

#### Report Cover Sheet / D21.08

(Use as 8.5x11 Cover Sheet for Reports without a Template)

Highlighted areas have a drop down list to select from.

All documents must be loaded to PCS Drop Box in PDF format and Named with underscores between each of these items: Document #; Spread; Inspectors First Initial & Last Name; then Date of Report. **EXAMPLE: D12.05\_OPP1\_JGreen\_020116** 

Inspector Name:	Brian Lipinski, PG
Contractor Name:	Michels Directional Crossings
Report Date:	8/12/2020
Rev:	
	Misc Reports
	HDD Directional Survey
	Spread 6
Pipeline #	
Pipeline / Facility Name:	20 Houston injection Fam Ouks
Pipeline / Facility SCADA Code:	12127 - HST7-TWI5-20
Area:	Eastern Area Pipelines
District:	Montello
Mile Post:	
Station Start:	14801+68
Station End:	
Lat:	
Long:	
County:	Chaster
County:	CHESTER
State:	Pennsylvania
Agency:	PADEP
Heat Number:	
Serial Number:	
NOTES:	

End of Day Summary: Michels Pipeline spent the day cleaning up the IR. The reamer was pulled from the hole. Three truckloads (26 yards) of grout were pumped into the IR at the end of the day.

grout were pumped into the IR at the end of the day. Ream from SE to NW. Total Length (MD): 2,686 ft

Total footage for the day (MD): 0 ft claimed + 0 ft unclaimed = 0 ft

Total footage completed to date (MD): 1579 ft (claimed) + n/aft (BTS) + 15 ft (unclaimed) = 1594ft

Estimated HD bit location: np ft (claimed) + n/a ft (BTS) + 0ft (unclaimed) = np ft

Estimated Pipeline Station Number: ---

No IRs. No LOC. No LCMs.

% Complete US+DS (MD): (n/a ft + 1594 ft)/2,686 ft = 59%

Inspector Name:	Inspector Signature:	Date:
Brian Lipinski, PG	Brian Lipinski, PG	8/12/2020
Chief Inspector Name:	Chief Inspector Signature:	Date:

# Sunoco Pipeline L.P. - Pennsylvania Pipeline Project HDD Inspection Daily Report

<b>Date:</b> 08/12/20	Utility Inspector:	PG Inspector: Brian Lipir	ıski, PG								
	DS/Brad Golay: 580.304.9871	PG Support:									
Spread #: 6	US/Leslie Gray: 870.217.2714	Company: GES, Inc									
Rd Permit Name: Milford DS address: Green \ 19335 (40.079037, - US address: Little Cd 19355 (40.082544, - HDD Plan #: PA-CH	,	Weather  AM: 78-88 °F, partly cloudy  PM: 88-90 °F, partly cloudy with thunderstorms  Wind: SW, 2-12 mph  Prior 24-hrs Precip: 0 inches									
Drilling Supervisor	r:	HDD Path Length (ft): 2,	641 (HD) / 2	,686 (MD)							
Company: Michel	S	Drilling Direction: NW to	SE[] SE to	NW [ <b>X</b> ]							
		Station start (SE): 14828+04 Starting Elev: 377.76  Station end (NW): 14801 Ending Elev: 494.056									
Steerhand/Surveyo	or: n/a during ream	Daily Claimed Footage per UI Report	Start	End	Total						
Foreman: James [	Day (DS) / Richard Wulff (US)	Measured Distance from SE e/e:	1579	1579	0						
		Horizontal Distance from SE e/e:	na	na	na						
Driller: James Day	(DS) / Richard Wulff (US)	Station:	na	na							
Rig Type: Michels	880 (US and DS)	Depth:	na	na							
		Elevation (ft-amsl):	na	na							
	t [ ] Ream [X] Swab[ ] ost-pipe pull inspection [ ]	Rate of Advancement: S	low [] Mode	rate [] Rapid	0						
Pilot exit point/dis		Materials Generated for Disposal: Yes [X] No []									
	Medium [ ] High [ <b>X</b> ] OCs and IRs occurred during (see Section 3)	Waste Description: IR cleanup materials; no amounts provided.									

Previous IR in Area? Yes [X] No [] If yes, when? During drilling for the 16-in line (see Section 3).	Known Water Sources in ROI? Yes[X] No [] Residential well within 450 ft buffer of HDD alignment.						
Known Product Release Location(s)? Yes [] No [X] If yes, describe:	Wetlands: W-H17						
Contamination Encountered? Yes [] No [X] If yes, describe:	Streams: S-H10 (SE stream segment), S-H11 (NW stream segment)						
Estimated GW Depth (from borings): 16 ft-bgs at SE end.	Other: (Pond: P-H2 – east/northeast of ROW)						
Significant Increase of Groundwater in Returns? Yes [X] No [] If yes, describe:  Distance/Depth/Est. Rate: 16 ft-bgs at SE end/10 gpm.	Unanticipated Water Sources Encountered?  Yes [] No [X] If Yes, describe:						
After 16-in pipe was pulled groundwater did eventually emerge from SE e/e requiring a containment system. Flow on 5/21/20 was moderate – estimated to be 10 gpm from outer conductor casing.							

Estimated Known Median Groundwater Well Yield: 10 gpm +/-

## **Area Geology (formations/fractures):**

The northwest entry/exit is located over the southeastern extent of a metadiabase, and SE of Milford Rd is a graphitic gneiss, referred to as the Pickering Gneiss.

- Metadiabase: Regional maps show the metadiabase to the SE edge of Milford Rd. Consists of a dark-greenish-gray to almost black diabase. Grain size is generally 0.5 to 1 mm. The rock consists of augite, feldspar, and magnetite. Much of it has been extensively altered. Feldspar is altered to sericite, and augite has been replaced by epidote and chlorite. It occurs as mostly thin dikes, but a few may be greater than 100 feet thick. It exhibits no banding.
- Graphitic gneiss: The graphitic felsic gneiss includes quartz, orthoclase, hornblende, biotite, graphite, and small areas of marble. It is light to medium gray. The graphite occurs as flakes 1 to 2 mm in diameter, somewhat larger than the usual grain size of the rock, and is disseminated throughout the gneiss. The unit is also referred to as the Pickering Gneiss. It has distinct and very common flaggy banding and is of sedimentary origin.
- **Franklin Marble:** Observed on regional maps and occurs to the southeast of the graphitic gneiss. White- to light-gray-weathering, white, grayish-white, or, less commonly pinkish-orange, coarse- to locally fine-crystalline calcite marble with accessory amounts of graphite, phlogopite, chondrodite, clinopyroxene.

**Approximate fracture locations based on Refraction:** 5+68, 7+58, 10+33, 11+33, 12+08, 12+98, 13+48, 14+98, 15+53, 18+23, 20+43, 22+08, 23+48 (0+00 is NW entry/26+41 is SE entry)

**Approximate fracture locations based on MASW:** 5+78, 7+68, 10+08, 11+78, 13+48, 16+08, 18+48, 20+33, 22+28 (0+00 is NW entry/26+41 is SE entry)

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Date: 08/12/20 HDD Location: 53-0290-20 (U5-D5)												
1. Dri	Iling Observations											
TIME ONSITE	DRILLING OBSERVATIONS	ROTARY TORQUE/PUSH-PULL/ ANNULAR PRESSURE	DRILLING FLUID COMPOSITION/ PUMPING RATE	MUD RETURN OBSERVATIONS								
0700 to 1000	Michels pipeline cleaning up IR in Wetlands W-H17 and Stream S- H10. No UI Report.	RT = NA Push = NA AP = NA	Bentonite, NA	NA								
1000 to 1300	Michels pipeline cleaning up IR in Wetlands W-H17 and Stream S-H10. Drill crew pulling joints from hole. No UI Report.	RT = NA Push = NA AP = NA	Bentonite, NA	NA								
1300 to 1600	Michels pipeline cleaning up IR in Wetlands W-H17 and Stream S-H10. Drill crew pulling joints from hole. At about 1400, there were 17 joints pulled on the rack. Crew cabbed up for lightning until 1600. No UI Report.	RT = NA Push = NA AP = NA	Bentonite, NA	NA								
1600 to 2030	Michels pipeline cleaning up IR in Wetlands W-H17 and Stream S-H10. Drill crew pulling joints from hole. Reamer at rig at 1810. Keystone Concrete arrived at 1810 and pumped 3 loads of grout into the IR depression. No UI Report.	RT = NA Push = NA AP = NA	Bentonite, NA	NA								
	End of Day Summary: Michels Pip pulled from the hole. Three truckload the day.	ds (26 yards) of grout w	• .									
	Ream from SE to NW. Total Length											
	Total footage for the day (MD): 0  Total footage completed to date (Id) 1594ft			5 ft (unclaimed) =								
	Estimated HD bit location: np ft (c	laimed) + n/a ft (BTS) +	+ 0ft (unclaimed) =	np ft								
	Estimated Pipeline Station Number	, , ,	,,	•								
	No IRs. No LOC. No LCMs.											
	% Complete US+DS (MD): (n/a ft +	1594 ft)/2,686 ft = 59%	6									

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2. Otl	ner Observations	
TIME ONSITE	OBSERVATIONS WALKING DRILL PATH	IR NOTED/ DESCRIPTION
0745- 0845	Inspected and observed IR cleanup at Wetland W-H17 and downgradient in Stream S-H10.	NA
0945- 1150	Inspected and observed IR cleanup at Wetland W-H17 and downgradient in Stream S-H10. Noted that the drill crew was pulling drill pipe on the DS rig.	NA
1315- 1410	Inspected and observed IR cleanup at Wetland W-H17 and downgradient in Stream S-H10. Noted that the drill crew was pulling drill pipe on the DS rig. There are 17 joints out at 1410 when crew cabbed up for lightning.	NA
1600- 2030	Inspected and observed IR cleanup at Wetland W-H17 and downgradient in Stream S-H10. The reamer was on the rig by 1810. Nothing was observed in the IR as the reamer was being removed from the hole. A concrete pump truck arrived at 1820 and began pumping grout into the IR depression. Each load only took approximately 10-15 minutes to pump but the last truck didn't arrive until 2002. Groundwater was observed coming from DS entry hole.	NA

#### 3. Comments

#### **NOTES:**

Upper Uwchlan Twp. Ordinance precludes personnel being on site prior to 0700 weekdays &, 0900 Saturday. Permitted work hours 7am-7pm (Mon through Fri) and 9am to 5pm (Sat). No work on Sundays or legal holidays.

**P&P Reference date:** Last revised 06/11/2019.

DS: 36-in outer casing: Installed to 90.1 ft (pipe in the ground); angle = 16 degrees.

DS: Centralizer casing: Installed to 95.05 ft; angle = 16 degrees

US: 36-in outer casing: Installed to 138.25 ft (pipe in the ground); angle = 18.5 degrees.

US: Centralizer casing: Installed to ~138.25 ft; angle = 18.5 degrees

**2/20/20:** BHA = 0.95 ft (bit) + 7.38 ft (jetting assembly) + 8.93 ft (gyro) + 1.23 ft (crossover sub) = 18.59 ft

**2/20/20:** BTS = 8.33 ft (gyro sensor/survey point 3 ft past jetting assembly)

**2/21/20:** BTS = 29.25 ft (mud motor/monel)

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## 3. Comments

**3/2/20:** Confirmed that 26+41 (DS entry) is the 36-in casing and the reference point for a "completed" joint is the SE (i.e., DS) side of the vice. Drilling SE to NW. Offset from 36-in casing to vice is 18.85 ft SE. Steerhand makes all corrections such that distances reference edge of 36-in casing (26+41).

All Form A distances (HD and MD) include the BTS since the steerhand provide HD and MD to the gyro sensor.

**3/3/20:** PGs must minimize foot traffic across the wetlands (W-H17). Based on communications with Josh Prosceno, PGs will walk to edges from the SE and NW (from NW will park within in ROW on Highview). Onsite EI will fly the wetlands 2-3x in AM and PM, weather permitting and provide PGs with photo of wetlands if anything changes or an end of day photo. Person inspecting the ROW will park near NW edge of LOD to minimize vehicle traffic in work space.

**3/4/20:** Installed 20 yd<sup>3</sup> grout (used open joint at 645 ft MD from SE entry). Did not see grout emerge at SE entry.

**3/5/2020:** Jetting Assembly BHA = 11.5 ft

**3/6/20:** Installed 40 yd³ (used open joint at ~508 ft MD from SE entry). While pumping third load, grout started to emerge at SE entry.

**3/9/20:** Augered out 36-in casing to 90.1 ft.

**3/13/20**: New BHA: 58.44 ft; New BTS: 32.96 ft. Changes due to different survey tool, and added monel to drill string with mud-motor.

**3/14/20**: Installed approximately 50 yd<sup>3</sup> grout (from open grout joint at 653.6 ft MD from SE entry). Grout observed within outer 36" casing at SE entry during pumping from the 5<sup>th</sup> grout truck. Grout volume to be confirmed in Monday (3/16/2020) meeting.

3/16/20: Drilled out grout from 26-in casing. Hard materials encountered at ~78 ft.

**3/20/20:** Tripped in joint #16, then Covid-19 related statewide work stoppage. Steady return flow before shutting down. After shut-down continuous flow from 36-in casing at 10 to 15 gpm.

**5/18/20**: Project restarted following Covid-19 work stoppage.

**5/22/20**: New BHA: 60.5 ft; New BTS: 33.5 ft. Utilizing new survey tool and added Monel to drill string with mud motor. Began augering out 36-in casing at NW entry.

**5/29/20:** Michels began drilling out grout placed before the Covid-19 work stoppage.

**5/30/30:** Michels reached face and resumed drilling new rock.

**6/01/20:** Drilled joint #21 then tripped out. Loss of flow was determined and while tripping back in at joint #14. Tripped back out swabbed the hole and tripped back in.

**06/18/20:** Change in BHA (60.6') from 33.5' bit to sensor to 33.6'

**6/19/20:** Begin pilot hole intersect phase at joint #29 (US side)

06/25/20: US mud fluid began discharging on the DS side today.

**06/26/20:** US intersected the DS bore today and began tripping in to DS side to begin reaming from DS.

**06/27/20:** US pushed through to the DS side today.

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## 3. Comments

IRs/LOC/	Spills							
Date	IR/ LOC/ Spill?	Location: feet from entry / and (pipeline station)	Quantity (gal)	Comments				
6/19/17	LOC	~19+52 (add 20 ft to plot on 20-in P&P). 16-in station ~14821+62	1,500	LOC occurred while drilling 16-in pilot at ~1,952 ft from NW e/e. Drilling pilot from NW to SE.				
6/20/19	LOC	~19+00 / (add 20 ft to plot on 20-in P&P). 16-in station ~14821+10	20,000	LOC occurred while drilling 16-in pilot at ~1,900 ft from NW e/e. Tripping out to NW e/e during pilot.				
6/21/19	LOC	0+00 to ~19+87 (add 20 ft to plot on 20-in P&P). (16-in stations ~14802+10 to ~14821+97)	22,113	LOC occurred while drilling 16-in pilot, tripping in from NW e/e to the SE.				
6//22/17	IR	~22+57 (add 20 ft to plot on 20-in P&P). 16-in station ~14824+67	50 to 100	IR occurred while drilling 16-in pilot along the embankment between the wetlands and the pond (P-H2).				
8/29/17	IR	~22+90 (add 20 ft to plot on 20-in P&P). 16-in station ~14825+00	No volume provided.	IR occurred while drilling 16-in pilot, west of the alignment after resumed drilling following shut-down. Drilling fluid was being circulated for restart after shutdown.				
3/3/2020	Partial LOC	~20+08 / (20-in station ~14821+17)	500	When bit 645 to 650 ft (MD) or 632 ft HD, NW of SE entry, driller observed ~50% decrease in returns to mud-pit. Drilling then immediately shut-down. Est fluid loss 500 gallons.				
3/5/20	Full LOC	~21+68 (20-in station ~14823+50)	100	While tripping in with jetting assembly, pump rate of 300 gpm, driller observed full loss of returns at 485.5 ft (MD) (or ~472 ft HD) from SE entry. Est fluid loss 100 gallons.				
3/13/20	LOC	~19+55 (20-in station ~14821+17)	~500	After tripping in to bottom, and advancing bore ~10 ft with BHA including mud-motor configuration, observed a LOC with an approximate 500 gallon fluid loss.				
6/2/20	Fluid Loss	Joint 22 from SE e/e (695.5 to 728/14821+08 to 14820+75	4,600	Loss of drilling fluid, but no change in both return flow to mud-pit or cuttings from shaker.				

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3. Co	mments			
6/3/20	Fluid Loss	Joint 23 from SE e/e (728 to ~780 ft HD/14820+75 to 14820+23)	4,784	Loss of drilling fluid, but no change in both return flow to mud-pit or cuttings from shaker.
6/4/20	Fluid Loss	Joints 24 through 27 from SE e/e (~740 to ~867 ft HD/14821+40 to 14820+26)	6,400	Loss of drilling fluid, but no change in both return flow to mud-pit or cuttings from shaker.
6/5/20	Fluid Loss	Joint 28 SE e/e (~887 to ~937 ft HD/14819+16 to 14818+66	2,250	Loss of drilling fluid, but no change in both return flow to mud-pit or cuttings from shaker.
6/6/20	Fluid Loss	Tripped out then tripping in up to Joint #11 (~	2,000	Michels reported fluid losses of 2,000 gallons for the day. No LOC or loss of cuttings returns observed
7/2/20	Spill	Drilling joint 19, fitting burst on rig	~10	Drilling fluid spilled onto joint rack, rig and below rig in secondary recovery pit. Minimal spill.
7/10/20	Spill	~100 feet from DS entry 14827+00	<b>&lt;</b> 5	Oily substance on timber mat. Absorbent applied and later removed; covered 12X6 area.
8/10/20	IR	In Wetlands W-H17 at station 14824+00	10,000	Mud in wetlands W-H17; inspected off LOD and it extends several hundred feet downstream in S-H10. Subsequent inspections by third parties revealed it made it downstream to the Marsh Creek Lake

4. 3 <sup>rd</sup> Party Ins	4. 3 <sup>rd</sup> Party Inspections													
NAME	AGENCY	TIME ONSITE	COMMENTS/OBSERVATIONS/DEFICIENCIES											

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## **Photographs**

Comments: (Morning) View of IR site.



**Comments: (Morning)** View of stream S-H10 approximately 100ft downgradient of main IR. .



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Date: 08/12/20 HDD Location: S3-0290-20 (US-DS) **Comments: (Morning)** View of containment around IR point.



Comments: (Evening) View of IR prior to being filled with grout.



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Date: 08/12/20 HDD Location: S3-0290-20 (US-DS)

Comments: (Evening) View of IR after being filled with grout.



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## HDD No.: \$3-0290-20 (US-DS)

			1 1	Sample ID	1		Horizontal	Drill									I	T
				as Joint #-?			Distance	Length										
				E.g. 101-1		Pilot - P	(HD)	(MD)		Drilling	Rotary	Drill	Fluid	Annular	Est. Fluid			
	Time		Joint Length	-2	Drilling	Ream - R	to Bit	to Bit	Depth	Rate		Pressure	Pumping	Pressure	Returns			Comments
Date	(military)	PG Name	or Sub length	-3	Direction	Bit Size	(feet)	(feet)	(feet)	(ft / hour)	(ft-lbs)	(psi)	Rate (gpm)	(psi)	(percent)	Formation	Cuttings Description	(Drilling parameters from UI 3hr Update Reports)
03/17/20		JValvik	32	20'auger	NW to SE	P ~34" auger	N/A	est 20'	est 20'	N/A	N/A	N/A	N/A	N/A	N/A	metadiabase	Hand Grab samples-Yellow brown silty sand, some weathered rock fragments (metadiabase)	none
03/17/20		JValvik	32	30'auger	NW to SE	P ~34" auger	N/A	est 30'	est 30'	N/A	N/A	N/A	N/A	N/A	N/A	metadiabase	A/A	none
5/28/2020																		Reported that petroleum odors observed while
																		augering out 36-in casing. Casing at ~123 ft.
6/5/2020	19:00	TJohnson	N/A	N/A BHA	NW to SE	Pilot - P	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Preparing to drill
6/6/2020		Ty Jackson	37	вна	NW to SE	P - 12.25											No cuttings - bit in casing.	
6/8/2020		Steven Tanen	94.8	1a-1 to 3a-6	"	"	104	122	35	19	13,500	22,500	239	14	Steady		No cuttings - bit in casing.	Using BHA for distances (37 ft) since UI not permitted to request bit to survey point distance (aka bit to sensor)
"		"	31.9	4a-1 to 4a-5	"	"									"		No cuttings - bit in casing.	
"	12:59	"		4aA-6	"	"									"		No cuttings.	12:52 -on bottom/rock face
"	14:18	II	31.5	5a-1	"	"	175.2								"	Pickering Gneiss	Light gray, m to f, quartz and feldspar, tr calcite, tr biotite, trace hornblende, trace magnetite	Started joint #5 at 13:53
"	14:29	"		5a-2	"	"	180.2								"	"	"	
"	14:33	"		5a-3	"	"	185.2								"	"		
"	14:38	"		5a-4	"	" "	190.2								- "		- same, becoming coarser (c to m)	
	14:42			5a-5	- "		195.2									"	"	
"	14:47	"		5a-6	"	"	201.7	221.99	54	n/p	16,785	50,000	239	27	"		- same, becoming finer (m to f)	Using BHA for distances (37 ft) since UI not permitted to request bit to survey point distance (aka bit to sensor)
6/9/2020	9:48	"	31.9	6a-1	"	"				n/p	23,000	55,000	107	25		"	Light gray coarse to fine, quartz and feldspar, calcite, biotite, trace hornblende, trace magnetite	0941: Started joint #6
"	9:55	"		6a-2	"	"										"	"	
"	10:05	"		6a-2	"	"										"	"	
"	10:28	"		6a-2	"	"										"	"	
	10:42	"		6a-5	"	- "										"	"	
"	11:55	"		6a-6	"	"	232.2	253.89	63.3							"	- same, but no magnetite	Using BHA for distances (37 ft) since UI not permitted to request bit to survey point distance (aka bit to sensor)
"	14:15	"	31.5	7a-1	"	"										"	н	1348: started joint #7.
"	16:15	"		7a-2		"				n/p	24000	55000	107	27		"		1415 started 7-2 (stopped from 1451 to 1600 due to hydraulic leak at mudpit pump (<1 pint). Cleaned up, replaced hose due to pin-hole leak.
"	16:55	"		7a-3	"	"	~247	~269								,	n e	1655: Advanced #7 ~15 ft before tripping out to add mud-pump. HD & MD estimated based on where stopped before tripping out to change down-hole tooling (i.e., add mud motor) >>>Using BHA for distances (37 ft) since UI not permitted to request bit to survey point distance (aka bit to sensor)
New joint c	ount since e	extended BHA ~22 f	t (previous samp	oling IDs renam	ed (e.g. 7-3	updated to 7	a-3)										T	T
6/10/2020	11:31	Steve Tanen		6-5		n									Steady	"	Light gray to gray coarse to fine, quartz and feldspar, trace calcite, biotite, trace hornblende, trace magnetite, some oxidation observed. Trace to little sericite, epidote and chlorite observed suggesting residuals from drilling through diabase mapped by others in area.	New joint count due to exention of BHA when adding mud-motor. BTS = 33.5 ft (per Michels management). Started 6-5 at 1123
"	12:08	"		6-6	"	"	228.7	274.34	63	18					"	"	n .	
"	12:34	"	31.5	7-1	"	"							_		"	"	"	1224: started #7
"	12:42	"		7-2	"	"					20,000	51,000	685	29	"	"	п	
"	12:52	"		7-3	"	"									"	"	"	
"	13:01	"		7-4 7-5	"	" "									- "	"	"	
"	13:13 14:31	"		7-5 7-6			260.7	305.84	33	30					"	"		
"	14:59	n n	31.83	8-1	-	"	200.1	505.04	- 55	50					"	"	11	1450: started #8
	17.00		01.00	U-1					ı		L	I	I .				I	1 100. Started #0

## HDD No.: \$3-0290-20 (US-DS)

Date	Time (military)	PG Name	Joint Length or Sub length	Sample ID as Joint #-? E.g. 101-1 -2 -3	Drilling Direction	Pilot - P Ream - R Bit Size	Horizontal Distance (HD) to Bit (feet)	Drill Length (MD) to Bit (feet)	Depth (feet)		Rotary Torque (ft-lbs)	Pressure	Fluid Pumping Rate (gpm)		Est. Fluid Returns (percent)	Formation	Cuttings Description	Comments (Drilling parameters from UI 3hr Update Reports)
"	15:11	"		8-2	"	"										"	<ul> <li>same with decreasing sericite, epidote and chlorite, increasing coarse materials (f Gravel size fragments observed).</li> </ul>	
"	15:29	"		8-3	"										"	"	H .	
"	15:43	"		8-4	"						20,000	60,000	700	33	"	"	"	
"	15:56	"		8-5	"										"	"	H .	
"	16:12	"		8-6	"	"									"	"	"	
"	16:57	"	31.65	9-1	"										"	"	"	1652: started #9
"	17:14	"		9-2	"										"	"	H .	
"	17:23	"		9-3	"										"	"	"	
"	17:33	"		9-4	"										"	"	H .	
"	17:54	"		9-5	"	"									"	"	"	
"	18:12	"		9-6	"		321.4	369.32		24	12,000	51,000	700	40	"	"	"	1837 to 1847: started #10, drilled ~3 ft
06/11/20	10:49	Ty Johnson	31.1	10-1	"	"										Pickering Gneiss	quartz, feldspare, biotite, dark mineral	1040: started joint#10
"	11:09	"		10-2	"	"										Pickering Gneiss	quartz, feldspare, biotite, dark mineral	
"	11:13	"		10-3	"	"											quartz, feldspare, biotite, dark mineral	
"	11:21	"		10-4	"	"										Pickering Gneiss	quartz, feldspare, biotite, dark mineral, green mineral	
"	11:27	"		10-5	"	"										Pickering Gneiss	quartz, feldspare, biotite, dark mineral, green mineral	
"	11:35	"		10-6	"	"	351.5	401.5	101	30	20,000	61,000	700	46	100	Pickering Gneiss	quartz, feldspare, biotite, dark mineral, green mineral	
"	12:08	"	32	11-1	"	"										Pickering Gneiss	quartz, feldspare, biotite, dark mineral, green mineral	1157: started joint #11
																Distracione On sino	quartz, feldspare, biotite, dark mineral, green mineral,	
	12:16	"		11-2												Pickering Gneiss	yellow mineral	
"	1:29	"		11-3	"	"										Pickering Gneiss	quartz, feldspare, biotite, dark mineral, green mineral, yellow mineral	
"	13:55	"		11-4	"											"	quartz, feldspare, biotite, dark mineral, green mineral, yellow mineral	
"	13:59	"		11-5	"	"										"	quartz, feldspare, biotite, dark mineral, green mineral	
"	14:12	"		11-6	"	"	382.5	433.5	110	24	13.000	59,000	700	55		"	quartz, feldspare, biotite, dark mineral, green mineral	
					<b>.</b>						-,	,					quartz, feldspare, biotite, dark mineral, green mineral,	
"	15:13	"	31.5	12-1	. "											"	yellow mineral	1446: started joint #12
"	15:43	"		12-2	"	"										"	quartz, feldspare, biotite, dark mineral, green mineral	,
"	16:00	"		12-3	"	"										"	quartz, feldspare, biotite, dark mineral	
"	16:23	"		12-4	"	"										"	quartz, feldspare, biotite, dark mineral	
"	16:40	"		12-5	"	"										"	quartz, feldspare, biotite, dark mineral, green mineral	
"	16:51	"		12-6	"	"										"	quartz, feldspare, biotite, dark mineral, green mineral	
"	17:30	"	31.4	13-1	"	"										"	quartz, feldspare, biotite, dark mineral, green mineral	1717: started joint #13
"	17:35	"	0	13-2	"	"										"	quartz, feldspare, biotite, dark mineral	,
"	17:43	"		13-3	"	"										"	quartz, feldspare, biotite, dark mineral, green mineral	
"	17:58	"		13-4	"	"										"	quartz, feldspare, biotite, dark mineral	
"	18:06	"		13-5	"	"										"	guartz, feldspare, biotite, dark mineral	
"	18:24	"		13-6	"	"	443.5	497.5	129	18	13,200	58 000	700	62	100	"	quartz, feldspare, biotite, dark mineral	
06/12/20	8:10	"	31.5	14-1	"	"	1.0.0	107.0	.20	.0	10,200	55,500	, 50	VL.	.00	"	gzt, feldsp, dk mineral,	0800: start joint 14
"	8:35	"	01.0	14-2	"	"										"	qzt, feldsp, dk mineral, minor green mineral	jone
"	8:50	"		14-3	"	"					<b>-</b>					"	gzt, feldsp, dk mineral,	
"	9:05	"		14-4	"	"										"	qzt, feldsp, dk mineral, green mineral, minor biotite	
"	9:32	"		14-5	"	"					<b>-</b>					"	qzt, feldsp, dk mineral, minor yellow mineral	
"	9:55	"		14-6	"	"	443.5	497.5	130	18	13 000	60,000	700	73	100	"	gzt, feldsp, dk mineral, minor biotite, black garnet	1004: finish joint 14
	9.55			14-0			440.0	431.3	130	10	13,000	00,000	700	13	100		qzt, feldsp, dk mineral, minor blottle, black garnet	
"	10:30	"	31.6	15-1	"	"										"	mineral  qzt, feldsp, dk mineral, bright white mineral, minor green	1023: start joint 15
"	10:45	"		15-2	"	"										,	mineral	
"	11:10	"		15-3	"	"										"	qzt, feldsp, dk mineral, bright white mineral, minor light green mineral	
"	11:35	"		15-4	"	"										"	qzt, feldsp, dk mineral, bright white mineral major	
"	12:00	"		15-5	"											"	qzt, feldsp, dk mineral, bright white mineral, dk green mineral very minor	
"	12:10	"		15-6	"	"	503.5	560.5	149	15	13,000	60,000	700	78	100	"	qzt, feldsp, dk mineral, bright white mineral	1247: finish joint 15

## HDD No.: S3-0290-20 (US-DS)

				Sample ID	<u> </u>		Horizontal	Drill									T	T
				as Joint #-?			Distance	Length			_							
	Time		Joint Length	E.g. 101-1 -2	Drilling	Pilot - P Ream - R	(HD) to Bit	(MD) to Bit	Depth	Drilling Rate	Rotary		Fluid Pumping	Annular Pressure	Est. Fluid Returns			Comments
Date	(military)	PG Name	or Sub length	-2 -3	Direction		(feet)	(feet)	(feet)		(ft-lbs)		Rate (qpm)	(psi)	(percent)	Formation	Cuttings Description	(Drilling parameters from UI 3hr Update Reports)
	(				"	"	(100-)	(1000)	(1111)	(***	(**************************************	(1-0-7)	(3)	(1-4-7	(Jessessa)		qzt, feldsp, dk mineral, bright white mineral minor, dark	
"	13:05	"	31.5	16-1												"	and light green mineral minor,	1256: start joint 16
"	44.40			40.0													qzt, feldsp, dk mineral, bright white mineral minor, dark	
	14:10	-		16-2													green mineral minor, black garnet, biotite qzt, feldsp, dk mineral, bright white mineral minor, dark	+
"	14:30	"		16-3	"	"										"	green mineral minor, biotite	
																	qzt, feldsp, dk mineral, bright white mineral minor, dark	
"	14:55	"		16-4												"	green mineral minor, light yellow/green mineral, biotite	
	15:15	"		16-5	"	"										"	qzt, feldsp, dk mineral, bright white mineral minor, dark green mineral minor, biotite	
"	15:25	"		16-6	"	"	531.5	591.5	158	16.8	13 000	66,000	700	79	100	"	qzt, feldsp, dk mineral, bright white mineral minor, biotite	1530 finish joint 16
"	16:00	"	31.6	17-1	"	"	331.3	391.3	130	10.0	13,000	00,000	700	13	100	"	qzt, feldsp, dk mineral, bright white mineral minor	1555: start joint 17
																	qzt, feldsp, dk mineral, bright white mineral minor, dark	
"	16:15	"		17-2												"	green mineral, biotite	
	16:30	"		17-3	"	"										"	gzt, feldsp, dk mineral, bright white mineral minor, biotite	<u> </u>
"	16:58	"		17-4	"	"										"	qzt, feldsp, dk mineral, bright white mineral minor	
																		1717: completed 25 ft of joint17 then tripped out
	47.05				"	"												to joint 9; added unclaimed footage to HD and
	17:05			17-5													qzt, feldsp, dk mineral, bright white mineral minor qzt, feldsp, dk mineral, bright white mineral minor, green	MD; 1830: finsh trip out to joint 9
06/13/20	13:20	"		17-6													mineral, mineral, bright write mineral minor, green	then began shaving
00,10,20	.0.20																	n/s: no samples. Continued to shave and swab
																		bore along joint #17. Multiple passes made were
06/15/20	n/a	Steven Tanen		see comments	"										Steady		n/s	made throughout the day. Joint #17 will be
															'			claimed once bore back desired path. Plan is to
																		take a survey shot at start of 6/16/20 to assess Joint #17 bit location.
00/40/00	1	Data - Lauta - Li		47.0	,		504.5	000.54	405						Oterado	District Occion		Once shaving completed, took a survey shot at
06/16/20	n/a	Brian Lapinski		17-6			564.5	623.54	165						Steady	Pickering Gneiss		the end of Joint #17 on 6/16/20
	0.00		20.4	40.4											"		gray to light gray, medium to fine, quartz, feldspar	
	9:00		32.1	18-1													(plagioclase), trace hornblends, little to trace sericite (white, fine grained and soft flakes), and trace epidote	0845: Started #18
"	9:10	"		18-2	"	"									"	"	"	0040. Clarica #10
"	9:25	"		18-3	"	"				21	13,000	60,000	700	83	"	"	- decreasing grain size	
"	9:45	"		18-4	"	"									"	"		
"	9:58	"		18-5	"	"									"	"	II .	
- "	10:17 12:44	"	31.59	18-6 19-1	"	"	595.7	655.64	173								" 	Swabbed and shaved at end of joint 18 1236: Started #19
"	12:44	Steve Tanen	31.59	19-1	"	"					12 000	55,000	700	87	"	"	III	1230. Started #19
"	14:09	"		19-3	"	"					12,000	00,000	700	- 01	"	"	II .	
"	14:19	"		19-4	"	"									"	"	II .	
"	14:30			19-5	"	"									"	"	-same, but very fine	
"	14:45	"	04.07	19-6	"	"	626.5	687.23	179.6						"	"	" 	4507, Chartad #00
"	15:20 15:33	"	31.67	20-1 20-2	"	"				22.8	13 000	58,000	700	91	"	"	"   II	1507: Started #20
"	15:55	"		20-3	"	"				22.0	13,000	30,000	700	31	"	"	"	
"	16:04	"		20-4	"	"									"	"	п	
"	16:14	"		20-5	"	"									"	"	п	
"	16:35	"	04.55	20-6	"	"	657.5	718.9	186.1						"	"		4704 01 1 1/04
- "	17:32 17:45	"	31.57	21-1 21-2	"	"									"	"	" "	1721: Started #21
"	17:45	u		21-2	"	"									"	"		+
"	18:08	u		21-4	"	"									"	"	n	
"	18:24	"		21-5	"	"				19.2	15,000	57,000	700	93	"	"	"	1846: stopped with ~ 1.5 ft to go on joint.
06/17/20	9:18	Steve Tanen		21-6	"		688.5	750.5	192	15	12,000	40,000	457	93		"	Intermediate Gneiss - Gray, m to f, quartz, feldspar	0900: continued on #21 (1.5 ft remained). Rig
53,11,20	5.10	5.5.5 1411011					555.0	. 55.5		.0	,000	.0,000	.5,				(plagioclase), hornblende, trace sericite	idle for repairs after #21 completed.

