TRANSMITTAL OF SHOP DRAWINGS, EQUIPMENT DATA, MATERIAL SAMPLES, OR MANUFACTURER'S CERTIFICATES OF COMPLIANCE

For use of this form, see ER 415-1-0; the proponent agency is CECW-CE

DATE	TRANSMITTAL NO.
2/5/2021	1800-10

SECTION I - REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the contractor)

TO:	FROM:	CONTRACT NO.	THIS IS A:
Eastern Resident Office US Army Corps of Engineers 355 RXR Plaza Uniondale, New York 11556	HydroGeoLogic, Inc. 11107 Sunset Hills Road, Suite 400 Reston VA20190 USA	W912DQ-17-D-3016 W912DQ20F3045	NEW TRANSMITTAL

SPECIFICATION SEC. NO. (Cover only one section with each transmittal)	PROJECT TITLE AND LOCATION 01	THIS TRANSMITTAL IS FOR: (Check one)
1800-Operation and Maintenace of Existing Systems	LAI Superfund Site OU 1-LTRA , Port Jefferson, New York	☐ FIO ☑ GA ☐ DA ☐ CR ☐ DA/CR ☐ DA/GA ☐ S

ITEM NO. (See Note 3) a.	DESCRIPTION OF SUBMITTAL ITEM (Type size, model number/etc) b.	SUBMITTAL TYPE CODE (See Note 8) c.	NO. OF COPIES d.	CONTRACT REFERENCE DOCUMENT		FOR CONTRACTOR USE g.	VARIATION (See Instruction No. 6) h.	FOR CE USE CODE (Note 9) i.
				SPEC. PARA NO. e.	DRAWING SHEET NO. f.			
18	O&M Manual - HGL	10 - OPERATIONS AND MAINTENANCE DATA	1	1.3.1.1		A	No	A
19	Plan of Operation - HGL	01 - PRECONSTRUCTION SUBMITTALS	1	1.3.1.2		A	No	A

Remarks from Contractor

I certify that the above submitted items have been reviewed in detail and are correct and in the strict conformance with the contract drawings and specifications except as otherwise stated.

Eric Dambaugh - HydroGeoLogic, Inc.

Eric Dambaugh

Digitally signed by Eric Dambaugh
Date: 2021.02.05 08:54:22 -05'00'

NAME AND SIGNATURE OF CONTRACTOR

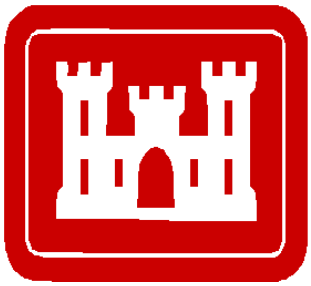
SECTION II - APPROVAL ACTION

ENCLOSURES RETURNED (List by item No.)	NAME, TITLE AND SIGNATURE OF APPROVING AUTHORITY	DATE
	BIAN.SHEWEN.1228728337 Digitally signed by BIAN.SHEWEN.1228728337 Date: 2021.03.16 10:34:59 -04'00'	3/16/2021

This page intentionally left blank.

OPERATIONS AND MAINTENANCE PLAN AND MANUAL
OLD MILL POND GROUNDWATER TREATMENT SYSTEM

LAWRENCE AVIATION INDUSTRIES SUPERFUND SITE
OPERABLE UNIT 1, LONG TERM REMEDIAL ACTION
PORT JEFFERSON, SUFFOLK COUNTY, NEW YORK



Prepared for
U.S. Army Corps of Engineers
Kansas City District

Contract. W912DQ-17-D-3016
Delivery Order: W912DQ20F3045

February 2021

HGL
HydroGeoLogic, Inc

This page was intentionally left blank.

OPERATIONS AND MAINTENANCE PLAN AND MANUAL
OLD MILL POND GROUNDWATER TREATMENT SYSTEM

LAWRENCE AVIATION INDUSTRIES SUPERFUND SITE
OPERABLE UNIT 1, LONG TERM REMEDIAL ACTION
PORT JEFFERSON, SUFFOLK COUNTY, NEW YORK

Prepared for:

U.S. Army Corps of Engineers
Kansas City District
601 E. 12th Federal Building
Kansas City, MO 64106-2896

Prepared by:

HydroGeoLogic, Inc.
Northway 10 Executive Park
313 Ushers Road
Ballston Lake, NY 12019

February 2021

This page was intentionally left blank.

This document was prepared by HydroGeoLogic, Inc. and has received the appropriate technical review and approval.

Prepared by:

Skaarup, John Digitally signed by Skaarup, John Date: 2021.02.05 08:52:37 -05'00'

2/5/2021

John Skaarup **Date**
Project Engineer/Waste Disposal Quality Control Manager

Reviewed by:

Eric Dambaugh Digitally signed by Eric Dambaugh Date: 2021.02.05 09:48:56 -05'00'

2/5/2021

Eric Dambaugh, P.G. **Date**
Contractor Quality Control System Manager

Approved by:

Dacyk, Pete Digitally signed by Dacyk, Pete Date: 2021.02.05 10:42:12 -05'00'

2/5/2021

Peter Dacyk, P.G. **Date**
Project Manager

Document Revision Log

Revision No.	Review/ Revision Date	Summary of Changes
0	2/2021	First submittal of this document

This page was intentionally left blank.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

APP	Accident Prevention Plan
cfm	cubic feet per minute
CFR	Code of Federal Regulations
cis-1,2-DCE	cis-1, 2-dichloroethene
CP	control panel
1,1-DCE	1,1-dichloroethene
F	Fahrenheit
ft	feet
GAC	granular activated carbon
gpm	gallons per minute
H&S	health and safety
HGL	HydroGeoLogic, Inc.
HMI	Human-machine interface
Hp	horsepower
lb	Pound
LE	level element
LGAC	Liquid-phase granular activated carbon
µg/L	micrograms per liter
NYSDEC	New York State Department of Environmental Conservation
NYSPDES	New York State Pollutant Discharge Elimination System
OSR	Off-Site Rule
O&M	operations and maintenance
OSHA	Occupational Safety and Health Administration
OU1	Operable Unit 1
PCE	tetrachloroethene
%	Percent
PID	photo-ionization detection
PLC	programmable logic controller
PPE	personal protective equipment
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
RAO	remedial action objective

rpm	revolutions per minute
SCADA	supervisory control and data acquisition
SDS	safety data sheet
SU	standard units
1,1,1-TCA	1,1,1-trichoroethane
TCE	trichloroethene
UFP	Uniform Federal Policy
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VC	vinyl chloride
VGAC	vapor-phase granular activated carbon
VOC	volatile organic compound

OPERATIONS AND MAINTENANCE PLAN AND MANUAL
OLD MILL POND GROUNDWATER TREATMENT SYSTEM

OPERABLE UNIT 1, LONG TERM REMEDIAL ACTION
LAWRENCE AVIATION SUPERFUND SITE
PORT JEFFERSON, NEW YORK

1.0 INTRODUCTION

This Operations and Maintenance (O&M) Plan and Manual has been prepared by HydroGeoLogic, Inc. (HGL) for the Old Mill Pond groundwater treatment system operating for Operable Unit 1 (OU1) of the Lawrence Aviation Industries Superfund Site. This document has been prepared for the U.S. Army Corps of Engineers (USACE) under contract W912DQ-17-D-3016 in accordance with Specifications Section 01800 – Operation and Maintenance of Existing Systems.

This document is intended to be the primary reference for the operation and maintenance of the groundwater treatment system. The O&M specifications for key system components are described in this document. The document must be read in conjunction with the following project planning documents:

- Environmental Protection Plan (HGL, 2020a);
- Contractor Quality Control Plan (HGL, 2020b);
- Staffing Plan (HGL, 2020c);
- Uniform Federal Policy-Quality Assurance Project Plan (UFP-QAPP) (HGL, 2021a); and
- Accident Prevention Plan (APP) (HGL, 2021b).

This document may be updated periodically to reflect any changes in operating, sampling, or reporting procedures that are introduced in the future.

1.1 O&M PLAN AND MANUAL ORGANIZATION

This O&M Plan and Manual is organized as follows:

- Section 1 Introduction - Includes the remedial action objectives (RAO), an overview of the treatment system, and a description of the project organization and staffing.
- Section 2 Site Description and History - Provides a description of the site and the historical operations.
- Section 3 Permits - Describes the permits required for system operation.
- Section 4 System Components - Describes each remedial system component and its operation.

- Section 5 System Operations - Describes the procedures for system start-up and shutdown.
- Section 6 Inspection and Maintenance - Summarizes the system maintenance requirements and inspections. This section also discusses the warrantees for the treatment plant.
- Section 7 Sampling and Monitoring Activities - Provides a summary of the system sampling and monitoring activities, including performance and compliance sampling and groundwater quality monitoring.
- Section 8 Record Keeping and Reporting - Summarizes the remedial system record keeping and reporting requirements.
- Section 9 Government Property - Explains contractor's duties to document Government property location.
- Section 10 Health and Safety - Provides a summary of the O&M health and safety requirements.
- Section 11 References - Material references within the O&M Manual.

1.2 REMEDIAL ACTION OBJECTIVES AND GOALS

The RAOs for the treatment system are to restore the groundwater aquifer to drinking water quality and prevent human ingestion of contaminated groundwater. These objectives are met by extracting contaminating groundwater, treating it through air stripping and activated carbon, and then discharging treated water to Old Mill Pond or to Old Mill creek.

The RAOs for the groundwater were developed to address the human health risks and environmental concerns and are as follows:

- Restore the groundwater aquifer to drinking water quality; and
- Prevent human ingestion of contaminated groundwater.

The objectives will be achieved through implementation of the following:

- Extraction of contaminated groundwater;
- Treatment of extracted groundwater using air stripping and granular activated carbon (GAC) adsorption; and
- Discharge of treated water to Old Mill Pond or Old Mill Creek, while meeting all required water quality standards.

The New York State Groundwater Quality Standards for site related contaminants and associated daughter products are shown in Table 1-1.

Table 1-1 New York State Groundwater Quality Standards

Parameter	New York Groundwater Quality Standards micrograms per liter (µg/L)
Vinyl Chloride (VC)	2
Tetrachloroethene (PCE)	5
Trichloroethene (TCE)	5
cis-1,2-Dichlorethene (cis-1,2-DCE)	5
1,1,1-Trichlorethane (1,1,1-TCA)	5
1,1-Dichloroethane (1,1-DCA)	5
1,1-Dichloroethene (1,1-DCE)	5
Chloroform	7

1.3 TREATMENT SYSTEM OVERVIEW

The groundwater treatment system includes three extraction wells that extract groundwater from the contaminated portion of the aquifer at various depths, for a total influent flow rate of approximately 225 to 245 gallons per minute (gpm). The combined influent groundwater enters an air stripper, where volatile organic compounds (VOC) are stripped out of the water and enter into the air stream. VOCs in the air stripper off-gas are treated by three vapor-phase granular activated carbon (VGAC) units before the effluent air is discharged to the atmosphere. The VGAC units are normally operated in series, as a lead/lag arrangement.

Process water from the air stripper is pumped through two liquid-phase granular activated carbon (LGAC) units. Residual VOCs that may be present in the process water are removed by GAC media in the two LGAC units. The LGAC units are normally operated in series, as a lead/lag arrangement. Treated water is discharged to Old Mill Pond or Old Mill Creek.

The treatment system is highly automated for control, monitoring, alarms, and shutdowns. Further details for the system components and controls, and operation of the treatment system, are included in Sections 4.0 and 5.0.

The location of the Old Mill Pond groundwater treatment system is shown on Figure 1.1. The site layout for the Old Mill Pond system is shown on Figure 1.2 and the layout of the treatment system building is shown on Figure 1.3. Details for the treatment system process water and air components, system instrumentation, and process piping are shown on Figure 1.4. The treatment system as-built drawings are presented in Appendix A.

1.4 PROJECT ORGANIZATION AND STAFFING PLAN

Treatment system construction was completed, and operation began in 2011. HGL began performing O&M activities on October 19, 2020. The project is staffed by qualified personnel to ensure that the treatment system is operated and maintained to meet the RAOs. A project

staffing plan (HGL, 2020c) outlines the proposed project staff, staff roles and certifications, subcontractors, and includes an organization chart.

A minimum of two treatment system operators will be provided to perform O&M tasks. One operator will act as the person responsible for routine plant operation, responding to system shutdowns, etc., and the second operator will serve as a backup in the event the primary operator is unavailable or additional resources are needed to complete O&M tasks. The operator will be present at the facility at a minimum of 1 day per week and will respond to alarm conditions within 2 hours of the shutdown notification. A minimum of two people will be on site for periodic O&M tasks when safety concerns warrant, in accordance the approved site-specific APP (HGL, 2021b).

2.0 SITE DESCRIPTION AND HISTORY

2.1 SITE DESCRIPTION

The Lawrence Aviation Industries Superfund Site OU1 includes two groundwater treatment systems. One system is located at the former manufacturing facility on former Lawrence Aviation Drive; it is the subject of a separate Operation and Maintenance Plan and Manual. The Old Mill Pond groundwater treatment system is the subject of this document; it is located at 103 Brook Road in Port Jefferson, Suffolk County, New York, as shown on Figure 1.2.

Site activities that do not occur within the Old Mill Pond water treatment system building, such as inspections of the Old Mill Creek discharge outfall, or monitoring well sampling, will take place within public areas in Port Jefferson.

2.2 SITE AND PROJECT HISTORY

The Lawrence Aviation Industries Site encompasses approximately 126 acres and consists of the former Lawrence Aviation Industries manufacturing facility and outlying parcels. The former facility is approximately 42 acres in size and was a titanium sheeting manufacturer. The former facility consists of 10 buildings, which are located in the southern portion of the property.

The Long Island Railroad and Sheep Pasture Road form the northern border of the former facility. To the east and west are various residential single family houses and to the south is a wooded area, beyond that is a residential area with more single family houses. The village of Port Jefferson and Port Jefferson Harbor, an embayment of Long Island Sound, lie approximately 1 mile to the north.

The section of the property currently occupied by former facility was previously a turkey farm, which was owned by Lawrence Aviation Industries' corporate predecessor, Ledkote Products Co. of New York. Ledkote produced items that included lead gutters and spouts for roof drains. In 1959, Ledkote Products Co. of New York changed names to Lawrence Aviation Industries, Inc. The former facility manufactured products from titanium sheet metal, including golf clubs and products for the aeronautics industry.

A Remedial Investigation was performed from 2003 to 2005; it documented a VOC plume originating at the former facility. The primary VOCs in the groundwater plume originating from the site are TCE and PCE. Other VOCs are present to a lesser extent, such as: chloromethane, 1,1-DCE, methyl tert-butyl ether, 1,1- DCA, cis-1,2- DCE, chloroform, and 1,1,1- TCA.

The Record of Decision was signed on September 29, 2006. The selected remedy documented in the Record of Decision included the construction of two groundwater pump and treatment systems; one located at the former facility on former Lawrence Aviation Drive, and a second system located approximately 1 mile downgradient within the village of Port Jefferson. Operation of the system at the former facility began in September 2011.

Throughout 2009 and continuing into 2010, the U.S. Environmental Protection Agency (USEPA) had several meetings with town officials in Port Jefferson, New York, to determine

the location of the off-site treatment system. After much discussion, USEPA and the village of Port Jefferson agreed upon the Old Mill Pond location for the treatment building. The parcel selected is located at the intersection of Book Road and Caroline Avenue. USEPA met and procured the services of the local architect to ensure the building conformed to the town's historical appeal and was designed within local building codes.

During the spring of 2010, USEPA and its contractors performed a cleanup of the Old Mill Pond and the downstream creek. Over 120 cubic yards of debris was removed from this area, including household trash and dead vegetation. This task was completed to prevent flooding of streets during heavy rains and to ensure the stream would be able to accept the discharge from the treatment system. Old Mill Pond treatment system construction was completed, and operation began in 2011.

2.3 SITE GEOLOGY AND HYDROLOGY

Three aquifers are present beneath the site: the Upper Glacial Aquifer, the Magothy Aquifer, and the Lloyd Sand Member of the Raritan Formation (Koszalka. 1984). The Magothy and underlying Lloyd Sand Aquifers are separated by the Raritan Clay member of the Raritan Formation. Consequently, water is interchanged more readily between the Upper Glacial and Magothy Aquifers than between the Magothy and Lloyd Aquifers. The presence of the Raritan Clay, directly underlying the Magothy Aquifer, is the lower boundary of the upper flow system. Investigations at the site have only focused on the Upper Glacial Aquifer and the top of the Magothy Aquifer.

The Magothy Aquifer consists of Upper Cretaceous Magothy deposits to the top of the confining clay unit of the Raritan Formation. It consists of fine to medium sand with interbedded silts and clays. It extends between the bottom of the Upper Glacial Aquifer and the Raritan Clay. The aquifer has a fluvial-deltaic depositional origin, is wedge shaped, and thickens progressively towards the south and southeast. The Magothy deposits were unconformably overlain by a veneer of Pliocene and Pleistocene deposits, chiefly of glacial origin (Franke and McClymonds, 1972). Deposition of the glacial deposits left the top of the Magothy Aquifer with discontinuous clay bodies in the deposits of the Pliocene-Pleistocene succession (Upper Glacial Aquifer), Smithtown Clay Unit, or Magothy Formation. This upper portion of the Magothy will be referred to as the reworked Magothy. The top of the Magothy Aquifer, which underlies the Upper Glacial Aquifer, was observed at a depth of 324 feet below ground surface (ft bgs) (99 ft below mean sea level [msl]) in stratigraphic boring ST-03. This unit also was observed in the boring for MPW-09 at a depth of 108 ft bgs (98.34 ft below msl).

The site is directly underlain by the Pleistocene-age Harbor Hill moraine, a remnant of the most recent glaciation. The moraine is up to 70 ft thick and composed primarily of sand and gravel with occasional lenses of silty sand and silt. The moraine deposits thin to the south and to the north.

At the former industrial facility, the moraine deposits are underlain by well graded fine to medium grained sands and silts with occasional layers of silt and clay or sand and gravel. The clay-rich layers observed in this zone were thin and discontinuous, likely derived from Magothy

formation materials (or Smithtown Clays), reworked and then re-deposited during the creation of the local moraine. The localized glacial activity at the site has reworked the upper layers of the Magothy Formation and left very complex heterogeneous glacial deposits at the base of the Upper Glacial Aquifer; this material is not differentiated from the reworked Magothy material described above. During the pre-design investigation, an aquifer test was performed on a test well in the area near well MPW-02. The upper 60 ft (180-240 ft bgs) of the aquifer was screened by the test well and piezometers also were screened within the zone from 205 to 225 ft bgs. The lithology observed in the screened zone was predominantly a mixture of fine to medium grained sands with silt.

The Upper Glacial Aquifer is generally under unconfined conditions and the upper limit is the water table. Synoptic groundwater elevation data collected in June 2016 was used to prepare a potentiometric surface map for the Upper Glacial Aquifer from the former facility to the Port Jefferson Harbor. The potentiometric surface map shows that groundwater flow in the vicinity of the former facility is to the north towards Port Jefferson Harbor. There is a downward gradient measured under the moraine, but moving to the north and off of the moraine towards Port Jefferson Harbor there is a significant upward hydraulic gradient driving groundwater towards the water table to discharge at Port Jefferson Harbor. The Upper Glacial Aquifer is under artesian conditions at MPW-09, which is near the Old Mill Pond facility and Old Mill Pond.

2.4 SITE CONTAMINATION

Contaminant removal actions were performed in 1990, 1991, 2009, 2014, and 2015. The remedial actions largely addressed waste materials and contaminated soil.

The June 2008 groundwater sampling results indicated the VOC plume emanated from the vicinity of monitoring wells MPW-02 and MPW-07 and migrates to the northwest. In the vicinity of multiport well MPW-10, approximately 1,000 ft from the western boundary of the former facility, groundwater flow and the VOC plume bend to the north toward Port Jefferson Harbor. There is an upward hydraulic gradient near MPW-09, indicating that contaminated groundwater is moving upward as it moves northward in the vicinity of well MPW-09 (near Old Mill Pond).

Groundwater sampling data indicates that the width of the VOC plume is generally decreasing as the LAI and Old Mill Pond groundwater treatment plants (GWTP) continue to operate. Recent data suggests that groundwater VOC contamination has separated into source area and downgradient plumes. Continued annual groundwater sampling and biennial surface water sampling events will provide additional data for ongoing evaluations of groundwater contamination from the site.

The following information summarizes VOC data for groundwater extracted by the Lawrence Aviation Industries GWTP:

- Total site-related VOC concentrations in EW-01 were detected at 251 µg/L when the sampling program began and were 197 µg/L in October 2012. VOC concentrations in EW-01 decreased to approximately 61.6 µg/L in October 2020; a reduction of approximately 75 percent (%).

- Total site-related VOC concentrations in EW-02 were detected at 154 µg/L when the sampling program began and were 37 µg/L in October 2012. VOC concentrations in EW-02 were approximately 34.7 µg/L in September 2020; a reduction of approximately 77% since the sampling program began. VOC concentrations in EW-02 started to slowly increase again in September 2017.

The following information summarizes VOC data for groundwater extracted by the Old Mill Pond GWTP:

- Total site-related VOC concentrations in EW-1 decreased from 313 µg/L since system startup in August 2011 to 73 µg/L in October 2020; a reduction of approximately 78%.
- Total site-related VOC concentrations in EW-2 decreased since system startup from 454 µg/L in August 2011 to 66 µg/L in October 2020; a reduction of approximately 86%.
- Total site-related VOC concentrations in EW-6 decreased since startup in September 2013 from 934 to 272 µg/L in October 2020; a reduction of approximately 71%.

3.0 SITE PERMITS

The Old Mill Pond treatment system operates under two permit equivalencies, as described below. Copies of the permit equivalencies are included in Appendix B.

- New York State Pollutant Discharge Elimination System (NYSPDES) Discharge Permit Equivalency. The permit equivalency regulates the treatment system effluent water quality and limits the mass and/or concentration of pollutants that may be discharged to Old Mill Pond, a Class D water body. A summary of the permit equivalent criteria is provided below in Table 3-1.

Table 3-1 NYSPDES Discharge Criteria

Parameter	Limits	Units	Frequency
Flow	150	gpm	Continuous
Flow	Monitor	gpd	Continuous
pH (determined in the field)	6.0 – 9.0	S.U.	Monthly
Chloromethane	10	µg/L	Monthly
1,1-DCA	10	µg/L	Monthly
1,1-DCE	10	µg/L	Monthly
cis-1,2-DCE	10	µg/L	Monthly
1,1,1-TCA	10	µg/L	Monthly
TCE	10	µg/L	Monthly
PCE	1.0	µg/L	Monthly
Chromium (total)	16	µg/L	Monthly
Copper	13.4	µg/L	Monthly
Iron	300	µg/L	Monthly
Zinc	120	µg/L	Monthly

Notes:
gpd – gallons per day
S.U. – standard units

- New York Air Permit Equivalent. This permit equivalency regulates Old Mill Pond treatment system air emissions. USEPA, Region 2 is listed as the permittee but monitoring and reporting is performed by the O&M contractor. The permit equivalency does not allow emissions into the atmosphere of substances in quantities that would result in air pollution. A summary of the permit equivalent criteria is provided below in Table 3-2.

Table 3-2 New York Air Permit Equivalent Criteria

Parameter	Criteria
GAC Removal Efficiency	≥ 99 percent
Air Stripper Blower Flow Rate	2,300 cubic ft per minute
Discharge of TCE	1.638 pounds per day
Discharge of PCE	0.0216 pound per day

This page intentionally left blank.

