

State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax 894-2109



FOR OGCC USE ONLY

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

OGCC Employee:

Spill Complaint Inspection NOAV

Tracking No:

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe):

GENERAL INFORMATION

OGCC Operator Number: 24320 Name of Operator: Diamond Operating Inc. Address: 6666 Gunpark Drive, Suite 200 City: Boulder State: CO Zip: 80301 Contact Name and Telephone Name: David Peterson No: (303) 494-4420 Fax: API/Facility No: 117631, 109575 County: Washington Facility Name: Decker Skim/1 and Decker 22-18 2 Facility Number: 117631 and 109575 Well Name: Decker Lease Wells #1, #2 Well Number: Decker Lease Wells #1, #2 Location (QtrQtr, Sec, Twp, Rng, Meridian): SWNE S18 T4S R53W Latitude: 39.706645 Longitude: -103.357073

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Produced Water Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation. ** Please see 'Potential Receptors' section below. Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Rangeland Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Norka-Colby loams, 3 to 5 percent slopes Potential receptors (water wells within 1/4 mi, surface waters, etc.): There is a domestic water well located approximately 115 ' to the Southeast (DWR #89412) Depth to shallow groundwater is estimated at approximately 35 feet bgs. Description of Impact (if previously provided, refer to that form or document): Impacted Media (check): Soils X Vegetation Groundwater Surface water Extent of Impact: Refer to the attached Figures and Table 1 How Determined: Excavation and soil sampling

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document): On February 19, 2016 as part of characterization and closure activities, six tests pits were excavated and soil samples were collected at varying depths to determine the vertical and lateral extent of hydrocarbon impacts that exceed COGCC Table 910-1 standards (Table 910) for each pit. Describe how source is to be removed: Please see attached Enhanced Bioremediation Workplan. Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.: Please see attached Enhanced Bioremediation Workplan.



Tracking Number: _____ Name of Operator: Diamond Operating Inc. OGCC Operator No: 24320 Received Date: _____ Well Name & No: Decker Skim/1 & Decker 22-18 2 Facility Name & No.: 117631, 109575

REMEDIATION WORKPLAN (CONT.)

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.): Groundwater was not encountered during characterization activities. Please see attached Enhanced Bioremediation Workplan.

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required. Please see attached Enhanced Bioremediation Workplan.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing. Is further site investigation required? [X] Y [] N If yes, describe: Sidewall and base confirmation sampling will be performed. Please see attached Enhanced Bioremediation Workplan and Exhibit A for analytical results to date.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.): No offsite disposal is planned for this project.

IMPLEMENTATION SCHEDULE

Table with 4 columns: Date Site Investigation Began (2/19/2016), Date Site Investigation Completed (2/19/2016), Remediation Plan Submitted (6/20/2016), Remediation Start Date (7/20/2016), Anticipated Completion Date (7/20/2019), Actual Completion Date (TBD)

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: David Peterson

Signed: [Signature] Title: Pres. Dept Date: 6/21/2016

OGCC Approved: _____ Title: _____ Date: _____



**Enhanced Bioremediation Work Plan
Decker Lease - Skim Pits 1, and 22-18 2
Diamond Operating Inc.**

Introduction

Tasman Geosciences, Inc. (Tasman), on behalf of Diamond Operating Inc. (Diamond), has prepared this Enhanced Bioremediation Work Plan as an addendum to the attached Form 27 submittal to the Colorado Oil and Gas Conservation Commission (COGCC) in relation to the Enhanced Bioremediation Land Treatment of impacted pit soils. The impacted soils to be treated are being removed from the Decker Lease Skim Pit 1, and 22-18 2 located at the Decker Lease (Site). The Decker Lease Skim Pit 1, and 22-18 request for closure will be submitted separately under the existing Form 27 (Document #2142361) and the existing Remediation Project #8697 (REM#8697). The closure request will be submitted once Phase One of this Enhanced Bioremediation Work Plan is complete. The Site is situated approximately 1/2 mile east of the intersection of Washington County Roads U and 10 within Washington County, Colorado, as shown in Figure 1. The Site is surrounded by rangeland, and the Site legal description is the SW ¼ of the NE ¼ of Section 18, Township 4S, and Range 53W.

Diamond has selected to remediate the soils associated with the Decker Lease Skim Pit 1 (Pit 1), and 22-18 2 (Pit 2) using a three phased Enhanced Bioremediation approach outlined below.

Characterization Activities (Complete)

On February 19, 2016 as part of characterization and closure activities, six test pits were excavated and soil samples were collected at varying depths to determine the vertical and lateral extent of hydrocarbon impacts that exceed COGCC Table 910-1 standards (Table 910) for each pit. Six soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), and total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) by USEPA Method 8260B, and TPH - diesel range organics (DRO) by USEPA Method 8015. The Pit 1 base test pit was advanced to a depth of 27 feet bgs. Hydrocarbon impacts above Table 910 standards were identified as deep as 18 feet bgs. Soil sample P1W@27, collected from 27 feet bgs exhibited concentrations below laboratory detection limits as well as Table 910 standards. Test pits to the south and west of Skim Pit 1 were advanced to a depth of 20 feet bgs and no petroleum hydrocarbon impacts were identified. The Pit 2 base test pit was advanced to a depth of 27 feet bgs. Hydrocarbon impacts above Table 910 standards were identified as deep as 16 feet bgs. Soil sample P2E@24 collected 24 feet bgs exhibited concentrations below laboratory detection limits as well as Table 910 standards. Test pits to the north and east of Pit 2 were advanced to a depth of 20 feet bgs and no petroleum hydrocarbon impacts were identified. As a result of characterization activities it is estimated that 2,300 Cubic Yards (cy) of soils exhibiting concentrations above Table 910 standards are within the Pit 1 and Pit 2 footprint. Sample depths, locations, and results are illustrated within the attached Figures 2, 3, and 4. Soil analytical data is summarized in Table 1



and the analytical reports are included as Exhibit A. Groundwater was not encountered during characterization activities and no impacted soil was removed from location.

Phase One Field Activities

Soils exhibiting impacts above Table 910 standards will be excavated and sidewall confirmation samples illustrated within Figure 2 will be collected to ensure no soils exhibiting impacts above Table 910 standards remain. The excavation sidewalls will be sloped and a ramp access will be added to allow an escape pathway for wildlife. The excavation will be surrounded by fencing until backfill is completed. With COGCC approval impacted soils will be placed in the designated treatment area illustrated within the Decker Bioremediation Area Map – Figure 5 and graded to a maximum 1 foot thickness. The treatment area will be gridded into 23 distinct 100 cy monitoring units based on the one foot depth of the impacted soil lift (Figure 5). Each monitoring unit will be surveyed to record the location and unit extents for monitoring purposes. Written surface owner approval documents for the land treatment of impacted soils at the location within the proposed bioremediation area identified on figure 5 are included as Exhibit B.

Phase Two Field Activities

Phase Two Enhanced Bioremediation activities will include the annual application of a bioenhancement agent (*Micro-Blaze® Emergency Liquid Spill Control*), watering events depending on soil moisture content, and the repeated tilling of the soils. Tilling events will consist of heavy agricultural equipment using a three bottom plow to turn over soils to increase exposure to sun, air flow, wind, and precipitation events. Discing will be performed to break up any soil clods and a blade will be used to level the surface. During the three summer months tilling events will be performed bi-monthly, monthly tilling events will be performed the other nine months. Bi-annually a 4-point composite confirmation soil sample will be collected from each 100 cy monitoring unit to assess post-treatment hydrocarbon concentrations following six months of Enhanced Bioremediation Treatment. A Phase Two Progress Report including a project update and description, sample results as compared to Table 910, applicable figures, and laboratory analytical reports will be submitted on a bi-annual basis following sampling events. A proposed remediation activities schedule is included below.

Confirmation composite samples will be submitted to Summit Scientific Laboratory in Golden, Colorado for laboratory analyses of TPH-DRO and TPH-GRO which were identified as the main constituents of concern during characterization activities. BTEX, Sodium Adsorption Ratio (SAR), Electrical Conductivity (EC), and pH were not identified above Table 910 standards during characterization activities and as such would not be included in the analytical suite with COGCC approval (Table 1).

Phase Three Field Activities

Phase Three Enhanced Bioremediation activities will include the backfill and compaction of successfully treated soils which exhibit concentrations below Table 910 standards. Subsequent to



completion of remediation activities, the excavation and bioremediation treatment area will be re-contoured to match pre-existing conditions, disced to break up any soil clods, drill seeded, and straw crimped in order to be reclaimed in accordance with COGGC standards.

Diamond is proposing a Phase Two completion date of July 20, 2019, with backfill and final reclamation to occur within September 2019. Please see attached Proposed Remediation Schedule.

Conclusions

In order to close Decker Pit 1 and Decker Pit 2, impacted soils will be removed, sidewall and base confirmation samples will be collected and a closure request including sample results will be submitted under Remediation Project #8697. In order to address the impacted soils Diamond has selected Enhanced Bioremediation described herein as the remediation approach. Soils that exhibit concentrations above Table 910 standards will be removed and placed in the designated treatment area illustrated within the Decker Bioremediation Area Map – Figure 5 and graded to a maximum 1 foot thickness with COGCC approval. Enhanced Bioremediation Land Treatment, confirmation sampling, and progress reporting will be performed based on the schedule below. Soils which exhibit concentrations below Table 910 standards will be returned to the excavation as backfill.

Please contact me at 303-854-7337 if you require additional information.

Sincerely,
Tasman Geosciences, Inc.

A handwritten signature in blue ink, appearing to read "Carter Peace", is written over a light blue horizontal line.

