



APPROVED

Ensure BLM concurrence/approval.

May 31, 2016

Reference No. 088210-20

Mr. Zane Kurtz
Sr. Safety and Environmental Representative
5509 Champions Drive.
Midland, TX 79706
VIA E-Mail: zane_kurtz@eogresources.com

Dear Mr. Kurtz:

**Re: Assessment Summary Report
 North Young Fed 12-1 near Shinnery Federal No. 1 (API #30-025-30247)
 1RP-3849
 EOG Resources, Inc.
 Site Location: Unit K, Sec. 13, T 18-S, R 32-E
 (Lat 32.7444°, Long -103.7217°)
 Lea County, New Mexico**

GHD Services, Inc. is pleased to present this report for the above referenced site. Assessment activities were performed on February 29 and April 25, 2016 at the North Young Fed 12-1 (hereafter referred to as the "Site"). A historical release occurred at this Site that was known as the Shinnery Federal No. 1. The Site is located within Unit K, Section 13, Township 18 South, Range 32 East, in Lea County, New Mexico (Figure 1).

The Site is an active oil and gas well site approximately 12 miles south of Maljamar, New Mexico. According to EOG personnel, a release of approximately 120 barrels (bbls) of produced water occurred when a three inch poly line ruptured at a fuse weld. The release was discovered on September 9, 2015 and none of the fluids were recovered. A C-141 Form was submitted to the New Mexico Oil Conservation Division (NMOCD) on September 9, 2015 and remediation permit (RP) number 1RP-3849 was assigned. The location of the September 9, 2015 release was the same as a former release associated with the Shinnery Federal No. 1 that occurred on February 28, 2014.

The February 28, 2014 release was approximately 20 bbls of produced water all of which were unrecoverable. From February 28, 2014 and January 13, 2015 a third party contractor and CH2M Hill of Dallas, TX performed assessment and remedial activities in response to the Shinnery Federal No. 1 release. The horizontal extent of the release was delineated, impacted soils from the horizontal release footprint were excavated, a 20 millimeter (mm) liner was placed within the excavation and covered with clean fill. Approximately 712 cubic yards (yd³) of impacted soil were removed from the excavation and disposed of at the Lea Land Landfill in Carlsbad, NM. Approximately 1,008 yd³ of clean fill from Canvas Ranch were placed over top of the liner. All remedial efforts were performed by Watson Construction and overseen by CH2M Hill. Details of remedial activities were reported to the

NMOCD and the Bureau of Land Management (BLM) in a report dated August 19, 2015 that was submitted by CH2M Hill. Remedial closure for the Shinnery Federal No. 1 release was not granted by the NMOCD since the vertical extent of soil impacts had not been fully assessed.

The second release at the Site, associated with the North Young Fed 12-1, occurred on September 9, 2015. Soil impacts were localized to the area in and around the previous Shinnery Federal No. 1 lined and backfilled excavation. Due to the volume of the North Young Fed 12-1 release (120 bbls) the horizontal extent of impacted soils extended beyond the previously lined area. A work plan dated September 28, 2015 proposed by CH2M Hill was submitted to and approved by the NMOCD and BLM. The work plan detailed the horizontal and vertical delineation, excavation, and subsequent backfilling and lining of the newly impacted area. From October 1, 2015 through December 18, 2015 CH2M Hill performed the following assessment activities:

- Soil samples were collected from around the edge of the visibly impacted area.
- Impacted soils were excavated from on top of and around the previously lined area to and extent of approximately 100 feet by 100 feet.
- The previous placed liner was removed for further excavation of soil to a depth of approximately five feet bgs.
- Two soil borings were advanced in order to assess the vertical extent of chloride impacts in the area.

Consulting responsibilities were transferred to GHD prior to installation of a replacement liner and backfilling of the excavation.

Due to the uncertainty of the sample locations and the horizontal extent assessed by CH2M Hill, GHD completed additional soil sampling at the North Young Fed 12-1 release. Sampling was performed by GHD on February 29, 2016 and April 25, 2016 and discussed further in this report.