4.0 SYSTEM COMPONENTS

The treatment system consists of three active groundwater extraction wells, an 1,800 square foot, above grade building that houses the treatment system equipment, and discharge piping to Old Mill Pond and Old Mill Pond Creek. Three other extraction wells: EW-3, EW-4, and EW-5, were installed but are not in service. Water from extraction wells EW-3 and EW-4 contained elevated levels of iron. Extraction well EW-5 has a 4-inch diameter; it is too narrow to facilitate the installation of a groundwater pump. The treatment system building also contains all of the electrical distribution equipment, instrumentation and control equipment for the groundwater treatment process, and other building support systems.

4.1 EXTRACTION WELLS, PUMPS, AND PIPING

The treatment system utilizes three active groundwater extraction wells: EW-1, EW-2, and EW-6. Extraction wells EW-1 and EW-2 are located in the grassy area behind the treatment system building, within the fence that separates the treatment system area from the athletic field. Extraction well EW-6 is located on the west side of the treatment system driveway. Extraction wells EW-3 and EW-4 are standby wells because they contained elevated iron concentrations. EW-5 is not used for groundwater extraction because its diameter is too small to house a standard groundwater extraction pump. The locations of the extraction wells are shown on Figure 1.2. The well construction details are provided below in Table 4.1.

Table 4-1 Extraction Well Construction Details

Well Number	Top of Casing Elevation (ft amsl)	X Coordinate	Y Coordinate	Well Diameter (inches)	Top of Screened Interval (ft bgs)	Bottom of Screened Interval (ft bgs)	Well Depth (ft bgs)
ERT-EW-1	22.58	1240345.53	284149.95	6	120	140	139.7
ERT-EW-2	22.76	1240321.71	284149.95	6	90	110	109.4
ERT-EW-3	22.88	1240370.46	284174.31	6	90	110	109.8
ERT-EW-4	22.56	1240343.76	284193.23	6	60	80	79.5
ERT-EW-5	22.84	1240325.56	284206.51	4	20	40	39.6
ERT-EW-6	18.97	1240263.92	284057.195	6	90	120	120

Notes:
Each well is constructed of polyvinyl chloride piping.
X and Y coordinates are in New York State Plane - Long Island, Datum: NAD83, units of feet.
amsl = feet above mean sea level

The layout of the extraction wells was selected to provide hydraulic control of the groundwater plume and to recover VOC-impacted groundwater for treatment. Groundwater is extracted from each well using a submersible groundwater pump. Each pump has a variable frequency drive motor that allows the pump operation to be adjusted to the desired flow rate. A water level transducer is located in each extraction well to provide water level inputs to the supervisory,

control, and data acquisition (SCADA) system. Extraction well flow rate information is displayed by the human-machine interface (HMI).

Table 4-2 provides the design flow rates for each of the active extraction wells. The extraction well flow rates have been adjusted as necessary based on the field monitoring of water levels and an evaluation of the contaminant plume. The extraction well pumping rates will be evaluated and optimized to achieve maximum contaminant removal from the aquifer that is within the capacity of the treatment system.

The design flow rate for the extraction wells is 222 gpm. They can operate up to a flow rate of 240 gpm. The current influent flow rate for the treatment system is approximately 220 gpm.

Table 4-2 Extraction Well Design and Typical Flow Rates

Well Number	Design Flow Rate (gpm)	Typical Operation Flow Rate (gpm)
EW-1	75	60
EW-2	75	75
EW-6	77	85
Total	**227**	**220**

Inside the treatment building, pipes from the three extraction terminate at the air stripper. The individual well pipes contain sample ports for process water sampling.

Table 4-3 provides manufacturer name plate data for each of the extraction well pumps.

Table 4-3 Extraction Well Pump Design Data

	EW-1 and EW-2	EW-6
Manufacturer	Grundfos	Grundfos
Model	75S30-5	77S50-8
Size, inches	4	4
Rated flow, gpm	75	77

Table 4-4 provides manufacturer and distributor contact information.

Table 4-4 Extraction Well Pump Manufacturer and Distributor Contact Information

Manufacturer	Grundfos Pump Corporation 17100 West 118th Terrace Olathe, KS 66061 Phone: 913-227-3400 Fax: 913-227-3500
Local Area Representative	NY Pump and Motor Repair 144 Centre Street Brooklyn, NY 11231 Phone: 718-768-8700

The manufacturer's equipment information and O&M manual for the extraction well pumps are contained in Appendix C-1.

4.2 AIR STRIPPER

Ambient air is forced through the process water to remove VOCs within the air stripper. Ambient air is pushed into the air stripper sump by a blower. During the air stripping process, air and water mix vigorously within the air stripper. As a result, VOCs are transferred from the water into the countercurrent air.

The air stripper is a low-profile unit that contains three trays. Each tray contains numerous orifices to allow the water to bubble as it flows downward due to the air coming up through it, which creates a large surface area to allow the VOCs to be stripped out of the groundwater and placed in the air stream. Air stripper design data is provided below in Table 4-5.

After moving through the last tray, the process water enters into the air stripper sump. The air stripper sump water level is monitored by a level element (LE)/transmitter LE/level indicating transmitter. The air stripper discharge pump transfers the process water to the LGAC units for final treatment prior to discharge to Old Mill Pond or to Old Mill Creek.

Table 4-5 Air Stripper Design Data

Manufacturer	Hydro Quip
Model	NEEP Shallow Tray 31231-3553
Number of units	1
Number of trays	3
Maximum liquid flow rate, gpm	400 - 425
Average liquid flow rate, gpm	200 - 250
Sump capacity, gallons	308
Maximum air flow, cfm (manufacturer's design data)	2,700
Operating air flow, cfm	2,340

Note 1: Differential pressure during startup testing was measured at 24 inches water column.
cfm = cubic feet per minute

Table 4-6 provides manufacturer's contact information for the air stripper.

Table 4-6 Air Stripper Manufacturer Contact Information

Equipment Manufacturer	Hydro Quip 108 Pond Street Seekonk, MA 02703 Phone: 508-399-5771 Fax: 508-399-5352

The manufacturer's equipment information and O&M manual for the air stripper is contained in Appendix C-13.

Due to the excessive throttling of the extraction well pumps and the long extraction well header pipe distance, SCADA may sense a low flow or low-pressure alarm for the air stripper unit, just

before the extraction well pump is able to satisfy the flow and pressure set points. It is recommended that the operator quickly reset the alarm to restart the pump, which will allow the set points to be met before the alarm conditions occur again.

Periodically, the operator will inspect the air stripper trays for solids buildup through the inspection ports. If buildup of solids is observed, the treatment system will need to be shut down to allow cleaning of the air stripper trays.

During the warm humid summer months, the water condensation will form on the exterior of the air stripper. The plant operator shall sweep any condensation that has dripped onto the floor into the system sump, to prevent a slip hazard.

4.3 AIR SRIPPER BLOWER

The air stripper blower forces air through the air stripper trays. The blower transfers the VOC-laden air to the VGAC units for treatment prior to being discharged to the atmosphere.

The blower is designed to raise the temperature of the discharge air through the heat of compression. This rise in temperature reduces the relative humidity of the vapor air to approximately 50% relative humidity, which is optimal for carbon adsorption through the VGAC units.

Table 4-7 Air Stripper Blower Design Data

Manufacturer	American Fan Company
Model (motor)	A442B, Frame #245T
Number of units	1
Motor, hp	15
Motor speed, rpm	3,510
Blower fan speed, rpm	3,500
Electrical requirements	3 phase

Note 1: Values from air stripper and blower approved shop drawing.
Note 2: During normal operations, the blower discharge temperature will range from 96 Fahrenheit (F) to 101F.
Hp = horsepower
rpm = revolutions per minute

Table 4-8 provides manufacturer's contact information for the blower.

Table 4-8 Air Stripper Blower Manufacturer Contact Information

Equipment Manufacturer	U.S. Electric Motors 5693 E. Shelby Drive. Memphis, TN 38141 Phone: 800-233-6890
Local Area Representative	Same (stocking distributor)

The manufacturer's equipment information and O&M manual for the blower is contained in Appendix C-13.

4.4 VGAC UNITS

Three VGAC units treat the air stripper off-gas to meet the air permit equivalency limits. Each of the VGAC units contains 2,000 pounds (lbs) of virgin coconut carbon for a total of 6,000 lbs of carbon media. The VGAC carbon media adsorbs the VOCs as the air stream passes through the carbon beds. Each of the VGAC units has differential pressure indicating transmitter to monitor the differential pressure across the carbon vessel.

The VGAC units are operated in series operation (lead/lag configuration). Treated air is discharged into the atmosphere through a 6-inch stack that extends through the roof of the treatment system building.

Table 4-9 Vapor Phase Carbon Media Design Data

Manufacturer	Cabot Norit
Model	Norit Vapure® 410
Mesh size	4 x 10
Material	Coconut Shell
Expected Contaminant Removal, %	≥ 99

Table 4-10 Vapor Phase Carbon Media Replacement Contact Information

Media Replacement Firm	TetraSolv Services 1424 Abraham Drive Anderson, IN 46013 Phone: 765-643-3941

4.5 AIR STRIPPER DISCHARGE PUMP

Process water from the air stripper is pumped through two LGAC units to remove any residual VOC prior to discharge to Old Mill Pond or to Old Mill Pond Creek. The air stripper discharge pump is powered by a variable-frequency drive motor to allow adjustments for the speed of the pump, to maintain the water level in the air stripper sump, and to maintain water flow through the LGAC units.

Table 4-11 Air Stripper Discharge Pump Design Data

Manufacturer	Goulds Pumps
Model	8SH2M52EO
Number of units	1

Capacity (gpm)	425
Motor, hp	15
Electrical requirements	3-phase

Table 4-12 provides manufacturer's contact information for the air stripper discharge pump.

Table 4-12 Air Stripper Discharge Pump Manufacturer Contact Information

Equipment Manufacturer	ITT Goulds Pumps 240 Fall Street Seneca Falls, NY 13148 Phone: 315-568-2811
Local Area Representative	Hayes Pump Inc. 295 Fairfield Avenue. Fairfield, NJ 07004 Phone: 973-808-0606

The manufacturer's equipment information and O&M manual for the air stripper discharge pump are contained in Appendix C-10.

4.6 LGAC UNITS

Two LGAC units treat process water from the air stripper to ensure that the discharge permit equivalency requirements are achieved. The process water enters each LGAC unit through a 6-inch diameter polyvinyl chloride line at the top of the unit and flows down through the carbon media before exiting through a 6-inch line at the bottom of the unit.

Each of the LGAC units contains 2,000 lbs of virgin coconut carbon for a total of 4,000 lbs of carbon media. The carbon media adsorbs VOC as the water passed through each carbon bed. Each of the LGAC units have a differential pressure transducer that monitors the differential pressure across the carbon vessels.

The LGAC units can be operated in parallel or in series. The normal operation of the LGAC units is in series (lead/lag configuration). The treated water is discharged into the aquifer through a 6-inch line that goes to Old Mill Pond or to Old Mill Pond Creek.

Table 4-13 Liquid Phase Carbon Media Design Data

Manufacturer	TetraSolv Services
Model	Stags
Mesh size	12x30
Material	Coconut Shell
Expected Contaminant Removal, %	≥ 99

Table 4-14 Liquid Phase Carbon Media Replacement Contact Information

Media Replacement Firm	TetraSolv Services 1424 Abraham Drive Anderson, IN 46013 Phone: 765-643-3941

The LGAC units also remove particulate matter that may be present in the process water as it passes through the units.

During the warm humid summer months, condensation will form on exterior of the LGAC units. The plant operator shall sweep any condensation that has dripped on to the floor into the treatment system sump to prevent a slip hazard.

4.7 PARTICLE FILTRATION UNITS

The treatment system includes two particle filter units to remove particulate matter from water that is processed by the air stripper. The particle filters prevent the media in the downstream LGAC units from being fouled by particulates. Each unit houses one size 2 bag filter; 10 micron bag filters are used. Typically, the bag filters are replaced once each month.

4.8 PROCESS AREA SUMP PUMP

The process area includes a sump to collect water that is drained from treatment system components for maintenance activities, etc. The sump contains a submersible sump pump to transfer water into the treatment system. Sump Pump characteristics are summarized below in Table 4.15.

Table 4-15 Sump Pump Characteristics

Sump Pump	Wayne Pumps, www.waynepumps.com Model CDU1000 Single Phase Motor 1 hp 120 volts 5,400 gallons per hour capacity
Distributor	MJN True Value 691 Route 25a Miller Place, NY 11764 Phone: 631-821-3567

4.9 DISCHARGE LOCATIONS

After the final treatment of the groundwater in the LGAC units, the effluent is directed to Old Mill Pond, located adjacent to the treatment system building. The effluent can be directed to an

alternate discharge point located on Old Mill Pond Creek, if water levels in Old Mill Pond are too high. The alternate discharge location is approximately 1,200 ft northeast of the treatment system building, at a culvert near Barnum Avenue. The discharge locations are depicted on Figure 1.2.

4.10 PROCESS CONTROL AND OPERATIONS

The facility equipment is primarily monitored and controlled via a control panel located in the control room inside the treatment system building. This panel is equipped with a programmable logic controller (PLC) system to execute automatic control logic and a HMI to display equipment status, alarms, and input/output diagnostics; to enter operational parameters (operating mode [automatic or manual], set points, etc.); to trend data; and to historically log data. The system can be remotely accessed via a secure internet connection.

The color of motors, valves, and level switches indicates their current operating status. For valves and motors, green indicates operational/within the established parameters and gray indicates not operating/outside of established parameters. For the air stripper level switches, blue indicates the water level is rising and black indicates the water level is decreasing. For the pond and creek discharge level switches, green indicates the water level is decreasing and black indicates the water level is rising.

Extraction well pumps are controlled by the water level in the well, the status of the air stripper, and the established flow rate set point on the HMI. The well pumps will turn off if the water level decreases to the established "stop" water level set point, or if the air stripper operation is shut down or disabled by a high water level alarm.

The air stripper and its blower will be operational if any of the extraction well pumps are active and will turn off if all the extraction well pumps are off. The air stripper will shut down if the sump water level decreases to the established "stop" water level set point.

The system will try to discharge to Old Mill Pond and Old Mill Creek simultaneously. If the Old Mill Pond level switch indicates a high water level in the pond, the system will close the pond discharge valve. The air stripper will not discharge water if both of the pond and creek discharge valves are closed.

The manufacturer's equipment information and O&M manuals for instrumentation and controls system items are included in Appendix C.

The Old Mill Pond treatment system has multiple alarms to shut down the treatment process:

- Air Stripper No Air Flow: A no flow issue indicates a blower failure or clogged VGAC units and stops the extraction wells from pumping more contaminated water into the air stripper. A controlled system shutdown will occur if a no flow condition is detected.
- Air Stripper Sump Water High Level: A high water level alarm in the sump indicates an air stripper discharge pump failure or clogging of the particle filter units. A controlled system shutdown will occur if a water high level condition is detected.

4.11 ELECTRICAL DISTRIBUTION

The treatment system receives its power from a single 480-volt feed from Public Service Energy Group (PSEG Long Island). The power is fed to a single motor control center where the power is branched out to the individual loads. The treatment system is not equipped with any alternative power sources to power the treatment system or building.
As-Built drawings "Power Connection #1" and "Power Connection #2" in Appendix A illustrate the power distribution and the power panel schedule.

The site also has telephone and internet communications. The internet is used to remotely monitor the treatment system, and provide a way for the SCADA system to call out to operations personnel when an alarm condition occurs. The telephone communication service is voice over internet protocol, provided by Optimum.

4.12 HEATING, VENTILATION, AND AIR CONDITIONING

The heating system in the treatment system building consists of a geothermal heater. The treatment system building also contains exhaust fans for regulating the building temperature in warm weather.

4.13 POTABLE WATER

Potable water is used for a variety of uses in the treatment building and system. In the treatment building, the potable water system is protected by one reduced pressure zone backflow prevention device. The device prevents contamination of the potable water distribution system by the treatment system if a siphon is created. The primary use of potable water is for the restroom in the treatment building.

4.14 BUILDING AND LANDSCAPING

The treatment system building is approximately 1,800 square feet in area. The treatment building was designed and constructed to match the appearance of buildings in Port Jefferson. The sanitary system is composed of gravity lines. The floor drain in the bathroom discharges to the sanitary system and the floor drain the process room drains to the building sump.

When pumping out the building sump, to increase the flow rate of the building sump pump, the flow from the extraction wells can be temporarily reduced. This will allow the sump pump to increase the amount of water it pumps into the air stripper. After the building sump pump is stopped, the extraction well pumps should be checked and their flow rates may need to be adjusted to ensure that they are pumping at their desired flow rates.

The perimeter fence, locks, and other security items should be checked for integrity and operation. The surrounding vegetation will be kept in a neat and orderly manner to avoid complaints from neighbors and minimize any insect or wildlife issues with the building or the equipment. Specifically, the contractor will:

- Cut brush and weeds in all areas within the site boundaries as necessary to maintain proper working conditions and site appearance, including mowing of all grassed areas a minimum of six times per year within the fence and adjacent to the access road.

- Properly dispose of all litter, cut brush and weeds, and other similar on-site generated waste.
- Immediately repair minor on-site soil erosion within the site fence to prevent major erosion problems.
- Maintain a litter-free site at all times.
- Maintain neat and clean work areas and equipment at all times.
- Keep trash, debris, and rubbish picked up from the floor, walkways, stairways, and passageways.
- Keep walkways free of grease and oil.
- Keep all roads, drives, and parking areas clear and clean; provide repairs to the parking lot and other areas, if damaged.
- Provide snow removal for the parking area and building entrance to afford continuous operations. If required, ice should be physically removed or have salt placed on it to melt the ice to prevent slips and falls.

4.15 ONE-CALL MARKOUTS

The contractor shall be responsible for performing New York One-Call markouts for the underground extraction well headers and the discharge piping in response to markout requests. Operations personnel receive notifications from New York 811 that provide notice of any planned excavation activities in the area of the GWTP or associated buried utilities. Markouts shall be conducted promptly.

5.0 SYSTEM OPERATIONS

This section of this O&M Manual provides guidance on system startup, shutdown, and what actions to complete in case of an emergency. This section also contains guidance for what actions are required to perform a GAC media change out for the VGAC and LGAC units.

5.1 INITIAL CONDITIONS

The following items are assumed to be completed prior to any startup of the treatment system.

- Power is available, and all electrical breakers are in their correct position;
- All valves are in their correct position;
- Potable water is available;
- All machinery safety guards are installed;
- All maintenance and repairs are complete;
- All instrumentation is operating correctly;
- All programming is complete and correct;
- Carbon is loaded into all GAC units; and
- All equipment is ready for operation.

5.2 STARTUP SEQUENCE

During system startup and restart, the system will require a manual restart. This manual startup procedure will involve a series of steps that the PLC will sequence to startup the system. The steps required for the startup of the treatment system include the following:

1. Place the air stripper blower in “Automatic” mode on the HMI.
2. Start the air stripper blower via the HMI.
3. Check the air stripper blower pressure and ensure it is within the normal operating range.
4. Select the lead/lag positioning for each of the GAC units.
5. Place the air stripper discharge pump in “Automatic” mode via the HMI.
6. Start the applicable extraction well pumps through the HMI.
7. Vent the individual extraction well pumps through their manual vents after startup of the individual pump.
8. Check that all pressure and flow indications match expected values for the extraction well pumps and the air stripper blower.
9. Check that the air stripper discharge pump starts and maintain the sump level in the air stripper.

10. Check the differential pressure across all the GAC units to verify the units are not clogged.
11. Check the injection well water level to ensure that the treated water is being injected into the aquifer.
12. Complete operator round sheets and check that all parameters are within their normal expected values.
13. Conduct operational groundwater quality monitoring.
14. Test external communications by triggering a building entry alarm. This should send an alarm notification without affecting the treatment system processes.

5.3 SHUTDOWN SEQUENCE

Shutdown sequences are presented below.

5.3.1 Operator Shutdown

When an operator determines a shutdown is required, the following actions shall be taken.

1. Stop all extraction well pumps via the HMI. Check to ensure all flow rates and pressures from the extraction wells are indicating "zero."
2. After 2 minutes, stop the air stripper discharge pump via the HMI. Check to ensure the water flow rate into the LGAC units is indicating "zero." This will make sure no water is being discharged and that there is no siphoning from the discharge piping into the treatment system.
3. Wait 5 minutes, then stop the air stripper blower via the HMI. Check that the air flow is indicating "zero."

5.3.2 Controlled System Shut Down

When the PLC determines that a controlled system shut down is required, the PLC performs the following actions:

1. Stop all of the extraction well pumps.
2. Stop the air stripper discharge pump.
3. After an operator-adjustable time delay, the air stripper blower will be shut down.

5.3.3 Extended Shut Down

When the treatment system has to be shut down for long period of time (greater than 1 week), an extended shut down procedure needs to be completed:

1. Complete the actions described in Section 5.3.1 or 5.3.2 of this document.
2. Open all electrical power supply breakers to all of the extraction well pumps.
3. Open the electrical power supply breakers to the air stripper discharge pump.

4. Open the electrical power supply breaker for the air stripper blower.
5. Drain the process piping of water to the maximum extent possible by opening and shutting various vent and drain valves.

5.4 SWITCHING TREATMENT PLANT DISCHARGE LOCATIONS

5.4.1 Discharging to the Old Mill Creek

At times, there may be a need to have the treatment system discharge to Old Mill Creek instead of Old Mill Pond. If this need arises, the steps below will be used to direct the system effluent water to the Old Mill Creek.

1. Perform an operator-initiated plant shut down.
    a. Wait for the air stripper blower to automatically stop after its set run time.
    b. Wait for the water in the air stripper trays to migrate into the air stripper sump.
    c. Wait for the air stripper discharge pump to come to the designed stop set level.
2. With the plant shut down, record the values from the Old Mill Pond discharge flow meter totalizer and the Old Mill Creek flow meter totalizer.
3. Close the Old Mill Pond discharge valve.
4. Open the Old Mill Creek discharge valve.
5. Perform normal system startup activities:
    a. Observe that water is flowing to the air stripper and that the air stripper blower started up.
    b. Wait for the air stripper sump level to reach the start set point for the LGAC feed pumps.
    c. With the air stripper discharge pump operating, watch for discharge to Old Mill Creek.
6. Verify that water flow is being recorded by the Old Mill Creek flow meter.
7. Check that no water is going to Old Mill Pond.

The treatment system will continue to treat the water and discharge the effluent to Old Mill Creek.

5.4.2 Discharging to Old Mill Pond

To change the treatment system from Old Mill Creek discharge to Old Mill Pond discharge, follow the steps below:

1. Perform an operator-initiated system shut down.
    a. Wait for the air stripper blower to automatically stop after its set run time.
    b. Wait for the water in the air stripper trays to migrate into the air stripper sump.

   c. Wait for the air stripper discharge pump to come to the designed stop level set point.

2. With the plant shut down, record the values on the Old Mill Pond discharge flow meter totalizer and the Old Mill Creek flow meter totalizer.
3. Close the Old Mill Creek discharge valve.
4. Open the Old Mill Pond discharge valve.
5. Perform normal system startup activities:
   a. Observe water is flowing to the air stripper and that the blower started up.
   b. Wait for the air stripper sump level to reach the start set point for the air stripper discharge pump.
   c. With the air stripper discharge pump operating, watch for discharge to Old Mill Pond.
6. Check that no water flow is going to Old Mill Creek.

The treatment system will be discharging to Old Mill Pond.

