOTALES	mg/L	24	6	SM 2540D
*SOLIDOS SEDIMENTALES	mg/L	<0.1	0.1	SM 2540F
DEMANDA BIOQUIMICA DE OXIGENO	mg/L O2	<6	6	SM 5210B 4500C
*DEMANDA QUIMICA DE OXIGENO	mg/L O2	10	3	HACH 8000
NITROGENO TOTAL	mg/L-N	16	2.5	SM Kjeldahl 4500B
FOSFORO TOTAL	mg/L-P	<0.2	0.2	SM 3030B 3120B
ARSENICO	mg/L As	<0.098	0.098	SM 3030B 3120B
CADMIO	mg/L Cd	0.09	0.0019	SM 3030B 3120B
CIANURO	mg/L	0.014	0.005	EPA 335.2
COBRE	mg/L	<0.0106	0.0106	SM 3030B 3120B
CROMO TOTAL	mg/L Cr	0.12	0.0018	SM 3030B 3120B
MERCURIO	µ/L Hg	<0.32	0.32	EPA 245.1
NIQUEL	mg/L Ni	<0.0035	0.0035	SM 3030B 3120B
PLOMO	mg/L Pb	<0.0221	0.0221	SM 3030B 3120B
ZINC	mg/L Zn	0.0098	0.0076	SM 3030B 3120B
COLOR	u PtCo	19	1	HACH 8025
COLIFORMES FECALES	NMP/100 ml	<3	3	SM 9223
RELACION DQO/DBO		9.50		
RELACION DBO/DQO		0.11		

***** ACREDITADO ISO 17025 según OGA-LE-031-09***

Metodología basada en:

EPA 'Oil and grease' and 'petroleum hydrocarbons ' n-Hexane extractable material (HEM) and silical gel treated n-hexane extractable material (SGT-HEM) by extraction and gravimetry.

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Lda. Mariela Rendon
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Colegiada No. 3514

Revisado: _____
Licda. Mariela Rendon
Química, Colegiado 3514
Jefe de Laboratorio de Microbiología

Licda. Bárbara R. Cano
Colegiado 2113
Químico

Revisado: _____
Licda. Bárbara Cano
Química, Colegiado 2113
Gerente de Laboratorios

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www.solucionesanaliticas.c

INFORME DE ANÁLISIS

Cliente	MINERA SAN RAFAEL, S.A.	**Número de orden**	74846
Dirección	Km 8.6 Antigua Carr El Salvador Muxbal, Corp Muxbal, Tor Oeste Of 504	**Código de Muestra**	12.02.15.03.03
Persona Responsable	MIGUEL BERGANZA	**Fecha de ingreso**	15-02-2012
Referencia Cliente	WW3	**Fecha de informe**	19-03-2012
Paquete de análisis	AGUAS RESIDUALES	**Asesor**	EDGAR MENA

DATOS DE LA MUESTRA

Fecha de muestreo	14-02-2012	**Fecha Inicio de Análisis**	15-02-2012
Hora de muestreo	10:52 A.M.	**Temperatura de Ingreso**	REFRIGERADA
Recipiente	PLASTICO, VIDRIO	**Temperatura de almacenaje**	4 ± 2 °C
Tipo de Muestra	AGUA EFLUENTE	**Responsable de Muestreo**	CLIENTE
Ubicación	EL ESCOBAL		

PARÁMETROS LABORATORIO

Parámetro	Dimensionales	Valor	Límite de detección	Metodología
ACIDEZ/ALCALINIDAD	unidades pH	7.45	0.01	Eletródo de vidrio
ACEITES Y GRASAS	mg/L	<6	6	EPA 1664
MATERIA FLOTANTE		AUSENTE		
*SOLIDOS EN SUSPENSION TOTALES	mg/L	<6	6	SM 2540D
*SOLIDOS SEDIMENTALES	mg/L	0.3	0.1	SM 2540F
DEMANDA BIOQUIMICA DE OXIGENO	mg/L O2	<6	6	SM 5210B 4500C
*DEMANDA QUIMICA DE OXIGENO	mg/L O2	9	3	HACH 8000
NITROGENO TOTAL	mg/L-N	23	2.5	SM Kjeldahl 4500B
FOSFORO TOTAL	mg/L-P	<0.2	0.2	SM 3030B 3120B
ARSENICO	mg/L As	<0.098	0.098	SM 3030B 3120B
CADMIO	mg/L Cd	0.040	0.0019	SM 3030B 3120B
CIANURO	mg/L	0.013	0.005	EPA 335.2
COBRE	mg/L	<0.0106	0.0106	SM 3030B 3120B
CROMO TOTAL	mg/L Cr	0.0074	0.0018	SM 3030B 3120B
MERCURIO	µ/L Hg	<0.32	0.32	EPA 245.1
NIQUEL	mg/L Ni	<0.0035	0.0035	SM 3030B 3120B
PLOMO	mg/L Pb	<0.0221	0.0221	SM 3030B 3120B
ZINC	mg/L Zn	0.012	0.0076	SM 3030B 3120B
COLOR	u PtCo	5	1	HACH 8025
COLIFORMES FECALES	NMP/100 ml	<3	3	SM 9223
RELACION DQO/DBO		9.00		
RELACION DBO/DQO		0.11		