## HDD No.: \$3-0290-20 (US-DS)

				Sample ID as Joint #-?			Horizontal Distance	Drill Length										
	Time		Joint Length	E.g. 101-1 -2	Drilling	Pilot - P Ream - R	(HD) to Bit	(MD) to Bit	Depth	Rate	Rotary Torque	Drill Pressure	Fluid Pumping	Pressure				Comments
Date	(military)	PG Name	or Sub length	-3	Direction	Bit Size	(feet)	(feet)	(feet)	(ft / hour)	(ft-lbs)	(psi)	Rate (gpm	(psi)	(percent)	Formation	Cuttings Description	(Drilling parameters from UI 3hr Update Reports) Added ~2 ft spider between #21 and #22. 1433:
"	14:50	"	33.66	22-1	"	"									"	"	"	Started Joint #22
"	15:03	"		22-2	- "	"									"	"	" 	
"	15:17 15:32	"		22-3 22-4	"	"				n/r	14,000	56,000	700	93		"	III	
"	15:54	"		22-5	"	"				11/1	14,000	30,000	700	93	"	"	l l	
"	16:29	n n		22-6	"	"	721.5	784.1	198.4						"	"	"	
"	17:42	"		23-1	"	"	1 1 1 1		10011						"	"	- same as above, but becoming fine to very fine	1729: Started Joint #23
"	18:08	"		23-2	"	"									"		"	
"	18:24	"		23-3	"	"									"	"	п	
"	18:36			23-4	"	"				16.8	13,000	50,000	700	107	"		"	Stopped for the day ~3 ft past 23-4
06/18/20	8:06	Ty Johnson		23-4	- "	- "	-								"	-	quartz, feldspar, dark mineral,, lots of biotite	Took another sample for 23-4 2 feet in
	8:15			23-5												"	quartz, feldspar, dark mineral,, lots of biotite, minor light green minereal,	
	8:15		+				1										quartz, feldspar, dark mineral,, lots of biotite, minor	
	8:30	"		23-6												"	bright white minereal,	
	0.00																quartz, feldspar, dark mineral, biotite, minor bright white	
"	9:25	"		24-1	"	"										"	minereal,	
	9:45	"		24-2		,,											quartz, feldspar, dark mineral, biotite, minor bright white minereal,	
	9.45																quartz, feldspar, dark mineral, biotite, minor bright white	
	10:05	"	31.54	24-3			752.5	815.5	204	0.28	12,000	54,000	700	106	100	"	minereal,	
	10.00		01.01	24.4			702.0	010.0		0.20	12,000	0 1,000	700	100	100		quartz, feldspar, dark mineral, biotite, minor bright white	
"	10:30	"		24-4	"										"	"	minereal,	
"	10:55	"		24-5		,,											quartz, feldspar, dark mineral, biotite, minor bright white minereal.	
	10:55		+				1										quartz, feldspar, dark mineral, biotite, minor bright white	
"	11:10	"		24-6		"									"	"	minereal,	
				05.4													quartz, feldspar, dark mineral, biotite, minor bright white	
"	12:15	"		25-1	"										"	"	minereal, very minor yellow mineral	
				25-2													quartz, feldspar, dark mineral, biotite, minor bright white	
"	12:30	"		202	"	"									"	"	minereal, very minor green mineral	
"	12:50		31.59	25-3			700 5	047.5	240	0.04	15.000	60,000	700	447	100		quartz, feldspar, dark mineral, biotite, minor bright white	
	12:50	<u> </u>	31.59			-	783.5	847.5	210	0.24	15,000	62,000	700	117	100		minereal, very minor green mineral quartz, feldspar, dark mineral, minor biotite, minor bright	,
	14:30	"		25-4												"	white mineral	`
	11.00																quartz, feldspar, dark mineral, minor bright white	
"	14:45	"		25-5	"										"	"	mineral, very minor green mineral	
				25-6													quartz, feldspar, dark mineral, biotite, bright white	
"	15:00	"		23-0	"	"									"	"	mineral	
	45.55		04.04	00.4			0.45		0.5					400	_		quartz, feldspar, dark mineral, biotite, bright white	
	15:55		31.91	26-1	- "	- "	815.5	879.5	215	0.26	20,000	61,000	700	120	"	"	mineral quartz, feldspar, dark mineral, bright white mineral, light	
	16:10			26-2													green mineral	
"	16:20	"		26-3	"	"									"	"	quartz, feldspar, dark mineral, bright white mineral	
	10.20			200													quartz, feldspar, dark mineral, biotite, bright white	
"	16:45	"		26-4	"										"	"	mineral, minor green mineral	
																	quartz, feldspar, dark mineral, minor biotite, bright white	
"	17:00	"		26-5	"	"									"	"	mineral, minor light green mineral	
,,	47.00		04 ==	00.0			0.40 =	046.57	040.0	0.01	40.000	00.000	700	440			and the second s	Drilling activity ceased at 1758 due to
- "	17:20	"	31.77	26-6	- "	- "	846.7	910.94	218.9	0.24	19,000	60,000	700	116		"	quartz, feldspar, dark mineral, bright white mineral	mechanical problem.
06/19/20	8:36	"		27-1												"	quartz, feldspar, dark mineral, bright white mineral, minor biotite	0818: Begin drilling joint 27; mechanical problems were resolved promptly this morning.
00/18/20	0.30		+	21-1													quartz, feldspar, dark mineral, bright white mineral,	problems were resolved promptly this morning.
"	9:00	"		27-2	-	"										"	minor biotite, minor green mineral	
	2.30																quartz, feldspar, dark mineral, bright white mineral,	
"	9:14	"		27-3	"	"										"	minor biotite, minor green mineral	

## HDD No.: \$3-0290-20 (US-DS)

				Sample ID as Joint #-?			Horizontal Distance	Drill Length										
	Time		Joint Length	E.g. 101-1 -2	Drilling	Pilot - P Ream - R	(HD) to Bit	(MD) to Bit	Depth	Drilling Rate	Rotary Torque		Fluid Pumping	Annular Pressure	Est. Fluid Returns			Comments
Date	(military)	PG Name	or Sub length		Direction		(feet)	(feet)		(ft / hour)	(ft-lbs)		Rate (gpm)		(percent)	Formation	Cuttings Description	(Drilling parameters from UI 3hr Update Reports)
"	9:41	"		27-4	"	"										"	quartz, feldspar, dark mineral, bright white mineral, minor biotite	
,,	10:00	,,	31.54	27-5			np	910.94	np	np	16,000	60,000	700	115	100		quartz, feldspar, dark mineral, minor bright white mineral, minor biotite, minor green mineral	
"	10:16	"		27-6		"				•						"	quartz, feldspar, dark mineral, minor bright white mineral, minor biotite	1021: Complete drilling joint 27
"	11:40	"		28-1	"											"	quartz, feldspar, dark mineral, minor bright white mineral, minor biotite	1102: Begin drilling joint 28
"	12:35	"		28-2	"											"	quartz, feldspar, dark mineral, minor bright white mineral, minor biotite	
"	12:58	"	31.47	28-3	"		844.5	908.98	222.7	0.26	14,000	60,000	700	134	100	"	quartz, feldspar, dark mineral, minor bright white mineral, minor biotite	
"	missed	"		28-4	"	"					Í					"		missed due to lightning threat
"	missed	"		28-5	"	"										"		missed due to lightning threat; 1345: Complete drilling joint 28
																		1400: begin drilling joint 29. Crew moved from drilling pilot hole to pilot hole intersect; 1408:
"	14:08	"		28-6	"	"										"	quartz, feldspar, dark mineral, minor bright white mineral	sample 28-6 collected due to miss during lightning threat.
"	14:31	"		29-1	"											"	quartz, feldspar, dark mineral, minor bright white mineral quartz, feldspar, dark mineral, minor bright white	
"	14:50	"		29-2	"	"										"	mineral, minor biotite	
"	15:03	"		29-3	"											"	quartz, feldspar, dark mineral, minor bright white mineral quartz, feldspar, dark mineral, minor bright white	
"	15:32	"		29-4	"	"										n	mineral, minor biotite	
"	15:52	"		29-5	"	"										n	quartz, feldspar, dark mineral, minor bright white mineral quartz, feldspar, dark mineral, minor bright white	
"	16:00	"	31.7	29-6	"	"	909.3	973.95	229.3	0.25	15,000	60,000	700	123	100	n	mineral, biotite quartz, feldspar, dark mineral, minor bright white	1604: Complete drilling joint 29
"	17:52	"		30-1													mineral, minor biotite	1625: Begin drilling joint 30
"	18:00	"		30-2	"	"										"	quartz, feldspar, dark mineral, minor bright white mineral, minor biotite	
	18:14	"		30-3												,,	quartz, feldspar, dark mineral, minor bright white mineral	
"	18:23	"		30-4	"											"	quartz, feldspar, dark mineral, minor bright white mineral	
"	18:28	,,		30-5	"		940.8	1005.65	229.3	0.27	16.000	58.000	700	125	100	,,	quartz, feldspar, dark mineral, minor bright white mineral	1830: Stop for the day with 25 feet of joint 30 drilled
06/20/20	10:25	"	32	30-6	"	"	972.5	1037.5		0.48		55,000		112	100	"	quartz, feldspar, dark mineral, minor bright white mineral, biotite, minor green mineral	10:26: Complete drilling joint 30; Then begin surveying for intersection process
"	16:21	"		31-1	"	"	972.5	1037.5	232	np	14,000	55,000	700	112	100	"	quartz, feldspar, dark mineral, minor bright white mineral, biotite	Still trying to intersect downstream bore: Completed 8 feet of joint 31
06/22/20	n/a	Brian Lipinski, PG		31-2	"	"										"	no sample collected; overlap of DS drilled section	
"	n/a n/a	"		31-3 31-4	- "	"											"   n	
"	n/a n/a	"		31-4	"	"										"	"	
"	n/a	"	31.71	31-6	"	"	1004.9	1069.37	231.3	12	13,000	60,000	700	114	steady	"	п	
"	n/a	"		32-1	"	"										"	"	
"	n/a n/a	"		32-2 32-3	"	"									<b> </b>	"	"   II	
"	n/a	"		32-3	"	"										"	"	
"	n/a	"		32-5	"	"			_							"	"	
"	n/a	"	31.53	32-6	"	"	1036.4	1100.9	232.4	10.2	13,000	61,000	700	128	Steady	"	"	

## HDD No.: \$3-0290-20 (US-DS)

				Sample ID			Horizontal	Drill							1			
				as Joint #-?			Distance	Length										
				E.g. 101-1		Pilot - P	(HD)	(MD)		Drilling	Rotary	Drill	Fluid	1	Est. Fluid			_
<b>.</b> .	Time	2011	Joint Length	-2	Drilling	Ream - R	to Bit	to Bit		Rate		Pressure			1		0.00	Comments
Date	(military)	PG Name	or Sub length	-3	Direction	Bit Size	(feet)	(feet)	(feet)	(ft / hour)	(ft-lbs)	(psi)	Rate (gpm	(psi)	(percent)	Formation	Cuttings Description gray to light gray, medium to fine, quartz, feldspar	(Drilling parameters from UI 3hr Update Reports)
																	(plagioclase), trace hornblends, little to trace sericite	
	15:26	"		33-1													(white, fine grained and soft flakes), and trace epidote	
"	15:50	"		33-2	"	"										"	no change	
"	16:30	"		33-3	"											"	"	
"	17:01	"		33-4	"	"										"	"	
"	17:40	"	0.4 ==	33-5	"	"	4000	1100.07			11000	22.222	700	100		"		
	18:22	"	31.77	33-6	- "	- "	1068.2	1132.67	233.3	9	14,000	60,000	700	133	Steady	"	" ( 5 )	
																	gray to light gray, medium to fine, quartz, feldspar	
06/23/20	10:29	Prion Liningki DC		34-1													(plagioclase), trace hornblends, little to trace sericite (white, fine grained and soft flakes), and trace epidote	
"	11:04	Brian Lipinski, PG		34-2	"		-								1	"	no change	
"	11:40	"		34-3	-	"										"	"	
"	11:50	"		34-4	"										1	"	11	
"	12:05	"		34-5	"	"										"	п	
"	12:35	"	31.73	34-6	"	"	1099.6	1164.4	235.5	15	14,000	60,000	700	135	steady	"	11	
"	13:45	"		35-1	"	"										"	11	
"	14:03	"		35-2	"	"										"	п	
"	14:39	"		35-3	"											"	II .	
"	15:00	"		35-4	"	"										"	"	
	15:20	"	04.05	35-5	- "	- "	4404.4	4400.05	000.0	40.0	40.000	05.000	700	400		"	"	
	15:49	"	31.85	35-6 36-1	"		1131.4	1196.25	236.3	13.8	13,000	65,000	700	138	steady		"	
"	17:05 17:20	"		36-1	"										-	"	11	
	17:20	"		36-3	"										+	"	п	
"	17:58	"		36-4	"				1						+	"	II II	
	17.50			30-4					1								gray to light gray, medium to fine, quartz, feldspar	
																	(plagioclase), trace hornblends, little to trace sericite	
06/24/20	8:00	Brian Lipinski, PG		36-5												Pickering Gneiss	(white, fine grained and soft flakes), and trace epidote	
"	8:24	"	31.73	36-6	"	"	1163.1	1227.98	236.7	15	14,000	65,000	700	137	steady	"	no change	
"	9:15	"		37-1	"	"									<b>†</b>	"	II .	
"	9:44	"		37-2	"	"										"	11	
"	10:24	"		37-3	"	"										"	II .	
"	10:45	"		37-4	"	"										"	II .	
"	11:03	"		37-5	"	"										"		
	11:24	"	31.77	37-6	"	"	1194.9	1259.75	236.9	13.8	13,000	60,000	700	138	steady	"	"	
	12:50	" "		38-1	"	- "									-	"	"	
"	13:00 13:12	"		38-2 38-3	"				1						-	"	III	
	14:30	"		38-4	"										+	"	п	
"	15:05	"		38-5	-	"			1							"	11	
"	15:15	"	31.38	38-6	"	"	1226.3	1291.13	237.1	13.2	15,000	60,000	700	140	steady	"	II II	
"	17:30	"		39-1	"	"		1			.,	,		1	,	"	п	
"	18:00	"		39-2	"	"										"	"	
"	18:18	"		39-3	"	"										"	II .	
"	18:30	"		39-4	"	"										"	"	
06/25/20	9:10	Ty Johnson		39-5	"	"									1	"	quartz, feldspar, dark mineral, bright white mineral	
	0.04		04.54	00.0				4000 0-								,,	quartz, feldspar, dark mineral, bright white mineral,	
"	9:31	"	31.54	39-6	"	- "	<b>_</b>	1322.67						1	1	" "	minor biotite quartz, feldspar, dark mineral, bright white mineral	<u> </u>
	10:34			40-1	-		-		+					-	-		quartz, feldspar, dark mineral, bright white mineral quartz, feldspar, dark mineral, bright white mineral,	
	11:29	"		40-2												"	minor biotite	
"	12:00	"		40-2	"	"	<del>                                     </del>	<del>                                     </del>	+					1	1	"	quartz, feldspar, dark mineral, bright white mineral	
"	12:26	"		40-4	-	"	<del>                                     </del>		1					-		"	quartz, feldspar, dark mineral, bright white mineral	
"	missed	"		40-5	"	"	1257.8	1322.67	237.7	0.15	13,000	65,000	700	143	100	"	missed	
	5554						51.0	.522.57		3.10	. 5,555	55,555		1	1.00		quartz, feldspar, dark mineral, bright white mineral,	
"	13:07	"	31.98	40-6	"	"										"	minor biotite	
																		Drilling fluid returns intercepted downstream.
		"		41-1		"	1	i	1		i l	i	ı	i	1		missed	Cuttings can not be sampled

## HDD No.: \$3-0290-20 (US-DS)

HDD Name: Little Conestoga Rd HDD Permit Name: Milford Rd/Little Conestoga Rd

Date	Time (military) missed missed	PG Name	Joint Length or Sub length	Sample ID as Joint #-? E.g. 101-1 -2 -3 41-2	Drilling Direction	Pilot - P Ream - R Bit Size	Horizontal Distance (HD) to Bit (feet)	Drill Length (MD) to Bit (feet)	Depth (feet)	Drilling Rate (ft / hour)	Rotary Torque (ft-lbs)		700	Annular Pressure (psi)	Returns (percent)  returns on DS side returns on	Formation " "	Cuttings Description missed	Comments (Drilling parameters from UI 3hr Update Reports) Drilling fluid returns intercepted downstream. Cuttings can not be sampled Drilling fluid returns intercepted downstream. Cuttings can not be sampled Drilling fluid returns intercepted downstream.
"	missed	"	20	41-4	_ "	"		1341.15			HDD	No.: \$3-0	516 <b>290-20 (DS)</b>	142	DS side		missed	Cuttings can not be sampled
Date	Time (military)	PG Name	Joint Length or Sub length	Sample ID as Joint #-? E.g. 101-1 -2 -3	Drilling Direction	Pilot - P Ream - R Bit Size	Horizontal Distance (HD) to Bit (feet)	Drill Length (MD) to Bit (feet)	Depth (feet)	Drilling Rate (ft / hour)	Rotary Torque (ft-lbs)	Drill Pressure (psi)	Fluid Pumping Rate (gpm)	Annular Pressure (psi)	Est. Fluid Returns (percent)	Formation	Cuttings Description	Comments (Drilling parameters from UI 3hr Update Reports)
02/20/20	17:25	Steve Tanen	n/a	n/a	SE to NW	P - 12	na	na	na	na	na	na	na	na	na	na	na	Set-up BHA, calibrated gyro, then electrical issues.
02/21/20	1600	Lawrence Galiano	31.92	1-1	SE to NW	P - 12	na	na	0	80	1,400	65,030	258	4	100	Pickering Gneiss	Overburden - dk grayish brown sandy silt	BTS = 8.33 ft. BHA = 18.59 ft Advanced BHA with mud motor/monel
"	1605	"	31.32	1-2	JL LU INVV	H - 17	na	na	"	"	"	"	"	"	"	"	Overburden - dk grayish brown sandy silt	Advanced Bria with midd motor/monei
II II	1610	II .	"	1-3	"	ıı ı	na	na	"	II .	"	"	"	"	"	II .	Overburden - dk grayish brown sandy silt	п
11	1615	II .	"	1-4	"	ıı ı	na	na	"	ıı .	"	"	"	"	ıı ı	II .	Overburden - dk grayish brown sandy silt	п
II .	1620	II .	"	1-5	"	II .	na	na	"	ıı	"	=	"	=	"	II	Overburden - dk grayish brown sandy silt	п
"	1625	II .	II .	1-6	"	"	na	na	"	II .	"	"	"	"	"	II .	Overburden - dk grayish brown sandy silt	II
п	1630	II .	31.82	2-1	"	"	50.63	63.8	14	ıı	"	"	"	ıı .	"	п	Overburden - dk grayish brown sandy silt	п
"	1635	"	"	2-2	"	"	"	-	"	II .	"	"	"	"	"	"	Overburden - dk grayish brown sandy silt	П
"	1640	ıı .	"	2-3	"	"	"	-	"	II .	"	"	"	"	"	"	Overburden - dk grayish brown sandy silt	П
"	1645	"	"	2-4	"	"	"	-	"	"	"	"	"	"	"	"	Overburden - dk grayish brown sandy silt	II
"	1650	"	- "	2-5	"	"	"	-	"	"	- "	"	"	"	"	"	Overburden - dk grayish brown sandy silt	" "
"	1655	"	22.42	2-6	- "	"	"	-	- "	"		"	"	"		"	Overburden - dk grayish brown sandy silt	"
"	1700 1705	"	32.12	3-1 3-2	"	"	"	80.8			"	"	"	"		"	weathered bedrock: Dark gray medium-grained gneiss	"
11	1705	ıı .	"	3-2	"	"	"	-	"	"	"		"	"		"	weathered bedrock: Dark gray medium-grained gneiss  Light to dark gray medium-coarse grained gneiss	II II
"	1705	II II	11	3-4	"	"	п	101.8	"	"	"	"	"	"	"	п	Light to dark gray medium-coarse grained gneiss  Light to dark gray medium-coarse grained gneiss	п
2/22/2020	11:30	Steve Tanen	"	na	na	na	na	na	"	na	na	na	na	na	na		No samples/no drilling activities	Rig down for repairs (mud cleaning system and power unit). Waiting on parts, expected 2/25/20.
2/27/2020	16:05	п	"	4-5	SE to NW	P - 12.25		36.6325							steady	Pickering Gneiss	dark gray mafic graphitic gneiss - hornblendes (<75%), qtz, orthoclase, graphite	Rig idle from 2/22-2/26/2020 - radiator system. 1556: Started drilling (continuing joint partially completed prior to breakdown). Change in the Joint count noted - corrected. Likely occurred when switching over from jetting bit assembly to mud motor.
11	16:11	ıı	"	4-6	"	"	141.92	146.53	32		1,400	65,000	672	0	"	п	"	After joint completed, rig idle - mechanical (shaker system motor)
2/28/2020	9:31	Alan R. Hirschfeld/ Steve Tanen	31.92	5-1	"	"									steady	u	dark gray mafic graphitic gneiss - hornblendes (<70%), qtz, orthoclase, graphite, tr.iron oxidation. Fine to medium sand sized	Started joint at 0915 after maintenance on mudsystem pump.
"	9:36	II .		5-2	"	"									"	п	med gray felsic gneiss with hornblendes (<30%), qtz, and orthoclase	
"	9:45	"		5-3	"	"									"	п	a/a, increasng in size, medium to coarse grained, tr. iron oxidation	
"	9:51	п		5-4	"	"									"	п	a/a , med to coarse, with gravel sized fragments, moderaately oxidized	/
"	9:57	"		5-5	"	II .									"	n .	light to med gray felsic gneiss with hornblendes (<30%), qtz, and orthoclase	
"	10:01	"		5-6	"	"	177.21	177.93	40.8		1,000	1,500	672	3	steady	"	a/a, fine to medium grain sized cuttings	Stopped for maintenance.
"	13:10	"	31.85	6-1	"	"					1,400	1,500	672	29	"	"	a/a	Started joint at 1304
"	13:17	"		6-2	- "	"									"	"	a/a, increasing in size, med to coarse grain sized cuttings	
"	13:22 13:25	" "		6-3 6-4	"	"	<del>                                     </del>								"	"	a/a a/a, slight iron oxidation (<30%)	
		ı	1	ı U-4	1	1	1	1	1		1	1	1	1	1		ja/a, siigiit II UII UXIUALIUII (\SU/0)	1

Horizontal Distance = straight line distance from entry point to drill bit.

Drill Length = length of tools in ground (bit to entrance).

Depth = ft below ground surface perpendicular to predefined location on drill path (e.g. entry)

## HDD No.: \$3-0290-20 (US-DS)

Date	Time (military)	PG Name	Joint Length or Sub length	Sample ID as Joint #-? E.g. 101-1 -2 -3	Drilling Direction	Pilot - P Ream - R Bit Size	Horizontal Distance (HD) to Bit (feet)	Drill Length (MD) to Bit (feet)	Depth (feet)	Drilling Rate (ft / hour)	1 -	Drill Pressure (psi)	Fluid Pumping Rate (gpm	Pressure	Est. Fluid Returns (percent)	Formation	Cuttings Description	Comments (Drilling parameters from UI 3hr Update Reports)
	14:34	"		6-6	"	- "									- "	"	a/a	Restared drilling at 14:28
п	15:00	п	32.92	7-1	"	"									"	"	Highly weathered, oxidized, decomposed (>70%) brown felsic gneiss, with qtz and orthoclase,w soft silty oxidized nodules	Started joint at 1455. Easily pushing through.
ıı .	15:03	n		7-2	п	п									"	"	Weathered, oxidized,decomposed (about 50%) light gray to brown felsic gneiss, with qtz and orthoclase, w soft silty oxidized nodules	Easily pushing through 5-ft intervals (1 minute or less)
II .	15:04	п		7-3	"	"									"	"	a/a	п
II .	15:05	п		7-4	"	"									"	"	a/a	п
II .	15:06	п		7-5	"	"									"	"	a/a	п
"	15:07	"		7-6	"	"	235.06	242.7	56.47						"	"	a/a	"
"	16:03	"	31.67	8-1	"	- "				14,000	14,000	1,500	672	42	- "	"	a/a	Started joint at 1601. Easily pushing through.
"	16:04	"		8-2	"	"									"	"	a/a	Easily pushing through 5-ft intervals (1 minute or less)
"	16:05	" "		8-3	" "	"					-				"	"	a/a	"
"	16:05 16:06			8-4 8-5	" "	"					-				"	"	a/a a/a	ıı
ш	16:06	ıı ıı		8-6	"	"									"	"	a/a a/a	п
"	16:18	п	31.44	9-1	"	"									ıı ı	"	a/a	Started joint at 1617. Easily pushing through.
··	16:21	11		9-2	"	"									"	11	a/a	Easily pushing through 5-ft intervals (1 minute or less)
"	16:22	n n		9-3	"	"									"	"	a/a	п
"	16:23	п		9-4	"	"									"	ıı ı	a/a	п
II .	16:23	п		9-5	"	"									"	ıı .	a/a	п
"	16:24	II .		9-6	"	"	296.51	305.81	70.79						"	"	a/a	п
"	16:35	"	32.94	10-1	"	"									"	"	a/a	Started joint at 1633
"	16:36	II		10-2	"	"									"	11	a/a	Easily pushing through 5-ft intervals (1 minute or less)
"	16:38	"		10-3	"	"									"	"	a/a	Harder interval, still relatively soft materials
"	16:40	"		10-4	- "						14,000	1,200	699	55	- "	"	a/a	Shutdown for mechanical issues (mud pump)
02/29/20	11:07	Marty Mengel/ Steve Tanen		10-5	"	"									Steady	"	Weathered , oxidized (approx 40%) light gray to tan felsic gneiss with qtz and orthoclase. Trace graphite. Med - course grain. 15% dark minerals.	Started drilling at 1106 on joint partially completed day prior.
II .	11:09	п	323.6	10-6	"	"	328.76	338.75	77.41						"	"	a/a	
· ·	12:28	п	33.74	11-1	II	"									"	п	a/a	After joint #10 added spider (~2 ft). Joint 31.74 ft (total additiona ~33.74 ft). Started joint at 1226
"	12:30	п		11-2	"	"									"	"	a/a	
"	12:31	"		11-3	"	"									"	"	a/a	
	12:33 12:34	" "		11-4	"	"					-				"	"	a/a	
"	12:35	п		11-5 11-6	"	"					-				"	ıı ı	a/a a/a	
"	12:48	п	32.99	12-1	"	"					15,000	1,000	699	59	"	"	Weathered , oxidized (approx 40%), light gray to tan felsic gneiss with qtz and orthoclase. Med - course grain. 20% dark minerals.	Started joint at 1245
"	12:50	п		12-2	"	II II		-	-		+				"	"	a/a	
	12.30			12.2													Weathered , oxidized (approx 40%), light gray to tan felsic	
"	12:51	п		12-3	"	"									"	"	gneiss with qtz and orthoclase. 20% dark minerals. 85% med- course grain. Approx 15% med gray gneiss cobble content.	Increased grain sizes
"	12:52	"		12-4	"	"									"	"	a/a	
"	12:53	" "		12-5	- "	"			-						"	"	a/a	
"	12:54 13:53	" "	32.97	12-6 13-1	"	"		<del>                                     </del>	-		1			-	- "	"	a/a	Started joint at 1351
"	13:53	u u	32.97	13-1	"	"									"		a/a Weathered , oxidized (approx 40%), light gray to tan felsic gneiss with qtz and orthoclase. 20% dark minerals. Med-	Starteu Joint at 1551
	15.55			132													course grain.	

