

Serena McIlwain, Secretary Suzanne E. Dorsey, Deputy Secretary

August 29, 2024

Mr. John Lee ExxonMobil Environmental and Property Solutions c/o Infineum 1900 East Linden Avenue, Building 28a Linden, NJ 07036

RE: POST REMEDIATION MONITORING SAMPLING REQUIREMENTS Case No. 2006-0303-BA Former Exxon R/S No. 2-8077 14258 Jarrettsville Pike, Phoenix Baltimore County, Maryland

Dear Mr. Lee:

The Maryland Department of the Environment's (MDE) Oil Control Program (OCP) completed a review of the *Table 1*, *MDE Approved Monitoring Activities with Trigger Values* (Table 1) dated January 19, 2024, and prepared by Kleinfelder. The *Post Remediation Monitoring Plan Approval and Select Monitoring Well Abandonment Approval* letter, dated December 19, 2023, required specific amendments to Table 1 before final post-remedial monitoring of the fractured rock network was approved. Specific trigger levels of concern (125% of the maximum concentration since 4th Quarter 2021) and depth specific historic sampling intervals were required to be populated for wells in which discrete HydraSleeveTM groundwater sampling is proposed in deep wells where multiple fracture intervals have been identified and historically sampled. MDE understands the remediation system was deactivated and post-remedial monitoring commenced on December 21, 2023.

On March 7, 2024, the annual Settlement Agreement and Consent Order (SACO) technical meeting was conducted. During the meeting, and as summarized in an email sent on March 8, 2024, OCP required Table 1 to be amended to include all historic discrete zone sampling intervals and results, not just the discrete zones that were proposed by your environmental consultant for sampling during post-remedial monitoring. Additionally, OCP required the rationale for the selection of each of the specific discrete zones proposed. In an email dated April 2, 2024, your environmental consultant provided a broad timeline and background for many of the discrete sampling events, although the specific depths and results were not provided or populated on Table 1. The only rationale provided by your environmental consultant was that little difference (defined as order-of-magnitude level) among the interval samples were reported during the discrete sampling events.

Throughout this project, reductions of groundwater sampling from specific fracture zones were approved based upon time series data provided **and** the continued pumping status of the remediation system. As each reduction was approved, OCP made it clear that multi-depth discrete zone sampling

from the deep monitoring wells might be required after remediation system was shut-down and postremedial monitoring was approved. Based upon our review, MDE requires the following:

- **To begin during the next quarter**, groundwater samples must be collected from all discrete intervals that have been sampled during this case. Specifically, each fracture zone should be sampled for a minimum of two events (on the established frequency of each respective well).
- Each discrete interval must have its own row populated in Table 1, including all associated criteria (i.e. highest and most recent concentration, trigger level of concern, etc.).
- Within 24 hours of receiving an analytical laboratory report that shows the detection of a trigger level of concern in a monitoring well, report the sampling results to the OCP case manager. An email is an acceptable format to meet this reporting requirement.
- All discrete zone sampling must continue until written approval is received by OCP. Summary data tables of all historic discrete zone intervals and sampling data must be provided, as well as depths of HydraSleeve composite samplers, depths of pumps (for recovery wells that were sampled at pumping depths), flute sampling depths, etc.
- After collection of the initial two rounds of data, a proposal for reduction in discrete zone sampling will be reviewed. The proposal must include rational and data to support the request.

If you have any questions, please contact the case manager, Mr. Matthew Mueller, at 410-537-3574 or <u>matthew.mueller@maryland.gov</u>, or the regional supervisor, Ms. Ellen Jackson, at 410-537-3482 or <u>ellen.jackson@maryland.gov</u>.

Sincerely,

Susan Bull, Division Chief Remediation Division Oil Control Program

Enclosures:

Post Remediation Monitoring Plan Approval and Select Monitoring Well Abandonment Approval, dated December 19, 2023 Table 1 – MDE Approved Monitoring Activities, dated May 20, 2024 March 7, 2024 Meeting Follow-up email from MDE, dated March 8, 2024 April 2, 2024 email response from Kleinfelder

cc: Alicyn Craig, Esquire, ExxonMobil Corporation Mr. Mark Schaaf, Kleinfelder East, Inc.
Mr. Kevin Koepenick, Manager, Groundwater Management Section, Balt. County DEPS Julie Kuspa, Deputy Council, Office of the Attorney General Mr. Matthew Mueller, Case Manager, Remediation Division, Oil Control Program Ms. Ellen Jackson, Regional Supervisor, Remediation Division, Oil Control Program Mr. Christopher H. Ralston, Program Manager, Oil Control Program



Wes Moore, Governor Aruna Miller, Lt. Governor

Serena McIlwain, Secretary Suzanne E. Dorsey, Deputy Secretary

December 19, 2023

Mr. John Lee ExxonMobil Environmental and Property Solutions c/o Infineum 1900 East Linden Avenue, Building 28a Linden, NJ 07036

RE: POST REMEDIATION MONITORING PLAN APPROVAL and SELECT MONITORING WELL ABANDONMENT APPROVAL Case No. 2006-0303-BA Former Exxon R/S No. 2-8077 14258 Jarrettsville Pike, Phoenix Baltimore County, Maryland

Dear Mr. Lee:

The Maryland Department of the Environment's (MDE) Oil Control Program (OCP) completed a review of the *Sampling Reduction, Well Abandonment, and Additional Cycling Work Plan*, dated February 27, 2023; the *Addendum to Sampling Reduction, Well Abandonment, and Additional Cycling Work Plan*, dated April 13, 2023; the *Phase 2 Recovery Well Cycling Report of Results and Request for Post Operation Monitoring Report*, dated July 31, 2023; and the *Third Quarter 2023 Groundwater Monitoring and Remedial Status Report*, dated November 15, 2023.

Post Remediation Monitoring Plan Proposal

A request to formally cease operation of the remediation system and enter post remediation monitoring was proposed by Kleinfelder on behalf of ExxonMobil based on the results of the last sequence of recovery well shutdown and cycling assessment of four recovery wells within the Jacksonville study area. A recovery well (RW) cycling assessment was implemented from March 2022 through December 2022, and involved cycling fourteen RWs through predetermined pumping and recharge periods. Based on the data and communication with OCP, Kleinfelder initiated Phase 2, which entailed subsequent cycling and reactivation of the four RWs (MW-38C, MW-54B, MW-187A, and MW-187C). The four RWs were cycled on and off for one month each for two cycles over a four-month period (from January 27, 2023, through June 1, 2023). This cycling assessment was implemented to evaluate the effects of continued pumping of wells with dissolved phase petroleum concentrations located in the intersection of Jarrettsville Pike and Paper Mill Road, and on the properties located at 14307 and 14311 Jarrettsville Road.

Based on the results of the Phase 2 cycling, which included monthly sample collection from the four RWs (i.e., MW-38C, MW-54B, MW 187A, and MW-187C) and select adjacent monitoring wells and continued quarterly sampling of the approved monitoring network, Kleinfelder concluded that

although dissolved phase petroleum concentration trends remained consistent, little to no benefit was derived from continued operation of the remediation system. Concentrations of petroleum constituents are expected to continue to decline through natural attenuation, based on geochemical indicators and microbial data collected in 2022. The overall area of remaining dissolved phase petroleum remains stable through more than nine months of system shutdown, and the cycling events performed between 2022 and 2023. In addition, the recovery system influent concentrations and recovery rates are at levels that showed minimum hydrocarbon recovery and supports shutdown of the remediation system.

As of the 3rd Quarter 2023 report, thirteen wells had concentrations of petroleum constituents above groundwater standards and/or state action levels during the period of July 2022 through September 2023. The following summary provides the maximum and the most recent concentrations for the wells during this period. As noted, in some instances specific sampling depths are provided or samples were collected from active recovery wells through the remediation system.

- MW-16R, methyl-tert-butyl-ether (MTBE) was detected at a concentration of 35 parts per billion (ppb) (October 2022), which is above the 20 ppb state action level, and 25 ppb (September 2023).
- MW-38C, MTBE was detected at a concentration of 110 ppb (January 2023) and 3.2 ppb (September 2023), sampling from remediation system.
- MW-40, benzene was detected at a concentration of 17 ppb (June 2023) and 7.3 ppb (September 2023), which is above the 5 ppb groundwater standard.
- MW-45R, MTBE was detected at a concentration of 25 ppb (March 2023).
- MW-54B, benzene was detected at a concentration of 52 ppb (November 2022) and was not detected September 2023, and MTBE was detected at a concentration of 410 ppb (November 2022) and 94 ppb (September 2023).
- MW-54C, samples collected from two sampling interval depths:
 - Benzene was detected at a concentration of 32 ppb (June 2023), and MTBE at a concentration of 59 ppb (April 2023) and 58 ppb (June 2023), sampling depth was 210 feet; and
 - Benzene was detected at a concentration of 31 ppb (April 2023) and 28 ppb (June 2023), and MTBE at a concentration of 66 ppb (April 2023) and 52 ppb (June 2023), sampling depth was 295 to 298 feet.
- MW-82D, MTBE was detected at a concentration of 27 ppb (June 2023), sampling depth was 250 feet.
- MW-139, MTBE was detected at a concentration of 31 ppb (December 2022) and 5.7 ppb (September 2023).

