



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

September 05, 2018

Johnny Titsworth  
Burnett Oil Co Inc  
PO Box 188  
Loco Hills, NM 88255  
TEL: (432) 425-2891  
FAX

RE: Waterflood

OrderNo.: 1808H97

Dear Johnny Titsworth:

Hall Environmental Analysis Laboratory received 25 sample(s) on 8/30/2018 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](http://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 #NM0901

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: 1808H97

Date Reported: 9/5/2018

CLIENT: Burnett Oil Co Inc

Lab Order: 1808H97

Project: Waterflood

Lab ID: 1808H97-001

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP2 2-3'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	9/4/2018 1:01:25 PM	40114

Lab ID: 1808H97-002

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP2 3-4'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	9/4/2018 1:13:50 PM	40114

Lab ID: 1808H97-003

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP2 4-5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	9/4/2018 1:26:14 PM	40114

Lab ID: 1808H97-004

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 0-1'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	9/4/2018 2:03:28 PM	40114

Lab ID: 1808H97-005

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 1-2'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	100	30		mg/Kg	20	9/4/2018 2:15:52 PM	40114

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

**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
- PQL Practical Quantitative Limit

- 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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1808H97

Date Reported: 9/5/2018

CLIENT: Burnett Oil Co Inc

Lab Order: 1808H97

Project: Waterflood

Lab ID: 1808H97-006

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 2-3'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	210	30		mg/Kg	20	9/4/2018 2:28:17 PM	40114
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Lab ID: 1808H97-007

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 3-4'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	180	30		mg/Kg	20	9/4/2018 2:40:41 PM	40114
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Lab ID: 1808H97-008

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 4-5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	150	30		mg/Kg	20	9/4/2018 2:53:05 PM	40114
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Lab ID: 1808H97-009

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 5-6'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	95	30		mg/Kg	20	9/4/2018 9:17:41 PM	40140
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Lab ID: 1808H97-010

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 6-7'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	75	30		mg/Kg	20	9/4/2018 9:54:55 PM	40140
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Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
	PQL	Practical Quantitative Limit

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1808H97

Date Reported: 9/5/2018

CLIENT: Burnett Oil Co Inc

Lab Order: 1808H97

Project: Waterflood

Lab ID: 1808H97-011

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 7-8'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA							
Chloride	66	30		mg/Kg	20	9/4/2018 10:07:20 PM	40140

Lab ID: 1808H97-012

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 8-9'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA							
Chloride	72	30		mg/Kg	20	9/4/2018 10:19:45 PM	40140

Lab ID: 1808H97-013

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 0-1'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA							
Chloride	380	30		mg/Kg	20	9/4/2018 10:32:09 PM	40140

Lab ID: 1808H97-014

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 1-2'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA							
Chloride	490	30		mg/Kg	20	9/4/2018 10:44:34 PM	40140

Lab ID: 1808H97-015

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 2-3'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b> Analyst: MRA							
Chloride	640	30		mg/Kg	20	9/4/2018 10:56:59 PM	40140

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

**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
- PQL Practical Quantitative Limit

- 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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1808H97

Date Reported: 9/5/2018

CLIENT: Burnett Oil Co Inc

Lab Order: 1808H97

Project: Waterflood

Lab ID: 1808H97-016

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 3-4'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	610	30		mg/Kg	20	9/4/2018 11:09:24 PM	40140
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Lab ID: 1808H97-017

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 4-5'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	320	30		mg/Kg	20	9/4/2018 11:46:37 PM	40140
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Lab ID: 1808H97-018

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 5-6'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	390	30		mg/Kg	20	9/4/2018 11:59:02 PM	40140
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Lab ID: 1808H97-019

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 6-7'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	480	30		mg/Kg	20	9/5/2018 12:11:26 AM	40140
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Lab ID: 1808H97-020

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 7-8'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	560	30		mg/Kg	20	9/5/2018 12:23:51 AM	40140
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Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
	PQL	Practical Quantitative Limit

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

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order: 1808H97

Date Reported: 9/5/2018

CLIENT: Burnett Oil Co Inc

Lab Order: 1808H97

Project: Waterflood

Lab ID: 1808H97-021

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 8-9'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	630	30		mg/Kg	20	9/5/2018 12:36:16 AM	40140
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Lab ID: 1808H97-022

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP1 9-10'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	660	30		mg/Kg	20	9/5/2018 12:48:40 AM	40140
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Lab ID: 1808H97-023