1. Introduction

There are relatively few groundwater wells in the area of the Site with which to obtain a depth to groundwater. Based on information available from the New Mexico Tech Pit Portal website, the closest USGS gauging site is located approximately 2.75 miles northwest of the site. The data from this website indicates groundwater at a depth of approximately 84 feet below ground surface (bgs). It was also observed by CH2M Hill during drilling activities on December 17 and 18, 2015 that groundwater was not present in two soil borings advanced to 50 feet bgs.

There do not appear to be any well head protection areas and no surface water bodies within 200 to 1000 ft of the Site. Therefore, the preliminary total ranking score for the Site is 10 (see table below).

Based on this score, the applicable NMOCD Site-specific Recommended Remediation Action Limits (RRALs) are 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for total benzene, toluene, ethylbenzene, and xylenes (BTEX), 1000 mg/kg for total petroleum hydrocarbons (TPH), and 250 mg/kg for chlorides.

New Mexico Oil Conservation Division Site Assessment	
Ranking Criteria	Score
Depth to Ground Water (>50 ft bgs,< 100 ft bgs)	10
Wellhead Protection Area (> 1000 ft from water source, > 200 ft from domestic source)	0
Distance to Surface Body Water (> 1000 ft)	0
Ranking Criteria Total Score	10*
*Because the ranking criteria total score is 10, NMOCD established RRALs are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 1,000 mg/kg for TPH ¹ , and 250 mg/kg for chlorides.	

1. NMOCD Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993

2. Assessment Activities

Site assessment activities were initially performed by CH2M Hill of Dallas, Texas between October 1 and December 18, 2015. Soil assessment activities (excavation and drilling) were performed and soil samples were analyzed by TraceAnalysis, Inc. (TraceAnalysis) of Lubbock, Texas.

The analytical data obtained from the soil samples collected by CH2M Hill indicated that the horizontal extent of chloride concentrations had been delineated to below the RRAL. However, the exact locations of the collected samples were unknown to EOG or GHD at the time of the transfer of consulting responsibilities in February of 2016. The vertical extent of chloride concentrations were delineated by the advancement of two soil borings overseen by CH2M Hill in December of 2015. The results of the soil boring analytical data can be referenced on Figure 2.

Further soil sampling to confirm the horizontal extent of chloride impacts to soil was performed by GHD on February 29, 2016 and April 25, 2016. A total of eight soil samples were collected using a hand auger at a depth of approximately 4.5 feet bgs in each location on February 29, 2016. The samples were submitted to Hall Environmental Analysis Laboratory (HEAL) of Albuquerque, New Mexico for analysis of chloride by EPA Method 300. The results of the samples indicated that the horizontal extent of the chloride was assessed except for the southern end of the site (sample number S-088210-20-022916-SP-02). Three additional soil samples were collected in this area on April 25 and analyzed for chloride by EPA Method 300 by HEAL. The results of these samples were below the laboratory reporting limit.

The impacted soil located at the southern portion of the excavation (indicated by sample S-088210-20-022916-SP-02) was excavated on May 20, 2016. Laboratory analytical results from the February and April 2016 sampling indicate that chloride concentrations in the samples that were submitted were below the RRAL for chloride (Figure 2). Based on this, it appears that the vertical and horizontal extent of chloride has been fully assessed at the site.

3. Summary and Recommendations

Based on the assessment of the petroleum hydrocarbon and chloride concentrations, GHD recommends the following:

- Placement of a 20 mil polyethylene liner in the bottom of the excavation at a depth of 4.5 to 5 ft bgs.
- Backfilling of the excavation with clean fill material and wheel compacting to grade.
- Fertilizing and reseeding of the disturbed area with a BLM-approved seed mix.

Following completion of the above activities EOG will request that no further action be required for the Site. Should you have any questions, or require additional information regarding this submittal, please feel free to contact myself or Bernie Bockisch at (505) 884-0672 or Bernard.Bockisch@ghd.com.

