

### **General Information**

NMOCD District:	District 2	incident#:	NM2005959916	
Landowner:	Private			
Client:	Matador Production Company	Site Location:	Black River at Ogden Road	
Date:	March 24, 2020	Project#:	20E-00239-004	
Client Contact:	Casey Snow	Phone #:	(972) 371-5439	
Vertex PM:	Natalie Gordon	Phone #:	(505) 506-0040	

## **Objective**

The objective of this environmental remediation work plan is to identify areas of potential concern found during site assessment and monitoring activities and propose appropriate and feasible remediation techniques to address the potential boring mud release at the Black River bore site (hereafter referred to as "Black River"). The alleged incident may have occurred as a result of nearby boring activities exacerbating an underground fissure, allowing the movement of a small amount of boring mud out of the borehole and into the Black River via an anomaly in the streambed. Some light-colored fine sediments are visible on the bottom and edges of the Black River stream bed, extending downstream from the anomaly approximately 264 feet. The location and boundaries of the Black River site are identified on Figure 1 (Attachment 1). Areas of potential concern identified and delineated include the point of potential release and visible color variations potentially representing fine sediments/potential bentonite as mapped on March 25, 2020.

Initial water and soil sampling were conducted on February 24, including samples collected from both upstream and downstream of the alleged release site. Daily water sampling has been conducted since February 27. All water quality standards as outlined in the Standards for Interstate and Intrastate Surface Waters regulation, 20.6.4 New Mexico Administrative Code (NMAC) are being met, with the only issue of concern being the potential bentonite/sediment coating a portion of the streambed. Increased sediment and fines on the streambed could possibly adversely affect periphyton and benthic organisms, decrease light availability for organisms in the river, and potentially affect fish gills and/or change their behavior and normal movement within the river ecosystem. While no evidence of these negative effects has been recorded to date, the regulator has recommended that the preferred course of action is to remove the layer of potential bentonite/sediment and fines from the streambed, while limiting an increase in turbidity to less than ten nephelometric turbidity units (NTU) over background turbidity levels, as required by Subsection J of 20.4.4.13 NMAC.

### Site Assessment/Characterization

Following the alleged release reported on February 24, 2020, and the determination to conduct daily water monitoring and sampling, six sample locations were established on the Black River, both upstream and downstream of the alleged release point (Attachment 2). Water samples were collected from these locations one time per each 24-hour period and soil samples were collected from the riverbed or river bank every fourth day. Water samples were submitted to a National Environmental Laboratory Accreditation Program (NELAP)-approved laboratory for analysis of the following parameters: total dissolved solids (TDS); total suspended solids (TSS); turbidity; pH; volatile organics, including benzene, toluene, ethylbenzene, and xylenes (BTEX); total petroleum hydrocarbons (TPH), including motor oil range organics (MRO), diesel range organics (DRO) and gasoline range organics (GRO); and inorganic compounds – chloride and sulfates. Soil samples were analyzed for pH; volatile organics, including benzene, toluene, ethylbenzene, and xylenes (BTEX); total petroleum hydrocarbons (TPH), including motor oil range organics (MRO), diesel range organics (DRO) and gasoline range organics (GRO); and inorganic compounds – chloride and sulfates. Data from this comprehensive sampling regimen are summarized in Table 1 (Attachment 3). The complete lab data reports are included in Attachment 4. None of the analyzed parameters exceeded state water quality standards as a result of this potential incident, with the exception of turbidity levels on February 25, 2020. Following



that one day of elevated turbidity levels, turbidity returned to normal for each of the sampling locations as shown by the trends exhibited for those locations over time. Table 2 and Table 3 (Attachment 3) summarize bi-weekly soil sampling laboratory analyses data and daily water monitoring field data, respectively.

## **Proposed Remedial Activities**

Vertex proposes to remediate areas in the Black River identified as potentially contaminated with bentonite or other fine sediments. The proposed remediation would include removal of potential bentonite accumulations/deposits from the streambed to the extent feasible. Because consistent water monitoring and sampling have not identified any water quality issues and there are no benchmark contamination standards that the river currently exceeds, Vertex proposes that remediation be considered complete when there are minimal visible signs of the introduced material.

Remediation will involve three phases: (1) prevention of downstream movement of potential bentonite or other sediment material; (2) removal of the potential bentonite and other possibly-introduced sediment materials from the streambed; and (3) disposal of the removed material.