## HDD No.: \$3-0290-20 (US-DS)

Date	Time (military)	PG Name	Joint Length or Sub length	Sample ID as Joint #-? E.g. 101-1 -2 -3	Drilling Direction	Pilot - P Ream - R Bit Size	Horizontal Distance (HD) to Bit (feet)	Drill Length (MD) to Bit (feet)	Depth (feet)	Drilling Rate (ft / hour)	Rotary Torque (ft-lbs)		Fluid Pumping Rate (gpm			Formation	Cuttings Description	Comments (Drilling parameters from UI 3hr Update Reports
- "	13:57	"		13-3	"	"									"	"	a/a	
"	13:59	"		13-4	"	"									"	"	a/a Less weathered , less oxidized (approx 20%), light to med gray/brown felsic gneiss with qtz and orthoclase. 20% dark	
																	minerals. Med-coarse grain.	
"	14:01	"		13-6	"	"									"	"	a/a	
"	14:38		32.92	14-1	- "	"									"	"	a/a	Started joint at 1437
"	13:39	"		14-2	- "	"									"	"	a/a	
	14:41			14-3	- "												a/a	
"	14:42	"		14-4	"	"									"	"	a/a	
	14:43	"		14-5	- "											"	a/a	
"	14:44			14-6	"	"									"		a/a	
"	14:55	"	31.85	15-1	"	"	-								"	"	a/a	Started joint at 1454
"	14:56	"		15-2	"	"									"	"	a/a	
"	15:00	"		15-3	- "	"	-								"	"	a/a	Drilling rate notably slower - harder materials
"	15:03	" "		15-4	"	"	-								"	"	a/a	
"	15:06	"		15-5		"	400.0	500.04	405.05						"	"	a/a	
"	15:09	"	24.05	15-6	"	"	490.9	503.31	105.35						"		a/a	0
"	15:47 15:51	"	31.85	16-1	"	"									"	"	a/a	Started joint at 1542
"		"		16-2		"									"		a/a	
"	15:54	"		16-3	"	"									"		a/a	
	15:58	"		16-4													a/a	
"	16:03	"		16-5	"	ıı									"	"	Less weathered, less oxidized (approx 15%), light to med gray/brown felsic gneiss with qtz and orthoclase. 30% dark minerals. Med-course grain.	Drilling rates notably slower starting at 15:00 (~475 ft).
"	16:06	II		16-6	"	"	522.52	535.16	109.15						"	11	a/a	
"	16:20	II	31.78	17-1	"	"					14,000	2,300	699	84	"	11	a/a	Started joint at 1615
"	16:26	II .		17-2	"	"									"	"	a/a	
"	16:32	"		17-3	"	"									"	n	Less weathered, less oxidized (<10%), light to dark gray/brown felsic gneiss with qtz and orthoclase. 30% dark minerals. Med-course grain.	
"	16:38	II .		17-4	"	"					17,000	2,300	699	99	"	II .	a/a	
03/02/20	8:48	Brian Duggan/ Steve Tanen		17-5	"	"									"	"	Less weathered, less oxidized (<10%), light to dark gray/brown felsic gneiss with qtz and orthoclase. 30% dark minerals.Trace graphite	Started 17-5 at 0848
"	9:25	ıı		17-6	II .	"	554.13	566.94	112						"	"	п	
"	10:03	II	32.9	18-1	"	ıı					19,000	2,300	700	113	"	II .	П	Started joint at 0936
"	10:15	II .		18-2	II	"									ıı ı	п	п	
"	10:29	II		18-3	"	ıı									"	II .	П	
"	10:37	II .		18-4	"	"									"	"	п	
"	11:19	II .		18-5	II .	"									ıı ı	п	П	Drilled 1037 to 1045, 1114 to 1119
"	11:32	11		18-6	"	"	586.93	599.89							"	"		Drilled 1119 to 1127, 1128 to 1132. Then started tripping out due to signal issue.
"	18:40	"	31.71	19-1	"	"					19,000	1,500	700	86	"	"	"	Started at 1825, stopped at 1840. Did not complete 19-1. Completed 3/2/20 at 0805 (started at 0800)
03/03/20		II		19-2	"	ıı									"	II	п	Started 19-2 at 0805
"	8:25	11		19-3	"	"									"	п	п	
"	8:36	п		19-4	"	"									"	11	п	
"	8:48	II .		19-5	"	"									"	"	п	
"	8:58	ıı .		19-6	"	"	618.54	631.6							"	п	п	
ıı	10:53	п	31.7	20-1	"	"					19,000	2,200	700	86	"	п		Started Joint @0932/ Stopped at 0934 (mech issue)/restarted at 1011 to 1017/1025 to 1055
"	11:04	II .		20-2	"	"				1						"	11	

## HDD No.: \$3-0290-20 (US-DS)

The book   Policy					Sample ID as Joint #-? E.g. 101-1		Pilot - P	Horizontal Distance (HD)	Drill Length (MD)		Drillina	Rotary	Drill	Fluid	Annular	Est. Fluid			
## 1.12   1.12	Date		PG Name	•	-2		Ream - R	to Bit	to Bit	- 1	Rate	Torque	Pressure	Pumping	Pressure	Returns	Formation	Cuttings Description	
No.   Process   Process	п	11:17	"		20-3	п	"								change in		"	п	driller observed ~50% reduction in mud returns. Did not complee 20-3 at time of partial LOC, ~2 ft of
1909   1909	03/04/20	19:00	Brian Duggan	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	were performed as drilling was suspended due to yesterday's loss of fluid. Approximately 20 cubic yards of grout were pumped into borehole. Although bentonite bags and water were reportedly consumed
	03/05/20	19:00	Steve Tanen	na	na	SE to NW		na	na	na	na	na	na	then dropped to	na	0% at ~485.5 ft	na	No grout observed in cuttings.	bore. Tripped into 485.5 ft at 300 gpm then experienced full mud loss (no returns to mud pit). Stopped tripping in.
Marty Mingel   Ra	03/06/20		Steve Tanen	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	to emerge from casing at SE entry while pumping thrid load.
Sylvey   19-00   19-	03/07/20		Marty Mengel	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
Settle   Settle   Fig.   Fig.   Settle   Fig.   F	03/09/20	19:00	Brian Duggan	na	na	SE to NW	na	na	na	na	na	na	na	na	na	na	na	na	
1.5.37	03/10/20	9:54	Steve Tanen	na	na	SE to NW	l .	na	na	14	na	0	1,000	258	4	Steady	na	na	
15-9	"	12:38	"	п	"	"	"	na	na	56	na	0	1,000	205	1	"	II .	na	п
18-39	"	15:37	"	=	"		"	na	na	70	na	0	1,000	205	60	"	=	na	n .
0.5/11/2/0   10.00   Chris Mulry   ma   ma   SE to NW   Jetting Bit   ma   ma   ma   ma   ma   ma   ma   m	п	18:59	"	п	п	п	ıı .	na	na	89	na	1,500	1,500	280	105	"	п	na	
03/12/20   19:00   Chris Multy   na   na   SE to NW   none   na   na   na   na   na   na   na	03/11/20		Chris Mulry			SE to NW	Jetting Bit												
Steve Tanen/Mich Forbes   31.76   19-5 (change to BHA)   19-5 (change to BHA)   19-6																			
03/13/20   16:09   Stever Taneer (Michael Forbes   19-6	03/12/20	19:00	Chris Mulry	na	na	SE to NW	none	na	na	na	na	na	na	na	na	na	na	na	
16-42   18-00   Marty Mengel   na   na   na   na   na   na   na   n	03/13/20	16:09	·	31.76		"	P-12.25									Steady	felsic gneiss		joint count due to change in BHA. Reached bottom at
03/14/20   18:00   Marty Mengel   na   na   na   na   na   na   na   n	ıı .	16:43	п		19-6	п	п	685.58	698.74			1,200	3,700	699	85 to 72	LOC	intermediate gneiss	Intermediate gneiss. Increasing % of darker minerals.	completed joint and swabbing/sizing bore.
See   See	03/14/20	18:00	Marty Mengel	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	started to emerge from casing at SE entry while pumping 5th load.
3/18/2020   10:00   Jeffrey Valvik   na   na   na   na   na   na   na   n			Steven Tanen	na	na	SE to NW	ŭ	na	na	na	na	na	na	na	na	na	na	na	(set grout) at ~78 ft.
13:00			"	na	na	"	P-12.25	na	na	na	na	na	na	na	na	na	na	na - tripping in	
15:00	3/18/2020			na		"	"			na						na			Tripping with jet assembly (BTS = 58 ft)
18:00   Jeffrey Valvik   na   na   na   na   na   na   na   n	"			"															
3/19/2020 10:00 " " " " " " " " " " " " " " " " " "						"													
"         13:00         "         "         "         "         na         na <td></td> <td></td> <td>Jettrey Valvik</td> <td>na "</td> <td>na "</td> <td>n n</td> <td></td> <td>Triangle and the interpretable (DTC - 50 AA S)</td>			Jettrey Valvik	na "	na "	n n													Triangle and the interpretable (DTC - 50 AA S)
16:00   "   "   "   "   "   "   na   na   na			"																Tripping with jet assembly (B1S = 58.44 π)
19:00   "				11		п													<del> </del>
15:00   16:41   Steve Tanen   16   17   16   17   17   17   18   18   19   18   18   19   18   18				II .		"													drilling out grout with mud motor on
3/20/2020         16:41         Steve Tanen         na         na         "         "         na         na <td></td> <td>15.00</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>110</td> <td>11d</td> <td>110</td> <td>110</td> <td>1,400</td> <td>2,300</td> <td>000</td> <td>04</td> <td>110</td> <td>110</td> <td>na - u ipping m</td> <td></td>		15.00						110	11d	110	110	1,400	2,300	000	04	110	110	na - u ipping m	
5/22/2020 19:00 Lawrence Galiano na na SE to NW P-12.25 na na na na 0 250 204 40 Steady na na-tripping in mad motor and 13 joints	3/20/2020	16:41	Steve Tanen	na	na	"	"	na	na	na	na	na	na	na	na	na	na	п	
						SE to NW	P-12.25											na-tripping in	
												na				-			

## HDD No.: \$3-0290-20 (US-DS)

Date	Time (military)	PG Name	Joint Length	Sample ID as Joint #-? E.g. 101-1 -2 -3	Drilling Direction	Pilot - P Ream - R Bit Size	Horizontal Distance (HD) to Bit (feet)	Drill Length (MD) to Bit (feet)	Depth (feet)	Drilling Rate (ft / hour)	Rotary Torque (ft-lbs)	Drill Pressure (psi)	Fluid Pumping Rate (gpm)	Annular Pressure (psi)	Est. Fluid Returns (percent)	Formation	Cuttings Description	Comments (Drilling parameters from UI 3hr Update Reports)
5/26/2020	19:00	Lawrence Galiano	na	na	SE to NW	P-12.25	na (leet)	na (Teet)	na	na	na	na	na na	na	na	na	na	Tripping in. Total of 17 joints advanced.
5/27/2020	19:00	Chris Mulry	na	na	SE to NW	P-12.25	na	na	na	na	na	na	na	na	na	na	na	Trip in, then trip out for sensor communication issue.
5/28/2020	19:00	Bob Heim	na	na	SE to NW	P-12.25	na	na	na	na	na	na	na	na	na	na	na	Trip out for connection / communication issues.
			(redrill of 18-4 through 19-5 with current BTS configuration). Grout interval,														na (actually felsic gneiss, but this was from sides of borehole	Trip in #4 - #18 (partial), drilled grout out of rest of #18 and out of approx. 25' of #19. Driller stated 8' more grout to drill before reach face. Based on this, projected face very closely matches HD & MD reported for sample 20-3 on 3/3 of this form and not
5/29/2020	17:15	Bob Heim	not logged.	na	SE to NW	P-12.25	na	na	na	na	13,000	40,000	700	56	Steady	na	as drilled grout interval). No new formation cut today.	the numbers on 3/13.
5/30/2020	14:27	Bob Heim		20-1	SE to NW	P-12.25	666	679							"	Pickering Gneiss	felsic gneiss	
"	14:59	II		20-2	"	"	666	679							"	"	II	
"	15:14	II		20-3	"	"	666	679							"	"	II	
"	15:29	II .		20-4	"	"	666	679							"	"	П	
"	15:40	п		20-5	"	"	666	679							"	II .	п	
"	15:52	"	31.89	20-6	"	"	665.96	679.14	142.5	19	20,000	50,000	700	68	Steady	II .	II .	Drilled joint #20 (new rock, beyond grout).
"	16:34	"	31.51	21-1	"	"									"	II .	П	Started joint #21
06/01/20	8:08	Ty Johnson	"	21-2	"	"									"	"	П	continued joint #21
"	8:21	"	"	21-3	"	"									"	"	II .	"
"	8:29	п	"	21-4	"	"									"	ıı .	"	"
"	8:33	"	"	21-5	"	"									"	"	II .	
"	8:49	п	"	21-6	"	"	695.41	708.50	145	0.9	18,000	42,000	700	54	"	"	п	Completed joint #21 (new rock)
06/02/20	16:24	Max Howard/Steve Tanen	33.04	22-1	п						18,000	68,000	700	75			Felsic gneiss: gray, some purple, glassy, white to brown, mix of quartz, calcite, with trace clinopyroxene and mica.	Started joint at 15:24. Stopped at ~15:26 due to driller reported diminished fluid returns and possible fluid loss (reported at ~350 gallons). PG did not observe reduction of return flow to the mud-pit or a loss of cuttings returns to the mud-cleaning/shaker system. Resumed at 16:14 after driller communicated with Michels senior management and subsequent conversations with Michels senior management, CM and ETP. CM, Ray Banach updated PGs (Steve Tanen and Lieschen Fish).
"	16:37	п		22-2	"	"									"	п	п	
"	16:58	п		22-3	"	"									"	"	п	
II .	17:12	П		22-4	"	"									"	п	п	
"	17:29	п		22-5	"	"									"	II .	П	
	17:54	n		22-6	"		728.5	741.69	149	0.4							п	Drilling halted at end of joint due to continued fluid losses (no visible loss of return flow to the mud-pit and constant flow of cuttings observed at mud-cleaning/shaker system). CM called and updated PG (Steve Tanen) and noted that driller will continue to proceed while monitoring return flow to the mud-pit and mud-cleaning/shaker system.
06/03/20	1543	Max Howard	32.03	23-1	"	II .				0.33	18,000	65,000	700	78	"	п	п	
06/03/20	1620	Max Howard		23-2	"	11												
06/03/20	1640	Max Howard		23-3	"	II .												
06/03/20	1648	Max Howard		23-4	"	II .												
06/03/20	1700	Max Howard		23-5	"	11												
06/03/20	1713	Max Howard		23-6	"	11	759.5	772.5	153.3									
06/03/20	1800	Max Howard	31.95	24-1	"	"									$oxed{\Box}$			
06/03/20	1815	Max Howard		24-2	"	II .												
06/03/20	1833	Max Howard		24-3	"	"												
06/03/20	1840	Max Howard		24-4	"	II .												

## HDD No.: \$3-0290-20 (US-DS)

				Sample ID as Joint #-? E.g. 101-1		Pilot - P	Horizontal Distance (HD)	Drill Length (MD)		Drilling	Rotary	Drill	Fluid	Annular	Est. Fluid			
Date	Time (military)	PG Name	Joint Length or Sub length	-2 -3	Drilling Direction	Ream - R Bit Size	to Bit (feet)	to Bit (feet)	Depth (feet)	Rate (ft / hour)		Pressure	Pumping Rate (gpm)	Pressure (psi)		Formation	Cuttings Description	Comments (Drilling parameters from UI 3hr Update Reports)
																	Intermediate Gneiss-dark gray and white, quartz-rich gneiss	
06/04/20	7:40	Chris Mulry		24-5	SE to NW	P-12.25					18,000	65,000	700	82	steady	Pickering Gneiss	with pyroxene, hornblende, mica, calcite and trace garnet.	
"		" "	31.5	24-6 25-1	"	"				20							no change	
"	8:50	II II	31.5	25-1	"	II .				20							п п	
"	0.50	II .	"	25-3	"	"												
"		ıı .	"	25-4	"	"											ппп	
"		"	"	25-5	"	ı											11 11	
"		"	"	25-6	"	II .											11 11	
"	11:00	"	31.5	26-1	"	"				17.7	18,000	65,000	700	78	steady	Pickering Gneiss		
"		"	"	26-2	"	"											" "	
"		"	"	26-3 26-4	"	"											11 11	
"		II II	"	26-5	"	II .											п п	
"		II .	"	26-6	"	"				19.4							11 11	
"	14:00	ıı .	31.5	27-1	"	"											ппп	
"		п	"	27-2	"	"											11 11	
"		"	II .	27-3	II .	II											11 11	
"		"	"	27-4	"	II .											" "	
"		"	"	27-5	"	"												
"	15:48	"	"	27-6	"	"	886.95	899.5	162.9	17.2	19,000	65,000	700	78	steady	Pickering Gneiss	Internalista Casica madicus massand subita assessa sida	
																	Intermediate Gneiss-medium gray and white, quartz-rich gneiss with pyroxene, hornblende, mica, calcite and trace	A 2.5 ft spider sub was added during trip in after Joint
06/05/20	11:15	Chris Mulry	32.92	28-1	SE to NW	P-12.25				0.4	18,000	65,000	700	82	steady	Pickering Gneiss	garnet.	# 25
"	12:12	"	"	28-2	"	"				0.4	10,000	03,000	700	- 02	"	"	Barret	11 23
"	12:36	"	"	28-3	"	II .									"	II .		
"	13:55	"	"	28-4	"	ı				0.4	18,000	65,000	700	78	"	II		
"	14:12	II .	"	28-5	"	=									"	"		
	44.22	"		28-6	"	"	024.75	025.00	164.7									Drilling halted from 14:40 - 17:56 for severe weather
"	14:33 17:56	ıı .	33.0	28-6	"	"	921.75	935.09	164.7							п		interruption and mud pump maintenance.
"	18:29	ıı ı	"	29-2	"	"									"	п		
"	18:46	II .	"	29-3	"	"				0.4	17,000	47,000	700	78	"	II	no change in cuttings	
06/06/20	17:00	Will Avery	na	na	SE to NW	P-12.25										п		No advancement. Trip out/in
06/08/20	11:45	Andrew Thomas,PG	"	29-4	SE to NW	P-12.25										"		trip in
06/08/20	11:57	Andrew Thomas,PG	"	29-5	SE to NW	P-12.25										II .		
06/08/20	12:40	Andrew Thomas,PG	"	29-6	SE to NW	P-12.25	954.5	968.5	124	0.4	17,000	47,000	700	78	steady	"		
06/08/20	14:12	Andrew Thomas,PG	"	30-1	SE to NW	P-12.25										"		
06/08/20 06/08/20	14:29 14:50	Andrew Thomas,PG Andrew Thomas,PG	"	30-2 30-3	SE to NW SE to NW	P-12.25 P-12.25												
06/08/20	15:15	Andrew Thomas,PG	"	30-4	SE to NW	P-12.25										п		
06/08/20	15:31	Andrew Thomas,PG	"	30-5	SE to NW	P-12.25				0.3	17,000	53,000	700	81	steady	II		
06/08/20	16:19	Andrew Thomas,PG	"	30-6	SE to NW	P-12.25	987.5	987.5	123		-				,	II .		
06/08/20	17:00	Andrew Thomas,PG	32.95	31-1	SE to NW	P-12.25										п		
06/08/20	17:23	Andrew Thomas,PG	"	31-2	SE to NW	P-12.25										п		
06/08/20	17:39	Andrew Thomas,PG	"	31-3	SE to NW	P-12.25										"		
06/08/20	17:54	Andrew Thomas,PG	"	31-4	SE to NW	P-12.25					47.000	52.000	700	00		"		
06/08/20 06/09/20	18:23 8:31	Andrew Thomas,PG Chris Mulry	"	31-5 31-6	SE to NW SE to NW	P-12.25 P-12.25	1020.57	1033.99	123	0.4	17,000	53,000	700	83	steady	Pickering Gneiss		
"	9:15	Chiris Mulify	32.02	32-1	JL LU INVV	P-12.25	1020.37	1033.33	123							r ickei ing Olieiss		
"	9:46	11	"	32-2	"	"										п		
																	Intermediate Gneiss-medium gray and white, quartz-rich	
																	gneiss with pyroxene, k-feldspar, hornblende, mica, calcite	
11	10:15	п	"	32-3	SE to NW	P-12.25				0.4	20,000	53,000	700	75	steady	Pickering Gneiss	and trace garnet.	

## HDD No.: \$3-0290-20 (US-DS)

				Sample ID as Joint #-?			Horizontal Distance	Drill Length										
				E.g. 101-1		Pilot - P	(HD)	(MD)		Drilling	Rotary	Drill	Fluid	Annular	Est. Fluid			
	Time		Joint Length	-2	Drilling	Ream - R	to Bit	to Bit	Depth	Rate	Torque	Pressure		Pressure	Returns			Comments
Date	(military)	PG Name	or Sub length	-3	Direction	Bit Size	(feet)	(feet)	(feet)	(ft / hour)	(ft-lbs)	(psi)	Rate (gpm)	(psi)	(percent)	Formation	Cuttings Description	(Drilling parameters from UI 3hr Update Reports)
"	10:35	" "	"	32-4 32-5	"	"												
"	10:48 11:23	" "	"	32-5 32-6	"	"	1053.48	1066.91	123							"		
06/09/20	12:05	Chris Mulry	32.94	33-1	SE to NW	P-12.25	1033.46	1000.91	123						steady	Pickering Gneiss		
"	12:24	"	"	33-2	JE to IVV	"									Steady	"		
"	12:49	n n	"	33-3	SE to NW	P-12.25				0.3	20,000	51,000	700	78	steady	Pickering Gneiss		
"	14:05	11	"	33-4	"	"										ıı .		
"	14:25	II .	II .	33-5	"	"										II .		
"	14:58	II.	"	33-6	"	"	1086.4	1099.85	124							ıı .		
06/09/20	15:43	Chris Mulry	32.85	34-1	SE to NW	P-12.25									steady	Pickering Gneiss		
"	16:11	"	"	34-2	SE to NW	P-12.25				0.4	19,000	48,000	700	76	steady	Pickering Gneiss		
"	16:35 17:02	" "	"	34-3 34-4	"	"												
	17:02			34-4		-												drilling halted at 1728 due to problems with mud
"	17:26	п	"	34-5	"					0.4	19,000	48,000	700	76	steady	Pickering Gneiss	no change in cuttings	plant.
	17.20			34 3						0.4	13,000	40,000	700	70	steady	rickering driess	Light gray quartz and feldspar, tr calcite, tr biotite, trace	plant.
06/10/20	10:17	Brian Lipinski, PG	32.85	34-6	SE to NW	P-12.25				0.3		63,000	700	80	steady	Pickering Gneiss	hornblende	drilling halted for 25 minutes for refueling
"	11:10	"	32.8	35-1	"	"						63,000	700	80	steady	Pickering Gneiss	no change in cuttings	
"	11:34	"	"	35-2	"	"									steady	Pickering Gneiss	"	
"	12:01	11	II .	35-3	п	"				0.3					steady	Pickering Gneiss	II .	
"	13:50	п	11	35-4	"	"									steady	Pickering Gneiss	no change in cuttings	looks like LCM in cuttings
"	14:40	п	"	35-5	"	"									steady	Pickering Gneiss		"
"	15:01	"	"	35-6	"	"					19,000	64,000	700	81	steady	Pickering Gneiss		"
"	15:36	" "	32.99	36-1	"	"				0.5					steady	Pickering Gneiss	" 	"
"	16:04 16:25	11	"	36-2 36-3		"									steady steady	Pickering Gneiss Pickering Gneiss	III	п
"	16:38	п	п	36-4	п	"									steady	Pickering Gneiss	   II	II II
"	17:01	п	"	36-5	"	"									steady	Pickering Gneiss	"	II II
"	17:26	п	II .	36-6	"	"	1185.03	1213.49	124.7	0.3	18,000	42,000	700	80	steady	Pickering Gneiss	II .	п
"	17:52	"	32.97	37-1	"	"					-				steady	Pickering Gneiss	"	II .
"	18:15	п	"	37-2	II .	"									steady	Pickering Gneiss	II .	II .
"	18:35	II .	"	37-3	"	"									steady	Pickering Gneiss	"	II .
																	Light gray quartz and feldspar, tr calcite, tr biotite, trace	
06/11/20	8:25	Brian Lipinski, PG	"	37-4	SE to NW	P-12.25									steady	Pickering Gneiss	hornblende	less LCM material in returns than yesterday
	8:57	" "	"	37-5 37-6	"	"	4247.00	1221 46	124.0	0.2	10.000	42.000	700	0.0	steady	Pickering Gneiss	no change in cuttings	
"	9:31 10:31	п	32.99	38-1	"	"	1217.98	1231.46	124.8	0.3	18,000	42,000	700	86	steady steady	Pickering Gneiss Pickering Gneiss	lı .	
"	11:05	п	32.33	38-2	п	"									steady	Pickering Gneiss		
11	11:30	II II	"	38-3	"	"									steady	Pickering Gneiss	"	
"	16:18	"	"	38-4	"	"									steady	Pickering Gneiss	п	
"	16:50	11	"	38-5	ıı ı	"									steady	Pickering Gneiss	"	
"	17:25	п	"	38-6	"	"	1250.96	1264.44	124.7	0.5	21,000	70,000	700	79	steady	Pickering Gneiss	"	
"	17:55	II		39-1	"	"									steady	Pickering Gneiss	п	
"	18:15	ıı		39-2	"	"									steady	Pickering Gneiss	"	
"	18:33	"		39-3	"	"									steady	Pickering Gneiss	"	
06/42/26	0.00	Dalon Linter Lt DC		20.4	CE 4- 5"4"	D 13.35										Dialogias Caria	Light gray quartz and feldspar, tr calcite, tr biotite, trace	
06/12/20	8:06 8:27	Brian Lipinski, PG		39-4 39-5	SE to NW	P-12.25									steady	Pickering Gneiss Pickering Gneiss	hornblende no change in cuttings	
"	8:27 8:57	"	32.99	39-5 39-6	"	ıı .	1283.95	1297.43	124 5	0.5	22,000	73 000	700	78	steady steady	Pickering Gneiss Pickering Gneiss	same with less biotite and less hornblende	
"	10:21	ıı ıı	32.33	40-1	"	"	1203.33	1237.43	127.3	0.5	22,000	, 3,000	700	,,,	steady	Pickering Gneiss	no change in cuttings	
"	10:48	ıı ı		40-2	п	"									steady	Pickering Gneiss	"	
"	11:19	II .		40-3	"	"									steady	Pickering Gneiss	п	
"	11:35	п		40-4	"	"									steady	Pickering Gneiss	"	
"	11:51	"		40-5	п	11									steady	Pickering Gneiss	"	
"	12:20	II .	32.99	40-6	"	"	1316.94	1330.42	124.3	0.5	22,000	75,000	700	82	steady	Pickering Gneiss	"	
"	14:01	"		41-1	"	II .									steady	Pickering Gneiss	"	

## HDD No.: \$3-0290-20 (US-DS)

				Sample ID as Joint #-?			Horizontal Distance	Drill Length										
	Time		Joint Length	E.g. 101-1 -2	Drilling	Pilot - P Ream - R	(HD) to Bit	(MD) to Bit	Depth	Drilling Rate	Rotary Torque			Annular Pressure	Est. Fluid Returns			Comments
Date	(military)	PG Name	or Sub length	-3	Direction	Bit Size	(feet)	(feet)		(ft / hour)	(ft-lbs)		Rate (gpm)	(psi)	(percent)	Formation	Cuttings Description	(Drilling parameters from UI 3hr Update Reports)
"	14:32	"		41-2	"	"									steady	Pickering Gneiss		
"	15:02 15:21	"		41-3 41-4	"	" "									steady steady	Pickering Gneiss Pickering Gneiss	II	
ıı ı	15:46	11		41-4	"	"									steady	Pickering Gneiss	II .	
"	16:44	п		41-6	"	"	1352.03	1365.48	124.1	np	23,000	62,000	700	83	steady	Pickering Gneiss	II II	
II .	17:19	II .		42-1	"	"									steady	Pickering Gneiss	п	
"	17:43	п		42-2	"	"									steady	Pickering Gneiss	п	
"	18:00	п		42-3	II .	"									steady	Pickering Gneiss	II .	
"	18:33	п		42-4	"	"									steady	Pickering Gneiss	п	
06/13/20	11:32	Steve Tanen/ Rob Croydon		42-5	"	"									"	п	gray to light gray, medium to fine, quartz, feldspar (plagioclase), trace hornblends, trace garnet, little to trace sercite (white, fine grained and soft flakes)	Started 42-5 at 1126
п	12:01	п		42-6	"	п	1383.7	1397.34	123.9	36(*)	22,000	81,000	700	83	"	п	"	(*) Appears that number being provided is ft/min; PG converted to ft/hr
"	13:44	п	33.08	43-1	"	ıı .									"	п	п	Started Joint 43 at 1250, stopped for lunch at 1310,
		п			"	"										"		resumed #43 at 1342
" "	14:14	"		43-2 43-3	" "	"										"	"	
-	14:29			43-3		-										-		(*) Appears that number being privided is ft/min; PG
"	14:49	"		43-4	"	"				36(*)	23,000	81,000	700	87	"	"		converted to ft/hr
"	15:02 15:38	"		43-5 43-6	"	" "	1416.83	1430.35	122.6						"	"	" "	
	15:38			43-0			1410.05	1430.33	123.0									Started Joint 44 at 1615. (*) Appears that number
"	16:28	"	31.9	44-1	"	"				42(*)	23,000	78,000	700	86	"	"		being provided is ft/min; PG converted to ft/hr
																	gray to light gray, medium to fine, quartz, feldspar	being provided is rymmy . I converted to rym
6/15/2020		Brian Lipinski, PG	"	44-2											Steady		(plagioclase), trace hornblends, little to trace sericite (white,	
	7:53				SE to NW	P-12.25									· [	Pickering Gneiss	fine grained and soft flakes), and trace epidote	
"	8:15	п	"	44-3	II .	"									"	II .	no change	
"	8:37	П	п	44-4	"	"									"	п	п	
"	8:53	II .	"	44-5	"	"									"	"	II .	
"	9:20	"	"	44-6	"	"	1448.73	1462.25	123.4	42	22,000	74,000	700	88	"	"		
"	10:21	"	31.78	45-1	"	"									"	"	"	
"	10:47	"		45-2	"	" "									"	"		
"	11:00 11:16		"	45-3 45-4	"	"	1480.6	1493.52	123.3	42	22,000	70,000	700	92	"	"	II .	
"	11:35	п	"	45-5	"	"	1460.0	1495.52	123.3	42	22,000	70,000	700	92		п	lu .	
п	11:56	п	"	45-6	"	"									"	11	11	
"	13:40	п	31.72	46-1	ıı ı	"									"	п	II .	
"	13:59	п	"	46-2	"	"									"	11	п	
"	14:15	п	"	46-3	II .	II .									II .	11	п	
"	14:36	II .	"	46-4	"	"									"	п	II .	
"	14:45	п	"	46-5	II .	"									"	II	п	
"	14:59	П	п	46-6	"	"	1512.31	1525.84	123.3	42	23,000	77,000	700	91	"	п	п	
"	15:32	п	31.55	47-1	"	II .									"	II .	п	
"	15:50	"	"	47-2	"	"									"	"		
"	16:14	11	"	47-3	"	"									"	п		
"	16:30	" "	"	47-4	"	"									"	"		
"	17:07	п	"	47-5 47-6	"	"	1543.86	1557.20	122.2	36	22.000	75 000	700	93	"	"	II	
"	17:23 17:57	п	31.6	47-6	"		1543.80	1557.39	123.2	30	23,000	75,000	700	93	"	п	III	
п	18:10	п	31.0	48-1	"	"									"	п		
"	18:30	п	"	48-3	"	п									"	п	"	
+	_0.50			-10 0													gray to light gray, medium to fine, quartz, feldspar	
																	(plagioclase), trace hornblends, little to trace sericite (white,	
06/16/20	7:45	Brian Lipinski, PG	"	48-4	SE to NW	P-12.25									steady	Pickering Gneiss	fine grained and soft flakes), and trace epidote	
п	8:20	п	п	48-5	"	ıı .									"		no change in cuttings	

## HDD No.: \$3-0290-20 (US-DS)

				Sample ID as Joint #-?			Horizontal Distance	Drill Length										
	Time		laint Lanath	E.g. 101-1	Drilling	Pilot - P	(HD) to Bit	(MD) to Bit	Donth	Drilling Rate	Rotary		Fluid Pumping		Est. Fluid Returns			Comments
Date	(military)	PG Name	Joint Length or Sub length	-2 -3	Direction	Ream - R Bit Size	(feet)	(feet)	Depth (feet)	(ft / hour)	(ft-lbs)		Rate (gpm)	Pressure (psi)	(percent)	Formation	Cuttings Description	Comments (Drilling parameters from UI 3hr Update Reports)
"	8:40	ro Name	"	48-6	"	"	1575.47	1588.99	122.7	48		71,000	700	(psi) 89	(percent)	" "	" Cuttings Description	(Drilling parameters from or one opuate reports)
"	9:35	п	31.53	49-1	"	"	1373.47	1300.33	122.7	10	23,000	7 1,000	700	03	"	п	II II	
"	9:55	п	"	49-2	"	"										п	II .	
11	10:25	п	II .	49-3	"	"									"	п	п	
"	10:50	II II	"	49-4	"	"									"	п	п	
"	11:30	II .	"	49-5	"	"									"	п	п	
"	11:55	ıı ı	ıı .	49-6	"	"	1606.98	1620.52	121.8	30	23,000	79,000	700	91	"	п	п	
"	12:45	п	31.68	50-1	"	"									"	п	II .	
"	13:00	п	II .	50-2	"	"									"	п	II .	
"	14:15	"	"	50-3	"	"									"	II .	II .	
"	14:35	"	"	50-4	"	"									"	II .	II .	
"	15:00	"	"	50-5	"	"									"	II .	II .	
"	15:30	"	"	50-6	"	"	1638.43	1652.2	120.5	24	24,000	80,000	700	94	"	II .	п	
"	16:45	II	31.66	51-1	"	"										II	п	
"	17:05	п	II .	51-2	"	ıı .										II .	п	
"	17:30	п		51-3	"	II .										II	п	
"	18:00	II .	II .	51-4	"	"										11	П	
11	18:33	п	II .	51-5	"	"										II	п	
																	gray to light gray, medium to fine, quartz, feldspar	
																	(plagioclase), trace hornblends, little to trace sericite (white,	
06/17/20	09:!0	Brian Lipinski, PG		51-6	SE to NW	P-12.25	1670.24	1683.86	118.8	24	25,000	85,000	700	92	steady		fine grained and soft flakes), and trace epidote	
"	10:25	"	32.91	52-1	"	"									"	II .	no change in cuttings	
"	10:40	"	"	52-2	"	"									"	"		
"	10:55	"	"	52-3	"	"									"	"		
"	11:20	"	"	52-4	"	"									"	"		
	11:45	"	"	52-5	"	" "									" "			
	12:05	"	"	52-6			1703.09	1716.77	116.6	24	25,000	87,000	700	92		"		
																	gray to light gray, medium to fine, quartz, feldspar	
06/40/20	1010		22.05	52.4			4700.0	4746.00	442.7	42	25.000	00.000	700	00		"	(plagioclase), trace hornblends, little to trace sericite (white,	
06/19/20	1010	Max Howard	32.95	53-1	" "	" "	1702.3	1716.22	113.7	12	26,000	86,000	700	90	" "	"	fine grained and soft flakes), and trace epidote	
- "	1035	Max Howard	"	53-2		" "												
	1100	Max Howard	"	53-3											"			
	1130	Max Howard		53-4														
																	avenute light avenu modium to fine avenue (increase) foldensu	
																	gray to light gray, medium to fine, quartz (increase), feldspar (plagioclase), trace hornblends, little to trace sericite (white,	
	1140	May Hayyard	"	F2 F													fine grained and soft flakes), and trace epidote	
	1140 1210	Max Howard Max Howard	11	53-5 53-6	"										"	11	ine graineu and soft flakes), and trace epidote	
06/20/20				55-0														No drilling today, Working on pilot intersect.
06/20/20	0:00	Glennon Graham, Jr.							<u> </u>									ino unling today, working on phot intersect.

