



FIGURES

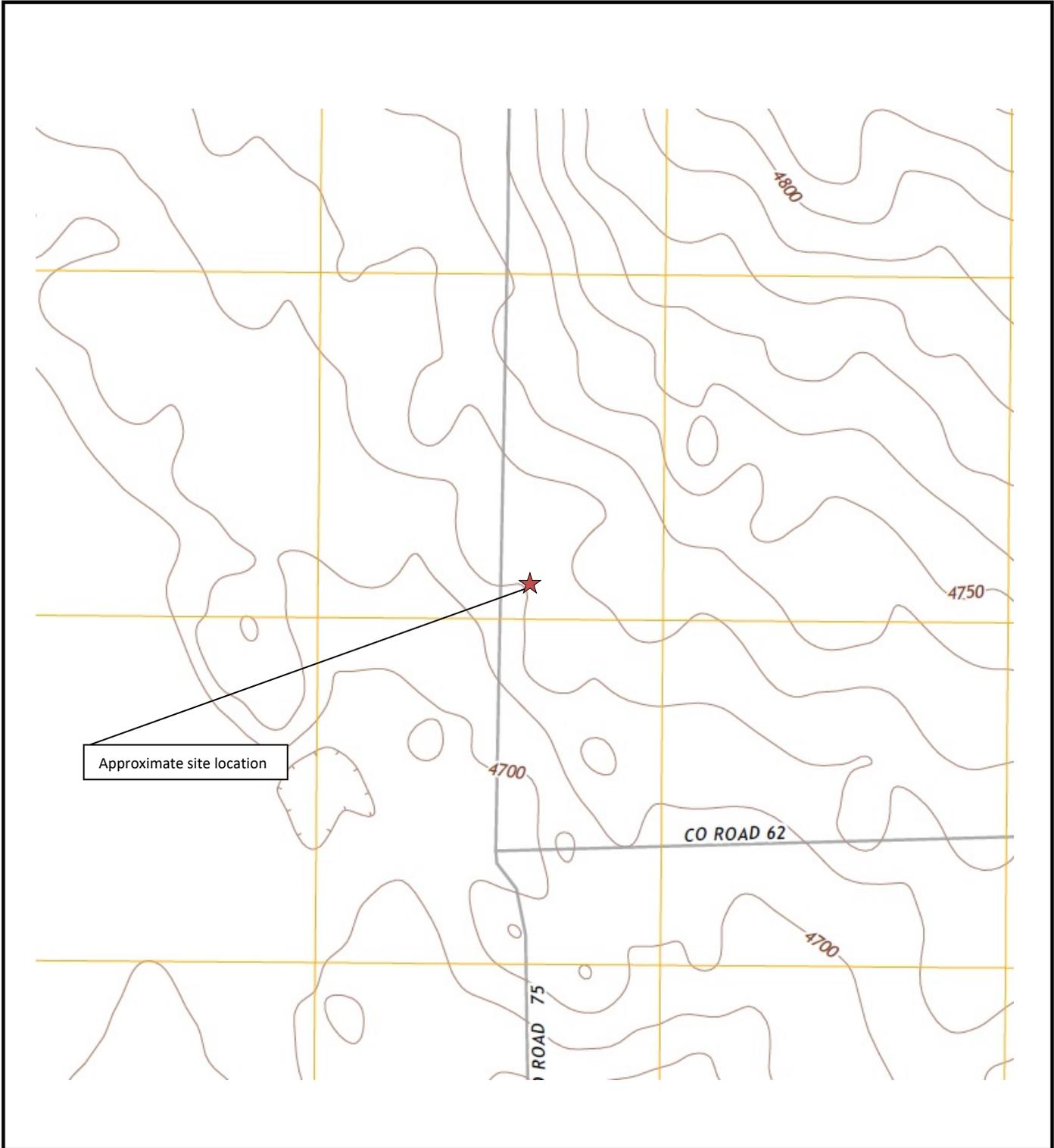
Figure 1: Topographic Site Location Map

Figure 2: Initial Assessment Soil Analytical Map

Figure 3: Pothole Assessment Map

Figure 4: Soil Vapor Extraction Soil Analytical Map

Figure 5: Soil Vapor Extraction Effluent Air Analytical Map





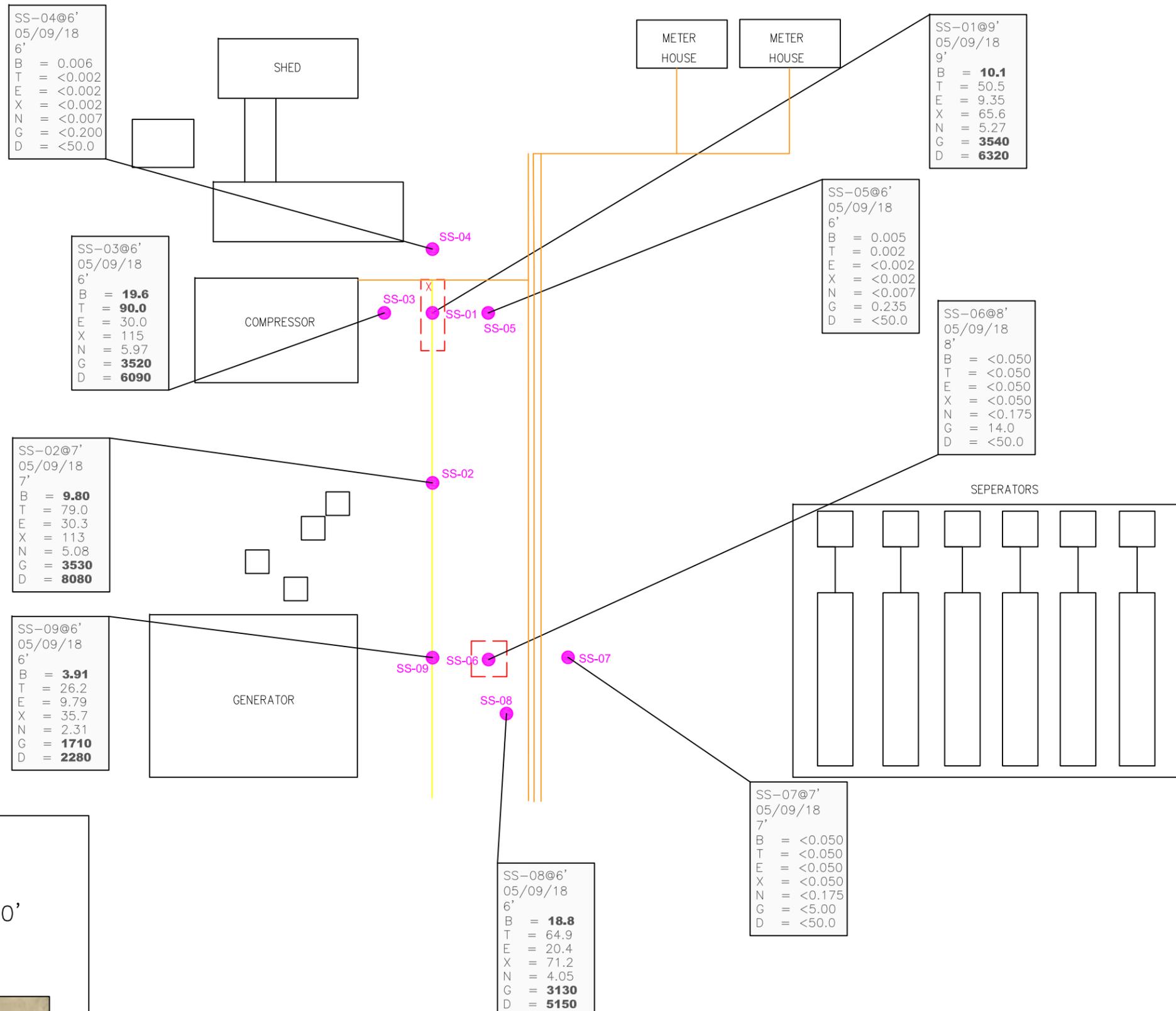
Topographic Site Location Map
 Wells Ranch AE32 Econode
 Flow Line Release
 40.4440 / -104.3552
 SW¼ NW¼ SEC.32 T6N R62W 6PM
 Weld County, Colorado
 Remediation # 12140



EAGLE
 ENVIRONMENTAL
 CONSULTING, INC.