- MW-178C, MTBE was detected at a concentration of 65 ppb (September 2023).
- MW-181C, MTBE was detected at a concentration of 26 ppb (September 2023), sampling depth was 212.5 feet.
- MW-187A, benzene was detected at a concentration of 1,200 ppb (July 2022) and 25 ppb (September 2023), and MTBE was detected at a concentration of 190 ppb (July 2022) and 23 ppb (September 2023), sampling from remediation system.
- MW-187C, MTBE was detected at a concentration of 420 ppb (October 2022) and 180 ppb (September 2023), sampling from remediation system.
- MW-189D, samples collected from two sampling interval depths:
 - MTBE was detected at a concentration of 200 ppb (September 2023), sampling depth not specified; and
 - MTBE was detected at a concentration of 340 ppb (December 2022) and 280 ppb (June 2023), sampling depth was 79 feet.

The proposed post remediation monitoring plan includes shutdown and removal of the pumps in recovery wells MW-38C, MW-54B, MW-187A, and MW-187C, and gauging and sampling of these wells and adjacent monitoring wells MW-54C, MW-178C, and MW-187B monthly for three months. The frequency of monitoring will be reduced to quarterly, thereafter, if results show no rebound or adverse effects. The remediation system will remain at the facility for 1 year following shutdown, although, the rented air compressor units will be removed. MDE has been assured that an air compressor will be rented if system restart is required. If post remediation monitoring results display increases above the most recent 2-year trends, a response criterion has been established to verify and monitor the fluctuations. In accordance with the procedures outlined in the email dated October 4, 2023 (see enclosure), the following criteria would trigger further actions during post remediation monitoring:

- If groundwater concentrations in a monitoring well exceed five times the state action level or groundwater standard (i.e., 25 ppb for benzene and 100 ppb for MTBE), and the concentration is 125% or greater than the maximum concentration detected in that well since 4th Quarter 2021, then a confirmatory sample will be collected within one week upon receipt of the sample data.
- If the confirmatory sample results meet or exceed the above criteria, then the sampling frequency will increase to monthly for at least three consecutive months.
- If after three months the data shows a sustained increasing trend, then additional actions will be proposed and discussed with MDE based on the location, history, and concentration trend.

- Sampling frequency will revert to the initial sampling frequency once established trends show a stable or decreasing trend.
- In addition, if liquid phase hydrocarbons (LPH) are detected in any monitoring well, LPH recovery will be implemented including weekly gauging and bailing until LPH are not detected for four consecutive weeks, and then the gauging will revert to a monthly schedule for three months, then quarterly.
- If LPH exists for three months, then alternative approaches will be discussed with OCP.

Based on the current land use, the available information reviewed for this case including a review of the remediation system recovery rates, results from the recent system cycling studies, the results of the biodegradation studies, historical and current dissolved phase hydrocarbon concentrations, locations of the current pumping wells, and the retention of a comprehensive monitoring well network for continued monitoring during post remediation, MDE approves remediation system shutdown and entering into post remediation monitoring, to include gauging and groundwater sampling, contingent upon the following comments and requirements.

- 1. Within 24 hours of receiving an analytical laboratory report that shows the detection of a trigger level of concern in a monitoring well, report the sampling results to the OCP case manager. An email is an acceptable format to meet this reporting requirement.
- 2. If LPH are detected in any monitoring well, report the incident immediately, but not later than 2 hours after detection of the LPH. Detections of LPH must be called into the OCP office at 410-537-3442. In addition, the OCP case manager must be notified by email or telephone of the report.
- 3. By no later than January 5, 2024, update and return Table 1 *MDE Approved Monitoring Activities*, for final approval.
 - a. Populate the *Specific Trigger Concentration by Well* column with the calculated 125% of the maximum concentration since 4th Quarter 2021, to ensure clear evaluation of the petroleum concentrations that warrant trigger actions. Once final approval is received, this criterion must be included in all future analytical summary data tables submitted for OCP review.
 - b. Populate the *Depth Specific Sampling Interval* column with the discrete interval from which samples are collected from any monitoring well designated for fracture specific sampling intervals. All discrete interval sampling must continue to be performed so that concentration trends continue to be monitored at the specified sampling depths.

Monitoring Well Abandonment and Sampling Plan Proposal

In addition to the request to cease remediation system operation and enter post remediation monitoring, ExxonMobil submitted the *Sampling Reduction, Well Abandonment and Additional Cycling Work Plan (Plan)*, dated February 27, 2023, for OCP review. This *Plan* was supplemented

by an *Addendum*, dated April 13, 2023. In accordance with Flowchart 2 of the Order of Resolution, dated June 6, 2018, the *Plan* proposed a substantial number of monitoring wells for abandonment, a monitoring plan for the remaining wells, and a reduction in the private water supply sampling. ExxonMobil's summary proposal of the monitoring well network reduction is as follows:

- Abandonment of 150 monitoring wells based on groundwater concentrations that have remained below MDE groundwater standards or state action levels for at least 2 years and are not needed for gauging associated with the development of potentiometric surface maps.
- Of the remaining monitoring well network, Kleinfelder proposed to retain 37 MWs as follows: continue monthly sampling of 7 MWs, conduct quarterly sampling of 15 MWs, conduct annual sampling of 11 MWs and retain 4 MWs, however, no sampling or gauging will be performed from these wells.

Based on the current land use, the available information reviewed for this case including a review of the monitoring well network construction details, historical and current dissolved phase hydrocarbon concentrations, locations of the monitoring wells relative to historic LPH and dissolved phase impacts, and the retention of a comprehensive monitoring well network for continued monitoring during post remediation monitoring, MDE approves abandonment of the monitoring wells and monitoring well sampling frequencies as detailed in the enclosed Table 1. A summary of the proposed and approved monitoring activities is provided below.

	Current Totals	EM Proposed Totals	MDE Approved Totals
Existing Wells	187	37	72
Monitored	119	33	72
- Monthly Sampling for 3 months then revert to Quarterly	. 0	7	7
- Quarterly Sampling	60	15	30
- Semi-Annual Sampling	59	0	35
- Annual Sampling	0	11	0
Gauge Only	21	0	0
Inactive Status	47	4	0
Abandoned Wells	122	272	237
Total Wells	309	309	309

Summary of Proposed / Approved Monitoring Activities and Well Abandonments

MDE requires that of the **187** wells currently remaining, **72** monitoring wells are to be retained for continued monitoring (sampling and gauging at specified frequencies), and **115** monitoring wells are approved for proper abandonment.

The monitoring wells approved for abandonment must be properly abandoned by a Marylandlicensed well driller in accordance with all applicable requirements of Code of Maryland Regulations (COMAR) 26.04.04.34—36. Provide copies of the required well abandonment reports

to both OCP (Attn: Ms. Ellen Jackson) and the Baltimore County Department of Environmental Protection and Sustainability (Attn: Mr. Kevin Koepenick). Notify OCP at least five working days prior to performing well abandonment activities so OCP staff has an opportunity to observe the work activities.

This letter is not a not a waiver or limitation of MDE's right to take enforcement action in the future based upon contamination at and around the site. The MDE and the State of Maryland retain all authority and rights to seek all available relief, including equitable relief and damages of any nature, such as compensatory and natural resource damages, for contamination at and around the site.

Private Water Supply Well Sampling Plan Proposal

OCP will review the *Private Water Supply Well Sampling Reduction Request* following receipt of the 1st Quarter Post Remediation Monitoring Report. This report must be supplemented with a standalone *Private Drinking Water Monitoring Report* and a revised evaluation of proposed private well monitoring reductions based upon the final post remediation monitoring well network to ensure continued protection of public health.

If you have any questions, please contact the case manager, Mr. Matthew Mueller, at 410-537-3574 or <u>matthew.mueller@maryland.gov</u>, or the regional supervisor, Ms. Ellen Jackson, at 410-537-3482 or <u>ellen.jackson@maryland.gov</u>.

Sincerely,

Susan Bull, Chief Remediation Division Oil Control Program

Enclosure: Table 1 – MDE Approved Monitoring Activities October 4, 2023 email RE: WP Response – additional action trigger situations

cc: Alicyn Craig, Esquire, ExxonMobil Corporation Mr. Mark Schaaf, Kleinfelder East, Inc.
Mr. Kevin Koepenick, Manager, Groundwater Management Section, Balt. County DEPS Mr. Matthew Mueller, Case Manager, Remediation Division, Oil Control Program Ms. Ellen Jackson, Regional Supervisor, Remediation Division, Oil Control Program Julie Kuspa, Esquire, Office of Attorney General Mr. Christopher H. Ralston, Program Manager, Oil Control Program

e
-
>
-
+
U
<
_
20
~
.=
-
0
~
-
-
~
0
5
~
_
ъ
0)
5
5
0
-
α.
~
-
<
ш
0
-
5
~
-
1.5
e
-
2
m
-
_