### Prevention of downstream movement of potential bentonite/sediment

Preventative measures to limit any potential movement of bentonite or sediment material downstream from its current location will involve the use of a series of check dams that filter river water through a layer of fine mesh sandwiched between two rows of tightly layered sandbags (Attachment 5). These check dams will be set up across the width of the river at two locations in the remediation area, dividing the area of remediation into three roughly equal sections. Two additional check dams will be set up further downstream, as a safeguard against the downstream migration of solids disturbed by the remediation activities. Specific locations for the check dams will be chosen at the time of remediation and will be dependent on river conditions, including flow rate and depth. The locations for the safeguard check dams will also be chosen at the time of remediation; however, the safeguard check dams will be located not less than 5 feet from the downstream edge of the portion of the riverbed to be remediated, with not less than 5 feet of lateral spacing between each of the dams. An additional set of check-dam structures may be installed at a second downstream location, if river conditions deem that it is warranted.

#### Removal of potential bentonite or other sediment material from the streambed

Removal of the potential bentonite or other fine sediment material from the Black River will involve vacuuming the material from the streambed with the use of a trash pump and vacuum hose. The end of the vacuum hose will be fitted with a filter to prevent the removal of larger items, including river rocks, fish, vegetation or other organisms. The hose will carry removed material(s) to a frac tank for holding, pending removal for disposal at an approved off-site location.

In the event that upstream turbidity (at the sample point 25-feet upstream) is determined to be less than 50 nephelometric turbidity units (NTU) and the downstream turbidity (at the sample point 25-feet downstream) increases such that it exceeds ten nephelometric turbidity units (NTU) over background turbidity levels, or upstream turbidity is determined to be greater than or equal to 50 (NTU) and the downstream turbidity increases such that it is equal to or greater than 20% over background turbidity levels as determined by upstream water monitoring, remediation activities will immediately cease until downstream turbidity levels decrease to below 60 NTUs or less than 20% above upstream/background turbidity levels, whichever turbidity limit is applicable.

### Disposal of the removed material from the Black River site

Contents of the frac tanks will be transferred into tanker trucks and removed from site for disposal at an appropriate landfill or other site that accepts this type of material, such as R360.

#### **Environmental Site Remediation Work Plan**



The vacuum hose and trash pumps will be operated and manned by roustabout crew members. A Vertex environmental technician will be onsite during remediation activities to observe removal activities and ensure that the remediation activities and prevention methods are working as expected. For the duration of the remediation activities, the environmental technician will conduct water monitoring at fifteen-minute intervals, alternating between a point 25-feet upstream from the initial potential point of release and 25-feet downstream from the remediation activities. This water monitoring will use an In-Situ Aquatroll 600 water monitor, which is capable of collecting location and various water quality data.

An estimated 20 cubic yards of potential bentonite and additional fine streambed sediment are projected to be removed during remediation.

In addition to water monitoring conducted during remediation activities, daily water sampling will continue during remediation activities and for the seven consecutive days following completion of remediation activities to ensure that surface water quality standards continue to be met. New sampling locations will be determined prior to the commencement of remediation activities.

The water samples will be placed into laboratory-provided containers, preserved on ice and submitted to a NELAP-approved laboratory for analysis. Laboratory analyses for the following parameters will be ordered: TSS, TDS, total dissolved oxygen, pH, turbidity, chlorides, sulfates, volatile organics (BTEX) and TPH.

No reclamation or restoration activities are planned at this time as removal of non-introduced materials will be kept to a minimum and the structure and design of the stream are not expected to be altered in any way.

## **Timeline for Completion**

Remediation activities, as outlined in this work plan, are projected to be completed within 30 days of approval of this work plan by NM OCD.

If there are any questions regarding this report, please contact Natalie Gordon at 505-506-0040.