5.5 EMERGENCY PROCEDURES

Emergency procedures provided below should be followed in the event of the following circumstances. USACE shall be notified immediately of all incidents and shutdowns.

5.5.1 Equipment Malfunction

During normal operations, the PLC will determine if operational parameters are out of specification based on the set points of the various instruments and the control logic. If the PLC determines that any item is not functioning correctly, it will complete a controlled shut down of the treatment system (please refer to Section 5.3.2). Malfunctioning extraction well pumps will automatically shut down via the low flow alarm or the pump low pressure alarm. The PLC will send automated email messages to system operators reporting the alarm, and operations will remain suspended until the issue is resolved and cleared from the PLC.

System operators who will be notified by automated email messages currently include USACE personnel and HGL operators.

5.5.2 Spill

The treatment system building includes a sump that is equipped with a high level float switch. In the event of a liquid spill within the O&M building, liquid will collect within the sump. If the high level float switch is triggered, the PLC will complete a controlled shut down of the treatment system. The PLC will send automated email messages to system operators reporting the alarm, and operations will remain suspended until the issue is resolved and cleared from the PLC. A spill may occur due to errors associated with automated controls for pumping rates, air stripper sump level, or may result from damage to system equipment or piping.

5.5.3 Power Failure

In the event of power loss to the treatment system building, treatment plant operations will cease, and the PLC will send automated email messages to system operators reporting the alarm. Operations will remain suspended until power is restored and the system is restarted from the PLC.

5.5.4 Manual Shutdown

In the event of an emergency observed by the operator, which does not trigger a controlled shutdown, the facility will be shut down manually by one of two methods: 1) an operator-initiated shutdown at the HMI performed in accordance with Section 5.3.1; or 2) an emergency shut down at the main breaker switch.

If at any time, the operator observes an emergency, becomes aware of a hazard to personnel, or believes that a piece of equipment is not operating correctly, they should shut down the treatment system. System shut down at the HMI will be performed in accordance with Section 5.3.1, if time allows and the operator can safely access the HMI. Alternately, if time or hazardous conditions do not allow the operator to shut down the facility through the HMI, the operator will go to the main breaker switch in the control room and flip the switch to the "off" position.

5.5.5 Evacuation

Depending on the emergency, personnel may need to evacuate the facility. Personnel should evacuate the facility and perform a head count of personnel that were on site at the time of the emergency. Personnel will gather at the dirt and gravel vacant lot that is located north of the site, at the intersection of Brook Road and West Broadway. Personnel will contact appropriate emergency response personnel as described herein and in the site-specific APP.

5.5.6 Emergency Contact Information and Hospital Location

In the event of a situation or unplanned occurrence requiring assistance, the appropriate contact(s) should be made from the following list:

Table 5-1 Emergency Contact Information

Emergency Contact	Phone Number(s)
Fire/Police/Ambulance/Paramedics - Emergency	911
Emergency Hospital: St. Charles Hospital 200 Belle Terre Road, Port Jefferson, NY 11777	631-474-6000
Poison Control Center	800-222-1222
National Response Center (All spills in reportable quantities)	800-424-8802
NYSDEC Spill Control	800-457-7362
USEPA Remedial Project Manager Maria Jon	212-637-3967

Emergency Contact	Phone Number(s)
USACE KC District Project Manager Jason L'Ecuyer	816-389-3908
USACE KC District Engineer Thomas Zelesky	816-389-3919
USACE NY District Project Engineer/COR Shewen Bian	917-790-6251
USACE NY District Project Manager Rich Gajdek	917-790-8234
USACE Project Engineer/COR Alternate Mike Ortega	917-790-6252
USACE NY Project Manager Kinjal Shah	917-790-8233
HGL 24/7 Emergency Number	800-341-3647
Program Manager Lisa Tholl	913-378-2318
Project Manager Pete Dacyk	518-877-0390
Superintendent/Alternate SSHO James Russell	609-774-4212
Corporate H&S Director/Safety and Health Manager Steve Davis, CSP, CIH	865-659-0499
WorkCare 24/7 Incident Intervention service (First aid and injury management guidance)	888-449-7787

NYSDEC = New York State Department of Environmental Conservation

The nearest hospital is St. Charles Hospital, which is located at 200 Belle Terre Road, Port Jefferson, New York. A map and directions to the hospital are provided in Appendix E and are posted in the treatment system building control room. General first aid equipment is provided on site; however, please seek immediate medical assistance, if necessary.

When the cause of the emergency situation has been determined and repaired or corrected, then the operator may restart operations at the facility using the process designated within this document.

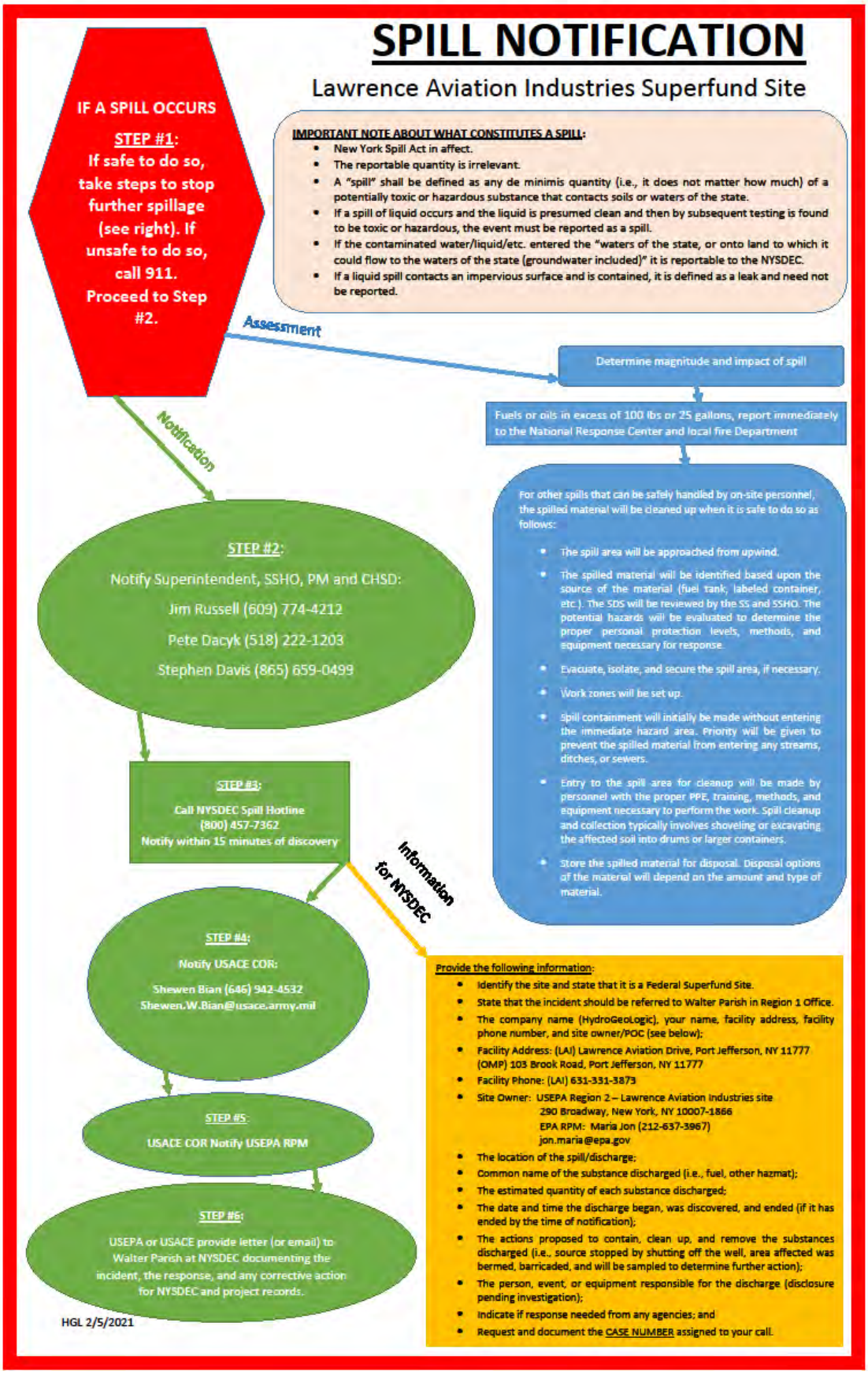
5.5.7 Reporting Permit Non-Compliance, Chemical Spills, and Release of Contaminants to Groundwater

In the event of permit non-compliance, injection well malfunction, or other catastrophic failure of the treatment system, the NYSDEC needs to be notified of the event by calling 1-800-457-7362. NYSDEC must be notified within 2 hours of the commencement of the discharge or of becoming aware of the discharge in the event of permit non-compliance. All information that is provided during the phone call should be recorded in the facility log book. In addition, USACE

will be orally notified as soon as possible, but no later than 24 hours of the event. Written notification will be provided to USACE and USEPA within 72 hours of the event.
Notifications should contain the following information:

- Chemical name (whether the material is extremely hazardous or a Comprehensive Environmental Response, Compensation and Liability Act substance);
- Exact (if known) or estimated quantity of release;
- Time and duration of incident;
- Medium or media into which the release occurred;
- Any known or anticipated health effects and advice regarding medical attention, precautions taken as a result of the release; and
- Name and phone number of the person who may be contacted for further information.

Release notification must be done immediately. If a facility operator fails to report a release, he or she may be subject to penalties. Written follow-up notifications should be submitted no later than 30 days following the release incident. The actual telephone release notification(s) should be made as described above.


SPILL NOTIFICATION
Lawrence Aviation Industries Superfund Site
IF A SPILL OCCURS
STEP #1:
If safe to do so, take steps to stop further spillage (see right). If unsafe to do so, call 911.
Proceed to Step #2.
IMPORTANT NOTE ABOUT WHAT CONSTITUTES A SPILL:
New York Spill Act in affect.
The reportable quantity is irrelevant.
A "spill" shall be defined as any de minimis quantity (i.e., it does not matter how much) of a potentially toxic or hazardous substance that contacts soils or waters of the state.
If a spill of liquid occurs and the liquid is presumed clean and then by subsequent testing is found to be toxic or hazardous, the event must be reported as a spill.
If the contaminated water/liquid/etc. entered the "waters of the state, or onto land to which it could flow to the waters of the state (groundwater included)" it is reportable to the NYSDEC.
If a liquid spill contacts an impervious surface and is contained, it is defined as a leak and need not be reported.
Assessment
Determine magnitude and impact of spill
Fuels or oils in excess of 100 lbs or 25 gallons, report immediately to the National Response Center and local fire Department
Notification
For other spills that can be safely handled by on-site personnel, the spilled material will be cleaned up when it is safe to do so as follows:
The spill area will be approached from upwind.
The spilled material will be identified based upon the source of the material (fuel tank, labeled container, etc.). The SDS will be reviewed by the SS and SSHO. The potential hazards will be evaluated to determine the proper personal protection levels, methods, and equipment necessary for response.
Evacuate, isolate, and secure the spill area, if necessary.
Work zones will be set up.
Spill containment will initially be made without entering the immediate hazard area. Priority will be given to prevent the spilled material from entering any streams, ditches, or sewers.
Entry to the spill area for cleanup will be made by personnel with the proper PPE, training, methods, and equipment necessary to perform the work. Spill cleanup and collection typically involves shoveling or excavating the affected soil into drums or larger containers.
Store the spilled material for disposal. Disposal options of the material will depend on the amount and type of material.
STEP #2:
Notify Superintendent, SSHO, PM and CHSD:
Jim Russell (609) 774-4212
Pete Dacyk (518) 222-1203
Stephen Davis (865) 659-0499
STEP #3:
Call NYSDEC Spill Hotline
(800) 457-7362
Notify within 15 minutes of discovery
Information for NYSDEC
Provide the following information:
Identify the site and state that it is a Federal Superfund Site.
State that the incident should be referred to Walter Parish in Region 1 Office.
The company name (HydroGeoLogic), your name, facility address, facility phone number, and site owner/POC (see below);
Facility Address: (LAI) Lawrence Aviation Drive, Port Jefferson, NY 11777
(OMP) 103 Brook Road, Port Jefferson, NY 11777
Facility Phone: (LAI) 631-331-3873
Site Owner: USEPA Region 2 – Lawrence Aviation Industries site
290 Broadway, New York, NY 10007-1866
EPA RPM: Maria Jon (212-637-3967)
jon.maria@epa.gov
The location of the spill/discharge;
Common name of the substance discharged (i.e., fuel, other hazmat);
The estimated quantity of each substance discharged;
The date and time the discharge began, was discovered, and ended (if it has ended by the time of notification);
The actions proposed to contain, clean up, and remove the substances discharged (i.e., source stopped by shutting off the well, area affected was bermed, barricaded, and will be sampled to determine further action);
The person, event, or equipment responsible for the discharge (disclosure pending investigation);
Indicate if response needed from any agencies; and
Request and document the CASE NUMBER assigned to your call.
STEP #4:
Notify USACE COR:
Shewen Bian (646) 942-4532
Shewen.W.Bian@usace.army.mil
STEP #5:
USACE COR Notify USEPA RPM
STEP #6:
USEPA or USACE provide letter (or email) to Walter Parish at NYSDEC documenting the incident, the response, and any corrective action for NYSDEC and project records.
HGL 2/5/2021

5.6 CARBON CHANGE OUT EVENTS

5.6.1 VGAC

The Old Mill Pond treatment system has three VGAC units that operate in a lead/lag/lag arrangement. Monthly process air sampling results are used to determine when a carbon change out event is required. VGAC media change out events are scheduled when the VOC removal for one or more units begins to decrease significantly. The media in multiple VGAC units can be replaced during a change out event. VOC concentrations are field monitored weekly with a photo-ionization detection (PID) to provide additional data.

The procedure for completing a VGAC media change out for the lead VGAC unit is provided below:

1. Shut down the treatment system.
2. Lockout/tagout the lead VGAC unit following all applicable local, state, and Federal laws.
3. Open the access hatches to the lead VGAC unit.
    a. Prior to opening the GAC unit, staff must wear all appropriate personal protective equipment (PPE) as required by the VGAC Safety Data Sheets (SDS).
4. Use a vacuum truck or other piece of equipment, carefully remove the spent VGAC media and place it in appropriate containers that are United Nations/Department of Transportation approved for transportation to an off-site regeneration facility. Note: Verify USEPA Off-Site Rule (OSR) procedures have been followed (the contractor has submitted regeneration facility information to USEPA OSR personnel and received approval).
5. Label the spent VGAC media containers and include a non-hazardous manifest for proper documentation of the shipment.
6. Use a flash light to inspect the interior of the VGAC unit. Ensure all of the air distribution manifolds are installed and are not damaged.
    a. If damage is observed, implement confined space entry procedures, including having an entrant and attendant/supervisor on site, conduct air monitoring within the VGAC unit, and perform a confined space entry to repair or replace air distribution manifolds as necessary.
7. Using an appropriate method, place 2,000 lbs of fresh, reactivated VGAC media into the vessel. Be certain to exercise caution while installing the fresh media, to avoid damaging the air distribution manifolds within the VGAC unit.
8. Shut and tighten all access hatches.
9. Start the air stripper blower in “Manual” mode and inspect all of the VGAC hatches for leaks using soap bubbles to check for air leaks.
    a. Record the differential pressure across each of the lead and lag VGAC units.
    b. Address any leaks that may have been found prior to system start up.

10. Stop the air stripper blower and place it in "Automatic" control mode at the operator interface terminal.
11. Start the treatment system.

5.6.2 LGAC

A carbon change out event is required when 75% or more of the influent TCE concentration breaks through the lead carbon unit. When breakthrough is approaching, a subcontractor should be scheduled to replace the spent LGAC media with fresh virgin LGAC media. Also, if any effluent sample at any time exceed permitted discharge limits, the treatment system will be shut down and the LGAC will be replaced. The procedure for completing a LGAC media change out event for the lead LGAC unit is provided below.

1. One week before the scheduled change out event, isolate the lead LGAC unit by changing the process water valve positions to route process water through the lag LGAC unit. Lockout/tagout the lead LGAC unit following all applicable local, state, and Federal laws.
2. Allow water to drain from the lead LGAC unit for one to several days. Open the access hatches to the lead LGAC, if desired, to facilitate the water draining.
3. Prior to beginning the change out activities on the day of the event, staff must wear appropriate PPE as required by the LGAC SDS.
4. Using a vacuum truck or other piece of equipment, carefully remove the spent LGAC and place it in appropriate containers that are United Nations/Department of Transportation approved for transportation to an off-site regeneration facility. Note: Verify USEPA OSR procedures have been followed (the contractor has submitted regeneration facility information to USEPA OSR personnel and received approval).
    a. If the LGAC media is difficult to remove, implement confined space entry procedures, including having an entrant and attendant/supervisor on site, conduct air monitoring within the LGAC unit, and perform a confined space entry. Use hand tools such as hammers and shovels to break up the LGAC media so it can be removed. Exercise caution to avoid damaging the water distribution manifold.
5. Label the spent LGAC containers and include a non-hazardous manifest for proper documentation of the shipment.
6. Use a flash light to inspect the interior of the LGAC unit. Ensure that all water distribution manifold and media retention screens are installed and not damaged.
    a. If damage is observed, perform a confined space entry to repair or replace distribution manifold pieces as necessary.
7. Fill one third of the unit with water before placing fresh media in the unit. The water will act as a buffer for the distribution manifold. Place 2,000 lbs of fresh, virgin LGAC media into the vessel in accordance with the vendor's O&M manual.
8. Shut and tighten all access hatches.

9. Change process water piping valve positions to change the lead LGAC unit position into the lag position. The former lag LGAC unit containing relatively older LGAC media will be changed to the lead position.
10. Start the treatment system.
    a. Record the differential pressure across each LGAC unit.

This page was intentionally left blank.

6.0 INSPECTIONS AND MAINTENANCE

The treatment system requires periodic monitoring, inspections, and maintenance to detect any electrical, mechanical, or process issues that may affect the performance of the treatment system. The goal of the contractor's monitoring, inspection, and maintenance program will be to achieve a minimum operational readiness rate of 90%. The readiness rate is defined as the number of fully capable operational days divided by number of available operational days in any particular month. If the readiness rate drops below 90%, the contractor will submit in writing to the Government recommended actions to improve operations. Actions may include additional spare parts or maintenance of equipment, equipment improvements, additional operations or maintenance training, and/or revised operating procedures.

6.1 SYSTEM INSPECTIONS AND MONITORING

The physical inspection and review of equipment and operating parameters will be performed during each operator visit (a minimum of once per week). Inspections will include, at a minimum, visual observations that all equipment is working as intended and that no leaks are observed in any treatment equipment or piping. During the inspections, the operator will collect operational parameter readings from the treatment system and note any abnormalities that are observed.

The treatment system also will be monitored by obtaining water and vapor samples at several locations through the treatment train to determine the treatment efficiency; confirm that the system is operating in accordance with the requirements of the permits and equivalencies; and to estimate the frequency of carbon change out events. The system sampling and monitoring is described in Section 7.2.

6.2 SYSTEM MAINTENANCE

The treatment system equipment requires periodic maintenance to achieve the required system readiness rate and to ensure that the equipment is able to operate at its design capacity for long periods of time. Maintenance activities include:

- Routine maintenance including lubrication, belt tensioning, adjustment of pump packing glands, and routine adjustments;
- Preventive maintenance including inspection, cleaning, lubrication, adjustment, calibration, and minor part and component replacement (e.g., filters, hoses, oil, and grease) as required to minimize malfunctions, breakdown, and deterioration of equipment; and
- Corrective maintenance and repair work that is required to return a system or component to its proper operating condition, including overhauling, reprocessing, or replacing parts or materials that have deteriorated by action of the elements or usage and have not been addressed through preventative maintenance.

An inventory of spare parts, tools, and materials will be maintained on site as necessary to operate the system in accordance with equipment manufacturers' information, including health

and safety supplies, personnel protection equipment, and first aid supplies. The contractor will replenish the spare parts, tools, and materials inventory as parts and materials are used for maintenance and will keep the inventory up-to-date and fully stocked.

Equipment and materials warranties are included in Appendix C. The contractor will operate and maintain all equipment, systems, processes, and appurtenances in accordance with the manufacturers' recommendations to ensure that the warranties or guarantees are not voided. Corrective maintenance performed by suppliers, manufacturers or subcontractors on warranted equipment, components, materials or workmanship will be coordinated by the contractor with the Government and supplier, subcontractor, or manufacturer. Corrective maintenance involving replacement due to normal failure of equipment and materials not under warranty will be performed by the contractor utilizing the on-site maintenance staff to the greatest extent possible.

The contractor will characterize, dispose, and handle all debris and waste generated by the treatment system O&M activities and sampling events, including the off-site regeneration of spent carbon. If site waste is characterized as hazardous waste, it shall be handed in accordance with the accumulation and storage requirements of a Small Quantity Generator. All hazardous waste will be disposed at USEPA-approved disposal facilities in accordance with OSR procedures. General refuse will be picked up as part of the normal neighborhood collection service.

7.0 SAMPLING AND MONITORING ACTIVITIES

This section provides an overview of the sampling and monitoring activities that have been developed to monitor the performance of the treatment system and compliance with permit requirements. All sampling activities will be performed in accordance with the UFP-QAPP (HGL, 2021a) and site permit equivalencies. Site permit equivalencies are provided in Appendix B.

7.1 SITE-WIDE GROUNDWATER MONITORING

The groundwater monitoring program includes the collection of groundwater samples and groundwater level data from site-wide monitoring wells. The wells will be sampled on an annual basis to evaluate the reduction in groundwater contaminant concentrations. The list of long-term monitoring wells to be sampled and analytical parameters is provided in Appendix F. The sampling locations are shown on Figure 1.1.

Table 7-1 Site-Wide Groundwater Monitoring Schedule

Location	Frequency	Medium	Monitoring Required
Extraction wells: EW-1, EW-2, EW-4, EW-5, and EW-6	Annual	Water	VOCs, metals, and wet chemistry parameters (alkalinity, sulfate, hardness, chloride, fluoride, total Kjeldahl nitrogen, total organic carbon, total suspended solids, total dissolved solids, and ammonia) In addition to the above-referenced parameters, EW-1, EW-2, and EW-6 are monitored for 1,4-dioxane.
Long-term monitoring wells*	Annual	Water	VOCs, metals, and wet chemistry parameters (alkalinity, sulfate, hardness, chloride, fluoride, total Kheljal nitrogen, total organic carbon, total suspended solids, total dissolved solids, and ammonia) In addition to the above-referenced parameters, select wells are monitored for 1,4-dioxane.
Long-term monitoring wells*	Annual**	Water	Synoptic water levels

*See Appendix F for a list of wells.
** To coincide with the groundwater sampling events.

7.2 PERFORMANCE AND COMPLIANCE MONITORING

Performance and compliance sampling and monitoring will be performed to confirm that the treatment system is operating as intended and the permit discharge criteria are being met. A

summary of the performance and compliance sampling and monitoring is summarized below. Analytical detection limits must be sufficiently low to achieve the applicable permit limits.