Source: USGS 7.5 Minute Topographic Map, Point of Rocks, CO Quadrangle 2013

Figure 1



LEGEND

- X APPROXIMATE RELEASE LOCATION
- ABOVEGROUND INFRASTRUCTURE
- APPROXIMATE UNDERGROUND (ABANDONED) LINE
- APPROXIMATE ABOVE GROUND FLOWLINE LOCATIONS
- - - APPROXIMATE SURFACING/EXCAVATION BOUNDARIES 05/09/18
- APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

PARAMETERS

SOIL SAMPLE LOCATION
DATE
DEPTH (FEET)
B = BENZENE (mg/kg)
T = TOLUENE (mg/kg)
E = ETHYLBENZENE (mg/kg)
X = TOTAL XYLENES (mg/kg)
N = NAPHTHALENE (mg/kg)
G = TPH-GRO (mg/kg)
D = TPH-DRO (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS

TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS

NOTE: VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

VALUES IN **BOLD** EXCEED COGCC TABLE 910-1 REGULATORY LIMITS.

COGCC - COLORADO OIL AND GAS CONSERVATION COMMISSION

SITE MAP INSERT

0 180'
APPROXIMATE SCALE IN FEET



0 10'
APPROXIMATE SCALE IN FEET

INITIAL ASSESSMENT SOIL ANALYTICAL MAP
WELLS RANCH AE32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140

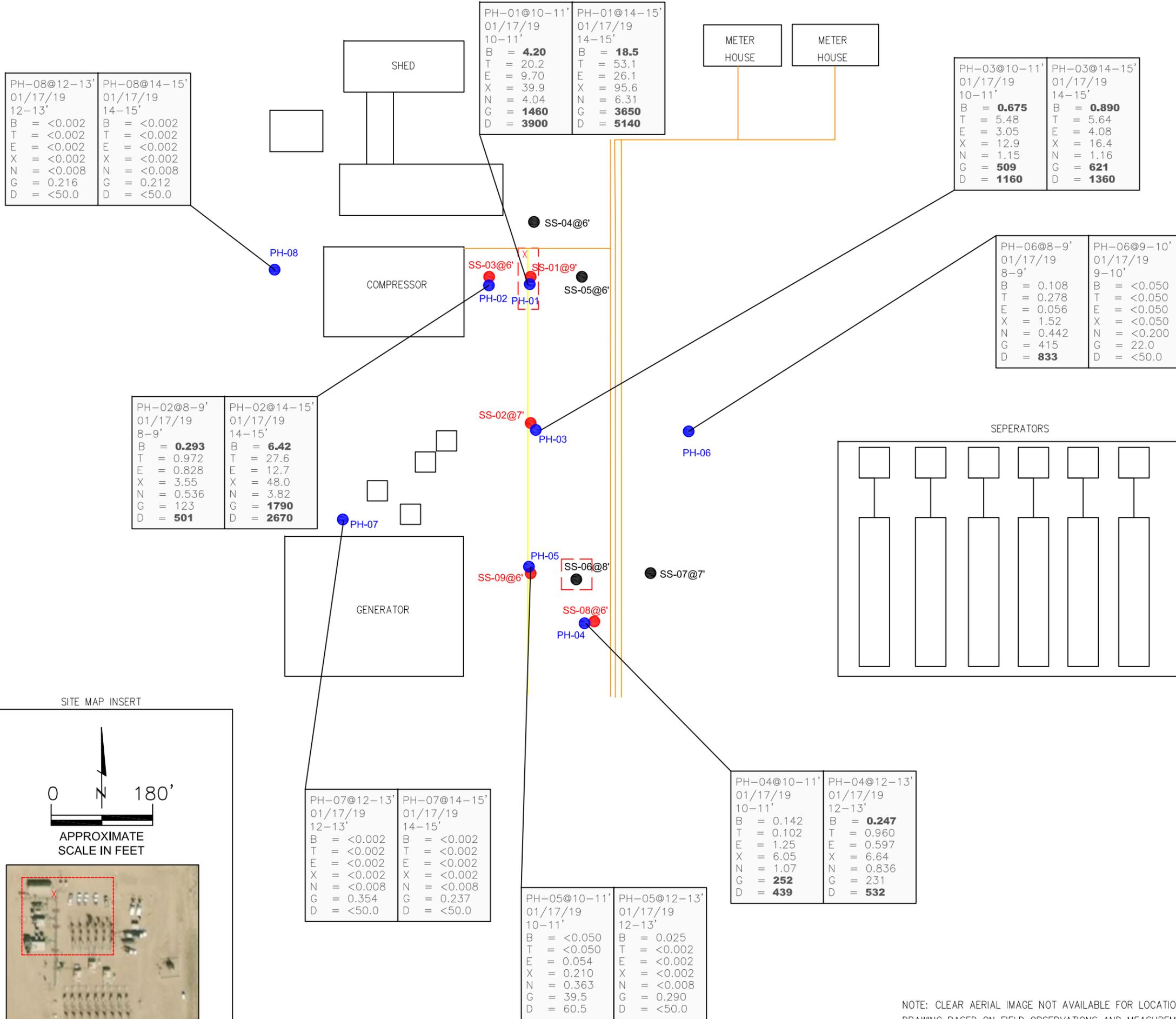
DATE: 01/22/19

FIG. NO.: 2

DRAWN BY: amn

EAGLE ENVIRONMENTAL CONSULTING, INC.
4101 INCA STREET, DENVER, CO 80211
Ph: 303-433-0479 • F: 303-325-5449

NOTE: CLEAR AERIAL IMAGE NOT AVAILABLE FOR LOCATION.
DRAWING BASED ON FIELD OBSERVATIONS AND MEASUREMENTS



- LEGEND**
- X APPROXIMATE RELEASE LOCATION
 - ABOVEGROUND INFRASTRUCTURE
 - APPROXIMATE UNDERGROUND (ABANDONED) LINE
 - APPROXIMATE ABOVE GROUND FLOWLINE LOCATIONS
 - - - APPROXIMATE SURFACING/EXCAVATION BOUNDARIES 05/09/18
 - SS-02 APPROXIMATE LOCATION OF INITIAL SOIL SAMPLES BELOW COGCC TABLE 910-1 REGULATORY LIMITS
 - SS-02 APPROXIMATE LOCATION OF INITIAL SOIL SAMPLES ABOVE COGCC TABLE 910-1 REGULATORY LIMITS
 - APPROXIMATE POTHOLE ASSESSMENT LOCATIONS

PARAMETERS

SOIL SAMPLE LOCATION	
DATE	
DEPTH (FEET)	
B =	BENZENE (mg/kg)
T =	TOLUENE (mg/kg)
E =	ETHYLBENZENE (mg/kg)
X =	TOTAL XYLENES (mg/kg)
N =	NAPHTHALENE (mg/kg)
G =	TPH-GRO (mg/kg)
D =	TPH-DRO (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

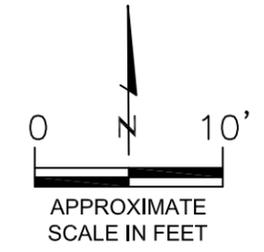
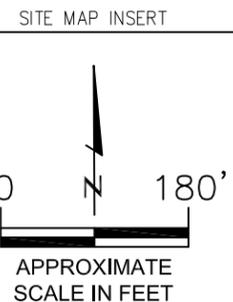
TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS

TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS

NOTE: VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

VALUES IN **BOLD** EXCEED COGCC TABLE 910-1 REGULATORY LIMITS.