Sincerely,

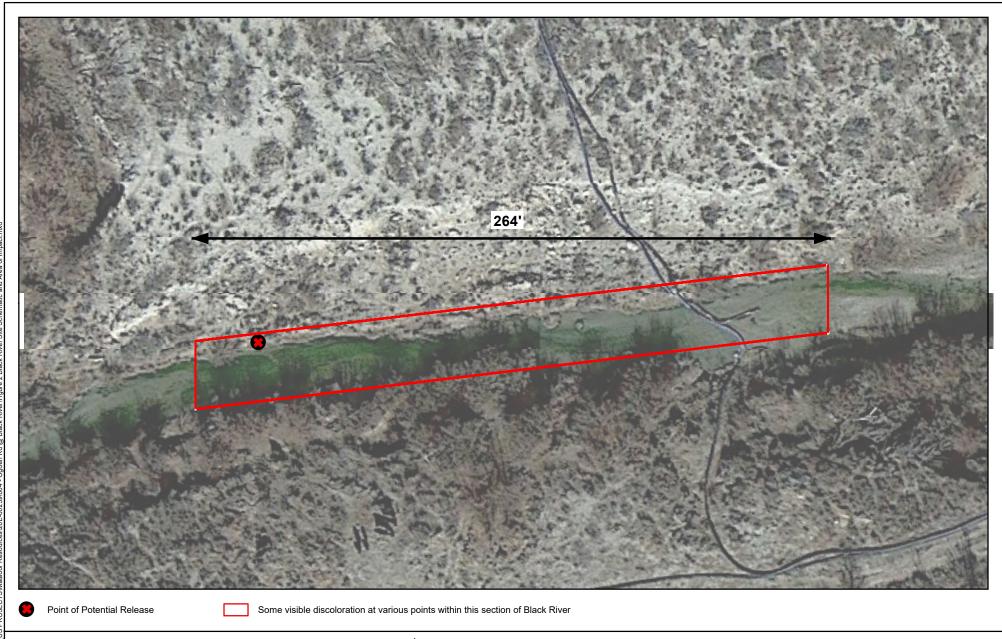
Natalie Gordon
PROJECT MANAGER

### **Attachments**

Attachment 1: Black River Site Schematic and Area of Impact Attachment 2: Black River Pre-Remediation Daily Sampling Points

Attachment 3: Summary Tables of Daily Water Sampling and Bi-weekly Soil Sampling

Attachment 4: Lab Data Reports
Attachment 5: Check Dam Diagram





NAD 1983 UTM Zone 13N

Map Center: Date: Mar 31/20

Lat/Long: 32.238781, -104.090858



**Black River Site Schematic and Area of Impact** 

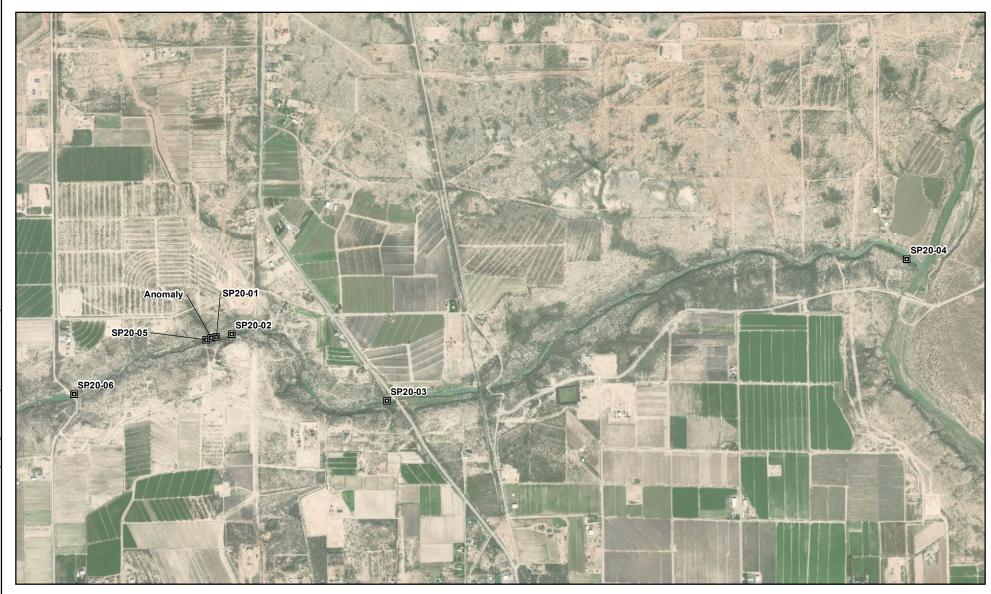
FIGURE:

1



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Imagery from ESRI, 2018. Point of release and area of impact from Vertex GPS survey.



Sampling Point



0 250 500 1,000 1,500 Feet

Map Center: Lat/Long: 32.240699, -104.073107 NAD 1983 UTM Zone 13N Date: Mar 26/20



**Black River Pre-Remediation Daily Sampling Points** 

FIGURE:

2



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes.

Note: Imagery from ESRI, 2018. Sampling points from Vertex GPS survey.

VERSATILITY. EXPERTISE.