Well	0	Screen Interval (feet below top of	Depth Specific Sampling Interval (feet below top of casing)	Date GW Recovery Activities Ceased	Last Sampling Date (update Quarterly)	Last MTBE Result	Trigger Level for Action	Current Monitoring	Monitoring	Exxon Rationale	MDE Approved December 2023	MDE Rationale	
MW- 1		20-45			11/2/2022	QN ON	Indel	Semi-Annual	Annual	Continued monitoring in SE portion of former Station; below standards >3 vrs (2/25/2019)	Quarterly	Other constituents present / source zone monitoring	
MW- 1A	[R]	35-55		6/10/2019	10/17/2022	QN		Quarterly	Abandon	Below standards for >6 yrs (9/28/2016)	Abandon		
MW- 2		20-50			11/2/2022	QN		Semi-Annual	Abandon	Below standards for >11 yrs (12/13/12)	Abandon		
MW- 2A	[R]	35-55		7/30/2019	10/17/2022	QN		Quarterly	Abandon	Below standards >7 yrs (9/10/2015)	Quarterly	Source zone monitoring	
MW- 3 [F	[Ľ	20-50		3/11/2022	12/9/2022			Quarterly	Quarterly	Continued monitoring NW of former UST area; GW recovery ceased 3/14/22; below standards <1 yr (1/14/2021)	Quarterly	Agreed as proposed	
MW- 4 [F	R]	15-50		5/5/2020	12/8/2021	QN		Quarterly	Abandon	Below standards >4 yrs (8/23/2018)	Abandon		
MW- 4A MW- 6 [F	R	دد-د د 20-50		6/10/2019	11/2/2022 10/17/2022	n n		Quarterly Quarterly	Abandon Annual	Below standards >13 yrs (3/10/2009) Continued monitoring West of former UST area; below standards >9 yrs	Abandon Quarterly	Source zone / no annual sampling	
MW-7 [F	R]	20-55		8/4/2020	12/9/2022	QN		Quarterly	Abandon	(0/ 14/ 2013) Below standards >3 yrs (2/22/2019)	Abandon		
MW- 8		25-45			10/18/2022	QN		Semi-Annual	Abandon	Below standards >16 yrs (4/16/2006)	Abandon		
9 - MM		25-50		9/11/2018	11/2/2022	QN		Semi-Annual	Abandon	Below standards >15 yrs (10/31/2007)	Abandon		
MW- 12		20-35			11/10/2022	QN		Semi-Annual	Abandon	Never above standards >16 yrs	Semi-Annual	Source zone perimeter monitorine	
MW- 13	[R]	25-35		8/4/2020	10/18/2022	1.9		Quarterly	Abandon	Below standards >5 yrs (9/28/2017)	Abandon	quintering	
MW- 15		15-35			11/10/2022	QN		Semi-Annual	Abandon	Below standards >16 yrs (3/13/2006)	Semi-Annual	Source zone perimeter monitorine	
MW- 16	[R]	20-38		6/28/2021	10/19/2022	DN		Quarterly	Abandon	Below standards >8 yrs (6/23/2014)	Abandon	0	
MW- 16F	R [R]	45-60		3/11/2022	12/5/2022	8.7		Quarterly	Quarterly	Continued monitoring NW of former UST area; GW recovery ceased 3/14/22; last above action levels 4/16/2021	Quarterly	Agree as proposed	
MW- 17		25-50		9/11/2018	10/18/2022	QN		Quarterly	Annual	Continued monitoring in SW portion of former Station; below standards >14 yrs	Semi-annual	No annual sampling	
MW- 19	[R]	20-45		10/1/2019	10/18/2022	QN		Quarterly	Abandon	Below standards >6 yrs (3/14/2016)	Quarterly	Source zone perimeter monitorine	
MW- 20		20-40			N/A	N/A		Gauging only	Abandon	Never above standards >16 yrs	Abandon		
MW- 21	-	20-45		7/30/2019	11/2/2022	QN		Semi-Annual	Abandon	Below standards >15 yrs (8/17/2007)	Abandon		
-77 -WW	K	20-45		//8/2019	10/18/2022	NN		Quarterly	Abandon	Below standards >5 yrs (12/27/2017)	Quarterly	Source zone monitoring	
MW- 23	[R]	20-45		10/1/2019	11/2/2022	0.30 J		Semi-Annual	Abandon	Below standards >12 yrs (9/14/2010)	Semi-Annual	source zone perimeter monitoring	
MW- 24		20-35		5/6/2015	11/11/2022	QN		Semi-Annual	Abandon	Below standards >14 yrs (5/21/2008)	Abandon		
MW- 25 MW- 26		25-55 25-45		11/19/2013 5/6/2015	11/29/2022 11/11/2022	ON ON		Semi-Annual Semi-Annual	Abandon Abandon	Below standards >12 yrs (9/14/2010) Below standards >14 yrs (2/20/2008)	Abandon Abandon		
MW- 27	[R]	27-43		6/28/2021	11/19/2022	Q.		Quarterly	Abandon	Below standards >3 yrs (2/25/2019)	Quarterly	Last pumped 6-28-21, source	
MW- 27E	8	60-125			10/19/2022	L 06.0		Quarterly	Abandon	Below standards >3 yrs (6/13/2019)	Quarterly	Source zone	
MW- 27F	R [R]	30-60		7/1/2020	10/19/2022	QN		Quarterly	Annual	Continued monitoring North of former UST area; last above action levels 7/24/2020	Quarterly	Source zone/ no annual sampling	
MW- 29		10-30		5/6/2015	11/28/2022	QN		Semi-Annual	Abandon	Below standards >5 yrs (12/22/2017)	Abandon		
MW- 30		10-35		5/6/2015	11/11/2022	QN		Semi-Annual	Abandon	Below standards >8 yrs (6/16/2014)	Abandon		
MW- 32		30-50 15-45		12/7/2017	11/1/2022 8/75/7072	1.1		Quarterly Sami-Annual	Abandon	Below standards >2 yrs (3/9/2020) Below standards >0 vrs (3/10/2013)	Abandon		
MW- 360		125-424			8/25/2022	QN		Semi-Annual	Abandon	Never above standards >16 yrs	Abandon	·	
MW- 36F	æ	30-80		10/8/2018	8/25/2022	1.7		Semi-Annual	Abandon	Below standards >4 yrs (3/9/2018)	Quarterly	Depth specific monitoring	
MW- 37	[R]	40-96		6/30/2020	10/27/2022	QN		Quarterly	Abandon	Below standards >4 yrs (4/5/2018)	Abandon		
MW- 38 MW- 38B	3	23-63 68-125		//31/2019	10/27/2022 10/28/2022	ON ON		Quarterly Semi-Annual	Abandon Abandon	Below standards >4 yrs (1/15/2018) Below standards >8 yrs (4/22/2014)	Quarterly Quarterly	Depth specific monitoring Depth specific monitoring	
MW- 380	c [R]	125-300		active recovery	12/6/2022	68		Monthly*	Monthly*	Actively cycled RW; currently above for MTBE (12/6/2022)	Monthly / Quarterly	Agreed as proposed	
MW-40		5-30		8/31/2015	12/28/2022	QN		Quarterly	Quarterly	Continued monitoring SW of station. Typically below standards with occasional fluctuation above. Below	Quarterly	Agreed as proposed	
MW- 41A	4	15-35			2/23/2022	QN		Gauging only	Abandon	standards <1 yr (11/29/2022). Never above standards >16 yrs	Abandon		

p. 1 of 5

ies
ž
Act
ring
lito
δ
/ed
prov
Ap
MDE
÷
ble
ഷ

S
.e
Ξ.
÷.
Ū,
◄
80
Е.
5
÷
c
2
2
σ
ē
2
5
8
Ā
ā
₹
-
-i
01
ž
at
Ë.

