



- WELL LOCATION
- SOIL BORING
- ABOVE GROUND STORAGE TANK

Figure 4b
SITE MAP

Sandridge Mutual 4-30H
API 05-057-06488 - SW SE Section 30, T7N, R80W
Jackson County, CO

Project No. C016-048	Prepared by	Drawn by JMA
Date 6/7/16	Reviewed by	Filename 16048QC





H

surface	0
1'	0
2'	0

A

1'	18
2'	250
3'	242
4'	120
5'	22

Mutual 4-30H

5/5/16	
2	
B	0.12
T	0.015
E	0.037
X	0.013
G	12
D	2000

B

1'	3
2'	422
3'	370
4'	390
4.5'	275

5/5/16	
4.5	
B	13
T	69
E	61
X	290
G	16,000
D	43000

C

1'	5
2'	320
3'	195
4'	740
4.5'	940

5/5/16	
5	
B	<-0.002
T	<-0.005
E	<-0.005
X	<-0.010
G	31
D	2200

D

1'	2
2'	240
3'	340
4'	230
4.5'	440

E

1'	0
2'	25
3'	280
3.5'	240
4'	60

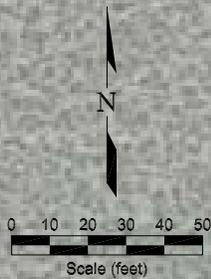
F

5/5/16	
2	
B	<-0.002
T	<-0.005
E	<-0.005
X	<-0.010
G	12
D	960

1'	0
2'	190
3'	305
3.5'	380
4.5'	28

G

1'	0
2'	0



- WELL LOCATION
- SOIL BORING
- ABOVE GROUND STORAGE TANK
- SAMPLE DEPTH (feet below ground surface)
- PID READING (ppm)

5/5/16	
2	
B	<-0.002
T	<-0.005
E	<-0.005
X	<-0.010
G	<-0.50
D	<50

DATE SAMPLED
SAMPLE DEPTH (ft)
BENZENE (mg/kg)
TOLUENE (mg/kg)
ETHYLBENZENE (mg/kg)
TOTAL XYLENES (mg/kg)
TPH-GRO (mg/kg)
TPH-DRO (mg/kg)

Figure 4c
**SOIL CHEMISTRY &
SOIL SAMPLE PID READINGS**

Sandridge Mutual 4-30H
API 05-057-06488 - SW SE Section 30, T7N, R80W
Jackson County, CO

Project No. C016-048	Prepared by	Drawn by JMA
Date 6/7/16	Reviewed by	Filename 16048QC





Fremont Environmental
1759 Redwing Lane
Broomfield CO, 80020

Project: COGCC-Former EE3 Locations

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/16/16 15:17

**Mutual C-4,5 Ft
1605076-04 (Soil)**

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/05/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	43000	500	mg/kg	10	1605095	05/10/16	05/13/16	8015M	

Date Sampled: **05/05/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		378 %	30-150		"	"	"	"	S-02

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/05/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	13	0.20	mg/kg	100	1605097	05/10/16	05/10/16	EPA 8260B	
Toluene	89	0.50	"	"	"	"	"	"	
Ethylbenzene	61	0.50	"	"	"	"	"	"	
Xylenes (total)	290	5.0	"	1000	"	"	05/11/16	"	
Gasoline Range Hydrocarbons	16000	500	"	"	"	"	05/10/16	"	

Date Sampled: **05/05/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		115 %	23-173		"	"	05/11/16	"	
<i>Surrogate: Toluene-d8</i>		103 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.2 %	21-167		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: **05/05/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	1.04	0.500	mg/kg	100	1605115	05/12/16	05/12/16	EPA 8270D SIM	R-01
Acenaphthylene	ND	0.0500	"	10	"	"	05/13/16	"	R-01

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1605076-04 (Soil)**

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Semivolatile Organic Compounds by EPA Method 8270D SIM

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.0500	mg/kg	10	1605115	05/12/16	05/13/16	EPA 8270D SIM	R-01
Benzo (a) anthracene	ND	0.500	"	100	"	"	05/12/16	"	R-01
Benzo (b) fluoranthene	0.209	0.0500	"	10	"	"	05/13/16	"	R-01
Benzo (k) fluoranthene	ND	0.0500	"	"	"	"	"	"	R-01
Benzo (g,h,i) perylene	ND	0.0500	"	"	"	"	"	"	R-01
Benzo (a) pyrene	ND	0.0500	"	"	"	"	"	"	R-01
Chrysene	0.902	0.0500	"	"	"	"	"	"	R-01
Dibenz (a,h) anthracene	ND	0.0500	"	"	"	"	"	"	R-01
Fluoranthene	0.141	0.0500	"	"	"	"	"	"	R-01
Fluorene	2.83	0.500	"	100	"	"	05/12/16	"	R-01
Indeno (1,2,3-cd) pyrene	ND	0.0500	"	10	"	"	05/13/16	"	R-01
Naphthalene	11.1	0.500	"	100	"	"	"	"	R-01
Phenanthrene	5.68	0.500	"	"	"	"	"	"	R-01
Pyrene	0.839	0.0500	"	10	"	"	"	"	R-01

Date Sampled: 05/05/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		32.4 %	35-150		"	"	"	"	S-04
Surrogate: Fluoranthene-d10		28.5 %	35-150		"	"	"	"	S-04

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 05/05/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.12	0.161	mg/kg dry	1	1605091	05/10/16	05/10/16	EPA 6020A	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 05/05/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4670	16.1	mg/kg dry	1	1605094	05/10/16	05/11/16	EPA 6020/Mod. USDA60 6(2, 3A)	

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**Mutual C-4,5 Ft
1605076-04 (Soil)**

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Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Magnesium	241	8.06	mg/kg dry	1	1605094	05/10/16	05/11/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium	1760	8.06	"	"	"	"	"	"	"

Date Sampled: 05/05/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.81		units	"	1605123	05/12/16	05/12/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 05/05/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.26	0.0100	mmhos/cm	1	1605102	05/11/16	05/11/16	SM 2510B	

Date Sampled: 05/05/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.33	0.100	pH Units	"	1605090	05/10/16	05/11/16	EPA 9045	

Date Sampled: 05/05/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	62.0		%	"	1605088	05/10/16	05/11/16	% calculation	

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