Sincerely,

GHD

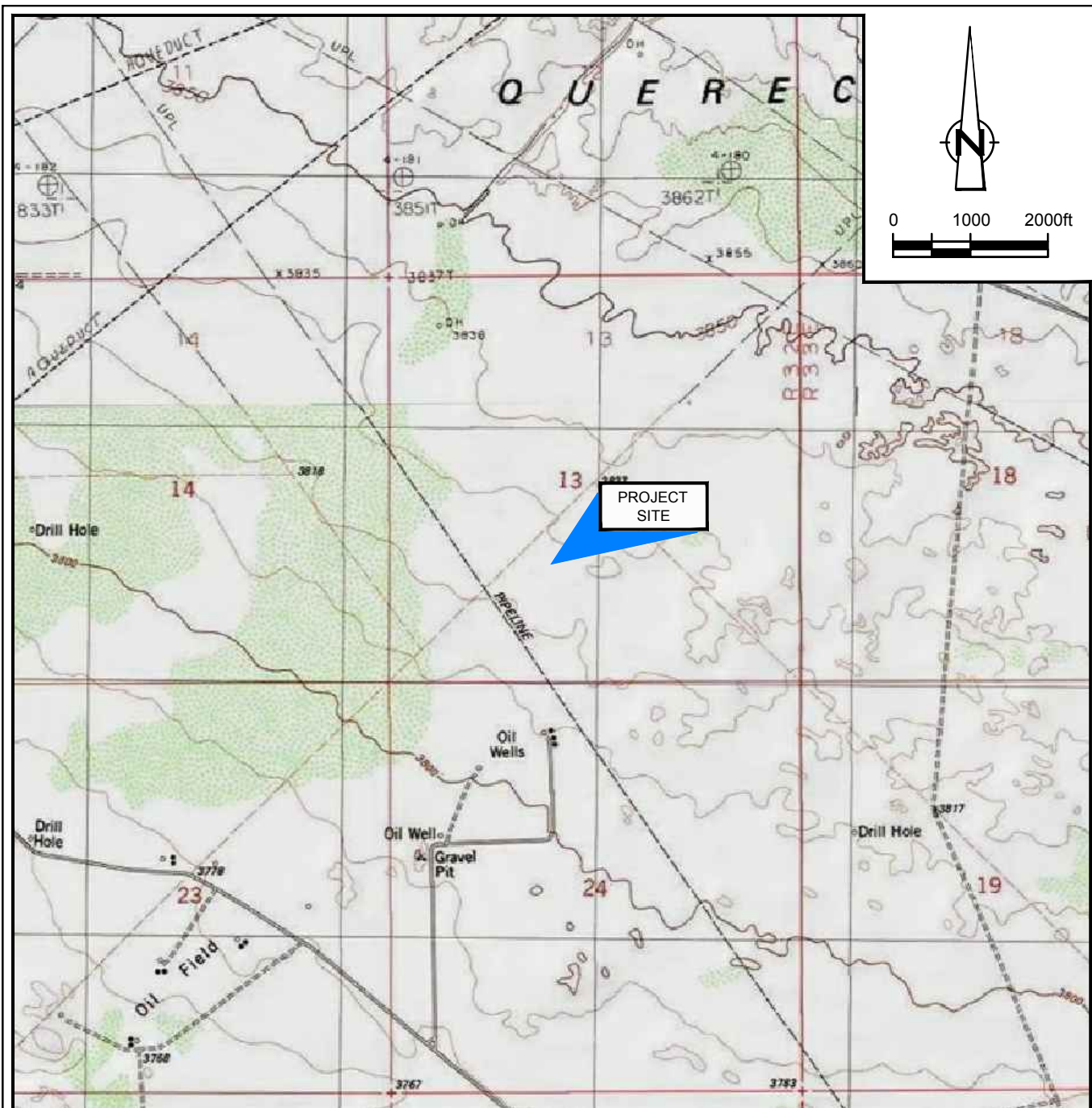


Bernard Bockisch
Senior Project Manager

BB/mc/02



Christine Mathews,
Staff Scientist



SOURCE: USGS 7.5 MINUTE QUAD
 "LAGUNA GATUNA NW, DOG LAKE, GREENWOOD LAKE,
 AND MALJAMAR, NEW MEXICO"