***** ACREDITADO ISO 17025 según OGA-LE-031-09***

Metodología basada en:

EPA 'Oil and grease' and 'petroleum hydrocarbons ' n-Hexane extractable material (HEM) and silical gel treated n-hexane extractable material (SGT-HEM) by extraction and gravimetry.

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Química Bióloga
Colegiada No. 3514

Revisado: _____
Licda. Mariela Rendon
Química, Colegiado 3514
Jefe de Laboratorio de Microbiología

Licda. Bárbara R. Cano
Colegiado 2113
Químico

Revisado: _____
Licda. Bárbara Cano
Química, Colegiado 2113
Gerente de Laboratorios

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Agricultura - Industria - Ambiente

14 Avenida 19-50, Condado El Naranjo, Bodega # 23
Ofibodegas San Sebastián, Zona 4 de Mixco, Guatemala
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INFORME DE ANALISIS

Cliente	: MINERA SAN RAFAEL, S. A. (10070)		Número de orden	: 75552	
Dirección	: Km 8.6 Antigua Carr El Salvador muxbal, Corp muxbal, trr Oeste Of 504		Código de muestra	: 12.03.27.11.04	
Persona Responsable	: MIGUEL VERGANZA		Fecha de ingreso	: 27/03/2012	
Referencia Cliente	: WW2		Fecha del informe	: 10/04/2012	
Paquete de análisis	: AGUAS RESIDUALES		Asesor	: EDGAR MENA	

DATOS DE LA MUESTRA

Fecha de Muestreo	: 27/03/2012		Fecha Inicio de Analisis	: 27/03/2012	
Hora de Muestreo	: 08:49 A. M.		Hora de Ingreso	: 18:43:35	
Recipiente	: PLASTICO,VIDRIO Y BOLSA ESTERIL		Temperatura de Ingreso	: REFRIGERADA	
Tipo de muestra	: AGUA RESIDUAL		Temperatura almacenaje	: 4 ± 2 °C	
Localización	: WW2		Responsable de muestreo	: CLIENTE	

ACIDEZ/ALCALINIDAD	unidades de pH	7.62	pH 0 - 14	Electródo de vidrio

PARAMETROS LABORATORIO

PARAMETROS	DIMENSIONALES	VALOR	LIMITE DE DETECCION	METODOLOGIA
GRASAS Y ACEITES	mg/L	< 6	6	EPA 1664
MATERIA FLOTANTE		AUSENTE		
*SOLIDOS EN SUSPENSION TOTALES	mg/L	27	6	SM 2540D
*SOLIDOS SEDIMENTABLES	ml/L	< 0.1	0.1	SM 2540F
DEMANDA BIOQUIMICA DE OXIGENO	mg/L -O2	< 6	6	SM 5210B 4500C
*DEMANDA QUIMICA DE OXIGENO	mg/L -O2	6	3	HACH 8000
NITROGENO TOTAL	mg/L -N	18	2.5	SM Kjeldahl 4500B
FOSFORO TOTAL	mg/L -P	< 0.2	0.2	SM 3030B 3120B
ARSENICO	mg/L -As	< 0.098	0.098	SM 3030B 3120B
CADMIO	mg/L -Cd	0.092	0.0019	SM 3030B 3120B
CIANURO	mg/L	0.0057	0.0050	EPA 335.2
COBRE	mg/L -Cu	< 0.0106	0.0106	SM 3030B 3120B
CROMO TOTAL	mg/L -Cr	< 0.0018	0.0018	SM 3030B 3120B
MERCURIO	ug/L -Hg	< 0.32	0.32	EPA 245.1
NIQUEL	mg/L -Ni	< 0.0035	0.0035	SM 3030B 3120B
PLOMO	mg/L -Pb	< 0.0221	0.0221	SM 3030B 3120B
ZINC	mg/L -Zn	0.089	0.0076	SM 3030B 3120B
COLOR	u PtCo	22	1	HACH 8025
COLIFORMES FECALES	NMP/100 ml	4	3	SM 9223
RELACIÓN DQO/DBO		6.00		
RELACIÓN DBO/DQO		0.17		