#### HDD No.: S3-0290-20 (US-DS)

The   Part   P										(merged	1 03-D3 F0111	B on 6/27/2	U)								
Trace   Trace   Professional Continue   Water   Wate															Approximate	Running	Type of				
Defect   The				Pilot - P		Clean		Total	Loss Contro	ol Materials		Estimated	Running total		Mud Pumped	Total Mud	Bentonite	Soil	Liquid	Mud	
	Date	Time		Ream - R	Drilling	Water	Bentonite	Bentonite	DrillPlex	Plugz-it	Total LCM	Mud Mixed	Mud Mixed	Pump Rate			(sodium or	Disposal	Disposal	Wt./	1 '
Secret Paris   March	(xx/xx/xx)	(military)	Professional Geologist	Bit Size	Direction	(gal)	(bags)	(bags)	(hags)	•	1	1	(gallons)	(gpm)			calcium)			1	3 hr UI Update Reports)
Control   Cont	· · · ·	, ,,				10-7	(***8**/	(****)	(3283)	(**8*/	1 07	, ,	,	10. 7	(ganons)	(gailons)	, ·	., ,	10 /		nana takan afficita (till mara 26" casing
CATALON   -   -   -   -   -   -   -   -   -	03/17/20	17:00	Jeffrey Valvik	P - 36" auger	NW to SE	0	0	0	0	0	0	0	0	0	0	0		0	0	np	1
10074200			·																		
Application																					advancing casing
500,000   1000						0	0	0	0	0	0	0	0	0	0	0		0	0	np	"
Section   1900   Ty Juminose   NA   NY 19 SE   0   0   0   0   0   0   0   0   0	03/20/20			"	"	0	0	0	0	0	0	0	0	0	0	0		0	0	np	"
Month   Sevent Taren   P-1225   P-122	06/05/20	19:00	Ty Johnson	NA	NW to SE	0	0	0	0	0	0	0	0	0	0	0	Sodium	0	0	np	Prepping to drill
569 970   2001   Severe famen   P - 12.25   2.00   56   56   0   0   0   2.000   2.0	06/06/20	19:00	Ty Johnson	NA	NW to SE	0	0	0	0	0	0	0	0	0	0	0	Sodium	0	0	np	Prepping to drill
569 970   2001   Severe famen   P - 12.25   2.00   56   56   0   0   0   2.000   2.0																					Cleaned up 40 gal release of drilling mud
. 1246	06/08/20	1001	Steven Tanen	P - 12.25	"	2.000	56	56	0	0	0	2.000	2.000	800	0	0	sodium	0	40	1	
1246   1	, ,					,						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,								•
1.1546																					
1.566	"	1246	II II	"	"	7,092	43	99	0	0	0	7,092	9,092	239	3,585	3,585	"	0	0	np	•
1445   -   -   -   -   -   -   -   -   -	"	4546	"	"		525	-	405				F2F	0.627	220	42.522	47.200	-	_	_		( 30/31.91() 011 bottom
160-    160-		1546				535	ь	105	U	U	0	535	9,627	239	13,623	17,208	-	0	U	np	
6,7/2020   0.999	ıı ı	1645	"	II .	"	0	0	105	0	0	0	0	9.627	0	0	17.208	"	0	0	np	
1.745   1.75									-				,		_	ŕ					9
*** 1760 *** *** *** *** *** *** *** *** *** *	6/9/2020	0939	"	"	"	225	35	140	0	0	0	225	9,852	107	803	18,011	"	0	0	np	Tripped and started Joint #6
## 1,004   10   211   0   0   1,044   11,777   107   5,778   45,403   0   0   0   0   0   0   0   0   0	"	1245	"	"	"	755	21	161	0	0	0	755	10,607	107	14,552	32,563	"	0	0	np	
" 1790 " " 1,044 10 211 0 0 0 1,044 11,707 107 5,778 45,403 " 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	"	1601	II .	"	"	56	40	201	0	0	0	56	10,663	107	7,062	39,625	"	0	0	np	1601 resume drilling after hydraulic leak
" 1730 " " " 1,044 10 211 0 0 0 0 1,044 11,707 107 5,778 45,403 " 0 0 0 p for confunction for advantage control to five plane and the second control to five pl																					
1/30																					1
March   Marc	ıı ı	1730	ıı ı	ıı .		1 044	10	211	n	n	l 0	1 044	11 707	107	5 778	45 403	"	0	n	nn	
06/10/20   0939   0		1730				1,044	10		· ·	O	"	1,044	11,707	107	3,770	43,403		"			
06/10/20 0839																					_
0.5   0.5											1										
** 1241 * * * * 507 6 217 0 0 0 507 12,214 685 30,140 75,543 * 0 0 0 pp  ** 1542 * * * * * 869 4 2211 0 0 0 0 869 13,683 700 133,600 109,143 * 0 0 0 pp  ** 1547 * * * * * 500 21 242 0 0 0 0 950 14,033 700 121,010 230,243 * 0 0 0 pp  ** 1547 * * * * * 1542 * * * * 10 0 pp  ** 1547 * * * * * 500 21 242 0 0 0 0 0 950 14,033 700 121,010 230,243 * 0 0 0 pp  ** 1547 * * * * * 1542 * * * * 10 0 pp  ** 1548 * * * 10 0 pp  ** 1549 * 10	06/10/20	0939	п	ıı .	"	0	0	211	0	0	0	0	11,707	0	0	45,403	"	0	0	np	
** 1542													·			, , , , , , , , , , , , , , , , , , ,					mud-motor)
1847							6				0							0	0	np	
1831   Tylohnson							4			0	0							0	0	<del></del>	
1331	"	1847	"	"	"	950	21	242	0	0	0	950	14,033	700	121,100		"	0	0	np	Finished Joint #9, adv #10 ~3 of 5 ft
" 1633 " " " 126 8 266 0 0 0 0 126 15,741 700 28,700 32,943 " 0 0 0 0 Finish close 131; start topic 12 1 2 2 2 2 1 0 0 0 0 1,466 18,080 700 105,700 434,643 " 0 0 0 0 p Finished Joint #13; start topic 12 1 3 1 1 0 0 0 1,466 18,080 700 88,690 521,443 " 0 0 0 p Finished Joint #14 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	06/11/20	1033	Ty Johnson	"	"	0	0	242	0	0	0	0	14,033		0	230,243	"	0	0	np	
" 2002 " " " " 893 2 268 0 0 0 0 893 16,634 700 105,700 436,643 " 0 0 0 p Finished Joint #12, finish loin #13 106/12/70 1034 " " " 1,446 23 291 0 0 0 1,446 18,080 700 86,800 521,443 " 0 0 0 p Finished Joint #13 15,547 Joint #13 11,124 0 291 0 0 0 0 1,446 18,080 700 61,600 583,043 " 14 0 p Finished Joint #14 15,547 Joint #15,547 Joint #15,547 Joint #15,547 Joint #15,547 Joint #17 Joint #18,080 700 61,600 583,043 " 14 0 p P Finished Joint #13 15,547 Joint #15,547 Joint #15,54	"	1331	"	=	"	1,582	16	258	0	0	0	1,582	15,615	700	70,000	300,243	"	0	0	np	Finished Joint #10; start Joint #11
06/12/20   1034	"	1633	II II	п	"	126	8	266	0	0	0	126	15,741	700	28,700	328,943	"	0	0	np	Finish Joint #11; start Joint 12
06/12/20   1034	II .	2002	"	"	"	893	2	268	0	0	0	893	16.634	700	105.700	434.643	"	0	0	gn	Finished Joint #12: finish Joint # 13
" 1331 " " " 1,124 0 291 0 0 0 0 18,080 700 61,600 583,043 " 14 0 np Finished Joint 15; start joint 16; 5 supersacks were used on the start joint 16; 5 supersacks were used on the start joint 16; 5 supersacks were used on the start joint 16; 5 supersacks were used on the start joint 16; 5 supersacks were used on the start joint 17 on the start joint 16; 5 supersacks were used on the start joint 17 on the start joint 16; 5 supersacks were used on the start joint 17 on the start joint 17 on the start joint 16; 5 supersacks were used on the start joint 17 on the start	06/12/20		II	ш	ıı ı				0	0	0				· · · · · · · · · · · · · · · · · · ·		"	0	0	<del>                                     </del>	,
1632   "		200 .				2,					<del> </del>	2,	20,000	7.00	ŕ			<u> </u>			
1632	"	1331	"	"	"	1,124	0	291	0	0	0	0	18,080	700	61,600	583,043	"	14	0	np	
" 1014 " " " 571 0 291 0 0 0 0 18,080 700 51,800 741,943 " 0 0 0 np Completed 25 ft. of joint 17 then tripped out; 5 superisches were used 106/13/20 1033 " " " 0 0 0 291 0 0 0 0 18,080 0 0 741,943 " 0 0 0 np Tripping in Completed 25 ft. of joint 17 then tripped out; 5 superisches were used 11332 " 0 0 0 18,080 0 0 0 741,943 " 0 0 0 np Tripping in Completed 25 ft. of joint 17 then tripped out; 5 superisches were used 11332 " 0 0 0 18,080 0 0 0 741,943 " 0 0 0 np Tripping in Completed 25 ft. of joint 17 then tripped out; 5 superisches were used 114,091 1332 " 0 0 0 18,080 0 0 0 741,943 " 0 0 np Tripping in Completed 25 ft. of joint 17 then tripped out; 5 superisches were used 114,091 1332 " 0 0 0 18,080 0 0 0 0 18,080 0 0 0 0 18,080 0 0 0 0 0 18,080 0 0 0 0 0 18,080 0 0 0 0 0 18,080 0 0 0 0 0 19,150 700 19,150 700 19,150 700 19,150 700 19,150 700 19,150 700 19,150 700 19,150 700 19,150 700 19,150 700 141,091 1,102,834 " 0 0 0 np Shaving bore along Joint #17 Continued to shave along #17, made multiple passes Joint 17 to Shave along #17 w multiple 1845 " 0 0 0 np Passes. Will to Sation.  " 1845 " 0 0 0 19,953 700 84,700 1,286,934 " 0 0 0 np Passes. Will to Sation.  " 1845 " 0 0 0 np Passes. Will to Sation.  " 1912 10 313 0 0 0 0 9912 20,865 700 54,600 1,341,534 " 0 0 np Shaved after 418 completed 25 ft. of joint 17 then tripped out; 5 superisches were used 18,090 10,110 11,102,1	"	1622	11	"	"	116	0	201	_	0		_	10.000	700	107 100	600 142		_	0		
1014   1014		1632				446	U	291	U	U	0	U	18,080	700	107,100	690,143		U	U		
06/13/20 1033 " " " 0 0 0 291 0 0 0 0 18,080 0 0 741,943 " 0 0 0 p Tripped in to rock face  " 1632 " " " 1,070 10 301 0 0 0 0 1,070 19,150 700 191,100 933,043 " 0 0 p Tripped in to rock face  " 1632 " " 0 0 0 301 0 0 0 19,150 700 191,100 933,043 " 0 0 0 p Shaving bore along loint #17  " 1239 " " " 196 0 301 0 0 0 0 19,150 709 141,091 1,102,834 " 0 0 p Shaving bore along loint #17  " 1602 " " " 803 2 303 0 0 0 883 19,953 700 99,400 1,202,234 " 0 0 p P Continue to shave along #17, made multiplel passes  " 1845 " " " 385 0 303 0 0 0 0 19,953 700 84,700 1,286,934 " 0 0 p p passes. Will take a survey shot 6/16/20 to assess boint 17 bit location.  06/16/20 0934 Brian Lapinski " " 912 10 313 0 0 0 0 0 20,865 700 54,600 1,341,534 " 0 np Shaving, advancing #18.  " 1253 " " " Shaving bore along boint #17  " 0 0 0 p Continue to shave along #17 w multiple assess will take a survey shot 6/16/20 to assess boint 17 bit location.	ıı ıı	1014	II .	m m	"	571	0	291	0	0	0	0	18,080	700	51,800	741,943	"	0	0	l nn	1
" 1332 " " " 1,070 10 301 0 0 0 18,080 0 0 741,943 " 0 0 0 np Completed joint 17, tripped int to rock face  " 1632 " " " 1,070 10 301 0 0 0 0 1,070 19,150 700 191,100 933,043 " 0 0 0 np Completed joint 17, tripped int to rock face  " 1632 " " " 196 0 301 0 0 0 0 19,150 700 28,700 961,743 " 0 0 0 np Shaving bore along Joint #17  " 1239 " " " 196 0 301 0 0 0 0 19,150 709 141,091 1,102,834 " 0 0 0 np Continue to shave along #17, made multiple passes  " 1602 " " " 803 2 303 0 0 0 0 803 19,953 700 99,400 1,202,234 " 0 0 0 np Continue to shave along #17 w multiple passes  " 1845 " " " 385 0 303 0 0 0 0 0 19,953 700 84,700 1,286,934 " 0 0 0 np passes. Will take a survey shot 6/16/20 to a sess Joint 17 bit location.  06/16/20 0934 Brian Lapinski " " 912 10 313 0 0 0 0 0 0 20,865 700 125,300 1,466,834 " 13 0 np Shaving, advancing #18.																					
1632						0	0		0	0					l		- "	0	0		
1632   1632   1632   1634   1634   1634   1635   1635   1636	"	1332	"	"	"			291			0	0	18,080	0	0	741,943				np	Tripped in to rock face
1032   1032   1031	ıı ıı	1622	11			1 070	10	201		0	_	1.070	10.150	700	101 100	022 042		_	_	nn	completed joint 17; tripped out to 16 and
" 1239 " " 196 0 301 0 0 0 19,150 709 141,091 1,102,834 " 0 0 np Continue to shave along #17, made multiplel passes  " 1602 " " " 803 2 303 0 0 0 0 803 19,953 700 99,400 1,202,234 " 0 0 np Continue to shave along #17, made multiplel passes  " 1845 " " " 385 0 303 0 0 0 0 0 19,953 700 84,700 1,286,934 " 0 0 0 np Continue to shave along #17 w multiple passes. Will take a survey shot 6/16/20 to assess Joint 17 bit location.  06/16/20 0934 Brian Lapinski " " 912 10 313 0 0 0 0 912 20,865 700 54,600 1,341,534 " 0 0 np Completed shaving, advancing #18.  " 1253 " " 161 0 313 0 0 0 0 0 20,865 700 125,300 1,466,834 " 13 0 np Shaved after #18 completed		1032				1,070	10	301	· ·	U	"	1,070	19,130	700	191,100	955,045		"	"	пр	began shaving
" 1239 " " 196 0 301 0 0 0 19,150 709 141,091 1,102,834 " 0 0 np Continue to shave along #17, made multiplel passes  " 1602 " " " 803 2 303 0 0 0 0 803 19,953 700 99,400 1,202,234 " 0 0 np Continue to shave along #17, made multiplel passes  " 1845 " " " 385 0 303 0 0 0 0 0 19,953 700 84,700 1,286,934 " 0 0 0 np "  Continue to shave along #17 w multiple passes  Continue to shave along #17 w multiple passes  " 1845 " " " 912 10 313 0 0 0 9912 20,865 700 54,600 1,341,534 " 0 0 np Completed shaving, advancing #18.  " 1253 " " " 161 0 313 0 0 0 0 0 20,865 700 125,300 1,466,834 " 13 0 np Shaved after #18 completed	06/15/20	0946	Steven Tanen	п	"	0	0	301	0	0	0	0	19,150	700	28,700	961,743	"	0	0	np	Shaving bore along Joint #17
1239   1602   "   "   803   2   303   0   0   0   0   19,150   709   141,091   1,102,834   "   0   0   np   multiplel passes																					
" 1602 " " " " 803 2 303 0 0 0 0 803 19,953 700 99,400 1,202,234 " 0 0 0 np "  " 1845 " " " 385 0 303 0 0 0 0 0 19,953 700 84,700 1,286,934 " 0 0 np "  Continued to shave along #17 w multiple passes. Will take a survey shot 6/16/20 to assess Joint 17 bit location.  O6/16/20 0934 Brian Lapinski " " 912 10 313 0 0 0 0 912 20,865 700 125,300 1,466,834 " 13 0 np Shaved after #18 completed	"	1239	"			196	0	301	0	0	0	0	19,150	709	141,091	1,102,834	"	0	0		
" 1845 " " " 385 0 303 0 0 0 0 19,953 700 84,700 1,286,934 " 0 0 0 np passes. Will take a survey shot 6/16/20 to assess Joint 17 bit location.  06/16/20 0934 Brian Lapinski " " 912 10 313 0 0 0 0 912 20,865 700 54,600 1,341,534 " 0 0 np Completed shaving, advancing #18.  " 1253 " " 161 0 313 0 0 0 0 0 20,865 700 125,300 1,466,834 " 13 0 np Shaved after #18 completed	п	1602	п	п	"	803	2	303	n	n	0	803	19 953	700	99.400	1 202 234	"	0	0		II
"       1845       "       "       "       385       0       303       0       0       0       0       19,953       700       84,700       1,286,934       "       0       0       np       passess. Will take a survey shot 6/16/20 to assess Joint 17 bit location.         06/16/20       0934       Brian Lapinski       "       "       912       10       313       0       0       0       912       20,865       700       54,600       1,341,534       "       0       0       np       Completed shaving, advancing #18.         "       1253       "       "       161       0       313       0       0       0       20,865       700       125,300       1,466,834       "       13       0       np       Shaved after #18 completed		1002				003		303			<del>                                     </del>	003	15,555	700	33,400	1,202,234		-	-		Continued to shave along #17 w multiple
1845   365   0 305   0 0 0 0 0 19,955   700   84,700   1,266,934   0 0 0 19 passes. Will take a survey shot 6/16/20 to assess Joint 17 bit location.    06/16/20	"	1045	"		"	205	_	202	_	0	_		10.053	700	04.700	1 200 024	"	_		1	
06/16/20         0934         Brian Lapinski         "         912         10         313         0         0         0         912         20,865         700         54,600         1,341,534         "         0         0         np         Completed shaving, advancing #18.           "         1253         "         "         161         0         313         0         0         0         20,865         700         125,300         1,466,834         "         13         0         np         Shaved after #18 completed		1645				585	"	303	U	U	"	"	19,953	/00	84,/00	1,200,934		0	"		I'
" 1253 " " " 161 0 313 0 0 0 0 0 20,865 700 125,300 1,466,834 " 13 0 np Shaved after #18 completed	001:-1				,												<del> </del>				
	06/16/20		Brian Lapinski				<b>!</b>					<b>!</b>					- "				
"   1529   Steven Tanen   "   "   756   3   316   0   0   0   756   21,621   700   51,800   1,518,634   "   0   0   np	"		"								0						"	13	0	np	Shaved after #18 completed
	"	1529	Steven Tanen	II .	"	756	3	316	0	0	0	756	21,621	700	51,800	1,518,634	"	0	0	np	

#### HDD No.: S3-0290-20 (US-DS)

		<u> </u>							(merged	1 02-D2 FOLL	n B on 6/27/2	0)								
														Approximate	Running	Type of				Comments
			Pilot - P		Clean		Total	Loss Contro	ol Materials		Estimated	Running total		Mud Pumped	Total Mud	Bentonite	Soil	Liquid	Mud	
Date	Time		Ream - R	Drilling	Water	Bentonite	Bentonite	DrillPlex	Plugz-it	Total LCM	Mud Mixed	Mud Mixed	Pump Rate	Downhole	Pumped	(sodium or	Disposal	Disposal	Wt./	(Materials consumed based on
(xx/xx/xx)	(military)	Professional Geologist	Bit Size	Direction	(gal)	(bags)	(bags)	(bags)	(bags)	(bags)	(gallons)	(gallons)	(gpm)	(gallons)	(gallons)	calcium)	(yd3)	(gal)	Vis.	3 hr UI Update Reports)
"	1847	II .	п	"	73	0	316	0	0	0	0	21,621	700	105,700	1,624,334	"	0	0	np	
												-								0951: Completed last 1.5 ft of #21; then
06/17/20	1004	"	"	"	876	12	328	0	0	0	876	22,497	457	23,307	1,647,641	"	0	0	np	rig idle for repairs to mud pump
																				Rig idle for repairs to generator and mud
"	1244	"	"	"	0	0	328	0	0	0	0	22,497	0	0	1,647,641	"	13	0	np	system during this period
11	1548	II .	п	ıı ı	220	0	328	0	0	0	0	22,497	700	52,500	1,700,141	"	0	0	np	1431: Resumed drilling, starting on #22
п	1846	II .	п	ıı .	277	0	328	0	0	0	0	22,497	700	85,400	1,785,541	"	0	0	np	2 10 21 110 20 1110 20 11111 20 11 112
								-						,						0757: resumed drilling joint 23; 0906:
06/18/20	1000	Ty Johnson	"	"	797	6	334	0	0	0	797	23,294	700	62,300	1,847,841	"	0	0	np	begin drilling joint 24
																				1119: completed joint 24; 1151: began
"	1300	"	"	"	922	12	346	0	0	0	922	24,216	700	100,100	1,947,941	"	0	0	np	drilling joint 25
																				1508: complete drilling joint 25; 1526:
"	1600	"	"	"	90	0	346	0	0	0	0	24,216	700	63,700	2,011,641	"	0	0	np	begin drilling joint 26
																	1	1		1758: Joint 27 on rig. Drilling ceased due
"	1900	"	"	"	685	0	346	0	0	0	0	24,216	700	69,300	2,080,941	"	0	0	np	to mechanical problem
06/19/20	1000	II II	II .	ıı ı	945	10	356	0	0	0	945	25,161	700	25,900	2,106,841	"	0	0	np	818: begin drilling joint 27
00/19/20	1000				343	10	330	0	U	0	343	23,101	700	23,900	2,100,841		0	0	пр	1021: Complete joint 27; 1102: Begin
II II	1300	"	II .	"	329	0	356	0	0	0	0	25,161	700	73,500	2,180,341	"	0	0	np	
							<del>                                     </del>				+	+					1			drilling joint 28
"	1600	"	"	"	218	4	360	0	0	0	218	25,379	700	79,800	2,260,141	"	0	0	np	1345: Complete drilling joint 28; 1406:
																				Begin drilling joint 29
n n	1900	II .	n n	"	2	0	360	0	0	0	0	25,379	700	15,400	2,275,541	"	0	0	np	1604: Complete drilling joint 29; 1625:
05/20/20	1000	"	"	"			252		•			25.270			2 275 544			_		Begin drilling joint 30
06/20/20	1000	"	"	"	0	0	360	0	0	0	0	25,379	700	0	2,275,541	"	0	0	np	have not started drilling yet
	1300				0	0	360	0	U	0	0	25,379	700	17,500	2,293,041		0	0	np	1012 - 1026: completed drilling joint 30
																				1238: joint 30 on rack; 1345: survey shots
																				on joint 29; 2:15 PM, Vac-Truck pumped
	4600	,,			0	0	250		0		0	25.270	700	22.200	2 225 244		0			out liquid waste from the cutting's tanks
	1600				"	0	360	0	U	0	"	25,379	700	32,200	2,325,241		0	0	np	and took it to the downstream side drill;
																				1529: begin drillng jont 31; 1630: stop
																				drilling for the day.
06/22/20	1000	Drian Lininski DC	"	"	704	15	375	0	0	0	704	26,083	700	0	2,325,241	Sodium	12	_		Duilling inink 24
06/22/20	1300	Brian Lipinski, PG	"	"	0	15 5	380	0	0	0	0	26,083	700	0	2,325,241	Souluili	13 0	0	np	Drilling joint 31 Drilled Joint # 31 for a total of 32'.
"	1600	II II	"	"	986	5	385	0	0	0	986	27,069	700	1	2,325,241	"	0	0	np	
"	1900	"	"	"	184	0	385	0	0	0	0	27,069	700	0	2,325,241	"	0	0	np	Finished joint # 32 for a total of 32'
06/23/20	1000	Brian Lipinski, PG	"	"	0	0	385	0	0	0	0	27,069	700	0	2,325,241	sodium	0	0	np	Finished joint 33
00/23/20		Brian Lipinski, PG	"	"		7		0	0			<u> </u>	1			Soulum		+	np	drilling joint 34
11	1300	ıı .	"	"	432	<u> </u>	392			0	432	27,501	700	0	2,325,241	"	0	0	np	finished joint 34
"	1600	"	"	"	446	0	392	0	0	0	0	27,501	700	0	2,325,241	"	0	0	np	finished joint 35
	1900	Poisso Liniandi RC	"	"	667	3	395	0	0	0	667	28,168	700	0	2,325,241	C - di	0	0	np	drlled 22ft of joint 36
06/24/20	1000	Brian Lipinski, PG	"	"	326	10	405	0	0	0	326	28,494	700	0	2,325,241	Sodium	0	0	np	finished joint 36
"	1300	"	"	"	90	0	405	0	0	0	0	28,494	700	0	2,325,241	"	0	0	np	finished joint 37
"	1600	" "	"	"	770	9	414	0	0	0	770	29,264	700	0	2,325,241	"	0	0	np	finished joint 38
	1900		"	"	27	1	415	0	0	0	27	29,291	700	0	2,325,241		0	0	np	dilling joint 39
06/25/20	1000	Ty Johnson, PG	pi	"	636	7	422	0	0	0	636	29,927	700	26,600	2,351,841	Sodium	0	0	np	complete drilling joint 39
06/25/20	1300			- "	90	0	422	0	0	0	0	29,927	700	118,300	2,470,141		0	0	np	drilling joint 40
0.010=1==		"	,,			_		_	_								_	_		complete drilling joint 40; begin drilling
06/25/20	1600	"		"	1,470	6	428	0	0	0	1,470	31,397	700	32,900	2,503,041	. "	0	0	np	joint 41; 1418 drilling fluid intercepted DS
			"														<del>                                     </del>			
06/25/20	1900	"		"	624	4	432	0	0	0	624	32,021	516	13,416	2,516,457	"	0	0		complete drilling 20 feet of joint 41
06/26/20	1000	"	"	"	155	3	435	0	0	0	155	32,176		0	2,516,457		0	0	np	5 supersacks used
06/26/20	1300	п	"	"	1,581	19	454	0	0	0	1,581	33,757	516	0	2,516,457	"	12.5	0	np	1 Dump truck
06/26/20	1600	II	"	"	36	0	454	0	0	0	0	33,757	516	0	2,516,457	"	0	0	np	

#### HDD No.: S3-0290-20 (US-DS)

HDD Name: Little Conestoga Rd HDD Permit Name: Milford Rd./Little Conestoga Rd

(merged US-DS Form B on 6/27/20)

									(merged	1 02-D2 FOLL	n B on 6/27/2	J)								
Date (xx/xx/xx)	Time (military)	Professional Geologist	Pilot - P Ream - R Bit Size	Drilling Direction	Clean Water (gal)	Bentonite (bags)	Total Bentonite (bags)	Loss Contro DrillPlex (bags)		Total LCM (bags)	Estimated Mud Mixed (gallons)	Running total Mud Mixed (gallons)	Pump Rate (gpm)	Approximate Mud Pumped Downhole	Running Total Mud Pumped (gallons)	Type of Bentonite (sodium or calcium)	Soil Disposal (yd3)	Liquid Disposal (gal)	Mud Wt./ Vis.	Comments (Materials consumed based on 3 hr UI Update Reports)
	,	"	"	"								,,	(86)	(gallons)						+
06/26/20	1900				270	9	463	0	0	0	270	34,027		0	2,516,457		0	0	np	
Merged US-DS I	Form B on 6/2	7/20 (US above/DS below	)																	
																				Catain DIIA salibuated sime them electrical
02/20/20	17:25	Steve Tanen	P - 12	SE to NW	0	0	0	0	0	0	0	0	0	0	0	0	0	0	np	Set-up BHA, calibrated gyro, then electrial issues. No drilling conducted.
02/21/20	1000	Lawrence Galiano	P - 12	SE to NW	0	6	6	0	0	0	0	0	400	44,000	44,000	sodium	0	0	np	Advanced BHA 4 joints
02/21/20	1300	Lawrence Galiano	P - 12	SE to NW	0	16	22	0	0	0	0	0	0	0	44,000	sodium	0	0	np	Tripped out 4 joints
02/21/20	1500	Lawrence Galiano	P - 12	SE to NW	0	0	22	0	0	0	0	0	0	0	44,000	sodium	0	0	np	Drill idle, repairing mud system
02/21/20	1700	Lawrence Galiano	P - 12	SE to NW	7,500	14	36	0	0	0	7,500	7,500	258	11,610	55,610	sodium	0	0	np	Advanced BHA 2 joints
02/22/20	1130	Steve Tanen	P - 12.25	ıı	0	0	36	0	0	0	0	7,500	0	0	55,610	na	0	0	np	Rig idle - repairs to mud cleaning system/power unit. Waiting on parts. Expected 2/25/20.
02/27/20	1830	Steve Tanen	п	11	400	13	49	0	0	0	400	7,900	672	14,784	70,394	sodium	0	0	np	Rig idle for repairs 2/22/20 through 2/26/20. Restarted ~1600 on 2/27/20
02/28/20	1006	п	"	"		8	57	0	0	0	0	7,900	672	30,912	101,306	II .	0	0	np	1001: Idle - mech issue mud sys
"	1257	"	"	"		3	60	0	0	0	0	7,900	0	0	101,306	"	0	0	np	
"	1601	"	"	"		3	63	0	0	0	0	7,900	672	28,896	130,202	"	0	0	np	1304: restarted drilling
ıı .	1640	п	п	"	500	3	66	0	0	0	500	8,400	699	13,281	143,483	"	0	0	np	Water used only provided at EOD. Shutdown at 1640 (mechanial issue)
02/29/20	1000	"	п	"		0	66	0	0	0	0	8,400	0	0	143,483	"	0	***	np	***Reportedly, 9 loads of water were removed from the mud-pit overnight. No drilling - mechanic onsite for repair to mud
п	1246	п	п	II II		40	106	0	0	0	0	8,400	699	9,087	152,570	"	0	0	np	system.  1106: Started drilling. Reportedly increasing mud viscosity.
11	1612	п	п	"		11	117	0	0	0	0	8,400	699	37,746	190,316	"	0	0	np	,
п	1638	"	п	"	0	4	121	0	0	0	0	8,400	699	9,087	199,403	"	13	7,100	np	Liquid disposal is water from frac tanks.  Water used, soil & liquid disposal reported
02/02/20	1004	"	"	"		10	121	0	0	0	0	8,400	700	44.000	244,203	"	0			at EOD.  0848: Started drilling
03/02/20	1300	"	"	"		10 0	131 131	0	0	0	0	8,400	700 700	44,800 45,850	290,053	"	0	0		Tripped out 9 joints (30s/ea)
11	1607	11	"	"		5	136	0	0	0	0	8,400	700	9,450	290,053	"	0	0	np	Tripped out 9 joints (30s/ea)  Tripped out 3 joints (30s/ea)
п	1840	"	п	п	0	48	184	0	0	0	0	8,400	700	21,583	321,086	"	0	0	·	No water added, working on increasing mud viscosity to manage groundwater infiltration into bore
03/03/20	1012	11	п	"		0	184	0	0	0	0	8,400	700	64,400	385,486	ıı	13		np	
"	1256	II II	11	"		0	184	0	0	0	0	8,400	0	0	385,486	ıı ı	1			Tripping out = no mud used
n	1558	п	п	п		5	189	0	0	0	0	8,400	0	0	385,486	"			np	Tripping in = no mud used; mud generation used to flush "grout" joints prior to connecting to drill string. Water volume provided as end of day total
п	1740	п	п	"	200	10	199	0	0	0	200	8,600	0	0	385,486	"		12000	np	Tripping in = no mud used; water volume provided as end of day total
03/04/20	1600	Brian Duggan	na	na	0	0	199	0	0	0	0	8,600	0	0	385,486	na	0	0	np	No drilling activity. Grouting operations performed from 1230 to 1455. Tripping out begins. Drilling to resume tomorrow. Intalled 20yd3 of grout.
n	1900	п	na	na	1,200	26	225	0	0	0	1,200	9,800	0	0	385,486	sodium	0	12,000	np	No drilling activity and no pumping reported. Tripping out completed. Drilling to resume tomorrow.
03/05/20	1000	Steve Tanen					225			0	0	9,800		0	385,486	"			np	Reinstalling centeralizer casing - no 10am report