LAT/LONG: 32.7444° NORTH, 103.7217° WEST
 COORDINATE: NAD83 DATUM, U.S. FOOT
 STATE PLANE ZONE - NEW MEXICO EAST

Figure 1
 SITE LOCATION MAP
 NORTH YOUNG FED 12-1
 LEA COUNTY, NEW MEXICO
EOG Resources



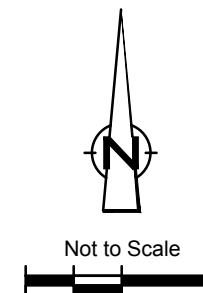
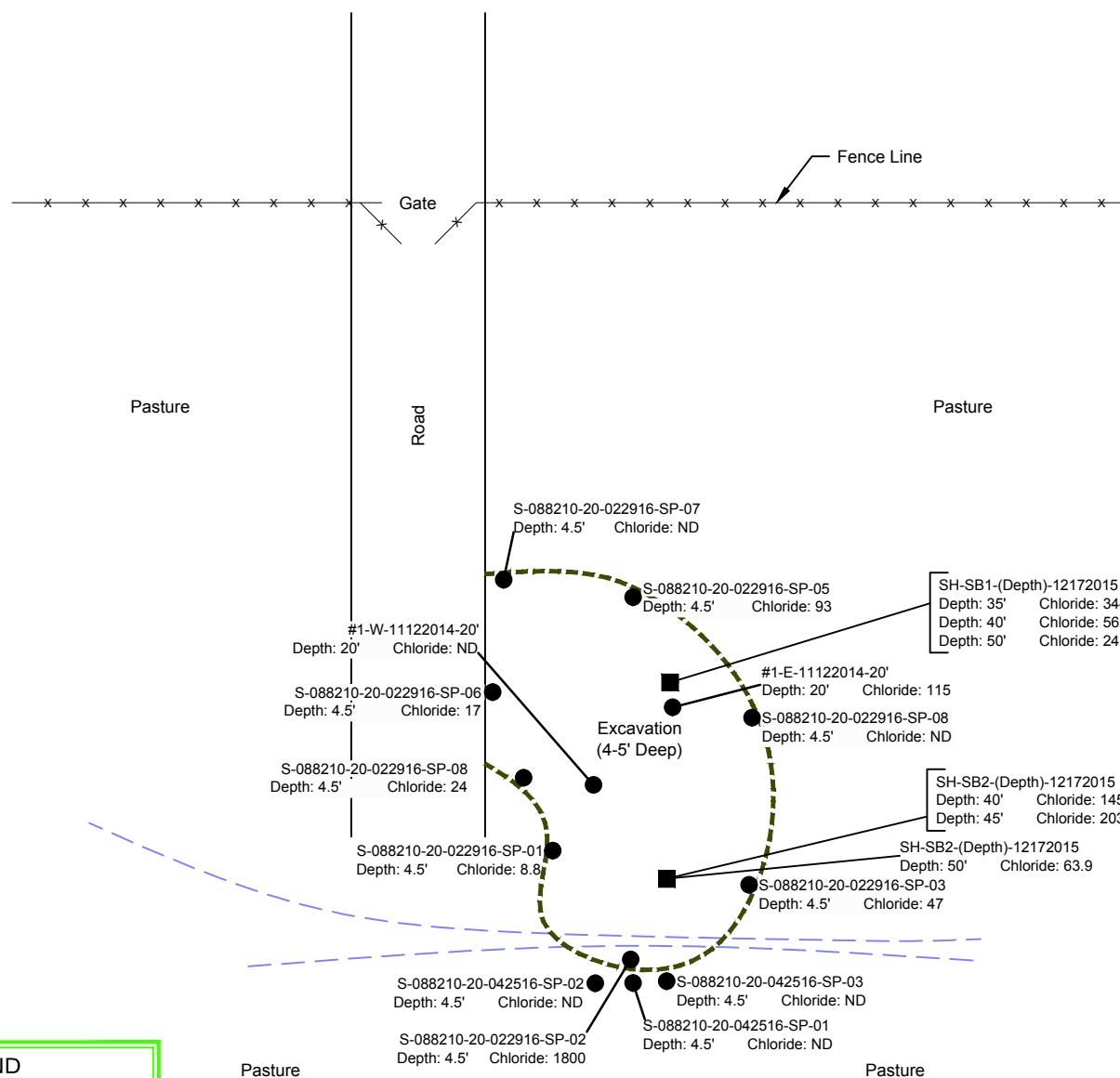