COGCC - COLORADO OIL AND GAS CONSERVATION COMMISSION



POTHOLE ASSESSMENT MAP
WELLS RANCH AE32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140

DATE	01/22/19
FIG. NO.	3
DRAWN BY	amn

EAGLE
ENVIRONMENTAL
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4101 INCA STREET, DENVER, CO 80211
Ph: 303-433-0479 • F: 303-325-5449

NOTE: CLEAR AERIAL IMAGE NOT AVAILABLE FOR LOCATION.
DRAWING BASED ON FIELD OBSERVATIONS AND MEASUREMENTS

SVE-01@22.5-25'
04/18/19
22.5-25'
B = 0.008
T = 0.011
E = <0.002
X = <0.002
N = <0.008
G = 0.215
D = <50.0

SVE-05@22.5-25'
04/18/19
22.5-25'
B = 0.020
T = 0.043
E = 0.010
X = 0.043
N = <0.008
G = 0.430
D = <50.0

SVE-04@27.5-30'
04/18/19
27.5-30'
B = 0.056
T = 0.068
E = 0.011
X = 0.049
N = <0.008
G = 0.529
D = <50.0

SVE-02@22.5-25'
04/18/19
22.5-25'
B = 0.012
T = 0.011
E = <0.002
X = <0.002
N = <0.008
G = 0.206
D = <50.0

SVE-03@32.5-35'
04/18/19
32.5-35'
B = 0.080
T = 0.436
E = 0.236
X = 0.953
N = <0.200
G = 156
D = 32.3

LEGEND

- X APPROXIMATE RELEASE LOCATION
- ABOVEGROUND INFRASTRUCTURE
- APPROXIMATE UNDERGROUND (ABANDONED) LINE
- APPROXIMATE ABOVE GROUND FLOWLINE LOCATIONS
- - - APPROXIMATE SURFACING/EXCAVATION BOUNDARIES 05/09/18
- SS-02 APPROXIMATE LOCATION INITIAL SOIL SAMPLES ABOVE COGCC TABLE 910-1 REGULATORY LIMITS
- ⊕ APPROXIMATE SOIL VAPOR EXTRACTION (SVE) WELL LOCATIONS
- ⊖ DESTROYED (DES) SVE WELL LOCATION

PARAMETERS

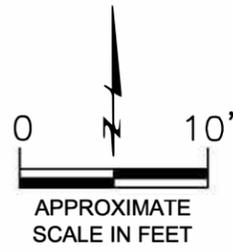
SOIL SAMPLE LOCATION
DATE
DEPTH (FEET)
B = BENZENE (mg/kg)
T = TOLUENE (mg/kg)
E = ETHYLBENZENE (mg/kg)
X = TOTAL XYLENES (mg/kg)
N = NAPHTHALENE (mg/kg)
G = TPH-GRO (mg/kg)
D = TPH-DRO (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM
TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS
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VALUES IN **BOLD** EXCEED COGCC TABLE 910-1 REGULATORY LIMITS.

COGCC - COLORADO OIL AND GAS CONSERVATION COMMISSION

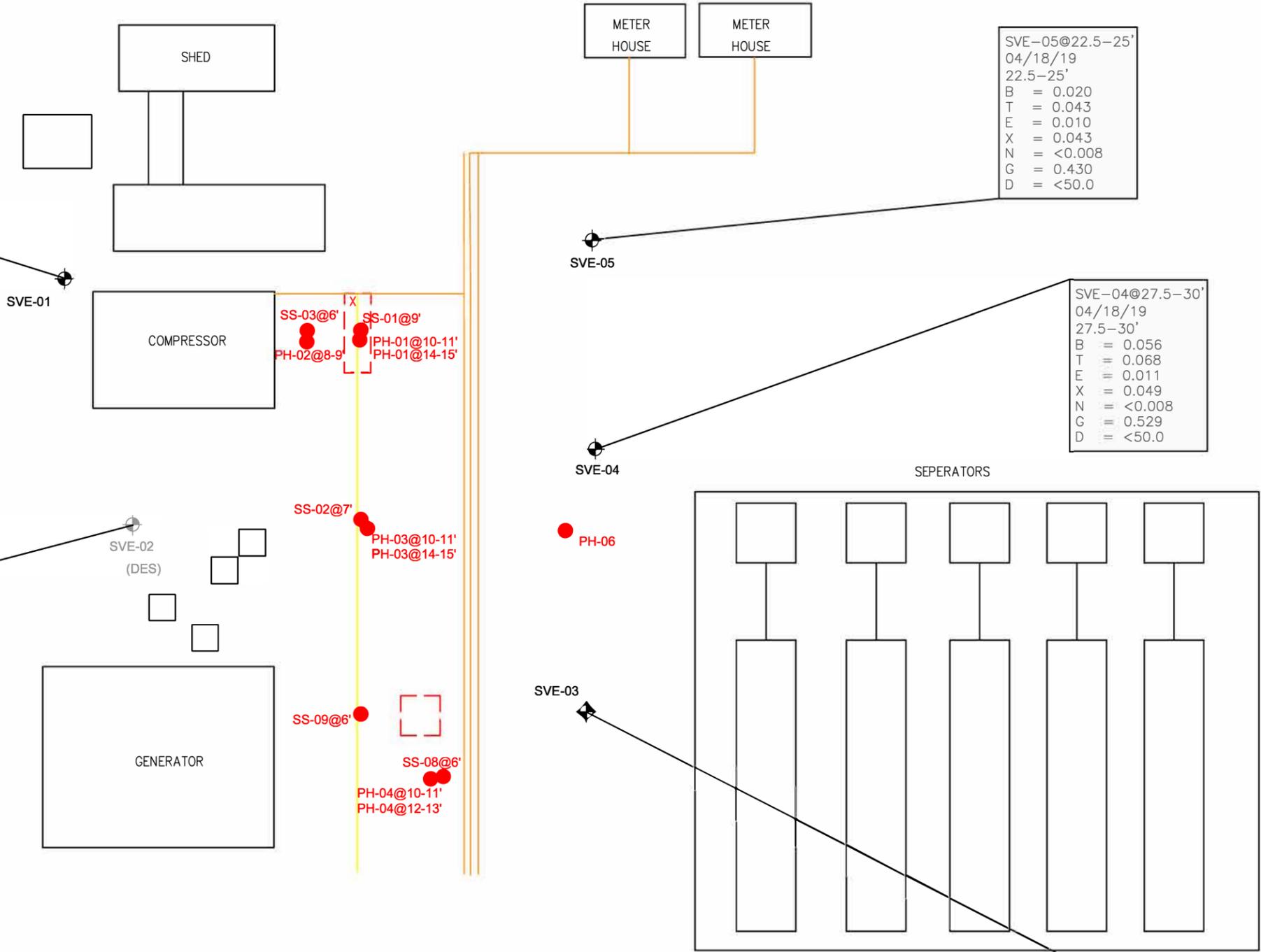


SVE SOIL ANALYTICAL MAP
WELLS RANCH AE32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140