#### HDD No.: S3-0290-20 (US-DS)

HDD Name: Little Conestoga Rd HDD Permit Name: Milford Rd./Little Conestoga Rd

(merged US-DS Form B on 6/27/20)

											n B on 6/27/2	- /								
			Pilot - P		Clean		Total	Loss Contro	l Materials		Estimated	Running total		Approximate Mud Pumped	Running Total Mud	Type of Bentonite	Soil	Liquid	Mud	Comments
Date	Time		Ream - R	Drilling	Water	Bentonite	Bentonite	DrillPlex	Plugz-it	Total LCM	1		Pump Rate	Downhole	Pumped	(sodium or	Disposal	Disposal	Wt./	(Materials consumed based on
(xx/xx/xx)	(military)	Professional Geologist	1	Direction	(gal)	(bags)	(bags)	(bags)	(bags)	(bags)	(gallons)	(gallons)	(gpm)	(gallons)	(gallons)	calcium)	(yd3)	(gal)	Vis.	3 hr UI Update Reports)
11	1316	11	R - 12 in**	SE to NW		27	252	0	0	0	0	9,800	300	7,200	392,686	"	0	0	np	Tripping w Jetting Bit Assembly
			==									0,000		7,200				1		Following mud loss decreased pump rate,
11	1423	II .		"	0	0	252	0	0	0	0	9,800	100	10,300	402,986	"	0	0	np	while swabbed to work on reestablishing
	1.20						-52		· ·			3,000	200	10,000	102,500				۳.,	flow
"	1900	"		"	0	13	265	0	0	0	0	9,800	0	0	402,986	"	0	9,000	np	Total water usage provided at end of day.
																				Grouted bore. Intalled 40 yd3 of grout.
03/06/20	1720	ıı .	na	na	0	0	265	0	0	0	0	9,800	0	0	402,986	na	0	3,000	np	Grout started to emerge from casing at SE
												,			,					entry while pumping thrid load.
																				Soil disposal volume includes some grout
03/07/20	1700	Marty Mengel	na	na	0	0	265	0	0	0	0	9,800	0	0	402,986	na	39	0	np	cuttings
																				Grout cuttings removed from site for
03/09/20	1900	Brian Duggan	na	na	0	0	265	0	0	0	0	9,800	0	0	402,986	na	26	0	np	disposal. No other materials consumed.
03/10/20	0954	Steve Tanen	P - 12.25	SE to NW		0	265	0	0	0	0	9,800	258	516	403,502	sodium	0	0	np	Tripping in w jetting bit assembly.
"	1238	II .	"	"		40	305	0	0	0	0	9,800	205	20,500	424,002	"	0	0	np	11 0 7 0 7
"	1537	II .	"	"		0	305	0	0	0	0	9,800	205	5,945	429,947	"	0	0	np	
"	1859	II .	"	"	3,100	15	320	0	0	0	3,100	12,900	280	56,280	486,227	"	0	0	np	Water used only provided at EOD.
03/11/20	1000	Chris Mulry	P - 12.25	SE to NW	0	15	335	0	0	0	0	12,900	285	0	486,227	"	0	0	np	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
"	1600	"	"	"	3,000	5	340	0	0	0	3,000	15,900	0	0	486,227	"	20	1000	np	
03/12/20	1500	Chris Mulry	na	SE to NW	0	0	340	0	0	0	0	15,900	0	0	486,227	"	0	3000	np	no drilling, no mud circulation today
03/13/20	0946	Steve Tanen	P - 12.25	"		0	340	0	0	0	0	15,900	0	0	486,227	"	0	0	np	0930 Started tripped in.
"	1307	II .	"	"		0	340	0	0	0	0	15,900	150	3,000	489,227	"	0	0	np	10 joints in at ~2 min/joint (ave)
"	1550	"	II .	"		20	360	0	0	0	0	15,900	150	2,400	491,627	"	0	0	np	8 joints in at ~2 min/joint (ave)
"	1945	"	II .	"	1,000	10	370	0	0	0	1,000	16,900	699	27,960	519,587	"	0	0	np	Water used only provided at EOD
					,			-			,	-,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,					Intalled 50 yd3 of grout into bore. Grout
03/14/20	1600	Marty Mengel	na	na	0	0	370	0	0	0	0	16,900	0	0	519,587		0	3000	np	started to emerge from casing at SE entry
, ,		,										,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							'	while pumping 5th load
ıı .		"																		Pump rate and time estimated (not
"	1800	"	na	Na	3,200	25	395	0	0	0	3,200	20,100	150	1,500	521,087		0	6000	np	provided). Pumped 50yd3 grout.
03/16/20	0954	Steve Tanen				0	395	0	0	0	0	20,100	0	0	521,087				np	, , , ,
"	1241	II .				0	395	0	0	0	0	20,100	0	0	521,087				np	
"	1545	"	~36-in auger	SE to NW	0	0	395	0	0	0	0	20,100	0	0	521,087		13	3,000	np	Augered out 36-in casing
																				De installing 44 in series info feature of
03/17/20	0938	"	P - 12.25	"			395	0	0	0	0	20,100	0	0	521,087	sodium	0	0	np	Re-installing 14-in casing; info for use of
																				LCMs not provided (not on UI data form)
"	1250	11	"	=			395	0	0	0	0	20,100	0	0	521,087	"	0	0	np	Tripped in BHA (jetting assembly)
"	1543	11	II .	=			395	0	0	0	0	20,100	306	18,207	539,294	"	0	0	np	Tripping w Jetting Bit Assembly (7 joints)
																				Tripping w jetting bit assembly (3 joints);
"	1821	"	"	"	6,800	30	425	0	0	0	6,800	26,900	309	24,720	564,014	"	0	0	np	bentonite and water provided at end of
																				day.
03/18/20	1000	Jeffrey Valvik	P - 12.25	SE to NW	0	0	425	0	0	0	0	26,900	0	0	564,014	"	0	0	np	
03/18/20	1300	Jeffrey Valvik	P - 12.25	SE to NW	0	0	425	0	0	0	0	26,900	306	0	564,014	"	0	0	np	
03/18/20	1600	Jeffrey Valvik	P - 12.25	SE to NW	0	0	425	0	0	0	0	26,900	306	0	564,014	"	0	0	np	
03/18/20	1900	Jeffrey Valvik	P - 12.25	SE to NW	4,400	27	452	0	0	0	4,400	31,300	306	0	564,014	"	0	0	np	
03/19/20	1000	Jeffrey Valvik	P - 12.25	SE to NW	0	0	452	0	0	0	0	31,300	306	0	564,014	"	0	0	np	
03/19/20	1300	Jeffrey Valvik	P - 12.25	SE to NW	0	0	452	0	0	0	0	31,300	0	0	564,014	"	0	0	np	
03/19/20	1600	Jeffrey Valvik	P - 12.25	SE to NW	0	0	452	0	0	0	0	31,300	0	0	564,014	"	0	0	np	
03/19/20	1900	Jeffrey Valvik	P - 12.25	SE to NW	3,000	41	493	0	0	0	3,000	34,300	600	0	564,014	"	0	0	np	
03/20/20	0939	Steve Tanen	"	=			493	0	0	0	0	34,300	605	54,450	618,464	"	0	0	np	Tripped in #16 (w mud-motor)
																				Started #17 (with mud-motor) then
"	1249	11	"	"	1,200	20	513	0	0	0	1,200	35,500	605	8,470	626,934	"	0	0	np	tripped out due to statewide Covid-19
			<u>                                      </u>				<u>                                      </u>			<u> </u>				<u> </u>	<u></u>	<u> </u>				work stoppage.

#### HDD No.: S3-0290-20 (US-DS)

					,				(mergea	US-DS Forn	n B on 6/27/2	(0)								
														Approximate	Running	Type of				Comments
			Pilot - P		Clean		Total	Loss Contr	ol Materials		Estimated	Running total		Mud Pumped	Total Mud	Bentonite	Soil	Liquid	Mud	
Date	Time		Ream - R	Drilling	Water	Bentonite	Bentonite	DrillPlex	Plugz-it	Total LCM	Mud Mixed	Mud Mixed	Pump Rate	Downhole	Pumped	(sodium or	Disposal	Disposal	Wt./	(Materials consumed based on
(xx/xx/xx)	(military)	<b>Professional Geologist</b>	Bit Size	Direction	(gal)	(bags)	(bags)	(bags)	(bags)	(bags)	(gallons)	(gallons)	(gpm)	(gallons)	(gallons)	calcium)	(yd3)	(gal)	Vis.	3 hr UI Update Reports)
05/21/20	1900	Chris Mulry	P - 12.25	SE to NW	3,000	48	561	0	0	0	3,000	38,500	0	0	626,934	"	0	0	np	no drilling, no tools in hole
05/22/20	1900	Lawrence Galiano	P - 12.25	SE to NW	5,200	42	603	0	0	0	5,200	43,700	100	24,500	651,434	"	0	0	np	Tripped in mud motor and 5 joints
					3,200				, i		<u> </u>		+			210			<del></del>	, , ,
05/23/20	1100	Lawrence Galiano	P - 12.25	SE to NW		0	603	0	0	0	0	43,700	0	0	651,434	NA "	0	0	np	No drilling conducted due to weather
05/26/20	1900	Lawrence Galiano	P - 12.25	SE to NW	300	20	623	0	0	0	300	44,000	600	198,000	849,434	- "	0	0	np	Tripped in 4 joints
05/27/20	1900	Chris Mulry	P - 12.25	SE to NW	2,000	31	654	0	0	0	2,000	46,000	700	35,000	884,434	"	0	0	np	mostly maintenance conducted, tripped in
03/27/20	1500	Citi S ividii y	1 12.25	32 10 1111	2,000	31	031		Ŭ	Ů	2,000	10,000	700	33,000	001,101			Ů		1/2 joint, then tripped out 8 joints
05/28/20	1900	Bob Heim	P - 12.25	SE to NW	0	0	654	0	0	0	0	46,000	0	0	884,434	"	0	240		Trip out for connection / communication
03/26/20	1900	вой пенн	P - 12.25	SE LO INVV	0	"	034	U	0	"	"	40,000	"	"	004,434			240	np	issues.
05 /20 /20	0000		D 42.25	65. 404/	_	4	655		_		_	45.000	100	400	004.004	G 1:		44760		Liquid disposal addition is correction made
05/29/20	0930	Bob Heim	P - 12.25	SE to NW	0	1	655	0	0	0	0	46,000	100	400	884,834	Sodium	0	11760	np	by UI for 5/28. Tripped in #3, #4
п	1230	Bob Heim	P - 12.25	SE to NW	0	0	655	0	0	0	0	46,000	100	2,800	887,634	"	0	0	np	Tripped in #5 - #12
												10,000		2,000				+ -	- 17	
"	1530	Bob Heim	P - 12.25	SE to NW	0	0	655	0	0	0	0	46,000	700	18,200	905,834	"	0	0	np	Tripped in #13 to partially into #18 where
	1550	вой пенн	P - 12.25	SE LO INVV	0	"	033	U	0	"	"	40,000	700	10,200	903,634			"	ПР	encountered and drilled out grout.
																-	1	-		
																				Drilled grout completing approx 25' of #19.
п	1830	Bob Heim	P - 12.25	SE to NW	2,200	53	708	0	0	0	2,200	48,200	700	63,700	969,534	"	0	12000	np	Suspect water and bags reported this row
	1030	Dob Heim	1 12.23	32 10 1111	2,200	33	/00	Ü	Ĭ		2,200	10,200	, , , ,	03,700	303,331			12000	'''	are actually totals for the day. Liquid
																				disposal as well.
05/30/20	0930	Bob Heim	P - 12.25	SE to NW	0	0	708	0	0	0	0	48,200		0	969,534	sodium	0		np	Not drilling.
п	1230	Bob Heim	P - 12.25	SE to NW	0	0	708	0	0	0	0	48,200	700	9,100	978,634	"	0		np	Resumed drilling grout on joint #19.
																				Drilled #20 into face (new rock). Started
"	1630	Bob Heim	P - 12.25	SE to NW	5,000	46	754	0	0	0	5,000	53,200	700	98,700	1,077,334	"	13	9000	np	drilling #21.
"	1700	Bob Heim	P - 12.25	SE to NW	0	0	754	0	0	0	0	53,200	700	7,700	1,085,034	"	0	0	np	Continued drilling #21.
	1700	DOD HEIIII	1 - 12.23	JE to IVV	-		754	0	0	0	"	33,200	700	7,700	1,003,034		-	-	пр	No Report; Drilled #21; Tripped all the way
06/01/20	1000	Ty Johnson	P - 12.25	SE to NW		0	754	0	0	0	0	53,200		0	1,085,034	"	0	0	np	
							<del>   </del>				_					<del>                                     </del>			-	out; Tripped In: start 1230
	1300	Ty Johnson	P - 12.25	SE to NW	1	0	754			0	0	53,200	700	10,500	1,095,534	- "	0	0	np	Tripping In to #14
"	1600	Ty Johnson	P - 12.25	SE to NW		0	754	0	0	0	0	53,200	0	0	1,095,534	"	0	0	np	Tripped Out to #3
II .	1900	Ty Johnson	P - 12.25	SE to NW	5,100	79	833	0	0	0	5,100	58,300	0	0	1,095,534	"	0	0	np	Tripped In to #7
																				Tripping in. (used pump rate from next
06/02/20	0938	Steve Tanen	"	"	0	0	833	0	0	0	0	58,300	600	3,600	1,099,134	"	0	0	np	interval as not drilling when data
																				collected)
"	1235	"	ıı .	"	0	0	833	0	0	0	0	58,300	600	16,200	1,115,334	"	0	0	np	Tripping in.
11	1544	II .	II .	"	0	0	833	0	0	0	0	58,300	700	11,200	1,126,534	"	0	0	np	Resumed pilot at Joint #22
n n	1758	II .	п	"	6,100	88	921	0	0	0	6,100	64,400	700	78,400	1,204,934	"	13	0	np	Stopped due to fluid losses
06/03/20	0930	Max Howard	II .	"	0,100	0	921	0	0	0	0,100	64,400	0	0	1,204,934	"	0	0	np	Stopped due to Hala losses
00/03/20	0930	IVIAX FIUWATU			0	0	921	0	0	0	"	04,400	0	U	1,204,934	+	0	- 0	пр	Estimated 4 700 sellens Bloom it and Base
"	1230	"	"	"	0	0	921	0	see comments	0	0	64,400	0	0	1,204,934	"	0	0	np	Estimated 1,700 gallons Plugz-it used. Bag
			"																	count not provided.
"	1530	"	"	"	0	0	921	0	0	0	0	64,400	700	66,500	1,271,434	"	0	0	np	
"	1830	II .	"		8,700	112	1,033	0	4	1	8,700	73,100	700	42,000	1,313,434	"	13	0	np	LCM was used, UI reportd "4 additional
	1830				0,700	112	1,033	O	4	7	8,700	73,100	700	42,000	1,313,434		13	U	пр	bags of "Plugz-it"
06/04/20	0930	Chris Mulry	P - 12.25	SE to NW	0	0	1,033	0	2	6	0	73,100	700	89,600	1,403,034	sodium	0	3000	np	pilot drilling, completed joint #24
"	1230	"	"	"	0	0	1,033	0	2	8	0	73,100	700	70,700	1,473,734	"	0	3000	np	pilot drilling - completed joint #26
п	1530	"	ıı .	"	0	0	1,033	0	0	8	0	73,100	700	77,000	1,550,734	"	0	3000	np	pilot drilling - completed joint #27
																				began tripping out at 1610 due to loss of
"	1830	"	"	"	7,100	66	1,099	0	0	8	7,100	80,200	0	0	1,550,734	"	13	3000	np	connection with sensor
																				Tripping in, 11 joints advanced thus far.
06/05/20	0930	Chris Mulry	P - 12.25	SE to NW	0	0	1,099	0	0	8	0	80,200	700	7,000	1,557,734	sodium	0	3000	np	
																		ļ		Minimal intermittent mud circulation.
n n	1300	"	"	"	0	0	1,099	0	0	8	0	80,200	700	45,500	1,603,234	"	0	3000	np	completed tripping in and advanced joint
							_,,,,,					11,200	""	,555	_,		<u> </u>			#28 approx 17 ft
n n	1600	ıı .	"	"	0	0	1,099	0	0	8	0	80,200	700	30,800	1,634,034		0	3000	np	Drilling suspended 1440 - 1756 For severe
	1000	<u>                                       </u>					1,055	0		°		80,200	700	30,000	1,034,034	<u> </u>		3000	lih	weather
11	1900	II .	II II	"	2,600	109	1,208	0	0	8	2,600	82,800	700	37,100	1,671,134	"	0	0	np	Completed half of joint #29
												· · · · · · · · · · · · · · · · · · ·							<u> </u>	

#### HDD No.: S3-0290-20 (US-DS)

		<u> </u>							(mergea	US-DS Form	n B on 6/27/2	J)								
														Approximate	Running	Type of				Community
			Pilot - P		Clean		Total	Loss Contro	l Materials		Estimated	Running total		Mud Pumped	Total Mud	Bentonite	Soil	Liquid	Mud	Comments
Date	Time		Ream - R	Drilling	Water	Bentonite	Bentonite	DrillPlex	Plugz-it	Total LCM	Mud Mixed	Mud Mixed	Pump Rate	Downhole	Pumped	(sodium or	Disposal	Disposal	Wt./	(Materials consumed based on
(xx/xx/xx)	(military)	Professional Geologist	Bit Size	Direction	(gal)	(bags)	(bags)	(bags)	(bags)	(bags)	(gallons)	(gallons)	(gpm)	(gallons)	(gallons)	calcium)	(yd3)	(gal)	Vis.	3 hr UI Update Reports)
06/06/20	1700	Will Avery	P - 12.25	SE to NW	10,100	64	1,272	0	0	8	10,100	92,900	0	0	1,671,134	"	13	0	np	Trip out/in
06/08/20	1000	Steve Tannen	P - 12.25	SE to NW	0	0	1,272	0	0	8	0	92,900	0	0	1,671,134	"	0	0	np	Trip In
		+				0		0	0	8	0	,				"		0		·
06/08/20	1300	Andrew Thomas	P - 12.25	SE to NW	0		1,272		0			92,900	700	49,000	1,720,134	"	0	0	np	pilot drilling - complete joint 29
06/08/20	1600	Andrew Thomas	P - 12.25	SE to NW	0	0	1,272	0		8	0	92,900	700	84,000	1,804,134	"	0		np	pilot drilling - complete joint 29
06/08/20	1900	Andrew Thomas	P - 12.25	SE to NW	600	78	1,350	0	0	8	600	93,500	700	105,000	1,909,134		0	0	np	pilot drilling - complete joint 30
06/09/20	1000	Chris Mulry	P - 12.25	SE to NW	0	0	1,350	0	0	8	0	93,500	700	81,900	1,991,034		13	3000	np	pilot drilling - complete joint 31
	1300			"	0	0	1,350	0	0	8	0	93,500	700	121,800	2,112,834	"	0	3000	np	pilot drilling - complete joint 32
"	1600	"	"	"	0	0	1,350	0	0	8	0	93,500	700	87,500	2,200,334	"	0	3000	np	pilot drilling - complete joint 33
"	1900	"	"	"	2,300	47	1,397	0	0	8	2,300	95,800	700	72,100	2,272,434	"	0	3000	np	pilot drilling - advance 29 feet of joint 34
06/10/20	1000	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,397	0	0	8	0	95,800	700	0	2,272,434	sodium	0		np	pilot drilling joint 34
06/10/20	1300	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,397	0	0	8	0	95,800	700	0	2,272,434	Sodium	0		np	pilot drilling joint 35
06/10/20	1600	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,397	0	0	8	0	95,800	700	0	2,272,434	Sodium	0		np	pilot drilling joint 35
06/10/20	1900	Brian Lipinski, PG	P - 12.25	SE to NW	3,000	50	1,447	0	2	10	3,000	98,800	700	0	2,272,434	Sodium	3		np	pilot drilling joint 36
06/11/20	1000	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,447	0	0	10	0	98,800	700	0	2,272,434	Sodium	0		np	pilot drilling joint 37
06/11/20	1300	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,447	0	0	10	0	98,800	700	0	2,272,434	Sodium	0		np	tripping in/out
06/11/20	1600	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,447	0	0	10	0	98,800	700	0	2,272,434	Sodium	0		np	tripping in/out
06/11/20	1900	Brian Lipinski, PG	P - 12.25	SE to NW	2,500	32	1,479	0	0	10	2,500	101,300	700	0	2,272,434	Sodium	0		np	pilot drilling joint 38 and 15ft of 39
06/12/20	1000	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,479	0	0	10	0	101,300	700	0	2,272,434	Sodium	0		np	pilot drilling joint 39 and put on joint 40
06/12/20	1300	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,479	0	0	10	0	101,300	700	0	2,272,434	Sodium	0		np	pilot drilling joint 40 and put on joint 41
06/12/20	1600	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,479	0	0	10	0	101,300	700	0	2,272,434	Sodium	0		np	pilot drilling joint 41 and put on 42
06/12/20	1900	Brian Lipinski, PG	P - 12.25	SE to NW	2,000	27	1,506	0	0	10	2,000	103,300	700	1	2,272,434	Sodium	0			
06/12/20	1900	Brian Lipinski, PG	P - 12.25	SE LO INVV	2,000	21	1,506	U	U	10	2,000	103,300	700	0	2,272,434	Souluili	- 0		np	pilot drilling joint 42
06/13/20	1204	Steve Tanen	II .	"			1,506	0	0	10	0	103,300	700	25,900	2,298,334	"	0	0	np	resumed at 42-5 at 1126, materials
																				consumed, not reported until EOD
ıı ıı	1451	ıı ı	II .	"			1,506	0	0	10	0	103,300	700	65,800	2,364,134	"	0	0	np	materials consumed, not reported until
												-		,					•	EOD
"	1641	II .	II .	"	800	14	1,520	0	0	10	800	104,100	700	44,100	2,408,234	"	0	0	gn	Bentonite bag and water consumed
							·					·		1.7=22						provided as total at the end of the shift
06/15/20	1000	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,520	0	0	10	0	104,100	700	0	2,408,234	sodium	0	0	np	pilot drilling joint 44
"	1300	"	II .	"	0	0	1,520	0	0	10	0	104,100	700	0	2,408,234	"	0	0	np	pilot drilling joint 45
"	1600	"	"	"	0	0	1,520	0	0	10	0	104,100	700	0	2,408,234	"	0	0	np	pilot drilling joint 46
																				pilot drilling joint 47; Bentonite bag and
"	1900	"	II .	"	2,100	32	1,552	0	0	10	2,100	106,200	700	0	2,408,234	"	13	0	np	water consumed provided as total at the
																				end of the shift
06/16/20	1000	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,552	0	0	10	0	106,200	700	0	2,408,234	sodium	0	0	np	pilot drilling joint 48
II .	1300	II .	II .	"	0	0	1,552	0	0	10	0	106,200	700	0	2,408,234	"	0	0	np	pilot drilling joint 49
II .	1600	II .	11	II II	0	0	1,552	0	0	10	0	106,200	700	0	2,408,234	"	0	0	np	pilot drilling joint 50
																				pilot drilling joint 51; Bentonite bag and
"	1900	ıı .	II .	"	2,700	31	1,583	0	0	10	2,700	108,900	700	0	2,408,234	"	13	0	np	water consumed provided as total at the
					,		, , , , , ,				,	,			,, -					end of the shift
06/17/20	1000	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,583	0	0	10	0	108,900	700	0	2,408,234	sodium	0	0	np	drilled joint 51
"	1300	"	"	"	0	0	1,583	0	0	10	0	108,900	700	0	2,408,234	"	0	0		drilled joint 52
"	1600	п	11	"	0	0	1,583	0	0	10	0	108,900	700	0	2,408,234	"	0	0		tripping out
	1000				0		1,303			10	<del></del>	100,300		-	2,400,234				пр	tripping out - note that 1500 gallons/2900
"	1900	"	II .	"	2,900	17	1,600	0	0	10	2,900	111,800		0	2,408,234	"	0	0	np	gallons of water reported was used to
																				clean the mud motor and not pumped
06/10/20	1000	May Harrand	11	"	0		1 600		0	10		111 000			2.400.224	"	-	_	<b></b>	downhole.
06/18/20	1000	Max Howard	"		0	0	1,600	0	0	10	0	111,800	0	0	2,408,234	"	0	0	np	Tripped In Hole (TIH)
06/18/20	1300	Max Howard	"	"	0	0	1,600	0	0	10	0	111,800	0	0	2,408,234	"	0	0	np	TIH
06/18/20	1600	Max Howard	"	"	0	0	1,600	0	0	10	0	111,800	0	0	2,408,234		0	0	np	TIH
06/18/20	1900	Max Howard	"		1,300	42	1,642	0	0	10	1,300	113,100	0	0	2,408,234	"	0	0	np	TIH
06/19/20	1000	Max Howard		"	0	0	1,642	0	0	10	0	113,100	0	0	2,408,234	"	13	0	np	Rig Maintnence
06/19/20	1300	Max Howard	"	"	0	0	1,642	0	0	10	0	113,100	700	84,000	2,492,234	"	0	0	np	Drilled joint 53

#### HDD No.: S3-0290-20 (US-DS)

Date   Proceedings										merge)		m B on 6/27/2	0								
Declaration			Professional Geologist	Ream - R	1	Water	1	Bentonite	DrillPlex	ol Materials Plugz-it	Total LCM	Estimated  Mud Mixed	Running total Mud Mixed	Pump Rate	Mud Pumped Downhole	Total Mud Pumped	Bentonite (sodium or	Disposal	Disposal	Wt./	(Materials consumed based on
																	"		_		-
October   Columbia	06/19/20	1900	Max Howard	"	- "	700	52	1,694	0	0	10	700	113,800	0	0	2,492,234	- "	0	6000	np	Back off for US to drill, Idle
Marging   1939	06/20/20	1000	Glennon C. Grham, Jr	P - 12.25	SE to NW	0	0	1,694	0	0	10	0	113,800	0	0	2,492,234	sodium	0	0	np	· •
1.00   1.00	06/20/20	1300	Glennon C. Grham, Jr	11	"	0	0	1,694	0	0	10	0	113,800	0	0	2,492,234	"	0	0	np	drill on intrsect.
06/22/20   100	06/20/20	1600	Glennon C. Grham, Jr	II	п	1,300	17	1,711	0	0	10	1,300	115,100	0	0	2,492,234	"	0	1300	np	
1967-270    1900	06/22/20	1000	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,711	0	0	10	0	115,100	0	0	2,492,234	sodium	0	0	np	no drilling; maintenance while US works towards pilot intersect
06/23/20   1600   "	06/22/20	1300	п	II.	"	0	0	1,711	0	0	10	0	115,100	0	0	2,492,234	"	0	0	np	no drilling; maintenance while US works towards pilot intersect
66/23/20   130	06/22/20	1600	"	п	"	0	0	1,711	0	0	10	0	115,100	0	0	2,492,234	"	0	0	np	no drilling; maintenance while US works
B6/23/20   1000   Brian Lipinski, PG   P-12.25   SE to NW   0   0   1.716   0   0   10   0   116.200   0   0   2.492.234   0   0   0   no diffice, maintenance while Us work towards pilot intensance while Us work	06/22/20	1900	п	"	"	1,100	5	1,716	0	0	10	1,100	116,200	0	0	2,492,234	"	0	0	np	no drilling; maintenance while US works
books   book						_	_			_	1	_		_				<u> </u>			Michels employees checked hoses and
1500   1500	06/23/20	1000	Brian Lipinski, PG	P - 12.25	SE to NW	0	0	1,716	0	0	10	0	116,200	0	0	2,492,234	sodium	0	0	np	back out to joint 45 while taking shots
160/23/20   1900   "	06/23/20	1300	11	"	"	0	0	1,716	0	0	10	0	116,200	0	0	2,492,234	"	0	0	np	no drilling; maintenance while US works towards pilot intersect
06/23/20   1900   0	06/23/20	1600	"	II	ıı ı	0	0	1,716	0	0	10	0	116,200	0	0	2,492,234	"	0	0	np	no drilling; maintenance while US works towards pilot intersect
Def/24/20   1000   Brian Lipinski, PG   " " 0 0 0 1,716 0 0 0 10 0 116,200 0 0 2,492,234   sodium 0 0 0 no proving plot intersect 1. The province of the pro	06/23/20	1900	"	"	"	0	0	1,716	0	0	10	0	116,200	0	0	2,492,234	"	0	0	np	no drilling; maintenance while US works
06/24/20 1600 " " " 0 0 1,716 0 0 10 10 0 116,200 0 0 2,492,234 " 0 0 0 pp towards pilot intersect 06/24/20 1600 " " 0 0 0 1,716 0 0 0 10 0 116,200 0 0 2,492,234 " 0 0 0 pp towards pilot intersect 06/24/20 1900 " " 800 4 1,720 0 0 10 800 117,000 0 0 2,492,234 " 0 0 0 pp towards pilot intersect 06/25/20 1900 Ty Johnson, PG " 0 0 1,720 0 0 110 0 117,000 0 0 2,492,234 " 0 0 0 pp towards pilot intersect; I Vac trucks 06/25/20 1300 Ty Johnson, PG " 0 0 1,720 0 0 10 0 117,000 0 0 2,492,234	06/24/20	1000	Brian Lipinski, PG	п	"	0	0	1,716	0	0	10	0	116,200	0	0	2,492,234	sodium	0	0	np	no drilling; maintenance while US works
06/24/20 1900 " " " 8800 4 1,720 0 0 10 800 117,000 0 0 2,492,234 " 0 0 0 np to drilling; maintenance while US work of the control of the con	06/24/20	1300	п	11	п	0	0	1,716	0	0	10	0	116,200	0	0	2,492,234	"	0	0	np	no drilling; maintenance while US works
06/24/20   1900   "	06/24/20	1600	п	"	"	0	0	1,716	0	0	10	0	116,200	0	0	2,492,234	"	0	0	np	no drilling; maintenance while US works
Contract	06/24/20	1900	"	"	п	800	4	1,720	0	0	10	800	117,000	0	0	2,492,234	"	0	0	np	no drilling; maintenance while US works
Shipped mud back to US pit.   Ship																					no drilling; maintenance while US works
06/25/20   1300   Ty Johnson, PG   "	06/25/20	1000	Ty Johnson, PG	"	"	0	0	1,720	0	0	10	0	117,000	0	0	2,492,234		13	0	np	
Shipped mud back to US pit.   1600   Ty Johnson, PG   " " " 0 0 1,720 0 0 0 10 0 117,000 0 0 0 2,492,234 0 0 0 np   No drilling; 1418: US mud received DS. 1	06/25/20	1300	Ty Johnson, PG	ıı	"	0	0	1 720	0	0	10	0	117 000	0	0	2 492 234		0	0	nn	no drilling; maintenance while US works
1,720   1,72	00/23/20	1300	17 301113011, 1 0				Ů	1,720			10		117,000	, °	0	2,432,234				119	shipped mud back to US pit.
1720   1900   1730nnson, PG   1720   0   0   1740   0   0   1740   0   0   1740   0   0   1740   0   0   0   1740   0   0   0   0   0   0   0   0   0	06/25/20	1600	Ty Johnson, PG	ıı	"	0	0	1,720	0	0	10	0	117,000	0	0	2,492,234		0	0	np	Vac trucks shipped mud back to US pit.
06/26/20         1000         "         "         0         0         1,720         0         0         10         0         117,000         0         0         2,492,234         0         np         mud back to US pit.           06/26/20         1300         "         "         0         0         1,720         0         0         117,000         0         0         2,492,234         0         np         US mud received DS. 2 Vac trucks shipp mud back to US pit.           06/26/20         1600         "         "         0         0         1,720         0         0         117,000         0         0         2,492,234         0         np         US mud received DS. 2 Vac trucks shipp mud back to US pit.	06/25/20	1900	Ty Johnson, PG	11	п	0	0	1,720	0	0	10	0	117,000	0	0	2,492,234		0	9000	np	
06/26/20 1600 " " 0 0 1,720 0 0 10 0 117,000 0 0 0 2,492,234 0 np mud back to US pit.  06/26/20 1600 " " 0 0 1,720 0 0 10 0 117,000 0 0 2,492,234 0 np mud back to US pit.  US mud received DS. 2 Vac trucks shipp mud back to US pit.	06/26/20	1000	n n	ıı	"	0	0	1,720	0	0	10	0	117,000	0	0	2,492,234			0	np	US mud received DS. 2 Vac trucks shipped mud back to US pit.
06/26/20 1600 " " " 0 0 1,720 0 0 10 0 117,000 0 0 2,492,234 0 np US mud received DS. 2 Vac trucks shipp mud back to US pit.	06/26/20	1300	"	11	"	0	0	1,720	0	0	10	0	117,000	0	0	2,492,234			0	np	US mud received DS. 2 Vac trucks shipped mud back to US pit.
US mud received DS. Vac trucks chinne	06/26/20	1600	"	II	"	0	0	1,720	0	0	10	0	117,000	0	0	2,492,234			0	np	US mud received DS. 2 Vac trucks shipped
06/26/20 1900 " " 0 22 1,742 0 0 10 117,000 0 0 2,492,234 Sodium 3000 np mud back to US pit.	06/26/20	1900	"	ıı .	"	0	22	1,742	0	0	10	0	117,000	0	0	2,492,234	Sodium		3000	np	US mud received DS. Vac trucks shipped