Carter Peace
Environmental Scientist

Attached:

Proposed Remediation Schedule

Figure 1 – Site Location Map

Figure 2 – Cross Section and Sample Location Map

Figure 3 – Decker Pits Cross Section 1 (Test pits 5, 1, 2, and 4)

Figure 4 – Decker Pits Cross Section 2 (Test pits 3, 2, and 6)

Figure 5 – Decker Bioremediation Area Map

Table 1 – Decker Skim Pits Soil Analytical Data Summary Table

Exhibit A– Laboratory Analytical Report

Exhibit B– Signed Landowner Agreements



Proposed Remediation Activities Schedule:

Task	Start Date	End Date	Notes
Phase One Excavate and Grade	7/15/2016	7/20/2016	
Phase Two Enhanced Bioremediation	7/20/2016	7/20/2019	Three year period
Tilling Event	7/21/2016	7/21/2016	
Microblaze Event	7/22/2016	7/22/2016	Weather dependent
Tilling Event	7/29/2016	7/29/2016	
Tilling Event	8/15/2016	8/15/2016	
Tilling Event	8/30/2016	8/30/2016	
Tilling Event	9/15/2016	9/15/2016	
Tilling Event	9/30/2016	9/30/2016	
Tilling Event	10/15/2016	10/15/2016	
Tilling Event	11/15/2016	11/15/2016	
Tilling Event	12/15/2016	12/15/2016	
Tilling Event	1/15/2017	12/15/2017	
Confirmation Sampling	1/20/2017	1/20/2017	
Phase Two Progress Report 1	1/31/2017	1/31/2017	
Tilling Event	2/15/2017	2/15/2017	
Tilling Event	3/15/2017	3/15/2017	
Tilling Event	4/15/2017	4/15/2017	
Tilling Event	5/15/2017	5/15/2017	
Tilling Event	6/15/2017	6/15/2017	
Tilling Event	6/30/2017	6/30/2017	
Microblaze Event	7/1/2017	7/1/2017	Weather dependent
Tilling Event	7/15/2017	7/15/2017	
Confirmation Sampling	7/20/2017	7/20/2017	
Phase Two Progress Report 2	7/30/2017	7/30/2017	
Tilling Event	7/30/2017	7/30/2017	If Necessary
Tilling Event	8/15/2017	8/15/2017	If Necessary
Tilling Event	8/30/2017	8/30/2017	If Necessary
Tilling Event	9/15/2017	9/15/2017	If Necessary
Tilling Event	10/15/2017	10/15/2017	If Necessary
Tilling Event	11/15/2017	11/15/2017	If Necessary
Tilling Event	12/15/2017	12/15/2017	If Necessary



Tilling Event	1/15/2018	1/15/2018	If Necessary
Confirmation Sampling	1/20/2018	1/20/2018	If Necessary
Phase Two Progress Report 3	1/30/2018	1/30/2018	If Necessary
Tilling Event	2/15/2018	2/15/2018	If Necessary
Tilling Event	3/15/2018	3/15/2018	If Necessary
Tilling Event	4/15/2018	4/15/2018	If Necessary
Tilling Event	5/15/2018	5/15/2018	If Necessary
Tilling Event	6/15/2018	6/15/2018	If Necessary
Tilling Event	6/30/2018	6/30/2018	If Necessary
Microblaze Event	7/20/2018	7/20/2018	If Necessary
Confirmation Sampling	7/20/2018	7/20/2018	If Necessary
Phase Two Progress Report 4	7/30/2018	7/30/2018	If Necessary
Tilling Event	7/30/2018	7/30/2018	If Necessary
Tilling Event	8/15/2018	8/15/2018	If Necessary
Tilling Event	8/30/2018	8/30/2018	If Necessary
Tilling Event	9/15/2018	9/15/2018	If Necessary
Tilling Event	10/15/2018	10/15/2018	If Necessary
Tilling Event	11/15/2018	11/15/2018	If Necessary
Tilling Event	12/15/2018	12/15/2018	If Necessary
Tilling Event	1/15/2019	1/15/2019	If Necessary
Confirmation Sampling	1/20/2019	1/20/2019	If Necessary
Phase Two Progress Report 5	1/30/2019	1/30/2019	If Necessary
Tilling Event	2/15/2019	2/15/2019	If Necessary
Tilling Event	3/15/2019	3/15/2019	If Necessary
Tilling Event	4/15/2019	4/15/2019	If Necessary
Tilling Event	5/15/2019	5/15/2019	If Necessary
Tilling Event	6/15/2019	6/15/2019	If Necessary
Tilling Event	6/30/2019	6/30/2019	If Necessary
Confirmation Sampling	7/1/2019	7/1/2019	If Necessary
Phase Two Final Report	7/20/2019	7/20/2019	
Phase Three Backfill	8/1/2019	8/10/2019	With COGCC Approval
Final Reclamation	9/1/2019	9/30/2019	

Figures

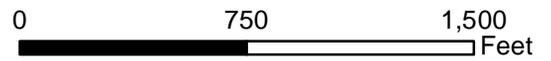
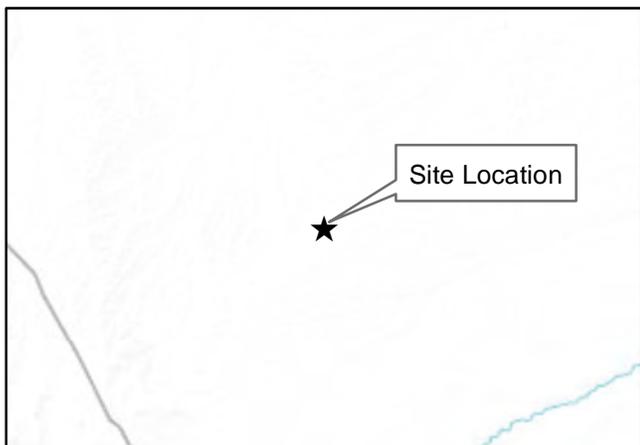
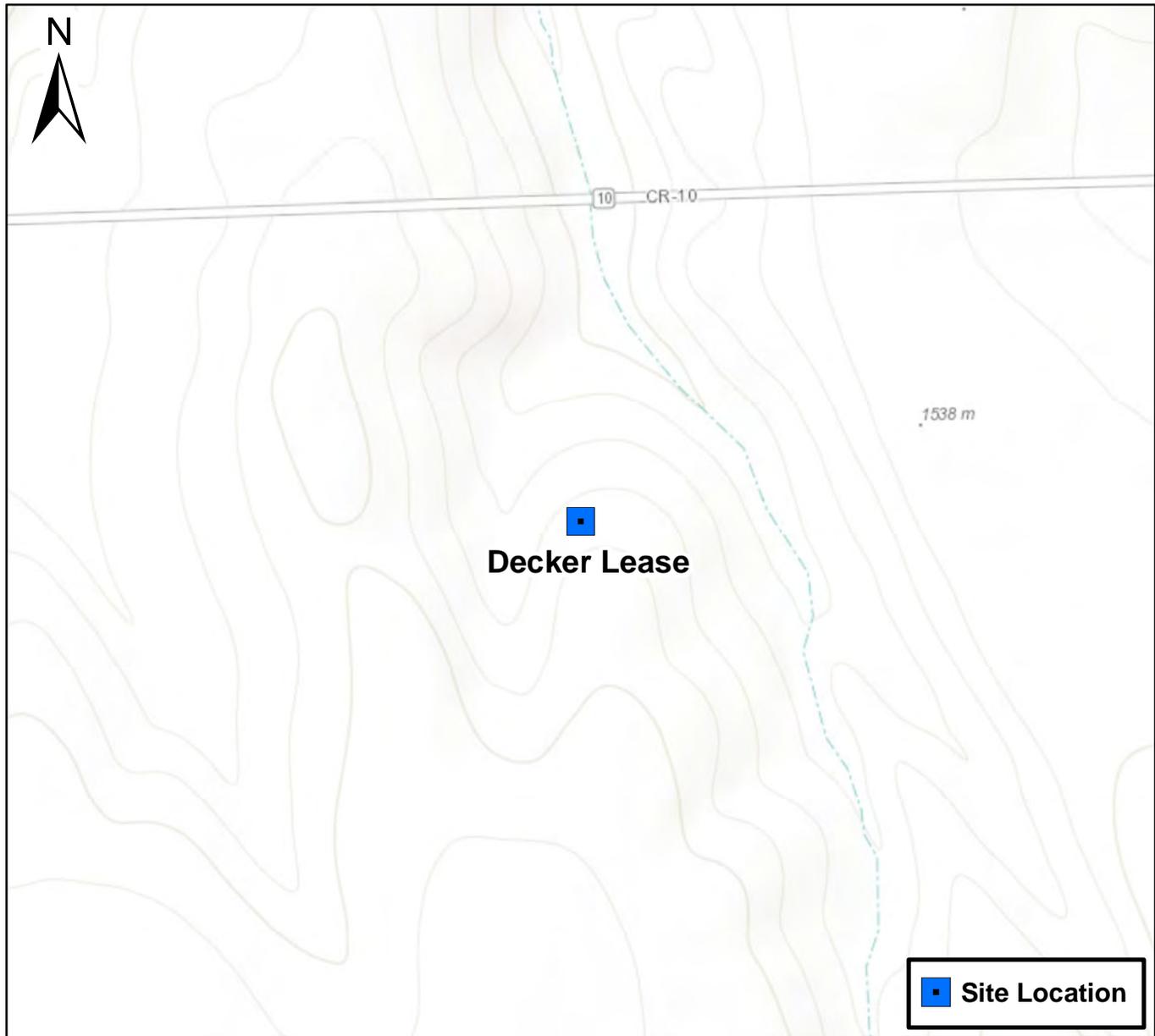
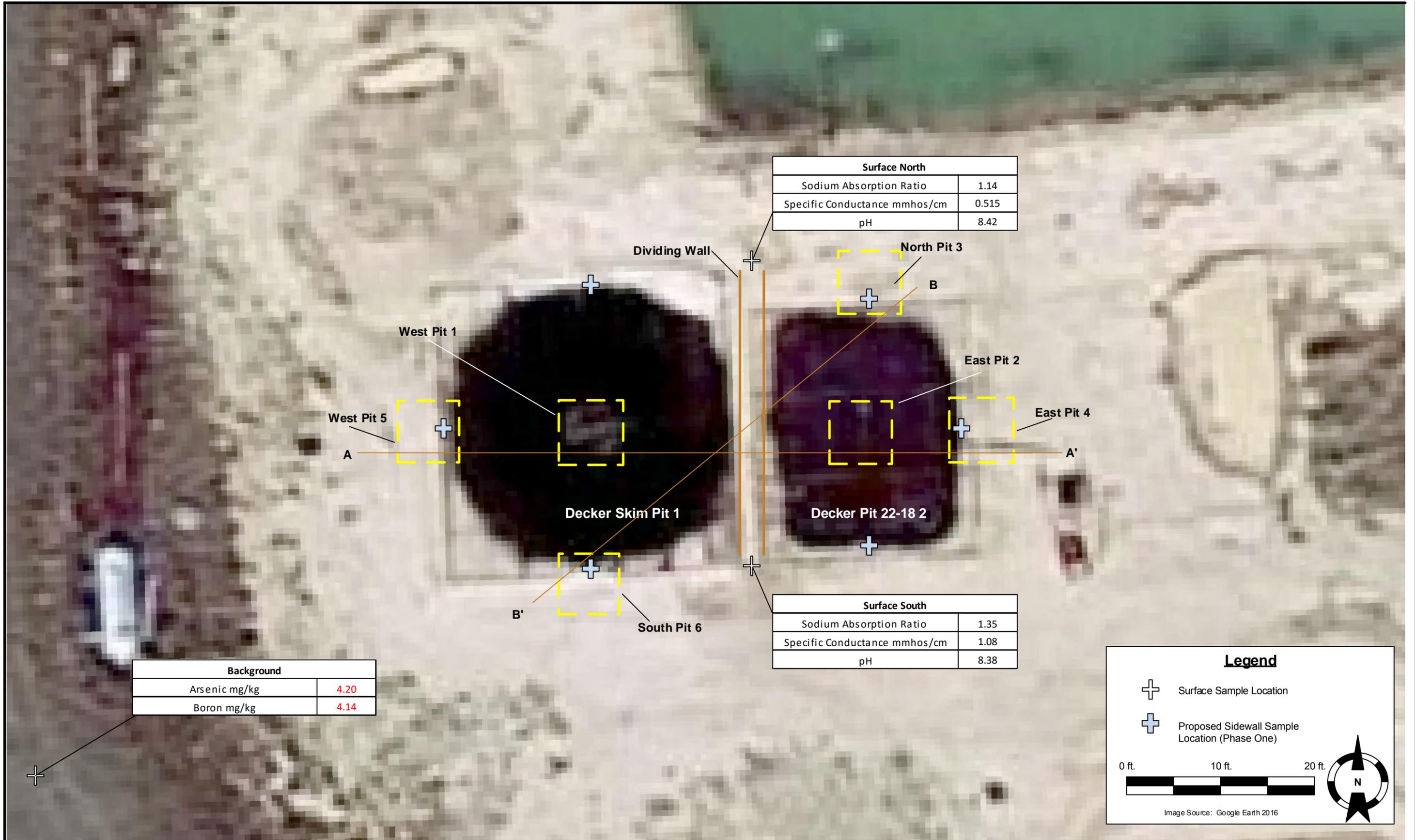