Document Path: G:∖1-Projects∖\_US PROJECTS\Matador Resources\20E-00239\004 - Ogden Rd @ Black River\

Client Name: San Mateo Midstream, LLC Site Name: Black River @ Ogden Road

NM OCD Incident Tracking Number: NRM2005959916

					ater Sam	pple Lab Results								
	Sample Description		Characteristics			Petroleum Hydrocarbons  Volatile Extractable							ganic	
Sample Point	Sample Location*	Sample Date	Hd	Total Suspended Solids	Total Dissolved Solids	Turbidity	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	Total Petroleum Hydrocarbons (TPH)	Chloride	Sulfate
		0 (07 (0000		(mg/L)	(mg/L)	(NTU)	(μg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L
		2/27/2020 2/28/2020	7.92	<8.0 <4.0	2,380 2,370	5.1 4.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	320 340	1,100 1,100
		2/29/2020	7.96	8.0	2,360	8.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	320	1,100
		3/1/2020	7.95	<4.0	2,350	10.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	310	1,100
		3/2/2020	7.94	<4.0	2,350	6.6	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	310	1,100
		3/3/2020 3/4/2020	7.94 7.93	10.0 260.0	2,320 2,320	7.7 230.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	340 290	1,200
		3/5/2020	7.98	25.0	2,040	23.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	230	990
		3/6/2020	8.01	25.0	2,040	15.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	210	980
		3/7/2020	7.93	15.0	2,100	14.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	230	980
		3/8/2020 3/9/2020	7.90	16.0	2,140	13.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	260	1,100
		3/9/2020	7.92 7.96	14.0 14.0	2,170 2,180	14.0 11.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	260 270	990 1,000
SP 20-01	100'	3/11/2020	7.96	15.0	2,180	12.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	290	1,100
3F ZU-U1	Downstream	3/12/2020	8.10	35.0	2,180	18.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	290	1,100
		3/13/2020 3/14/2020	7.58 8.02	14.0 22	2,190 2,110	17.0 23	- <1.0	- <4.5	- <0.050	<1.0 <1.0	<5.0 <5.0	<6.000 <6.050	260 250	980
		3/14/2020	7.95	28.0	2,110	23.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	260	1,000
		3/16/2020	8.04	15.0	2,130	17.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	250	1,000
		3/17/2020	7.93	19.0	2,160	17.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	240	940
		3/18/2020	7.86	18.0	2,180	12.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	270	1,000
		3/19/2020 3/20/2020	7.93 7.91	8.0 4.0	2,210 2,290	10.0 10.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	270 300	1,000
		3/21/2020	7.96	31.0	2,490	28.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	420	1,100
		3/22/2020	8.03	50.0	1,760	38.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	150	-
		3/23/2020	7.98	14.0	2,630	14.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	480	1,100
		3/24/2020 3/25/2020	7.82 7.88	10.0 <4.0	2,870 3,330	11.0 8.1	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	590 750	1,200
		3/23/2020	7.00	\4.0	3,330	0.1	V1.0	\4.3	\0.030	V1.0	\\ 3.0	<0.030	/30	1,300
		2/27/2020	-	44.0	2,400	55.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	340	1,100
		2/28/2020	7.96	5.0	2,430	7.4	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	350	1,100
		2/29/2020	7.48	25.0	2,390	15.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050 <6.050	340	1,100
		3/1/2020 3/2/2020	7.94 7.93	8.0 16.0	2,390 2,370	12.0 7.1	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050	330 330	1,100
		3/3/2020	7.95	20.0	2,350	11.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	330	1,100
		3/4/2020	7.95	240.0	2,270	150.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	300	990
		3/5/2020	8.01	38.0	2,090	32.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	240	990
		3/6/2020 3/7/2020	8.00 7.94	27.0 19.0	2,060 2,150	19.0 14.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	230 250	990
		3/8/2020	7.89	15.0	2,140	13.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	270	1,000
		3/9/2020	7.92	18.0	2,260	13.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	280	1,000
	100	3/10/2020	7.97	20.0	2,230	14.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	300	1,100
SP 20-02	100 yards downstream	3/11/2020 3/12/2020	7.94 8.00	14.0 27.0	2,250 2,270	13.0 15.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	310 310	1,100
	downstream	3/13/2020	7.96	17.0	2,200	16.0	-	-	-	<1.0	<5.0	<6.000	270	-
		3/14/2020	8.00	27.0	2,190	28.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	270	1,000
		3/15/2020	7.98	32.0	2,230	23.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	280	990
		3/16/2020 3/17/2020	8.03 7.92	24.0	2,180 2,150	19.0 19.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	270 270	1,000
		3/18/2020	7.88	15.0	2,170	13.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	280	1,100
		3/19/2020	7.95	17.0	2,260	14.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	300	1,100
		3/20/2020	7.92	7.0	2,290	11.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	290	1,000
		3/21/2020 3/22/2020	7.94 7.99	29.0 83.0	2,550 1,770	30.0 46.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	430 160	1,100
		3/23/2020	7.99	14.0	2,650	14.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	490	1,100
		3/24/2020	7.90	10.0	2,880	12.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	610	1,200
		3/25/2020	7.87	5.0	3,310	5.7	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	760	1,300
	<u> </u>	2/27/2020	_	32.0	2,740	55.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	460	1,200
		2/27/2020	7.85	24.0	2,740	35.0	<1.0	<4.5 <4.5	<0.050	<1.0	<5.0 <5.0	<6.050 <6.050	480	1,200
		2/29/2020	7.85	55.0	2,750	65.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	480	1,200
		3/1/2020	7.86	35.0	2,780	66.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	460	1,200
		3/2/2020	7.82	29.0	2,710	16.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	450	1,200
		3/3/2020 3/4/2020	7.88 7.90	39.0 140.0	2,680 2,450	36.0 130.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	470 330	1,300 1,100
		3/5/2020	7.92	51.0	2,360	58.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	240	1,100
	1	3/6/2020	7.45	42.0	2,310	43.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	320	1,100