#### HDD No.: S3-0290-20 (US-DS)

									(merged	1 02-D2 F011	m B on 6/2//2	(0)								
Date (xx/xx/xx)	Time (military)	Professional Geologist	Pilot - P Ream - R Bit Size	Drilling Direction	Clean Water (gal)	Bentonite (bags)	Total Bentonite (bags)	Loss Contro DrillPlex (bags)	ol Materials Plugz-it (bags)	Total LCM (bags)	Estimated Mud Mixed (gallons)	Running total Mud Mixed (gallons)	Pump Rate (gpm)	Approximate Mud Pumped Downhole (gallons)	Running Total Mud Pumped (gallons)	Type of Bentonite (sodium or calcium)	Soil Disposal (yd3)	Liquid Disposal (gal)	Mud Wt./ Vis.	Comments (Materials consumed based on 3 hr UI Update Reports)
06/27/20	1000	11	"	n .	0	0	1,742	0	0	10	0	117,000		0	2,492,234				np	1 Vac truck brought mud from DS side to US side
06/27/20	1300	"	11	ıı ı	471	6	1,748	0	0	10	471	117,471		0	2,492,234	Sodium		3000	np	1 vac truck removing waste; 30 joints tripped in to complete the push through to DS side
06/27/20	1600	II .	=	"	0	0	1,748	0	0	10	0	117,471		0	2,492,234			3000	np	1 vac truck removing waste
06/29/20	1000	Brian Lipinski, PG	R - 30"	SE to NW	0	0	1,748	0	0	10	0	117,471		0	2,492,234			0	np	installing reamer
06/29/20	1300	Brian Lipinski, PG	"	SE to NW	0	0	1,748	0	0	10	0	117,471		0	2,492,234			0	np	reamed 3 joints
06/29/20	1600	Brian Lipinski, PG	"	SE to NW	0	0	1,748	0	0	10	0	117,471	700	0	2,492,234	sodium		0	np	reamed joint 4
06/29/20	1900	Brian Lipinski, PG	"	SE to NW	5,400	66	1,814	0	0	10	5,400	122,871	700	0	2,492,234	sodium		3000	np	reamed joints 5 and 6
06/30/20	1000	Brian Lipinski, PG	R - 30"	SE to NW	0	14	1,828	0	0	10	0	122,871	700	0	2,492,234	sodium	13	0	np	reaming joint 7
06/30/20	1300	Brian Lipinski, PG	п	SE to NW	2,847	53	1,881	0	0	10	2,847	125,718	700	0	2,492,234	sodium	26	0	np	finished reaming joint 7, 8, 9 and started 10
06/30/20	1600	Brian Lipinski, PG	II .	SE to NW	1351	16	1,897	0	0	10	1,351	127,069	700	0	2,492,234	sodium	0	0	np	finished reaming joints 10 and 11
06/30/20	1900	Brian Lipinski, PG	II .	SE to NW	2,586	36	1,933	0	0	10	2,586	129,655	700	0	2,492,234	sodium	0	0	np	reamed joints 12, 13, 14, and 15
07/01/20	1000	Brian Lipinski, PG	R - 30"	SE to NW	1,700	19	1,952	0	0	10	1,700	131,355	700	0	2,492,234	sodium	0	0	np	reamend joint 16
07/01/20	1300	Brian Lipinski, PG	"	SE to NW	1,100	21	1,973	0	0	10	1,100	132,455	700	0	2,492,234	sodium	26	0	np	reamed joint 17 and started 18
07/01/20	1600	Brian Lipinski, PG	II .	SE to NW	1,000	22	1,995	0	0	10	1,000	133,455	700	0	2,492,234	sodium	13	0	np	Reaming joint 18
07/01/20	1900	Brian Lipinski, PG	"	SE to NW	1,733	19	2,014	0	0	10	1,733	135,188	700	0	2,492,234	sodium	0	0	np	finished reaming joint 18
07/02/20	1000	Ty Johnson, PG	"	SE to NW	1,700	30	2,044	0	0	10	1,700	136,888	700	64,400	2,556,634	sodium	0	0	np	one supersack added to cuttings tank; one Vac Truck onsite removing waste but not disposing it putting back into pit
07/02/20	1300	Ty Johnson, PG	11	SE to NW	900	23	2,067	0	0	10	900	137,788	700	86,800	2,643,434	sodium	0	0	np	one supersack added to cuttings tank; one Vac Truck onsite removing waste but not disposing it putting back into pit
07/02/20	1600	Ty Johnson, PG	"	SE to NW	2,093	38	2,105	0	0	10	2,093	139,881	700	102,200	2,745,634	sodium	0	0	np	one Vac Truck onsite removing waste but not disposing it putting back into pit
07/02/20	1900	Ty Johnson, PG	п	SE to NW	400	4	2,109	0	0	10	400	140,281	700	51,100	2,796,734	sodium	0	0	np	one Vac Truck onsite removing waste but not disposing it putting back into pit
07/03/20	1000	Ty Johnson, PG	"	SE to NW	0	0	2,109	0	0	10	0	140,281		0	2,796,734		13	0	np	One dump truck removing solid waste. one Vac Truck onsite removing waste but not disposing it putting back into pit
07/03/20	1300	Ty Johnson, PG	11	SE to NW	0	0	2,109	0	0	10	0	140,281		0	2,796,734		0	0	np	one Vac Truck onsite removing waste but not disposing it putting back into pit. Cleaning hole with "doughnut" assembly
07/06/20	1000	Brian Lipinski, PG	"	SE to NW	3,900	0	2,109	0	0	10	0	140,281	0	0	2,796,734	sodium	26	0	np	Ran doughnut 1.5 joints into hole to clean hole
07/06/20	1300	Brian Lipinski, PG	"	SE to NW	2,700	40	2,149	0	0	10	2,700	142,981	550	0	2,796,734	sodium	26	0	np	Ran doughnut 6 joints into hole to clean hole
07/06/20	1600	Brian Lipinski, PG	"	SE to NW	500	32	2,181	0	0	10	500	143,481	550	0	2,796,734	sodium	13	0	np	Ran doughnut all the way to the reamer. Cabbed up for lightning
07/06/20	1900	Brian Lipinski, PG	"	SE to NW	0	0	2,181	0	0	10	0	143,481	0	0	2,796,734	sodium	0	0	np	No activity; cabbed up for lightning. Part of crew left at 5; rest remained until 6.
07/07/20	1000	Brian Lipinski, PG	"	SE to NW	0	0	2,181	0	0	10	0	143,481	0	0	2,796,734	sodium	0	0	np	pulling doughnut out of hole
07/07/20	1300	Brian Lipinski, PG	"	SE to NW	3,500	71	2,252	0	0	10	3,500	146,981	700	0	2,796,734	sodium	13	0	np	tripping out
07/07/20	1600	Brian Lipinski, PG	"	SE to NW	100	14	2,266	0	0	10	100	147,081	700	0	2,796,734	sodium	13	0	np	tripping out
07/07/20	1900	Brian Lipinski, PG	"	SE to NW	300	15	2,281	0	0	10	300	147,381	700	0	2,796,734	sodium	0	0		tripping back in
07/08/20	1000	Brian Lipinski, PG	"	SE to NW	100	16	2,297	0	0	10	100	147,481	700	0	2,796,734	sodium	13	0	<del>                                     </del>	tripping back into the hole
07/08/20	1300	Brian Lipinski, PG	"	SE to NW	1,000	17	2,314	0	0	10	1,000	148,481	700	0	2,796,734	sodium	26	0	np	tripping back into the hole
07/08/20	1600	Brian Lipinski, PG	"	SE to NW	0	0	2,314	0	0	10	0	148,481	0	0	2,796,734	sodium	13	0	np	repairing mud pump
07/08/20	1900	Brian Lipinski, PG	II	SE to NW	200	15	2,329	0	0	10	200	148,681	700	0	2,796,734	sodium	0	0	np	tripped all the way back in; cabbed up for lightning from 1730-1830

#### HDD No.: S3-0290-20 (US-DS)

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Date (xx/xx/xx)	Time (military)	Professional Geologist	Pilot - P Ream - R Bit Size	Drilling Direction	Clean Water (gal)	Bentonite (bags)	Total Bentonite (bags)	Loss Contro DrillPlex (bags)	ol Materials Plugz-it (bags)	Total LCM (bags)	Estimated Mud Mixed (gallons)	Running total Mud Mixed (gallons)	Pump Rate (gpm)	Approximate Mud Pumped Downhole (gallons)	Running Total Mud Pumped (gallons)	Type of Bentonite (sodium or calcium)	Soil Disposal (yd3)	Liquid Disposal (gal)	Mud Wt./ Vis.	Comments (Materials consumed based on 3 hr UI Update Reports)
07/09/20	1000	Ty Johnson, PG	"	SE to NW	1,400	39	2,368	0	0	10	1,400	150,081	700	84,000	2,880,734	sodium	0	0	np	At rock face and begin reaming with joint 21; complet joint 21; begin joint 22
07/09/20	1300	Ty Johnson, PG	п	SE to NW	100	20	2,388	0	0	10	100	150,181	700	119,000	2,999,734	sodium	0	0	np	drilling joint 22; grout in mud downhole needs replaced. It is not moving cuttings out, so disposing of it as solid waste.
07/09/20	1600	Ty Johnson, PG	11	SE to NW	100	17	2,405	0	0	10	100	150,281	700	73,500	3,073,234	sodium	13	0	np	completed joint 22; begin reaming joint 23; Drilling fluid needs replaced due to grout added to it durning reaming. Replacing all drilling fluid and removing it as solid waste. 3 supersacks used
07/09/20	1900	Ty Johnson, PG	11	SE to NW	2,900	27	2,432	0	0	10	2,900	153,181	700	108,500	3,181,734	sodium	13	0	np	continue to ream jonit 23. Drilling fluid needs replaced due to grout added to it durning reaming. Replacing all drilling fluid and removing it as solid waste. 9 supersacks used
07/10/20	1000	Ty Johnson, PG	п	SE to NW	2,100	47	2,479	0	0	10	2,100	155,281	700	95,200	3,276,934	sodium	13	0	np	complete joint 23 and begin joint 24; Replacing all drilling fluid and removing it as solid waste. 2 supersacks used
07/10/20	1300	Ty Johnson, PG	п	SE to NW	0	9	2,488	0	0	10	0	155,281	700	87,500	3,364,434	sodium	0	0	np	continued reaming joint 24; Replacing all drilling fluid and removing it as solid waste. 4 supersacks used
07/10/20	1600	Ty Johnson, PG	"	SE to NW			2,488			10	0	155,281		0	3,364,434				np	no report - rainout
07/10/20	1900	Ty Johnson, PG	II .	SE to NW			2,488			10	0	155,281		0	3,364,434				np	no report - rainout
07/11/20	1000	Ty Johnson, PG	II .	SE to NW	0	0	2,488	0	0	10	0	155,281	0	0	3,364,434	Sodium			np	not drilling yet
07/11/20	1300	Ty Johnson, PG	II .	SE to NW	1,700	57	2,545	0	0	10	1,700	156,981	700	91,700	3,456,134	Sodium	13	0	np	resumed reaming joint 24
07/11/20	1600	Ty Johnson, PG	"	SE to NW	400	2	2,547	0	0	10	400	157,381	700	109,200	3,565,334	Sodium	26	0	np	completed joint 24 and began reaming joint 25
07/11/20	1900	Ty Johnson, PG	=	SE to NW	0	0	2,547	0	0	10	0	157,381	700	32,900	3,598,234	Sodium	0	0	np	reaming joint 25
07/13/20	1000	Brian Lipinski, PG	=	SE to NW	400	25	2,572	0	0	10	400	157,781	700	63,000	3,661,234	Sodium	13	0	np	reaming joint 25
07/13/20	1300	Brian Lipinski, PG	"	SE to NW	400	31	2,603	0	0	10	400	158,181	700	126,000	3,787,234	Sodium	13	0	np	completed reaming joint 25, started joint 26
07/13/20	1600	Brian Lipinski, PG	=	SE to NW	1,000	31	2,634	0	0	10	1,000	159,181	700	91,000	3,878,234	Sodium	13	0	np	reaming joint 26
07/13/20	1900	Brian Lipinski, PG	"	SE to NW	1,000	8	2,642	0	0	10	1,000	160,181	700	108,500	3,986,734	Sodium	0	0	np	completed reaming joint 26, started joint 27
07/14/20	1000	Brian Lipinski, PG	"	SE to NW	1,500	36	2,678	0	0	10	1,500	161,681	700	42,000	4,028,734	Sodium	13	0	np	reaming joint 27
07/14/20	1300	Brian Lipinski, PG	II .	SE to NW	3,754	56	2,734	0	0	10	3,754	165,435	700	119,000	4,147,734	Sodium	13	0	np	finished reaming joint 27, sarted reaming joint 28
07/14/20	1600	Brian Lipinski, PG	"	SE to NW	100	29	2,763	0	0	10	100	165,535	700	105,000	4,252,734	Sodium	0	0	np	reaming joint 28
07/14/20	1900	Brian Lipinski, PG	п	SE to NW	700	26	2,789	0	0	10	700	166,235	700	105,000	4,357,734	sodium	0	0	np	finished reaming joint 28. determined that whille adding joint 29, they twisted off the drill stem on the US side of the reamer.
07/15/20	1000	Brian Lipinski, PG	"	SE to NW	400	39	2,828	0	0	10	400	166,635	700	42,000	4,399,734	sodium	0	0	np	tripped out to joint 25. running a doughut to aid hole cleanout
07/15/20	1300	Brian Lipinski, PG	"	SE to NW	1,200	18	2,846	0	0	10	1,200	167,835	700	84,000	4,483,734	sodium	0	0	np	ran doughnut 19 joints into the hole
07/15/20	1600	Brian Lipinski, PG	"	SE to NW	1,500	5	2,851	0	0	10	1,500	169,335	700	84,000	4,567,734	sodium	0	0	np	Ran doughnut to the reamer
07/15/20	1900	Brian Lipinski, PG	п	SE to NW	7,658	46	2,897	0	0	10	7,658	176,993	700	84,000	4,651,734	sodium	0	0	np	tripped out to joint 18
07/16/20	1000	Ty Johnson, PG	"	SE to NW	0	2	2,899	0	0	10	0	176,993	700	17,500	4,669,234	sodium	0	0	np	tripped out 18 jointsto the reamer, pulled the centralizer and detached reamer; 2
07/16/20	1300	Ty Johnson, PG	"	SE to NW	0	0	2,899	0	0	10	0	176,993	0	0	4,669,234		26	0	np	supersacks were used tripping out 25 joints to broken joint; 3 supersacks used

#### HDD No.: S3-0290-20 (US-DS)

									Inciged	1 03 03 1 0111	1 B ON 6/2//2	· ·		1						1
														Approximate	Running	Type of				Comments
			Pilot - P		Clean		Total	Loss Contro	ol Materials		Estimated	Running total		Mud Pumped	Total Mud	Bentonite	Soil	Liquid	Mud	
Date	Time		Ream - R	Drilling	Water	Bentonite	Bentonite	DrillPlex	Plugz-it	Total LCM	Mud Mixed	Mud Mixed	Pump Rate	Downhole	Pumped	(sodium or	Disposal	Disposal	Wt./	(Materials consumed based on
(xx/xx/xx)	(military)	Professional Geologist	Bit Size	Direction	(gal)	(bags)	(bags)	(bags)	(bags)	(bags)	(gallons)	(gallons)	(gpm)	(gallons)	(gallons)	calcium)	(yd3)	(gal)	Vis.	3 hr UI Update Reports)
	` ''	-	"												, ,	_				
07/16/20	1600	Ty Johnson, PG		SE to NW	4,757	30	2,929	0	0	10	4,757	181,750	0	0	4,669,234	sodium	13	0	-	US trips into DS pit; 2 supersacks used
07/16/20	1900	Ty Johnson, PG	"	SE to NW	700	0	2,929	0	0	10	0	181,750	0	0	4,669,234		0	0	np	Assembling reamer tools.
07/17/20	1000	Ty Johnson, PG	ıı .	SE to NW	300	4	2,933	0	0	10	300	182,050	700	18,900	4,688,134	sodium	0	0	np	Tripped 5 joints in and installed the
07/17/20	1000	1 y 3011113011, 1 G		SE to NW	300		2,333	O	0	10	300	102,030	700	18,500	4,000,134	Souldill	0	U	ıρ	centralizer
07/47/20	4200	T. Johnson BC		CE +- ND4/	4 500	10	2.054	0	0	10	4.500	402 550	700	20.400	4 740 224		4.2			Tripping reamer in and returned to rock
07/17/20	1300	Ty Johnson, PG		SE to NW	1,500	18	2,951	0	U	10	1,500	183,550	700	30,100	4,718,234	sodium	13	0	np	face at joint 28. 4 supersacks used.
07/17/20	1600	Ty Johnson, PG	II .	SE to NW	2,500	23	2,974	0	0	10	2,500	186,050	700	26,600	4,744,834	sodium	0	0	np	Reaming joint 29
		,												,					·	Completed joint 29; begin reaming joint
07/17/20	1900	Ty Johnson, PG	"	SE to NW	700	2	2,976	0	0	10	700	186,750	700	109,200	4,854,034	sodium	0	0	np	30; 3 supersacks used
07/18/20	1000	Ty Johnson, PG	п	SE to NW	0	0	2,976	0	0	10	0	186,750	0	0	4,854,034		13	0	qn	working on mud rig
		.,,		02 to		<del>                                     </del>		·			<u> </u>	,	,	Ĭ	.,65 .,65 .				p	Continued drilling joint 30; 1 supersack
07/18/20	1300	Ty Johnson, PG	"	SE to NW	600	8	2,984	0	0	10	600	187,350	700	96,600	4,950,634	sodium	13	0	np	used
07/18/20	1600	Ty Johnson, PG	ıı .	SE to NW	0	0	2,984	0	0	10	0	187,350	700	17,500	4,968,134	sodium	0	0	np	Completed joint 30
07/18/20	1900	Ty Johnson, PG	"	SE to NW	0	0	2,984	0	0	10	0	187,350	700		4,989,134	sodium	0	0	-	
		, , .	"	<del> </del>						_				21,000		ł				Reaming joint 30
07/20/20	1000	Brian Lipinski, PG	"	SE to NW	0	0	2,984	0	0	10	0	187,350	0	0	4,989,134	sodium	0	0	np	working on US rig
07/20/20	1300	Brian Lipinski, PG		SE to NW	400	6	2,990	0	0	10	400	187,750	700	77,000	5,066,134	sodium	13	0	np	reaming joint 31
07/20/20	1600	Brian Lipinski, PG	"	SE to NW	0	3	2,993	0	0	10	0	187,750	700	105,000	5,171,134	sodium	0	0		finished joint 31 and started 32
07/20/20	1900	Brian Lipinski, PG	"	SE to NW	200	10	3,003	0	0	10	200	187,950	700	84,000	5,255,134	sodium	0	0		finished reaming joint 32 and 33
07/21/20	1000	Brian Lipinski, PG	"	SE to NW	0	0	3,003	0	0	10	0	187,950	0	0	5,255,134	sodium	26	0	np	working on mud rig
07/21/20	1300	Brian Lipinski, PG	"	SE to NW	500	25	3,028	0	0	10	500	188,450	700	42,000	5,297,134	sodium	13	0	np	reaming joint 34
07/21/20	1600	Brian Lipinski, PG	"	SE to NW	100	52	3,080	0	0	10	100	188,550	750	90,000	5,387,134	sodium	0	0	np	reaming joint 34
07/21/20	1900	Brian Lipinski, PG	"	SE to NW	400	51	3,131	0	0	10	400	188,950	750	112,500	5,499,634	sodium	0	3000	np	finsihed joint 34 and started joint 35
07/22/20	1000	Brian Lipinski, PG	II .	SE to NW	0	0	3,131	0	0	10	0	188,950	0	0	5,499,634	sodium	13	3000	np	working on mud rig
07/22/20	1300	Brian Lipinski, PG	п	SE to NW	200	44	3,175	0	0	10	200	189,150	750	112,500	5,612,134	sodium	0	0	np	finished joint 35 and started joint 36
07/22/20	1600	Brian Lipinski, PG	п	SE to NW	0	30	3,205	0	0	10	0	189,150	750	112,500	5,724,634	sodium	0	0		finished joint 36 and started 37
				0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			0,200													continued reaming joint 37 but stopped
07/22/20	1900	Brian Lipinski, PG	"	SE to NW	0	12	3,217	0	0	10	0	189,150	750	45,000	5,769,634	sodium	0	0	np	due to rain at 1700
																				tripped joint 37 out, pulled casing and ran
07/23/20	1000	Ty Johnson, PG	"	SE to NW	0	0	3,217	0	0	10	0	189,150		0	5,769,634		0	0	np	
						-														doughnut for 3 joints.
07/23/20	1300	Ty Johnson, PG	II .	SE to NW	0	70	3,287	0	0	10	0	189,150	500	58,000	5,827,634	sodium	13	0	np	ran doughnut for 14 joints; 3 supersacks
		, .										-		-						used
07/23/20	1600	Ty Johnson, PG	n n	SE to NW	0	0	3,287	0	0	10	0	189,150	500	30,000	5,857,634		0	0	np	finished running doughnut for a total of 18
		.,					0,201								3,001,001					joints and began tripping them out
																				18 joints are tripped out and circulated the
07/23/20	1900	Ty Johnson, PG	"	SE to NW	1,900	89	3,376	0	0	10	1,900	191,050	500	1,500	5,859,134	sodium	13	0	np	reamer for an unknown amount of time; 8
																				supersacks used
07/24/20	1000	Ty Johnson DC		CE +0 NIM/	0	0	2 276	0	0	10	0	101.050	0		F 0F0 124		12			tripped joints 37-35 out and put spider-sub
07/24/20	1000	Ty Johnson, PG		SE to NW	0	0	3,376	U	U	10	0	191,050	"	0	5,859,134		13	0	np	on.
07/24/20	4200	T 1.1 DC	"	65	700	62	2 422	•	•	40	700	404 750	750	54.000	5.040.404	1.	40	_		tripped joints 37-35 in and circulated
07/24/20	1300	Ty Johnson, PG		SE to NW	700	62	3,438	0	0	10	700	191,750	750	51,000	5,910,134	sodium	13	0		drillng fluid; 7 supersacks used.
																_				Michels employees completed reaming
07/24/20	1600	Ty Johnson, PG	"	SE to NW	300	25	3,463	0	0	10	300	192,050	750	84,750	5,994,884	sodium	0	0		joint 37 and began 38.
07/24/20	1900	Ty Johnson, PG	п	SE to NW	200	41	3,504	0	0	10	200	192,250	750	82,500	6,077,384	sodium	0	0		Reaming joint 38; 2 supersacks used
07/21/20	1300	17 301113011,110		32 to 1111	200		3,301	Ü		10	200	132,230	730	02,300	0,077,301	Sourann	<u> </u>			swabbing hole and trucking mud from frac
07/25/20	1000	Ty Johnson, PG	ıı .	SE to NW	0	0	3,504	0	0	10	0	192,250		0	6,077,384		0	_		tank to US pit to assist in flushing the
07/23/20	1000	Ty Johnson, Fo		JL to IVVV	"		3,304	U	U	10	"	192,230		"	0,077,364		"	"		
				-		-														borehole
07/25/20	1300	Ty Johnson, PG	II .	SE to NW	1,400	70	3,574	0	0	10	1,400	193,650	750	101,250	6,178,634	Sodium	0	0		complete joint 38 and begin joint 39; 2
	45	,	"				·				·	·					-			supersacks used
07/25/20	1600	Ty Johnson, PG		SE to NW	100	68	3,642	0	0	10	100	193,750	750	72,750	6,251,384	Sodium	0	0		reaming joint 39, 1 supersack used.
07/25/20	1900	Ty Johnson, PG	"	SE to NW			3,642	0	0	10	0	193,750		0	6,251,384				np	No report. Reaming joint 39

#### FORM B Materials Consumed

#### HDD No.: \$3-0290-20 (US-DS)

HDD Name: Little Conestoga Rd
HDD Permit Name: Milford Rd./Little Conestoga Rd
(merged US-DS Form B on 6/27/20)

Date (xx/xx/xx)	Time (military)	Professional Geologist	Pilot - P Ream - R Bit Size	Drilling Direction	Clean Water (gal)	Bentonite (bags)	Total Bentonite (bags)	Loss Contro DrillPlex (bags)	ol Materials Plugz-it (bags)	Total LCM (bags)	Estimated Mud Mixed (gallons)	Running total Mud Mixed (gallons)	Pump Rate (gpm)	Approximate Mud Pumped Downhole (gallons)	Running Total Mud Pumped (gallons)	Type of Bentonite (sodium or calcium)	Soil Disposal (yd3)	Liquid Disposal (gal)	Mud Wt./ Vis.	Comments (Materials consumed based on 3 hr UI Update Reports)
07/27/20	1000	Brian Lipinski, PG	п	SE to NW	0	0	3,642	0	0	10	0	193,750	0	0	6,251,384		0	0		swabbing hole and trucking mud from frac tank to US pit to assist in flushing the borehole
07/27/20	1300	Brian Lipinski, PG	II .	SE to NW	1,800	95	3,737	0	0	10	1,800	195,550	0	0	6,251,384		0	0	np	swabbing hole
07/27/20	1600	Brian Lipinski, PG	"	SE to NW	4,463	95	3,832	0	0	10	4,463	200,013	750	90,000	6,341,384	Sodium	13	0	np	finished reaming joint 39
07/27/20	1900	Brian Lipinski, PG	"	SE to NW	2,000	49	3,881	0	0	10	2,000	202,013	750	97,500	6,438,884	Sodium	0	0	np	reaming joint 40
07/28/20	1000	Brian Lipinski, PG	"	SE to NW	300	46	3,927	0	0	10	300	202,313	750	37,500	6,476,384	Sodium	13	0	np	reaming joint 40
07/28/20	1300	Brian Lipinski, PG	II	SE to NW	1,670	50	3,977	0	0	10	1,670	203,983	750	82,500	6,558,884	Sodium	13	0	np	finished reaming joint 40 and started joint 41
07/28/20	1600	Brian Lipinski, PG	II .	SE to NW	0	35	4,012	0	0	10	0	203,983	750	90,000	6,648,884	Sodium	26	0	np	continued reaming joint 41
07/28/20	1900	Brian Lipinski, PG	"	SE to NW	100	41	4,053	0	0	10	100	204,083	750	97,500	6,746,384	Sodium	0	0	np	finished reaming joint 41 and started joint 42
07/29/20	1000	Brian Lipinski, PG	"	SE to NW	1,573	64	4,117	0	0	10	1,573	205,656	750	97,500	6,843,884	Sodium	0	0	np	continued reaming joint 42
07/29/20	1300	Brian Lipinski, PG	II	SE to NW	0	26	4,143	0	0	10	0	205,656	750	120,000	6,963,884	sodium	0	0	np	finished reaming joint 42 and started joint 43
07/29/20	1600	Brian Lipinski, PG	"	SE to NW	515	21	4,164	0	0	10	515	206,171	750	82,500	7,046,384	sodium	0	0	np	finished reaming joint 43
07/29/20	1900	Brian Lipinski, PG	"	SE to NW	400	21	4,185	0	0	10	400	206,571	750	120,000	7,166,384	sodium	0	0	np	finished reaming joint 44
07/30/20	1000	Ty Johnson, PG	II	SE to NW	0	0	4,185	0	0	10	0	206,571		0	7,166,384		13	0	np	Ran bull-nose bit parrallel to drill stem to clean hole.
07/30/20	1300	Ty Johnson, PG	II	SE to NW	6,294	94	4,279	0	0	10	6,294	212,865	750	64,500	7,230,884	sodium	13	0	np	Tripped bull-nose out and began reaming joint 45; 6 supersacks used
07/30/20	1600	Ty Johnson, PG	II	SE to NW	2,063	40	4,319	0	0	10	2,063	214,928	750	73,500	7,304,384	sodium	0	0	np	Continued reaming joint 45; 6 supersacks used
07/30/20	1900	Ty Johnson, PG	"	SE to NW	1,100	28	4,347	0	0	10	1,100	216,028	750	105,000	7,409,384	sodium	0	0	np	Completed joint 45
07/31/20	1000	Ty Johnson, PG	"	SE to NW	8,473	149	4,496	0	0	10	8,473	224,501	750	73,500	7,482,884	sodium	26	0	np	Began reaming joint 46; 4 supersacks used
07/31/20	1300	Ty Johnson, PG	"	SE to NW	6,111	77	4,573	0	0	10	6,111	230,612	750	93,750	7,576,634	sodium	13	0	np	Completed reaming joint 46 and began
07/31/20	1600	Ty Johnson, PG	"	SE to NW	0	16	4,589	0	0	10	0	230,612	750	87,000	7,663,634	sodium	13	0	np	Michels completed joint 47 and began 48; 3 supersacks used
07/31/20	1900	Ty Johnson, PG	"	SE to NW	200	19	4,608	0	0	10	200	230,812	750	92,250	7,755,884	sodium	0	0	np	completed joint 48
08/01/20	1000	Ty Johnson, PG	"	SE to NW	0	0	4,608	0	0	10	0	230,812		0	7,755,884		0	0	np	no drilling
08/01/20	1300	Ty Johnson, PG	II	SE to NW	3,700	70	4,678	0	0	10	3,700	234,512	400	8,800	7,764,684	sodium	0	0	np	circulated fluid, sat idle, then began tripping out reamer; 6 supersacks used
08/01/20	1600	Ty Johnson, PG	n .	SE to NW	5,400	70	4,748	0	0	10	5,400	239,912		0	7,764,684	sodium	26	0	np	Tripping out reamer, having difficulty; 7 supersacks used
08/01/20	1900	Ty Johnson, PG	"	SE to NW	3,000	53	4,801	0	0	10	3,000	242,912		0	7,764,684		0	0	np	Tripping out reamer, having difficulty
08/03/20	1000	Brian Lipinski, PG	"	SE to NW	0	105	4,906	0	0	10	0	242,912	0	0	7,764,684	sodium	0	0	np	tripping in doughnut to reamer
08/03/20	1300	Brian Lipinski, PG	"	SE to NW	0	20	4,926	0	0	10	0	242,912	0	0	7,764,684	sodium	0	3000		tripped doughnut in, checked returns, tripped doughnut back out.
08/03/20	1600	Brian Lipinski, PG	"	SE to NW	2,300	28	4,954	0	0	10	2,300	245,212	0	0	7,764,684	sodium	13	3000	np	tripped reamer out
08/03/20	1900	Brian Lipinski, PG	"	SE to NW	0	0	4,954	0	0	10	0	245,212	0	0	7,764,684	sodium	0	0	np	installed new reamer
08/04/20	1000	Brian Lipinski, PG	II .	SE to NW	0	0	4,954	0	0	10	0	245,212	0	0	7,764,684	sodium	0	0	np	rained out; drillers onsite monitoring pit
08/04/20	1300	Brian Lipinski, PG	"	SE to NW	0	0	4,954	0	0	10	0	245,212	0	0	7,764,684	sodium	0	0	np	rained out; drillers onsite monitoring pit
08/04/20	1600	Brian Lipinski, PG	"	SE to NW	0	0	4,954	0	0	10	0	245,212	0	0	7,764,684	sodium	0	0	np	rained out; drillers onsite monitoring pit
08/04/20	1900	Brian Lipinski, PG	"	SE to NW	0	0	4,954	0	0	10	0	245,212	0	0	7,764,684	sodium	0	0		rained out; drillers onsite monitoring pit
08/05/20	1000	Brian Lipinski, PG	"	SE to NW	0	0	4,954	0	0	10	0	245,212	0	0	7,764,684	sodium	0	0		no work - insufficient equipment to run all drills on spread 6 so 290 is shut down
08/05/20	1300	Brian Lipinski, PG	п	SE to NW	0	0	4,954	0	0	10	0	245,212	0	0	7,764,684	sodium	0	0		no work - insufficient equipment to run all drills on spread 6 so 290 is shut down
08/06/20	1000	Ty Johnson, PG	ш	SE to NW	0	0	4,954	0	0	10	0	245,212		0	7,764,684		0	0	nn	no drilling. The crew mixed drilling fluid and solid waste