Figure 1
 Site Location Map
 Decker Lease
 SWNE S18 T4S R53W
 Washington County, Colorado





DATE: March 15, 2016

DESIGNED BY: C. Peace

DRAWN BY: K. Forsmark



Diamond Operating Decker Lease
 SWNE, Section 18, Township 4 South, Range 53 West
 Washington County, Colorado

Cross-Section Index and Sample Location Map

FIGURE 2

West Pit 5

West Pit 1

East Pit 2

East Pit 4

60 Ft.

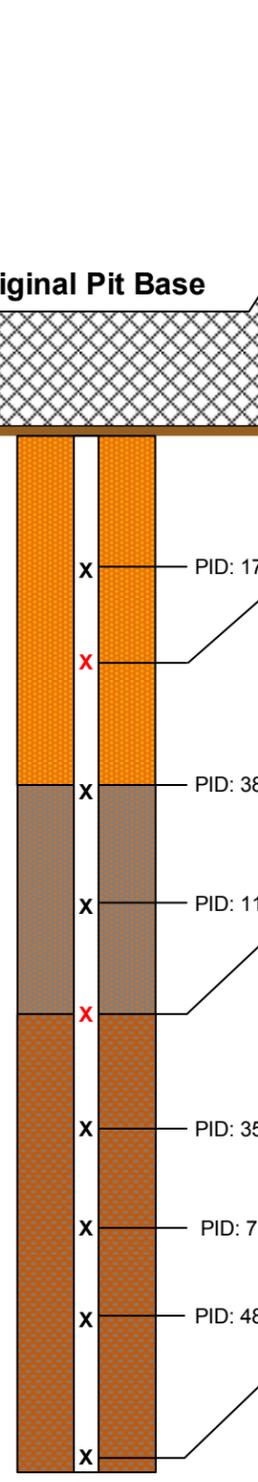
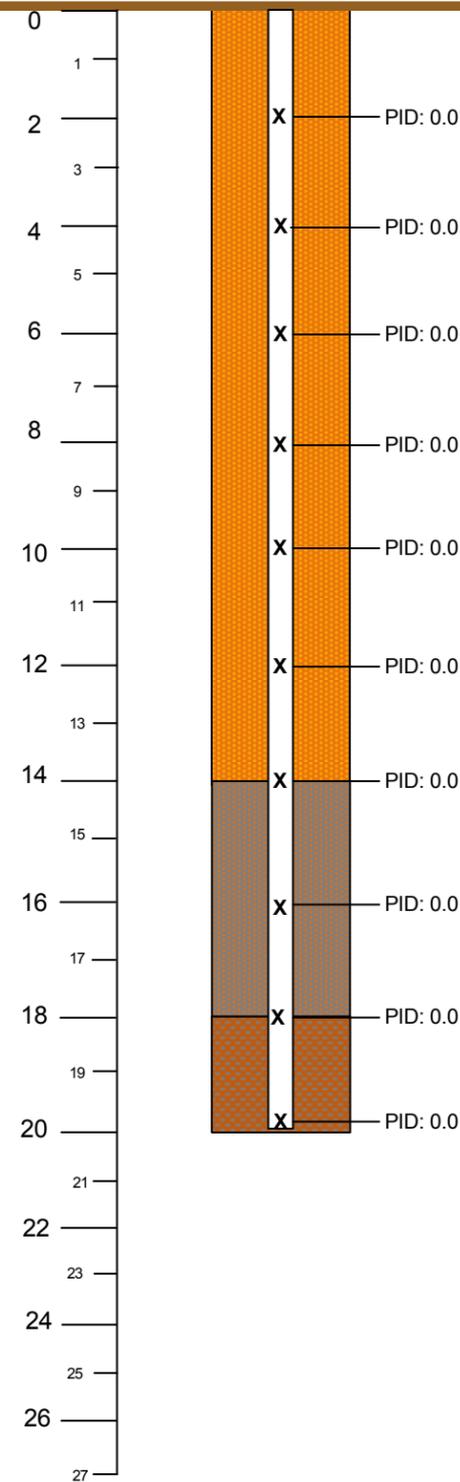
Dividing Wall

Original Pit Base

Original Pit Base

A

A'



P1W @ 12'	
Benzene mg/kg	<0.0020
Toluene mg/kg	<0.0050
Ethylbenzene mg/kg	<0.0050
Total Xylenes mg/kg	<0.0050
PID (ppm)	209
DRO (mg/kg)	540
GRO (mg/kg)	23
TPH (mg/kg)	563

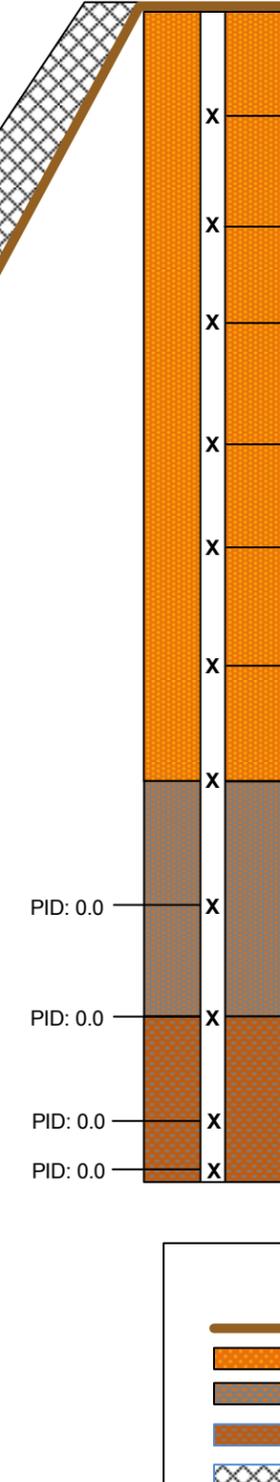
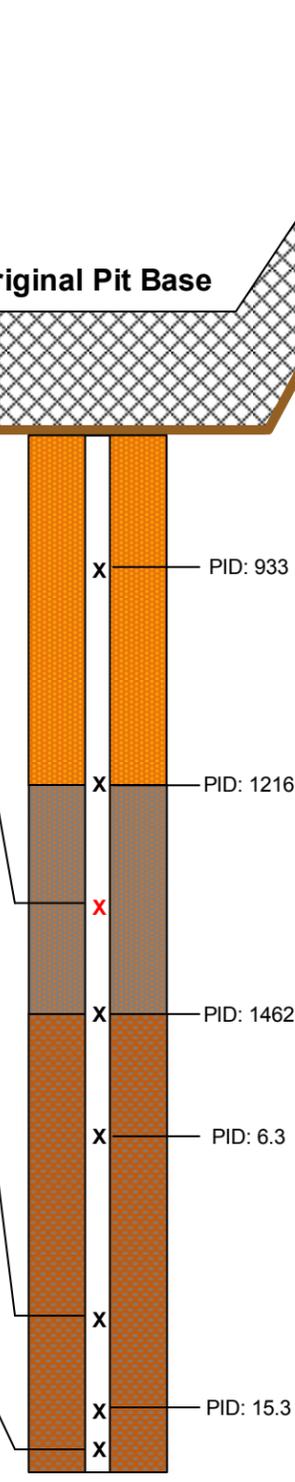
P1W @ 18'	
Benzene mg/kg	<0.0020
Toluene mg/kg	<0.0050
Ethylbenzene mg/kg	<0.0050
Total Xylenes mg/kg	<0.0050
PID (ppm)	624
DRO (mg/kg)	630
GRO (mg/kg)	78
TPH (mg/kg)	708