100	112.00				100	100																																									
MDE Rationale	No annual sampling		Agreed as proposed										Agreed as proposed	Agreed as proposed				Intersection monitoring					Fracture monitoring																								
MDE Approved December 2023	Semi-Annual	Abandon	Quarterly	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Quarterly	Quarterly	Abandon	Abandon	Abandon Ahandon	Quarterly	Ahandon	Abandon	Abandon	Abandon	Quarterly	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon Abandon	
Exxon Rationale	Continued monitoring SW of Station and downgradient of MW-40; below standards >12 vrs (12/20/2010)	Below standards >16 yrs (3/15/2006 - only exceedance)	Continued monitoring NE of Station; GW recovery ceased 3/14/22; below standards >2 vrc (6/72/2020)	Below standards >8 yrs (12/10/2014)	Below standards >15 yrs (2/19/2007)	Below standards >9 yrs (9/26/2013) Below standards >14 yrs	(12/18/2008)	Below standards >14 yrs (4/23/2008)	Below standards >16 yrs (7/20/2006)	Below standards >14 yrs (3/13/2008) Relow standards >17 wrs (7/26/2010)	Below standards >16 vrs (3/17/2006)	Below standards >9 yrs (12/17/2013)	Continued monitoring NE of station; below standards < 1 yr (2/21/2022)	Continued monitoring NE of station; below standards >3 vrs (2/25/2019)	Below standards >3 yrs (1/9/2019)	Below standards >15 yrs (6/6/2007)	Below standards >16 yrs (8/22/2006) Below standards >9 yrs (3/28/2013)	Below standards for 5 yrs (9/19/2017)	Below standards >10 vrs (1/23/2012)	Below standards >15 yrs (9/17/2007)	Below standards >4 yrs (4/4/2018)	Never above standards >16 yrs	Continued monitoring NE of station; below standards >8 vrs (5/5/2014)	Never above standards >12 yrs	Never above standards >15 yrs	Never above standards >16 yrs	Never above standards >16 yrs Below standards >14 yrs (5/14/2008)	Below standards >16 yrs (3/22/2006)	Never above standards >16 yrs	Below standards >16 yrs (7/25/2006)	Never above standards >16 yrs	Below standards >11 yrs (1/8/2011)	Below standards >3 yrs (3/4/2019)	Below standards >10 yrs (3/22/2012)	Below standards >14 yrs (5/15/2008) no access	Below standards >14 yrs (4/29/2008) no access	Never above standards >14 yrs(7 H/S intervals) no acress	Never above standards >16 yrs	Never above standards >16 yrs	Below standards >13 yrs (6/25/2009) (3 H/S intervals)	Never above standards >16 yrs	Below standards >16 yrs (5/18/2006)	Never above standarus >14 yrs (2/18/2006) Below standards >14 yrs (2/18/2006)				
Proposed Monitoring Activity	Annual	Abandon	Quarterly	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Quarterly	Quarterly	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Annual	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	Abandon	
Current Monitoring Activity	Semi-Annual	Retained	Quarterly	Quarterly	Semi-Annual	Semi-Annual	Semi-Annual	Quarterly	Quarterly	Semi-Annual	Gauging only	Quarterly	Quarterly	Quarterly	Quarterly	Gauging only	Ketained Semi-Annual	Semi-Annual	Semi-Annual	Semi-Annual	Quarterly	Semi-Annual	Quarterly	Semi-Annual	Gauging only	Gauging only	Gauging only	Gauging only	Quarterly	Retained	Semi-Annual	Semi-Annual	Gauging only	Gauging only	Semi-Annual	Quarterly	Semi-Annual	Retained	Retained	Retained	Gauging only	Retained	Retained	Retained	Retained	Semi-Annual	
Trigger Level for Action (ppb)														•																														ε			
Last MTBE Result (ppb)	Q	1.7	6.1 ·	QN	0.28 J	17.0	QN	QN	Q		Q	QN	2.2	QN	QN	QN .	DN DN	QN	QN	DN	Ŋ	Ŋ	0.52 J	QN	QN	ON C	N/A	N/A	QN	ON ON	QN	ND	QN	ON ON	QN	QN	QN	QN	QN	QN	QN	QN	QN	QN	Q	NN	
Last Sampling Date (update Quarterly)	11/2/2022	6/6/2022	12/9/2022	11/1/2022	11/15/2022	8/ // 2022	9/7/2022	8/9/2022	8/9/2022	2702/1/6	2/25/2019	11/1/2022	11/1/2022	12/6/2022	11/1/2022	2/25/2019	9/9/2022	8/25/2022	8/25/2022	9/9/2022	11/1/2022	10/28/2022	12/6/2022	10/28/2022	6/18/2019	2/25/2019	6102/9/c	N/A	11/1/2022	5/23/2022 11/1/0022	11/2/2022	9/7/2022	5/13/2019	5/14/2019 ccociacio	9/7/2022	12/9/2022	11/29/2022	8/9/2017	8/9/2017	8/9/2017	2/28/2019	2/28/2019	2/28/2019	2/13/2019	2/13/2019	11/15/2022	
Date GW Recovery Activities Ceased	8/31/2015		3/11/2022	10/2/2019	5/21/2018	8107/71/6	11/7/2018		C100/01/11	12/13/2013		11/7/2018	8/30/2020	6/30/2021	6/30/2020		11/7/2018	9/12/2018	10/8/2018		6/30/2020		6/12/2019							12/15/2009				2100/21/01	9/12/2018	7/1/2020										10/8/2018	
Depth Specific Sampling Interval (feet below top of casing)																																		-													
Screen Interval (feet below top of casing)	10-40	25-65	125-300	25-50	20-56	57-DT	33-43	2-20	60-300 5 30	38 5-48 5	5-25	5-25	50-125	125-380	3-38	10-25	40-60	40-60	40-60	37.5-57.5	10-40	42-72	80-297.4	400-420	20-40	1/-32	4-24	4-24	3-15	3-15	25-47	8.5-28.5	15-45	35-55 30-70	25-60	35-60	32-55	5-20	30-35	60-359	15-30	40-50	60-200	20-40	50-60	15-45	
Well ID	MW- 72	MW- 73	MW- 73C	MW- 75 [R]	MW- 76	MW- //A	MW- //B	MW- 78A	MW- 78C	MW-80A	MW- 81	MW- 82	MW- 82B [R]	MW- 82D [R]	MW- 82R [R]	MW- 83	MW- 84	MW- 85	MW- 87	MW- 88	MW- 89 [R]	MW- 91	MW- 91C [R]	MW- 91D	MW- 92A	MW- 94	064 -WM	MW- 97	MW- 99A	MW- 1016	MW- 105	MW- 106	MW- 107	MW- 108	MW- 110	MW- 121 [R]	MW- 125	MW- 131A	MW- 131B	MW- 131C	MW- 133A	MW- 133B	MW- 133C	MW- 135A	MW- 1358	MW- 137	

p. 3 of 5

Depth Specific Sampling Interval Date GW Recovery Last Sampling Date Last Wince List Secretion (feet below top of casing) Activities Ceased (update Quarterly) (ppb) Action Mor 9/8/2022 ND 9/8/2022 ND Semi
3/11/2022 12/28/2022 0.68 J
6/23/2017 12/5/2022 31
N/A N/A
DN 12/14/2021
5/14/2019 0.6.1 correction 11/1/2019 0.6.1
UN 8/17/21/2
2/14/2018 ND
2/27/2018 ND F
8/4/2020 10/18/2022 3.3 Q
6/10/2019 12/9/2022 ND Q
5/6/2015 11/29/2022 ND Sem
11/10/2022 ND Ser
11/2/2022 NU Second Sec
2/28/2019 ND
3/11/2019 ND R
5/14/2019 ND 6
3/11/2019 ND
3/3/2020 0.2.1
9/27/2018 8/26/2022 ND
4/26/2019 10/20/2022 ND
10/1/2019 10/20/2022 ND 50
e 0/23/2022 1.4 5 8/30/2022 1.6 5
8/5/2020 10/20/2022 9.9 ·
8/26/2022 0.26 J Se
11/29/2022 1.3 Ser
5/20/2019 ND Gau
10/20/2022 1.4 Q
V2/12/12/12/12/12/12/12/12/12/12/12/12/12
1/13/2020 ND
11/29/2022 8.5
8/25/2022 ND
8/25/2022 0.75 J

Table 1. MDE Approved Monitoring Activities

p. 4 of 5

Table 1. MDE Approved Monitoring Activities

)E Rationale	d as proposed	nual sampling	nual sampling	Ire monitoring	d as proposed	tre monitorine	0		d as proposed	d as proposed	d as proposed	dip monitoring	d as proposed	n without sampling	n without sampling	d as proposed	nual sampling	nual sampling
W	Agree	No an	No an	Fractu	Agree	Fractu			Agree	Agree	Agree	Down	Agree	No retentio	No retentio	Agree	No an	No an
MDE Approved December 2023	Quarterly	Semi-Annual	Semi-Annual	Semi-Annual	Quarterly	Semi-Annual	Abandon	Abandon	Monthly/ Quarterly	Monthly/ Quarterly	Monthly/ Quarterly	Quarterly	Quarterly	Semi-Annual	Semi-Annual	Quarterly	Semi-Annual	Semi-Annual
Exxon Rationale	Continued monitoring NE of Station; below standards >3 yrs (5/21/2019)	Continued monitoring NE of Station; below standards >8 yrs (8/20/2014)	Continued monitoring NE of Station; below standards >4 yrs (8/24/2018)	Below standards >3 yrs (3/18/2019)	Continued monitoring NE of Station; GW recovery ceased 3/14/22; below standards <1.w. (6/24/2022)	Below standards >2 vrs (4/16/2020)	Below standards >6 vrs (2/8/2016)	Never above standards >9 yrs H/S	Actively cycled RW; currently above for Benzene and MTBE (12/5/2022)	Continued monitoring North of station and within intersection; below standards <1 yr (6/6/2022) ; GW recovery ceased 3/14/22	Actively cycled RW; currently above for MTBE (12/6/2022)	Below standards >4 yrs	Continued monitoring NE of Station; currently above for MTBE (12/21/2022)	Retained as inactive supply well; never above standards >13 yrs	Retained as inactive supply well; never above j-flag	Continued monitoring North of former UST area; below standards <1 yr (4/27/2022); GW recovery ceased 3/14/22	Continued monitoring within former UST area; below standards >3 yrs (2/1/2019)	Continued monitoring within former UST area; below standards >3 yrs (1116/2019); GW recovery ceased 3/14/22
Proposed Monitoring Activity	Quarterly	Annual	Annual	Abandon	Quarterly	Abandon	Abandon	Abandon	Monthly*	Monthly*	Monthly*	Abandon	Quarterly	Retain	Retain	Quarterly	Annual	Annual
Current Monitoring Activity	Quarterly	Semi-Annual	Quarterly	Quarterly	Quarterly	Quarterly	Quarterly	Retained	Monthly*	Monthly*	Monthly*	Quarterly	Quarterly	Retained	Retained	Quarterly	Quarterly	Quarterly
Trigger Level for Action (ppb)																		
Last MTBE Result (ppb)	14	3.4	19	17	5.9	5.2	QN	DN	62	9.3	260	0.20 J	340	QN	QN	2.2	16	Ŋ
Last Sampling Date (update Quarterly)	11/1/2022	8/25/2022	12/28/2022	10/20/2022	12/9/2022	10/20/2022	7/28/2022	3/14/2019	12/5/2022	12/5/2022	12/6/2022	8/29/2022	12/21/2022	2/11/2019	12/9/2022	12/9/2022	10/19/2022	12/9/2022
Date GW Recovery Activities Ceased	6/30/2021	10/23/2017			3/11/2022	8/5/2020	4/26/2019		active recovery	3/11/2022	active recovery					3/11/2022	8/4/2020	3/11/2022
Depth Specific Sampling Interval (feet below top of casing)																		
Screen Interval (feet below top of casing)	30-60	60-125	125-300	100-300	100-300	100-300	100-300	70-428	25-60	60-125	125-300	125-436	35-384	20-300	27-425	24-69	25-70.75	24-69
Well ID	MW- 181A [R]	MW- 181B	MW- 181C	MW- 182	MW- 183 [R]	MW- 184 [R]	MW- 185 [R]	MW- 186D	MW- 187A [R]	MW- 187B [R]	MW- 187C [R]	MW- 188D	MW- 189D (79)	PW- 14311	PW- 3501	SVE- 1 [R]	SVE- 2 [R]	SVE- 3 [R]