#### FORM B Materials Consumed

#### HDD No.: S3-0290-20 (US-DS)

HDD Name: Little Conestoga Rd
HDD Permit Name: Milford Rd./Little Conestoga Rd
(merged US-DS Form B on 6/27/20)

			Pilot - P		Clean		Total	Loss Contro	ol Materials		Estimated	Running total		Approximate Mud Pumped	Running Total Mud	Type of Bentonite	Soil	Liquid	Mud	Comments
Date (xx/xx/xx)	Time (military)	Professional Geologist	Ream - R Bit Size	Drilling Direction	Water (gal)	Bentonite (bags)	Bentonite (bags)	DrillPlex (bags)	Plugz-it (bags)	Total LCM (bags)	Mud Mixed (gallons)	Mud Mixed (gallons)	Pump Rate (gpm)	Downhole (gallons)	Pumped (gallons)	(sodium or calcium)	Disposal (yd3)	Disposal (gal)	Wt./ Vis.	(Materials consumed based on 3 hr UI Update Reports)
08/06/20	1300	Ty Johnson, PG	п	SE to NW	1,837	42	4,996	0	0	10	1,837	247,049	750	13,500	7,778,184	sodium	0	0	np	began tripping in, 18 joints in hole; 9 supersacks used
08/06/20	1600	Ty Johnson, PG	11	SE to NW	279	9	5,005	0	0	10	279	247,328	750	56,250	7,834,434	sodium	13	0	np	continued tripping in, 31 joints in hole
08/06/20	1900	Ty Johnson, PG	п	SE to NW	400	5	5,010	0	0	10	400	247,728	750	75,000	7,909,434	sodium	13	0	np	Tripped all the way in through joint 48 back to rock face.
08/07/20	1000	Ty Johnson, PG	п	SE to NW	100	60	5,070	0	0	10	100	247,828	750	70,500	7,979,934	sodium	0	0	np	began reaming joint 49, 3 supersacks used
08/07/20	1300	Ty Johnson, PG	п	SE to NW	185	54	5,124	0	0	10	185	248,013	750	45,000	8,024,934	sodium	13	0	np	completed joint 49 and began reaming joint 50
08/07/20	1600	Ty Johnson, PG	п	SE to NW	50	17	5,141	0	0	10	50	248,063	750	93,000	8,117,934	sodium	26	0	np	completed reaming joint 50 and began joint 51; 9 supersacks used
08/07/20	1900	Ty Johnson, PG	"	SE to NW	0	0	5,141	0	0	10	0	248,063		0	8,117,934		0	0	np	no report - rainout
08/08/20	1000	Ty Johnson, PG	п	SE to NW			5,141			10	0	248,063		0	8,117,934				np	placing wash over tool on joint 51 to clean borehole
08/08/20	1300	Ty Johnson, PG	п	SE to NW	2,100	150	5,291	0	0	10	2,100	250,163	600	66,000	8,183,934	sodium	0	0	np	running wash over tool to clean hole and periodically checking circulation; 10 supersacks used
08/08/20	1600	Ty Johnson, PG	п	SE to NW	15,044	119	5,410	0	0	10	15,044	265,207	600	25,200	8,209,134	sodium	26	0	np	running wash over tool to clean hole and periodically checking circulation; 1 supersack used
08/08/20	1900	Ty Johnson, PG	II	SE to NW	0	0	5,410	0	0	10	0	265,207		0	8,209,134		0	0	np	no report; tripping wash over tool out
08/10/20	1000	Brian Lipinski, PG	п	SE to NW	0	0	5,410	0	0	10	0	265,207	600	36,000	8,245,134	Sodium	13	0	np	ran the wash tool in 11 joints; reamer still 50 joints in
08/10/20	1300	Brian Lipinski, PG	п	SE to NW	7,115	20	5,430	0	0	10	7,115	272,322	600	36,000	8,281,134	Sodium	13	0	np	ran the wash tool in 21 joints; reamer still 50 joints in
08/10/20	1600	Brian Lipinski, PG	п	SE to NW			5,430			10	0	272,322	600	36,000	8,317,134				np	no report; UI said wash tool was out of the hole at 1520; IR was confirmed at 1536 in Wetlands W-H17
08/10/20	1900	Brian Lipinski, PG	"	SE to NW			5,430			10	0	272,322		0	8,317,134				np	no report; cleaning up IR
08/11/20	1000	Brian Lipinski, PG	"	SE to NW			5,430			10	0	272,322		0	8,317,134				np	no UI report; cleaning up IR
08/11/20	1300	Brian Lipinski, PG	"	SE to NW			5,430			10	0	272,322		0	8,317,134				np	no UI report; cleaning up IR
08/11/20	1600	Brian Lipinski, PG		SE to NW			5,430			10	0	272,322		0	8,317,134				np	no UI report; cleaning up IR
08/11/20	1900	Brian Lipinski, PG	"	SE to NW			5,430			10	0	272,322	-	0	8,317,134			-	np	no UI report; cleaning up IR
08/12/20	1000	Brian Lipinski, PG		SE to NW			5,430			10	0	272,322	<del> </del>	0	8,317,134			-	np	no UI report; cleaning up IR
08/12/20	1300	Brian Lipinski, PG	п	SE to NW			5,430			10	0	272,322		0	8,317,134				np	no UI report; cleaning up IR; pulling reamer
08/12/20	1600	Brian Lipinski, PG	п	SE to NW			5,430			10	0	272,322		0	8,317,134				np	no UI report; cleaning up IR; pulling reamer
08/12/20	1900	Brian Lipinski, PG	п	SE to NW			5,430			10	0	272,322		0	8,317,134				np	no UI report; cleaning up IR; finished pulling reamer and pumped 3 loads of grout into IR

# S3-0290-20 (US-DS)

			PPP 6 Drill Path Monitoring Log
Date	Time	Print Name	Comments
3/17/2020	000	loffroy Volvile DC	Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
3/11/2020	900	Jeffrey Valvik, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
3/17/2020	1220	Jeffrey Valvik, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
		, , ,	areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
3/17/2020	1345	Jeffrey Valvik, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
			areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
6/4/2020	1400	Ty Johnson, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
			areas of IR or subsidence were noted.  Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
6/4/2020	1745	Ty Johnson, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
0/ 1/2020	1745	1 y 001113011, 1 0	areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
6/5/2020	845	Ty Johnson, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
		,	areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
6/5/2020	1150	Ty Johnson, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
			areas of IR or subsidence were noted.
0/5/0000	4700	T 11 DO	Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
6/5/2020	1730	Ty Johnson, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
			areas of IR or subsidence were noted.  Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
6/6/2020	920	Ty Johnson, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
0/0/2020	320	1 y 001113011, 1 0	areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
6/6/2020	1300	Ty Johnson, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
			areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
6/6/2021	1600	Ty Johnson, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
0/0/0000	1015	0. 7 70	areas of IR or subsidence were noted.
6/8/2020	1045	Steven Tanen, PG	Inspected ROW from the NW (US) e/e to pipeline station 14807+40 (~578 ft from NW e/e). No IRs.
"	1305 1450	ıı ı	Inspected ROW from the NW (US) e/e to pipeline station 14807+40 (~578 ft from NW e/e). No IRs.  Inspected ROW from the NW (US) e/e to pipeline station 14807+40 (~578 ft from NW e/e). No IRs.
			Inspected ROW from the NW (US) e/e to pipeline station 14807+40 (~578 ft from NW e/e). Bit at ~14803+64
"	1745	"	(~202 ft (HD) from NW e/e). No IRs.
6/9/2020	953	Lindsay Phillips	inspected ROW from the NW (US) e/e to pipeline station 14807+40 (~578 ft from NW e/e). No IRs.
"	1200	"	Inspected ROW from the NW (US) e/e to pipeline station 14807+40 (~578 ft from NW e/e). No IRs.
"	1430	"	Inspected ROW from the NW (US) e/e to pipeline station 14813+91 (~1,229 ft from NW e/e). No IRs.
"	1600	"	Inspected ROW from the NW (US) e/e to pipeline station 14813+91 (~1,229 ft from NW e/e). No IRs.
"	1710	Steven Tanen, PG	Inspected ROW from the NW (US) e/e to pipeline station 14813+91 (~1,229 ft from NW e/e). Bit at ~14804+09
6/10/2020	940	Steven Tanen, PG	(~247 ft (HD) from NW e/e). No IRs. Inspected ROW from the NW (US) e/e to pipeline station 14805+87 (~425 ft from NW e/e). No IRs.
"	1215	"	Inspected ROW from the NW (US) e/e to pipeline station 14805+87 (~425 ft from NW e/e). No IRs.
"	1320	"	Inspected ROW from the NW (US) e/e to pipeline station 14805+87 (~425 ft from NW e/e). No IRs.
"	1520	"	Inspected ROW from the NW (US) e/e to pipeline station 14805+87 (~425 ft from NW e/e). No IRs.
"	1645	"	Inspected ROW from the NW (US) e/e to pipeline station 14805+87 (~425 ft from NW e/e). No IRs.
"	1817	"	Inspected ROW from the NW (US) e/e to pipeline station 14807+40 (~578 ft from NW e/e). No IRs.
0/44/2222	000		Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
6/11/2020	800	Ty Johnson, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
			areas of IR or subsidence were noted.  Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
"	1200	Will Avery, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
	1200	VVIII AVELY, 1 G	areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
"	1400	Will Avery, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
		,, -	areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
"	1600	Will Avery, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
			areas of IR or subsidence were noted.
,,	4000	VACILIA. DO	Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
. "	1800	Will Avery, PG	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
			areas of IR or subsidence were noted.
6/12/2020	800	Ty Johnson, PG and	Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
0, 12,2020	550	Matt Feits	areas of IR or subsidence were noted.
			Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
"	1015	Matt Feits	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
			areas of IR or subsidence were noted.

	Bore ID:		S3-0290-20 (US-DS)
			(combined 6/27/20)
Date	Time	Print Name	PPP 6 Drill Path Monitoring Log  Comments
Date "	1222		Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
"	1445	Ty Johnson	areas of IR or subsidence were noted.  Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No
_		·	areas of IR or subsidence were noted.  Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
"	1645	Matt Feits	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No areas of IR or subsidence were noted.  Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from
"	1830	Matt Feits	Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No areas of IR or subsidence were noted.
6/13/2020	935	Matt Feits	Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No areas of IR or subsidence were noted.
n	1330	Matt Feits	Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No areas of IR or subsidence were noted.
"	1530		Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No areas of IR or subsidence were noted.
11	1630	Ty Johnson	Inspected LOD from the Entry Pit (US Side) to Highview Road including areas along Little Conestoga Road from Milford Road to the LOD at Highview Road. Overlapping with inspections from the Exit pad (DS side) area. No areas of IR or subsidence were noted.
6/15/2020	855	Steven Tanen, PG	Inspected LOD from the US entry to 14809+38. Maximum distance drilled ~14807+26. No IRs. Also inspected ECDs along northwest edge of LOD. No issues.
"	1115	"	Inspected LOD from the US entry to 14809+38. Maximum distance drilled ~14807+26. No IRs.
"	1430	"	Inspected LOD from the US entry to 14809+38. Maximum distance drilled ~14807+26. No IRs. Also inspected ECDs along northwest edge of LOD. No issues.
"	1630	"	Inspected LOD from the US entry to 14809+38. Maximum distance drilled ~14807+26. No IRs.
"	1820		Inspected LOD from the US entry to 14809+38. Maximum distance drilled ~14807+26. No IRs. Also inspected ECDs along northwest edge of LOD. No issues
6/16/2020	900 1135	Brian Lapinski, PG	Inspected LOD from the US entry to 14808+00 (bit at ~14807+36). No IRs. Inspected LOD from the US entry to 14808+00 (bit at ~14807+58). No IRs.
"	1430	Lindsay Phillips	Inspected LOD from the US entry to 14809+38 (bit at ~14808+00). No IRs. Also inspected ECDs along northwest edge of LOD. No issues.
"	1635	Steven Tanen, PG	Inspected LOD from the US entry to 14809+38 (bit at ~14808+19). No IRs. Also inspected ECDs along northwest edge of LOD. No issues.
"	1830	"	Inspected LOD from the US entry to 14809+38 (bit at ~14808+35). No IRs. Also inspected ECDs along northwest edge of LOD. No issues.
6/17/2020	918	Steven Tanen, PG	Inspected LOD from the US entry to 14809+38 (bit at ~14808+35). No IRs. Also inspected ECDs along northwest edge of LOD. No issues.
"	1514	Lindsay Phillips	Inspected LOD from the US entry to 14809+38 (bit at ~14808+65). No IRs.
"	1630	Steven Tanen, PG	Inspected LOD from the US entry to 14809+38 (bit at ~14808+84). No IRs. Also inspected ECDs along northwest edge of LOD. No issues.
"	1830	"	Inspected LOD from the US entry to 14809+38 (bit at ~14809+06). No IRs. Also inspected ECDs along northwest edge of LOD. No issues.
6/18/2020	810	Matt Feits	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.
"	1130	Matt Feits	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.
n .	1430	Ty Johnson	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.
п	1630	Matt Feits	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.
"	17:50	Matt Feits	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.
"	18:40	Ty Johnson & Matt Feits	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.
6/19/2020	9:30	Ty Johnson	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.
n .	14:00	Ty Johnson	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.
"	16:10	Ty Johnson	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA
"	18:30	Ty Johnson	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA
6/20/2020	9:30	Ty Johnson	Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA
n	11:45	Ty Johnson	14806+00. No IRs.  Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA 14806+00. No IRs.
"	15:00	Ty Johnson	14806+00. No IRs.

# S3-0290-20 (US-DS)

D-1-	T:	Drive Name	PPP 6 Drill Path Monitoring Log
Date "	Time	Print Name	Comments Inspected LOD from the US entry to STA 14813+92. Inspected residential water well from LOD at STA
6/22/2020	16:40 730	Ty Johnson  Brian Lipinski, PG	14806+00. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/22/2020	945	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/22/2020	1350	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/22/2020	1645	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/23/2020	730	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/23/2020	1115	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/23/2020	1500	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/23/2020	1730	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/24/2020	830	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/24/2020	1030	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/24/2020	1230	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/24/2020	1355	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/24/2020	1630	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/24/2020	1645	Brian Lipinski, PG	Inspected US entry to station 14811+00. No IRs.
6/24/2020	1830	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/25/2020	830	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/25/2020	1030	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/25/2020	1230	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/25/2020	1355	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/25/2020	1630	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/25/2020	1645	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.
6/25/2020	1830	Ty Johnson, PG	Inspected US entry to NW edge of wetlands W-H17. No IRs.
6/26/2020	1030	Ty Johnson, PG	Inspected from NWE entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs. Inspected wetland W-H17 from SE side. No Irs
6/26/2020	1400	Ty Johnson, PG	Inspected from NWE entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
6/26/2020	1620	Ty Johnson, PG	Inspected from NWE entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
6/26/2020	1820	Ty Johnson, PG	Inspected from NWE entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs. Inspected wetland W-H17 from SE side. No Irs
Combined US	& DS reports	(DS below)	

Bore ID:		S3-0290-20 (US-DS)
		(combined 6/27/20)
		PPP 6 Drill Path Monitoring Log
Time	Print Name	Comments  Walked from CE artin (44920.02) to artify rail force line (44924.77) and back. Standing water absorbed in
0815	Steve Tanen	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – drilling hadn't started). Observed grayish streaks in mud in wetlands W-H17 at eastern most end of stream segment S-H11 (not drilling related – drilling hadn't started). Stream segment S-H10 flowing clear.
1500	"	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – drilling hadn't started). Observed grayish streaks in mud in wetlands W-H17 at eastern most end of stream segment S-H11 (not drilling related – drilling hadn't started). Stream segment S-H10 flowing clear.
0830	Lawrence Galiano	Walked LOD from SE entry (14828+03) to split-rail fence line (14821+77) roundtrip Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – water was present prior to drilling activities. Stream segment S-H10 flowing clear. Walked LOD from SE entry (14828+03) to split-rail fence line (14821+77) and back. Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – water was present prior to drilling activities. Stream segment S-H10 flowing clear.
1020	n	Walked LOD from SE entry (14828+03) to split-rail fence line (14821+77) roundtrip Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – water was present prior to drilling activities. Stream segment S-H10 flowing clear. Walked LOD from SE entry (14828+03) to split-rail fence line (14821+77) and back. Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – water was present prior to drilling activities. Stream segment S-H10 flowing clear.
1400	"	Walked LOD from SE entry (14828+03) to split-rail fence line (14821+77) roundtrip Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – water was present prior to drilling activities. Stream segment S-H10 flowing clear. Walked LOD from SE entry (14828+03) to split-rail fence line (14821+77) and back. Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – water was present prior to drilling activities. Stream segment S-H10 flowing clear.
1550	"	Walked LOD from SE entry (14828+03) to split-rail fence line (14821+77) roundtrip Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – water was present prior to drilling activities. Stream segment S-H10 flowing clear. Walked LOD from SE entry (14828+03) to split-rail fence line (14821+77) and back. Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – water was present prior to drilling activities. Stream segment S-H10 flowing clear.
0950	Steve Tanen	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Standing water observed in swale crossing ROW at ~14822+80 (not drilling related – rig idle for repairs). Observed grayish streaks in sediment in wetlands W-H17 at eastern most end of stream segment S-H11 (not drilling related – rig idle for repairs and observed prior to drilling start-up), otherwise stream segment S-H11 flowing clear. Stream segment S-H10 flowing clear.
		Rig idle for repairs, no PGs onsite
		Rig idle for repairs, no PGs onsite
1355	Alan Hirshfeld, PG	Rig idle for repairs, no PGs onsite  Walked from SE entry to NW entry/exit. Standing water observed in swale crossing ROW at ~14822+80 (observed prior to drilling start-up). Observed grayish streaks in sediment in wetlands W-H17 at eastern most end of stream segment S-H11 (observed prior to drilling start-up), otherwise stream segment S-H11 flowing clear.
1415	п	Walked from SE entry to NW entry/exit. Standing water observed in swale crossing ROW at ~14822+80 (observed prior to drilling start-up). Observed grayish streaks in sediment in wetlands W-H17 at eastern most end of stream segment S-H11 (observed prior to drilling start-up), otherwise stream segment S-H11 flowing clear. Stream segment S-H10 flowing clear.
1628	Steve Tanen, PG	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Standing water observed in swale crossing ROW at ~14822+80 (observed prior to drilling starting up). Observed grayish streaks in sediment in wetlands W-H17 at eastern most end of stream segment S-H11 (observed prior to drilling start-up), otherwise stream segment S-H11 flowing clear. Stream segment S-H10 flowing clear.
0725	Alan Hirshfeld, PG	Prior to drilling start up for the day, walked from SE entry to NW e/e. Standing water observed in swale crossing ROW at ~14822+80 (observed prior to 1 <sup>st</sup> day of drilling). Observed grayish streaks in sediment in wetlands W-H17 at eastern most end of stream segment S-H11 (observed prior to 1 <sup>st</sup> day of drilling), otherwise stream segment S-H11 flowing clear. Stream segment S-H10 flowing clear; however, iron precipitate and bio-sheen observed (both observed prior to 1 <sup>st</sup> day of drilling).
0745	"	Walked from SE entry to NW entry/exit. Conditions the same as observed during the previous inspection, as noted above.
0830	Steve Tanen, PG	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above.
1240	II .	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above.
1440	Alan Hirshfeld, PG	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection as noted above. Michels stationed a full-time spotter in the wetlands area.
1612	Steve Tanen, PG	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspections, as noted above. Michels stationed a full-time spotter in the wetlands area.
1722	"	After completion of drilling, walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspections, as noted above.
0852	"	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Observed grayish-brown streaks in sediment in wetlands W-H17 at eastern most end of stream segment S-H11 (observed prior to 1st day of drilling), otherwise stream segment S-H11 flowing clear. Stream segment S-H10 flowing clear; however, iron precipitate and bio-sheen observed (both observed prior to 1st day of drilling). No IRs.
	Time  0815  1500  0830  1020  1400  1550  0950  1355  1415  1628  0725  0745  0830  1240  1440  1612  1722	Time         Print Name           0815         Steve Tanen           1500         "           0830         Lawrence Galiano           1020         "           1400         "           1550         "           0950         Steve Tanen           1355         Alan Hirshfeld, PG           1415         "           1628         Steve Tanen, PG           0725         Alan Hirshfeld, PG           0745         "           0830         Steve Tanen, PG           1240         "           1440         Alan Hirshfeld, PG           1612         Steve Tanen, PG           1722         "

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	1	I	PPP 6 Drill Path Monitoring Log
Date	Time	Print Name	Comments  Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as
"	1029	"	observed during the previous inspection, as noted above. No IRs.
"	1132	"	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above. No IRs.
"	1447	Steve Tanen & Brian Duggan	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above. No IRs.
"	1757	Steve Tanen	Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above. No IRs.
3/3/2020	0836	Steve Tanen, PG	Walked from SE entry (14828+03) to Highview Rd (~14818+44) and back. Observed grayish-brown streaks in sediment in wetlands W-H17 at eastern most end of stream segment S-H11 (observed prior to 1 <sup>st</sup> day of drilling), otherwise stream segment S-H11 flowing clear. Stream segment S-H10 flowing clear; however, iron precipitate
"	1045	"	and bio-sheen observed (both observed prior to 1 <sup>st</sup> day of drilling). No IRs.  Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above. No IRs.
"	1118	Steve Tanen & Brian Duggan	Following reported partial LOC, walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Drill bit at ~14821+71. Conditions the same as observed during the previous inspection, as noted above. Michels crew walked to Highview Rd (~14818+44) and along RCE to Green Valley Rd. No IRs.
"	1200	Steve Tanen	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above. No IRs.
"	1415	Brian Duggan, PG	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above. No IRs.
"	1515	Steve Tanen & Brian Duggan	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above. No IRs.
"	1630	Steve Tanen	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above. No IRs.
"	1741	"	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection, as noted above. No IRs.
3/4/2020	715	Brian Duggan, PG	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, around adjacent pond berm (as allowed due to Condition 2) to split-rail fence line (14821+77) and returned. Running waters and standing water clear; no IRs or significant earth features.
	830	"	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, around adjacent pond berm (as allowed due to Condition 2) to split-rail fence line (14821+77) and returned. Running waters and standing water clear; no IRs or significant earth features.
	1010	п	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Drove to LOD crossing Highview Rd and walked LOD south to split-rail fence line (14821+77) and returned. Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water clear; no IRs or significant earth features.
	1200	"	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Drove to LOD crossing Highview Rd and walked LOD south to split-rail fence line (14821+77) and returned. Running waters and standing water clear; no IRs or significant earth features.
	1320	"	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). After grout was pumped from the first truck, walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water clear; no IRs or significant earth features.
	1445	"	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). After grout was pumped from the second truck, and pigs were pushed through the stems, walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water clear; no IRs or significant earth features.
	1520	"	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Drove to LOD crossing Highview Rd and walked LOD south to split-rail fence line (14821+77) and returned. Running waters and standing water clear; no IRs or significant earth features.
	1720	"	Implemented Condition 2 monitoring (i.e., expanded inspection area to include 100 ft beyond HDD alignment in area of sensitive receptors). Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water clear; no IRs or significant earth features.
3/5/2020	0745	Steve Tanen and Jeff Valvik	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to Highview Rd (~14818+44) and back. Streams clear. Standing water in ROW – no emerging or otherwise flowing groundwater observed (conditions as previously observed prior to drilling start-up). All streams clear. No IRs.
"	1000	Steve Tanen, PG	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection as noted above. All streams clear. No IRs.
"	1145	"	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection as noted above. All streams clear. No IRs.

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			PPP 6 Drill Path Monitoring Log
Date	Time	Print Name	Comments
"	1344	n	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection as noted above. All streams clear. No IRs.
n n	1447	п	Continuing with Condition 2 monitoring. Following reported LOC, walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Drill bit at ~14823+05. Conditions the same as observed during the previous inspection, as noted above. All streams clear. No IRs.
"	1350	Jeff Valvik, PG	Continuing with Condition 2 monitoring. Following reported LOC, walked from SE entry (14828+03) to SE edge of wetlands W-H17 and back. Conditions the same as observed during the previous inspection, as noted above. All streams clear. No IRs.
"	1615	"	Continuing with Condition 2 monitoring. Following reported LOC, walked from SE entry (14828+03) to SE edge of wetlands W-H17 and back. Conditions the same as observed during the previous inspection, as noted above. All streams clear. No IRs.
"	1736	Steve Tanen	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection as noted above. All streams clear. No IRs.
"	1825	п	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection as noted above. All streams clear. No IRs.
3/6/2020	0740	Jeff Valvik, PG	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to Highview Rd (~14818+44) and back. Streams clear. Standing water in ROW – no emerging or otherwise flowing groundwater observed (conditions as previously observed prior to drilling start-up). All streams clear. No IRs.
"	720	Jeff Valvik, PG	Inspected southeast edge of wetlands. All streams and standing water clear. No IRs.
"	1213 to 1427	Steve Tanen & Jeff Valvik	Continued with Condition 2 monitoring. While grout being pumped one PG continuously monitored area from NW edge of wetlands W-H17, while other PG monitored from mud-pit to SE edge of wetlands. All streams and standing water remained clear – no IRs observed – while pumping grout.
"	1524	Steve Tanen, PG	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection as noted above. All streams clear. No IRs.
n	1620	"	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection as noted above. All streams clear. No IRs.
u	1705	u	Continuing with Condition 2 monitoring. Walked from SE entry (14828+03) to split-rail fence line (14821+77) and back. Conditions the same as observed during the previous inspection as noted above. All streams clear. No IRs.
3/7/2020	0913	Marty Mengel, PG	Walked LOD from DS drill rig to SE side of Wetland W-H17 and streams (S-H10 & S-H11). Water clear. No IRs.
"	1016	"	Inspected LOD from drill pad to southeast edge of Wetland W-H17. Streams (S-H10 & S-H11) and standing water clear. No IRs.
"	1056	"	Drive inspection to US side/Milford Road. No IRs or other atypical conditions observed.
"	1100	"	Drove to Highview Road and parked. Walked LOD over area of borehole bottom and to NW side of wetlands W-H17. Observed wetlands from west side of pond P-H2 berm ("condition 2 monitoring"). Streams and ponded water clear. No IRs.
"	1401	"	Drove to Highview Road and parked. Walked LOD over area of borehole bottom and to NW side of wetlands W-H17. Observed wetlands and streams from west side of pond P-H2 berm ("condition 2 monitoring"). Streams and ponded water clear. Drove to US side. No IRs.
"	1510	"	Walked LOD from DS drill rig to SE side of Wetland W-H17 and streams. Water clear. No IRs.
"	1606	"	Drove to Highview Road and parked. Walked LOD over area of borehole bottom and to NW side of wetlands W-H17. Observed wetlands and streams from west side of pond P-H2 berm ("condition 2 monitoring"). Streams and ponded water clear. No IRs.
"	1632	"	Walked LOD from DS drill rig to SE side of Wetland W-H17 and streams. Water clear. No IRs.
3/9/2020	740	Steve Tanen, PG	Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. No IRs or other significant features observed.
"	820	Brian Duggan, PG	Drove to LOD crossing at Highview Rd and walked LOD south to edge of wetland W-H17; walked adjacent pond berm (per HDD IRR Contingency Plan Condition 2); and returned. Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water observed to be clear; no IRs or significant earth features observed.
"	847	Steve Tanen, PG	Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. No IRs or other significant features observed.
"	1100	Brian Duggan, PG	Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water observed to be clear; no IRs or significant earth features observed.
"	1230	"	Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water observed to be clear; no IRs or significant earth features observed.
"	1345	"	Drove to LOD crossing Highview Rd and walked LOD south to edge of wetland W-H17 and returned. Running waters and standing water observed to be clear; no IRs or significant earth features observed.
"	1420	"	Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water observed to be clear; no IRs or significant earth features observed.
"	1620	"	Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water observed to be clear; no IRs or significant earth features observed.
"	1720	II	Walked from SE entry (14828+03) to edge of wetland W-H17, and streams S-H10 & S-H11, and returned. Running waters and standing water observed to be clear; no IRs or significant earth features observed.

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Date	Time	Print Name	PPP 6 Drill Path Monitoring Log  Comments
3/10/2020	745	Steve Tanen, PG	Continuing with Condition 2 monitoring. Initial inspection conducted prior to the start-up of drilling. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2 and wetlands from berm between pond P-H2 and wetlands W-H17 (i.e., area of monitoring expanded near receptors 100 ft beyond the HDD alignment per Condition 2). Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). All standing and flowing water in wetlands clear. Sediments with gray streaks and gray sediment in the wetlands was observed from edges of wetland, but no flowing, churning or bubbling sediment in the wetlands area was observed. Grey sediment and sediment with gray streaks in the wetlands was a pre-existing condition prior to the initial start-up of drilling at this location. Clear standing water observed on ROW between wetlands and fence – no flow observed – this is an ongoing pre-existing condition. No IRs observed.
"	910	п	Continuing with Condition 2 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2 and wetlands from berm between pond P-H2 and wetlands W-H17. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
	1055	"	Continuing with Condition 2 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2 and wetlands from berm between pond P-H2 and wetlands W-H17. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
	1220	"	Continuing with Condition 2 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2 and wetlands from berm between pond P-H2 and wetlands W-H17. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
"	1347	"	Continuing with Condition 2 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2 and wetlands from berm between pond P-H2 and wetlands W-H17. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
"	1528	п	Continuing with Condition 2 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2 and wetlands from berm between pond P-H2 and wetlands W-H17. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
	1720	"	Continuing with Condition 2 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2 and wetlands from berm between pond P-H2 and wetlands W-H17. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
"	1820	"	Continuing with Condition 2 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2 and wetlands from berm between pond P-H2 and wetlands W-H17. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
"	1844	п	Continuing with Condition 2 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2 and wetlands from berm between pond P-H2 and wetlands W-H17. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
3/11/2020	735	Brian Duggan, PG	Condition 1 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected wetlands W-H17 and adjacent stream segments within LOD. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
"	1000	п	Condition 1 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected wetlands W-H17 and adjacent stream segments within LOD. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
"	1115	"	Condition 1 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected wetlands W-H17 and adjacent stream segments within LOD. No changes to the conditions discussed above. No IRs.
"	1400	п	Condition 1 monitoring. Inspection conducted while drilling/pumping mud. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected wetlands W-H17 and adjacent stream segments within LOD. Inspected area from NW edge of wetlands W-H17 to split-rail fence (14821+77). No changes to the conditions discussed above. No IRs.
"	1755	Chris Mulry, PG	Inspection conducted while tripping out with minimal mud flow. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected area from NW edge of wetlands W-H17 to Highview Road. No changes to the conditions discussed above. No IRs.
3/12/2020	730	Chris Mulry, PG	Condition 1 monitoring with no drilling taking place. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected pond P-H2, stream S-H11 and adjacent wetlands from edge of LOD. All standing and flowing water in wetlands and stream is clear. Clear standing water observed on ROW between wetlands and fence – no flow observed – this is an ongoing pre-existing condition. No IRs observed.
"	1000	"	Inspection conducted with no drilling or mud circulation. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected stream S-H11. Inspected area from NW edge of wetlands W-H17 northwest to Highview Road (14818+40). No changes to the conditions discussed above. No IRs.
"	1300	п	Inspection conducted with no drilling or mud circulation. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected stream S-H11. Inspected area from NW edge of wetlands W-H17 northwest to Highview Road (14818+40). No changes to the conditions discussed above. No IRs.
"	1630	"	Inspection conducted with no drilling or mud circulation. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Inspected stream S-H11. Inspected area from NW edge of wetlands W-H17 northwest to Highview Road (14818+40). No changes to the conditions discussed above. No IRs.