Table 7-2 Treatment System Performance and Compliance Monitoring Schedule

Equipment	Purpose	Frequency	Medium	Analytical Required
Treatment System Discharge				
Treated Water Effluent to Old Mill Pond or Old Mill Pond Creek	Compliance: NYSPDES	Monthly	Water	Select VOCs, select metals (total), pH (field parameter)
Treated Air Effluent	Compliance: Air Permit Equivalent	Weekly	Air	Total VOCs using PID
Treated Air Effluent	Compliance: Permit Equivalent	Monthly	Air	Grab sample VOCs (Summa canister)
VGAC				
Influent VGAC	Performance	Weekly	Air	Total VOCs using PID
Effluent VGAC	Compliance	Weekly	Air	Total VOCs using PID
VGAC Post Lead Unit	Performance	Weekly	Air	Total VOCs using PID
VGAC Post Second Unit	Performance	Weekly	Air	Total VOCs using PID
Extraction Wells				
EW-1, EW-2, and EW-6	Performance	Monthly	Water	Select VOCs, select metals (total)
Air Stripper				
Air Stripper Effluent	Performance	Monthly	Water	Select VOCs, select metals (total)
LGAC Discharge				
LGAC Mid-Train	Performance	Monthly	Water	Select VOCs, select metals (total)

8.0 RECORD KEEPING AND REPORTING

Records documenting the O&M of the treatment system will be maintained electronically (SCADA system) and via physical records (visual site inspection, and maintenance logs and log books). A regular backup schedule will be employed to prevent inadvertent loss of electronic data. The records will be retained as hard copies on site and electronically as scanned copies. Site inspection and maintenance logs will be completed during the weekly routine site inspections, and during emergency site inspections (e.g., following a system shutdown) to document system operation and maintenance activities.

8.1 PROGRESS AND STATUS REPORTS

Monthly Progress Reports and Annual Groundwater Sampling Reports will be prepared and submitted to the Government to aid in tracking system performance and effectiveness in achieving the RAOs. The Monthly Progress Reports will describe treatment system operations and will be submitted to the Government by the 15th day of the following month (pending receipt of data from the laboratory). The progress reports will include, but not be limited to, discussions of the following items:

- Health and safety (H&S) activities, including safety hours (hours on site) status, H&S problems encountered, safety instruction, accidents, corrective actions, and any deficiencies noted during routine inspections;
- A description of all O&M activities that occurred;
- Total water and air volumes treated and estimates for contaminant mass removed in each unit process per month, and total removal to date;
- Readiness rate determined by fully capable operational days divided by available operational days in the reporting period;
- A summary of performance and compliance sampling, analytical results, problems, and corrective actions;
- A summary of data logged by the PLC per month;
- Carbon use per month, to date, and projection for the timing of the next change out;
- If used, chemical consumption per month, to date, and projection for next month, including quantities and cost to contractor;
- Updated O&M logs;
- Identification of problems, suggested correction actions, and activities performed by the contractor to correct the problem;
- Planned activities and schedule for significant operations, maintenance, laboratory, and administrative activities to be performed; and
- All other factors that affect the operation, maintenance, and management of the treatment system.

Annual Groundwater Sampling Reports will be prepared upon receipt of annual sampling event data, in accordance with the guidance USEPA 542-R-05-010 O&M Report Template for Groundwater Remedies. The report will generally include, but not be limited to:

- Proposed changes to standard operating procedures for unit process items that maximize performance and minimize chemical usage, energy requirements, etc.
- A summary of the groundwater monitoring data to evaluate the effectiveness of the groundwater remedy, including statistical trends and a comparison to the site cleanup goals.
- A summary of the groundwater monitoring well inventory and recommended repairs, if needed.
- The "remedy progress" section of the annual report will summarize remedy progress with respect to the system goals and will include the following:
    - A brief summary of the groundwater extraction and treatment system goals;
    - A discussion of data collected during the reporting period (e.g., water levels, groundwater concentrations, etc.) and whether the data is consistent or inconsistent with expectations and/or previous data (if not, include a brief description of the difference);
    - A description of whether the short-term remedy goals are being met, based on an interpretation of data collected and implementation of institutional controls;
    - A description of whether longer-term remedy goals are being met or when they will likely be met, based on an interpretation of data collected and implementation of institutional controls; and
    - A discussion of new inconsistencies or gaps in the current "site conceptual model," if any have been identified based on an interpretation of O&M data, and whether or not the site conceptual model has been updated accordingly.
- The "proposed modifications" section of the Annual Groundwater Sampling Report will present modifications to the groundwater remedy and long-term monitoring program for consideration by stakeholders. It will include the following:
    - A brief description of any such recommendations; and
    - The details of recommended modifications, including the rationale behind those recommendations, and estimated costs and/or savings associated with the recommendations.

8.2 COMPLIANCE REPORTING

Monthly reports shall be prepared for each period the Old Mill Pond treatment system is operational. Reports are submitted to USACE.

9.0 GOVERNMENT PROPERTY

One of the contractor's duties is to maintain a list of Government property that is present at the site. The current Government property list is provided in Appendix G.

During the course of normal treatment system operations, various equipment may be imported or exported from the Old Mill Pond treatment system building based on needs and goals of USACE or USEPA. Proper tracking of equipment transfer involves organized recordkeeping practices. When transferring any equipment to the job site or away from the job site, a transfer form must be completed and signed off on by a USACE representative. A copy of all transfer forms will be maintained on file at the site in the control room filing system. A standard form used to document inventory transfers to other Government-owned sites is presented in Appendix H.

This page was intentionally left blank.

10.0 HEALTH AND SAFETY

The Contractor is responsible for all aspects of H&S associated with O&M activities, including safety of lower-tier subcontractors in accordance with project specification section 01 35 26 - Safety, Health, and Emergency Response. All work will be performed in accordance with the APP and the Activity Hazard Analysis forms that have been prepared and submitted for site activities. The contractor will:

- Maintain up-to-date H&S records for all on-site personnel;
- Inform the Government of all near misses, incidents, on-site accidents, and related claims;
- Provide all necessary personal protective equipment for the contractor personnel prior to proceeding with the work;
- Provide hard hats, safety glasses, reflective vests, and hearing protection to Government personnel and other visitors; and
- Show proper Occupational Safety and Health Administration (OSHA)-approved 40-hour H&S training and subsequent 8-hour refreshers for all workers associated with any activity that may be exposed to contaminated materials.

A H&S Checklist is provided in Appendix D for guidance on the number and type of equipment that is housed within the treatment system building. SDSs are included in the hazardous communications binder, which is located on site. SDS for new materials that are brought on site will be added to binder. The SDS binder will be reviewed for accuracy a minimum of once per year to ensure that all required information is included.

10.1 HAZARDS

During normal O&M of the treatment system, operators will be exposed to the following hazards:

- **Process Equipment and Electrical Components-** Operators should be aware of all the potential physical hazards associated with the use of motorized equipment (e.g., pumps and blowers) and electrical equipment (e.g., electrical panels, motors, instrumentation, and wiring) during the operation of the treatment system components.
- **Heavy Equipment-** Operators must be aware of the potential physical hazards associated with the use of heavy equipment (such as vacuum trucks) during the O&M of the treatment system.
- **Slip/Trips/Falls-** Significant slip/trip/fall hazards exist within in the treatment system building. This includes piping, vaults, equipment skids, secondary containment berms, and outdoor components of the groundwater extraction and treatment system.
- **Chemical Vapors-**Volatile organic vapors may be released from process equipment and piping due to leaks. These vapors could potentially accumulate within the process building at unsafe levels.

- **Hazardous Energy-** All maintenance and repairs that are completed for the treatment system must be compliant with the OSHA standard for The Control of Hazardous Energy **(**Lockout/Tagout**)** (29 Code of Federal Regulations [CFR] 1910.147). Hazardous energy includes pressurized fluids, gases, compressed springs, and electrical equipment as examples. Controlling hazardous energy includes removing the energy by depressurizing piping and removing electrical power from components and completing a full and proper lockout/tagout of the components. Prior to any work being completed, staff should test their lockout/tagout boundaries to ensure the hazardous energy is removed. If the isolations do not remove all of the hazardous energy, or the component must be operational to troubleshoot or repair, notify supervisors and only qualified personnel should conduct the repairs or troubleshooting.
- **Confined Space Entry-** The VGAC and LGAC vessels are considered permit required confined spaces. Although it is highly unlikely that the vessels will need to be entered, whenever operators are required to enter the spaces, confined space procedures must be followed. This includes initial and continuous monitoring of the atmosphere inside the spaces prior to and during entry.
- **Ladder Safety-** Operators must utilize proper ladder safety procedures when using fixed and portable ladders. Portable ladders must be secured to a fixed surface that will support more than the anticipated total load. When climbing or descending a ladder, personnel must face the ladder and maintain three points of contact at all times.
- **Elevated Work Locations and Fall Protection-** Work performed at heights greater than 6 feet where a fall hazard exists requires fall protection. Fall protection may include guardrails, safety nets, or personal fall arrest systems. Fall protection must be used in accordance with the OSHA Standard for Fall Protection (29 CFR 1926 Subpart M). Operators should not use fall arrest equipment until they have been properly trained.
- **Pressurized Equipment-** Pressurized conditions resulting from pump and blower operations are regulated under normal conditions by process control equipment. Any observed leaks within piping or loose components of equipment should be immediately repaired to prevent spills or pressurized releases. Routine equipment and piping inspections should be performed as preventative measures to minimize hazards that may result from pressurized releases. Operators must wear appropriate PPE at all times.
- **Noise-** Noise (decibel) levels inside the process area can be expected to exceed OSHA permissible exposure limits. It is recommended that hearing protection be used whenever personnel will be inside the process area within the treatment system building.
- **PPE-** Operators must wear all appropriate PPE before entering the treatment system building and the extraction vaults. As a minimum, nitrile gloves, safety glasses, hard hat, hearing protection, and steel toe shoes should be worn or used.

All activities that are conducted on site must be compliant with all local, state, and Federal rules and regulations. Examples of such activities include ladder use and working in confined spaces.

Health and safety information including the hospital map and directions, emergency contact list, safety checklists, and regulatory postings are posted in the treatment plant control room.

The nearest hospital is St. Charles Hospital, located at 200 Belle Terre Road, Port Jefferson, New York. General first aid equipment is provided on site; however, please seek immediate medical assistance if necessary. USACE must be notified immediately via e-mail or phone of all safety incidents. An emergency contact list is provided in Section 5.5.6.

In the event of treatment system-related emergencies, emergency shutdown procedures will be conducted in accordance with Section 5.5.

This page was intentionally left blank.

11.0 REFERENCES

Franke, O.L., and McClymonds, N.E., 1972. *Summary of the Hydrologic Situation on Long Island, New York, as a Guide to Water-Management Alternatives.* Geological Survey Professional Paper 627-F.

HydroGeoLogic, Inc. (HGL), 2020c. *Staffing Plan, Lawrence Aviation Industries Superfund Site Operable Unit 1, Long-Term Remedial Action, Port Jefferson, New York.* December.

HGL, 2020b. *Contractor Quality Control Plan, Lawrence Aviation Industries Superfund Site Operable Unit 1, Long-Term Remedial Action, Port Jefferson, New York.* October.

HGL, 2020a. *Environmental Protection Plan, Lawrence Aviation Industries Superfund Site Operable Unit 1, Long-Term Remedial Action, Port Jefferson, New York.* October.

HGL, 2021a. *Project-Specific Uniform Federal Policy Quality Assurance Project Plan, Lawrence Aviation Industries Superfund Site Operable Unit 1, Long-Term Remedial Action, Port Jefferson, New York.* January.

HGL, 2021b. *Accident Prevention Plan, Lawrence Aviation Industries Superfund Site Operable Unit 1, Long-Term Remedial Action, Port Jefferson, New York.* January.

Koszalka, E.J., 1984. *Geohydrology of the northern part of the Town of Brookhaven, Suffolk County, New York*. USGS Water-Resources Investigations Report 83-4042.

This page was intentionally left blank.

FIGURES

This page intentionally left blank.

\\Srv-gst-01\hglgis\Lawrence_Aviation_K13006_MSIW\OMPM\(1-1)Site_Location.mxd
2/1/2021 TH
Source: HGL, HDR, ESRI ArcGIS Online Imagery

Legend

- Monitoring Well
- Site Location
- Site Boundary

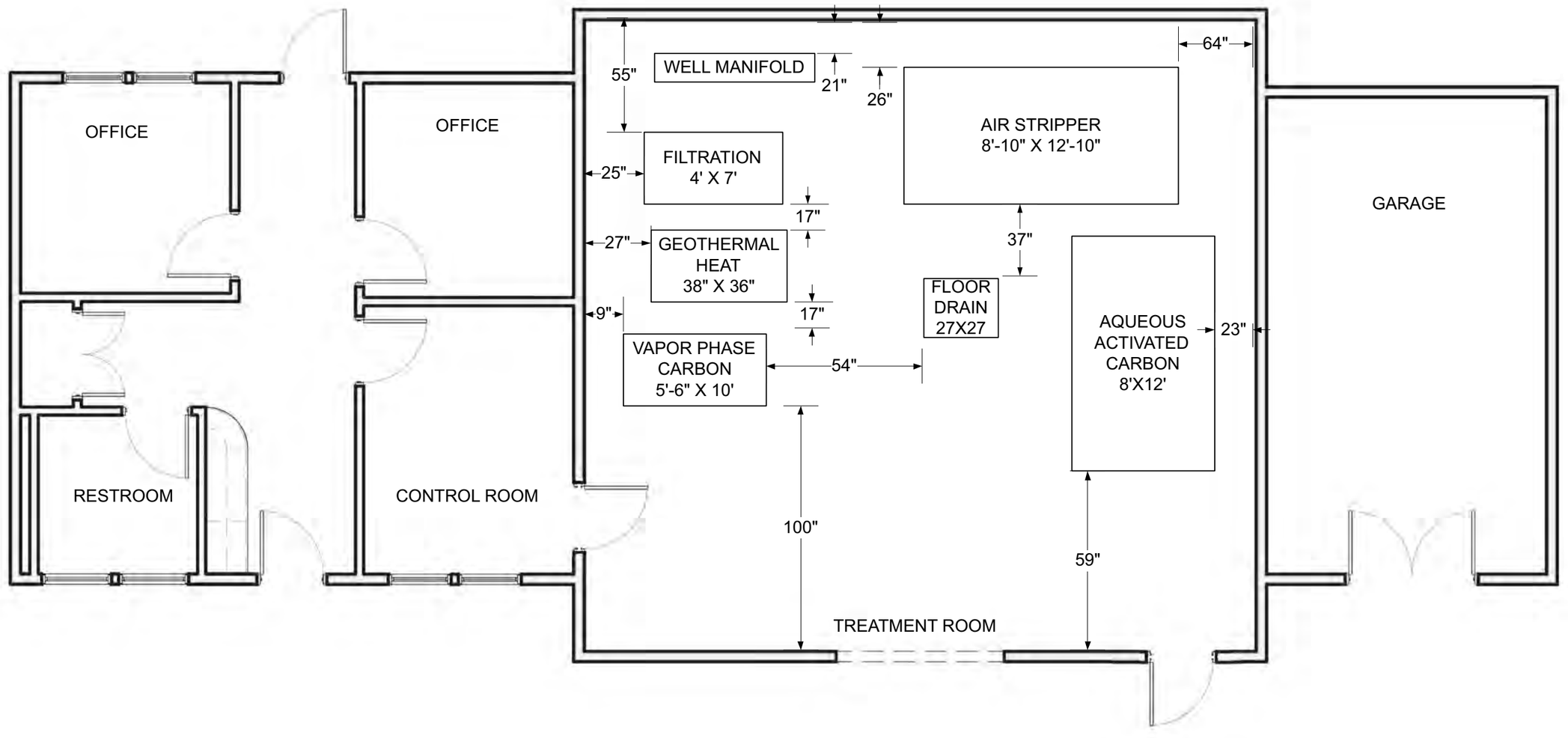
Figure 1.1
Site Location

\\Srv-gst-01\hglgis\Lawrence_Aviation_K13006_MSIW\OMPM\(1-2)OMP_Layout.mxd
2/1/2021 TH
Source: HGL, HDR, ESRI
ArcGIS Online Imagery

Legend

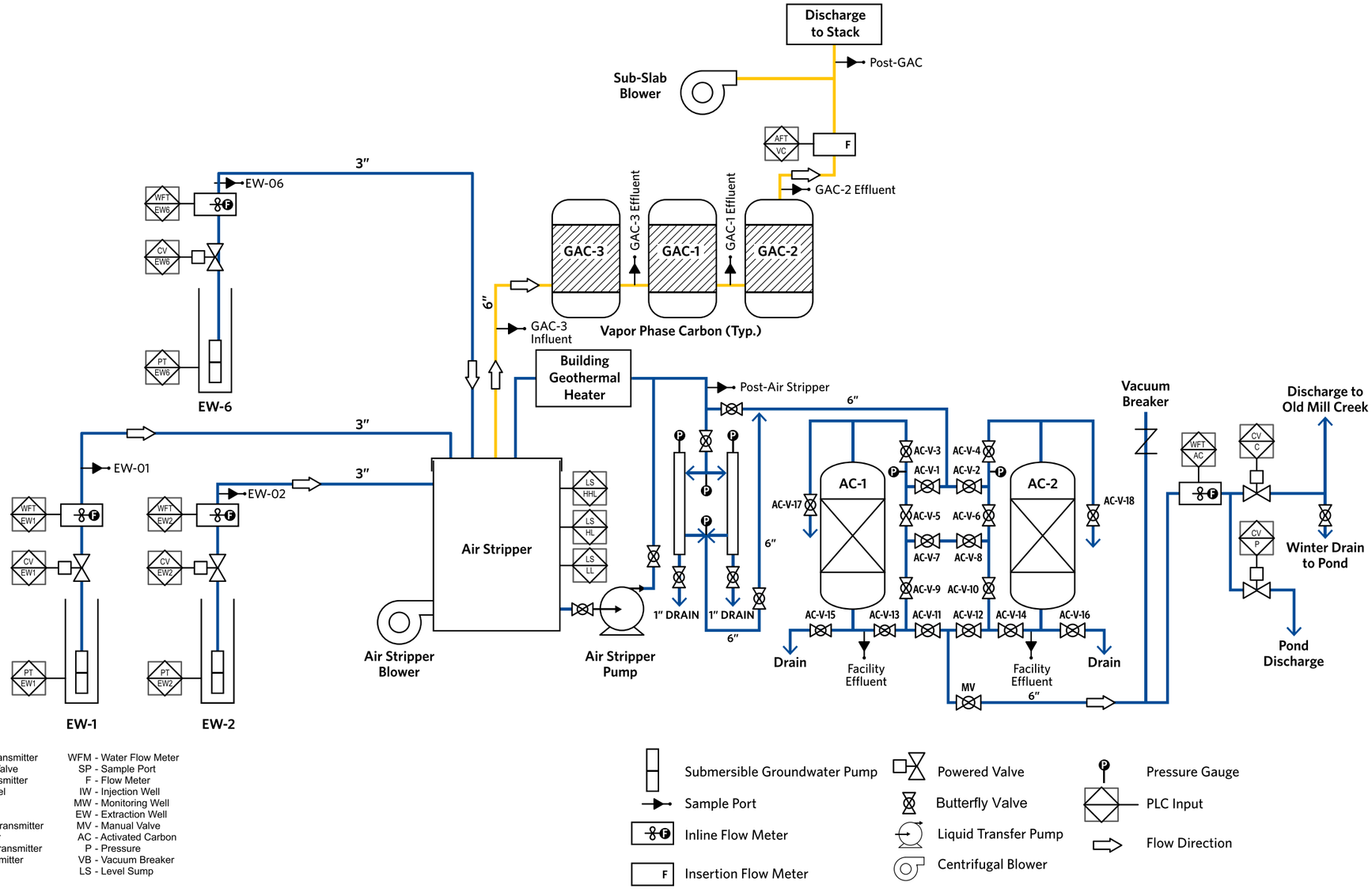
- Extraction Well
- Approximate Discharge Line
- Site Boundary

Figure 1.2
Site Layout
Old Mill Pond
Treatment System



\\Srv-gst-01\hglgis\Lawrence_Aviation_K13006_MSIW\OMPM\
(1-3)Treatment_Sys_Building.cdr
2/1/2021 TH
Source: Environmental Restoration, LLC

Figure 1.3
Treatment System Building Layout
Old Mill Pond



\\Srv-gst-01\hglgis\Lawrence_Aviation_K13006_MSIW\OMPM\(1-4)Process_Flow_OMP.cdr
2/1/2021 TH
Source: Environmental Restoration, LLC, HDR

Legend

Water Piping

Air Piping

Figure 1.4
Process Flow Diagram
Old Mill Pond
Treatment System

APPENDIX A

AS-BUILT DRAWINGS

This page intentionally left blank.

Report of Significant Differences for the Down Gradient Water Treatment Facility
Lawrence Aviation Industries Superfund Site
Old Mill Pond Area
Port Jefferson, NY

Final Version: May 2012

INTRODUCTION

In June 2009 Lockheed Martin, under contract with US EPA Region II, prepared bid specifications for the construction of a down gradient water treatment facility for the Lawrence Aviation Industries Superfund Site located in Port Jefferson, NY. These specifications were then used as a guide by Environmental Restoration, LLC ("ER"), the Emergency and Rapid Response Services ("ERRS") contractor in Region II, to construct the water treatment plant. This report provides a summary of significant differences between the original proscriptive design criteria presented in the draft final bid specification report, prepared by the Lockheed Martin Response Engineering and Analytical Contract ("REAC") dated June 23, 2009, and the final treatment plant as constructed. The REAC report listed major treatment system items on pages 5 through 7 as items a. through m. under the Project Objectives. This report will provide the difference between what is described in the REAC report for each of the items as listed and what was determined to be necessary based on final site conditions and ground water testing results. This report is intended to be utilized as a cross-reference to explain differences between the REAC report and the final treatment plant as constructed.

SYSTEM COMPONENTS

Building (a): A pre-engineered metal building was not used to house the water treatment facility. The building used to house the treatment plant is a slab on grade wooden frame structure approximately 75'x30' with the outward appearance of a residential home. The treatment facility is located in the corner of a baseball field on public property at the existing recovery well site adjacent to a residential neighborhood. The architectural design required review and approval by the Village of Port Jefferson Architectural Review Committee, elected officials, and the general public. Because of the treatment building location in a residential neighborhood the committee required the structure to have the outward appearance of a residence.

Public sewers were not available at the selected plant site. Bathroom wastewater is collected in an on-site underground holding tank and is pumped by a septic tank cleaning and disposal contractor as required.

Green technologies were used during construction activities and incorporated into the design of the facility whenever practical. For example the building is heated using approximately 8 GPM of the recovered groundwater through a geothermal heat pump. Open cell concrete pavers were installed around the building to minimize impervious areas and direct storm water back into the water table.

Extraction Well Pumps (b): Four variable speed well pumps, each capable of a pumping range of 10 to 90 gpm, are provided. The programmable logic control system (PLC) controls the pump speeds through variable speed drives to provide a specific flow from each well. Each well has a level transducer that allows for continuous water level monitoring through the PLC. Only 4 wells were equipped with pumps because the 5th well was not of adequate size (diameter) or depth for a pump. After review of the pumping capacity of the four variable speed pumps it was determined by the OSC that a 5th well was not needed and this well would be better suited to monitor the water level in the adjacent pond.

Equalization Vessel (c): An equalization vessel was considered not necessary for this system. This decision was made to simplify system operation, eliminate a pump and pumping control system and the need for pumping the water twice; once from the extraction wells to the tank and again from the tank to the air stripper.

Influent Transfer Pump (d): An equalization vessel (see c. above) was not used and this eliminated the need for a transfer pump.

Influent Filter (e): An influent filter was installed in the system and operated for approximately 3 months. During this time it was determined that the influent water quality was such that it was not needed. However, it was found that the treated water leaving the Air Stripper contained small quantities of oxidized iron that was precipitating out of solution and accumulating in the aqueous carbon units. Therefore, it was decided that the filters were better suited being located between the Air Stripper and the aqueous activated carbon filter.