Figure 2
SITE DETAIL MAP
NORTH YOUNG FED 12-1
LEA COUNTY, NEW MEXICO
EOG Resources





Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

March 11, 2016

Bernie Bockish

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: North Young Fed 12-1

OrderNo.: 1603190

Dear Bernie Bockish:

Hall Environmental Analysis Laboratory received 8 sample(s) on 3/3/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order: 1603190

Date Reported: 3/11/2016

CLIENT: GHD
Project: North Young Fed 12-1

Lab Order: 1603190

Lab ID: 1603190-001 **Collection Date:** 2/29/2016 3:30:00 PM
Client Sample ID: S-088210-20-022916-SP-01 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	8.8	7.5		mg/Kg	5	3/8/2016 11:43:33 PM	24147

Lab ID: 1603190-002 **Collection Date:** 2/29/2016 3:40:00 PM
Client Sample ID: S-088210-20-022916-SP-02 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	1800	75		mg/Kg	50	3/10/2016 3:52:37 AM	24147

Lab ID: 1603190-003 **Collection Date:** 2/29/2016 3:45:00 PM
Client Sample ID: S-088210-20-022916-SP-03 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	47	7.5		mg/Kg	5	3/9/2016 12:58:01 AM	24147

Lab ID: 1603190-004 **Collection Date:** 2/29/2016 3:50:00 PM
Client Sample ID: S-088210-20-022916-SP-04 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	ND	1.5		mg/Kg	1	3/9/2016 1:47:40 AM	24147

Lab ID: 1603190-005 **Collection Date:** 2/29/2016 4:00:00 PM
Client Sample ID: S-088210-20-022916-SP-05 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	93	7.5		mg/Kg	5	3/9/2016 2:12:29 AM	24147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical ReportLab Order: **1603190**Date Reported: **3/11/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** GHD
Project: North Young Fed 12-1**Lab Order:** 1603190**Lab ID:** 1603190-006 **Collection Date:** 2/29/2016 4:05:00 PM
Client Sample ID: S-088210-20-022916-SP-06 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	17	7.5		mg/Kg	5	3/9/2016 2:37:18 AM	24147

Lab ID: 1603190-007 **Collection Date:** 2/29/2016 4:10:00 PM
Client Sample ID: S-088210-20-022916-SP-07 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	ND	7.5		mg/Kg	5	3/9/2016 3:02:08 AM	24147

Lab ID: 1603190-008 **Collection Date:** 2/29/2016 4:15:00 PM
Client Sample ID: S-088210-20-022916-SP-08 **Matrix:** AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	24	7.5		mg/Kg	5	3/9/2016 3:26:57 AM	24147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1603190

11-Mar-16

Client: GHD

Project: North Young Fed 12-1

Sample ID	MB-24147		SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	24147		RunNo:	32667				
Prep Date:	3/8/2016		Analysis Date:	3/8/2016		SeqNo:	999625		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-24147			SampType:	LCS		TestCode:	EPA Method 300.0: Anions			
Client ID:	LCSS			Batch ID:	24147		RunNo:	32667			
Prep Date:	3/8/2016			Analysis Date:	3/8/2016		SeqNo:	999626		Units:	mg/Kg
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	14	1.5	15.00	0	93.0	90	110				