P1W @ 27'	
Benzene mg/kg	<0.0020
Toluene mg/kg	<0.0050
Ethylbenzene mg/kg	<0.0050
Total Xylenes mg/kg	<0.0050
PID (ppm)	7.1
DRO (mg/kg)	<50
GRO (mg/kg)	<50
TPH (mg/kg)	<50

P2E @ 16'	
Benzene mg/kg	<0.0020
Toluene mg/kg	<0.0050
Ethylbenzene mg/kg	<0.0050
Total Xylenes mg/kg	<0.0050
PID (ppm)	1649
DRO mg/kg	860
GRO mg/kg	2000
TPH mg/kg	2860
Benzo (a) pyrene mg/kg	0.0565
Arsenic mg/kg	4.53
Boron mg/kg	4.07

P2E @ 24'	
Benzene mg/kg	<0.0020
Toluene mg/kg	<0.0050
Ethylbenzene mg/kg	<0.0050
Total Xylenes mg/kg	<0.0050
PID (ppm)	62.7
DRO (mg/kg)	<50
GRO (mg/kg)	<50
TPH (mg/kg)	<50

P2E @ 27'	
Benzene mg/kg	<0.0020
Toluene mg/kg	<0.0050
Ethylbenzene mg/kg	<0.0050
Total Xylenes mg/kg	<0.0050
PID (ppm)	3.6
DRO (mg/kg)	<50
GRO (mg/kg)	<50
TPH (mg/kg)	<50



Notes

- 1) COGCC Table 910-1 Standard:
Arsenic 0.39 mg/kg
Boron 2.00 mg/l
- 2) Decker Site background levels:
Arsenic **4.20** mg/kg
Boron **4.14** mg/kg
- 3) PID (Photoionization Detector) readings are measured in parts per million (ppm)

*Not drawn to scale

LEGEND

- Ground Surface
- Sand
- Gray Sand
- Sandy Clay
- Oil Impacted Material (excavated and staged)

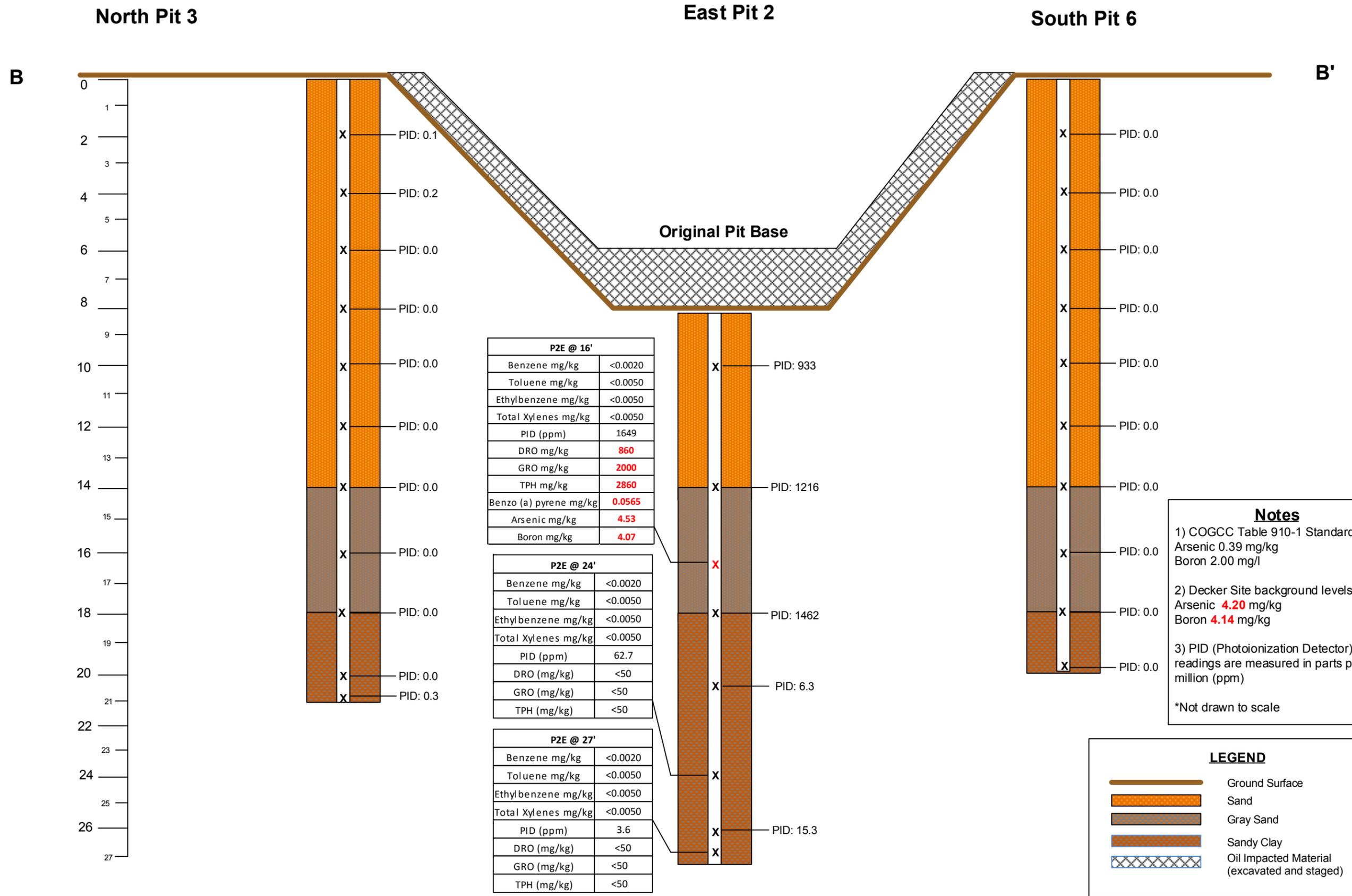
DRAWN BY: KF
DATE: 03/14/2016

Diamond Operating Decker Lease
SWNE Section 18, Township 4 South, Range 53 West
Washington County, Colorado

TASMAN GEOSCIENCES
Tasman Geosciences, LLC
6899 Pecos Street - Unit C
Denver, CO 80221

Decker Test Pits
Cross-Section A-A

Figure 3



DRAWN BY: KF

DATE: 03/15/2016

**Diamond Operating
Decker Lease**

SWNE Section 18, Township 4 South, Range 53 West
Washington County, Colorado



Tasman Geosciences, LLC
6899 Pecos Street - Unit C
Denver, CO 80221

Decker Test Pits
Cross-Section B-B

Figure 4



Decker Skim Pit 1

Decker Pit 22-18 2

- MU01
- MU02
- MU03
- MU04
- MU05
- MU06
- MU07
- MU08
- MU09
- MU10
- MU11
- MU12
- MU13
- MU14
- MU15
- MU16
- MU17
- MU18
- MU19
- MU20
- MU21
- MU22
- MU23

Legend

-  Monitoring Unit Grid
-  Bioremediation Area

Notes:
 MU01 - 100 Cubic Yard Monitoring Unit 01
 All locations are approximate unless otherwise stated.

0 50 100 Feet 

Coordinate System: WGS 1984 UTM Zone 13N

DATE: June 6, 2016

DESIGNED BY: C. Peace

DRAWN BY: Z. Mahaffey



Diamond Operating Decker Pits
 SWNE, Section 18, Township 4 South, Range 53 West
 Washington County, Colorado

Bioremediation Area Map

Figure 5

Table 1

**DIAMOND OPERATING
DECKER PITS CHARACTERIZATION
SOIL ANALYTICAL DATA SUMMARY
TABLE 1**

			DECKER PIT 1 - WEST PIT 1			DECKER PIT 22-18 2 - EAST PIT 2			SURFACE		BACKGROUND
Sample Name	Units	COGCC 910-1 Soil Sample Standards	P1W @ 12 PID:209	P1W @ 18 PID:624	P1W @ 27 PID:7.1	P2E @ 16 PID:1649	P2E @ 24 PID:62.7	P2E @ 27 PID:3.6	SURFACE NORTH	SURFACE SOUTH	Background
Benzene	mg/kg	0.17	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NA	NA	NA
Toluene	mg/kg	85	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA
Ethylbenzene	mg/kg	100	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA
Total Xylenes	mg/kg	175	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NA	NA	NA
DRO	mg/kg	500	540	630	<50	860	<50	<50	NA	NA	NA
GRO	mg/kg	500	23	78	<0.50	2000	<0.50	<0.50	NA	NA	NA
TPH	mg/kg	500	563	708	<0.50	2860	<0.50	<0.50	NA	NA	NA
Sodium Adsorption Ratio	units	<12				2.13			1.14	1.35	NA
Specific Conductance (EC)	mmhos /cm	<4				0.814			0.515	1.08	NA
pH	pH units	6-9				7.5			8.42	8.38	NA
Acenaphthene	mg/kg	1,000				<0.0500					NA
Anthracene	mg/kg	1,000				<0.0500					NA
Benzo (a) anthracene	mg/kg	0.22				0.108					NA
Benzo (b) fluoranthene	mg/kg	0.22				0.109					NA
Benzo (k) fluoranthene	mg/kg	2.2				0.0183					NA
Benzo (a) pyrene	mg/kg	0.022				0.0565					NA
Chrysene	mg/kg	22				<0.0500					NA
Dibenz (a,h) anthracene	mg/kg	0.022				<0.0500					NA
Fluoranthene	mg/kg	1,000				0.0476					NA
Fluorene	mg/kg	1,000				0.347					NA
Indeno (1,2,3-cd) pyrene	mg/kg	0.22				<0.0500					NA

