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January 29, 2019

Mr. Robert Strang
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-7013

Subject: **Semiannual Discharge Monitoring and Site Inspection Report – November 2018**
Primoshield Incorporated Site, Site No. 633027
MACTEC Engineering & Consulting, P.C., Project No. 3612122251

Dear Mr. Strang:

MACTEC Engineering and Consulting, P.C., (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC) is submitting this letter report describing the November 2018 semi-annual site management (SM) activities completed, and observations noted, at the Primoshield Incorporated Site (Site), NYSDEC Site # 633027, located in Utica, New York (NY).

The Primoshield Site is a former metal electroplating facility located at 1212 St. Vincent Street. The Site is approximately 2.4 acres in size and is bordered by Conkling Avenue on the northwest and St. Vincent Street on the south and east. The Site's Classification Code is 4 (SM). Figure 1 shows the Site location, and Figure 2 depicts the Site features.

The Site's Record of Decision required a groundwater treatment system to remediate contaminated groundwater by carbon filtration, and then discharge treated effluent to the Publicly Owned Treatment Works (POTW). The remedial system was initially installed for treatment of trichloroethene, 1,1,1-trichloroethane, 1,1-dichloroethane, and chromium in groundwater. However, since 2001 concentrations have been below discharge permit levels and no longer warranted the use of carbon filtration. Currently, water feeds via gravity to a collection sump and is then pumped and discharged directly to the POTW.

SM activities include long-term monitoring consisting of groundwater monitoring every 15 months, semi-annual discharge monitoring, and spring and fall Site inspections (MACTEC, 2017). This report presents the findings of the semi-annual Site inspection and discharge monitoring performed on November 28, 2018.

Site Inspection

The semi-annual Site inspection includes the following activities:

- Checking treatment system operation
- Inspecting the physical conditions of the Site
- Carrying out maintenance or repairs as needed (not required at this time).

The Inspection Form and photo documentation of the inspection are provided in Attachment 1.

Treatment System

The treatment system was observed to be turned off upon arrival. The system was turned to autorun mode and allowed to run for one hour prior to discharge sampling. The system was left running for the duration of the inspection visit. However, during the Site visit silty water was observed upwelling near the Trench 1 cleanout on the southwest corner of the Site (see Attachment 1, photos 9 and 10). The cause of the upwelling was not apparent at the time of the inspection, therefore, the system was shut off prior to leaving the Site. The issue was further investigated in December 2018 and is discussed in the 2018 Annual Report. The flow meter/totalizer reading was recorded at 4,445,400 gallons (see Attachment 1 photo 1). The manhole was opened during the inspection and the pump assembly was visually examined and appears to be in good condition.

Site Conditions

The physical condition of the Site was inspected to evaluate compliance with the requirements of the Site Management Plan and to document any changes in Site conditions since the last Site inspection was conducted (March 2018). Unless otherwise noted, conditions at the Site were observed to be consistent with previous inspections. Observations noted and documented during the November 2018 Site inspection are provided in Attachment 1, and include:

- The top rail of fence is unattached along the north-central Site area where the fence changes in height
- Loose and/or damaged barbed wire was observed in two areas of the fencing

- The protective casings on P-106S, P-106D, and P-107S were observed to be loose and the well pad for P-107S was observed to have heaved (see Photo 3)
- The northernmost cleanout (Trench 2, Cleanout 5) will not close due to settlement of the protective road-box and surrounding concrete (see Photo 4)
- Young trees and other vegetation are encroaching on the fencing to the southeast of P-105, north of P-106, and a few other areas. Vegetation is encroaching on the perimeter fence in several locations (see Photos 6, 7, and 8).

Maintenance or Repairs

No maintenance or repair activities were completed during the November 2018 Site inspection.

Semiannual Discharge Monitoring

A sample of the treatment system effluent was collected on November 28, 2018 and submitted to ALS Laboratory for the following analyses: volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) method 624, metals (cadmium, chromium copper, nickel, lead and zinc) by USEPA method 200.7, cyanide by USEPA method 9010 B, and pH by USEPA method SM 4500. Laboratory results demonstrate that concentrations remain below the POTW discharge criteria (see below). The field data record collection form, the laboratory report of analysis, and chain of custody records are included in Attachment 2.

Semiannual Discharge Analytical Results December 2018

POLLUTANT/PARAMETER	POTW Limit	Results
Total Flow, gal/day	No Limit	304**
pH	5.0-12.5	7.09
Cadmium, mg/L	1	0.005 U
Chromium, mg/L	5	0.01 U
Copper, mg/L	3	0.02 U
Lead, mg/L	5	0.05 U
Nickel, mg/L	2	0.04 U
Zinc, mg/L	4	0.02 U
Cyanide, mg/L	3	0.01 U
Total VOCs, mg/L	2.0*	**0.02644**

mg/L = milligrams per liter
*Total Volatile Organics is the sum of detected VOCs.
Bold results indicate the parameter was detected.
U = not detected; value represents the sample quantitation limit

** = Average flow based on totalizer reading and days between measurements.

Summary

The Site's groundwater collection system near the Trench 1 clean-out was observed to be contributing to upwelling groundwater while the system was running at the time of the November 2018 inspection event. This issue was investigated further during a December 2018 Site visit and the same condition was not observed. This follow up investigation is discussed in the 2018 Annual Report. The system was set to the "autorun" position in December and should be inspected periodically before the Spring Inspection which is scheduled for April 2019.

A semi-annual discharge sample was collected, and results indicate detectable levels of total VOCs; however, results were below the POTW allowable discharge limits of the permit. Inspections and discharge monitoring are recommended to continue on a semi-annual basis.

The perimeter fence condition is consistent with past observations; some minor damage was noted that does not require immediate repair. Young trees impinging on the perimeter fences should be removed at the roots to prevent continued growth and potential fence damage. The well casings for P-106S, P-107S and P-107D should be regrouted and the Trench 2 cleanout should be trimmed down to allow the cover to fit securely. Maintenance activities will be coordinated with the spring 2019 Site inspection.

Please feel free to contact us if you have any questions at 207-775-5401.

Sincerely,

MACTEC Engineering & Consulting, P.C.