Monthly sampling during cycling assessment, reverts to quarterly thereafter.
 H/S = HydraSleeve* discrete depth sampler
 [R] = Recovery Well

p. 5 of 5



LE: Inactive Exxon Facility 28077 / Phoenix, MD - WP Response - additional action trigger situations message

 lark Schaaf <MSchaaf@kleinfelder.com>
 Wed, Oct 4, 2023 at 4:37 P

 b: Susan Bull -MDE- <susan.bull@maryland.gov>, Ellen Jackson <ellen.jackson@maryland.gov>
 ellen.jackson@maryland.gov>

 c: "Burghardt, Michael J" <michael.j.burghardt@exxonmobil.com>, "Lee, John J" <john.j.lee@exxonmobil.com>, Chris Ralston
 chris.ralston@maryland.gov>, Leslie Steele <LSteele@kleinfelder.com>

Hi Ellen and Susan.

Thanks for your time Monday to discuss the workplans under review by the MDE.

As discussed, and per your email below, MDE is requesting specific trigger situations during the post-operational monitoring period that would prompt additional sampling or remedial activities which would be implemented prior to MDE responding to that specific situation. Below are proposed trigger situations and responses which would be implemented without prior MDE approval. Note: if any of these situations occur, the agreed actions will be implemented and concurrently MDE will be notified and additional actions may be implemented beyond those described below with MDE approval.

Significant rebound in concentrations at a monitoring well

If a groundwater petroleum constituent concentration in a monitoring well exceeds five times the MDE action level (e.g. 25 ppb benzene, 100 ppb MTBE) and the concentration is 125% or greater than the maximum concentration detected in that well since 4Q2021, then that well will be resampled within one week of receiving the elevated result. If the resample results confirm elevated concentration(s) (exceed five times the MDE action level and 125% of maximum concentration detected since 4Q2021), the sampling frequency will be increased to monthly for at least 3 consecutive months. If at the end of the three months, the concentration demonstrates a sustained increasing trend, additional actions appropriate for the well(s) of concern's location, history, and concentration trend, will be proposed for discussion with MDE and implemented following MDE approval. Once concentrations have stabilized or a decreasing trend has been re-established, sampling will revert to the prior MDE-approved frequency.

Detection of light non-aqueous phase liquid (LNAPL) in a well

If LNAPL is detected in any monitoring well, LNAPL recovery activities will be implemented, including weekly gauging and bailing of the affected well until LNAPL is not observed for 4 consecutive weeks, at which time monthly gauging would be conducted for 3 months before reverting to quarterly. If at any time during gauging LNAPL is observed, weekly bailing will resume. Note that the existing remediation system is not designed to handle LNAPL as it has not been recovered by the system since 2006. Therefore interim LNAPL recovery activities would include manual bailing or skimming into portable drums or tanks prior to offsite disposal. If LNAPL persists for 3 months or more, additional remedial action to address the LNAPL will be proposed for discussion with MDE and implemented following MDE approval.

Please let us know if you have questions or require additional information.

Thanks.

Mark

Mark Schaaf

Senior Program Manager

1745 Dorsey Road

Suite J,

Hanover, MD 21076

o| +1 410-850-0404

ml +1 815_225_1616

EINFELDER **Celebrating 60 Years** and Imagining Our Future

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

From: Susan Bull -MDE- <susan.bull@maryland.gov> Sent: Tuesday, October 3, 2023 11:20 AM To: Mark Schaaf <MSchaaf@kleinfelder.com>; Leslie Steele <LSteele@kleinfelder.com> Cc: Ellen Jackson <ellen.jackson@maryland.gov>; Burghardt, Michael J <michael.j.burghardt@exxonmobil.com>; Lee, John J <john.j.lee@exxonmobil.com>; Chris Ralston <chris.ralston@maryland.gov>; Susan Bull -MDE- <susan.bull@maryland.gov> Subject: Re: Inactive Exxon Facility 28077 / Phoenix, MD - meeting request

External Email

Mark and Leslie,

Bright People. Right Solutions.

Thanks for taking the time to speak with us yesterday. Per our conversation, OCP is in the final stages of completing our reviews of the multiple documents submitted for the Exxon Jacksonville project during this calendar year and preparing a written response to the reduction and the post operation shut down requests.

Our goal for post-remedial monitoring is to ensure that we have planned for the most likely situations that trigger either enhanced monitoring or restart of the system. We do not want to enter a situation where your team has identified a critical data point of concern and delays occur while awaiting the "MDE to evaluate whether resuming pumping or other remedial action is warranted". Please submit a document to address these trigger situations and Exxon/ Klinefelder's proposed course of action to each identified trigger. As discussed yesterday, OCP intends to include this as part of or written response to the post remedial shut down letter. Once we receive this plan we will be able to finalize our letter.

If you have any additional questions, please feel free to contact me.

Baltimore, Maryland 21230 susan.bull@maryland.gov 410-537-3499 (O) 410-365-9813 (C) Website | Facebook | Twitter

Click here to complete a three question customer experience survey.

On Fri, Sep 29, 2023 at 5:30 PM Mark Schaaf

Hi Susan.

Catching up on emails late Friday.. another crazy day.

What time Monday are you available to chat? I am available 10 to 1130am or 1pm to 230pm. Thoughts?

Thanks.

Mark

Best regards,

Mark Schaaf

Senior Program Manager

1745 Dorsey Road

Suite J,

Hanover, MD 21076

0 +1 410-850-0404

m| +1 845-325-4646

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

From: Susan Bull -MDE- <susan.bull@maryland.gov> Sent: Friday, September 29, 2023 2:41 PM To: Mark Schaaf <MSchaaf@kleinfelder.com> Cc: Ellen Jackson <ellen.jackson@maryland.gov>; Burghardt, Michael J <michael.j.burghardt@exxonmobil.com>; Lee, John J <john.j.lee@exxonmobil.com>; Leslie Steele <LSteele@kleinfelder.com>; Susan Bull -MDE- <susan.bull@maryland.gov>; Chris Ralston Subject: Re: Inactive Exxon Facility 28077 / Phoenix, MD - meeting request

External Email

Mark,

I reached out to you earlier today and left you a message. I was hoping to discuss the progress of our review. In the event we are unable to touch base before 3:30 when I clock out today, I will try to connect with you on Monday.

Susan R. Bull Chief, Remediation Division Oil Control Program, Land and Materials Administration Maryland Department of the Environment 1800 Washington Boulevard Baltimore, Maryland 21230 susan.bull@maryland.gov 410-537-3499 (O) 410-365-9813 (C) Website | Facebook | Twitter

Click here to complete a three question customer experience survey.

On Fri, Sep 22, 2023 at 3:27 PM Chris Ralston -MDE- <chris.ralston@maryland.gov> wrote:

Mark,

We definitely appreciate the offer for a meeting. Susan and Ellen are completing their review of the WPs, maps, data, etc. at the end of next week. We will know after that if there are any remaining questions or other needs for a meeting. Susan or I will be in touch this time next week.

Christopher Ralston

Program Manager, Oil Control Program

Land and Materials Administration

Maryland Department of the Environment

1800 Washington Boulevard, Ste. 620

Baltimore, Maryland 21230

chris.ralston@maryland.gov

```
O - 410-537-3470
```

Click here to complete a three question customer experience survey.

On Fri, Sep 22, 2023 at 12:09 PM Mark Schaaf

Hi Chris.

Were you able to select a date that works for your team?

Thanks.

Mark

From: Chris Ralston -MDE- <chris.ralston@maryland.gov> Sent: Monday, September 18, 2023 12:55 PM To: Mark Schaaf <MSchaaf@kleinfelder.com> Cc: Ellen Jackson <ellen.jackson@maryland.gov>; Susan Bull <susan.bull@maryland.gov>; Burghardt, Michael J <michael.j.burghardt@ exxonmobil.com>; Lee, John J <john.j.lee@exxonmobil.com>; Leslie Steele <LSteele@kleinfelder.com> Subject: Re: Inactive Exxon Facility 28077 / Phoenix, MD - meeting request

External Email

Mark,

Thanks for the email. Susan is out the first part of this week. We'll get back to you towards the end of the week on this.

Christopher Ralston

Program Manager, Oil Control Program

Land and Materials Administration

Maryland Department of the Environment

1800 Washington Boulevard, Ste. 620

Baltimore, Maryland 21230

chris.ralston@maryland.gov

O - 410-537-3470

C - 443-324-1699

Website | Facebook | Twitter

Click here to complete a three question customer experience survey.