Air Stripper (f): A stainless steel forced air shallow tray air stripper capable of more than 200 gpm was cleaned, inspected and repurposed from another site for the treatment system.

Off-Gas Treatment (g): A single vapor phase granular activated carbon unit is provided to treat off-gas from the air stripper. A single unit was used because the low concentrations of volatile organics presently found in the site groundwater did not justify the need for two carbon units.

Effluent Discharge Pump (h): An effluent discharge pump was provided that meets the performance specifications. The pump discharges the treated water to a surface water body.

Treated Water Discharge (i): The effluent discharge system consists of two discharge points. One is an adjacent pond and the second is a stream located at the culvert on Barnum Ave. Internal discharge system piping, control valves and water level monitors at the pond monitor discharge conditions and control which location is used for effluent discharge. The system is designed to monitor water levels during storm events to minimize localized flooding. The system shuts down during high water level conditions in the stream and the pond.

Liquid Phase Carbon Polishing (j): The liquid phase carbon units are equipped with hard piping and valves to enable either unit to be operated in a lead or lag mode. The valving also enables the carbon units to be operated in a parallel mode.

Effluent Filter (k): An effluent filter was installed to remove particulate material prior to the aqueous phase activated carbon filters. The influent water chemistry indicated low concentrations of iron present from some sampling events. Iron has been found intermittently and infrequently in influent samples. An influent filter was installed as a precautionary measure to prolong the life of the aqueous phase carbon units.

Control System (l): A PLC is provided that meets or exceeds the requirement in the specifications.

Well Vault System (m): Well vaults are provided that meet the requirement in the specification.

ADDITIONAL INFORMATION

Process flow diagrams, as-built drawings, and control panel schematics can be found in the compendium to this document, titled "Lawrence Aviation Site: Process Flow Diagram and Control Panel Drawings".

CONCLUSION

The document generated by Lockheed Martin in June 2009 was utilized as a guide when developing the down gradient pump and treatment plant. During the design and construction phases, site conditions and water chemistry caused slight deviations from the proposal. Although these "real-world" conditions produced equipment and technique alterations, the overall objectives of the facility were met. Sampling events have shown that the performance of the system is appropriate and compatible with the scope outlined in the proposal.

P.E. CERTIFICATION

I, Harold U. Nash, am a professional engineer licensed in the Commonwealth of Virginia (registration number 8533). I attest that I have visited the subject property located at 103 Brook Road, Port Jefferson, Suffolk County, New York. I am familiar with the requirements outlined in the Record of Decision for the Remedial Action proposed for the Lawrence Aviation Industries Site. These deviations are appropriate and adequate for meeting the goals and objectives outlined by EPA as part of an overall groundwater contamination remediation effort. The building and process design implemented has been constructed under my direction using good engineering practices. Based on my reviews during construction, review of the final constructed facility and observation of the operation of the facility, I certify that the facility was constructed in substantial conformance with the detailed construction, engineering, and architectural plans developed for the project. In addition, to the best of my knowledge the facility was constructed in conformance with local codes and laws, and is an adequate structure for the area.

Harold U. Nash, P.E.
Virginia Registration No. 8533

5/22/12
Date

Lawrence Aviation Site

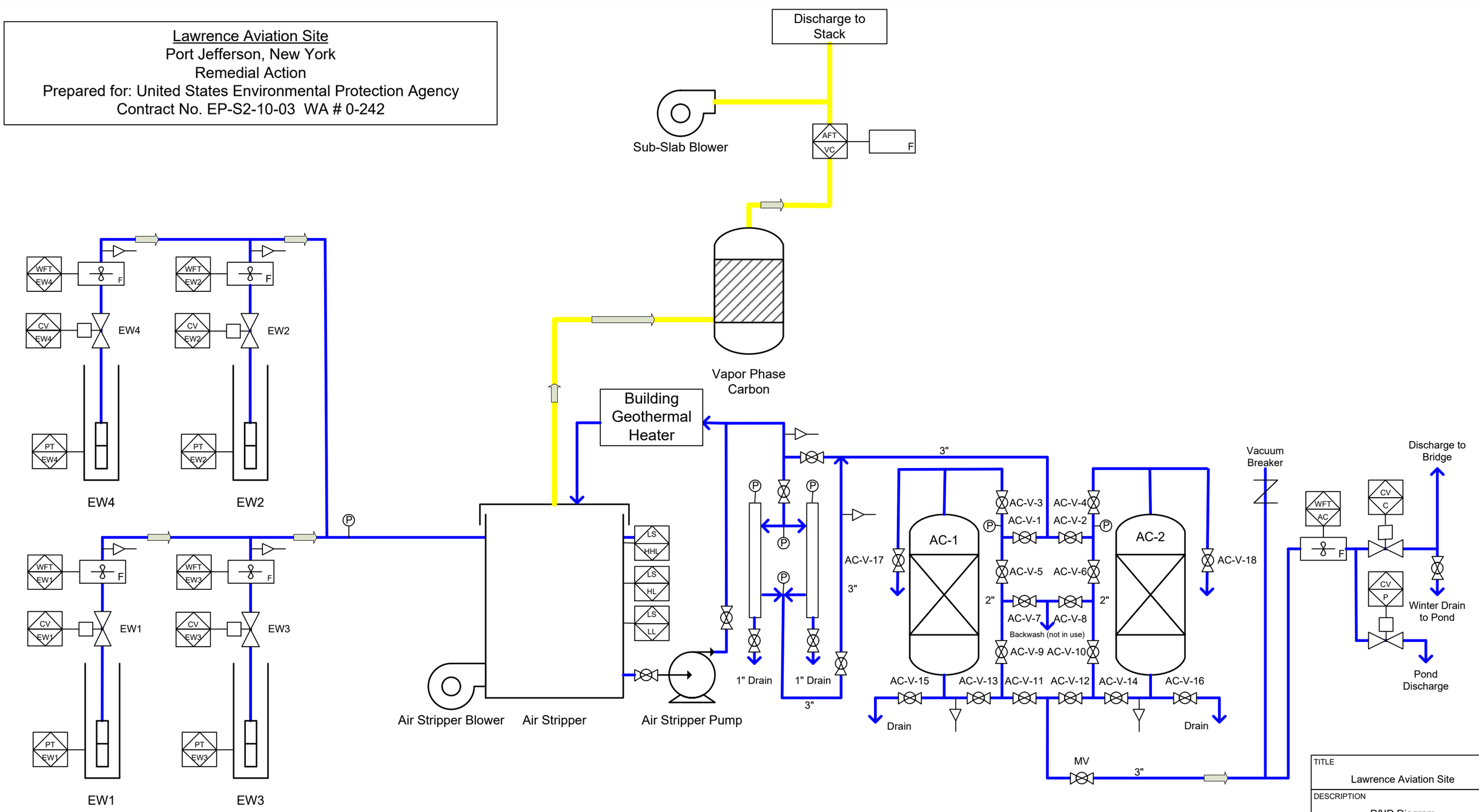
Process Flow Diagram and Control Panel Drawings

TITLE	Stanton Cleaners Treatment System
DESCRIPTION	Cover Page
DRAWN BY	Environmental Remediation
DATE	5/14/2011
REVISED	4/4/2012
PAGE	1 OF 15

Table of Contents

TITLE	Lawrence Aviation Site
DESCRIPTION	Table of Contents
DRAWN BY	Environmental Remediation
DATE	7/13/2010
REVISED	4/4/2012
PAGE	2 OF 15

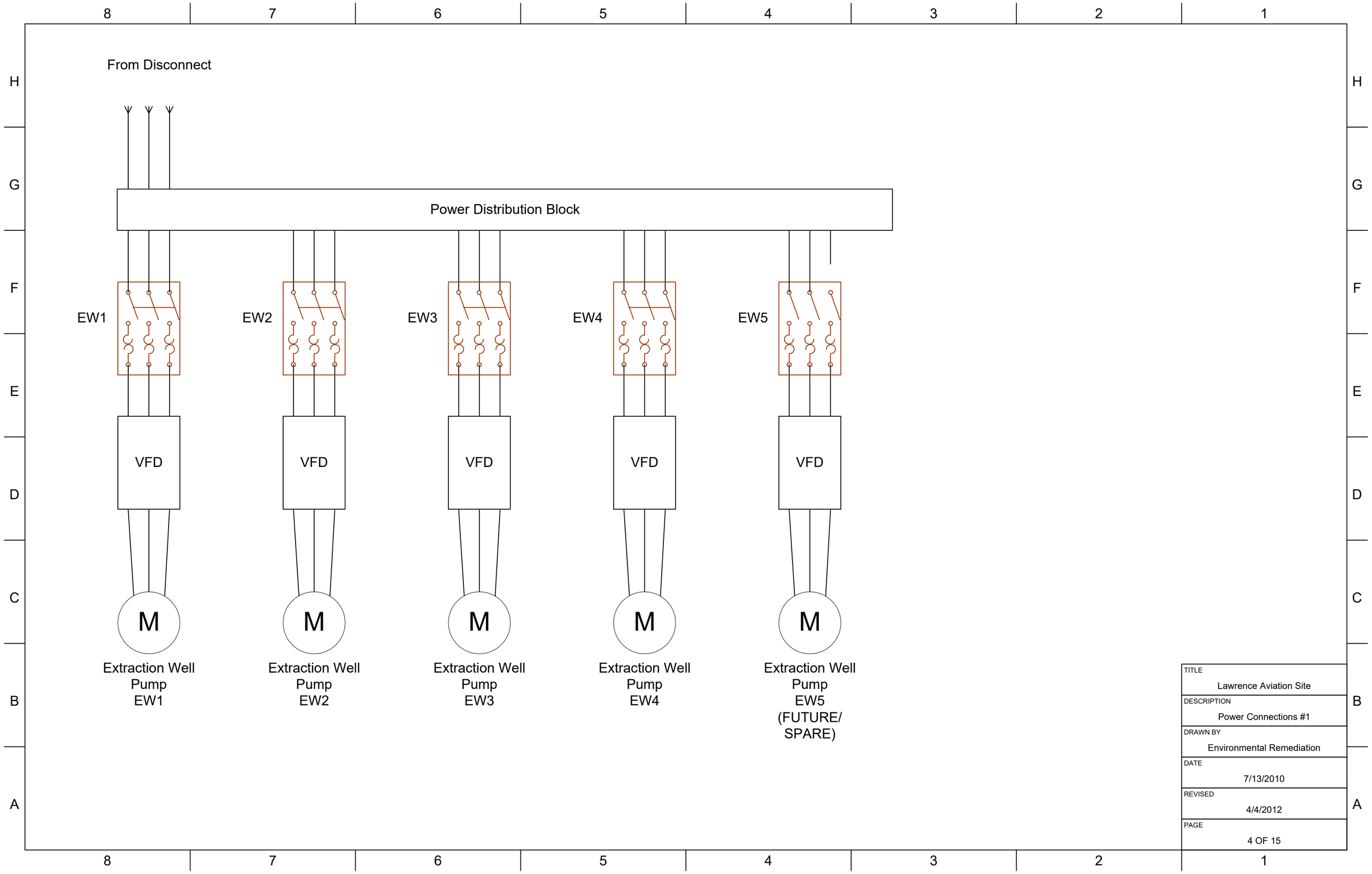
Lawrence Aviation Site
Port Jefferson, New York
Remedial Action
Prepared for: United States Environmental Protection Agency
Contract No. EP-S2-10-03 WA # 0-242



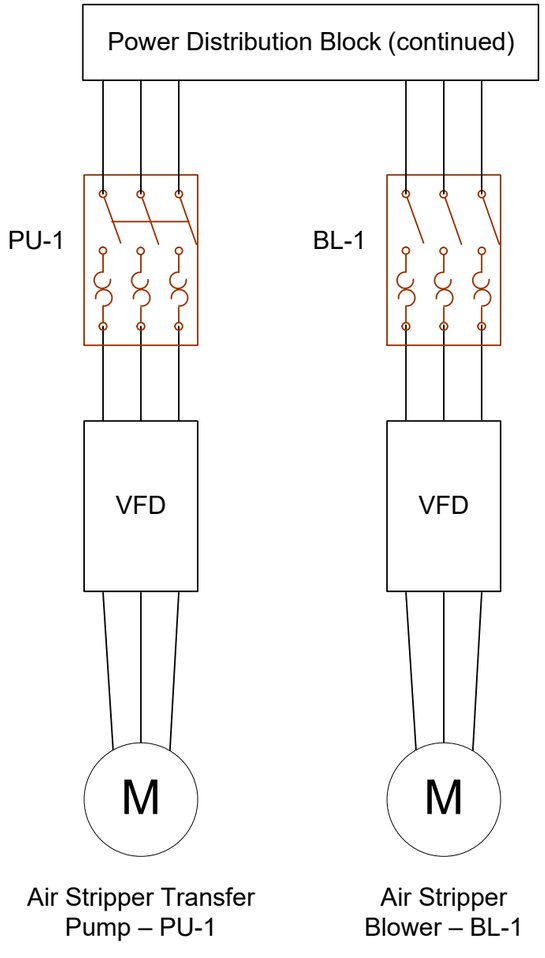
WFT – Water Flow Transmitter
FCV – Flow Control Valve
PT – Pressure Transmitter
HHL – High High Level
HL – High Level
LL – Low Level
TT – Temperature Transmitter
pHT – pH Transmitter
CT – Conductivity Transmitter
AFT – Air Flow Transmitter
CV – Control Valve
WFM – Water Flow Meter
SP – Sample Port
F – Flow Meter
IW – Injection Well
MW – Monitoring Well
MV – Manual Valve
AC – Activated Carbon
P - Pressure
VB – Vacuum Breaker
Water Piping
Air Piping

Submersible Groundwater Pump
Sample Port
Inline Flow Meter
Insertion Flow Meter
Powered Valve
Ball Valve
Liquid Transfer Pump
Centrifugal Blower
Pressure Gauge
PLC Input
Flow Direction

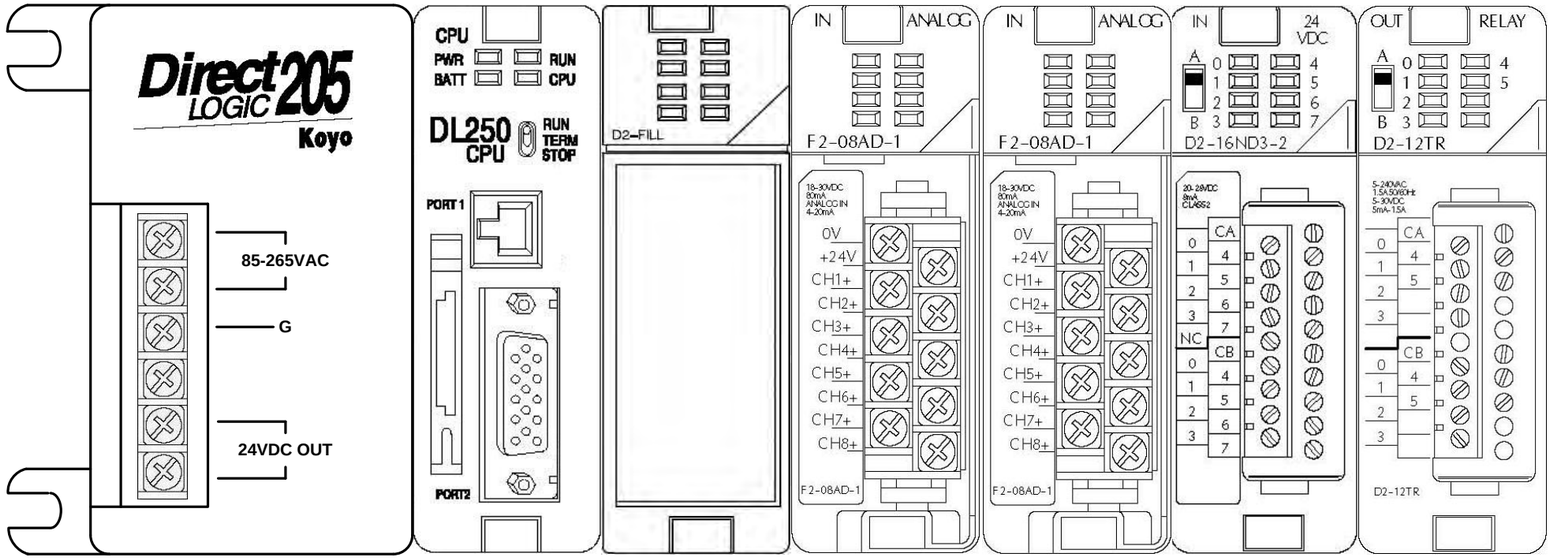
TITLE	Lawrence Aviation Site
DESCRIPTION	P&ID Diagram
DRAWN BY	Environmental Remediation
DATE	7/14/2010
REVISED	4/11/2012
PAGE	3 OF 15



TITLE	Lawrence Aviation Site
DESCRIPTION	Power Connections #1
DRAWN BY	Environmental Remediation
DATE	7/13/2010
REVISED	4/4/2012
PAGE	4 OF 15

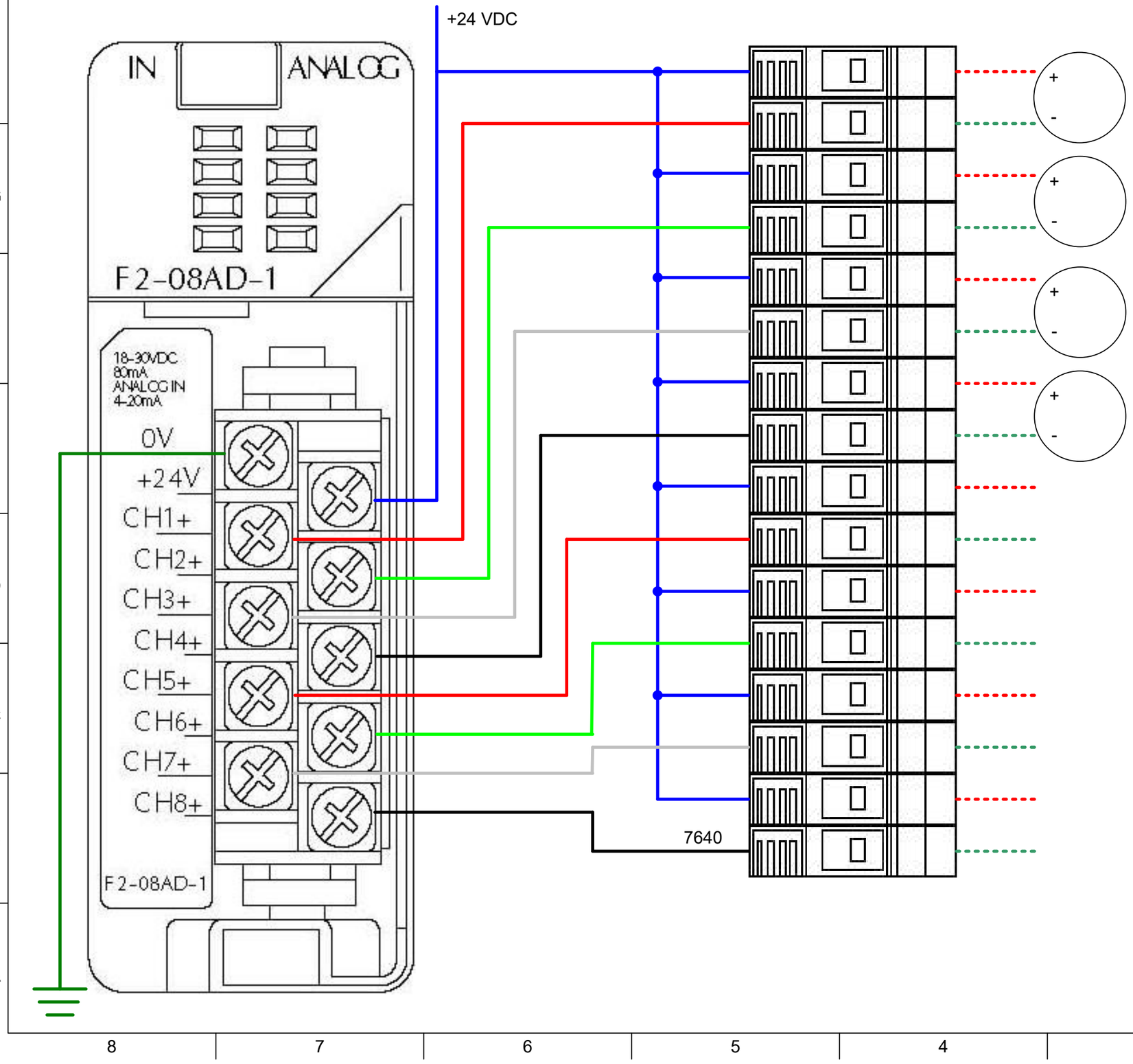


TITLE	Lawrence Aviation Site
DESCRIPTION	Power Connections #2
DRAWN BY	Environmental Restoration
DATE	7/13/2010
REVISED	4/4/2012
PAGE	5 OF 15

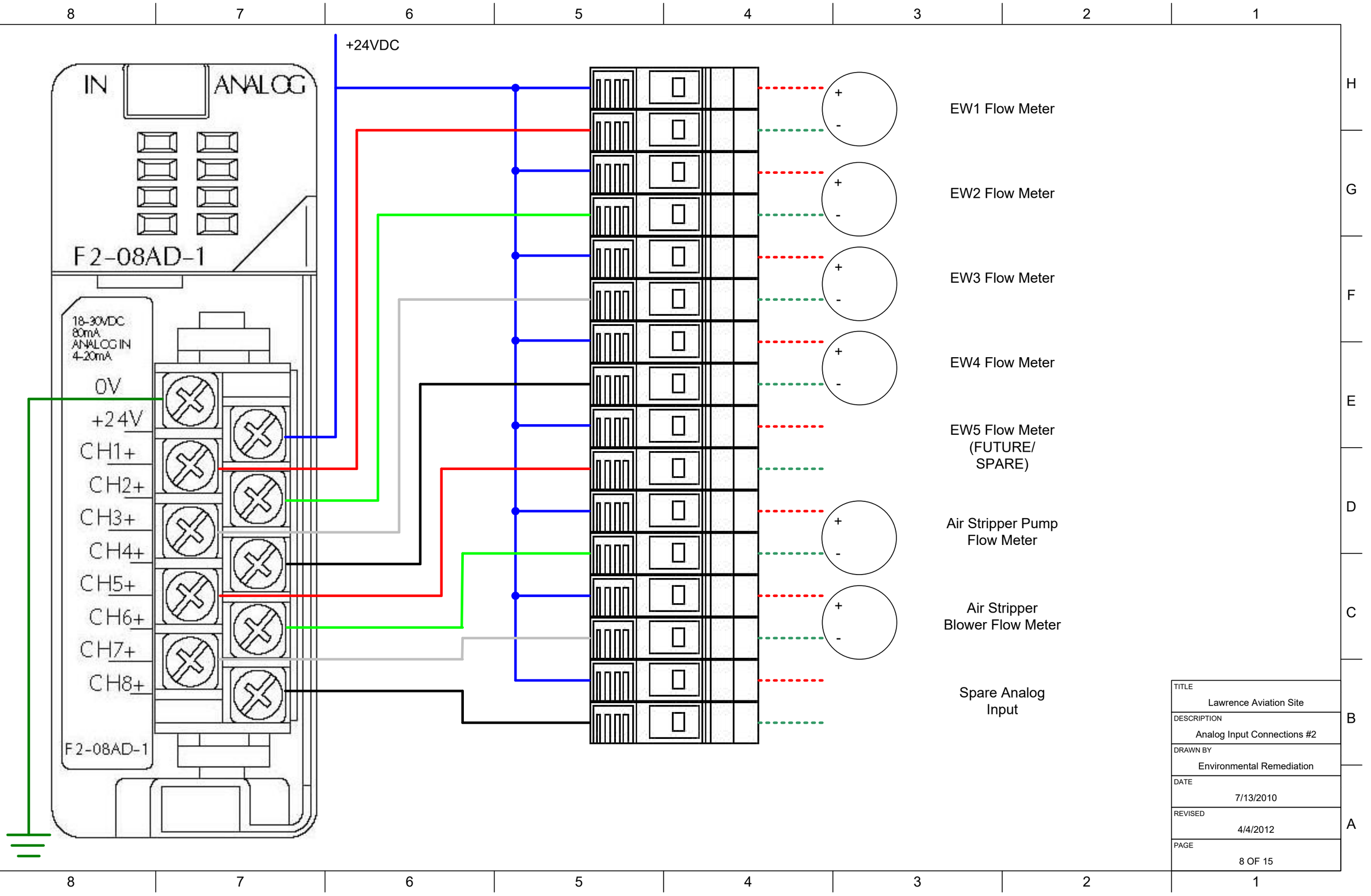


Rack #1

TITLE	Lawrence Aviation Site
DESCRIPTION	PLC Layout
DRAWN BY	Environmental Remediation
DATE	7/13/2010
REVISED	4/4/2012
PAGE	6 OF 15