Client Name: San Mateo Midstream, LLC

Site Name: Black River @ Ogden Road NM OCD Incident Tracking Number: NRM2005959916

Daily Water San																
	Sample Description			Characteristics			Petroleum Hydrocarbons Volatile Extractable							Inorganic		
Sample Point	Sample Location*	Sample Date	Нd	Total Suspended Solids	Total Dissolved Solids	Turbidity	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range of Organics (MRO)	Total Petroleum Hydrocarbons (TPH)	Chloride	Sulfate		
				(mg/L)	(mg/L)	(NTU)	(μg/L)	 (μg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)		
		3/7/2020	7.84	32.0	2,410	32.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	340	1,100		
		3/8/2020	7.84	47.0	2,510	44.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	360	1,100		
		3/9/2020 3/10/2020	7.85 7.86	44.0 34.0	2,510 2,520	46.0 32.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	370 400	1,100 1,200		
SP 20-03	Noor 20E Dridge	3/11/2020	7.53	23.0	2,530	31.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	420	1,200		
3P 2U-U3	Near 285 Bridge	3/12/2020	7.89	29.0	2,540	25.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	410	1,200		
		3/13/2020 3/14/2020	7.87 7.93	42.0 43.0	2,560 2,490	44.0 48.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	380 370	1,100		
		3/15/2020	7.94	45.0	2,480	48.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	370	1,100		
		3/16/2020	7.65	28.0	2,480	30.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	370	1,100		
		3/17/2020	7.93	37.0	2,470	41.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	360	1,100		
		3/18/2020 3/19/2020	7.81 7.91	31.0 20.0	2,540 2,500	32.0 27.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	390 390	1,200 1,100		
		3/20/2020	7.86	25.0	2,620	27.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	410	1,100		
		3/21/2020	7.90	25.0	2,610	30.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	430	1,200		
		3/22/2020 3/23/2020	7.96 7.95	57.0 22.0	1,940 2,640	39.0 24.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	200 470	1,100		
		3/24/2020	7.95	27.0	3,040	29.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	650	1,300		
		3/25/2020	7.82	17.0	3,510	17.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	830	1,400		
		2/27/2020		.0.0	2 000	22.0	.10	.4.5	.0.050	-10	.5.0	.6.050	600	1 200		
		2/27/2020 2/28/2020	7.94	<8.0 19.0	3,090 3,480	23.0 17.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	600 800	1,300 1,400		
		2/29/2020	7.97	19.0	3,070	26.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	600	1,300		
		3/1/2020	7.97	12.0	3,090	29.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	580	1,300		
		3/2/2020 3/3/2020	7.49 7.96	20.0 16.0	2,950 3,010	12.0 17.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	560 610	1,300 1,300		
		3/4/2020	8.00	32.0	2,700	37.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	490	1,100		
		3/5/2020	7.91	29.0	2,610	39.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	400	1,200		
		3/6/2020	7.96	36.0	2,590	40.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	420	1,100		
		3/7/2020 3/8/2020	7.93 7.93	29.0 28.0	2,510 2,620	33.0 30.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	400 400	1,100 1,100		
		3/9/2020	7.95	22.0	2,790	26.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	490	1,100		
		3/10/2020	7.50	24.0	2,770	22.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	500	1,200		
SP 20-04	Pecos/Black River Confluence	3/11/2020 3/12/2020	7.92 7.94	14.0 83.0	2,730 2,940	22.0 49.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	510 610	1,300 1,300		
	Tiver connucince	3/13/2020	7.94	24.0	2,840	30.0	-	-	-	<1.0	<5.0	<6.000	470	-		
		3/14/2020	7.97	28.0	2,690	34.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	460	1,100		
		3/15/2020	8.00	36.0	2,730	36.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	470 450	1,100 1,100		
		3/16/2020 3/17/2020	8.00 7.95	33.0 21.0	2,660 2,700	35.0 28.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	480	1,200		
		3/18/2020	7.88	30.0	2,780	29.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	500	1,200		
		3/19/2020	7.96	21.0	2,870	24.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	560	1,200		
		3/20/2020 3/21/2020	7.49 7.98	32.0 33.0	3,130 2,850	39.0 39.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	630 540	1,200 1,200		
		3/22/2020	7.49	35.0	2,250	37.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	290	-		
		3/23/2020	8.01	51.0	2,110	49.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	270	970		
		3/24/2020 3/25/2020	7.96 7.93	25.0 23.0	2,870 3,340	30.0 27.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	610 800	1,200 1,300		
		3/23/2020	7.55	23.0	3,340	27.0	VI.0	V4.5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	V1.0	V3.0	V0.030	800	1,300		
		2/27/2020	-	<8.0	2,350	3.8	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	310	1,100		
		2/28/2020	7.96	<4.0	2,380	2.7	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	330	1,100		
		2/29/2020 3/1/2020	7.96 7.97	10.0 <4.0	2,320 2,330	6.5 7.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	320 300	1,100 1,000		
		3/2/2020	7.95	<4.0	2,330	3.8	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	320	1,100		
		3/3/2020	7.96	5.0	2,290	4.3	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	320	1,100		
		3/4/2020 3/5/2020	7.99 8.00	38.0 13.0	2,230 2,030	36.0 16.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	310 230	1,000 980		
		3/6/2020	8.02	18.0	2,030	14.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	210	1,000		
		3/7/2020	7.98	11.0	2,060	13.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	220	970		
		3/8/2020	7.43	13.0	2,160	11.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	240	970		
		3/9/2020 3/10/2020	7.94 7.97	14.0 16.0	2,150 2,160	11.0 11.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	250 270	970 1,100		
SP 20-05	100' Upstream	3/11/2020	7.97	4.0	2,160	13.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	280	1,100		
3F 2U-U3	100 Obstream	3/12/2020	8.03	21.0	2,170	15.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	280	1,100		
		3/13/2020 3/14/2020	7.98 8.02	8.0 18.0	2,190 2,130	12.0 20.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	260 240	960		
		3/14/2020	8.02	16.0	2,130	18.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	260	1,000		
	I	3/ 13/ 2020	0.00	10.0	2,100	10.0	`1.0	1 -7.5	1 -0.050	` `1.0	-5.0	1 -0.030	200	1,000		