On Fri, Sep 15, 2023 at 6:07 PM Mark Schaaf < MSchaaf@kleinfelder.com> wrote:

Hi Ellen, Susan, and Chris.

Thank you for your calls this week to discuss the site progression. As we discussed, MDE-OCP is getting close to completing the workplan review and related response letter including details with respect to the post-remedial sampling plan and well abandonments. As you

subsequent MDE-OCP response letter.

ExxonMobil and Kleinfelder would like to schedule an in-person meeting to discuss either final questions/concerns related to the workplan response letters or discuss/review details of the response letter if drafted/completed.

We propose the following dates for near-term in-person meeting in Baltimore:

Tues Oct 10

Wed Oct 11

Mon Oct 16 or

Tues Oct 17

Please advise regarding availability. Likely best for a 1pm start time for any of the listed dates.

Thanks and have a good weekend.

Mark

Mark J. Schaaf

Senior Program Manager

1745 Dorsey Road. Suite J

Hanover, MD 21076

0 +1 410-850-0404

m| +1 845-325-4646

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

Click here to complete a three question customer experience survey.

Click here to complete a three question customer experience survey.

Click here to complete a three question customer experience survey.

Click here to complete a three question customer experience survey.



Matthew Mueller -MDE- <matthew.mueller@maryland.gov>

March 7, 2024 Meeting Follow-up

Mark Schaaf <MSchaaf@kleinfelder.com>

Tue, Apr 2, 2024 at 8:28 AM To: Ellen Jackson <ellen.jackson@maryland.gov>, Susan Bull <susan.bull@maryland.gov>, Matthew Mueller -MDE-<matthew.mueller@maryland.gov>

Cc: "chris.ralston@maryland.gov" <chris.ralston@maryland.gov>, "Lee, John J" <john.j.lee@exxonmobil.com>, Leslie Steele <LSteele@kleinfelder.com>, Joe Frascarella <JFrascarella@kleinfelder.com>

Hi Matt, Susan, and Ellen.

As highlighted yellow below and on the accompanying spreadsheet, MDE-OCP has requested (in general) details regarding the history of Hydrasleeve sampling as it relates to proposed post-remedial sampling methods. The data collection history from discrete depth and interval sampling via Hydrasleeves (aka vertical delineation) is somewhat long and varied.

Based on file research, Hydrasleeve sampling started in 2008 with a comparison of purge-and-grab sample results to discrete depth sample (Hydrasleeve) results. Initial Hydrasleeve sampling testing/comparisons were communicated by email to Ellen (and others) from 2008 to 2010.

A Near NE Remediation Workplan was submitted Mar 27, 2012. The Department responded with a letter dated May 1, 2012 requiring additional discrete depth sampling (via Hydrasleeve) beyond the intervals/depths proposed in the workplan. The Department requested discrete depth sampling prior to initiation of gw recovery from the new RWs plus discrete depth sampling from other MWs. The discrete depth sample intervals proposed, and the Department's additional requested intervals/depths, were largely based on downhole geophysics. The requested discrete depth sampling was completed mid-2012. Results from the mid-2012 sampling was presented to the Department in an email dated July 19, 2012.

More detailed Hydrasleeve results were reported to MDE in a Report of Results dated Aug 31, 2012 (Report of Results -Near Northeast Area Hydrasleeve Sampling and Hayes Transducer Data). To provide additional vertical delineation analytical data for the Near NE area and establish discrete interval baseline data for future sampling, MDE requested two rounds of discrete interval sampling at eleven "C" series wells (MWs - 36C, 38C, 47C, 54C, 179C, 180C, 181C, 182 and RWs - 183, 184, and 185). Overall, there was no variance (order-of-magnitude level) among the (sometimes) many discrete samples per well. Similarly, there was little persistent notable difference (again - order-of-magnitude level) among the interval samples (S=shallow vs D=deep). Shallow and deep intervals were collected from the mid-point of the upper ("shallow") and lower ("deep") half of the open portion of the well.

Thus, for many of the wells you requested explanation and/or history of the various discrete depth sampling:

- Initial interval sampling based on the bottom, mid-point and/or upper portion of the select NE wells was conducted pre-2012
- Subsequent discrete depth sampling (prior to gw recovery) based on downhole geophysics was completed in 2012
- During periods of groundwater recovery single samples were collected from groundwater recovery sample ports (various time periods) and/or reversion to interval (vs discrete depth) Hydrasleeve sampling protocols
- · Post-remediation sampling was reverted to the interval sampling since there was little variance (at an order-ofmagnitude level) among the many discrete samples even when there were much higher concentrations of MtBE in the samples collected from monitoring and recovery wells in 2012

The reasons for the various proposed sampling methods and particular sample intervals can be grouped into one of three basic categories. Combined with the above explanations, I hope this is suitable, as opposed to the time-consuming process of providing specific history of the sampling on a well-by-well basis.

State of Maryland Mail - March 7, 2024 Meeting Follow-up

- For wells that have a history of Hydrasleeve sampling (e.g. PW-3501), but no detections in any intervals above standards, we have proposed purge-and-grab sampling to confirm continued non-detect conditions.
- For wells that have been ND (or very low level MtBE) for a long period of time (post gw recovery), we have also proposed purge-and-grab sampling to confirm continued non-detect conditions.
- At the request of MDE-OCP, we have proposed continued Hydrasleeve interval sampling for wells that were Hydrasleeve sampled prior to gw recovery.

Let me know if you want me to forward the referenced workplans, report of results, or previous MDE communications/approvals.

Also, let me know if you'd like to schedule a call to discuss further (or review any specific well or group of wells). Looking into the history of a few specific wells will explain by-in-large the various sampling approaches and related changes over time vs detailing the sampling history on a well-by-well basis.

Thanks.

Mark

Mark Schaaf, CPG

Senior Program Manager

1745 Dorsey Road

Suite J,

Hanover, MD 21076

o +1 410-850-0404

m| +1 845-325-4646



This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

From: Susan Bull -MDE- <susan.bull@maryland.gov>
Sent: Friday, March 8, 2024 11:37 AM
To: Lee, John J <john.j.lee@exxonmobil.com>; Mark Schaaf <MSchaaf@kleinfelder.com>; Leslie Steele
<LSteele@kleinfelder.com>
Cc: Matthew Mueller -MDE- <matthew.mueller@maryland.gov>; Ellen Jackson <ellen.jackson@maryland.gov>; Chris Ralston <chris.ralston@maryland.gov>; Susan Bull -MDE- <susan.bull@maryland.gov>
Subject: March 7, 2024 Meeting Follow-up

External Email

[Quoted text hidden]

2 attachments

MDE Post Remediation Sampling Trigger Values MDE DRAFT Comments March 6 2024.xlsx 82K

28077_DATA for MDE Hydrasleeve Sampling Inquiry.xlsx
 658K



Matthew Mueller -MDE- <matthew.mueller@maryland.gov>

March 7, 2024 Meeting Follow-up

 Susan Bull -MDE- <susan.bull@maryland.gov>
 Fri, Mar 8, 2024 at 11:37 AM

 To: "Lee, John J" <john.j.lee@exxonmobil.com>, Mark Schaaf <mschaaf@kleinfelder.com>, Leslie Steele

 <LSteele@kleinfelder.com>

 Cc: Matthew Mueller -MDE- <matthew.mueller@maryland.gov>, Ellen Jackson -MDE- <ellen.jackson@maryland.gov>, Chris

 Ralston <chris.ralston@maryland.gov>, Susan Bull -MDE- <susan.bull@maryland.gov>

John, Mark and Leslie,

Thanks for inviting the OCP team to the site to host our annual SACO update and technical meeting. The visual of the site, the historic case briefing and the physical ability to witness the boundaries of this massive project was a perfect way to kick off the post-remedial milestone and the incorporation of Matt and I to this project.

It is OCP's understanding that the remediation system was shut down on December 21, 2023 and that monthly gauging and sampling is occurring as directed in the wells designated for monthly monitoring. As we approach our first quarterly collection of data, we discussed the sampling table that OCP required as part of our December 19, 2023 approval letter. OCP has a few update questions for a select number of deeper monitoring zones, but for the most part we are in concurrence with the rest of the table.

As discussed yesterday, I have attached the table with MDE's comments. Please update the table to account for the historic discrete zone sampling results (highest and most recent) and the rationale for why the proposed sampling zones were selected for our final review and approval.

As discussed, the OCP has the following comments on the draft citizen letter:

1. Page 2, 2nd paragraph - I would suggest identifying the months that are included in the **second quarter of 2024.**

2. I would suggest renaming the "Ongoing Activities" to "Future Activities" as these activities are planned, but not yet OCP approved. The process will be pretty defined and well supported by MDE when we get there, but we are not quite there yet.

3. Strike the last line of this section that states "For those properties that will no longer be sampled by ExxonMobil, the MDE may contact you to arrange for its environmental contractor to sample your private supply well on additional time." This language is **NOT** approved.

4. Please cc myself (my title is in the signature) and Chris Ralston, Administrator, Oil Control Program on the letter when it is sent. We will share the letter internally with our legal council and the Director.

5. Finally, this is your letter to send and how you choose to word the final letter is your decision, with the exception of the above. As discussed, I would suggest that it might be helpful to have someone in your public relations department offer some guidance on softening the letter to ensure that a non-technically minded recipient understands the overall message you are trying to convey.