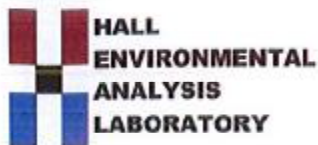
Sample ID	1603190-001AMS		SampType: MS		TestCode: EPA Method 300.0: Anions					
Client ID:	S-088210-20-022916		Batch ID: 24147		RunNo: 32667					
Prep Date:	3/8/2016		Analysis Date: 3/8/2016		SeqNo: 999650		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	21	7.5	15.00	8.790	79.2	64.2	131			

Sample ID	1603190-001AMSD		SampType:	MSD		TestCode:	EPA Method 300.0: Anions				
Client ID:	S-088210-20-022916		Batch ID:	24147		RunNo:	32667				
Prep Date:	3/8/2016		Analysis Date:	3/9/2016		SeqNo:	999651		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	23	7.5	15.00	8.790	93.6	64.2	131	9.98	20		

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: GHD

Work Order Number: 1603190

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

3/3/2016 9:50:00 AM

Completed By: Ashley Gallegos

3/3/2016 1:50:15 PM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: GHD - Albuquerque

Mailing Address: 6121 Indian School Rd NE Ste 200
Albuquerque, NM, 87110

Phone #: 505-884-0672

Email or Fax #: Bernard.Bockisch@ghd.com

A/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation:
☒ NELAP ☐ Other _____

EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: North Young Fed 12-1

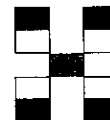
Project #: 088210/20

Project Manager: Bernard Bockisch
505-280-0572

Sampler: Steve Perez

On Ice: ☒ Yes ☐ No

Sample Temperature: 24° 1.0 = 1.4°c



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chlorides 300.0	Air Bubbles (Y or N)
1-16	1530	Soil	S-088210-20-022916-SP-01	4oz glass-1	Ice	-001												X	
	1540		S-088210-20-022916-SP-02			-002													
	1545		S-088210-20-022916-SP-03			-003													
	1550		S-088210-20-022916-SP-04			-004													
	1600		S-088210-20-022916-SP-05			-005													
	1605		S-088210-20-022916-SP-06			-006													
	1610		S-088210-20-022916-SP-07			-007													
	1615		S-088210-20-022916-SP-08			-008												X	

Relinquished by: Steve Perez Date: 1-16 Time: 8:20

Received by: [Signature] Date: 3/2/16 Time: 0820

Relinquished by: _____ Date: _____ Time: _____

Received by: [Signature] Date: 03/03/16 Time: 0950

Remarks:



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 29, 2016

Bernie Bockish

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: North Young Fed 12-1

OrderNo.: 1604B57

Dear Bernie Bockish:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/27/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical ReportLab Order: **1604B57**Date Reported: **4/29/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** GHD
Project: North Young Fed 12-1**Lab Order:** 1604B57**Lab ID:** 1604B57-001 **Collection Date:** 4/25/2016 4:00:00 PM
Client Sample ID: S-088210-20-042516-SP-01 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: SRM
Chloride	ND	30		mg/Kg	20	4/28/2016 12:51:47 PM	25067

Lab ID: 1604B57-002 **Collection Date:** 4/25/2016 4:05:00 PM
Client Sample ID: S-088210-20-042516-SP-02 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: SRM
Chloride	ND	30		mg/Kg	20	4/28/2016 1:29:02 PM	25067

Lab ID: 1604B57-003 **Collection Date:** 4/25/2016 4:10:00 PM
Client Sample ID: S-088210-20-042516-SP-03 **Matrix:** SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: SRM
Chloride	ND	30		mg/Kg	20	4/28/2016 2:06:15 PM	25067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1604B57