Rebecca Brosnan
Site Manager

Jean Firth
Project Manager

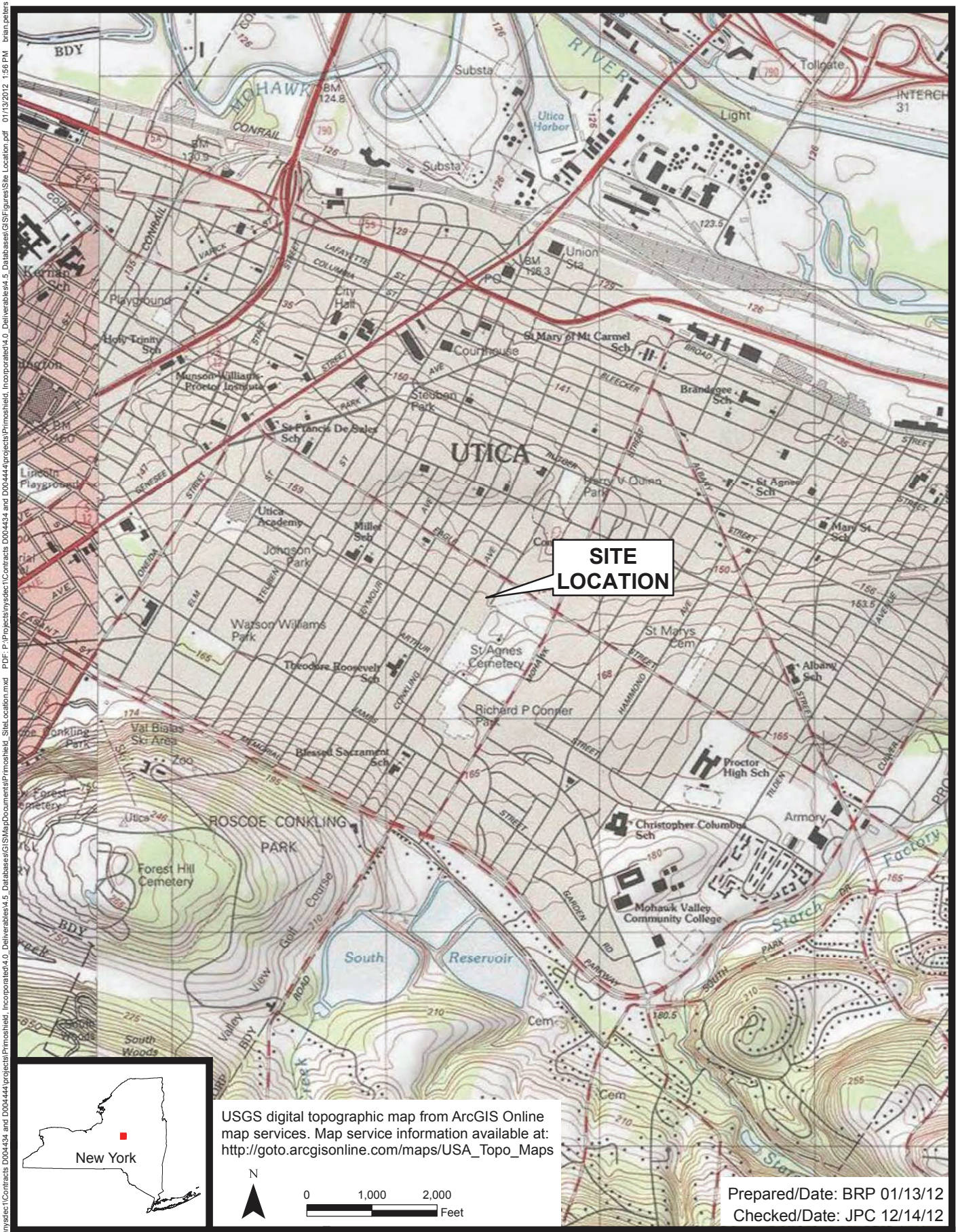
Enclosures

Attachment 1: Inspection Form & Photos

Attachment 2: Field Data Records, Laboratory Report of Analysis, and Chain of Custody

REFERENCES

MACTEC Engineering and Consulting, P.C., 2013. Site Management Plan, Primoshield, Incorporated Site No.: 633027, August 2017.



PRIMOSHIELD INC.
UTICA, NEW YORK

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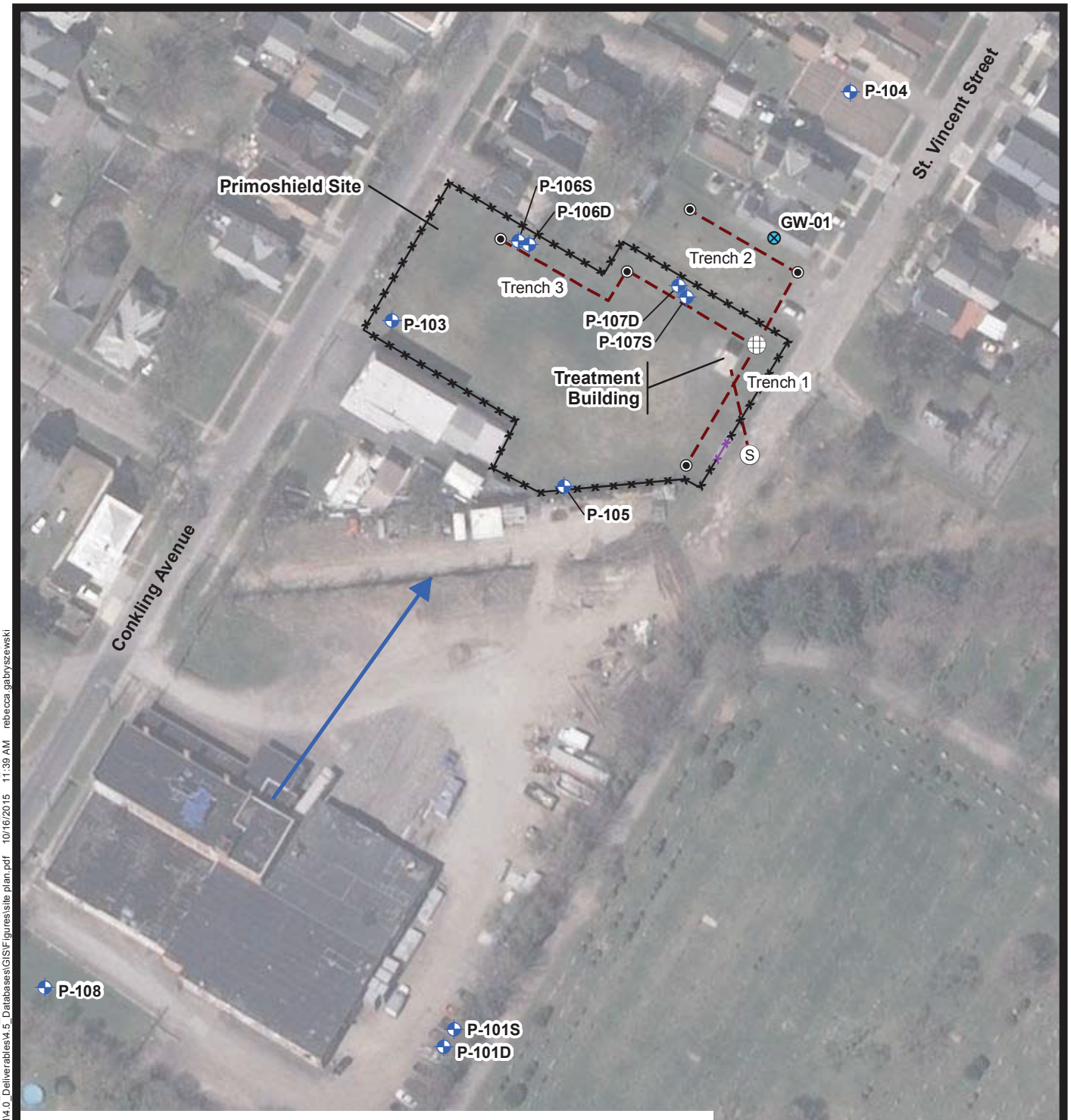
SITE LOCATION