***ACREDITADO ISO 17025 según OGA-LE-031-09**

Metodología basada en:
EPA 'Oil and grease' and' petroleum hydrocarbons' n-Hexane extractable material (HEM) and silica gel treated n-hexane extractable material (SGT-HEM) by extraction and gravimetry. Method 1664.1194
US Environmental Protection Agency.
HACH Reactor digestion method for Chemical Oxigen Demand

Lda. Mariela Rendon
Química Bióloga
Colegiado No. 3514

Revisado: _____
Licda. Mariela Rendon
Química Bióloga, Colegiado No. 3514
Jefe de Laboratorio de Microbiología

Licda. Barbara R. Cruz Cano
Colegiado 2113
Químico

Revisado: _____
Licda. Barbara Cano
Química, Colegiado 2113
Gerente de Laboratorios

Los resultados de este informe son válidos únicamente para la muestra como fue recibida en el Laboratorio.
La reproducción parcial del mismo deberá ser autorizada por escrito por Soluciones Analíticas.
Este informe es válido únicamente en su impresión original

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Soluciones Analíticas
Agricultura - Industria - Ambiente

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INFORME DE ANALISIS

Cliente	: MINERA SAN RAFAEL, S. A. (10070)		Número de orden	: 75552	
Dirección	: Km 8.6 Antigua Carr El Salvador muxbal, Corp muxbal, trr Oeste Of 504		Código de muestra	: 12.03.27.11.05	
Persona Responsable	: MIGUEL VERGANZA		Fecha de ingreso	: 27/03/2012	
Referencia Cliente	: WW3		Fecha del informe	: 10/04/2012	
Paquete de análisis	: AGUAS RESIDUALES		Asesor	: EDGAR MENA	

DATOS DE LA MUESTRA

Fecha de Muestreo	: 27/03/2012		Fecha Inicio de Analisis	: 27/03/2012	
Hora de Muestreo	: 09:32 A. M.		Hora de Ingreso	: 18:43:36	
Recipiente	: PLASTICO,VIDRIO Y BOLSA ESTERIL		Temperatura de Ingreso	: REFRIGERADA	
Tipo de muestra	: AGUA RESIDUAL		Temperatura almacenaje	: 4 ± 2 °C	
Localización	: WW3		Responsable de muestreo	: CLIENTE	

ACIDEZ/ALCALINIDAD	unidades de pH	10.40	pH 0 - 14	Electródo de vidrio

PARAMETROS LABORATORIO

PARAMETROS	DIMENSIONALES	VALOR	LIMITE DE DETECCION	METODOLOGIA
GRASAS Y ACEITES	mg/L	< 6	6	EPA 1664
MATERIA FLOTANTE		AUSENTE		
*SOLIDOS EN SUSPENSION TOTALES	mg/L	15	6	SM 2540D
*SOLIDOS SEDIMENTABLES	ml/L	< 0.1	0.1	SM 2540F
DEMANDA BIOQUIMICA DE OXIGENO	mg/L -O2	< 6	6	SM 5210B 4500C
*DEMANDA QUIMICA DE OXIGENO	mg/L -O2	5	3	HACH 8000
NITROGENO TOTAL	mg/L -N	16	2.5	SM Kjeldahl 4500B
FOSFORO TOTAL	mg/L -P	< 0.2	0.2	SM 3030B 3120B
ARSENICO	mg/L -As	< 0.098	0.098	SM 3030B 3120B
CADMIO	mg/L -Cd	0.051	0.0019	SM 3030B 3120B
CIANURO	mg/L	0.018	0.0050	EPA 335.2
COBRE	mg/L -Cu	< 0.0106	0.0106	SM 3030B 3120B
CROMO TOTAL	mg/L -Cr	< 0.0018	0.0018	SM 3030B 3120B
MERCURIO	ug/L -Hg	< 0.32	0.32	EPA 245.1
NIQUEL	mg/L -Ni	< 0.0035	0.0035	SM 3030B 3120B
PLOMO	mg/L -Pb	< 0.0221	0.0221	SM 3030B 3120B
ZINC	mg/L -Zn	0.055	0.0076	SM 3030B 3120B
COLOR	u PtCo	11	1	HACH 8025
COLIFORMES FECALES	NMP/100 ml	< 3	3	SM 9223
RELACIÓN DQO/DBO		5.00		
RELACIÓN DBO/DQO		0.20		

***ACREDITADO ISO 17025 según OGA-LE-031-09**

Metodología basada en:
EPA 'Oil and grease' and' petroleum hydrocarbons' n-Hexane extractable material (HEM) and silica gel treated n-hexane extractable material (SGT-HEM) by extraction and gravimetry. Method 1664.1194
US Environmental Protection Agency.
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ECOSISTEMAS
PROYECTOS AMBIENTALES

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REG 016 Resultados de Análisis