**DIAMOND OPERATING
DECKER PITS CHARACTERIZATION
SOIL ANALYTICAL DATA SUMMARY
TABLE 1**

			DECKER PIT 1 - WEST PIT 1			DECKER PIT 22-18 2 - EAST PIT 2			SURFACE		BACKGROUND
Sample Name	Units	COGCC 910-1 Soil Sample Standards	P1W @ 12 PID:209	P1W @ 18 PID:624	P1W @ 27 PID:7.1	P2E @ 16 PID:1649	P2E @ 24 PID:62.7	P2E @ 27 PID:3.6	SURFACE NORTH	SURFACE SOUTH	Background
Naphthalene	mg/kg	23				<0.0500					NA
Pyrene	mg/kg	1,000				<0.0500					NA
Arsenic	mg/kg	0.39				4.53					4.20
Barium	mg/kg	15,000				346					NA
Boron	mg/l	2				4.07					4.14
Cadmium	mg/kg	70				0.224					NA
Chromium	mg/kg	120,000				11.7					NA
Copper	mg/kg	3,100				11.9					NA
Lead	mg/kg	400				10.3					NA
Nickel	mg/kg	1,600				12.1					NA
Selenium	mg/kg	390				1.4					NA
Silver	mg/kg	390				<0.124					NA
Zinc	mg/kg	23,000				57.2					NA
Mercury	mg/kg	23				<0.554					NA
Chromium, Hexavalent	mg/kg	23				<0.300					NA
Chromium, Trivalent	mg/kg	23				11.7					NA
Calcium	mg/kg	NA				11,200					NA
Magnesium	mg/kg	NA				540					NA
Sodium	mg/kg	NA				850					NA
% Solids	%	NA				80.5					NA

**DIAMOND OPERATING
DECKER PITS CHARACTERIZATION
SOIL ANALYTICAL DATA SUMMARY
TABLE 1**

Notes:

- 1). Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective January 30, 2015.
- 2). TPH - Total volatile and extractable petroleum hydrocarbons. Value calculated by adding GRO and DRO concentrations.

GRO - Gasoline range organics

mmhos/cm - Millimhos per centimeter

EC - Specific conductance

NA-Not Analyzed

DRO - Diesel range organics

SAR - Sodium adsorption ratio

s.u. - Standard units

BGS - Below ground surface

mg/kg - Milligrams per kilogram

ppm - Parts per million

Red values indicate an exceedance of the COGCC soil standards.

< - Analytical result is less than the indicated laboratory reporting limit

Exhibit A

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

February 26, 2016

Carter Peace
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Decker

Enclosed are the results of analyses for samples received by Summit Scientific on 02/19/16 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker

Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P1W@12	1602160-01	Soil	02/19/16 00:00	02/19/16 17:00
P1W@18	1602160-02	Soil	02/19/16 00:00	02/19/16 17:00
P1W@27	1602160-03	Soil	02/19/16 00:00	02/19/16 17:00
P2E@16	1602160-04	Soil	02/19/16 00:00	02/19/16 17:00
P2E@24	1602160-05	Soil	02/19/16 00:00	02/19/16 17:00
P2E@27	1602160-06	Soil	02/19/16 00:00	02/19/16 17:00

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker

Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Summit Scientific

1602160

741 Corporate Circle Suite 1 - Golden, Colorado 80401
303-277-9310 • 303-277-9531 Fax

Client: TASMAN / RAMOND (INVOLING)
Address: _____
City/State/Zip: _____
Phone: _____ Fax: _____
Sampler Name: ESP

Page 1 of 1

Project Manager: C. PEACE
E-Mail: _____
Project Name: DECKER
Project Number: _____

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For:				Special Instructions	
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	1	2	3		4
PIWA 12	2/19/16															
PIWA 18																
PIWA 27																
P2EA 16																
P2EA 24																
P2EA 27	↓															
Relinquished by:		Date/Time:	Received by:		Date/Time:		Turn Around Time (Check)				Notes:					
Relinquished by:		Date/Time:	Received by:		Date/Time:		Same Day	<input type="checkbox"/>	72 Hours	<input type="checkbox"/>	Standard	<input checked="" type="checkbox"/>	on ice			
Relinquished by:		Date/Time:	Received by:		Date/Time:		24 Hours	<input type="checkbox"/>	48 Hours	<input type="checkbox"/>						
Relinquished by:		Date/Time:	Received by:		Date/Time:		Sample Integrity:									
		2/19/16 1700	2/19/16 1700		2/19/16 1700		Temperature Upon Receipt: 4.2°C									
		2/19/16 1750					Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									

www.s2scientific.com



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

P1W@12
1602160-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 02/19/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	540	50	mg/kg	1	1602210	02/22/16	02/24/16	8015M	

Date Sampled: 02/19/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		99.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 02/19/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1602211	02/23/16	02/24/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	23	0.50	"	"	"	"	"	"	

Date Sampled: 02/19/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		105 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		119 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

P1W@18
1602160-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	630	50	mg/kg	1	1602210	02/22/16	02/24/16	8015M	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		97.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1602211	02/23/16	02/24/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	78	0.50	"	"	"	"	"	"	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		101 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		116 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

P1W@27
1602160-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1602210	02/22/16	02/24/16	8015M	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1602211	02/23/16	02/24/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		115 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

P2E@16
1602160-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	860	50	mg/kg	1	1602210	02/22/16	02/24/16	8015M	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		103 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1602211	02/23/16	02/24/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	2000	50	"	100	"	"	"	"	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.6 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.4 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		112 %	21-167		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	1602244	02/24/16	02/26/16	EPA 8270D SIM	
Acenaphthylene	ND	0.00500	"	"	"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

P2E@16
1602160-04 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Anthracene	ND	0.00500	mg/kg	1	1602244	02/24/16	02/26/16	EPA 8270D SIM	
Benzo (a) anthracene	0.108	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.109	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0183	0.00500	"	"	"	"	"	"	
Benzo (g,h,i) perylene	0.117	0.0500	"	10	"	"	"	"	
Benzo (a) pyrene	0.0565	0.00500	"	1	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0476	0.00500	"	"	"	"	"	"	
Fluorene	0.347	0.0500	"	10	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0596	0.00500	"	1	"	"	"	"	
Naphthalene	ND	0.00500	"	"	"	"	"	"	
Phenanthrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: 02/19/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		136 %	35-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.0 %	35-150		"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 02/19/16 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.53	0.124	mg/kg dry	1	1602221	02/23/16	02/23/16	EPA 6020A	
Barium	346	0.124	"	"	"	"	"	"	
Boron	4.07	1.24	"	"	"	"	"	"	
Cadmium	0.224	0.124	"	"	"	"	"	"	
Chromium	11.7	0.621	"	"	"	"	"	"	
Copper	11.9	0.621	"	"	"	"	"	"	
Lead	10.3	0.124	"	"	"	"	"	"	
Nickel	12.1	0.124	"	"	"	"	"	"	
Selenium	1.40	0.0621	"	"	"	"	"	"	
Silver	ND	0.124	"	"	"	"	"	"	
Zinc	57.2	12.4	"	"	"	"	"	"	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

P2E@16
1602160-04 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Total Mercury by EPA Method 7471

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0554	mg/kg dry	1	1602236	02/24/16	02/24/16	EPA 7471	

Hexavalent Chromium by EPA 7196

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.300	mg/kg dry	1	1602233	02/24/16	02/25/16	EPA 7196	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	11.7	0.993	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	11200	10.1	mg/kg dry	1	1602246	02/24/16	02/24/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	540	5.06	"	"	"	"	"	"	
Sodium	850	5.06	"	"	"	"	"	"	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.13		units	"	1602248	02/25/16	02/25/16	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

P2E@16
1602160-04 (Soil)

Summit Scientific

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

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.814	0.0100	mmhos/cm	1	1602223	02/23/16	02/23/16	SM 2510B	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.50	0.100	pH Units	"	1602220	02/23/16	02/23/16	EPA 9045	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.5		%	"	1602222	02/23/16	02/24/16	% calculation	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

P2E@24
1602160-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1602210	02/22/16	02/24/16	8015M	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		92.9 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1602211	02/23/16	02/24/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

P2E@27
1602160-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1602210	02/22/16	02/24/16	8015M	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		89.7 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1602211	02/23/16	02/24/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/19/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1602210 - EPA 3550A

Blank (1602210-BLK1)

Prepared: 02/22/16 Analyzed: 02/23/16

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	12.2		"	12.5		97.4	30-150				

LCS (1602210-BS1)

Prepared: 02/22/16 Analyzed: 02/23/16

C10-C28 (DRO)	547	50	mg/kg	499		110	73-134				
<i>Surrogate: o-Terphenyl</i>	12.1		"	12.5		96.9	30-150				

Matrix Spike (1602210-MS1)

Source: 1602157-01

Prepared: 02/22/16 Analyzed: 02/23/16

C10-C28 (DRO)	548	50	mg/kg	497	108	88.6	50-148				
<i>Surrogate: o-Terphenyl</i>	12.2		"	12.5		98.4	30-150				

Matrix Spike Dup (1602210-MSD1)

Source: 1602157-01

Prepared: 02/22/16 Analyzed: 02/23/16

C10-C28 (DRO)	554	50	mg/kg	489	108	91.3	50-148	1.15		13	
<i>Surrogate: o-Terphenyl</i>	12.1		"	12.3		98.5	30-150				

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1602211 - EPA 5030 Soil MS

Blank (1602211-BLK1)

Prepared: 02/23/16 Analyzed: 02/24/16

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0396</i>		<i>"</i>	<i>0.0400</i>		<i>99.1</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0387</i>		<i>"</i>	<i>0.0400</i>		<i>96.8</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.8</i>	<i>21-167</i>			

LCS (1602211-BS1)

Prepared: 02/23/16 Analyzed: 02/24/16

Benzene	0.250	0.0020	mg/kg	0.225		111	58-130			
Toluene	0.220	0.0050	"	0.225		97.8	61-134			
Ethylbenzene	0.274	0.0050	"	0.223		123	74-139			
m,p-Xylene	0.525	0.010	"	0.449		117	73-137			
o-Xylene	0.252	0.0050	"	0.220		114	73-141			
Xylenes (total)	0.777	0.0050	"				30-150			
Gasoline Range Hydrocarbons	5.29	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0383</i>		<i>"</i>	<i>0.0400</i>		<i>95.7</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0395</i>		<i>"</i>	<i>0.0400</i>		<i>98.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.0</i>	<i>21-167</i>			

Matrix Spike (1602211-MS1)