TITLE	Lawrence Aviation Site
DESCRIPTION	Analog Input Connections #1
DRAWN BY	Environmental Remediation
DATE	7/13/2010
REVISED	4/4/2012
PAGE	7 OF 15



TITLE	Lawrence Aviation Site
DESCRIPTION	Analog Input Connections #2
DRAWN BY	Environmental Remediation
DATE	7/13/2010
REVISED	4/4/2012
PAGE	8 OF 15

Air Stripper High High Level

Air Stripper High Level

Air Stripper High Level

+24VDC

IN

24 VDC

A

B

0 1 2 3

4 5 6 7

D2-16ND3-2

20-28VDC 6mA CLASS2

CA

0 1 2 3

4 5 6 7

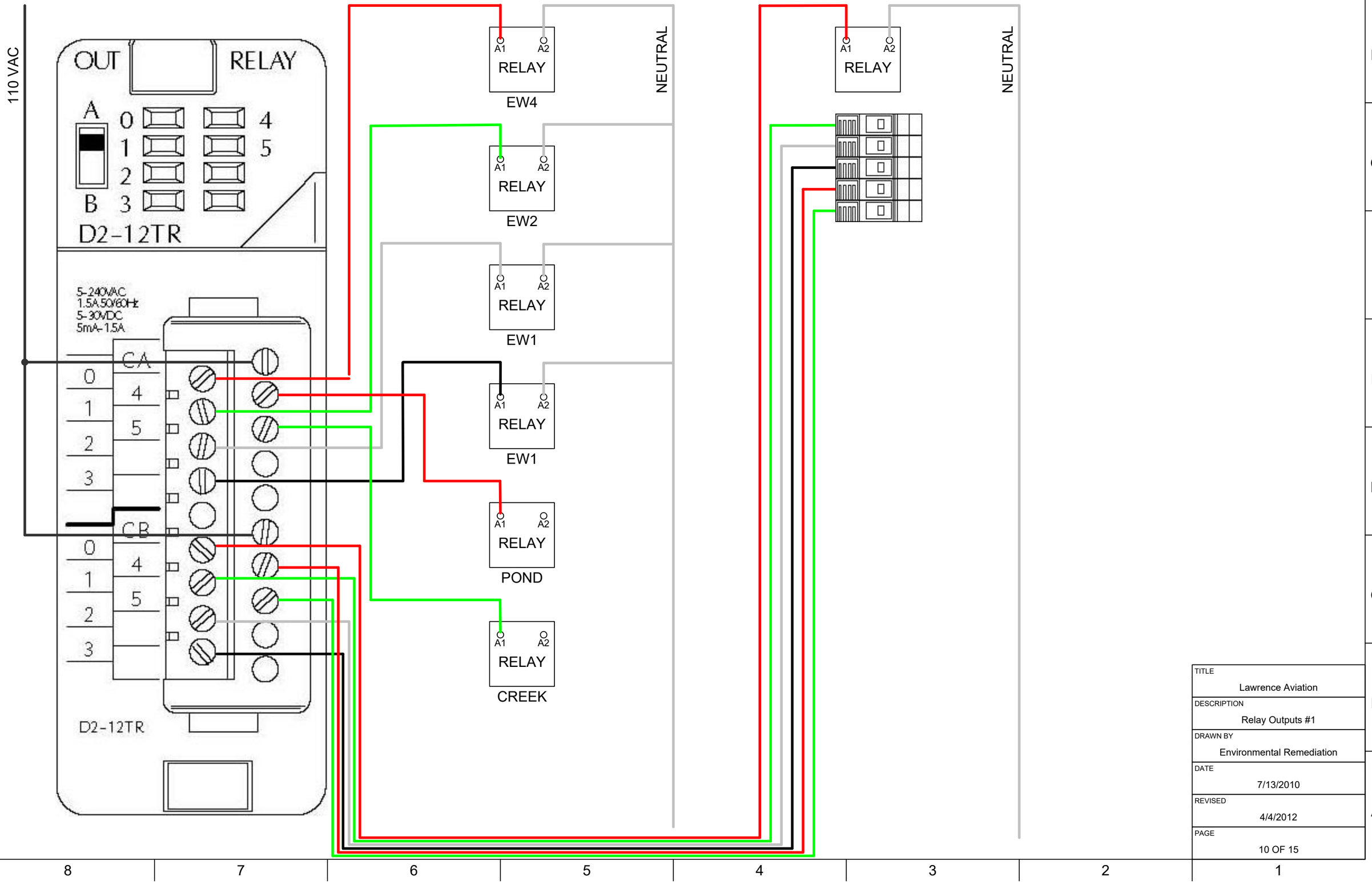
NC

CB

0 1 2 3

4 5 6 7

TITLE	Lawrence Aviation
DESCRIPTION	24VDC Inputs #1
DRAWN BY	Environmental Remediation
DATE	7/13/2010
REVISED	4/4/2012
PAGE	9 OF 15



TITLE	Lawrence Aviation
DESCRIPTION	Relay Outputs #1
DRAWN BY	Environmental Remediation
DATE	7/13/2010
REVISED	4/4/2012
PAGE	10 OF 15

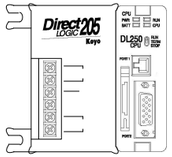
HMI SCREEN

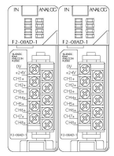
TITLE	Lawrence Aviation
DESCRIPTION	Door Layout
DRAWN BY	Environmental Remediation
DATE	7/13/2010
REVISED	4/4/2012
PAGE	11 OF 15

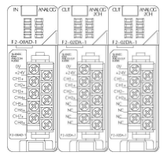
Power Distribution Block

Transformer

Disconnect







ETHER NET

ETHER NET

ETHER NET

ETHER NET

ETHER NET

ETHER NET

ETHER NET

CB CB CB

CB CB CB

VFD

VFD

VFD

VFD

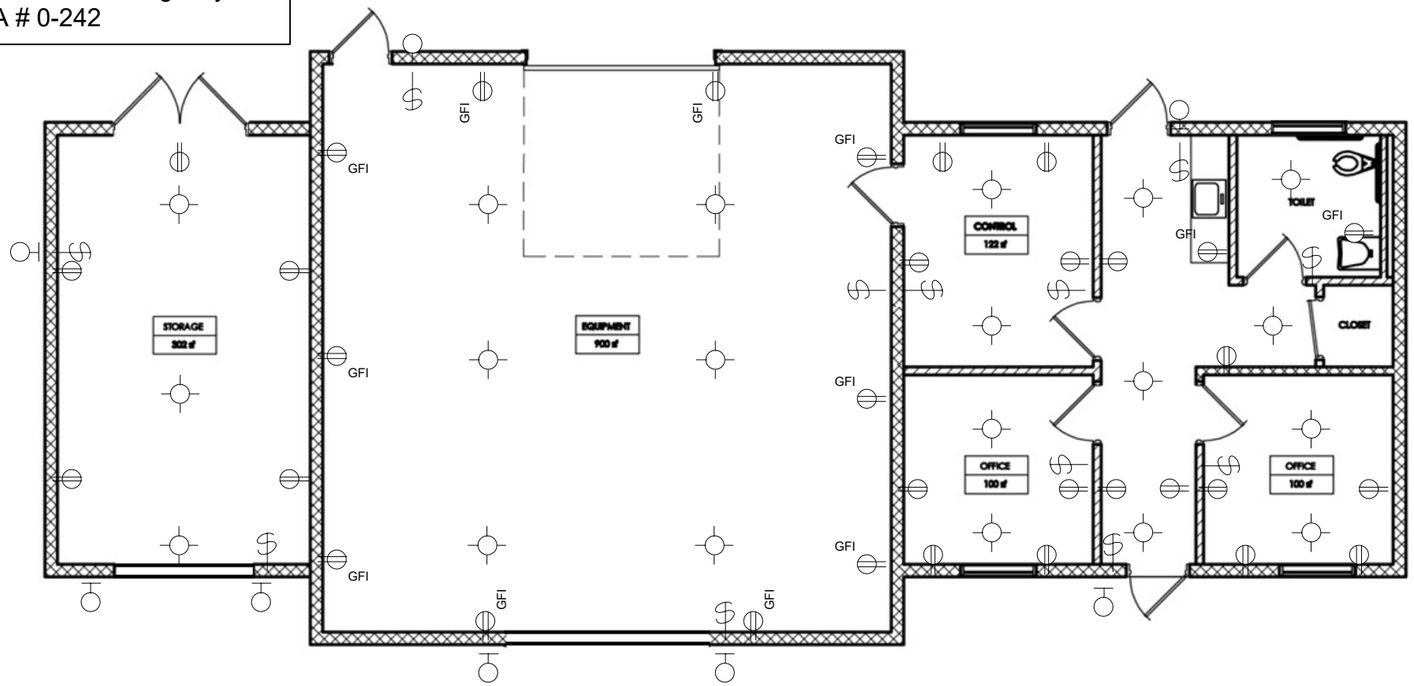
VFD

VFD

VFD

TITLE	Lawrence Aviation
DESCRIPTION	SubPanel Layout
DRAWN BY	Environmental Remediation
DATE	7/13/2010
REVISED	4/4/2012
PAGE	12 OF 15

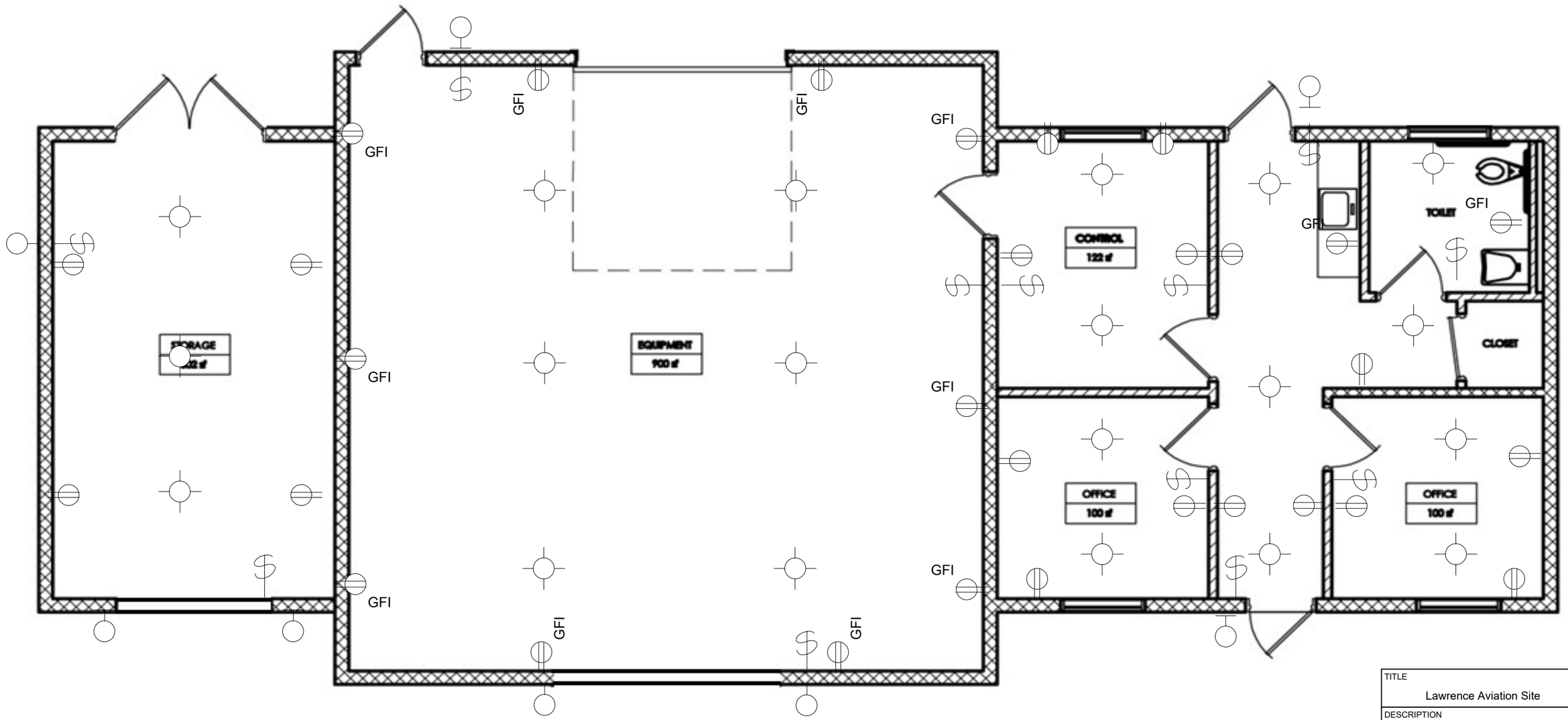
Lawrence Aviation Site
Port Jefferson, New York
Remedial Action
Prepared for: United States Environmental Protection Agency
Contract No.EP-C-04-032 WA # 0-242



Surface ceiling light
Wall light
Switches
Socket outlets
GFI outlets

TITLE	Lawrence Aviation Site
DESCRIPTION	Building Electrical Diagram
DRAWN BY	Environmental Remediation
DATE	8/03/2010
REVISED	8/03/2010
PAGE	13 OF 15

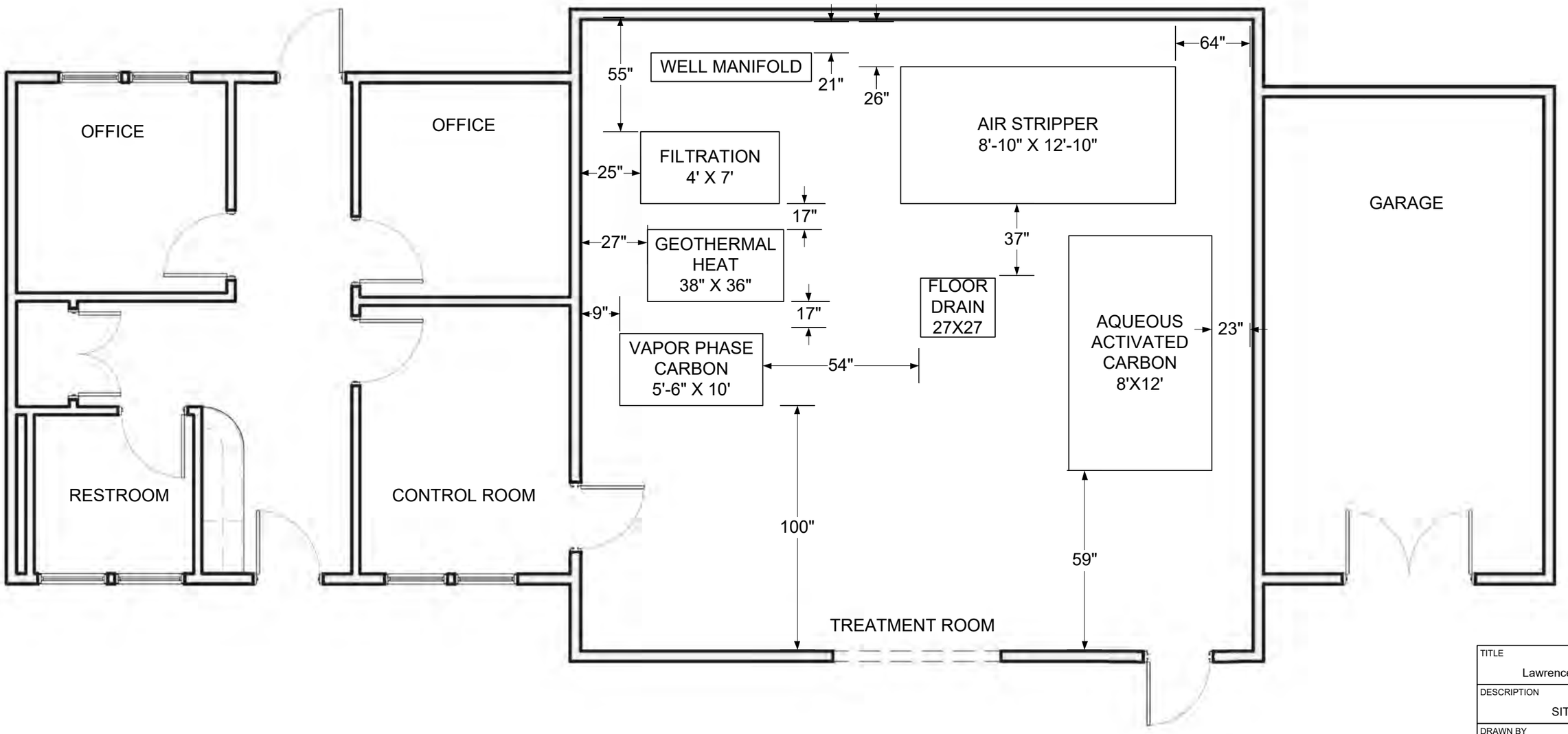
Lawrence Aviation Site
Port Jefferson, New York
Remedial Action
Prepared for: United States Environmental Protection Agency
Contract No.EP-C-04-032 WA # 0-242



Surface ceiling light
Wall light
Switches
Socket outlets
GFI outlets

TITLE	Lawrence Aviation Site
DESCRIPTION	Building Electrical Diagram
DRAWN BY	Environmental Remediation
DATE	8/23/2010
REVISED	8/23/2010
PAGE	14 OF 15

Lawrence Aviation Site
Port Jefferson, New York
Remedial Action
Prepared for: United States Environmental Protection Agency
Contract No.EP-C-04-032 WA # 0-242



TITLE	Lawrence Aviation Site
DESCRIPTION	SITE PLAN
DRAWN BY	ENVIRONMENTAL REMEDIATION
DATE	8/23/2010
REVISED	4/11/2012
PAGE	15 OF 15

This page intentionally left blank.

APPENDIX B

PERMIT EQUIVALENCIES

B-1 Air Permit Equivalent
B-2 New York State Pollution Discharge Elimination System Permit Equivalent

This page intentionally left blank.

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau A, 12th Floor
625 Broadway, Albany, New York 12233-7015
Phone: (518) 402-9620 • **Fax:** (518) 402-9022
Website: www.dec.ny.gov

Joe Martens
Commissioner

September 19, 2014

Ms. Yashodhara Saha
Project Engineer
HDR Inc.
500 Seventh Avenue
New York, NY 10018

RE: Lawrence Aviation Industries
Site, NYSDEC Site No. 152016
Suffolk County, Brookhaven (T).

Dear Ms. Saha:

HDR Inc. as contractor for the United States Environmental Protection Agency (USEPA), has submitted a revised draft of the final Air Permit Equivalent for the New York State Department of Environmental Conservation (NYSDEC) review. This Air Permit Equivalent is for the Old Mill Pond Groundwater Pump and Treat system associated with part of the operation, maintenance and monitoring of the remediation at the Lawrence Aviation Industries National Priority List (NPL) site.

The groundwater treatment system by the Old Mill Pond uses the best available control technology (BACT) to remove the contaminants of concern from the air stream. This consists of vapor phase carbon prior to air discharge. This vapor phase carbon system removes greater than 99 percent of the site-related contaminants. This will be confirmed by periodic system monitoring.

Based on my review, all NYSDEC comments have been addressed and, by means of this letter, the NYSDEC approves this permit equivalent for immediate implementation.

If you have any questions, please call me directly at 518-402-9620.

Sincerely,

Steven M. Scharf, P.E.
Remedial Bureau A
Division of Environmental Remediation

Enclosure: Air Permit Equivalent
ec/w/enc:
J. Swartwout
W. Parish
M. Jon, EPA region 2
D. Kleredes, HDR Inc.

New York State Department of Environmental Conservation
Air Permit Application

DEC ID	APPLICATION ID	OFFICE USE ONLY
- -	- /	/ /

Section I - Certification

Title V Certification N/A

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information [required pursuant to 6 NYCRR 201-6.3(d)] I believe the information is, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Responsible Official	Title
Signature	Date / /

State Facility Certification N/A

I certify that this facility will be operated in conformance with all provisions of existing regulations.

Responsible Official	Title
Signature	Date / /

Section II - Identification Information

Title V Facility Permit N/A	State Facility Permit N/A
• New • Significant Modification • Administrative Amendment	• New • Modification
• Renewal • Minor Modification General Permit Title:	General Permit Title:
• Application involves construction of new facility	• Application involves construction of new emission unit(s)

Owner/Firm

Name U.S EPA REGION 2			
Street Address 290 BROADWAY, 20th FLOOR			
City NEW YORK	State NY	Country USA	Zip 10007-1866
Owner Classification X Federal • State • Municipal • Corporation/Partnership • Individual			Taxpayer ID

Facility • Confidential

Name OLD MILL POND (OMP) GROUNDWATER TREATMENT FACILITY (GWTF)

Location Address INTERSECTION OF CAROLINE AVE. & BROOK RD.

• City / • Town / • Village PORT JEFFERSON / NEW YORK Zip 11777

Project Description • Continuation Sheet(s)

REFER CONTINUATION SHEET FOLLOWING PAGE 1

Owner/Firm Contact Mailing Address

Name (Last, First, Middle Initial) N/A			Phone No. ( )
Affiliation U.SEPA, REGION 2	Title		Fax No. ( )
Street Address 290 BROADWAY, 20th FLOOR			
City NEW YORK	State NY	Country USA	Zip 10007

Facility Contact Mailing Address

Name (Last, First, Middle Initial) JON, MARIA			Phone No. (212) 637-3967
Affiliation U.S EPA, REGION 2	Title REMEDIAL PROJECT MANAGER		Fax No. ( )
Street Address 290 BROADWAY, 20th FLOOR			
City NEW YORK	State NY	Country USA	Zip 10007

DEC ID
_ - _ _ _ _ - _ _ _ _ _

Section II - Identification Information

Project Description (continuation)

The Old Mill Pond (OMP) facility is associated with the Lawrence Aviation Industries (LAI) Superfund Site in Port Jefferson Station, NY. The groundwater at the source area, which is the LAI industrial facility has been impacted by chlorinated volatile organic compounds (CVOCs), specifically tetrachloroethene (PCE) and trichloroethene (TCE) due to past disposal practices. A groundwater extraction and treatment plant has been in operation at the LAI industrial facility since September, 2010. Groundwater and air discharges from the source area treatment plant are covered under a separate permit equivalent.