Client Name: San Mateo Midstream, LLC Site Name: Black River @ Ogden Road

NM OCD Incident Tracking Number: NRM2005959916

					Daily W	ater Samı	ple Lab Res	ults						
9	Sample Description		Charac	teristics		Petroleum Hydrocarbons								
				<u>ر</u>			Vol	atile			Inor	ganic		
Sample Point	Sample Location*	Sample Date	Нd	Total Suspended Solids	Total Dissolved Solids	Turbidity	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	Total Petroleum Hydrocarbons (TPH)	Chloride	Sulfate
				(mg/L)	(mg/L)	(NTU)	(µg/L)	(µg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
		3/16/2020	8.03	12.0	2,120	15.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	240	990
		3/17/2020	7.98	17.0	2,130	16.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	260	1,000
		3/18/2020	7.91	13.0	2,170	12.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	270	1,100
		3/19/2020	7.96	11.0	2,160	11.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	270	1,100
		3/20/2020	7.93	6.0	2,240	12.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	290	1,000
		3/21/2020	7.93	22.0	2,490	25.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	410	1,100
		3/22/2020	8.04	44.0	1,750	31.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	160	-
		3/23/2020	7.98	15.0	2,630	13.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	480	1,100
		3/24/2020	7.80	12.0	2,910	12.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	620	1,200
		3/25/2020	7.88	<4.0	3,290	7.3	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	750	1,300
														<u> </u>
		2/27/2020	-	<8.0	2,230	4.5	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	270	1,000
		2/28/2020	7.83	<4.0	2,250	4.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	290	1,100
		2/29/2020	7.83	11.0	2,230	6.9	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	290	1,100
		3/1/2020	7.81	<4.0	2,250	9.8	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	280	1,100
		3/2/2020	7.74	4.0	2,250	5.1	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	280	1,100
		3/3/2020	7.85	6.0	2,160	4.8	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	260	1,100
		3/4/2020	7.92	25.0	2,240	23.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	300	1,000
		3/5/2020	7.91	7.0	1,930	12.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	190	940
		3/6/2020	7.88	14.0	1,920	11.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	190	990
		3/7/2020	7.79	9.0	2,010	12.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	200	960
		3/8/2020	7.80	9.0	2,050	12.0	<1.0 <1.0	<4.5 <4.5	<0.050 <0.050	<1.0 <1.0	<5.0 <5.0	<6.050 <6.050	220 230	970 990
		3/9/2020 3/10/2020	7.82 7.79	12.0 11.0	2,080 2,080	12.0 8.8	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	250	1,100
	East of Higby	3/10/2020	7.79	<4.0	2,080	9.4	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	250	1,100
SP 20-06	Hole Road	3/11/2020	7.73	16.0	2,080	10.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	240	1,000
	Hole Road	3/13/2020	7.81	8.0	2,130	11.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	230	-
		3/14/2020	7.88	11.0	2,010	14.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	210	930