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP2 0-1'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	ND	30		mg/Kg	20	9/5/2018 1:01:05 AM	40140
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Lab ID: 1808H97-024

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP2 1-2'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	ND	30		mg/Kg	20	9/5/2018 1:13:30 AM	40140
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Lab ID: 1808H97-025

Collection Date: 8/29/2018 12:00:00 PM

Client Sample ID: SP3 9-10'

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch ID
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**EPA METHOD 300.0: ANIONS**

Analyst: MRA

Chloride	76	30		mg/Kg	20	9/5/2018 1:25:54 AM	40140
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Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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
	PQL	Practical Quantitative Limit

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1808H97

05-Sep-18

Client: Burnett Oil Co Inc

Project: Waterflood

Sample ID	MB-40114		SampType: mblk		TestCode: EPA Method 300.0: Anions					
Client ID:	PBS		Batch ID: 40114		RunNo: 53883					
Prep Date:	9/4/2018		Analysis Date: 9/4/2018		SeqNo: 1779460		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-40114		SampType: lcs		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSS		Batch ID: 40114		RunNo: 53883					
Prep Date:	9/4/2018		Analysis Date: 9/4/2018		SeqNo: 1779461		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.6	90	110			

Sample ID	MB-40140		SampType:	mblk		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	40140		RunNo:	53883				
Prep Date:	9/4/2018		Analysis Date:	9/4/2018		SeqNo:	1779503		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-40140		SampType:	lcs		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSS		Batch ID:	40140		RunNo:	53883				
Prep Date:	9/4/2018		Analysis Date:	9/4/2018		SeqNo:	1779504		Units:	mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	14	1.5	15.00	0	94.6	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  
PQL Practical Quantitative Limit  
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: BURNETT OIL CO INC

Work Order Number: 1808H97

RcptNo: 1

Received By: Jazzmine Burkhead 8/30/2018 8:30:00 AM

Completed By: Erin Melendrez 8/30/2018 11:37:36 AM

Reviewed By:

LB: JAB 08/30/18

*Jazzmine Burkhead*

*UUG*

### Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐

2. How was the sample delivered? Courier

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐

4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐

5. Sample(s) in proper container(s)? Yes ☒ No ☐

6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐

7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐

8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐

9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒

10. Were any sample containers received broken? Yes ☐ No ☒

11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐

13. Is it clear what analyses were requested? Yes ☒ No ☐

14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by: JAB

08/30/18

### Special Handling (if applicable)

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

Person Notified:

By Whom:

Regarding:

Client Instructions:

Date:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.2	Good	Yes			





# Chain-of-Custody Record

Client: Burnett Oil Co., Inc

Mailing Address:

P.O. Box 188 Loco Hills, NM 88255

Phone #: 432-425-2891

email or Fax#: jllsworth@burnettoil.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation:

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day

☒ Standard ☐ Rush

Project Name:

WATERFLOOD

Project #:

Project Manager:

Johnny Tittsworth

Sampler: JAMESON HERR

On Ice: ☒ Yes ☐ No

Sample Temperature: 32

Date Time Matrix Sample Request ID

7/29/18 PM SP1 0-1'

soil 1-2'

soil 2-3'

soil 3-4'

soil 4-5'

soil 5-6'

soil 6-7'

soil 7-8'

soil 8-9'

soil 9-10'

soil 0-1'

soil 1-2'

Date Time Relinquished by:

7/29/18 1258 JAMESON HERR

Date Time Relinquished by:

7/29/18 1400 SP2

Received by:

SP1

Date

8/29/18

Time

1400

Received by:

JAMESON HERR

Date

8/30/18

Time

08:30

Container Type and #

4 oz.

4 oz.

4 oz.

4 oz.

4 oz.

4 oz.

4 oz.

4 oz.

4 oz.

4 oz.

4 oz.

4 oz.

Preservative Type

Ice

Ice

Ice

Ice

Ice

Ice

Ice

Ice

Ice

Ice

Ice

Ice

HEAL No

1808H97

-013

-014

-015

-016

-017

-018

-019

-020

-021

-022

-023

-024

Chloride

X

TPH 8015M  
BTEX 8021B

Air Bubbles (Y or N)

Remarks: If total TPH exceeds 5,000 mg/kg - run deeper sample.  
If total BTEX exceeds 50 mg/kg - run deeper sample  
Benzene exceeds 10 mg/kg - run deeper sample

Causes