Project 3612-12-2251 Figure 1



Legend

- Cleanout access point
- 4-foot diameter manhole
- Discharge to sanitary sewer
- Groundwater Monitoring Well
- Temporary Groundwater Sample Point
- Perimeter Fence
- Perimeter Fence Gate
- Approximate GW flow direction
- Underground collection trench

N

0 50 100 Feet

Oneida County color digital orthoimagery (2008) from New York State GIS Clearinghouse at: http://www.nysgis.state.ny.us

Prepared/Date: BRP 10/16/15
Checked/Date: RLG 10/16/15

PRIMOSHIELD INC.
UTICA, NEW YORK

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SITE PLAN

Project 3612122251 Figure 2

Document: P:\Projects
ysdec1\Contracts D004434 and D004444\projects\Primoshield, Incorporated\4.0_Deliverables\4.5_Database\GIS\MapDocuments\Primoshield_SitePlan_8.5x11P.mxd PDF: P:\Projects
ysdec1\Contracts D004434 and D004444\projects\Primoshield, Incorporated\4.0_Deliverables\4.5_Database\GIS\Figures\site plan.pdf 10/16/2015 11:39 AM rebecca.gabryszewski

ATTACHMENT 1

INSPECTION FORM & PHOTOS

New York Department of Environmental Conservation
Inactive Hazardous Waste Site
Inspection Form-Treatment Systems

Site Name: *Primoshield Inc.*		**NYSDEC Site Number:** *633027*	**NYSDEC PM:** *Will Welling*
Site Location: *1212 St. Vincent Street, Utica, NY*		**Site Classification #:** *4*	**Primary Site Contact:** *Will Welling*
Site Inspection Date: 11/28/18	**Purpose of Inspection:** *Semi-annual inspection*		
Name of Inspector: RENE AUBE	**Title:** SR. ENG. TECH.	**Agency/Company:** *MACTEC/Amec Foster Wheeler*	**Address:** *511 Congress Street, Suite 200 Portland, ME 04101*
Phone Number: 860-888-3377			

Treatment Systems

System Status				General Observations:
System in operation during visit?	(Yes)	No		
Manned on a fulltime basis?		(No)		
Pump working?	(Yes)	No		
Initial flow rate (gpm):	UNKNOWN			
Totalizer reading (gallons):	04445400			
Discharge Monitoring				
Discharge to the POTW?	*Oneida County Sewer District Permit GW-040*			
Was permit performance monitoring conducted?	(Yes)	No		
Condition of Operational Controls				
Condition of gauges?	(Good)	Poor	NE	
(TOTALIZER) Condition of flow meters?	(Good)	Poor	NE	
Condition of system alarms?	Good	Poor	(NE)	TEST METHOD UNKNOWN.
Condition of flow pipes and hoses?	(Good)	Poor	NE	
Pipes labeled with direction of flow and contents?		(No)	NE	
Condition of valves?	(Good)	Poor	NE	
Evidence of leaking?	Yes	(No)	NE	
Condition of extraction/sump pump?	(Good)	Poor	NE	
Lighting in Work Areas Adequate?	(Yes)	No	NE	
Collection Vault and Pump				
Vault condition - outside (floor level)?	(Good)	Poor	NE	
Vault condition - inside (observed from floor level)?	(Good)	Poor	NE	
Collection/Discharge Trenches				
Condition of clean-out covers?	(Good) *	Poor	NE	* TRENCH 2 NORTH CLEAN-OUT COVER NOT SITTING FLUSH.
Evidence of sedimentation?	Yes	(No)	NE	

Site Features

Site Security and Fence				General Observations:
Condition of the access gates and locks?	(Good)	Poor	NE	
Condition building?	(Good)	Poor	NE	
Condition of the perimeter fence	(Good)	Poor	NE	
Is vegetation infringing on the fence?	(Yes)	No	NE	YOUNG TREES REQUIRE REMOVAL W/POWER EQUIP TO DIG OUT ROOTS.
Was a monitoring well inspection completed?	(Yes) see attached		No	
NE- not evaluated, provide explanation				

Additional Observation Notes:

ARRIVED ONSITE TO FIND SYSTEM TURNED OFF. CALLED WOOD PM, PER HIS DIRECTION TURN SYSTEM BACK TO AUTO RUN MODE, LET RUN FOR 1 HR, THEN COLLECT EFFLUENT SAMPLES. LEAVE SYSTEM RUNNING. WHILE PACKING UP FOR DEPARTURE, NOTICED SILTY WATER FLOODING SW CORNER OF SITE AND ADJACENT PROPERTY, WHICH WASN'T PRESENT ON ARRIVAL. TOOK PHOTOS, TURNED SYSTEM BACK OFF. PROBABLE BLOCKAGE IN SYSTEM DISCHARGE. CALLED WOOD PM, LEFT SYSTEM OFF.

New York Department of Environmental Conservation
Inactive Hazardous Waste Site
Inspection Form-Treatment Systems

Previously observed: Review and comment as to status (include photo documentation)

1. Is there vegetation infringing on the perimeter fence? (Remove infringing vegetation that can be removed without the use of power tools.)
   YES, YOUNG TREES NEED TO BE DUG OUT WITH POWER EQUIPMENT.
2. What is the condition of the protective casings on P-107 and P-106?
   P106S, P106D, P107S CASINGS LOOSE IN GROUND. P107S FROST HEAVED UP.
3. What is the condition of the northernmost intake/access port in Trench 2? Was it repaired?
   NOT REPAIRED, COVER STILL NOT SITTING FLUSH.
4. What is the condition of the metal rail in the north-central area of the fence where the fence height changes?
   STILL MISSING.
5. What is the condition of the loose and/or damaged barbed wire along the fencing previously noted?
   STILL RUSTY/LOOSE.
6. What is the condition of the fence posts supporting the St Vincent Street gate?
   TILTED INWARD BUT SERVICABLE.
7. What is the condition of the top rail of fence along the north-central Site area where the fence changes in height?
   SAME AS #4.

Photograph Log:

Photograph 1

Photograph 2

Photograph 3

Photograph 4

Photograph 5

Photograph 6

Photograph 7

Photograph 8

Photograph 9

Photograph 10

Performance Monitoring:

Were check samples collected during this visit? (Yes) No

Sample type collected *(circle or write in other)* : **Groundwater** (Effluent)