		3/15/2020	7.89	14.0	2,090	15.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	220	910
		3/16/2020	7.89	18.0	2,030	18.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	220	990
		3/17/2020	7.89	7.0	2,050	11.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	230	980
		3/18/2020	7.71	35.0	2,090	28.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	240	1,000
		3/19/2020	7.96	11.0	2,160	11.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	270	1,100
		3/20/2020	7.79	6.0	2,180	8.6	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	260	1,000
		3/21/2020	7.82	4.0	2,210	8.1	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	280	1,000
		3/22/2020	8.02	20.0	1,750	20.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	160	-
		3/23/2020	7.91	8.0	2,570	12.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	470	1,100
		3/24/2020	7.82	10.0	2,870	11.0	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	590	1,200
		3/25/2020	7.75	6.0	3,290	7.8	<1.0	<4.5	<0.050	<1.0	<5.0	<6.050	740	1,300

<sup>\*</sup> See Figure 2 for sample locations. Green highlights are rain events Red font means initial data report, not final "-" indicates not assessed/analyzed.



Client Name: San Mateo Midstream, LLC Site Name: Black River @ Ogden Road

NM OCD Incident Tracking Number: NRM2005959916

				Intermitt	ent Soil Sample	Lab Results					
	Sample Description		Characteristics			Petroleum I	lydrocarbons			Inor	ganic
Sample Point	Sample Location*	Sample Date	Ŧ	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range elgenor Oil Range organics (MRO)	Total Petroleum Hydrocarbons (TPH)	Chloride	Sulfate
				(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
SP 20-01	100' Downstream	3/6/2020	7.54	<0.023	<0.207	<4.6	<9.9	<49	<63.5	280	3,000
SP 20-02	100 yards downstream	3/6/2020	7.88	<0.025	<0.225	<5.0	<9.1	<46	<60.1	470	690
SP 20-03	Near 285 Bridge	3/6/2020	8.14	<0.12	<1.07	<24	<9.9	<49	<82.9	98	370
SP 20-04	Pecos/Black River Confluence	3/6/2020	7.94	<0.12	<1.04	<23	<9.7	<48	<80.7	160	350
SP 20-05	100' Upstream	3/6/2020	7.51	<0.12	<1.05	<23	<9.7	<49	<81.7	240	990
SP 20-06	East of Higby Hole Road	3/6/2020	7.99	<0.12	<1.07	<24	<9.3	<47	<80.3	28	160
SP 20-01	100' Downstream	3/10/2020	7.57	<0.024	<0.215	<4.8	<8.4	<42	<55.2	200	5,000
SP 20-02	100 yards downstream	3/10/2020	7.77	<0.025	<0.221	<4.9	<9.3	<46	<60.2	77	4,300
SP 20-03	Near 285 Bridge	3/10/2020	7.93	<0.025	<0.224	<5.0	<9.7	<49	<63.7	98	4,800
SP 20-04	Pecos/Black River Confluence	3/10/2020	7.60	<0.12	<1.05	<23	<9.9	<49	<81.9	170	360
SP 20-05	100' Upstream	3/10/2020	7.52	<0.12	<1.07	<24	<8.3	<42	<74.3	750	2,500
SP 20-06	East of Higby Hole Road	3/10/2020	7.75	<0.12	<1.04	<23	<9.9	<50	<82.9	59	300
SP 20-01	100' Downstream	3/14/2020	7.86	<0.024	<0.213	<4.7	<9.9	<50	<64.6	140	510
SP 20-02	100 yards downstream	3/14/2020	7.98	<0.024	<0.216	<4.8	<9.8	<49	<63.6	270	2,000
SP 20-03	Near 285 Bridge	3/14/2020	7.48	<0.023	<0.210	<4.7	<9.3	<47	<61.0	130	2,300
SP 20-04	Pecos/Black River Confluence	3/14/2020	7.38	<0.12	<1.11	<25.0	<10.0	<50	<85.0	220	400
SP 20-05	100' Upstream	3/14/2020	7.33	<0.12	<1.11	<25.0	<9.3	47.0	<81.3	220	3,900
SP 20-06	East of Higby Hole Road	3/14/2020	8.19	<0.11	<1.03	<23.0	<10.0	<50	<83.0	29	140