As per the September 29, 2006 record of decision (ROD) issued by EPA, a second groundwater treatment facility was completed at the downgradient contaminated groundwater plume, located to the north of the LAI industrial facility, near Old Mill Pond, and has been in operation since August 2011. The downgradient OMP groundwater treatment facility is located at the intersection of Caroline Avenue and Brook Road in Port Jefferson, NY and provides hydraulic control of the groundwater plume downgradient from the source area. Groundwater containing CVOCs is extracted via 3 extraction wells at the OMP facility and treated in an air stripper. The treated water leaving the air stripper is sent through liquid phase granular activated carbon (GAC) units prior to surface discharge under a NYSDEC SPDES permit equivalent. The volatilized contaminants leaving the air stripper is treated using vapor phase GAC units prior to discharge to the atmosphere.

This application seeks to obtain a permit equivalent for the air emissions leaving the air stripper at the OMP facility. The permit equivalent will not change facility operations. The purpose of the permit equivalent is to monitor the emissions from the OMP facility on a monthly basis and to evaluate the need for change-out of carbon from the GAC units when saturation of carbon is near and prior to permit equivalent numbers are exceeded.

HDR has been conducting the long-term response action including operation, maintenance, and monitoring of both treatment facilities since October 2012.

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- -

Section III - Facility Information

Classification N/A

• Hospital • Residential • Educational/Institutional • Commercial • Industrial • Utility

Affected States (Title V Only) N/A

• Vermont • Massachusetts • Rhode Island • Pennsylvania Tribal Land:_____
• New Hampshire • Connecticut • New Jersey • Ohio Tribal Land:_____

SIC Codes

Facility Description • Continuation Sheet(s)

REFER CONTINUATION SHEET FOLLOWING PAGE 2

Compliance Statements (Title V Only) N/A

I certify that as of the date of this application the facility is in compliance with all applicable requirements: • YES • NO

If one or more emission units at the facility are not in compliance with all applicable requirements at the time of signing this application (the 'NO' box must be checked), the noncomplying units must be identified in the "Compliance Plan" block on page 8 of this form along with the compliance plan information required. For all emission units at this facility that are operating in compliance with all applicable requirements complete the following:

- This facility will continue to be operated and maintained in such a manner as to assure compliance for the duration of the permit, except those units referenced in the compliance plan portion of Section IV of this application.
- For all emission units, subject to any applicable requirements that will become effective during the term of the permit, this facility will meet all such requirements on a timely basis.
- Compliance certification reports will be submitted at least once a year. Each report will certify compliance status with respect to each requirement, and the method used to determine the status.

Facility Applicable Federal Requirements • Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Facility State Only Requirements • Continuation Sheet(s)

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

New York State Department of Environmental Conservation
Air Permit Application Form

DEC ID
- -

Section III - Facility Information

Facility Description (continuation)

The Lawrence Aviation Industries Superfund Site (EPA identification #NYD002041531) is located in Port Jefferson Station, New York. The Lawrence Aviation Industries Site was included on the National Priorities List (NPL) on March 6, 2000 and consists of the source area at the Lawrence Aviation industries (LAI) facility and the downgradient plume area in the vicinity of Old Mill Pond. Past disposal practices at the LAI industrial facility resulted in a variety of contaminant releases including trichloroethene and tetrachloroethene, acid wastes, oils, sludge, metals, and other industrial plant wastes. Previous investigations in the Site's vicinity suggest that releases of hazardous substances from the facility have affected site soils and groundwater, surface water and sediments downgradient of the site.

The primary function of the Old Mill Pond (OMP) groundwater extraction and treatment facility listed on this permit application form is to provide hydraulic control of the chlorinated volatile organic compounds containing groundwater plume and prevent migration of contaminated groundwater further downgradient from the Lawrence Aviation Industries source area into Old Mill Pond, Old Mill Creek, and Port Jefferson Harbor.

The groundwater extraction and treatment system at the OMP facility operates with 3 active extraction wells (EW-1, EW-2 and EW-6) at a combined influent groundwater flow rate of approximately 150 gpm. The treated groundwater leaving the air stripper is sent through liquid phase granular activated carbon (GAC) units and then discharged to a nearby natural pond under a NYSDEC SPDES permit equivalent. The VOC-contaminated air from the air stripper is treated by vapor phase GAC units before discharge to atmosphere via a stack on the roof of the building. Each vapor phase GAC unit consists of 2,000 pounds of reactivated coconut GAC with a mesh size of 4x8. The air stripper blower operates up to a maximum of 2,300 cfm.

Since the Site is listed on the NPL, a permit equivalent is warranted for the treated air discharged at the downgradient OMP facility.

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - - - - - - - -

Section III - Facility Information (continued)

Facility Compliance Certification N/A • Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

• Applicable Federal Requirement • State Only Requirement	• Capping	CAS No. - -	Contaminant Name

Monitoring Information

• Ambient Air Monitoring • Work Practice Involving Specific Operations • Record Keeping/Maintenance Procedures

Description

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method

Parameter Code	Parameter Description	Manufacturer Name/Model No.

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description

Facility Emissions Summary • Continuation Sheet(s)

CAS No.	Contaminant Name	PTE (lbs/yr)	PTE Range Code	Actual (lbs/yr)
NY075 - 00 - 5	PM-10			
NY075 - 00 - 0	PARTICULATES			
7446 - 09 - 5	SULFUR DIOXIDE			
NY210 - 00 - 0	OXIDES OF NITROGEN			
630 - 08 - 0	CARBON MONOXIDE			
7439 - 92 - 1	LEAD			
NY998 - 00 - 0	VOC			
NY100 - 00 - 0	HAP			
00127 - 18 - 4	TETRACHLOROETHENE	7.88	N/A	N/A
00079 - 01 - 6	TRICHLOROETHENE	597.87	N/A	N/A
- -				
- -				
- -				

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
1-[ ][ ][ ][ ]-[ ][ ][ ][ ][ ]

Section IV - Emission Unit Information

Emission Unit Description • Continuation Sheet(s)
EMISSION UNIT 1-00EU1 VOLATILE ORGANIC COMPOUNDS ARE REMOVED FROM GROUNDWATER IN AN AIR STRIPPER. THE VOLATILIZED CONTAMINANTS LEAVING THE TOP OF THE AIR STRIPPER ARE TREATED VIA GAC UNITS PRIOR TO DISCHARGE TO AIR VIA A VENT STACK ON THE ROOF OF THE BUILDING.

Building • Continuation Sheet(s)

Building	Building Name	Length (ft)	Width (ft)	Orientation
BLDG-1	OMP GROUNDWATER TREATMENT BUILDING	74	31	0°

Emission Point • Continuation Sheet(s)

EMISSION PT.	00EP1					
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
0'-0"	29	3	12	75		
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal
49	2,300	0.018	0.018	BLDG-1	30	N/A
EMISSION PT.						
Ground Elev. (ft)	Height (ft)	Height Above Structure (ft)	Inside Diameter (in)	Exit Temp. (°F)	Cross Section Length (in)	Cross Section Width (in)
Exit Velocity (FPS)	Exit Flow (ACFM)	NYTM (E) (KM)	NYTM (N) (KM)	Building	Distance to Property Line (ft)	Date of Removal

Emission Source/Control • Continuation Sheet(s)

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.
BLDG-1	1	AUG 2011	AUG 2011	N/A	048	VAPOR GAC	NEEP AIR STRIPPER / MODEL 31231-3553

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

Emission Source ID	Emission Source Type	Date of Construction	Date of Operation	Date of Removal	Control Type Code	Control Type Description	Manufacturer's Name/Model No.

Design Capacity	Design Capacity Units Code	Design Capacity Units Description	Waste Feed Code	Waste Feed Description	Waste Type Code	Waste Type Description

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - - - - - - - -

Section IV - Emission Unit Information (continued)

Process Information

• Continuation Sheet(s)

EMISSION UNIT 1-00EU1 PROCESS 4AC

Description

VOLATILE ORGANIC COMPOUNDS CONTAMINATED GROUNDWATER IS EXTRACTED VIA 3 EXTRACTION WELLS, COMBINED INFLUENT OF ≈150 GPM IS TREATED IN AN AIR STRIPPER. THE AIR STRIPPER IS A 3-TRAY SHALLOW LOW PROFILE AIR STRIPPER. THE PROCESS USES FORCED DRAFT, COUNTER CURRENT AIR STRIPPING THROUGH HORIZONTAL TRAYS TO REMOVE VOCs FROM WATER. CONTAMINATED WATER IS SPRAYED INTO THE TOP TRAY AND AIR IS SENT UP FROM THE BOTTOM USING A BLOWER. THE VOLATILIZED CONTAMINANTS ARE EMITTED AS AIR STRIPPER OFFGAS WHICH IS SENT THROUGH VAPOR PHASE GAC UNITS FOR TREATMENT PRIOR TO DISCHARGE TO THE ATMOSPHERE VIA VENT ON ROOF OF BUILDING.

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

• Confidential X Operating at Maximum Capacity • Activity with Insignificant Emissions	Operating Schedule		Building	Floor/Location
	Hrs/Day	Days/Yr		
	24	365	BLDG-1	MAIN

Emission Source/~~Control~~ Identifier(s)

BLDG-1							

EMISSION UNIT - PROCESS

Description

Source Classification Code (SCC)	Total Thruput		Thruput Quantity Units	
	Quantity/Hr	Quantity/Yr	Code	Description

• Confidential • Operating at Maximum Capacity • Activity with Insignificant Emissions	Operating Schedule		Building	Floor/Location
	Hrs/Day	Days/Yr		

Emission Source/Control Identifier(s)

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - - - - - - - -

Section IV - Emission Unit Information (continued)

Emission Unit	Emission Point	Process	Emission Source	Emission Unit Applicable Federal Requirements • Continuation Sheet(s)									
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-													
-													
-													
-													

Emission Unit	Emission Point	Process	Emission Source	Emission Unit State Only Requirements • Continuation Sheet(s)									
				Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-													
-													
-													
-													

Emission Unit Compliance Certification • Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause
6	NYCRR	212							

• Applicable Federal Requirement • State Only Requirement X Capping

Emission Unit	Emission Point	Process	Emission Source	CAS No.	Contaminant Name
1-00EU1	00EP1	GAC	BLDG-1	00079-01-6	TRICHLOROETHENE

Monitoring Information

- Continuous Emission Monitoring
- X Intermittent Emission Testing
- Ambient Air Monitoring
- Monitoring of Process or Control Device Parameters as Surrogate
- Work Practice Involving Specific Operations
- Record Keeping/Maintenance Procedures

Description

GRAB AIR SAMPLES ARE COLLECTED FROM INFLUENT AND EFFLUENT PORTS OF EACH GAC VESSEL USING SUMMA CANISTERS ON A MONTHLY BASIS + ANALYSED FOR TO-15 VOCs. PID READINGS ARE NOTED ON A WEEKLY BASIS. RESULTS REPORTED IN MONTHLY REPORTS.

Work Practice Type	Process Material Code	Process Material Description	Reference Test Method
			EPA-TO-15

Parameter Code	Parameter Description	Manufacturer Name/Model No.
54	VOLATILE ORGANIC COMPOUNDS	SUMMACANISTER

Limit Upper	Limit Lower	Limit Units Code	Limit Units Description
		lb/d	

Averaging Method Code	Averaging Method Description	Monitoring Frequency Code	Monitoring Frequency Description	Reporting Requirements Code	Reporting Requirements Description
		11	MONTHLY	11	MONTHLY

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- - - - - - - - -

Section IV - Emission Unit Information (continued)

Determination of Non-Applicability (Title V Only) • Continuation Sheet(s)

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	• Applicable Federal Requirement • State Only Requirement
-				

Description

Rule Citation

Title	Type	Part	Sub Part	Section	Sub Division	Paragraph	Sub Paragraph	Clause	Sub Clause

Emission Unit	Emission Point	Process	Emission Source	• Applicable Federal Requirement • State Only Requirement
-				

Description

Process Emissions Summary • Continuation Sheet(s)

EMISSION UNIT	1-00EU1				PROCESS	
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
00079-01-6	TRICHLOROETHENE		100	95	0.06825	05

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
					N/A	N/A

EMISSION UNIT	1-00EU1				PROCESS	
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
00127-18-4	TETRACHLOROETHENE		100	95	0.0009	05

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)
					N/A	N/A

EMISSION UNIT	-			PROCESS	
CAS No.	Contaminant Name	% Thruput	% Capture	% Control	ERP (lbs/hr)	ERP How Determined
- -						

PTE (lbs/hr)	PTE (lbs/yr)	PTE (standard units)	Standard Units	PTE How Determined	Actual (lbs/hr)	Actual (lbs/yr)

DEC ID
- -

Section IV - Emission Unit Information (continued)

EMISSION UNIT	Emission Unit Emissions Summary			• Continuation Sheet(s)
-				
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)
CAS No.	Contaminant Name			
- -				
ERP (lbs/yr)	PTE Emissions		Actual	
	(lbs/hr)	(lbs/yr)	(lbs/hr)	(lbs/yr)

Compliance Plan N/A • Continuation Sheet(s)

For any emission units which are not in compliance at the time of permit application, the applicant shall complete the following

Consent Order			Certified progress reports are to be submitted every 6 months beginning ___/___/___										
Emission Unit	Process	Emission Source	Applicable Federal Requirement										
			Title	Type	Part	Sub Part	Section	Sub Division	Parag.	Sub Parag.	Clause	Sub Clause
-												

Remedial Measure / Intermediate Milestones	R/I	Date Scheduled

New York State Department of Environmental Conservation
Air Permit Application

DEC ID
- -

Section IV - Emission Unit Information (continued)

Request for Emission Reduction Credits N/A • Continuation Sheet(s)

EMISSION UNIT -

Emission Reduction Description

Contaminant Emission Reduction Data N/A

Baseline Period ___/___/___ to ___/___/___

Reduction Date	Reduction Method
___/___/___	

CAS No.	Contaminant Name	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
- -			
- -			
- -			

Facility to Use Future Reduction

Name | APPLICATION ID - - /

Location Address

• City / • Town / • Village | State | Zip

Use of Emission Reduction Credits N/A • Continuation Sheet(s)

EMISSION UNIT -

Proposed Project Description

Contaminant Emissions Increase Data

CAS No.	Contaminant Name	PEP (lbs/yr)
- -		

Statement of Compliance N/A

• All facilities under the ownership of this "ownership/firm" are operating in compliance with all applicable requirements and state regulations including any compliance certification requirements under Section 114(a)(3) of the Clean Air Act Amendments of 1990, or are meeting the schedule of a consent order.

Source of Emission Reduction Credit - Facility

Name | PERMIT ID - - /

Location Address

• City / • Town / • Village | State | Zip

Emission Unit	CAS No.	Contaminant Name	ERC (lbs/yr) Netting	ERC (lbs/yr) Offset
-	- -			
-	- -			
-	- -			

DEC ID
- | | | | | - | | | | |

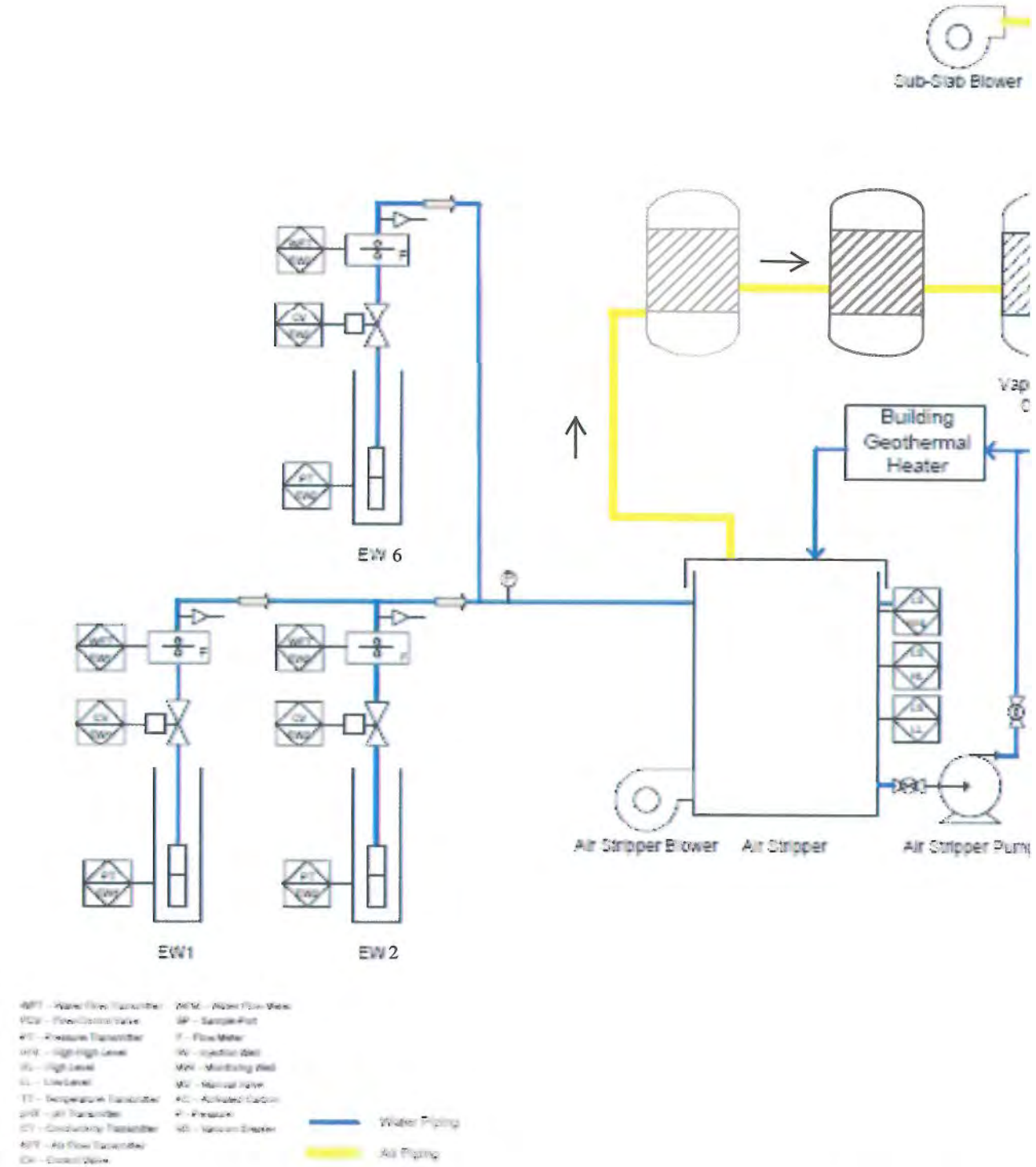
Supporting Documentation

- P.E. Certification (form attached)
- List of Exempt Activities (form attached)
- ✓ Plot Plan
- Methods Used to Determine Compliance (form attached)
- ✓ Calculations
- ✓ Air Quality Model (Results / _____)
- Confidentiality Justification
- Ambient Air Monitoring Plan (_____ / _____ / _____)
- Stack Test Protocols/Reports (_____ / _____ / _____)
- Continuous Emissions Monitoring Plans/QA/QC (_____ / _____ / _____)
- MACT Demonstration (_____ / _____ / _____)
- Operational Flexibility: Description of Alternative Operating Scenarios and Protocols
- Title IV: Application/Registration
- ERC Quantification (form attached)
- Use of ERC(s) (form attached)
- Baseline Period Demonstration
- Analysis of Contemporaneous Emission Increase/Decrease
- LAER Demonstration (_____ / _____ / _____)
- BACT Demonstration (_____ / _____ / _____)
- Other Document(s): _____ (/ /)

_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)
_____ (/ /)

FIGURES

HDR Henningson, Durham & Richardson Architecture and Engineering, P.C. One Blue Hill Plaza Pearl River, NY 10965	**Old Mill Pond GWTF Layout** **Lawrence Aviation Industries Superfund Site** **Port Jefferson Station, New York**	**Figure** 1



Source: Environmental Restoration, LLC, 2012.

Henningson, Durham & Richardson Architecture and Engineering, P.C.
One Blue Hill Plaza
Pearl River, NY 10965

ATTACHMENTS

Lawrence Aviation Industries- Old Mill Pond Groundwater Treatment Building
Attachment A
Air Emissions Calculations
EP-1, BLDG1

Air Emissions Calculations- without application of Control Equipment

CAS No.	Contaminant Name	Max Estimated Influent Water Concentration (µg/L)	Volume of Influent (gpm)	Mass of Contaminant (lb/day)	Mass of Contaminant (lb/hr)	Mass of Contaminant (lb/yr)
00127-18-4	Tetrachloroethene	12	150	0.0216	0.0009	7.884
00079-01-6	Trichloroethene	910	150	1.638	0.06825	597.87

Mass of VOCs removed was calculated using:

$M_w = (Vinf)\ (iC)\ k$

where,

M_w- mass of VOCs in pounds per day

V_{inf}- volume of influent (gpm)

$_iC$- concentration of total VOCs in influent (µg/L)

k is a constant to balance units

Legend:
µg/L - microgram per liter
gpm - gallons per minute
lb - pounds
hr - hour
yr - year

Input Parameters:	Units	Conversions (if any)
Stack dimensions:		
Stack height	29 ft	
Stick up	3 ft	
Outer Diameter	12 in	
Inner Diameter	12 in	1.00 ft
Building dimensions:		
Height	25 ft	
Width	31 ft	
Length	74 ft	
Building to property line	30 ft	
Air stripper pump (TDH)	45 in	
GW temp (MPW-02)	14 deg C	57.2 deg F
Approx Air Temp	80 deg F	
Assuming heat loss	75 deg F	
Max Air flow rate	2300 cfm	38 cfs
Velocity	49 ft/sec	

Scenario 1: EW-01, EW-02 and EW-06 through air stripper

Contaminant of Concern	CAS No	Groundwater Influent Concentration (µg/L)	Groundwater Flow Rate (gpm)	Emissions Rate[1] (lbs/day)	Emissions Rate (lbs/hr)	Emissions Rate (lbs/yr)
Trichloroethene	00079-01-6	910	150	1.6423	0.0684306	599.45
Tetrachloroethene	00127-18-4	12	150	0.0217	0.0009024	7.90

Acronyms:
EW - extraction well
CAS No - chemical abstract service number
µg/L - microgram per liter
gpm - gallons per minute
lbs - pounds
AGC - annual guideline concentration value
SGC - short-term guideline concentration value
Short-term maximum - sum of the max individual short-term contaminant impacts
Potential annual - sum of individual contaminant's potential annual impacts which are actual failures that may occur if the source operates conti

Notes:
1. Emissions rate calculated by:
   Groundwater influent concentration (µg/L) x Groundwater flow rate (gpm) x 1440 (min/day) x (1 lb/453.6 g) x (3.79 L/1 gal) x (1 g/10^6 µg)
2. Obtained from running input parameters and the calculated emissions rate for each contaminant through the DAR-1 model.

This page intentionally left blank.

----- Message from "Bruce Terbush" <brterbus@gw.dec.state.ny.us> on Fri, 10 Apr 2009 13:50:50 -0400 -----
To: "Steven Scharf" <sxscharf@gw.dec.state.ny.us>
Subject: Lawrence Aviation - Draft Effluent Criteria for Downgradient Groundwater Treatment Facility

Steve,

Attached is the draft effluent criteria for the Lawrence Aviation Industries Downgradient Groundwater Treatment Facility for three discharge alternatives. These limits are based upon the draft SPDES Permit Equivalent Application provided by Jeff Catanzarita of EPA on December 3, 2008.