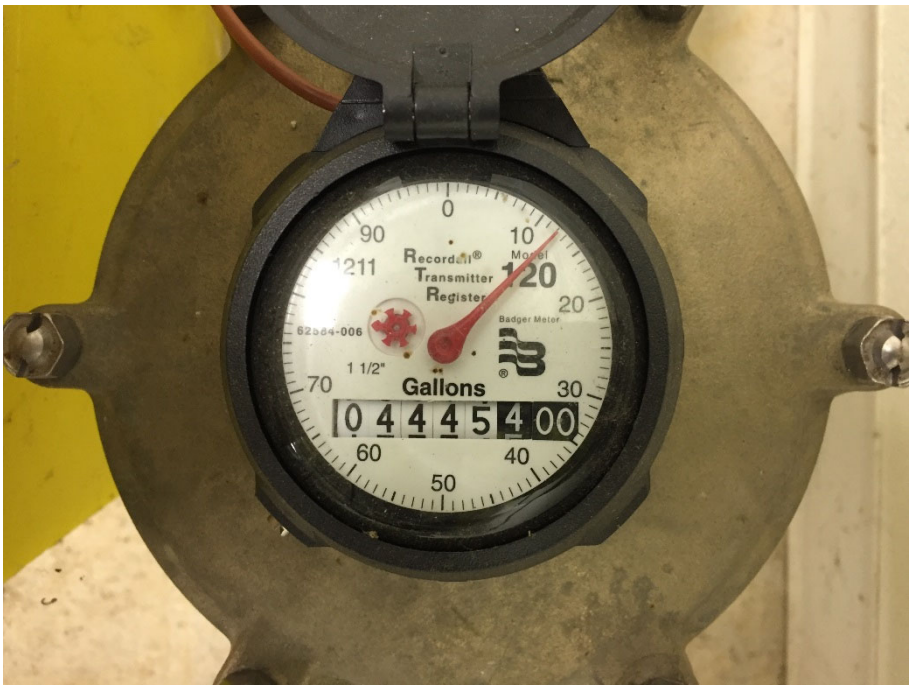
List Parameters/Methods Collected Per Media:
pH (150.1) METALS (200.7)
VOC (624) CYANIDE (9010)

Analytical Laboratory/Location:
ALS ENVIRONMENTAL, ROCHESTER NY.

Sample Observations:	TEMP	SP. COND	pH	DO	ORP	TURB
CLEAR, NO ODOR.	10.17°C	.544 MS/CM	6.50	5.51 MG/L	209.0 MV	4.22 NTU

Attachment 1 –Photographic Log

Client:	NYSDEC	***Project Number:***	3612122251
Site Name:	Primoshield, Inc.	***Site Location:***	Utica, New York.

Photographer: Rene Aube ***Date:*** 11/28/2018 ***Photograph:*** 1 ***Direction:*** n/a ***Description:*** Flow meter/totalizer reading	
Photographer: Rene Aube ***Date:*** 11/28/2018 ***Photograph:*** 2 ***Direction:*** n/a ***Description:*** System was turned to “off” position upon arrival.	

Attachment 1 –Photographic Log

Client:	NYSDEC	***Project Number:***	3612122251
Site Name:	Primoshield, Inc.	***Site Location:***	Utica, New York.

Photographer: Rene Aube ***Date:*** 11/28/2018 ***Photograph:*** 3 ***Direction:*** n/a ***Description:*** Well pad heaved at P-107S and casing is loose.	
Photographer: Rene Aube ***Date:*** 11/28/2018 ***Photograph:*** 4 ***Direction:*** n/a ***Description:*** Northwest end collection trench #2 cleanout lid does not sit properly.	

Attachment 1 –Photographic Log

Client:	NYSDEC	***Project Number:***	3612122251
Site Name:	Primoshield, Inc.	***Site Location:***	Utica, New York.

Photographer: Rene Aube ***Date:*** 11/28/2018 ***Photograph:*** 5 ***Direction:*** ESE ***Description:*** View of the property from the western corner of the property boundary.	
Photographer: Alex Klein ***Date:*** 12/20/2018 ***Photograph:*** 6 ***Direction:*** N ***Description:*** Overgrown fence portions along the northern property boundary.	

Attachment 1 –Photographic Log

Client:	NYSDEC	***Project Number:***	3612122251
Site Name:	Primoshield, Inc.	***Site Location:***	Utica, New York.

Photographer: Rene Aube ***Date:*** 11/28/2018 ***Photograph:*** 7 ***Direction:*** NW ***Description:*** Previous fence repair at the northwestern property boundary, vegetation encroaching on the fenceline.	
Photographer: Alex Klein ***Date:*** 12/20/2018 ***Photograph:*** 8 ***Direction:*** SE ***Description:*** Overgrown fence portions along the southern property near P-105 and the St. Vincent Street gate.	

Attachment 1 –Photographic Log

Client:	NYSDEC	***Project Number:***	3612122251
Site Name:	Primoshield, Inc.	***Site Location:***	Utica, New York.

Photographer: Rene Aube ***Date:*** 11/28/2018 ***Photograph:*** 9 ***Direction:*** n/a ***Description:*** Silty water observed at Trench 1 cleanout after the system was turned on.	
Photographer: Rene Aube ***Date:*** 11/28/2018 ***Photograph:*** 10 ***Direction:*** SW ***Description:*** Silty water observed at the southern property boundary near the Trench 1 cleanout after the system was turned on.	

ATTACHMENT 2

FIELD DATA RECORDS, LABORATORY REPORT OF ANALYSIS, AND CHAIN OF CUSTODY

Monitoring Well Inspection Form

Inspector(s): RENE AUBE
Date: 11-28-18 **Reviewed by:** RMB 12/3/18

Well ID	Ground Elevation[1] (feet msl)	Estimated Measurement Point Elevation[2] (feet msl)	Water Level (feet TOR)	Stickup on Casing (feet)	TOC to TOR (feet)	Depth to BOW (feet TOR)	Well ID Clearly Labeled (Y/N)	Well Lock (Y/N)	Cap on Well Riser (G/P/F)	Cap on Protective Casing (G/F/P)	Protective Casing (G/F/P)	Concrete Pad (G/F/P)	Comments
P-103	521.8	524.3	5.95	2.82	0.33	18.10	Y	Y	G	G	G	G	
P-105	522.7	525.1	3.81	3.03	0.48	18.22	Y	Y	G	G	G	G	
P-106S	521.1	524.8	5.00	4.12	0.28	18.50	Y	Y	G	G	G	P	CASING LOOSE IN GROUND.
P-106D	520.8	524.3	28.11	4.07	0.40	77.70	Y	Y	G	G	G	P	CASING LOOSE IN GROUND.
P-107S	519.4	522.1	4.39	3.15	0.21	17.16	Y	Y	G	G	G	P	CASING LOOSE IN GROUND, PAD FROST-HEAVED UP.
P-107D	519.3	522.0	28.57	3.25	0.49	77.73	Y	Y	G	G	G	G	
GW-01[3]	BURRIED IN SNOW.												

Notes:
1) Ground Elevation from monitoring well logs included in Monitoring Plan for Primoshield Plating January 2004.
2) Measurement Point Elevation calculated using the ground elevation and field measurements of casing stickup and the distance from the top of riser to the top of casing; therefore, the water elevations are approximate
3) GW-01 not surveyed as of 12/14/2016.