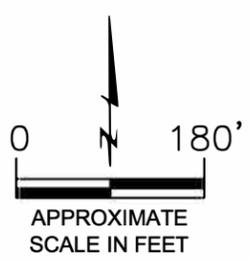
DATE
07/19/19
FIG. NO.
4
DRAWN BY
omn



NOTE: CLEAR AERIAL IMAGE NOT AVAILABLE FOR LOCATION.
DRAWING BASED ON FIELD OBSERVATIONS AND MEASUREMENTS



SITE MAP INSERT



EFFLUENT-SVE-01
07/10/19
B = 163
T = 108
E = <20.7
X = <98.2
G = 363000

EFFLUENT-SVE-05
07/10/19
B = 2040
T = 120
E = 31.1
X = 365.8
G = 383000

EFFLUENT-SVE-04
07/10/19
B = 5610
T = 2160
E = 249
X = 2584
G = 1360000

EFFLUENT-SVE-03
07/10/19
B = 114
T = 42.2
E = 42.6
X = 279.4
G = 45600

LEGEND

- X APPROXIMATE RELEASE LOCATION
- ABOVEGROUND INFRASTRUCTURE
- APPROXIMATE UNDERGROUND (ABANDONED) LINE
- APPROXIMATE ABOVE GROUND FLOWLINE LOCATIONS
- - - APPROXIMATE SURFACING/EXCAVATION BOUNDARIES 05/09/18
- SS-02 APPROXIMATE LOCATION INITIAL SOIL SAMPLES ABOVE COGCC TABLE 910-1 REGULATORY LIMITS
- ⊕ APPROXIMATE SOIL VAPOR EXTRACTION (SVE) WELL LOCATIONS
- ⊖ DESTROYED (DES) SVE WELL LOCATION

PARAMETERS

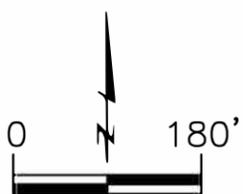
SAMPLE LOCATION
DATE
B = BENZENE (µg/m³)
T = TOLUENE (µg/m³)
E = ETHYLBENZENE (µg/m³)
X = TOTAL XYLENES (µg/m³)
G = TPH-GRO (µg/m³)

µg/m³ = MICROGRAMS PER CUBIC METER (AIR)

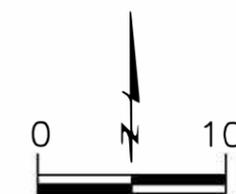
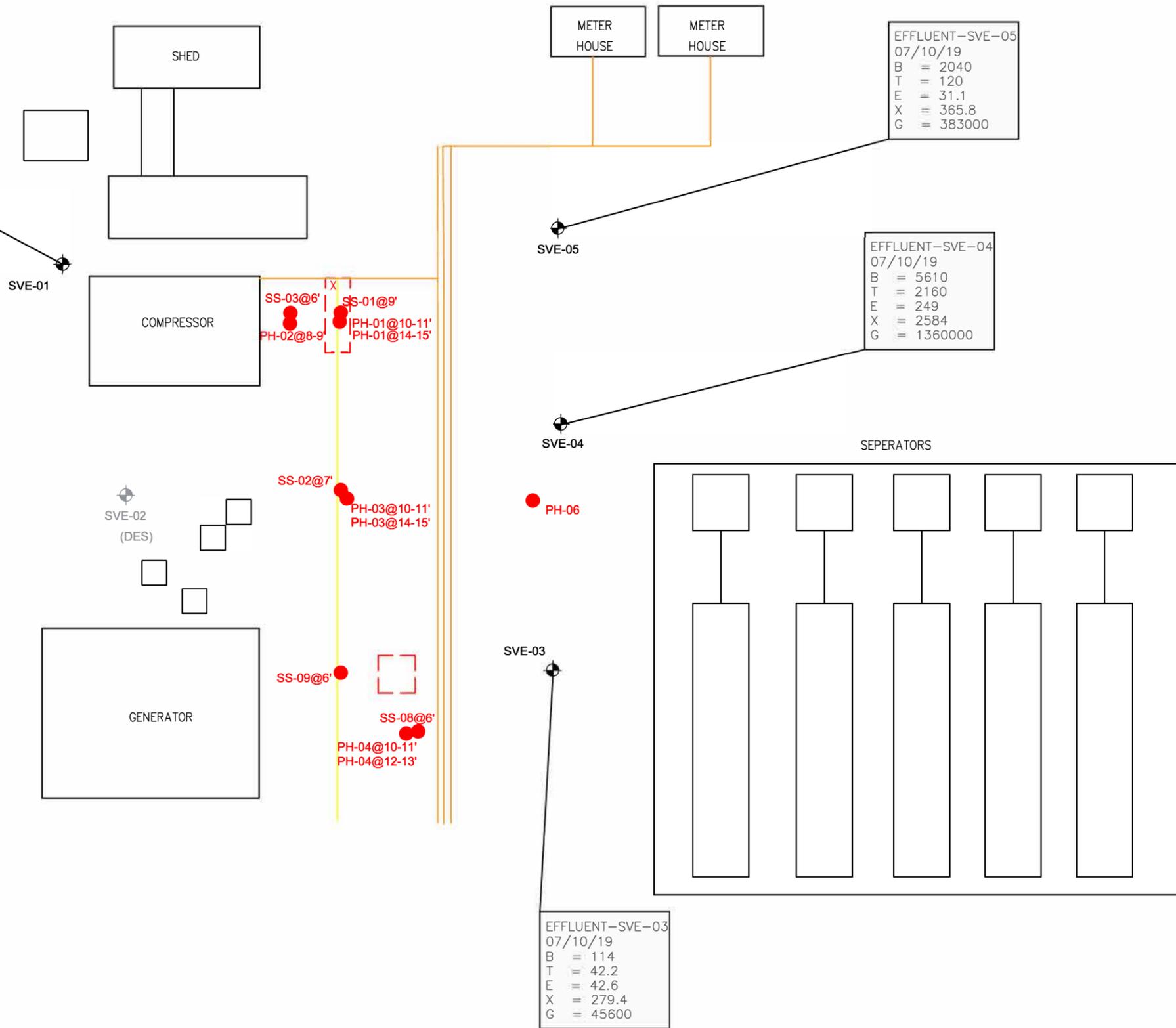
TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS

NOTE: VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

SITE MAP INSERT



APPROXIMATE SCALE IN FEET



APPROXIMATE SCALE IN FEET

SVE EFFLUENT AIR ANALYTICAL MAP
WELLS RANCH AE32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDIAION # 12140

NOTE: CLEAR AERIAL IMAGE NOT AVAILABLE FOR LOCATION.
DRAWING BASED ON FIELD OBSERVATIONS AND MEASUREMENTS

DATE
07/19/19

FIG. NO. 5
DRAWN BY amn





TABLES

Table 1: Soil Analytical Results Summary

Table 2: Soil Vapor Extraction Data Summary

**TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
WELLS RANCH AE 32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
COGCC Table 910-1 Regulatory Limits (mg/kg)			0.17	85	100	175	23	500	
SS-01 @ 9' (40.443805782 / -104.355188906)	05/09/18	9	10.1	50.5	9.35	65.6	5.27	3540	6320
SS-02 @ 7' (40.443773212 / -104.355184696)	05/09/18	7	9.80	79.0	30.3	113	5.08	3530	8080
SS-03 @ 6' (40.443814348 / -104.355200477)	05/09/18	6	19.6	90.0	30.0	115	5.97	3520	6090
SS-04 @ 6' (40.443824696 / -104.355188227)	05/09/18	6	0.006	<0.002	<0.002	<0.002	<0.007	<0.200	<50.0
SS-05 @ 6' (40.443805372 / -104.355171177)	05/09/18	6	0.005	0.002	<0.002	<0.002	<0.007	0.235	<50.0
SS-06 @ 8' (40.443726401 / -104.355189284)	05/09/18	8	<0.050	<0.050	<0.050	<0.050	<0.175	14.0	<50.0
SS-07 @ 7' (40.433725717 / -104.355170263)	05/09/18	7	<0.050	<0.050	<0.050	<0.050	<0.175	<5.00	<50.0
SS-08 @ 6' (40.44372107 / -104.355188625)	05/09/18	6	18.8	64.9	20.4	71.2	4.05	3130	5150
SS-09 @ 6' (40.443726389 / -104.35520129)	05/09/18	6	3.91	26.2	9.79	35.7	2.31	1710	2280
PH-01 @ 10-11' (40.443805782 / -104.355188906)	01/17/19	10-11.0	4.20	20.2	9.70	39.9	4.04	1460	3900
PH-01 @ 14-15' (40.443805782 / -104.355188906)	01/17/19	14-15.0	18.5	53.1	26.1	95.6	6.31	3650	5140
PH-02 @ 8-9' (40.443814348 / -104.355200477)	01/17/19	8-9.0	0.293	0.972	0.828	3.55	0.536	123	501
PH-02 @ 14-15' (40.443814348 / -104.355200477)	01/17/19	14-15.0	6.42	27.6	12.7	48.0	3.82	1790	2670
PH-03 @ 10-11' (40.443773212 / -104.355184696)	01/17/19	10-11.0	0.675	5.48	3.05	12.9	1.15	509	1160
PH-03 @ 14-15' (40.443773212 / -104.355184696)	01/17/19	14-15.0	0.890	5.64	4.08	16.4	1.16	621	1360



TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
WELLS RANCH AE 32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
COGCC Table 910-1 Regulatory Limits (mg/kg)			0.17	85	100	175	23	500	
PH-04 @ 10-11' (40.44372107 / -104.355188625)	01/17/19	10-11.0	0.142	0.102	1.25	6.05	1.07	252	439
PH-04 @ 12-13' (40.44372107 / -104.355188625)	01/17/19	12-13.0	0.247	0.960	0.597	6.64	0.836	231	532
PH-05 @ 10-11' (40.443726389 / -104.35520129)	01/17/19	10-11.0	<0.050	<0.050	0.054	0.210	0.363	39.5	60.5
PH-05 @ 12-13' (40.443726389 / -104.35520129)	01/17/19	12-13.0	0.025	<0.002	<0.002	<0.002	<0.008	0.290	<50.0
PH-06 @ 8-9' (40.443770362 / -104.355141909)	01/17/19	8-9.0	0.108	0.278	0.056	1.52	0.442	415	833
PH-06 @ 9-10' (40.443770362 / -104.355141909)	01/17/19	9-10.0	<0.050	<0.050	<0.050	<0.050	<0.200	22.0	<50.0
PH-07 @ 12-13' (40.443700479 / -104.355307349)	01/17/19	12-13.0	<0.002	<0.002	<0.002	<0.002	<0.008	0.354	<50.0
PH-07 @ 14-15' (40.443700479 / -104.355307349)	01/17/19	14-15.0	<0.002	<0.002	<0.002	<0.002	<0.008	0.237	<50.0
PH-08 @ 12-13' (40.443807778 / -104.355334288)	01/17/19	12-13.0	<0.002	<0.002	<0.002	<0.002	<0.008	0.216	<50.0
PH-08 @ 14-15' (40.443807778 / -104.355334288)	01/17/19	14-15.0	<0.002	<0.002	<0.002	<0.002	<0.008	0.212	<50.0



**TABLE 1
SOIL ANALYTICAL RESULTS SUMMARY
WELLS RANCH AE 32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDATION # 12140**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)
COGCC Table 910-1 Regulatory Limits (mg/kg)			0.17	85	100	175	23	500	
SVE-01 @ 22.5-25' (40.443818606 / -104.355400044)	04/18/19	22.5-25	0.008	0.011	<0.002	<0.002	<0.008	0.215	<50.0
SVE-02 @ 22.5-25' (40.44378147 / -104.355358707)	04/18/19	22.5-25	0.012	0.011	<0.002	<0.002	<0.008	0.206	<50.0
SVE-03 @ 32.5-35' (40.44372223 / -104.35511743)	04/18/19	32.5-35	0.080	0.436	0.236	0.953	<0.200	156	32.3
SVE-04 @ 27.5-30' (40.443775392 / -104.355115091)	04/18/19	27.5-30	0.056	0.068	0.011	0.049	<0.008	0.529	<50.0
SVE-05 @ 22.5-25' (40.443845101 / -104.355110051)	04/18/19	22.5-25	0.020	0.043	0.010	0.043	<0.008	0.430	<50.0
COGCC = Colorado Oil and Gas Conservatory Commission mg/kg = milligrams per kilogram TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics Note: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit. Note: Values presented in BOLD contained concentrations exceeding COGCC Table 910-1 Regulatory Limits									



TABLE 2
SOIL VAPOR EXTRACTION DATA SUMMARY
WELLS RANCH AE 32 ECONODE
FLOW LINE RELEASE
40.4440 / -104.3552
SW1/4 NW1/4 SEC.32 T6N R62W 6PM
WELD COUNTY, COLORADO
REMEDIATION # 12140

Date	Soil Vapor Extraction Unit Performance						Lab Analyses			Mass Removal			Notes
	Operation Time During Period (hours)	Operation Time During Period (%)	Induced Vacuum at Unit (in. H2O)	Effluent Temperature (F)	System Air Flow Rate (scfm)	VOC's (ppm-v)	Benzene (ug/m ³)	Total VOC's (ug/m ³)	VOC Emissions for Period from PID (lbs)	VOC Emissions for Period from Lab (lbs)	Benzene Emissions for Period from Lab (lbs)		
07/10/19	1.4	100%	60	144.3	500	21.4	163	363000	0.159	0.950	0.00043	SVE-01 Effluent	
07/10/19	1.5	100%	60	134.9	506	4.5	114	45600	0.037	0.129	0.00032	SVE-03 Effluent	
07/10/19	1.25	100%	60	125.9	512	82.3	5610	1360000	0.578	3.253	0.01342	SVE-04 Effluent	
07/10/19	1.25	100%	60	120.2	512	28.8	2040	383000	0.204	0.916	0.00488	SVE-05 Effluent	
TOTALS	5.4								0.98	5.25	0.02		

Notes:

scfm = standard cubic feet per minute
in. H2O = inches of water

F = degrees Fahrenheit
ppm-v = parts per million by volume
ug/m³ = micrograms per cubic meter

lbs = pounds
VOC = volatile organic compounds

APEN = Air Pollution Emissions Notice

Calculations - calculated average
Calculation for Total VOC (PID):
Operations time (hrs) (average of current and forward date) x [(P x V x C)/(R x T)](lb/day) x day/24 hrs = Total Emissions in pounds

Where: P = 1742.28 lbs/ft² = discharge pressure, based on atmospheric pressure of 12.12 lbs/ft² at 5,300 feet above mean sea level
V = System air flow rate in ft³/min x 1440 min/day = ft³/day
C = Fractional quantity of gas = VOC by PID/1E6
R = 16.27 lb-ft/lb-mole - °R = specific gas constant of gasoline = universal gas constant (1545.33 lb-ft/lb-mole-°R)/molecular weight of gasoline (95 lb/lb-mole)
T = Discharge temperature °F = 460 + °R

*Please note: Calculations presented in this table are not utilized for APEN emissions estimates. APEN emissions are calculated with an exponential decay rate (per CDPHE APCD request). Values in this table are time-weighted averages.