29-Apr-16

Client: GHD

Project: North Young Fed 12-1

Sample ID	MB-25067		SampType: MBLK		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 25067		RunNo: 33881					
Prep Date:	4/28/2016		Analysis Date: 4/28/2016		SeqNo: 1043530		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-25067		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 25067		RunNo: 33881					
Prep Date:	4/28/2016		Analysis Date: 4/28/2016		SeqNo: 1043531		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: GHD Work Order Number: 1604B57 RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

4/27/2016 9:30:00 AM

Completed By: Ashley Gallegos

4/27/2016 10:05:22 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record		Turn-Around Time:	
Client: <u>GHD - Albuquerque</u>		<input type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush <u>48hr</u>	
Billing Address: <u>6121 Indian School Rd NE</u>		Project Name: <u>North Young Fed 12-1</u>	
Phone #: <u>505-884-0672</u>		Project #: <u>088210/20</u>	
Email or Fax#: <u>Bernard.Bockisch@ghd.com</u>		Project Manager: <u>Bernard Bockisch</u>	
VQC Package: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		<u>505-280-0572</u>	
Accreditation: <u>NELAP</u>		Sampler: <u>Steve Perez</u>	
<input type="checkbox"/> Other _____		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
EDD (Type) _____		Sample Temperature: <u>1.4</u>	

486r

North Young Fed 12-1

088210/20

Bernard Gockisch

505-280-0572

Steve Perez

☐ No

1.4

[illegible]

BTEX + MTBE + TMB's (8021)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

BAH's (8310 or 8270 SIMS)

BCPA & Metals

Arizono / E CINO NO DO SO V

2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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[illegible]





020005 (VOW)

0270 (3E111-VCA)