NM = Not measured
msl = mean sea level
TOC = top of casing
TOR = top of riser
BOW = bottom of well

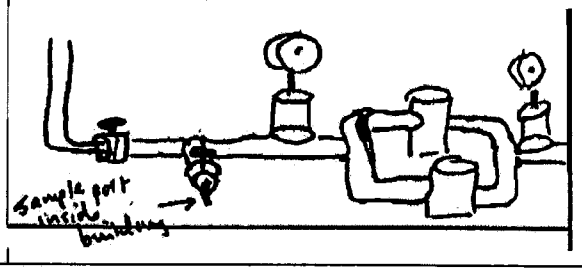
F = Fair
G = Good
N = No
P = Poor
Y = yes

EFFLUENT SAMPLING RECORD

PROJECT NAME	**Primoshield Inc.**
PROJECT NUMBER	3612122251.03
SAMPLER NAME	RENE AUBE
SAMPLER SIGNATURE	Rene Aube
CHECKED BY: RMB	**DATE:** 12/3/18

Monitoring Location	Collection System Effluent
Sample ID	633027-Effluent
Sample Date/Time	11/28/18 1415

SKETCH/NOTES:



ANALYTICAL PARAMETERS

	PARAMETER	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED
X	VOCs	624	NONE/ICE	3x40 mL
X	Metals*	200.7	HNO3/ICE	1x125 pL
X	pH	150.1	NONE/ICE	1x150 pL
X	Cyanide	9010	NAOH/ICE	1x125 pL

MACTEC

511 Congress Street, Portland Maine 04101

*- cadmium, chromium, copper, lead, nickel and zinc

TEMP 10.17 °C
SP. COND 0.544 MS/CM
pH 6.50
DO 5.51 MG/L
ORP 209.0 MV
TURB 4.22 NTU

CLEAR, NO TINT, NO ODOR.

FIELD INSTRUMENTATION CALIBRATION RECORD

PROJECT NAME: Primoshield | TASK NO: 03 | DATE: 11-28-18
PROJECT NUMBER: 3612122251 | MACTEC CREW:
PROJECT LOCATION: Utica, NY | SAMPLER NAME: RENE AUBE
WEATHER CONDITIONS (AM): — | SAMPLER SIGNATURE: Rene Aube
WEATHER CONDITIONS (PM): CLOUDY COLD WINDY L-SNOW | CHECKED BY: RMB | DATE: 12/3/18

MULTI-PARAMETER WATER QUALITY METER

METER TYPE YSI
MODEL NO. 556 MPS
UNIT ID NO. M015-10

AM CALIBRATION Start Time 1335 / End Time 1400
POST CALIBRATION CHECK Start Time 1430 / End Time 14450

	Units	Standard Value	Meter Value	*Acceptance Criteria (AM)	Standard Value	Meter Value	*Acceptance Criteria (PM)
pH (4)	SU	4.0	4.00	+/- 0.1 pH Units			
pH (7)	SU	7.0	7.00	+/- 0.1 pH Units	7.0	7.02	+/- 0.3 pH Units
pH (10)	SU	10.0	—	+/- 0.1 pH Units			
Redox	+/- mV	250 ~~240~~	230.0	+/- 10 mV	250 ~~240~~	249.1	+/- 10 mV
Conductivity	mS/cm	1.413	1.413	+/- 0.5 % of standard	1.413	1.415	+/- 5% of standard
DO (saturated)	%	100	98.7	+/- 2% of standard			
DO (saturated)	mg/L[1 (see Chart 1)]	10.87	10.89	+/- 0.2 mg/L	10.87	10.90	+/- 0.5 mg/L of standard
DO (<0.1)	mg/L	<0.1	—	< 0.5 mg/L			
Temperature	°C		9.98			9.98	
Baro. Press.	mmHg		733.1			733.1	

TURBIDITY METER

METER TYPE HACH
MODEL NO. 2100 Q
UNIT ID NO. M024-37

	Units	Standard Value	Meter Value	Standard Value	Meter Value	*Acceptance Criteria (PM)
10 Standard	NTU	10	9.98	10	9.97	+/- 5% of standard
20 Standard	NTU	20	~~19.92~~ 19.2	20	19.2	+/- 5% of standard
100 Standard	NTU	100	100	100	101	+/- 5% of standard
800 Standard	NTU	800	791	800	790	+/- 5% of standard

PHOTOIONIZATION DETECTOR

METER TYPE NA
MODEL NO. NA
UNIT ID NO. NA

	Units	Standard Value	Meter Value	Standard Value	Meter Value	
Background	ppmv	<0.1		<0.1		within 5 ppmv of BG
Span Gas	ppmv	100		100		+/- 10% of standard

O_2-LEL 4 GAS METER

METER TYPE NA
MODEL NO. NA
UNIT ID NO. NA

		Units	Standard Value	Meter Value	Standard Value	Meter Value	
Methane	%		50		50		+/- 10% of standard
O_2	%		20.9		20.9		+/- 10% of standard
H_2S	ppmv		25		25		+/- 10% of standard
CO	ppmv		50		50		+/- 10% of standard

OTHER METER

METER TYPE
MODEL NO.
UNIT ID NO.

See Notes Below for Additional Information

☑ Equipment calibrated within the Acceptance Criteria specified for each of the parameters listed above.
☐ Equipment (not) calibrated within the Acceptance Criteria specified for each of the parameters listed above**.

MATERIALS RECORD

Deionized Water Source:
Lot#/Date Produced:
Trip Blank Source:
Sample Preservatives Source:
Disposable Filter Type: 0.45 um cellulose
Calibration Fluids / Standard Source:
- DO Calibration Fluid (<0.1 mg/L)
- Other
- Other
- Other

	Cal. Standard Lot Number	Exp. Date
pH (4)	8GC347	3-20
pH (7)	8GC117	3-20
pH (10)	—	—
ORP	2340	12-22
Conductivity	8GC421	3-19
10 Turb. Stan.	A8232	11-19
20 Turb. Stan.	A8239	12-19
100 Turb. Stan.	A8236	11-19
800 Turb. Stan.	A8236	11-19
PID Span Gas	—	—
O_2-LEL Span Gas	—	—
Other	—	—

NOTES:

* = Unless otherwise noted, calibration procedures and acceptance criteria are in general accordance with USEPA Region 1 SOPs for Field Instrument Calibration (EQASOP-FieldCalibrat) and Low Stress Purging and Sampling (EQASOP-GW001), each dated 1/19/2010. Additional acceptance criteria obtained from instrument specific manufacturer recommendations.
** = If meter reading is not within acceptance criteria, clean/replace probe and re-calibrate, or use calibrated back-up meter if available. If project requirements necessitate use of the instrument, clearly document any deviations from acceptance criteria on all data sheets and log book entries.
1 = DO Saturated standard value is calculated based on Oxygen Solubility at Indicated Pressure Chart from the USEPA Region 1 SOP for Field Instrument Calibration (EQASOP-FieldCalibrat), dated 1/19/2010.