Client Name: San Mateo Midstream, LLC Site Name: Black River @ Ogden Road

NM OCD Incident Tracking Number: NRM2005959916

				Intermitt	ent Soil Sample	Lab Results					
	Sample Description		Characteristics		Inor	ganic					
				Vol	atile		Extra				
Sample Point	Sample Location*	Sample Date	Ħ	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	Total Petroleum Hydrocarbons (TPH)	Chloride	Sulfate
				(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
SP 20-01	100' Downstream	3/18/2020	-	<0.023	<0.207	<4.6	<9.7	<48	<62.3	410	5,400
SP 20-02	100 yards downstream	3/18/2020	-	<0.024	<0.220	<4.9	<9.0	<45	<58.9	250	4,400
SP 20-03	Near 285 Bridge	3/18/2020	-	<0.024	<0.215	<4.8	<9.7	<48	<62.5	4,600	5,300
SP 20-04	Pecos/Black River Confluence	3/18/2020	-	<0.024	<0.220	<4.9	<10.0	<50	<64.9	150	350
SP 20-05	100' Upstream	3/18/2020	-	<0.024	<0.213	<4.7	11.0	<50	11.0	2,900	4,200
SP 20-06	East of Higby Hole Road	3/18/2020	-	<0.025	<0.221	<4.9	12.0	<47	12.0	88	220
	1 1				ı	ı	ı	ī	ı	1	ı
SP 20-01	100' Downstream	3/21/2020	7.51	<0.024	<0.219	<4.9	<9.7	<49	<63.6	230	1,600
SP 20-02	100 yards downstream	3/21/2020	7.44	<0.023	<0.211	<4.7	<9.2	<46	<59.9	1,200	4,200
SP 20-03	Near 285 Bridge	3/21/2020	7.87	<0.024	<0.216	<4.8	<9.2	<46	<60.0	94	4,100
SP 20-04	Pecos/Black River Confluence	3/21/2020	7.98	<0.024	<0.215	<4.8	<9.6	<48	<62.4	130	280
SP 20-05	100' Upstream	3/21/2020	7.45	<0.024	<0.215	<4.8	<9.6	<48	<62.4	180	5,500
SP 20-06	East of Higby Hole Road	3/21/2020	7.39	<0.024	<0.217	<4.8	<9.5	<47	<61.3	98	910
							ı	ı		1	I
SP 20-01	100' Downstream	3/25/2020	7.39	<0.024	<0.219	<4.8	<9.4	<47	<61.2	300	5,600
SP 20-02	100 yards downstream	3/25/2020	7.21	<0.024	<0.217	<4.9	<8.5	<42	<55.4	120	3,900
SP 20-03	Near 285 Bridge	3/25/2020	7.80	<0.024	<0.217	<4.9	<7.6	<38	<50.5	140	4,000
SP 20-04	Pecos/Black River Confluence	3/25/2020	7.82	<0.023	<0.211	<4.7	<8.9	<44	<57.6	150	320
SP 20-05	100' Upstream	3/25/2020	7.31	<0.025	<0.222	<4.9	<9.8	<49	<63.7	2,600	4,800
SP 20-06	East of Higby Hole Road	3/25/2020	7.68	<0.024	<0.215	<4.8	<9.9	<50	<64.7	230	440

<sup>\*</sup> See Figure 1 for sample locations.



<sup>&</sup>quot;-" indicates not assessed/analyzed