As discussed yesterday, my team will be expecting two seperate work plans sometime in the second quarter to address the Craig supply well and the supply well located on 3501 Hampshire Glen. We look forward to receiving these documents.

As always, we are available to discuss any other technical questions that might arise as this project progresses and if additional technical meetings are necessary, we can schedule them on an as needed basis.

Susan R. Bull Chief, Remediation Division Oil Control Program, Land and Materials Administration Maryland Department of the Environment 1800 Washington Boulevard Baltimore, Maryland 21230 susan.bull@maryland.gov 410-537-3499 (O) 410-365-9813 (C) Website | Facebook | Twitter

Click here to complete a three question customer experience survey.

MDE Post Remediation Sampling Trigger Values MDE DRAFT Comments March 6 2024.xlsx 82K

Table 1

MDE Approved Monitoring Activities with Trigger Values Inactive Exxon Facility #28077 14258 Jarrettsville Pike Phoenix, MD

May 20, 2024

Well ID	Address	Screen Interval (feet below top of casing)	Sampling Method	Screen Interval Start (ft below TOC)	Depth Specific Sampling Interval (feet below top of casing)	MDE Comments	Date*** GW Recovery Activities Ceased	Last Sampling Date*** (update Quarterly)	Last MTBE Result*** (ppb)	Max MTBE Result since 4Q21 (ppb)	Trigger Level for Action MTBE (ppb)	Max Benzene Result since 4Q21 (ppb)	Trigger Level for Action Benzene (ppb)	Current Monitoring Activity	Proposed Monitoring Activity	MDE Approved December 2023
MW- 1	Station	20-45	P/G	20				11/2/2022	ND	ND (1.0)	100	ND (1.0)	25	Semi-Annual	Annual	Quarterly
MW- 2A	Station	35-55	P/G	35			7/30/2019	10/17/2022	ND	ND (1.0)	100	ND (1.0)	25	Quarterly	Abandon	Quarterly
MW- 3	Station	20-50	P/G	20			3/11/2022	12/9/2022	1.1	16	100	0.52 J	25	Quarterly	Quarterly	Quarterly
MW- 6	Station	20-50	P/G	20			6/10/2019	10/17/2022	ND	3.6	100	ND (1.0)	25	Quarterly	Annual	Quarterly
MW- 12	Station	20-35	P/G	20				11/10/2022	ND	ND (1.0)	100	ND (1.0)	25	Semi-Annual	Abandon	Semi-Annual
MW- 15	Station	15-35	P/G	15				11/10/2022	ND	ND (1.0)	100	ND (1.0)	25	Semi-Annual	Abandon	Semi-Annual
MW- 16R	Station	45-60	P/G	45			3/11/2022	12/5/2022	8.7	35	100	0.66 J	25	Quarterly	Quarterly	Quarterly
MW- 17	Station	25-50	P/G	25			9/11/2018	10/18/2022	ND	1.9	100	ND (1.0)	25	Quarterly	Annual	Semi-annual
MW- 19	Station	20-45	P/G	20			10/1/2019	10/18/2022	ND	0.20 J	100	ND (1.0)	25	Quarterly	Abandon	Quarterly
MW- 22	Station	20-45	P/G	20			7/8/2019	10/18/2022	ND	ND (1.0)	100	ND (1.0)	25	Quarterly	Abandon	Quarterly
MW- 23	Station	20-45	P/G	20			10/1/2019	11/2/2022	0.30 J	0.30 J	100	ND (1.0)	25	Semi-Annual	Abandon	Semi-Annual
MW- 27	Station	27-43	P/G	27			6/28/2021	11/19/2022	ND	ND (1.0)	100	ND (1.0)	25	Quarterly	Abandon	Quarterly
MW- 27B	Station	60-125	P/G	60				10/19/2022	0.90 J	3.3	100	1.2	25	Quarterly	Abandon	Quarterly
MW- 27R	Station	30-60	P/G	30			7/1/2020	10/19/2022	ND	2.7	100	ND (1.0)	25	Quarterly	Annual	Quarterly
MW- 36R	14307 Jarrettsville Pk.	30-80	P/G	30			10/8/2018	8/25/2022	1.7	1.9	100	ND (1.0)	25	Semi-Annual	Abandon	Quarterly
MW- 38	14311 Jarrettsville Pk.	23-63	P/G	23			7/31/2019	10/27/2022	ND	ND (1.0)	100	ND (1.0)	25	Quarterly	Abandon	Quarterly
MW- 38B	14311 Jarrettsville Pk.	68-125	P/G	68				10/28/2022	ND	ND (1.0)	100	ND (1.0)	25	Semi-Annual	Abandon	Quarterly
MW- 38C	14311 Jarrettsville Pk.	125-300	H/S	125	210, 298	Provide Rational for these intervals. Over time we have sampled from multiplediscrete zones. Where were these zones selected over other zones? Pump was at what depth? Was the last pumping depth eliminated?	12/15/2023	12/6/2022	89	110	137.5	1.8	25	Monthly*	Monthly*	Monthly/ Quarterly**
MW- 40	14223 Robcaste Road	5-30	P/G	5			8/31/2015	12/28/2022	ND	14	100	17	25	Quarterly	Quarterly	Quarterly
MW- 43A	Hampshire Glen Ct.	20-40	P/G	20			1/31/2013	3/3/2020	ND	ND (1.0)	100	ND (1.0)	25	Retained	Abandon	Semi-Annual
MW- 43B	Hampshire Glen Ct.	45-55	P/G	45				12/9/2019	ND	ND (1.0)	100	ND (1.0)	25	Retained	Abandon	Semi-Annual
MW- 45	14307 Jarrettsville Pk.	53-73	P/G	53			3/11/2022	12/9/2022	8.2	26	100	ND (1.0)	25	Quarterly	Quarterly	Quarterly
MW- 45R	14307 Jarrettsville Pk.	70-90	P/G	70			3/11/2022	12/9/2022	ND	84	105	0.38 J	25	Quarterly	Quarterly	Quarterly
MW- 47BB	3501 Hampshire Glen Ct.	55-125	P/G	55				10/28/2022	ND	ND (1.0)	100	ND (1.0)	25	Semi-Annual	Abandon	Semi-Annual
MW- 47C	3501 Hampshire Glen Ct.	125-300	H/S	125	126, 138.5, 190, 212.5, 287	Why were the 167 and 175 ft zones eliminated from current sampling ? These zones were >20 ppb in 2012. Add Rational.		1/29/2021	ND	15	100	0.36 J	25	Semi-Annual	Abandon	Semi-Annual
MW- 50	3313 Paper Mill Road	20-40	P/G	20				12/14/2017	0.5J	ND (1.0)	100	ND (1.0)	25	Retained	Abandon	Semi-Annual
MW- 50B	3313 Paper Mill Road	45-55	P/G	45				2/8/2019	ND	ND (1.0)	100	ND (1.0)	25	Retained	Abandon	Semi-Annual
MW- 50C	3313 Paper Mill Road	60-300	H/S	60	179, 240, 275	Provide rational.		2/8/2019	ND	ND (1.0)	100	ND (1.0)	25	Retained	Abandon	Semi-Annual
MW- 54	14307 Jarrettsville Pk.	16-56	P/G	16				10/27/2022	ND	0.47 J	100	ND (1.0)	25	Quarterly	Abandon	Quarterly

Table 1

MDE Approved Monitoring Activities with Trigger Values Inactive Exxon Facility #28077 14258 Jarrettsville Pike Phoenix, MD