Muestra: 1 muestra de agua
Análisis solicitado por: Ing. Miguel Berganza
Dirección: Km. 97.5 carretera Mataquescuintla, Aldea Sabana Redonda, San Rafael Las Flores. Santa Rosa
Procedencia de la muestra: Proyecto Escobal
Fecha de ingreso de muestra: 130412
Fecha de análisis: 130412-240412
Fecha del informe: 240412

Identificación de la muestra: WW7
Correlativo Ecosistemas: 615

Acuerdo Gubernativo 236-2006 (excepto cianuros)

PARAMETRO	DIMENSIONAL	LIMITE DE DETECCION	RESULTADO	METODOLOGIA	etapa 2 (2 de mayo de 2,015) Acuerdo 236-2006 descarga a cuerpo receptor
* Potencial de Hidrogeno pH (Laboratorio)	unidades	1	8.27	SMWW 4500H-B	6 a 9
* Aceites y Grasas	mg/L	5	N.D.	EPA 1664	50
Materia Flotante	---	---	ausente	Visual	ausente
Demanda Bioquimica de Oxigeno DBO_5	mg/L	10	< 10	Oxitop-Merck Análogo SMWW 5210D	ver nota
* Demanda Química de Oxigeno DQO	mg/L	25	< 25	Reflujo Cerrado, Merck, análogo SMWW 5220D	no especificado
Relación DBO_5/DQO	---	---	---	---	---
Relación DQO/DBO_5	---	---	---	---	---
* Sólidos Suspendidos	mg/L	10	17	SMWW 2540D	400
* Sólidos Sedimentables	ml/L	0.1	< 0.1	SMWW 2540F	no especificado
Nitrógeno Total	mg/L	1	1.8	Digestión alcalina persulfato colorimétrico HACH	50
Fósforo Total	mg/L	0.05	0.06	Spectroquant Merck Análogo EPA 365.2+3, SMWW 4500-P E, ISO 6978/1, DIN EN 1189 D11	30
* Arsénico As	mg/L	0.002	0.007	UNICAM AN40177_E10/03C	0.1
* Cadmio Cd	mg/L	0.02	N.D.	SMWW 3111B	0.1
* Cobre Cu	mg/L	0.03	N.D.	SMWW 3111B	3
Cromo Hexavalente Cr(VI)	mg/L	0.05	N.D.	Colorimétrico Hach, análogo SMWW 3500-Cr-D	0.1
* Mercurio Hg	mg/L	0.004	N.D.	UNICAM AN40181_E10/03C	0.02
* Niquel Ni	mg/L	0.05	N.D.	SMWW 3111B	2

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ECOSISTEMAS
PROYECTOS AMBIENTALES

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PARAMETRO	DIMENSIONAL	LIMITE DE DETECCION	RESULTADO	METODOLOGIA	etapa 2 (2 de mayo de 2,015) Acuerdo 236-2006 descarga a cuerpo receptor
* Plomo Pb	mg/L	0.05	N.D.	SMWW 3111B	0.4
* Zinc Zn	mg/L	0.01	N.D.	SMWW 3111B	10
Color Aparente	UC HZ equiv. Unid. Pt-Co	1	103	Colorimétrico Merck, análogo APHA 2120B, DIN 53409	no especificado
Color Real	UC HZ equiv. Unid. Pt-Co	1	< 1	Colorimétrico Merck, análogo APHA 2120B, DIN 53409	1000
** Coliformes Fecales	NMP/100mL	2	< 2	NMP	< 1 x 10^6

Notas:
Captación de muestras: La muestra fue captada por personal ajeno a Ecosistemas.
Transporte y preservación de la muestra: Refrigeración.
Metodología: Espectrofotométricos / Standard Methods for water and wastewater APHA, AWWA, 21 edic.
Organic Reagents for Trace Analysis. J.Fries/H. Getrost. E. Merck Darmstadt. 1977. EPA 1664
Para el análisis de As, Cd, Cu, Pb, Hg, Ni y Zn se trabajaron metales disueltos.
N.D. No detectable. Debajo del limite de detección.
NMP: Número mas probable
El valor DQO/DBO_5 y DBO_5/DQO no se ha determinado porque el resultado se encuentra abajo de nuestros limites de detección.
Respecto a la DBO el acuerdo 236-2006 la relaciona como "carga" junto al caudal y como meta de cumplimiento un valor de DBO de 200 mg/L (ver Acuerdo Articulo 19).
Los resultados obtenidos corresponden únicamente a la muestra recibida por el personal de Ecosistemas Proyectos Ambientales.

* Análisis acreditado COGUANOR NTG/ISO/IEC 17025:2005 según OGA LE 006-04
** *Análisis referido.*

Ing. Fernando Fuentes
Gerente Técnico

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