Calculation for Total VOC Emissions (Lab analyses):
Operation time(hrs) (average of current and forward date(s)) x (60 min/1hr) x (concentration of VOCs (ug/m³)) x (1 g/1E6 ug) x (2.2 CDPHE = Colorado Department of Public Health lb/1000 g) x (system air flow rate (ft³/min)) x (1m³/35.315 ft³) = Total Emissions in pounds





ATTACHMENT A

Soil Vapor Extraction Boring Log/Well Completion Diagrams

Boring Log/Well Completion Diagram: SVE-01

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-7') Potholed							<p>Concrete/Steel Casing Bentonite Chips 2" Dia. Sch. 40 PVC Riser 10/20 Silica Sand Pack 2" Dia. Sch. 40 Slotted PVC (0.010") 2" End Cap</p>		
5	(7-17') SAND - light brown, moderately moist, medium dense, rounded, very fine grained, poorly graded, N/O, N/S	PH	DP	1	50	18.8	N/A			
10						10.3				
15	(17-25') sandy CLAY - dark brown, dry, stiff to very stiff, low plasticity, moderately graded with <10% fine sand, N/O, N/S	SP	DP	2	100	19.2	N/A			
20						10.7				
25	BoB @ 25'	CL	DP	3	100	2.5	N/A			
30						7.1				
			DP	4	100	9.2	N/A			
						8.8				

DP - Direct Push
 HC - Hydrocarbon
 BoB - Bottom of Boring
 N/O - no odor
 N/S - no staining
 TOC - top of casing
 bgs - below ground surface

START/COMPLETION DATE: 04/18/2019	SAND PACK INTERVAL (FEET): 9-25
PROJECT: WELLS RANCH A32E ECONODE	BENTONITE/GROUT INTERVAL (FEET): 0-9
LOGGED BY: L. GATES	WELL SCREEN INTERVAL (FEET): 10-25
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE	WELL DIAMETER (INCHES): 2
BORING DEPTH (FEET): 25'	WELL DEPTH (FEET): 25'
PID INSTRUMENT: MiniRAE 3000 - PID #9	
TIME STARTED/COMPLETED: 1130/1230	
SAMPLE COLLECTION DEPTH (FEET)/TIME: 22.5-25' / 1200	



EAGLE
 ENVIRONMENTAL
 CONSULTING, INC.
 4101 INCA STREET, DENVER, CO 80211
 Ph: 303-433-0479 • F: 303-325-5449



ATTACHMENT B

Laboratory Analytical Reports (SVE Soil and Effluent Air Analytical)



April 23, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

4101 Inca Street

Denver

CO 80211

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. April 19, 2019. This project is associated with Origins project number Y904341-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Eagle Environmental Consulting, Inc.
4101 Inca Street
Denver CO 80211

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SVE-01@22.5-25'	Y904341-01	Soil	April 18, 2019 12:00	04/19/2019 10:00
SVE-02@22.5-25'	Y904341-02	Soil	April 18, 2019 11:07	04/19/2019 10:00
SVE-03@32.5-35'	Y904341-03	Soil	April 18, 2019 14:15	04/19/2019 10:00
SVE-04@27.5-30'	Y904341-04	Soil	April 18, 2019 15:24	04/19/2019 10:00
SVE-05@22.5-25'	Y904341-05	Soil	April 18, 2019 16:10	04/19/2019 10:00

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y904341

Client: Eagle

Client Project ID: Wells Ranch AE32 Econode

Checklist Completed by: JG

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4/19/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 13.3 °C _____ / _____ °C _____ / _____ °C _____ / _____ °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) JG

Date/Time Reviewed 4/22/19

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-01@22.5-25'
4/18/2019 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-01 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	U
Surrogate: o-Terphenyl	83.7 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	0.215	0.200	mg/kg	1	B9D1901	KDK	"	04/19/2019	
Benzene	0.008	0.002	"	"	"	KDK	"	"	
Toluene	0.011	0.002	"	"	"	KDK	"	"	
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	120 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-02@22.5-25'
4/18/2019 11:07:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-02 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	U
Surrogate: o-Terphenyl	78.2 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	0.206	0.200	mg/kg	1	B9D1901	KDK	"	04/19/2019	
Benzene	0.012	0.002	"	"	"	KDK	"	"	
Toluene	0.011	0.002	"	"	"	KDK	"	"	
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	120 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-03@32.5-35'
4/18/2019 2:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-03 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	92.3	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	
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Surrogate: <i>o</i> -Terphenyl	92.1 %	50-150			"	"	"	"	
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	156	50.0	mg/kg	250	B9D1901	KDK	"	04/19/2019	
Benzene	0.080	0.050	"	25	"	KDK	"	04/19/2019	
Toluene	0.436	0.050	"	"	"	KDK	"	"	
Ethylbenzene	0.236	0.050	"	"	"	KDK	"	"	
Xylenes, total	0.953	0.050	"	"	"	KDK	"	"	
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	120 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-04@27.5-30'
4/18/2019 3:24:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-04 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	U
Surrogate: o-Terphenyl	89.6 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	0.529	0.200	mg/kg	1	B9D1901	KDK	"	04/19/2019	
Benzene	0.056	0.002	"	"	"	KDK	"	"	
Toluene	0.068	0.002	"	"	"	KDK	"	"	
Ethylbenzene	0.011	0.002	"	"	"	KDK	"	"	
Xylenes, total	0.049	0.002	"	"	"	KDK	"	"	
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	121 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

SVE-05@22.5-25'
4/18/2019 4:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y904341-05 (Soil)

Diesel Range Organics (DRO/TEPH) by EPA 8015D

Diesel (C10-C28)	ND	50.0	mg/kg	1	B9D1902	JTD	04/19/2019	04/19/2019	U
Surrogate: o-Terphenyl	82.3 %	50-150			"	"	"	"	

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	0.430	0.200	mg/kg	1	B9D1901	KDK	"	04/19/2019	
Benzene	0.020	0.002	"	"	"	KDK	"	"	
Toluene	0.043	0.002	"	"	"	KDK	"	"	
Ethylbenzene	0.010	0.002	"	"	"	KDK	"	"	
Xylenes, total	0.043	0.002	"	"	"	KDK	"	"	
Naphthalene	ND	0.008	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	124 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1901 - EPA 5030 (soil)

Blank (B9D1901-BLK1)

Prepared: 04/19/2019 Analyzed: 04/19/2019

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125	119		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	96.4		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	101		70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1901 - EPA 5030 (soil)

LCS (B9D1901-BS1)

Prepared: 04/19/2019 Analyzed: 04/19/2019

Benzene	0.098	0.002	mg/kg	0.100		97.8	70-130			
Toluene	0.100	0.002	"	0.100		100	70-130			
Ethylbenzene	0.102	0.002	"	0.100		102	70-130			
m,p-Xylene	0.204	0.004	"	0.200		102	70-130			
o-Xylene	0.101	0.002	"	0.100		101	70-130			
Naphthalene	0.091	0.008	"	0.100		91.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		111	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1901 - EPA 5030 (soil)

Matrix Spike (B9D1901-MS1)	Source: Y904329-04			Prepared: 04/19/2019 Analyzed: 04/19/2019						
Benzene	0.088	0.002	mg/kg	0.100	ND	88.1	70-130			
Toluene	0.089	0.002	"	0.100	ND	89.3	70-130			
Ethylbenzene	0.092	0.002	"	0.100	ND	91.6	70-130			
m,p-Xylene	0.182	0.004	"	0.200	ND	91.2	70-130			
o-Xylene	0.090	0.002	"	0.100	ND	90.3	70-130			
Naphthalene	0.078	0.008	"	0.100	0.003	74.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		111	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1901 - EPA 5030 (soil)