	Bore ID:		S3-0290-20 (US-DS)
			(combined 6/27/20)
	<u> </u>	1 5.49	PPP 6 Drill Path Monitoring Log
3/13/2020	<b>Time</b> 725	Print Name Steve Tanen, PG	Comments  Prior to the start-up of drilling for the day (preparing to start tripping in new drill string), inspected area from SE entry (14828+03) to SE edge of wetlands W-H17 (14824+74). Observed standing and flowing water in wetlands and stream is clear. No IRs.
"	1100	· ·	Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17 & ROW inspected from Highview Rd to NW edge of wetlands W-H17. Observed standing and flowing water in wetlands and stream is clear. No IRs.
"	1350	Steve Tanen and Micah Forbes	Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17 & ROW inspected from Highview Rd to NW edge of wetlands W-H17. Observed standing and flowing water in wetlands and stream is clear. No IRs.
"	1620	Steve Tanen	Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17. Observed standing and flowing water in wetlands and stream is clear. No IRs.
"	1653	Steve Tanen and Micah Forbes	Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17 & ROW inspected from Highview Rd to NW edge of wetlands W-H17. Observed standing and flowing water in wetlands and stream is clear. No IRs.
"	1800	Steve Tanen	Following notification by Lead EI of a confirmed LOC, with an approximate 500 gallon loss of drilling fluid, ROW monitoring upgraded to Condition 2 and the area of the wetlands was inspected up to 100 ft from the HDD alignment. Inspected area from SE entry (14828+03) to SE edge of wetlands W-H17 & ROW inspected from Highview Rd to NW edge of wetlands W-H17. Observed standing and flowing water in wetlands and stream is clear. No IRs.
3/14/2020	910	Marty Mengel, PG	Inspected LOD between SE entry (14828+03) and Highview Road, including wetland W-H17, stream S-H10, stream S-H11, Pond P-H2 and the borehole bottom area. Due to the 2/13/2020 loss-of-circulation (LOC) of approx. 500 gallons, Condition 2 monitoring is in effect (walk up to 100-feet from the LOD). Observed flowing and standing water was clear. No IRs observed.
"	1105		Inspected LOD between SE entry (14828+03) and Highview Road, including wetland W-H17, stream S-H10, stream S-H11, Pond P-H2 and the borehole bottom area. Due to the 2/13/2020 loss-of-circulation (LOC) of approx. 500 gallons, Condition 2 monitoring is in effect (walk up to 100-feet from the LOD). Observed flowing and standing water was clear. No IRs observed.
"	1250	п	After grouting began, inspected LOD between SE entry (14828+03) and Highview Road, including wetland W-H17, stream S-H10, stream S-H11, Pond P-H2 and the borehole bottom area. Due to the 2/13/2020 loss-of-circulation (LOC) of approx. 500 gallons, Condition 2 monitoring is in effect (walk up to 100-feet from the LOD). Observed flowing and standing water was clear. No IRs observed.
"	1350	п	Inspected LOD between SE entry (14828+03) and Highview Road, including wetland W-H17, stream S-H10, stream S-H11, Pond P-H2 and the borehole bottom area. Due to the 2/13/2020 loss-of-circulation (LOC) of approx. 500 gallons, Condition 2 monitoring is in effect (walk up to 100-feet from the LOD). Observed flowing and standing water was clear. No IRs observed.
6/8/2020	1455	"	Inspected LOD between SE entry (14828+03) and Highview Road, including wetland W-H17, stream S-H10, stream S-H11, Pond P-H2 and the borehole bottom area. Due to the 2/13/2020 loss-of-circulation (LOC) of approx. 500 gallons, Condition 2 monitoring is in effect (walk up to 100-feet from the LOD). Observed flowing and standing water was clear. No IRs observed.
"	1606	"	After grouting completed, inspected LOD between SE entry (14828+03) and Highview Road, including wetland W-H17, stream S-H10, stream S-H11, Pond P-H2 and the borehole bottom area. Due to the 2/13/2020 loss-of-circulation (LOC) of approx. 500 gallons, Condition 2 monitoring is in effect (walk up to 100-feet from the LOD). Observed flowing and standing water was clear. No IRs observed.
3/16/2020	959	Steve Tanen, PG	Prior to advancing 14-in casing inspected ROW from SE entry to SE edge of wetlands W-H17; inspected ROW from Highview Rd to NW edge of wetland W-H17. No IRs.
"	1520 1655	"	While augering inspected ROW from SE entry to SE edge of wetlands W-H17. No IRs.  After tripping out auger, inspected ROW from SE entry to SE edge of wetlands W-H17. No IRs.
3/17/2020	0731		Condition 2 monitoring: Prior to advancing 14-in casing inspected ROW from SE entry to SE edge of wetlands W-H17. Inspected ROW from Highview Rd to NW edge of wetland W-H17. Standing water observed in ROW NW of wetlands W-H17. No emerging groundwater observed. No IRs.
"	1436	"	Condition 2 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Gray streaks observed in wetland sediments; however, no flowing or otherwise emerging mud observed. No IRs.
"	1647	"	Condition 2 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Gray streaks observed in wetland sediments; however, no flowing or otherwise emerging mud observed. No IRs.
"	1758	"	Condition 2 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Gray streaks observed in wetland sediments; however, no flowing or otherwise emerging mud observed. No IRs.
"	1854	"	Condition 2 monitoring: Following the conclusion of drilling for the day, inspected from SE entry (14828+03) to and around wetlands W-H17. Gray streaks observed in wetland sediments; however, no flowing or otherwise emerging mud observed. No IRs.
3/18/2020	720	Jeffrey Valvik	Condition 1 monitoring: Prior to resumption tripping in, inspected ROW from SE entry to SE edge of wetlands W H17; inspected ROW from Highview Rd to NW edge of wetland W-H17. Standing water observed in ROW NW of wetlands W-H17. No emerging groundwater observed. No IRs.
3/18/2020	830	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/18/2020	1000	Jeffrey Valvik	Condition 1 monitoring: Prior to resumption tripping in, inspected ROW from SE entry to SE edge of wetlands W-H17; inspected ROW from Highview Rd to NW edge of wetland W-H17. Standing water observed in ROW NW of wetlands W-H17. No emerging groundwater observed. No IRs.
3/18/2020	1030	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/18/2020	1100	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.

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3/18/2020	1150	Jeffrey Valvik	Condition 1 monitoring: Prior to resumption tripping in, inspected ROW from SE entry to SE edge of wetlands W H17; inspected ROW from Highview Rd to NW edge of wetland W-H17. Standing water observed in ROW NW of wetlands W-H17. No emerging groundwater observed. No IRs.
3/18/2020	1330	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/18/2020	1420	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/18/2020	1900	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/19/2020	735	Jeffrey Valvik	Condition 1 monitoring: Prior to resumption tripping in, inspected ROW from SE entry to SE edge of wetlands W H17; inspected ROW from Highview Rd to NW edge of wetland W-H17. Standing water observed in ROW NW of wetlands W-H17. No emerging groundwater observed. No IRs.
3/19/2020	740	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/19/2020	1000	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/19/2020	1210	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/19/2020	1550	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/19/2020	1900	Jeffrey Valvik	Condition 1 monitoring: Inspected from SE entry (14828+03) to and around wetlands W-H17. Inspected from Highland Ave to the NW entry. No IRs.
3/20/2020	0749	Chris Mulry, PG	Prior to the start-up of drilling, inspected from SE entry to SE edge of wetlands W-H17. No IRs.
"	0945	n	Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands W-H17. Standing water observed in ROW (~14822+80) between split-rail fence and NW edge of wetlands, no emerging water while drilling. Standing water observed prior to initial start-up of drilling at this location. No IRs.
"	1154	Steven Tanen, PG	Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands W-H17. Standing water observed in ROW (~14822+80) between split-rail fence and NW edge of wetlands, no emerging water while drilling. Standing water observed prior to initial start-up of drilling at this location. No IRs.
"	1230	н	Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands W-H17. Standing water observed in ROW (~14822+80) between split-rail fence and NW edge of wetlands. Standing water observed prior to initial start-up of drilling at this location. No IRs.
"	1503	п	Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands W-H17. Standing water observed in ROW (~14822+80) between split-rail fence and NW edge of wetlands. Standing water observed prior to initial start-up of drilling at this location. No IRs.
5/20/2020	730	Chris Mulry, PG	Inspected from SE entry to SE edge of wetlands W-H17. All clear. No IRs.
"	1000	"	Inspected from Highview Rd to NW edge of wetlands W-H17. No standing water in field as prior. No IRs.
"	1215	"	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs.
"	1320	Obair Mada DO	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
5/21/2020	730 815	Chris Mulry, PG	Inspected from SE entry to SE edge of wetlands W-H17. All clear. No IRs.  Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1100 - 1130	"	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. Inspected from Highview Rd to NW edge of wetlands W-H17. Running clear. Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1400-1430-	u u	Inspected from Highview Rd to NW edge of wetlands W-H17. Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
5/22/2020	0745	Lawrence Galiano	Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands W-H17. No Irs or subsidence issues observed.
"	0850	"	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed
"	1050	"	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed
"	1310 1515	"	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues.  Inspected from SE entry to SE edge of wetlands W-H17. Running clear. Inspected from Highview Rd to NW
		"	edge of wetlands W-H17. No IRs or subsidence issues observed
5/23/2020	1700 0940	Lawrence Galiano	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues.  Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands
5/26/2020		Lawrence Galiano	W-H17. No Irs or subsidence issues observed.  Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands
"	1200	"	W-H17. No Irs or subsidence issues observed.  Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands
"	1510	"	W-H17. No Irs or subsidence issues observed.  Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands W-H17. No Irs or subsidence issues observed.
"	1640	"	W-H17. No Irs or subsidence issues observed.  Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands W-H17. No Irs or subsidence issues observed.
"	1830	"	W-H17. No Irs or subsidence issues observed.  Inspected from SE entry to SE edge of wetlands W-H17; inspected from Highview Rd to NW edge of wetlands W-H17. No Irs or subsidence issues observed.
5/27/2020	0730	Chris Mulry	W-H17. No Irs or subsidence issues observed.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs or subsidence issues
"	0850	"	observed.  Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1100-1145	"	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1430-1510	"	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed

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5/28/2020	0750	Bob Heim, Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
"	1000	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
"	1015	Ty Johnson	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1230	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1445	Ty Johnson	Inspected from Highview Rd to NW edge of wetlands W-H17. Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
"	1635	Bob Heim	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1645	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
"	1805	Bob Heim	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
5/29/2020	0755	Bob Heim	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
"	0945	Bob Heim	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1015	Bob Heim	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
"	1150	Ty Johnson	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1215	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
"	1345	Bob Heim	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1430	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
" 5/00/0000	1545	Ty Johnson	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
5/30/2020	0945	Ty Johnson	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.  Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues
"	0958	Ty Johnson	observed.
"	1210	Ty Johnson	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1219	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues
"	1415	Bob Heim	observed.  Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1425	Bob Heim	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues
"	1640	Bob Heim	observed.  Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
· ·	1650	Bob Heim	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
6/1/2020	740	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues lobserved.
"	750	Ty Johnson	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	952	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues
"	1002	Ty Johnson	observed.  Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1333	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues
11	1400	Ty Johnson	observed.  Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1600	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
"	1636	Ty Johnson	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1745	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues observed.
"	1755	Ty Johnson	Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
"	1844	Ty Johnson	Inspected from SE entry to SE edge of wetlands W-H17. Running clear. No IRs or subsidence issues
"	1849	Ty Johnson	observed. Inspected from Highview Rd to NW edge of wetlands W-H17. No IRs or subsidence issues observed.
		: , 0010011	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview
			Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
6/2/2020	740	Max Howard, PG	PG also inspected US drill pad to assess auger cuttings soil pile. Michels safety onsite monitoring activities. Both Michels and GES screened drill cuttings which had petroleum-like odor and distinct discolorations. Area
"	1030	Max Howard, PG	screened with PID by both Michels and GES and no recordable readings with PID.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
n	1325	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1540	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1700	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
n n	1805	Steven Tanen, PG	Inspected from Fightylew Rd to NW edge of wetlands W-H17. No IRs. Then drove to Highview Rd and inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
		L	Into and inspected Hoth Fightiew Into to Mark edge of weildflus W-FIT. NO INS.

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Date	Time	Print Name	Comments Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview
6/3/2020	740	Max Howard, PG	Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	940	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1140	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1335	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1500	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1535	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview
"	1740	Max Howard, PG	Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview
6/4/2020	730	Chris Mulry	Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs.
"	800	Tom Veasey	Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
=	1100	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
n .	1300	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1510	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview
"	1730	Tom Veasey	Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview
	1100	Tom voucey	Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
6/5/2020	750	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1100	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1400	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1700	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
6/6/2020	915	Jeff Valvik, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1045	Jeff Valvik, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview
"	1435	Jeff Valvik, PG	Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview
"	1600	Jeff Valvik, PG	Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Then drove to Highview
0/0/0000		·	Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
6/8/2020	900	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd
	1130	Lindsay Phillips	and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1600	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1843	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
6/9/2020	7:45	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
W .	11:00	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1400	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	1720	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
6/10/2020	7:30	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs.
"	8:45	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
"	9:47	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd
"	11:04	Brian Lipinski, PG	and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd
"	11:47	Brian Lipinski, PG	and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd
"	13:01	Brian Lipinski, PG	and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Met with Cheryl Coombes, Land Agent to defined LOD north of Highview Rd, Walked from Highview Rd porth station 14810+00. No IRs.
"	17:00	Brian Lipinski, PG	defined LOD north of Highview Rd. Walked from Highview Rd north station 14810+00. No IRs.  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Walked from Highview Rd north station 14810+00. No IRs.
"	18:17	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Walked from Highview Rd north station 14810+00. No IRs.

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Doto	Time	Drint Name	PPP 6 Drill Path Monitoring Log
Date 6/11/2020	7:22	Print Name  Matt Feits	Comments  Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. No IRs.
6/11/2020	9:50	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/11/2020	11:30	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/11/2020	14:02	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/11/2020	16:20	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/11/2020	17:55	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/12/2020	7:30	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/12/2020	7:30	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/12/2020	11:15	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/12/2020	14:15	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/12/2020	18:00	Tom Veasey	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14814+00. No IRs.
6/13/2020	940	Steve Tanen/Rob Croydo	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
"	1135	Rob Croydon	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs. Encountered small yellow-brown dog in ROW (i.e., the yard of house along Highview Dr); dog barks a lot but not aggressive.
"	1415	Rob Croydon	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14812+99. No IRs. Encountered small yellow-brown dog in ROW (i.e., the yard of house along Highview Dr); dog barks a lot but not aggressive.
"	1634	Steve Tanen	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14812+99. Bit at ~14813+80. No IRs. Encountered small yellow-brown dog in ROW (i.e., the yard of house along Highview Dr); dog barks a lot but not aggressive.
6/15/2020	7:30	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14812+00. No IRs.
"	13:00	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14812+00. No IRs.
"	15:40	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14812+00. No IRs.
"	18:00	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14812+00. No IRs.
6/16/2020	8:50	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
"	11:00	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
"	15:20	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
"	18:00	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.

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PPP 6 Drill Path Monitoring Log			
Date	Time	Print Name	Comments
6/17/2020	9:30	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
"	11:00	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
"	13:50	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
n	18:00	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
6/18/2020	740	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
6/18/2020	830	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
6/18/2020	1030	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
6/18/2020	1230	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
6/18/2020	1430	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
6/18/2020	1630	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
6/18/2020	1830	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14809+00. No IRs.
6/19/2020	730	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/19/2020	915	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/19/2020	1030	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/19/2020	1230	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/19/2020	1430	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/19/2020	1630	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/19/2020	1830	Max Howard, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/20/2020	920	Glennon C. Graham, Jr.	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/20/2020	1050	Glennon C. Graham, Jr.	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/20/2020	1245	Glennon C. Graham, Jr.	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/20/2020	1510	Glennon C. Graham, Jr.	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/20/2020	1630	Glennon C. Graham, Jr.	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14813+92. No IRs.
6/22/2020	730	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.

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PPP 6 Drill Path Monitoring Log				
Date	Time	Print Name	Comments  Inspected from SE entry to SE edge of wetlands W H47. Water running clear, No IRe. Draws to Highwise Rd and	
6/22/2020	945	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/22/2020	1350	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/22/2020	1645	Brian Lipinski, PG	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/23/2020	730	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/23/2020	1115	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/23/2020	1500	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/23/2020	1730	Matt Feits	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/24/2020	830	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/24/2020	1030	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/24/2020	1230	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/24/2020	1355	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/24/2020	1630	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/24/2020	1830	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/25/2020	830	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/25/2020	1030	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/25/2020	1230	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/25/2020	1355	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/25/2020	1630	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/25/2020	1645	Lindsay Phillips	Inspected from SE entry to SE edge of wetlands W-H17. Water running clear. No IRs. Drove to Highview Rd and inspected from Highview Rd to NW edge of wetlands W-H17. Inspected north of Highview Drive to approximate station 14805+00. No IRs.	
6/25/2020	1830	Ty Johnson, PG	Inspected US entry to NW edge of wetlands W-H17. No IRs.	
6/26/2020	1030	Ty Johnson, PG	Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs. Inspected wetland W-H17 from SE side. No IRs.	
6/26/2020	1400	Ty Johnson, PG	Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
6/26/2020	1620	Ty Johnson, PG	Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
6/26/2020	1820	Ty Johnson, PG	Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
6/27/2020	940	Ty Johnson, PG	Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs. Inspected wetland W-H17 from SE side. No IRs.	
6/27/2020	1210	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00.	
6/27/2020	1430	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00.	

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Date	Time	Print Name	PPP 6 Drill Path Monitoring Log  Comments
			Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
6/27/2020	1615	Ty Johnson, PG	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00.
6/29/2020	830	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
6/29/2020	1100	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
6/29/2020	1500	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
6/29/2020	1730	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
6/30/2020	930	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
6/30/2020	1130	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
6/30/2020	1400	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
6/30/2020	1530	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
6/30/2020	1745	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/1/2020	900	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/1/2020	1130	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/1/2020	1400	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/1/2020	1530	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/1/2020	1715	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/2/2020	0800-0830	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/2/2020	1030	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid. Unknown source of turbidity.
7/2/2020	1100-1130	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
7/2/2020	1415-14-45	Ty Johnson, PG	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.  Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/2/2020	1645-1715	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.  Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/2/2020	1825-1845	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/3/2020	0745-0820	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/3/2020	910	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid. No precipitation is thought to have occurred. Source of turbidity unknown.
7/3/2020	1045-1120	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.  Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
7/3/2020	1400-1430	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/6/2020	800	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/6/2020	945	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/6/2020	1300	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.

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D-1-	T:	Delet Name	PPP 6 Drill Path Monitoring Log
Date	Time	Print Name	Comments Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/6/2020	1515	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
7/6/2020	1715	Brian Lipinski, PG	wetlands W-H17. Water is running clear. No IRs.  Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
110/2020	1710	Brian Elpinoki, i O	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/7/2020	730	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
			wetlands W-H17. Water is running clear. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/7/2020	1000	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
			wetlands W-H17. Water is running clear. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/7/2020	1200	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
			wetlands W-H17. Water is running clear. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/7/2020	1340	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
			wetlands W-H17. Water is running clear. No IRs.
7/7/2020	1545	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
=/=/0.00			wetlands W-H17. Water is running clear. No IRs.
7/7/2020	1830	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs. Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/8/2020	730	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
			wetlands W-H17. Water is running clear. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/8/2020	930	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
			wetlands W-H17. Water is running clear. No IRs.
7/8/2020	1100	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
		, , -	wetlands W-H17. Water is running clear. No IRs.
7/8/2020	1400	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
170/2020	1400	Brian Lipinski, i O	wetlands W-H17. Water is running clear. No IRs.
7/0/0000	4000	Delem Hindureld DO	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/8/2020	1600	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/8/2020	1830	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/9/2020	740	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water slightly turbid. Some precipitation occurred over the last 24 hours. Source of turbidity unknown.
7/9/2020	0820-0855	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
17072020	0020 0000	1 y comicon, 1 c	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs. Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
7/9/2020	1150-1220	Ty Johnson, PG	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/9/2020	1415-1445	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/9/2020	1015 1015	Tu Jahnaan DC	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
11912020	1615-1645	Ty Johnson, PG	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
7/9/2020	1815-1845	Ty Johnson, PG	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/10/2020	730	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water slightly turbid. No precipitation occurred over the last 24
			hours. Turbidity from site.  Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
7/10/2020	0745-0815	Ty Johnson, PG	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/10/2020	1130-1200	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/11/2020	9:30	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. No turbidity. 2.5 inches of precipitation occurred over the last 24
111112020	9.30	ry Johnson, FG	hours.  Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
7/11/2020	0940-1015	Ty Johnson, PG	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/11/2020	1210-1240	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
		-	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.
7/11/2020	1400-1425	Ty Johnson, PG	Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/11/2020	1605-1635	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Inspected from NW entry to NW edge of wetlands W-H17.  Water running clear. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
			Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/13/2020	730	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
			wetlands W-H17. Water is running clear. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/13/2020	930	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
			wetlands W-H17. Water is running clear. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/13/2020	1045	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
			wetlands W-H17. Water is running clear. No IRs.

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7/13/2020	1345	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Works is running clear. No IRs.
			wetlands W-H17. Water is running clear. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/13/2020	1615	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/13/2020	1830	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/14/2020	745	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the
7/14/2020	945	Brian Lipinski, PG	wetlands W-H17. Water is running clear. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/14/2020	1100	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.
7/14/2020	1545	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.
7/14/2020	1830	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/15/2020	745	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/15/2020	1045	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.
7/15/2020	1345	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.
7/15/2020	1430	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.
7/15/2020	1600	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.
7/15/2020	1815	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.
7/16/2020	735	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid. No precipitation occurred over the last 24 hours.
7/16/2020 7/16/2020	737 0905-0920	Ty Johnson, PG Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs.  Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/16/2020	1210-1240	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/16/2020	1425-1455	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/16/2020	1615-16-45	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/16/2020	1815-1845	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/17/2020	843	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid. No precipitation occurred over the last 24 hours.
7/17/2020	0850-915	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/17/2020	1145-1215	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/17/2020	1405-1430	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/17/2020	1600-1630	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.
7/17/2020	1800-1830	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. No IRs. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs. Inspected wetland W-C48 SE of DS drill rig. Water turbid. No provinciation occurred water the last 24 hours.
7/18/2020	955	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid. No precipitation occurred over the last 24 hours.  Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of
7/18/2020	1005-1030	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of
7/18/2020	1210-1245	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of
7/18/2020	1400-1430	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of
7/18/2020	1600-1640	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The
7/20/2020	745	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.

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Date	Time	Print Name	Comments	
7/20/2020	945	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
172072020	0.10	Brian Elpinola, i O	to US entry pit. Inspected water well at station 14806+00. No IRs.	
			Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/20/2020	1345	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
			to US entry pit. Inspected water well at station 14806+00. No IRs.  Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/20/2020	1600	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
			to US entry pit. Inspected water well at station 14806+00. No IRs.	
7/20/2020	1810	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.	
7/21/2020	800	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the	
172172020	000	Brian Lipinski, i G	wetlands W-H17. Water is running clear. No IRs.	
			Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The	
7/21/2020	1100	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the	
			wetlands W-H17. Water is running clear. No IRs.  Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/21/2020	1350	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
			to US entry pit. Inspected water well at station 14806+00. No IRs.	
7/04/0000	4700	D : 1: : 1: DO	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/21/2020	1700	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.	
7/21/2020	1810	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.	
		•	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The	
7/22/2020	800	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the	
			wetlands W-H17. Water is running clear. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The	
7/22/2020	1030	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the	
			wetlands W-H17. Water is running clear. No IRs.	
= 100 1000			Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/22/2020	1440	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.	
7/22/2020	1645	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.	
7/23/2020	726	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water clear. No precipitation occurred over the last 24 hours.	
7/23/2020	830-900	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
			wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
7/23/2020	1030-1100	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/23/2020	1450-1520	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
772072020	1100 1020	1 y 0011110011, 1 0	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/23/2020	1715-1745	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/24/2020	725	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water clear. One inch of precipitation occurred over the last 24 hours	
7/24/2020	750-815	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
		.,,	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/24/2020	1025-1050	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/04/0000	4020 4052	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
7/24/2020	1230-1253	ry Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/24/2020	1410-1435	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
		-	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
7/24/2020	1650-1715	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/24/2020	1815	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water clear.	
7/24/2020	1817-1840	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/25/2020	9:35	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water clear. No precipitation occurred over the last 24 hours.	
7/25/2020		•	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
112312020	1020-1050	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/25/2020	1215-1245	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17 No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
			wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
7/25/2020	1425-1455	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/25/2020	1612	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water clear.	
7/25/2020	1615-1645	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
			wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The	
7/27/2020	745	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the	
			wetlands W-H17. Water is running clear. No IRs.	
7/27/2020	1045	Brian Lininglei DO	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The	
7/27/2020	1045	Brian Lipinski, PG	water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.	
		L	Troughto Tr. 1111. Water to running clear. No IIVo.	

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Date	Time	Print Name	Comments	
7/27/2020	1200	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
1/21/2020	1200	Bilali Lipiliski, FG	to US entry pit. Inspected water well at station 14806+00. No IRs.	
			Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/27/2020	1500	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
			to US entry pit. Inspected water well at station 14806+00. No IRs.	
7/27/2020	1745	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.	
7/28/2020	745	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the	
172072020	7 10	Bridit Elpinoki, i O	wetlands W-H17. Water is running clear. No IRs.	
			Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/28/2020	900	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
			to US entry pit. Inspected water well at station 14806+00. No IRs.	
7/28/2020	1100	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
172072020	1100	Bridit Elpinoki, i O	to US entry pit. Inspected water well at station 14806+00. No IRs.	
			Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/28/2020	1430	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
7/20/2020	1000	Drian Lininaki DC	to US entry pit. Inspected water well at station 14806+00. No IRs.	
7/28/2020	1800	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.  Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/29/2020	730	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
		,,	to US entry pit. Inspected water well at station 14806+00. No IRs.	
			Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/29/2020	1030	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
			to US entry pit. Inspected water well at station 14806+00. No IRs.  Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/29/2020	1230	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
		, ,	to US entry pit. Inspected water well at station 14806+00. No IRs.	
			Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd	
7/29/2020	1630	Brian Lipinski, PG	and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd	
7/29/2020	1800	Brian Lipinski, PG	to US entry pit. Inspected water well at station 14806+00. No IRs.  Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.	
7/30/2020	725	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid. No precipitation occurred over the last 24 hours.	
7/30/2020	740	Ty Johnson, PG	Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at	
773072020	740	ry Johnson, PG	STA 14806+00. No IRs.	
7/30/2020	855-915	Ty Johnson, PG	Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
			Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
7/30/2020	1050-1120	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/30/2020	1225-1255	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
770072020	1220 1200	1 y 0011110011, 1 0	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/30/2020	1445-1520	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
=/00/0000			Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
7/30/2020	1630-1700	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/30/2020	1815	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid.	
7/30/2020	1825-1850	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
			wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-C48 SE of DS drill rig. Water turbid. 0.2 inches of precipitation occurred over the last 24	
7/31/2020	730	Ty Johnson, PG	hours.	
7/31/2020	805-830	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
.,51,2020	230 000	. , 5511110011, 1 0	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/31/2020	1035-1100	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/6 / /0	10/2 /	<b>-</b>	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
7/31/2020	1210-1223	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/31/2020	1430-1455	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
1,01,2020	1100-1400	1, 0011110011, 1 0	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/31/2020	1615-1640	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/04/2222	1000 1005	T 11 55	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
7/31/2020	1800-1825	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
7/31/2020	1838	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid.	
8/1/2020	916	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid. No precipitation occurred over the last 24 hours.	
8/1/2020	930-955	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
0/4/0000	1000 1015	Tu leberer 20	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
8/1/2020	1220-1245	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/1/2020	1425-1450	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
			wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/1/2020	1617	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water turbid.	

S3-0290-20 (US-DS)

ID: 53-0290-20 (O5-L (combined 6/27/20)

	PPP 6 Drill Path Monitoring Log			
Date	Time	Print Name	Comments  Inspected wattend W 1147 from CF side. No IDs. Water warrier sleep inspected from NIW order to NIW address of	
8/1/2020	1620-1645	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/3/2020	0730-0800	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.	
8/3/2020	0945-1020	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.	
8/3/2020	1245-1315	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.	
8/3/2020	1445-1520	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.	
8/3/2020	1645-1710	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.	
8/3/2020	1800	Brian Lipinski, PG	Starting at DS side, inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.	
8/4/2020	0730-0745	Brian Lipinski, PG	Inspected from DS entry to SW edge of wetlands W-H17. Inspected ECDs on US and DS pads	
8/4/2020	1000-1030	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.	
8/4/2020	1200-1215	Brian Lipinski, PG	Inspected from DS entry to SW edge of wetlands W-H17. Inspected ECDs on DS drill pad.	
8/4/2020	1415-1445	Brian Lipinski, PG	Inspected from DS entry to entry to SE edge of wetlands W-H17. Water is running clear. Drove to Highview Rd and inspected to NW edge of wetlands W-H17. Water is running clear. Then inspected ROW from Highview Rd to US entry pit. Inspected water well at station 14806+00. No IRs.	
8/4/2020	1745-1800	Brian Lipinski, PG	Inspected DS entry pit and US entry Pit. No IRs.	
8/5/2020	0730-0800	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. Inspected the DS entry pit and all accumulated pricipitation had been pumped from the pit. No IRs.	
8/5/2020	1000-1030	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. Inspected the DS entry pit and all accumulated pricipitation had been pumped from the pit. No IRs.	
8/5/2020	1330-1400	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. Inspected the DS entry pit and all accumulated pricipitation had been pumped from the pit. No IRs.	
8/6/2020	900	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water clear. No precipitation occurred over the last 24 hours.	
8/6/2020	940-1010	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/6/2020	1155-1225	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
		_	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
8/6/2020	1410-1445	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs. Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
8/6/2020	1625-1650	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/6/2020	1820-1845	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/6/2020	1853	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water clear.	
8/7/2020	730	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/7/2020	835-900	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/7/2020	1045-1105	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/7/2020	1210-1235	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/7/2020	1430-1500	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/8/2020	912	Ty Johnson, PG	Inspected wetland W-C48 SE of DS drill rig. Water slightly turbid. 0.8 inches of precipitation occurred over the last 24 hours.	
8/8/2020	1025-1050	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/8/2020	1200-1225	Ty Johnson, PG	Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of	
8/8/2020	1415-1450	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-H17 from SE side. No IRs. Water running clear. Inspected from NW entry to NW edge of wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.	
8/8/2020	1615-1640	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs. Inspected wetland W-H17 from SE side. No IRs. Water running clean. Inspected from NW entry to NW edge of wetland W-H17. No IRs. Inspected from IRs. Water running clean. Inspected from NW entry to NW edge of	
8/8/2020	1649	Ty Johnson, PG	wetlands W-H17. No IRs. Inspected residential water well from LOD at STA 14806+00. No IRs.  Inspected wetland W-C48 SE of DS drill rig. Water clear.	
0/0/2020	1040	ry dominadii, r d	Imposite mediana 11-0-10 of or bo diming. Trater deal.	

Drilling Contractor:

Michels

Bore ID:

S3-0290-20 (US-DS)

	PPP 6 Drill Path Monitoring Log				
Date	Time	Print Name	Comments		
8/10/2020	0730-0800	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.		
8/10/2020	1000-1025	Brian Lipinski, PG	Inspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. The water is running clear in wetlands W-H17. Drove to DS site and inspected the ROW to the SE edge of the wetlands W-H17. Water is running clear. No IRs.		
8/10/2020	1115-1130	Brian Lipinski, PG	Inspected DS entry pit to SE edge of wetland W-H17. Water is running clear. No IRs.		
8/10/2020	1500-1635	Brian Lipinski, PG	Ilnspected from US entry to entry to NW edge of wetlands W-H17. Inspected water well at station 14806+00. Wetland looks to have mud in it but can't get into check – too wet. Went to DS side and it is clear. Drove back to US side and walked around edge and it appears to be drilling mud. Called Brad Golay the DS UI and notified him at 1526. He came with Leslie Gray the US UI and confirmed it at 1536. I notified Lieschen Fiesch at 1546. Received permission from Josh Prosceno at 1552 to walk of ROW to find the end of the mud. Mud is in stream S-H10 and extends several hundred feet downgradient. Walked about 300-400 ft and brush was too dense to walk further. Lead Inspector told PG to move vehicle out of the Highview Rd Neighborhood at around 1635.		
8/11/2020	0730-0930	Brian Lipinski, PG	Inspected IR cleanup at Wetland W-H17 and downgradient in Stream S-H10		
8/11/2020	1030-1230	Brian Lipinski, PG	Inspected IR cleanup at Wetland W-H17 and downgradient in Stream S-H10		
8/11/2020	1400-1530	Brian Lipinski, PG	Inspected IR cleanup at Wetland W-H17 and downgradient in Stream S-H10		
8/11/2020	1700-1930	Brian Lipinski, PG	Inspected IR cleanup at Wetland W-H17 and downgradient in Stream S-H10		
8/12/2020	0745-0845	Brian Lipinski, PG	Inspected and observed IR cleanup at Wetland W-H17 and downgradient in Stream S-H10.		
8/12/2020	0945-1150	Brian Lipinski, PG	Inspected and observed IR cleanup at Wetland W-H17 and downgradient in Stream S-H10. Noted that the drill crew was pulling drill pipe on the DS rig		
8/12/2020	1315-1410	Brian Lipinski, PG	Inspected and observed IR cleanup at Wetland W-H17 and downgradient in Stream S-H10. Noted that the drill crew was pulling drill pipe on the DS rig. There are 17 joints out at 1410 when crew cabbed up for lightning.		
8/12/2020	1600-2030	Brian Lipinski, PG	Inspected and observed IR cleanup at Wetland W-H17 and downgradient in Stream S-H10. The reamer was on the rig by 1810. Nothing was observed in the IR as the reamer was being removed from the hole. A concrete pump truck arrived at 1820 and began pumping grout into the IR depression. Each load only took approximately 10-15 minutes to pump but the last truck didn't arrive until 2002. Groundwater was observed coming from DS entry hole.		