Charles S.O.D

2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033 2034 2035 2036 2037 2038 2039 2040 2041 2042 2043 2044 2045 2046 2047 2048 2049 2050 2051 2052 2053 2054 2055 2056 2057 2058 2059 2060 2061 2062 2063 2064 2065 2066 2067 2068 2069 2070 2071 2072 2073 2074 2075 2076 2077 2078 2079 2080 2081 2082 2083 2084 2085 2086 2087 2088 2089 2090 2091 2092 2093 2094 2095 2096 2097 2098 2099 2100 2101 2102 2103 2104 2105 2106 2107 2108 2109 2110 2111 2112 2113 2114 2115 2116 2117 2118 2119 2120 2121 2122 2123 2124 2125 2126 2127 2128 2129 2130 2131 2132 2133 2134 2135 2136 2137 2138 2139 2140 2141 2142 2143 2144 2145 2146 2147 2148 2149 2150 2151 2152 2153 2154 2155 2156 2157 2158 2159 2160 2161 2162 2163 2164 2165 2166 2167 2168 2169 2170 2171 2172 2173 2174 2175 2176 2177 2178 2179 2180 2181 2182 2183 2184 2185 2186 2187 2188 2189 2190 2191 2192 2193 2194 2195 2196 2197 2198 2199 2200 2201 2202 2203 2204 2205 2206 2207 2208 2209 2210 2211 2212 2213 2214 2215 2216 2217 2218 2219 2220 2221 2222 2223 2224 2225 2226 2227 2228 2229 2230 2231 2232 2233 2234 2235 2236 2237 2238 2239 2240 2241 2242 2243 2244 2245 2246 2247 2248 2249 2250 2251 2252 2253 2254 2255 2256 2257 2258 2259 2260 2261 2262 2263 2264 2265 2266 2267 2268 2269 2270 2271 2272 2273 2274 2275 2276 2277 2278 2279 2280 2281 2282 2283 2284 2285 2286 2287 2288 2289 2290 2291 2292 2293 2294 2295 2296 2297 2298 2299 2300 2301 2302 2303 2304 2305 2306 2307 2308 2309 2310 2311 2312 2313 2314 2315 2316 2317 2318 2319 2320 2321 2322 2323 2324 2325 2326 2327 2328 2329 2330 2331 2332 2333 2334 2335 2336 2337 2338 2339 2340 2341 2342 2343 2344 2345 2346 2347 2348 2349 2350 2351 2352 2353 2354 2355 2356 2357 2358 2359 2360 2361 2362 2363 2364 2365 2366 2367 2368 2369 2370 2371 2372 2373 2374 2375 2376 2377 2378 2379 2380 2381 2382 2383 2384 2385 2386 2387 2388 2389 2390 2391 2392 2393 2394 2395 2396 2397 2398 2399 2400 2401 2402 2403 2404 2405 2406 2407 2408 2409 2410 2411 2412 2413 2414 2415 2416 2417 2418 2419 2420 2421 2422 2423 2424 2425 2426 2427 2428 2429 2430 2431 2432 2433 2434 2435 2436 2437 2438 2439 2440 2441 2442 2443 2444 2445 2446 2447 2448 2449 2450 2451 2452 2453 2454 2455 2456 2457 2458 2459 2460 2461 2462 2463 2464 2465 2466 2467 2468 2469 2470 2471 2472 2473 2474 2475 2476 2477 2478 2479 2480 2481 2482 2483 2484 2485 2486 2487 2488 2489 2490 2491 2492 2493 2494 2495 2496 2497 2498 2499 2500 2501 2502 2503 2504 2505 2506 2507 2508 2509 2510 2511 2512 2513 2514 2515 2516 2517 2518 2519 2520 2521 2522 2523 2524 2525 2526 2527 2528 2529 2530 2531 2532 2533 2534 2535 2536 2537 2538 2539 2540 2541 2542 2543 2544 2545 2546 2547 2548 2549 2550 2551 2552 2553 2554 2555 2556 2557 2558 2559 2560 2561 2562 2563 2564 2565 2566 2567 2568 2569 2570 2571 2572 2573 2574 2575 2576 2577 2578 2579 2580 2581 2582 2583 2584 2585 2586 2587 2588 2589 2590 2591 2592 2593 2594 2595 2596 2597 2598 2599 2600 2601 2602 2603 2604 2605 2606 2607 2608 2609 2610 2611 2612 2613 2614 2615 2616 2617 2618 2619 2620 2621 2622 2623 2624 2625 2626 2627 2628 2629 2630 2631 2632 2633 2634 2635 2636 2637 2638 2639 2640 2641 2642 2643 2644 2645 2646 2647 2648 2649 2650 2651 2652 2653 2654 2655 2656 2657 2658 2659 2660 2661 2662 2663 2664 2665 2666 2667 2668 2669 2670 2671 2672 2673 2674 2675 2676 2677 2678 2679 2680 2681 2682 2683 2684 2685 2686 2687 2688 2689 2690 2691 2692 2693 2694 2695 2696 2697 2698 2699 2700 2701 2702 2703 2704 2705 2706 2707 2708 2709 2710 2711 2712 2713 2714 2715 2716 2717 2718 2719 2720 2721 2722 2723 2724 2725 2726 2727 2728 2729 2730 2731 2732 2733 2734 2735 2736 2737 2738 2739 2740 2741 2742 2743 2744 2745 2746 2747 2748 2749 2750 2751 2752 2753 2754 2755 2756 2757 2758 2759 2760 2761 2762 2763 2764 2765 2766 2767 2768 2769 2770 2771 2772 2773 2774 2775 2776 2777 2778 2779 2780 2781 2782 2783 2784 2785 2786 2787 2788 2789 2790 2791 2792 2793 2794 2795 2796 2797 2798 2799 2800 2801 2802 2803 2804 2805 2806 2807 2808 2809 2810 2811 2812 2813 2814 2815 2816 2817 2818

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ate:	Time:	Relinquished by:	Received by:	Date	Time
6/6	0730			4/26/16	0730
ate:	Time:	Relinquished by:	Received by:	Date	Time
4/16	1900			04/27/16	0930

Remarks:

If necessary, samples submitted to Hail Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly noted on the analytical report.