December 18, 2018 Service Request No:R1811545

Ms. Becky Brosnan
AMEC Foster Wheeler Environment & Infrastructure Inc.
511 Congress Street, Suite 200
Portland, ME 04101

Laboratory Results for: NYSDEC - Primoshield

Dear Ms.Brosnan,

Enclosed are the results of the sample(s) submitted to our laboratory November 29, 2018
For your reference, these analyses have been assigned our service request number **R1811545.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

CC: Julie Ricardi

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Narrative Documents

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Phone (585) 288-5380 Fax (585) 288-8475
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ALS Environmental

Client: AMEC Foster Wheeler E & I (MACTEC) **Service Request:** R1811545
Project: NYSDEC - Primoshield **Date Received:** 11/29/2018
Sample Matrix: Water

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier IV, validation deliverables including all summary forms and associated raw data. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt:

Two water samples were received for analysis at ALS Environmental on 11/29/2018. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at 0 to 6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature. If any samples were received for the analysis of pH, chlorine residual, sulfite, dissolved oxygen, or ferrous iron, the samples were analyzed past their holding time expiration since these analyses are required to be analyzed within 15 minutes of sampling.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by _____ Date 12/18/2018

Sample Receipt Information

ALS Environmental—Rochester Laboratory
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Phone (585) 288-5380 Fax (585) 288-8475
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Client: AMEC Foster Wheeler E & I (MACTEC) **Service Request:**R1811545
Project: NYSDEC - Primoshield/633027

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1811545-001	633027 - Effluent	11/28/2018	1415
R1811545-002	633027 - Trip Blank	11/28/2018	1000

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM 54340

ALS
1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE _____ OF _____

Project Name: NYSDEC-PRIMOSHIELD	Project Number: 633027
Project Manager: NATHAN VOGAN	Report CC:
Company/Address: WOOD E&IS 511 CONGRESS ST. PORTLAND, ME 04101 WOOD PROJ. # 3612122251	
Phone #: 207 828 3562	Email: NATHAN.VOGAN@WOODPLC.COM
Sampler's Signature: Rene Aube	Sampler's Printed Name: RENE AUBE

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 0 | | | | | 2 | | 0 | 4

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs • 8260 ☒ 624 ☐ CLP	GC/MS SVOAs • 8270 • 625	GC VOAs • 8021 • 601/602	PESTICIDES • 8081 • 608	PCBs • 8082 • 608	METALS, TOTAL (List in comments below) 200.7	METALS, DISSOLVED (List in comments below)	pH 150.1	CYANIDE, TOTAL 9010						REMARKS/ ALTERNATE DESCRIPTION
633027-EFFLUENT		11.28.18	1415	W	6	X					X		X	X						
633027-TRIPBLANK		11.28.18	1000	W	3	X														

Preservative Key
0. NONE
1. HCl
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

SPECIAL INSTRUCTIONS/COMMENTS
Metals
CADMIUM
CHROMIUM
COPPER
LEAD
NICKEL
ZINC
See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED: GW TREATMENT SYS DISCHARGE

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
X Standard (10 business days-No Surcharge)
REQUESTED REPORT DATE: _____

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
SEE QUOTE
Edata _____ Yes _____ No

INVOICE INFORMATION
PO #:
BILL TO:

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Rene Aube	Signature: Kirstie Wong	Signature	Signature	Signature	Signature
Printed Name: RENE AUBE	Printed Name: Kirstie Wong	Printed Name	Printed Name	Printed Name	Printed Name
Firm: WOOD E&IS	Firm: ALS	Firm	Firm	Firm	
Date/Time: 11.28.18 1600	Date/Time: 11/29/18 0955	Date/Time	Date/Time	Date/Time	

Distribution: White - Lab Copy; Yellow - Return to Originator

R1811545 5
AMEC Foster Wheeler Environment & Infrastructu
NYSDEC - Primoshield

Cooler Receipt and Preservation Check Form

R1811545 5
AMEC Foster Wheeler Environment & Infrastructu
NYSDEC - Primoshield

Project/Client NYSDEC - PRIMOSHIELD Folder Number

Cooler received on 11/29/18 by: KW

COURIER: ALS UPS (FEDEX) VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	(Y)	N
2	**Custody papers** properly completed (ink, signed)?	(Y)	N
3	Did all bottles arrive in good **condition** (unbroken)?	(Y)	N
4	Circle: (**Wet Ice**) **Dry Ice Gel packs** present?	(Y)	N

5a	**Perchlorate** samples have required headspace?	Y	N	(NA)
5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	Y	(N)	NA
6	Where did the bottles originate?	(ALS/ROC)	CLIENT	
7	Soil VOA received as: Bulk Encore 5035set			(NA)

8. Temperature Readings Date: 11/29/18 Time: 1003 ID: IR#7 (IR#10) From: (Temp Blank) Sample Bottle

Observed Temp (°C)	4.3						
Correction Factor (°C)	+0.4						
Corrected Temp (°C)	4.7						
Temp from:Type of bottle	Cent tube						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed (described below) Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by KW on 11/29 at 1005
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown/Preservation Check**: Date: 11/29/18 Time: 1457 by: SM

9.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO	
10.	Did all bottle labels and tags agree with custody papers?	(YES)	NO	
11.	Were correct containers used for the tests indicated?	(YES)	NO	
12.	Were 5035 vials acceptable (no extra labels, not leaking)?	YES	NO	(N/A)
13.	Air Samples: Cassettes / Tubes Intact with MS? · Canisters Pressurized		Tedlar® Bags Inflated	(N/A)

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID Adjusted	Vol. Added	Lot Added	Final pH
≥12	220617	NaOH	✓		client label					
≤2	↓	HNO_3	✓		↓					
≤2		H_2SO_4	·							
<4		$NaHSO_4$								
5-9		For 608pest			No=Notify for 3day					
Residual Chlorine (-)	•	For CN, Phenol, 625, 608pest, 522	✓		If +, contact PM to add $Na_2S_2O_3$ (625, 608, CN), ascorbic (phenol).					
		$Na_2S_2O_3$								
		ZnAcetate	-	-						
		HCl	**	**						

**VOAs and 1664 Not to be tested before analysis. Otherwise, all bottles of all samples with chemical preservatives are checked (not just representatives).

Bottle lot numbers: client label

Explain all Discrepancies/ Other Comments:

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
(PH)	SUB
SO3	MARRS
ALS	REV

Labels secondary reviewed by: SM

PC Secondary Review: JMS 11/30/18 *significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

ALS Group USA, Corp.
dba ALS Environmental

Internal Chain of Custody Report

Client: AMEC Foster Wheeler Environment & Infrastructure Inc. **Service Request:** R1811545
Project: NYSDEC - Primoshield/633027

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On
R1811545-001.01					
	SM 4500-H+ B				
		11/29/2018	1457	SMO / GLAFORCE	
R1811545-001.02					
	200.7,200.7,200.7,200.7,200.7,200.7				
		11/29/2018	1457	SMO / GLAFORCE	
		11/29/2018	1457	R-A01 / GLAFORCE	
		11/30/2018	1155	In Lab / KMCLAEN	
R1811545-001.03					
	9012B				
		11/29/2018	1457	SMO / GLAFORCE	
		11/30/2018	1409	RT000523 / GLAFORCE	
		11/30/2018	1410	R-015 / GLAFORCE	
R1811545-001.04					
	624				
		11/29/2018	1457	SMO / GLAFORCE	
		11/29/2018	1457	R-001 / GLAFORCE	
		12/4/2018	1036	In Lab / DLIPANI	
		12/4/2018	1745	R-001-S10 / DLIPANI	
R1811545-001.05					
		11/29/2018	1457	SMO / GLAFORCE	
		11/29/2018	1457	R-001 / GLAFORCE	
R1811545-001.06					
		11/29/2018	1457	SMO / GLAFORCE	
		11/29/2018	1457	R-001 / GLAFORCE	
R1811545-002.01					
	624				
		11/29/2018	1457	SMO / GLAFORCE	
		11/29/2018	1457	R-001 / GLAFORCE	
		12/4/2018	1036	In Lab / DLIPANI	
		12/4/2018	1745	R-001-S10 / DLIPANI	
R1811545-002.02					
		11/29/2018	1457	SMO / GLAFORCE	
		11/29/2018	1457	R-001 / GLAFORCE	
R1811545-002.03					
		11/29/2018	1457	SMO / GLAFORCE	
		11/29/2018	1457	R-001 / GLAFORCE	