Matrix Spike Dup (B9D1901-MSD1)	Source: Y904329-04			Prepared: 04/19/2019 Analyzed: 04/19/2019						
Benzene	0.095	0.002	mg/kg	0.100	ND	94.7	70-130	7.29	20	
Toluene	0.096	0.002	"	0.100	ND	96.2	70-130	7.48	20	
Ethylbenzene	0.097	0.002	"	0.100	ND	96.8	70-130	5.50	20	
m,p-Xylene	0.194	0.004	"	0.200	ND	97.0	70-130	6.19	20	
o-Xylene	0.097	0.002	"	0.100	ND	97.3	70-130	7.53	20	
Naphthalene	0.094	0.008	"	0.100	0.003	91.1	70-130	19.2	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		112	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9D1902 - EPA 3580										
Blank (B9D1902-BLK1)										
					Prepared: 04/19/2019 Analyzed: 04/19/2019					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Surrogate: o-Terphenyl	43		"	50.0		85.1	50-150			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1902 - EPA 3580

LCS (B9D1902-BS1)

Prepared: 04/19/2019 Analyzed: 04/19/2019

Diesel (C10-C28)	965	50.0	mg/kg	1000		96.5	70-130			
Surrogate: o-Terphenyl	49		"	50.0		97.7	50-150			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9D1902 - EPA 3580

Matrix Spike (B9D1902-MS1)	Source: Y904329-01			Prepared: 04/19/2019 Analyzed: 04/19/2019						
Diesel (C10-C28)	961	50.0	mg/kg	1000	112	84.9	70-130			
Surrogate: o-Terphenyl	48		"	50.0		96.9	50-150			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
 4101 Inca Street
 Denver CO 80211

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

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

Batch B9D1902 - EPA 3580

Matrix Spike Dup (B9D1902-MSD1)	Source: Y904329-01			Prepared: 04/19/2019 Analyzed: 04/19/2019						
Diesel (C10-C28)	991	50.0	mg/kg	1000	112	87.9	70-130	3.07	35	
Surrogate: o-Terphenyl	50		"	50.0		100	50-150			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Eagle Environmental Consulting, Inc.
4101 Inca Street
Denver CO 80211

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Jen Pellegrini For Noelle Doyle Mathis, President



July 17, 2019

Eagle Environmental Consulting, Inc.

Martin C Eckert III

8000 W 44th Ave

Wheat Ridge CO 80033

**Project Name - Noble - Wells Ranch AE32
Econode**

Project Number - [none]

Attached are your analytical results for Noble - Wells Ranch AE32 Econode received by Origins Laboratory, Inc. July 10, 2019. This project is associated with Origins project number Y907156-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Effluent-SVE-01	Y907156-01	Air	July 10, 2019 9:40	07/10/2019 16:40
Effluent-SVE-03	Y907156-02	Air	July 10, 2019 11:30	07/10/2019 16:40
Effluent-SVE-04	Y907156-03	Air	July 10, 2019 13:00	07/10/2019 16:40
Effluent-SVE-05	Y907156-04	Air	July 10, 2019 14:30	07/10/2019 16:40

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y907156

Client: Eagle

Client Project ID: Wells Ranch AE32

Checklist Completed by: JG

Shipped Via: HD

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 7/11/2019

Airbill #: N/A

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: Air

Cooler Number/Temperature: 1 / °C / °C / °C (Describe) °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		<u>Air</u>
Is there ice present (document if blue ice is used)		<input checked="" type="checkbox"/>		
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTS due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with Na ₂ CO ₃ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: JG (Project Manager)

Date/Time Reviewed: 7/12/19

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent-SVE-01

7/10/2019 9:40:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y907156-01 (Air)

GBTEX by TO-15M GC/MS

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
Gasoline Range Hydrocarbons	363000	7960	ug/m ³ Air	39.81	B9G1111	DPM	07/11/2019	07/11/2019	
Benzene	163	11.6	"	4.14	"	DPM	"	07/15/2019	
Toluene	108	20.7	"	"	"	DPM	"	"	
Ethylbenzene	ND	20.7	"	"	"	DPM	"	"	U
m,p-Xylene	ND	78.7	"	"	"	DPM	"	"	U
o-Xylene	ND	19.5	"	"	"	DPM	"	"	U
Surrogate: 1,2-Dichloroethane-d4	96.2 %	70-130			"	"		07/11/2019	
Surrogate: Toluene-d8	107 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	93.8 %	70-130			"	"		"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent-SVE-03

7/10/2019 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y907156-02 (Air)

GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	45600	1200	ug/m ³ Air	6.02	B9G1111	DPM	07/11/2019	07/15/2019	
Benzene	114	16.9	"	"	"	DPM	"	"	
Toluene	42.2	30.1	"	"	"	DPM	"	"	
Ethylbenzene	42.6	30.1	"	"	"	DPM	"	"	
m,p-Xylene	224	114	"	"	"	DPM	"	"	
o-Xylene	55.4	28.3	"	"	"	DPM	"	"	
Surrogate: 1,2-Dichloroethane-d4	97.5 %		70-130			"	"	"	
Surrogate: Toluene-d8	116 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent-SVE-04

7/10/2019 1:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y907156-03 (Air)

GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	1360000	79700	ug/m ³ Air	398.45	B9G1111	DPM	07/11/2019	07/15/2019	
Benzene	5610	1120	"	"	"	DPM	"	"	
Toluene	2160	192	"	38.46	"	DPM	"	07/11/2019	
Ethylbenzene	249	192	"	"	"	DPM	"	"	
m,p-Xylene	2160	731	"	"	"	DPM	"	"	
o-Xylene	424	181	"	"	"	DPM	"	"	
Surrogate: 1,2-Dichloroethane-d4	89.5 %	70-130			"	"		"	
Surrogate: Toluene-d8	102 %	70-130			"	"		07/15/2019	
Surrogate: 4-Bromofluorobenzene	95.6 %	70-130			"	"		07/11/2019	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Effluent-SVE-05

7/10/2019 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y907156-04 (Air)

GBTEX by TO-15M GC/MS

T

Gasoline Range Hydrocarbons	383000	7690	ug/m ³ Air	38.46	B9G1111	DPM	07/11/2019	07/11/2019	
Benzene	2040	108	"	"	"	DPM	"	"	
Toluene	120	20.0	"	4	"	DPM	"	07/16/2019	
Ethylbenzene	31.1	20.0	"	"	"	DPM	"	"	
m,p-Xylene	312	76.0	"	"	"	DPM	"	"	
o-Xylene	53.8	18.8	"	"	"	DPM	"	"	
Surrogate: 1,2-Dichloroethane-d4	93.4 %		70-130			"	"	07/11/2019	
Surrogate: Toluene-d8	112 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	94.0 %		70-130			"	"	"	