Source: 1602157-01

Prepared: 02/23/16 Analyzed: 02/24/16

Benzene	0.234	0.0020	mg/kg	0.214	ND	110	30-131			
Toluene	0.208	0.0050	"	0.214	ND	97.3	30-134			
Ethylbenzene	0.259	0.0050	"	0.212	ND	122	22-153			
m,p-Xylene	0.499	0.010	"	0.427	ND	117	10-159			
o-Xylene	0.243	0.0050	"	0.210	ND	116	31-151			
Xylenes (total)	0.741	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	4.99	0.50	"		ND		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0385</i>		<i>"</i>	<i>0.0380</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0370</i>		<i>"</i>	<i>0.0380</i>		<i>97.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0378</i>		<i>"</i>	<i>0.0380</i>		<i>99.5</i>	<i>21-167</i>			

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6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch 1602211 - EPA 5030 Soil MS

Matrix Spike Dup (1602211-MSD1)	Source: 1602157-01			Prepared: 02/23/16		Analyzed: 02/24/16				
Benzene	0.246	0.0020	mg/kg	0.224	ND	110	30-131	4.76	34	
Toluene	0.217	0.0050	"	0.224	ND	96.8	30-134	4.00	30	
Ethylbenzene	0.272	0.0050	"	0.222	ND	122	22-153	4.65	24	
m,p-Xylene	0.522	0.010	"	0.446	ND	117	10-159	4.62	68	
o-Xylene	0.252	0.0050	"	0.219	ND	115	31-151	3.61	38	
Xylenes (total)	0.774	0.0050	"		ND		30-150	4.29	20	
Gasoline Range Hydrocarbons	5.26	0.50	"		ND		30-150	5.24	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0402</i>		<i>"</i>	<i>0.0398</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0389</i>		<i>"</i>	<i>0.0398</i>		<i>97.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0402</i>		<i>"</i>	<i>0.0398</i>		<i>101</i>	<i>21-167</i>			

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Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch 1602244 - EPA 5030 Soil MS

Blank (1602244-BLK1)

Prepared: 02/24/16 Analyzed: 02/25/16

Acenaphthene	ND	0.00500	mg/kg							
Acenaphthylene	ND	0.00500	"							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Benzo (g,h,i) perylene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Naphthalene	ND	0.00500	"							
Phenanthrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0315</i>		"	<i>0.0330</i>		<i>95.5</i>	<i>35-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0355</i>		"	<i>0.0330</i>		<i>108</i>	<i>35-150</i>			

LCS (1602244-BS1)

Prepared: 02/24/16 Analyzed: 02/25/16

Acenaphthene	0.0311	0.00500	mg/kg	0.0329		94.4	50-150			
Acenaphthylene	0.0309	0.00500	"	0.0329		94.0	50-150			
Anthracene	0.0286	0.00500	"	0.0329		86.8	50-150			
Benzo (a) anthracene	0.0296	0.00500	"	0.0329		89.9	50-150			
Benzo (b) fluoranthene	0.0323	0.00500	"	0.0329		98.1	50-150			
Benzo (k) fluoranthene	0.0331	0.00500	"	0.0329		101	50-150			
Benzo (g,h,i) perylene	0.0330	0.00500	"	0.0329		100	50-150			
Benzo (a) pyrene	0.0302	0.00500	"	0.0329		91.7	50-150			
Chrysene	0.0295	0.00500	"	0.0329		89.7	50-150			
Dibenz (a,h) anthracene	0.0334	0.00500	"	0.0329		101	50-150			
Fluoranthene	0.0284	0.00500	"	0.0329		86.3	50-150			
Fluorene	0.0298	0.00500	"	0.0329		90.7	50-150			
Indeno (1,2,3-cd) pyrene	0.0316	0.00500	"	0.0329		96.1	50-150			
2-Methylnaphthalene	0.0310	0.00500	"	0.0329		94.4	0-200			
Naphthalene	0.0289	0.00500	"	0.0329		87.8	50-150			
Phenanthrene	0.0299	0.00500	"	0.0329		90.9	50-150			
Pyrene	0.0300	0.00500	"	0.0329		91.2	50-150			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0354</i>		"	<i>0.0329</i>		<i>108</i>	<i>35-150</i>			

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6899 Pecos Street
Denver CO, 80221

Project: Decker

Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch 1602244 - EPA 5030 Soil MS

LCS (1602244-BS1)

Prepared: 02/24/16 Analyzed: 02/25/16

Surrogate: Fluoranthene-d10	0.0386		mg/kg	0.0329		117	35-150			
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Matrix Spike (1602244-MS1)

Source: 1602097-02

Prepared: 02/24/16 Analyzed: 02/25/16

Analyte	Result	Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	Limit	Notes
Acenaphthene	0.0635	0.00500	mg/kg	0.0332	0.0399	71.3	50-150			
Acenaphthylene	0.0528	0.00500	"	0.0332	0.0300	68.8	50-150			
Anthracene	0.0406	0.00500	"	0.0332	0.0582	NR	50-150			QM-07
Benzo (a) anthracene	0.0310	0.00500	"	0.0332	0.00838	68.0	50-150			
Benzo (b) fluoranthene	0.0309	0.00500	"	0.0332	0.00691	72.3	50-150			
Benzo (k) fluoranthene	0.0293	0.00500	"	0.0332	0.00379	76.9	50-150			
Benzo (g,h,i) perylene	0.0315	0.00500	"	0.0332	0.00482	80.4	50-150			
Benzo (a) pyrene	0.0285	0.00500	"	0.0332	0.00382	74.2	50-150			
Chrysene	0.0302	0.00500	"	0.0332	0.00786	67.3	50-150			
Dibenz (a,h) anthracene	0.0297	0.00500	"	0.0332	ND	89.5	50-150			
Fluoranthene	0.0287	0.00500	"	0.0332	0.00835	61.3	50-150			
Fluorene	0.0618	0.00500	"	0.0332	0.0358	78.1	50-150			
Indeno (1,2,3-cd) pyrene	0.0287	0.00500	"	0.0332	0.00355	75.8	50-150			
2-Methylnaphthalene	6.48	0.00500	"	0.0332	33100	NR	0-200			E
Naphthalene	4.46	0.00500	"	0.0332	33100	NR	50-150			E
Phenanthrene	0.0735	0.00500	"	0.0332	0.0586	45.0	50-150			QM-07
Pyrene	0.0414	0.00500	"	0.0332	0.0221	58.1	50-150			
Surrogate: 2-Methylnaphthalene-d10	0.0420		"	0.0332		126	35-150			
Surrogate: Fluoranthene-d10	0.0340		"	0.0332		102	35-150			

Matrix Spike Dup (1602244-MSD1)

Source: 1602097-02

Prepared: 02/24/16 Analyzed: 02/25/16

Analyte	Result	Limit	Units	Spike Level	Source Result	%REC	Limits	RPD	Limit	Notes
Acenaphthene	0.0650	0.00500	mg/kg	0.0329	0.0399	76.4	50-150	2.26	20	
Acenaphthylene	0.0587	0.00500	"	0.0329	0.0300	87.3	50-150	10.6	20	
Anthracene	0.0462	0.00500	"	0.0329	0.0582	NR	50-150	12.8	20	QM-07
Benzo (a) anthracene	0.0432	0.00500	"	0.0329	0.00838	106	50-150	32.9	20	QM-07
Benzo (b) fluoranthene	0.0479	0.00500	"	0.0329	0.00691	125	50-150	43.0	20	QM-07
Benzo (k) fluoranthene	0.0404	0.00500	"	0.0329	0.00379	111	50-150	31.7	20	QM-07
Benzo (g,h,i) perylene	0.0408	0.00500	"	0.0329	0.00482	109	50-150	25.7	20	QM-07
Benzo (a) pyrene	0.0392	0.00500	"	0.0329	0.00382	108	50-150	31.8	20	QM-07
Chrysene	0.0447	0.00500	"	0.0329	0.00786	112	50-150	38.7	20	QM-07
Dibenz (a,h) anthracene	0.0346	0.00500	"	0.0329	ND	105	50-150	15.1	20	
Fluoranthene	0.0389	0.00500	"	0.0329	0.00835	93.0	50-150	30.2	20	QM-07
Fluorene	0.0750	0.00500	"	0.0329	0.0358	119	50-150	19.4	20	
Indeno (1,2,3-cd) pyrene	0.0391	0.00500	"	0.0329	0.00355	108	50-150	30.5	20	QM-07
2-Methylnaphthalene	5.56	0.00500	"	0.0329	33100	NR	0-200	15.1	200	E

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6899 Pecos Street
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Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch 1602244 - EPA 5030 Soil MS

Matrix Spike Dup (1602244-MSD1)	Source: 1602097-02			Prepared: 02/24/16		Analyzed: 02/25/16				
Naphthalene	7.88	0.00500	mg/kg	0.0329	33100	NR	50-150	55.4	20	E
Phenanthrene	0.0909	0.00500	"	0.0329	0.0586	98.2	50-150	21.1	20	QM-07
Pyrene	0.0560	0.00500	"	0.0329	0.0221	103	50-150	30.0	20	QM-07
Surrogate: 2-Methylnaphthalene-d10	0.0461		"	0.0329		140	35-150			
Surrogate: Fluoranthene-d10	0.0382		"	0.0329		116	35-150			

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6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 1602221 - EPA 3050B

Blank (1602221-BLK1)

Prepared & Analyzed: 02/23/16

Arsenic	0.114	0.100	mg/kg wet							
Barium	ND	0.100	"							
Boron	ND	1.00	"							
Cadmium	ND	0.100	"							
Chromium	ND	0.500	"							
Copper	ND	0.500	"							
Lead	ND	0.100	"							
Nickel	ND	0.100	"							
Selenium	0.506	0.0500	"							
Silver	ND	0.100	"							
Zinc	ND	10.0	"							

LCS (1602221-BS1)