ALS Group USA, Corp.
dba ALS Environmental

Internal Chain of Custody Report

Client: AMEC Foster Wheeler Environment & Infrastructure Inc. **Service Request:** R1811545

Project: NYSDEC - Primoshield/633027

Bottle ID	Methods	Date	Time	Sample Location / User	Disposed On

Miscellaneous Forms

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REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	Pennsylvania ID# 68-786
Delaware Approved	New Hampshire ID # 2941	Rhode Island ID # 158
DoD ELAP #65817	New York ID # 10145	Virginia #460167
Florida ID # E87674	North Carolina #676	

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to https://www.alsglobal.com/locations/americas/north-america/usa/new-york/rochester-environmental

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: AMEC Foster Wheeler E & I (MACTEC) **Service Request:** R1811545
Project: NYSDEC - Primoshield/633027

Non-Certified Analytes

Certifying Agency: New York Department of Health

Method	Matrix	Analyte
SM 4500-H+ B	Water	Temperature of pH Analysis
SM 4500-H+ B	Water	pH

Client:	AMEC Foster Wheeler E & I (MACTEC)	**Service Request:**	R1811545
Project:	NYSDEC - Primoshield/633027		

Sample Name:	633027 - Effluent	**Date Collected:**	11/28/18
Lab Code:	R1811545-001	**Date Received:**	11/29/18
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624.1		DLIPANI
9012B	MROGERSON	GNITAJOUPPI
SM 4500-H+ B		KMENGS

Sample Name:	633027 - Trip Blank	**Date Collected:**	11/28/18
Lab Code:	R1811545-002	**Date Received:**	11/29/18
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
624.1		DLIPANI

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

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Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
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Phone (585) 288-5380 Fax (585) 288-8475
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Analytical Report

Client:	AMEC Foster Wheeler E & I (MACTEC)	**Service Request:**	R1811545
Project:	NYSDEC - Primoshield/633027	**Date Collected:**	11/28/18 14:15
Sample Matrix:	Water	**Date Received:**	11/29/18 09:55
Sample Name:	633027 - Effluent	**Units:**	ug/L
Lab Code:	R1811545-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624.1

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	**10.2**	1.00	0.250	1	12/04/18 15:09	
1,1,2,2-Tetrachloroethane	1.00 U	1.00	0.200	1	12/04/18 15:09	
1,1,2-Trichloroethane	1.00 U	1.00	0.250	1	12/04/18 15:09	
1,1-Dichloroethane (1,1-DCA)	**0.500 J**	1.00	0.200	1	12/04/18 15:09	
1,1-Dichloroethene (1,1-DCE)	**1.64**	1.00	0.280	1	12/04/18 15:09	
1,2-Dichlorobenzene	1.00 U	1.00	0.200	1	12/04/18 15:09	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	12/04/18 15:09	
1,2-Dichloropropane	1.00 U	1.00	0.210	1	12/04/18 15:09	
1,3-Dichlorobenzene	1.00 U	1.00	0.200	1	12/04/18 15:09	
1,4-Dichlorobenzene	1.00 U	1.00	0.240	1	12/04/18 15:09	
2-Chloroethyl Vinyl Ether	10.0 U	10.0	0.530	1	12/04/18 15:09	
Acrolein	10.0 U	10.0	1.20	1	12/04/18 15:09	
Acrylonitrile	10.0 U	10.0	0.840	1	12/04/18 15:09	
Benzene	1.00 U	1.00	0.200	1	12/04/18 15:09	
Bromodichloromethane	1.00 U	1.00	0.310	1	12/04/18 15:09	
Bromoform	1.00 U	1.00	0.360	1	12/04/18 15:09	
Bromomethane	1.00 U	1.00	0.700	1	12/04/18 15:09	
Carbon Tetrachloride	1.00 U	1.00	0.340	1	12/04/18 15:09	
Chlorobenzene	1.00 U	1.00	0.200	1	12/04/18 15:09	
Chloroethane	1.00 U	1.00	0.230	1	12/04/18 15:09	
Chloroform	1.00 U	1.00	0.280	1	12/04/18 15:09	
Chloromethane	1.00 U	1.00	0.280	1	12/04/18 15:09	
Dibromochloromethane	1.00 U	1.00	0.200	1	12/04/18 15:09	
Methylene Chloride	1.00 U	1.00	0.470	1	12/04/18 15:09	
Ethylbenzene	1.00 U	1.00	0.200	1	12/04/18 15:09	
Tetrachloroethene (PCE)	1.00 U	1.00	0.280	1	12/04/18 15:09	
Toluene	1.00 U	1.00	0.200	1	12/04/18 15:09	
Trichloroethene (TCE)	**14.1**	1.00	0.200	1	12/04/18 15:09	
Trichlorofluoromethane (CFC 11)	1.00 U	1.00	0.270	1	12/04/18 15:09	
Vinyl Chloride	1.00 U	1.00	0.220	1	12/04/18 15:09	
cis-1,3-Dichloropropene	1.00 U	1.00	0.300	1	12/04/18 15:09	
m,p-Xylenes	2.00 U	2.00	0.210	1	12/04/18 15:09	
o-Xylene	1.00 U	1.00	0.200	1	12/04/18 15:09	
trans-1,2-Dichloroethene	1.00 U	1.00	0.260	1	12/04/18 15:09	
trans-1,3-Dichloropropene	1.00 U	1.00	0.300	1	12/04/18 15:09	

Analytical Report

Client:	AMEC Foster Wheeler E & I (MACTEC)	**Service Request:**	R1811545
Project:	NYSDEC - Primoshield/633027	**Date Collected:**	11/28/18 14:15
Sample Matrix:	Water	**Date Received:**	11/29/18 09:55
Sample Name:	633027 - Effluent	**Units:**	ug/L
Lab Code:	R1811545-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624.1

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	95	73 - 125	12/04/18 15:09	
4-Bromofluorobenzene	92	85 - 122	12/04/18 15:09	
Toluene-d8	99	87 - 121	12/04/18 15:09	

Analytical Report

Client:	AMEC Foster Wheeler E & I (MACTEC)	**Service Request:**	R1811545
Project:	NYSDEC - Primoshield/633027	**Date Collected:**	11/28/18 10:00
Sample Matrix:	Water	**Date Received:**	11/29/18 09:55
Sample Name:	633027 - Trip Blank	**Units:**	ug/L
Lab Code:	R1811545-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624.1