May 20, 2024

Well ID	Address	Screen Interval (feet below top of casing)	Sampling Method	Screen Interval Start (ft below TOC)	Depth Specific Sampling Interva (feet below top of casing)	MDE Comments	Date*** GW Recovery Activities Ceased	Last Sampling Date*** (update Quarterly)	Last MTBE Result*** (ppb)	Max MTBE Result since 4Q21 (ppb)	Trigger Level fo Action MTBE (ppb)	r Max Benzene Result since 4Q21 (ppb)	Trigger Level for Action Benzene (ppb)	Current Monitoring Activity	Proposed Monitoring Activity	MDE Approved December 2023
MW- 54B	14307 Jarrettsville Pk.	57-125	P/G	57			12/15/2023	12/6/2022	290	530	662.5	73	91.25	Monthly*	Monthly*	Monthly/ Quarterly
MW- 54C	14307 Jarrettsville Pk.	125-300	H/S	125	210, 295-298	Provide Rational, There were 4 additional zones sampled in 2012 with very high concentrations (136,164.5,212.5,250 & 280. Why were these zones eliminated from sampling?	,	12/21/2022	65	120	150	40	50	Semi-Annual	Quarterly	Monthly/ Quarterly
MW- 56A	Robcaste Road	15-35	P/G	15				12/12/2017	1	NS	100	NS	25	Gauging only	Abandon	Semi-Annual
MW- 56B	Robcaste Road	45-55	P/G	45				2/21/2019	0.3 J	NS	100	NS	25	Retained	Abandon	Semi-Annual
MW- 56C	Robcaste Road	60-350	P/G	60		Blank? Provide rational and sampling zones.		10/27/2020	ND	NS	100	NS	25	Retained	Abandon	Semi-Annual
MW- 57	3501 Hampshire Glen Ct.	25-65	P/G	25			8/13/2018	10/28/2022	ND	ND (1.0)	100	ND (1.0)	25	Semi-Annual	Abandon	Semi-Annual
MW- 58	3501 Hampshire Glen Ct.	35-65	P/G	35			3/28/2018	10/28/2022	0.35 J	0.56 J	100	ND (1.0)	25	Semi-Annual	Abandon	Semi-Annual
MW- 67	14221 Robcaste Road	10-40	P/G	10				N/A	N/A	ND (1.0)	100	ND (1.0)	25	Gauging only	Retain	Semi-Annual
MW- 72	14223 Robcaste Road	10-40	P/G	10			8/31/2015	11/2/2022	ND	0.23 J	100	ND (1.0)	25	Semi-Annual	Annual	Semi-Annual
MW- 73C	14315 Jarrettsville Pk.	125-300	H/S	125	210, 298	In recent years we had HS-s and HS-D with no corresponding depths. How do the selected intervals correspond to the depths of historic sampling?	3/11/2022	12/9/2022	6.1	15	100	0.56	25	Quarterly	Quarterly	Quarterly
MW- 82B	3508 Hampshire Glen Ct.	50-125	P/G	50			8/30/2020	11/1/2022	2.2	27	100	0.46 J	25	Quarterly	Quarterly	Quarterly
MW- 82D	3508 Hampshire Glen Ct.	125-380	H/S	125	250, 378	In recent years we had HS-s and HS-D with no corresponding depths. How do the selected intervals correspond to the depths of historic sampling?	6/30/2021	12/6/2022	ND	27	100	ND (1.0)	25	Quarterly	Quarterly	Quarterly
MW- 85	14301 Jarrettsville Pk.	40-60	P/G	40			9/12/2018	8/25/2022	ND	ND (1.0)	100	ND (1.0)	25	Semi-Annual	Abandon	Quarterly
MW- 91C	3501 Hampshire Glen Ct.	80-297.4	P/G	80		Blank? Former recovery well. Depth was very specific. Discrete zone sampling rational, and pump depth	6/12/2019	12/6/2022	0.52 J	0.53 J	100	ND (1.0)	25	Quarterly	Annual	Quarterly
MW- 138D	3506 Hampshire Glen	60-404	H/S	60	115-120, 230-235, 350-355	Approval of these zones are dependent of the zones selected for 91C and rational provided on zones selected	3/11/2022	12/28/2022	0.68 J	1.5	100	ND (1.0)	25	Quarterly	Quarterly	Quarterly
MW- 139	Station	60-80	P/G	60			6/23/2017	12/5/2022	31	31	100	ND (1.0)	25	Quarterly	Quarterly	Quarterly
MW- 146	3320 Paper Mill Road	35-60	P/G	35				2/14/2018	ND	ND (1.0)	100	ND (1.0)	25	Retained	Abandon	Semi-Annual
MW- 146B	3320 Paper Mill Road	60-126.5	P/G	60				2/14/2018	ND	ND (1.0)	100	ND (1.0)	25	Retained	Abandon	Semi-Annual
MW- 146C	3320 Paper Mill Road	125-300	H/S	125	Shallow, Deep	What depths of these and rational.		2/27/2018	ND	ND (1.0)	100	ND (1.0)	25	Retained	Abandon	Semi-Annual
MW- 166C	3418 Sweet Air	60-615	P/G	60		Blank, provide rational		3/11/2019	ND	ND (1.0)	100	ND (1.0)	25	Retained	Retain	Semi-Annual
MW- 168	3501 Hampshire Glen	65-250	H/S	65	67, 75, 87, 115, 235	Provide rational and add 148-ft	9/27/2018	8/26/2022	ND	ND (1.0)	100	ND (1.0)	25	Semi-Annual	Quarterly	Quarterly
MW- 171	3501 Hampshire Glen	36-130	P/G	36		Blank, provide rational		8/25/2022	1.4	2.4	100	ND (1.0)	25	Semi-Annual	Abandon	Semi-Annual

Table 1

MDE Approved Monitoring Activities with Trigger Values Inactive Exxon Facility #28077 14258 Jarrettsville Pike Phoenix, MD

May 20, 2024

Well ID	Address	Screen Interval (feet below top of casing)	Sampling Method	Screen Interval Start (ft below TOC)	Depth Specific Sampling Interval (feet below top of casing)	MDE Comments	Date*** GW Recovery Activities Ceased	Last Sampling Date*** (update Quarterly)	Last MTBE Result*** (ppb)	Max MTBE Result since 4Q21 (ppb)	Trigger Level for Action MTBE (ppb)	Max Benzene Result since 4Q21 (ppb)	Trigger Level for Action Benzene (ppb)	Current Monitoring Activity	Proposed Monitoring Activity	MDE Approved December 2023
MW- 176	3501 Hampshire Glen	125-250.1	P/G	125		Blank, provide rational	8/5/2020	10/20/2022	9.9	14	100	ND (1.0)	25	Quarterly	Abandon	Semi-Annual
MW- 177	3501 Hampshire Glen	125-250.5	H/S	125	187.75	Approved reduction from 5 intervals to 1 in 2019 due to levels being similar in all 5 intervals. Require all 5 zones to be sampled for 2 Qtrs to provide trends during post		11/29/2022	1.3	1.7	100	ND(1.0)	25	Semi-Annual	Abandon	Semi-Annual
MW- 178B	3501 Hampshire Glen	75-125	P/G	75				10/20/2022	1.4	2.8	100	ND (1.0)	25	Quarterly	Annual	Semi-Annual
MW- 178C	3501 Hampshire Glen	125-300	P/G	125		Blank, provide rational	1/27/2023	12/5/2022	59	110	137.5	1.4	25	Monthly*	Monthly*	Monthly/ Quarterly
MW- 179C	3501 Hampshire Glen	80-250	H/S	80	250	Provide rational. Add HS-S, this HS-D?		11/29/2022	8.5	8.5	100	ND (1.0)	25	Semi-Annual	Abandon	Semi-Annual
MW- 181A	14301 Jarrettsville Pk.	30-60	P/G	30			6/30/2021	11/1/2022	14	59	100	0.60 J	25	Quarterly	Quarterly	Quarterly
MW- 181B	14301 Jarrettsville Pk.	60-125	P/G	60			10/23/2017	8/25/2022	3.4	3.4	100	ND (1.0)	25	Semi-Annual	Annual	Semi-Annual
MW- 181C	14301 Jarrettsville Pk.	125-300	H/S	125	215.5	Provide rational and why one zone is selected from 7 intervals. Location is near release. Is 215.5 mid-open borehole.		12/28/2022	19	26	100	0.31 J	25	Quarterly	Annual	Semi-Annual
MW- 182	3501 Hampshire Glen	100-300	H/S	100	200	Provide rational. Discrete zone intervals reduced to HS-S at and HS-D at 300. Add HS-S?		10/20/2022	17	17	100	ND (1.0)	25	Quarterly	Abandon	Semi-Annual
MW- 183	3501 Hampshire Glen	100-300	P/G	100		Blank, provide rational	3/11/2022	12/9/2022	5.9	34	100	0.60 J	25	Quarterly	Quarterly	Quarterly
MW- 184	3501 Hampshire Glen	100-300	P/G	100		Blank, provide rational	8/5/2020	10/20/2022	5.2	10	100	1.6	25	Quarterly	Abandon	Semi-Annual
MW- 187A	Intersection	25-60	P/G	25			12/15/2023	12/5/2022	62	79	100	270	337.5	Monthly*	Monthly*	Monthly/ Quarterly
MW- 187B	Intersection	60-125	P/G	60			3/11/2022	12/5/2022	9.3	30	100	22	27.5	Monthly*	Monthly*	Monthly/ Quarterly
MW- 187C	Intersection	125-300	H/S	125	210, 298	Provide rational for approval	12/15/2023	12/6/2022	260	420	525	4.2	25	Monthly*	Monthly*	Monthly/ Quarterly**
MW- 188D	14311 Jarrettsville Pk.	125-436	H/S	125	280.5, 378			8/29/2022	0.20 J	6.2	100	ND (1.0)	25	Quarterly	Abandon	Quarterly
MW- 189D	3605A Southside Ave	35-384	H/S	35	79	Approved		12/21/2022	340	340	425	1.2	25	Quarterly	Quarterly	Quarterly
PW- 14311	14311 Jarrettsville Pk.	20-300	P/G	20		Provide rational		2/11/2019	ND	ND (1.0)	100	ND (1.0)	25	Retained	Retain	Semi-Annual
PW- 3501	3501 Hampshire Glen	27-425	P/G	27		Provide rational		12/9/2022	ND	ND (1.0)	100	ND (1.0)	25	Retained	Retain	Semi-Annual
SVE- 1	Station	24-69	P/G	24			3/11/2022	12/9/2022	2.2	180	225	9.9	25	Quarterly	Quarterly	Quarterly
SVE- 2	Station	25-70.75	P/G	25			8/4/2020	10/19/2022	16	17	100	ND (1.0)	25	Quarterly	Annual	Semi-Annual
SVE- 3	Station	24-69	P/G	24			3/11/2022	12/9/2022	ND	15	100	0.48 J	25	Quarterly	Annual	Semi-Annual

* Monthly sampling during cycling assessment, reverts to quarterly thereafter. ** Monthly sampling via Hydra Sleeve® when not in Active Remediation *** Up to date as of February 2023 Workplan

P/G = Purge and grab sample

H/S = Hydra Sleeve[®] discrete depth sampler

[R] = Recovery Well