Prepared & Analyzed: 02/23/16

Arsenic	132	0.100	mg/kg wet	127	104	59-110
Barium	219	0.100	"	244	89.9	61.1-110
Boron	171	1.00	"	224	76.1	43-110
Cadmium	120	0.100	"	129	92.8	61.2-110
Chromium	86.1	0.500	"	68.8	125	72.1-132
Copper	97.5	0.500	"	100	97.1	62.5-110
Lead	51.1	0.100	"	57.2	89.3	61-110
Nickel	127	0.100	"	122	103	65.7-111
Selenium	42.5	0.0500	"	49.2	86.4	51.6-111
Silver	21.6	0.100	"	24.4	88.5	54.3-110
Zinc	53.8	10.0	"	54.4	99.0	55.2-113

Duplicate (1602221-DUP1)

Source: 1602161-01

Prepared & Analyzed: 02/23/16

Arsenic	7.38	0.106	mg/kg dry	7.67	3.95	20
Barium	230	0.106	"	208	10.0	20
Boron	10.7	1.06	"	9.93	7.12	20
Cadmium	3.35	0.106	"	3.01	10.5	20
Chromium	38.1	0.530	"	34.4	10.3	20
Copper	134	0.530	"	123	8.24	20
Lead	251	0.106	"	229	9.42	20
Nickel	19.5	0.106	"	17.6	10.3	20
Selenium	1.64	0.0530	"	5.17	104	20
Silver	1.26	0.106	"	1.15	9.50	20
Zinc	528	10.6	"	490	7.56	20

QR-03

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Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 1602221 - EPA 3050B

Matrix Spike (1602221-MS1)	Source: 1602161-01			Prepared & Analyzed: 02/23/16								
Arsenic	53.2	0.103	mg/kg dry	41.3	7.67	110	75-125					
Barium	322	0.103	"	41.3	208	275	75-125					QM-07
Boron	48.4	1.03	"	82.5	9.93	46.6	75-125					QM-07
Cadmium	6.95	0.103	"	2.06	3.01	191	75-125					QM-07
Chromium	133	0.516	"	41.3	34.4	239	75-125					QM-07
Copper	163	0.516	"	41.3	123	95.6	75-125					
Lead	388	0.103	"	20.6	229	770	75-125					QM-07
Nickel	64.3	0.103	"	41.3	17.6	113	75-125					
Selenium	5.25	0.0516	"	4.13	5.17	2.07	75-125					QM-07
Silver	3.19	0.103	"	2.06	1.15	98.9	75-125					
Zinc	518	10.3	"	41.3	490	69.2	75-125					QM-07

Matrix Spike Dup (1602221-MSD1)	Source: 1602161-01			Prepared & Analyzed: 02/23/16								
Arsenic	57.2	0.107	mg/kg dry	42.9	7.67	115	75-125	7.14	25			
Barium	538	0.107	"	42.9	208	768	75-125	50.2	25			QM-07
Boron	52.1	1.07	"	85.8	9.93	49.2	75-125	7.51	25			QM-07
Cadmium	4.99	0.107	"	2.15	3.01	92.1	75-125	32.9	25			QM-07
Chromium	90.5	0.536	"	42.9	34.4	131	75-125	37.9	25			QM-07
Copper	158	0.536	"	42.9	123	81.7	75-125	2.71	25			
Lead	281	0.107	"	21.5	229	246	75-125	31.7	25			QM-07
Nickel	75.0	0.107	"	42.9	17.6	134	75-125	15.3	25			QM-07
Selenium	4.81	0.0536	"	4.29	5.17	NR	75-125	8.91	25			QM-07
Silver	2.88	0.107	"	2.15	1.15	80.5	75-125	10.4	25			
Zinc	886	10.7	"	42.9	490	923	75-125	52.3	25			QM-07

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6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Total Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1602236 - EPA 7471A

Blank (1602236-BLK1)

Prepared & Analyzed: 02/24/16

Mercury ND 0.0500 mg/kg wet

LCS (1602236-BS1)

Prepared & Analyzed: 02/24/16

Mercury 0.522 0.0500 mg/kg wet 0.500 104 80-120

Duplicate (1602236-DUP1)

Source: 1602183-01

Prepared & Analyzed: 02/24/16

Mercury 0.0544 0.0475 mg/kg dry 0.0555 1.94 20

Matrix Spike (1602236-MS1)

Source: 1602183-01

Prepared & Analyzed: 02/24/16

Mercury 0.542 0.0510 mg/kg dry 0.510 0.0555 95.4 80-120

Matrix Spike Dup (1602236-MSD1)

Source: 1602183-01

Prepared & Analyzed: 02/24/16

Mercury 0.578 0.0551 mg/kg dry 0.551 0.0555 94.7 80-120 6.38 20

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6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

**Hexavalent Chromium by EPA 7196 - Quality Control
Summit Scientific**

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

Batch 1602233 - 3060A_Mod

Blank (1602233-BLK1)			Prepared: 02/24/16 Analyzed: 02/25/16								
Chromium, Hexavalent	ND	0.300	mg/kg wet								
LCS (1602233-BS1)			Prepared: 02/24/16 Analyzed: 02/25/16								
Chromium, Hexavalent	18.0	0.300	mg/kg wet	19.9	90.5	80-120					
Duplicate (1602233-DUP1)			Source: 1602183-01			Prepared: 02/24/16 Analyzed: 02/25/16					
Chromium, Hexavalent	ND	0.300	mg/kg dry		ND					20	
Matrix Spike (1602233-MS1)			Source: 1602183-01			Prepared: 02/24/16 Analyzed: 02/25/16					
Chromium, Hexavalent	16.2	0.300	mg/kg dry	24.8	ND	65.4	80-120				QM-07
Post Spike (1602233-PS1)			Source: 1602183-01			Prepared: 02/24/16 Analyzed: 02/25/16					
Chromium, Hexavalent	0.412		mg/kg	0.498	ND	82.6	0-200				

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

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

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

Batch 1602246 - General Preparation

Blank (1602246-BLK1)

Prepared & Analyzed: 02/24/16

Calcium	ND	10.0	mg/kg wet						
Magnesium	ND	5.00	"						
Sodium	15.6	5.00	"						

LCS (1602246-BS1)

Prepared & Analyzed: 02/24/16

Calcium	572	10.0	mg/kg wet	500	114	82.9-118			
Magnesium	596	5.00	"	500	119	77.1-123			
Sodium	622	5.00	"	500	124	71-129			

Duplicate (1602246-DUP1)

Source: 1602137-05

Prepared & Analyzed: 02/24/16

Calcium	2570	11.1	mg/kg dry	2470			3.81	200	
Magnesium	162	5.56	"	160			0.890	200	
Sodium	2980	5.56	"	3020			1.35	200	

Matrix Spike (1602246-MS1)

Source: 1602137-05

Prepared & Analyzed: 02/24/16

Calcium	2650	11.1	mg/kg dry	556	2470	31.0	75-125		QM-07
Magnesium	777	5.56	"	556	160	111	75-125		
Sodium	3540	5.56	"	556	3020	93.6	75-125		

Matrix Spike Dup (1602246-MSD1)

Source: 1602137-05

Prepared & Analyzed: 02/24/16

Calcium	2580	11.1	mg/kg dry	556	2470	19.2	75-125	2.51	25	QM-07
Magnesium	800	5.56	"	556	160	115	75-125	2.88	25	
Sodium	3580	5.56	"	556	3020	102	75-125	1.32	25	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch 1602220 - General Preparation

LCS (1602220-BS1)				Prepared & Analyzed: 02/23/16							
pH	8.00	0.100	pH Units	8.00		100	95-105				
Duplicate (1602220-DUP1)				Source: 1602137-05		Prepared & Analyzed: 02/23/16					
pH	8.04	0.100	pH Units	8.19					1.85	20	

Batch 1602222 - General Preparation

Duplicate (1602222-DUP1)				Source: 1602160-04		Prepared: 02/23/16		Analyzed: 02/24/16			
% Solids	79.8		%	80.5					0.901	20	

Batch 1602223 - General Preparation

Blank (1602223-BLK1)				Prepared & Analyzed: 02/23/16							
Specific Conductance (EC)	ND	0.0100	mmhos/cm								
LCS (1602223-BS1)				Prepared & Analyzed: 02/23/16							
Specific Conductance (EC)	0.502	0.0100	mmhos/cm	0.500		100	90-110				
Duplicate (1602223-DUP1)				Source: 1602137-05		Prepared & Analyzed: 02/23/16					
Specific Conductance (EC)	4.97	0.0100	mmhos/cm	4.84					2.57	20	

Summit Scientific

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.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker

Project Number: [none]
Project Manager: Carter Peace

Reported:
02/26/16 14:21

Notes and Definitions

- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

March 21, 2016

Carter Peace
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Decker

Enclosed are the results of analyses for samples received by Summit Scientific on 03/16/16 17:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker

Project Number: [none]
Project Manager: Carter Peace

Reported:
03/21/16 14:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Background	1603120-01	Soil	03/16/16 00:00	03/16/16 17:00
Surface North	1603120-02	Soil	03/16/16 00:00	03/16/16 17:00
Surface South	1603120-03	Soil	03/16/16 00:00	03/16/16 17:00

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker

Project Number: [none]
Project Manager: Carter Peace

Reported:
03/21/16 14:15

Summit Scientific

1603120

741 Corporate Circle Suite 1 • Golden, Colorado 80401
303-277-9310 • 303-374-5933 Fax

Client: TASMAN / DIAMOND (INVOLV) Project Manager: C. PEACE Page 1 of 1
 Address: _____ E-Mail: _____
 City/State/Zip: _____ Project Name: DECKER
 Phone: _____ Fax: _____ Project Number: _____
 Sampler Name: GSP

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative			Matrix			Analyze For:						Special Instructions		
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	ARSENIC	BORON	Barium	SAR		pH	EC
BACKGROUND	3/16/16																	
SURFACE NORTH	↓																	
SURFACE SOUTH	↓																	
Relinquished by:		Date/Time:	Received by:		Date/Time:	Turn Around Time (Check)			Notes:									
Relinquished by:		Date/Time:	Received by:		Date/Time:	Same Day	<input type="checkbox"/>	72 Hours	<input checked="" type="checkbox"/>	ON ICE								
Relinquished by:		Date/Time:	Received by:		Date/Time:	24 Hours	<input type="checkbox"/>	Standard	<input type="checkbox"/>									
Relinquished by:		Date/Time:	Received in Lab by:		Date/Time:	48 Hours	<input type="checkbox"/>											
Relinquished by:		Date/Time:	Received in Lab by:		Date/Time:	Sample Integrity:												
Relinquished by:		Date/Time:	Received in Lab by:		Date/Time:	Temperature Upon Receipt:	4°C											
Relinquished by:		Date/Time:	Received in Lab by:		Date/Time:	Intact:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker

Project Number: [none]
Project Manager: Carter Peace

Reported:
03/21/16 14:15

Background
1603120-01 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.20	0.115	mg/kg dry	1	1603161	03/17/16	03/17/16	EPA 6020A	

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	4.14	1.15	"	"	"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.0		%	1	1603188	03/18/16	03/21/16	% calculation	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
03/21/16 14:15

**Surface North
1603120-02 (Soil)**

Summit Scientific

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

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4400	11.5	mg/kg dry	1	1603175	03/17/16	03/17/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	406	5.75	"	"	"	"	"	"	
Sodium	294	5.75	"	"	"	"	"	"	

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14		units	"	1603203	03/21/16	03/21/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.515	0.0100	mmhos/cm	1	1603173	03/17/16	03/17/16	SM 2510B	

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.42	0.100	pH Units	"	1603172	03/17/16	03/17/16	EPA 9045	

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.9		%	"	1603188	03/18/16	03/21/16	% calculation	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
03/21/16 14:15

Surface South
1603120-03 (Soil)

Summit Scientific

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

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	4960	11.1	mg/kg dry	1	1603175	03/17/16	03/17/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	401	5.56	"	"	"	"	"	"	
Sodium	367	5.56	"	"	"	"	"	"	

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.35		units	"	1603203	03/21/16	03/21/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.08	0.0100	mmhos/cm	1	1603173	03/17/16	03/17/16	SM 2510B	

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.38	0.100	pH Units	"	1603172	03/17/16	03/17/16	EPA 9045	

Date Sampled: **03/16/16 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0		%	"	1603188	03/18/16	03/21/16	% calculation	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
03/21/16 14:15

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

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

Batch 1603161 - EPA 3050B

Blank (1603161-BLK1)

Prepared: 03/16/16 Analyzed: 03/17/16

Arsenic	ND	0.100	mg/kg wet							
Boron	ND	1.00	"							

LCS (1603161-BS1)

Prepared: 03/16/16 Analyzed: 03/17/16

Arsenic	46.1	0.100	mg/kg wet	47.6	96.9	59.7-113				
Boron	122	1.00	"	251	48.5	48.4-113				

Duplicate (1603161-DUP1)

Source: 1603084-02

Prepared: 03/16/16 Analyzed: 03/17/16

Arsenic	7.98	0.109	mg/kg dry		9.07			12.7	20	
Boron	10.9	1.09	"		12.3			12.4	20	

Matrix Spike (1603161-MS1)

Source: 1603084-02

Prepared: 03/16/16 Analyzed: 03/17/16

Arsenic	59.2	0.125	mg/kg dry	46.1	9.07	109	75-125			
Boron	52.2	1.25	"	46.1	12.3	86.6	75-125			

Matrix Spike Dup (1603161-MSD1)

Source: 1603084-02

Prepared: 03/16/16 Analyzed: 03/17/16

Arsenic	50.0	0.112	mg/kg dry	44.8	9.07	91.3	75-125	16.9	25	
Boron	43.7	1.12	"	44.8	12.3	69.9	75-125	17.9	25	QM-07

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
03/21/16 14:15

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

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

Batch 1603175 - General Preparation

Blank (1603175-BLK1)

Prepared & Analyzed: 03/17/16

Calcium	ND	10.0	mg/kg wet						
Magnesium	ND	5.00	"						
Sodium	ND	5.00	"						

LCS (1603175-BS1)

Prepared & Analyzed: 03/17/16

Calcium	484	10.0	mg/kg wet	500	96.8	82.9-118			
Magnesium	518	5.00	"	500	104	77.1-123			
Sodium	519	5.00	"	500	104	71-129			

Duplicate (1603175-DUP1)

Source: 1603120-02

Prepared & Analyzed: 03/17/16

Calcium	4520	11.5	mg/kg dry	4400			2.61	200	
Magnesium	392	5.75	"	406			3.64	200	
Sodium	284	5.75	"	294			3.45	200	

Matrix Spike (1603175-MS1)

Source: 1603120-02

Prepared & Analyzed: 03/17/16

Calcium	5070	11.5	mg/kg dry	575	4400	117	75-125		
Magnesium	965	5.75	"	575	406	97.1	75-125		
Sodium	843	5.75	"	575	294	95.5	75-125		

Matrix Spike Dup (1603175-MSD1)

Source: 1603120-02

Prepared & Analyzed: 03/17/16

Calcium	5110	11.5	mg/kg dry	575	4400	122	75-125	0.616	25
Magnesium	1080	5.75	"	575	406	117	75-125	11.4	25
Sodium	940	5.75	"	575	294	112	75-125	10.9	25

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker
Project Number: [none]
Project Manager: Carter Peace

Reported:
03/21/16 14:15

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

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

Batch 1603172 - General Preparation

LCS (1603172-BS1)					Prepared & Analyzed: 03/17/16					
pH	7.96	0.100	pH Units	8.00	99.5	95-105				
Duplicate (1603172-DUP1)					Source: 1603094-01 Prepared & Analyzed: 03/17/16					
pH	8.35	0.100	pH Units	8.14	2.55	20				

Batch 1603173 - General Preparation

Blank (1603173-BLK1)					Prepared & Analyzed: 03/17/16					
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (1603173-BS1)					Prepared & Analyzed: 03/17/16					
Specific Conductance (EC)	0.505	0.0100	mmhos/cm	0.500	101	90-110				
Duplicate (1603173-DUP1)					Source: 1603094-01 Prepared & Analyzed: 03/17/16					
Specific Conductance (EC)	1.61	0.0100	mmhos/cm	1.65	2.39	20				

Batch 1603188 - General Preparation

Duplicate (1603188-DUP1)					Source: 1603120-01 Prepared: 03/18/16 Analyzed: 03/21/16					
% Solids	87.9		%	87.0	1.03	20				

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Decker

Project Number: [none]
Project Manager: Carter Peace

Reported:
03/21/16 14:15

Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific

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.

Exhibit B

Agreement for Remediation of Surface Use

This Agreement is entered into on this 10th day of June, 2016, by and between Scott and Delana Harrison, 7649 S. Eaton Way, Littleton, CO 80128, as Owner, and Diamond Operating Inc., 6666 Gunpark Drive, Suite 200, Boulder CO 80301, as Operator.

Owner is the surface owner and a mineral owner of certain lands located in Washington County, Colorado upon which Operator has been producing oil, gas and other hydrocarbons from two wells located on said lands as follows:

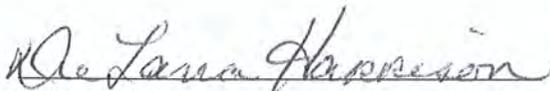
Wells	Decker #1 and Decker #3
Lands	<u>Township 4 South, Range 53 West, 6th P.M.</u> Section 18: W/2 NE/4, SE/4NW/4

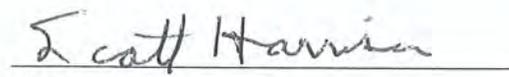
Operator has installed a new skim tank on the Decker facility for the purpose of replacing two earthen skim pits that had been in use in the operation of the Wells under prior approval of the Colorado Oil and Gas Conservation Commission (COGCC facility # 117631 and # 109575). In order to comply with COGCC regulations regarding reclamation of land and soil affected by oil and gas operations, operator plans to excavate soil from the skim pit and treat it using enhanced surface bioremediation methods. Operator will use a rectangular area that will be 150' x 400' located just southwest of the site of the skim pits (For details see attached Exhibit A). After the treated soil meets the COGCC Table 910 standards, it will be placed back into the pits and the remediation site will be reclaimed per COGCC guidelines and subject to Owner approval.

Owner hereby acknowledges agreement to this plan and Operator agrees to the full reclamation of surface in and around the replaced skim pits.

Dated and made effective the date included above.

OWNER:


Delana Harrison


Scott Harrison

OPERATOR:


David C. Peterson, President
Diamond Operating, Inc.

STATE OF COLORADO

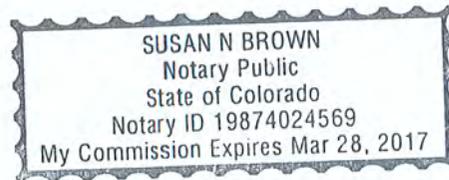
COUNTY OF ^(SP) Boulder Jefferson

The forgoing instrument was acknowledged before me this 10th day of June, 2016, by **Scott and Delana Harrison**.

Susan N. Brown
Notary Public

My Commission Expires:

3-28-17



THE STATE OF COLORADO
COUNTY OF BOULDER

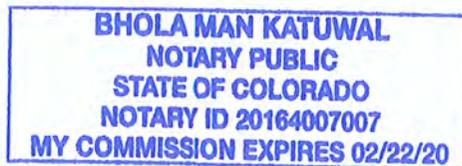
Before me, the undersigned, a Notary Public, on this day personally appeared **David C. Peterson**, known to me to be the person and officer whose name is subscribed to the foregoing instrument and acknowledged to me that the same was the act of the said **Diamond Operating, Inc.**, a Colorado corporation, and that he has executed the same as the act of said corporation for the purposes and consideration therein expressed, and in the capacity therein stated.

Given under my hand and seal of office this 7th day of June, 2016.

[Signature]
Notary Public

My Commission expires:

02/22/2020





Legend

- Pit_ID
- Bioremediation Area
- Test Pit Locations
- Pit Outline

Notes:
 All locations are approximate unless otherwise stated.

0 50 100 Feet

Coordinate System: WGS 1984 UTM Zone 13N

DATE: May 26, 2016
 DESIGNED BY: C. Peace
 DRAWN BY: Z. Mahafey



Diamond Operator
 Decker Pits
 NWSE, Section 7, Township 4 South, Ranges 53 West
 Washington County, Colorado

Bioremediation Area
 Map

Figure
 1