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
1,1,1-Trichloroethane (TCA)	1.00 U	1.00	0.250	1	12/04/18 14:47	
1,1,2,2-Tetrachloroethane	1.00 U	1.00	0.200	1	12/04/18 14:47	
1,1,2-Trichloroethane	1.00 U	1.00	0.250	1	12/04/18 14:47	
1,1-Dichloroethane (1,1-DCA)	1.00 U	1.00	0.200	1	12/04/18 14:47	
1,1-Dichloroethene (1,1-DCE)	1.00 U	1.00	0.280	1	12/04/18 14:47	
1,2-Dichlorobenzene	1.00 U	1.00	0.200	1	12/04/18 14:47	
1,2-Dichloroethane	1.00 U	1.00	0.200	1	12/04/18 14:47	
1,2-Dichloropropane	1.00 U	1.00	0.210	1	12/04/18 14:47	
1,3-Dichlorobenzene	1.00 U	1.00	0.200	1	12/04/18 14:47	
1,4-Dichlorobenzene	1.00 U	1.00	0.240	1	12/04/18 14:47	
2-Chloroethyl Vinyl Ether	10.0 U	10.0	0.530	1	12/04/18 14:47	
Acrolein	10.0 U	10.0	1.20	1	12/04/18 14:47	
Acrylonitrile	10.0 U	10.0	0.840	1	12/04/18 14:47	
Benzene	1.00 U	1.00	0.200	1	12/04/18 14:47	
Bromodichloromethane	1.00 U	1.00	0.310	1	12/04/18 14:47	
Bromoform	1.00 U	1.00	0.360	1	12/04/18 14:47	
Bromomethane	1.00 U	1.00	0.700	1	12/04/18 14:47	
Carbon Tetrachloride	1.00 U	1.00	0.340	1	12/04/18 14:47	
Chlorobenzene	1.00 U	1.00	0.200	1	12/04/18 14:47	
Chloroethane	1.00 U	1.00	0.230	1	12/04/18 14:47	
Chloroform	1.00 U	1.00	0.280	1	12/04/18 14:47	
Chloromethane	1.00 U	1.00	0.280	1	12/04/18 14:47	
Dibromochloromethane	1.00 U	1.00	0.200	1	12/04/18 14:47	
Methylene Chloride	1.00 U	1.00	0.470	1	12/04/18 14:47	
Ethylbenzene	1.00 U	1.00	0.200	1	12/04/18 14:47	
Tetrachloroethene (PCE)	1.00 U	1.00	0.280	1	12/04/18 14:47	
Toluene	1.00 U	1.00	0.200	1	12/04/18 14:47	
Trichloroethene (TCE)	1.00 U	1.00	0.200	1	12/04/18 14:47	
Trichlorofluoromethane (CFC 11)	1.00 U	1.00	0.270	1	12/04/18 14:47	
Vinyl Chloride	1.00 U	1.00	0.220	1	12/04/18 14:47	
cis-1,3-Dichloropropene	1.00 U	1.00	0.300	1	12/04/18 14:47	
m,p-Xylenes	2.00 U	2.00	0.210	1	12/04/18 14:47	
o-Xylene	1.00 U	1.00	0.200	1	12/04/18 14:47	
trans-1,2-Dichloroethene	1.00 U	1.00	0.260	1	12/04/18 14:47	
trans-1,3-Dichloropropene	1.00 U	1.00	0.300	1	12/04/18 14:47	

Analytical Report

Client:	AMEC Foster Wheeler E & I (MACTEC)	**Service Request:**	R1811545
Project:	NYSDEC - Primoshield/633027	**Date Collected:**	11/28/18 10:00
Sample Matrix:	Water	**Date Received:**	11/29/18 09:55
Sample Name:	633027 - Trip Blank	**Units:**	ug/L
Lab Code:	R1811545-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS, Unpreserved

Analysis Method: 624.1

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
1,2-Dichloroethane-d4	94	73 - 125	12/04/18 14:47	
4-Bromofluorobenzene	91	85 - 122	12/04/18 14:47	
Toluene-d8	98	87 - 121	12/04/18 14:47	

Metals

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

633027 - Effluent

Contract: R1811545

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: 633027-Efflu

Matrix (soil/water): WATER Lab Sample ID: R1811545-001

Level (low/med): LOW Date Received: 11/29/2018

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7440-43-9	Cadmium	5.0	U		P
7440-47-3	Chromium	10.0	U		P
7440-50-8	Copper	20.0	U		P
7439-92-1	Lead	50.0	U		P
7440-02-0	Nickel	40.0	U		P
7440-66-6	Zinc	20.0	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: _____

General Chemistry

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Analytical Report

Client:	AMEC Foster Wheeler E & I (MACTEC)	**Service Request:**	R1811545
Project:	NYSDEC - Primoshield/633027	**Date Collected:**	11/28/18 14:15
Sample Matrix:	Water	**Date Received:**	11/29/18 09:55
Sample Name:	633027 - Effluent	**Basis:**	NA
Lab Code:	R1811545-001		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Cyanide, Total	9012B	0.010 U	mg/L	0.010	1	12/06/18 11:19	12/04/18	
pH	SM 4500-H+ B	**7.09**	pH Units	-	1	11/30/18 15:15	NA	H
Temperature of pH Analysis	SM 4500-H+ B	**18.0**	deg C	-	1	11/30/18 15:15	NA	H

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM 54340

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE _____ OF _____

Project Name: NYSDEC-PRIMOSHIELD	Project Number: 633027
Project Manager: NATHAN VOGAN	Report CC:
Company/Address: WOOD E&IS 571 CONGRESS ST. PORTLAND, ME 04101 WOOD PROJ. # 3612122251	
Phone #: 207 828 3562	Email: NATHAN.VOGAN@WOODPLC.COM
Sampler's Signature: Rene Aube	Sampler's Printed Name: RENE AUBE

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs ○ 8260 ○ 624 ○ CLP	GC/MS SVOAs ○ 8270 ○ 625	GC VOAs ○ 8021 ○ 601/602	PESTICIDES ○ 8081 ○ 608	PCBs ○ 8082 ○ 608	METALS, TOTAL (List in comments below) 200.7	METALS, DISSOLVED (List in comments below)	pH 150.1	CYANIDE, TOTAL 9010					
PRESERVATIVE					0					2		0	4						
633027-EFFLUENT		11.28.18	1415	W	6	X				X		X	X						
633027-TRIP BLANK		11.28.18	1000	W	3	X													

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

REMARKS/ ALTERNATE DESCRIPTION

SPECIAL INSTRUCTIONS/COMMENTS
Metals
CADMIUM
CHROMIUM
COPPER
LEAD
NICKEL
ZINC
See QAPP ☐

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
X Standard (10 business days-No Surcharge)
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
_____ I. Results Only
_____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
_____ III. Results + QC and Calibration Summaries
_____ IV. Data Validation Report with Raw Data
SEE QUOTE
Edata _____ Yes _____ No

INVOICE INFORMATION
PO #
BILL TO:

STATE WHERE SAMPLES WERE COLLECTED: GW TREATMENT SYS DISCHARGE

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature: Rene Aube	Signature	Signature	Signature	Signature	Signature
Printed Name: RENE AUBE	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: WOOD E&IS	Firm	Firm	Firm	Firm	Firm
Date/Time: 11.28.18 1600	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

Distribution: White - Lab Copy; Yellow - Return to Originator