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9G1111 - Default Prep - Air										
Blank (B9G1111-BLK1)										
					Prepared: 07/11/2019 Analyzed: 07/11/2019					T
Gasoline Range Hydrocarbons	ND	200	ug/m ³ Air							U
Benzene	ND	2.80	"							U
Toluene	ND	5.00	"							U
Ethylbenzene	ND	5.00	"							U
m,p-Xylene	ND	19.0	"							U
o-Xylene	ND	4.70	"							U
Surrogate: 1,2-Dichloroethane-d4	10.3		ppbv	10.0		103	70-130			
Surrogate: Toluene-d8	8.94		"	10.0		89.4	70-130			
Surrogate: 4-Bromofluorobenzene	9.55		"	10.0		95.5	70-130			
LCS (B9G1111-BS1)										
					Prepared: 07/11/2019 Analyzed: 07/11/2019					T
Benzene	35.5	2.80	ug/m ³ Air	31.9		111	70-130			
Toluene	46.4	5.00	"	37.7		123	70-130			
Ethylbenzene	50.0	5.00	"	43.4		115	70-130			
m,p-Xylene	199	19.0	"	174		114	70-130			
o-Xylene	48.7	4.70	"	43.4		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	9.39		ppbv	10.0		93.9	70-130			
Surrogate: Toluene-d8	9.92		"	10.0		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	9.78		"	10.0		97.8	70-130			
LCS Dup (B9G1111-BSD1)										
					Prepared: 07/11/2019 Analyzed: 07/11/2019					T
Benzene	36.0	2.80	ug/m ³ Air	31.9		113	70-130	1.52	25	
Toluene	47.6	5.00	"	37.7		126	70-130	2.65	25	
Ethylbenzene	49.6	5.00	"	43.4		114	70-130	0.784	25	
m,p-Xylene	188	19.0	"	174		108	70-130	5.53	25	
o-Xylene	46.6	4.70	"	43.4		107	70-130	4.28	25	
Surrogate: 1,2-Dichloroethane-d4	9.20		ppbv	10.0		92.0	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
 8000 W 44th Ave
 Wheat Ridge CO 80033

Martin C Eckert III
 Project Number: [none]
 Project: Noble - Wells Ranch AE32 Econode

Volatile Organic Compounds by TO-15 in Air - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B9G1111 - Default Prep - Air

LCS Dup (B9G1111-BSD1)

Prepared: 07/11/2019 Analyzed: 07/11/2019

T

Surrogate: Toluene-d8	9.96		ppbv	10.0		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	9.83		"	10.0		98.3	70-130			

Origins Laboratory, Inc.



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Eagle Environmental Consulting, Inc.
8000 W 44th Ave
Wheat Ridge CO 80033

Martin C Eckert III
Project Number: [none]
Project: Noble - Wells Ranch AE32 Econode

Notes and Definitions

U Sample is Non-Detect.

T The TO-15 analysis is not part of the NELAC accreditation

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President



ATTACHMENT C

Soil Vapor Extraction Pilot Test Data Summary

**SOIL VAPOR EXTRACTION PILOT TEST DATA
WELLS RANCH AE 32 ECONODE
40.443511 / -104.355116
WELLS RANCH, COLORADO**

DATE PILOT TEST PERFORMED:		TEST WELLS: SVE-01, SVE-03 through SVE-05								
Time	SVE-01		SVE-02		SVE-03		SVE-04		SVE-05	
	VOC (ppm-v)	VOC (ppm-v)	VOC (ppm-v)	VOC (ppm-v)	VOC (ppm-v)	VOC (ppm-v)	VOC (ppm-v)	VOC (ppm-v)	VOC (ppm-v)	
Initial	800	0.0	DES	DES	58.6	58.6	36.2	36.2	391.5	391.5
Final	1455	32.8	DES	DES	66.8	66.8	48.1	48.1	212.0	212.0

SVE ONLY

Started: 815

Initial PID at stack:

- 1=0
- 3=0
- 4=0.9
- 5=4.3

Initial PID at manifold:

- 1=0
- 3=0
- 4=0
- 5=0

Time	Test Well Vacuum Applied (" H ₂ O)	Effluent Stack Velocity (ft/min)	Effluent Stack Flow (scfm)	Effluent Stack Temp (°F)	Effluent 4" VOC (ppm-v)	Well Head VOC (ppm-v)
815	20	NA	NA	91.3	0.8	17.9
830	40	NA	NA	108.2	21.1	152.9
845	40	NA	NA	111.7	21.7	139.2
900	60	NA	NA	112.9	20.3	NA
915	60	NA	497	129.7	22.8	NA
930	60	NA	488	134.6	20.6	NA
940	60	NA	500	144.3	21.4	NA
1000	20	NA	NA	99.6	1.7	51.6
1015	40	NA	NA	108.9	3.4	91.3
1030	40	NA	NA	125.7	7.1	154
1045	60	NA	439	127.9	5.4	114
1100	60	NA	NA	131.2	3.9	117
1115	60	NA	NA	131.8	4.7	112
1130	60	5813	506	134.9	4.5	77.0
1145	20	NA	502	98.3	40.9	461
1200	30	NA	NA	112.6	56.4	457.1
1215	40	5700	504	119.2	61.1	431.8
1230	50	5600	502	121.9	73.3	407.7
1245	60	5860	512	124.3	85.1	396
1300	60	NA	512	125.9	82.3	345
1315	20	NA	NA	87.1	7.8	145
1330	40	NA	NA	94.7	11.2	197
1345	40	NA	NA	118.8	14.9	241
1400	60	NA	NA	118.7	19.2	229
1415	60	5600	486	119.2	21.6	237
1430	60	5713	512	120.2	28.8	241

Well ID	SVE-01		SVE-03		SVE-04		SVE-05		
	Time	Vacuum ("H ₂ O)	VOC (ppm-v)						
815				0.0	57.2	0.0	40.3	0.0	401.7
830				0.0	57.8	0.0	52.8	0.0	389.2
845				0.0	60.3	0.0	38.9	0.0	397.7
900				0.0	59.1	0.0	43.3	0.0	411
915				0.0	57.7	0.0	49.7	0.0	403
930				0.0	58.8	0.0	54.1	0.0	482
940				0.0	51.8	0.0	48.8	0.0	477
1000	0.0	52.7			0.02	56.4	0.0	465	
1015	0.0	46.1			0.02	56.4	0.0	457	
1030	0.0	34.5			0.03	76.9	0.0	102	
1045	0.0	48.8			0.05	71.1	0.0	94.5	
1100	0.0	49.7			0.03	88.7	0.0	104	
1115	0.0	51.1			0.03	91.2	0.0	1003	
1130	0.0	52.3			0.03	105.7	0.0	97.9	
1145	0.0	47.5	0.01	28.1			0.08	72.4	
1200	0.0	25.6	0.01	24.1			0.08	23.8	
1215	0.0	24.9	0.01	29.2			0.1	29.7	
1230	0.0	26.1	0.02	37.7			0.1	31.1	
1245	0.0	38.8	0.02	54.7			0.1	16.6	
1300	0.0	26.3	0.02	45.6			0.1	14.2	
1315	0.0	19.2	0.01	52.3	0.06	7.8			
1330	0.0	27.9	0.01	50.3	0.06	29.2			
1345	0.0	36.5	0.01	53.1	0.08	38.7			
1400	0.0	37.7	0.01	68.2	0.08	33.7			
1415	0.0	39.8	0.01	71.4	0.08	29.3			
1430	0.0	38.4	0.01	81.1	0.08	28.3			

PID = Photoionization detector

VOC = Volatile Organic Compound

SVE = soil vapor extraction

> = greater than

°F = degrees fahrenheit

NA = Not available

" H₂O = inches of water

ft/min = feet per minute

scfm = standard cubic feet per minute

ppm-v = parts per million by volume

' = feet

" = inches

* = Unable to obtain PID reading due to increased flow rate at the well-head manifold

Note: Soil vapor extraction well SVE-02 was observed destroyed. The surrounding area appears regraded and resurfaced

Pilot Test Equipment:
SVE Blower: Tuthill 15 HP Positive Displacement Blower