This remedial project is intended to support the onsite groundwater pump & treat system by intercepting the offsite groundwater plume that is migrating from the Lawrence Aviation Industries site toward Port Jefferson Harbor. Groundwater will be intercepted at point prior to where groundwater enters Old Mill Pond and will be treated by sediment filters, air stripping and activated carbon prior to discharge. EPA has requested that this review provide draft effluent criteria and comments for several discharge alternatives including: (1) groundwater reinjection; (2) a discharge to Old Mill Pond; and (3) a discharge to the storm sewer system discharging to Port Jefferson Harbor. The draft effluent criteria is provided in the attached file as Alternatives I, II and III, respectively.

For alternative I, the effluent criteria is based upon our Division of Water's TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. Monitoring for aluminum was substituted in place of a limit based upon facility sampling indicating a high local background concentration.

For alternative II, the effluent criteria for chloromethane, 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethylene, 1,1,1-trichloroethane and trichloroethylene reflect technology limits in Attachment C from our Division of Water's TOGS 1.2.1 Industrial Permit Writing Manual. The effluent criteria for tetrachloroethylene, hexavalent chromium, copper, iron and zinc are based upon the Division of Water's TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations for Class D waters. Zero dilution has been assumed at this point of the review because no information has been provided regarding the location of this discharge. It must also be noted that the discharge to Old Mill Pond may be subject to the Class SC standards if Old Mill Pond is determined to be a continuous flowing natural stream tributary to Port Jefferson Harbor in accordance with 6NYCRR Part 925.4. This information should be addressed in your final SPDES Permit Equivalent Application.

For alternative III, the effluent criteria for chloromethane, 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethylene, 1,1,1-trichloroethane and trichloroethylene reflect technology limits in Attachment C from our Division of Water's TOGS 1.2.1 Industrial Permit

Writing Manual. The effluent criteria for tetrachloroethylene, hexavalent chromium, copper, lead, nickel and zinc are based upon the Division of Water's TOGS 1.1.1 Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations for Class SC waters. Again zero dilution has been assumed at this point of the review because no information has been provided regarding the location of this discharge. As mentioned above the discharge to Old Mill Pond may be subject to the Class SC standards if Old Mill Pond is determined to be a continuous flowing natural stream tributary to Port Jefferson Harbor in accordance with 6NYCRR Part 925.4.

In light of the above, the attached draft limits should be considered for your system design. Information should be collected to determine if the flow in Old Mill Pond is intermittent or continuously flowing to Port Jefferson Harbor. This will help to determine whether Alternative II or III will apply to the proposed discharge to Old Mill Pond. Additionally, information regarding location of the outfall may allow for some consideration of dilution where effluent criteria is based upon the ambient water quality standards. This would include the configuration of the storm sewer discharge pipe to Port Jefferson Harbor.

Please provide this information to EPA. If you have any questions, I can be reached at the number below.

Bruce Terbush
NYSDEC, Bureau of Water Permits
625 Broadway
Albany, NY 12233-3505
(518) 402-8235

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
2890 WOODBRIDGE AVENUE
EDISON, NJ 08837

August 15, 2011

Steven M. Scharf, P.E.
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Action, Bureau A
625 Broadway
Albany, NY 12233-7015

Subject : SPDES Permit Equivalent for Lawrence Aviation Industries – Old Mill Creek

Mr. Scharf:

As you are aware, the U.S. Environmental Protection Agency ("EPA") is in the process of constructing a groundwater pump and treatment facility at the intersection of Caroline Avenue and Brook Road in Port Jefferson, Suffolk County, New York. When the treatment facility becomes fully operational, effluent waters will be discharged into the Old Mill Pond and Creek. On December 3, 2008 EPA provided the New York State Department of Environmental Protection ("DEC") with a State Pollution Discharge Elimination System ("SPDES") Permit Equivalent Application. The application listed three post treatment water discharge options. This memo is being submitted to notify DEC that EPA will be discharging water into the Old Mill Pond and Creek, an option outlined in 2008.

On April 10, 2009 DEC provided EPA with effluent criteria detailing limitations and monitoring requirements that must be met for discharged waters into Old Mill Pond and Creek. EPA agrees with the draft criteria set forth in the document with the exception of hexavalent chromium. This contaminant has not been found to be associated with activities at the Lawrence Aviation Industries Site. Groundwater samples collected throughout the area by EPA and its contractors have not found chromium to be at levels of concern. It is with this that EPA accepts the effluent parameters without hexavalent chromium. EPA shall adhere to these criteria by sampling on a monthly basis, following an eight (8) week consecutive sampling event showing no exceedances.

Sincerely,

Keith Glenn
US EPA Region II
Regional Emergency Response Operations
2890 Woodbridge Avenue
Edison, NJ 08837
732-321-4454
glenn.keith@epa.gov

Attachment: LAI Downgradient Limits for Discharge Alternative II

EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning: Upon Start-up of Treatment System

and lasting until: Start-up + 5 years
the discharges from this treatment system to groundwater shall be limited and monitored by the operator as specified below:

Outfall and Parameters	Limitations		Units	Minimum Monitoring Requirements	
	Daily Avg.	Daily Max.		Measurement Frequency	Sample Type
Treated Groundwater Remediation Discharge to Mill Pond (Class D)					
Flow	Monitor	150	GPM	Continuous	Recorder
Flow	Monitor	Monitor	GPD	Continuous	Recorder
pH (range)	6.0 to 9.0		SU	Monthly	Grab
Chloromethane	NA	10.0	µg/l	Monthly [1]	Grab
1,1-Dichloroethane	NA	10.0	µg/l	Monthly [1]	Grab
1,1-Dichloroethene	NA	10.0	µg/l	Monthly [1]	Grab
cis-1,2-Dichloroethylene	NA	10.0	µg/l	Monthly [1]	Grab
1,1,1-Trichloroethane	NA	10.0	µg/l	Monthly [1]	Grab
Trichloroethylene	NA	10.0	µg/l	Monthly [1]	Grab
Tetrachloroethylene	NA	1.0	µg/l	Monthly [1]	Grab
Chromium, Hexavalent [2]	NA	16	µg/l	Monthly [1]	Grab
Copper	NA	13.4	µg/l	Monthly [1]	Grab
Iron	NA	0.3	mg/l	Monthly [1]	Grab
Zinc	NA	0.12	mg/l	Monthly [1]	Grab

Footnotes:

(1) The minimum measurement frequency shall be monthly following a period of 8 consecutive weekly sampling events showing no exceedances of the stated discharge limitations.

(2) Limit based on the dissolved form of hexavalent chromium.

Additional Conditions:

(1) Discharge is not authorized until such time as an engineering submission showing the method of treatment is approved by the Department. The discharge rate may not exceed the effective or design treatment system capacity. All monitoring data, engineering submissions and modification requests must be submitted to:

Salvatore Badalimenti - Remedial Project Manager (RPM)
USEPA - Region 2
290 Broadway, 20th Floor
New York, NY 10007-1866
Phone: (212) 637-3314

and

Steven M. Scharf
NYSDEC
Division of Environmental Remediation, Remedial Action, Bureau A
625 Broadway
Albany, New York 12233-7015
Phone: (518) 402-9620

With a copy sent to:

Regional Water Manager
NYSDEC - Region 1
SUNY Campus, Bldg. 40
Stony Brook, New York 11790
Phone: (631) 444-0405

(2) Only groundwater from the extraction wells for this remedial project is authorized for treatment and discharge.

(3) Authorization to discharge is valid only for the period noted above but may be renewed if appropriate. A request for renewal must be received 6 months prior to the expiration date to allow for a review of monitoring data and reassessment of monitoring requirements.

(4) Both concentration (mg/l or µg/l) and mass loadings (lbs/day) must be reported to the Department for all parameters except flow and pH.

(5) Any use of corrosion/scale inhibitors, biocidal-type compounds, or other water treatment chemicals used in the treatment process must be approved by the department prior to use.

(6) This discharge and administration of this discharge must comply with the substantive requirements of 6NYCRR Part 750.

{In Archive} Lawrence Aviation Offsite Pump and Treat SPDES Modification
Steven Scharf
to:
Keith Glenn
09/23/2011 08:57 AM
Cc:
Salvatore Badalamenti, Maria Jon, "John Swartwout", "John Conover", "William Spitz"
Hide Details
From: "Steven Scharf" <sxscharf@gw.dec.state.ny.us> Sort List...

To: Keith Glenn/R2/USEPA/US@EPA

Cc: Salvatore Badalamenti/R2/USEPA/US@EPA, Maria Jon/R2/USEPA/US@EPA, "John Swartwout" <jbswarto@gw.dec.state.ny.us>, "John Conover" <jeconove@gw.dec.state.ny.us>, "William Spitz" <whspitz@gw.dec.state.ny.us>

History: This message has been replied to.
Archive: This message is being viewed in an archive.

1 Attachment

letter.hw152016.2011-08-15.Offsite_Pump_&_Treat_EPA_SPDES_Permit_Equivalent_Discharge_Response,pdf.pdf

Keith,

This e-mail is in response to the USEPA request to remove hexavalent chromium from the State Pollution Discharge Elimination System (SPDES) analysis requirements for the Lawrence Aviation Industries Offsite Pump and Treat System. This is for the discharge of that offsite pump and treat system, located in the Village of Port Jefferson. The NYSDEC has reviewed your request to remove hexavalent chromium, and by means of this e-mail, hereby approves the USEPA request.

The analyses for the Lawrence Aviation Industries Offsite Pump and Treat system will continue to monitor for total chromium as part of the inorganic analyses. Should the chromium values change significantly, the USEPA will initiate an evaluation of this rise in chromium values and report those findings to the NYSDEC.

A letter will not follow this e-mail. Should you have any questions, please contact me at your earliest convenience.

Steven M. Scharf, P.E.
Project Engineer
New York State Department of
Environmental Conservation
Division of Environmental Remediation
Remedial Action, Bureau A
625 Broadway
Albany, NY 12233-7015
(518)402-9620
Fax: (518)402-9022
EDOCS Information
Region 1, Suffolk (C), Brookhaven (T)
NYSDEC Site No. 152016-OMM
FOILable

Steve : Attached is the memo from EPA accepting the draft effluent criteria for the LAI - Old Mill Creek pump and treatment system. As discussed, we are accepting the limits with the exception of hexavalent chromium. Let me know if you have any questions.

Thanks,

Keith Glenn
EPA Region II
Regional Emergency Operations Center
2890 Woodbridge Avenue
Edison, NJ 08837
glenn.keith@epa.gov
732/321.4454

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION II
2890 WOODBRIDGE AVENUE
EDISON, NJ 08837

November 22, 2011

ELECTRONIC COORESPONDANCE

Steven M. Scharf, P.E.
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Action, Bureau A
625 Broadway
Albany, NY 12233-7015

Subject : Commencement of Monthly Sampling; Completion of Weekly Sampling

Mr. Scharf:

On September 23, 2011 the U.S. Environmental Protection Agency (EPA) received approved criteria for discharge of treated groundwater at the Lawrence Aviation Industries Site-Old Mill Pond (LAI) location in Port Jefferson, NY. The discharge criteria were established to meet the New York State Department of Environmental Conservation (NYSDEC) State Pollution Discharge Elimination System (SPDES) program elements.

EPA has been conducting sampling events at the LAI-Old Mill Pond Site since August 18, 2011. Sampling and analytical procedures have been conducted in accordance with the SPDES equivalent criteria agreed upon. A total of twelve (12) sampling events have been conducted between August and November 2011, encompassing eight (8) consecutive operating weeks of the treatment system. Samples collected included influent waters, pre-air stripper, pre-carbon filtration, post-filtration, effluent, and others. Based on the results of the sampling events, the discharge criteria have been met for all parameters. No exceedances were noted in any of the sampling events. As such, EPA has completed the eight week minimum measurement frequency sampling phase of the project. EPA will commence with a monthly sampling protocol that will test for the parameters as outlined in the SPDES criteria. As specified in the SPDES equivalent memo, monthly sampling will be conducted for the next five (5) years or until conditions have changed. Should you have any questions, feel free to contact me.

Sincerely,

Keith Glenn
US EPA Region II
Regional Emergency Response Operations
2890 Woodbridge Avenue
Edison, NJ 08837
732-321-4454
glenn.keith@epa.gov

APPENDIX C

EQUIPMENT OPERATION AND MAINTENANCE MANUALS

C-1 Extraction Well Pumps
C-2 Stride Ethernet Switches
C-3 Actuated Ball Valves
C-4 Signet Magmeter Flow Sensor
C-5 GE Sensing, PTX/PDCR 1230 Depth and Level Sensors
C-6 C-More Hardware (Human Machine Interface) User Manual
C-7 Automation Direct DL205 Programmable Logic Computer User Manual
C-8 Automation Direct Ethernet Communications Models
C-9 Stride Industrial Ethernet Switches
C-10 Transfer Pump Installation, Operation, and Maintenance Instructions
C-11 Dura Pulse AC Drive User Manual
C-12 Proline Promag 50P, 53P Technical Information
C-13 Shallow Tray Air Stripper Model 31231 Technical Information
C-14 Wayne Sump Pump Technical Information
C-15 Lorex True Definition Bullet Security Camera

Due to the overly large size of the electronic version of the Equipment Manual file, it has been omitted from this version of the O&M Manual. The Equipment Manual can be found on the HGL Client Portal and also on a compact disc of the entire O&M Manual that will be delivered to the GWTP after the O&M Manual is finalized.

APPENDIX D

HEALTH AND SAFETY INSPECTION CHECKLIST

This page intentionally left blank.

28.3 USACE FACILITY SAFETY INSPECTION CHECKLIST

Facility	Date:	Inspected by:

INSTRUCTIONS

The purpose of this inspection checklist is to record your facility self-inspection.

The checklist is divided into major hazard groups. Under each hazard group are **Statements** about various conditions in the facility. There are three possible answers for each statement: **Yes** means that that there are no deficiencies associated with that statement anywhere in the facility; **No** means that there are one or more deficiencies; **N/A** means that the statement is not applicable to your facility; and, **Corrected** means that all the deficiencies connected to that statement have been corrected during the inspection. For example, if an electric wall socket is missing a cover plate but it was immediately corrected, then the **No** and the **Corrected** boxes would be checked. A "No" deficiency will be noted in the Deficiency Description box. If three wall sockets in various employees' facility offices were missing cover plates and either none of them or not all of them were corrected, then the **No** box would be checked and one or more deficiencies would be recorded in the Deficiency Description box.

The entry in the Deficiency Description box should include a deficiency number as explained in the Office and Facility Inspection Program, Section 3, the statement number of the deficiency, and the location(s) of the deficiency. Deficiencies found in multiple locations under the same statement number can be grouped under one deficiency number.

Forward the completed Inspection Checklist to the responsible manager and to the Director, Health & Safety by the 15th of the first month of the calendar Quarter in which the inspection is due.

28.3 USACE FACILITY SAFETY INSPECTION CHECKLIST

Facility	Date:	Inspected by:

1.0 GENERAL FACILITIES ISSUES

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
1.1 Bulletin board: State and federal Labor Posters are current and posted in an area frequented by employees. OSHA 300A posted Feb 1-April 30.					01.A.07h and 01.A.07.g
1.2 Bulletin board: Emergency phone numbers are posted where they can be found in case of an emergency. A map to the nearest emergency care facility is available					01.A.07a-b
1.3 Bulletin board: The facility has a copy of the APP.					01.A.07c
1.4 Bulletin board: The facility has a deficiency tracking log.					01.A.07.e
1.5 Bulletin board: The facility has an up to date SDS book or other system for making SDSs available to personnel and a list of chemicals and quantities with their locations.					01.A.07.i
1.6 Facility offices and cubicles are kept neat without excessive piles of files, books, plans either on top of or under desks, that could pose a hazard or impede egress.					02.B.03
1.7 Lighting is adequate, especially in escape routes.					07.A and 07.B.02
1.8 Are there new hazards or hazards not addressed by this checklist that should be assessed or controlled?					
Notes					

2.0 WALKING AND WORKING SURFACES

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
2.1 Floors are clean. Free of trip, slip, and fall hazards. Floors are free of protrusions, loose tiles, or carpets.					14.D.02
2.2 Corridors, passageways and aisles are clear and unobstructed.					14.D.02
2.3 Stair treads and edgings are in good repair.					14.D.02
2.4 Handrails are present and in good repair.					24.C
2.5 Exits are clear and unobstructed.					14.C.07
2.6 Outside exit landings and walkways are clear and unobstructed.					29 CFR 1910.37

HydroGeoLogic, Inc
Exceeding Expectations

28.3 USACE FACILITY SAFETY INSPECTION CHECKLIST

Facility	Date:	Inspected by:

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
2.7 Exits are marked with visible signs. If exit signs are illuminated there are no burnt out bulbs.					08 Table 8-1 Accident prevention signs
2.8 Facility exit doors open easily and without use of keys or other actions that might impede egress.					OSHA 29 CFR 1910.36 and 1910.37 NFPA 101 life safety codes
Notes					

3.0 STORAGE

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
3.1 Storage areas are neat and maintain at least 2 feet of unobstructed aisle space.					14.C.07
3.2 Adequate storage shelving is available. Boxes are not stacked on the floor or on top of file cabinets or in other locations that might pose a hazard or impede egress.					14.C.01
3.3 Vertical storage shelving and other storage systems are sturdy and stable or are secured to walls or to each other to prevent falling over or collapsing (bookcases are excluded from this requirement).					14.C
3.4 Materials are properly stacked (heaviest materials on the bottom).					14.C
3.5 Step ladders are present to enable access to top shelves and the ladders are in good condition and have slip resistant feet.					24B.08
3.6 Flammable/combustible liquids or compressed gases are not stored in offices.					09.B.01
3.7 Field equipment is cleaned before it is returned to the facility for storage.					OSHA 29 CFR 1910.303(b)(1)(i)
3.8 If there are more than 10 gallons of flammable solvents and chemicals stored inside, they are stored in NFPA and OSHA compliant cabinets away from sources of ignition. If less than 10 gallons they will be stored in original containers.					09.B.12 and OSHA 29 CFR1910.106 and 29 CFR 1910.101

28.3 USACE FACILITY SAFETY INSPECTION CHECKLIST

Facility	Date:	Inspected by:

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
3.9 Each container of hazardous substances is labeled with the name of the chemical and its hazards or it bears the original label from the manufacturer.					06.B.01.a (4)b OSHA 29 CFR 1910.1200
3.10 Mezzanines used for storage have been evaluated for static load capacity and a sign stating the allowable weight per square foot posted.					OSHA 29 CFR1926.250 and 1910.30(a)

Notes

4.0 EQUIPMENT AND FURNISHINGS

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
4.1 Office furniture is functional without obvious defects (clean and without protruding splinters or sharp metal edges).					5(a)1 OSHA General Duty Clause
4.2 Space heaters have guards in front of the heating elements, are positioned clear of combustible materials, and have a working tip switch.					09.D.09
4.3 Machines with rotating parts, pinch points, flying debris, or sparks adequately guarded.					17.A.03
4.4 Power saws and all mechanical cutting and grinding equipment are adequately guarded.					13.C.02
4.5 Machinery and equipment are inspected well maintained and clean.					18.G.02

Notes

28.3 USACE FACILITY SAFETY INSPECTION CHECKLIST

Facility	Date:	Inspected by:

5.0 ELECTRICAL SAFETY

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
5.1 Electrical equipment is used in the application for which it was rated (power levels for extension cords, wet vs. dry service, etc.).					11.A.04
5.2 Power cords are in good condition – no exposed wires, not spliced, not frayed or with cracked or damaged plugs.					11.A.04e
5.3 Power cords are used safely – placed/secured to prevent tripping and not run under carpets or chair mats or anything else that might compress the cords or retain heat.					11.A.04
5.4 Temporary wiring used for 90 days or less shall be marked with the date put into service.					National Electric code section 590.3 (B)and OSHA 29 CFR 1910.305(a)(2)(i)(B)
5.5 There is no daisy chaining of extension cords and/or power strips.					OSHA 29CFR 1910.303 (a) and 1910.304(b)(2)
5.6 Ground fault circuit interrupter outlets are in place near water (sinks, showers, etc.).					19.A.05m
5.7 Outlets (receptacles) are grounded with no evidence of cracking or burning.					EM 385-1-1 Appendix E OSHA 29 CFR 1910.304 (a)
5.8 All wall electrical receptacles and switches are protected with a cover plate so that no wires or energized components are exposed.					OSHA 29 CFR 1926.405(j)(1)(i) and 29 CFR 1910.305 (b)(2)(i)
5.9 Circuit breaker boxes have securely fastened covers.					11.C.01 11.C.05
5.10 Each circuit breaker is marked with the outlet or circuit it controls.					11.C.04
5.11 Access to each circuit breaker box is not impeded by stored materials (3 feet of clearance taped off on the floor in front of the circuit breaker box marking an access way is best practice).					11.C.01 OSHA 29 CFR 1910.303
5.12 All unused openings (including conduit knockouts) in electrical enclosures and fittings are closed with appropriate covers, plugs, and plates. There are no exposed energized components.					11.A
5.13 Portable electric hand tools are grounded or double insulated.					11.D

28.3 USACE FACILITY SAFETY INSPECTION CHECKLIST

Facility	Date:	Inspected by:

Notes

6.0 FIRE AND EMERGENCY RESPONSE

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
6.1 Fire extinguishers are the proper type for the hazard.					09.A
6.2 The location of the nearest fire extinguisher is indicated by a sign on the wall over its location.					08.A.05 f (1)
6.3 Access to fire extinguishers is not impeded by stored materials					OSHA 29 CFR 1910.157
6.4 Sprinkler heads, if present, are in good condition and their operation is unimpeded (there is at least 18 inches of clearance all the way around sprinkler heads). Nothing is hung from exposed sprinkler heads.					OSHA 29 CFR 1910.159(c)(10)
6.5 Building management conducts annual sprinkler system testing.					OSHA 29CFR1910.159(c)(2); NFPA 25 5.1 and Table 5.1.
6.6 Smoke and/or heat detectors, if present, are in good condition and their operation is unimpeded.					OSHA 29 CFR 1019.164
6.7 Building management conducts annual smoke and/or heat detector testing.					National Fire Protection Association, National Fire Alarm Code, NPFA-72
6.8 Evacuation routes are posted near every exit door and in the elevator lobby.					33.B.02 n.(3)
6.9 Each employee knows the rally point to meet after evacuation.					01.E.01.d.(3)
6.10 One employee is responsible for bringing the visitor's log from the building.					OSHA 29 CFR 1910.38
6.11 The building runs fire drills at least annually, if occupancy exceeds 50 personnel.					Fire brigade drills 09.J.02
6.12 Smoking prohibited except in designated areas and signs posted.					33.B.02 i.(1)

28.3 USACE FACILITY SAFETY INSPECTION CHECKLIST

Facility	Date:	Inspected by:

Notes

7.0 FIRST AID AND SANITATION

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
7.1 Kitchenette appliances are clean and in safe working order:					OSHA 29 CFR 1910.141
7.1.1 Toasters in good condition and free of heavy accumulations of crumbs, which can pose a fire hazard.					OSHA 29 CFR 1910.141
7.1.2 Coffee Makers in good condition with no exposed wiring or signs of overheating.					OSHA 29 CFR 1910.141
7.1.3 Microwaves in good condition: doors close securely and protective covers in place.					OSHA 29 CFR 1910.141
7.2 Materials in First Aid and CPR kits are within their expiration dates.					03.A.03 a. (2)b.
7.3 Facility toilets and washing stations are clean and sanitary.					02.E
7.4 Facility quick water flush systems in place if corrosive liquids are present.					06.B.02 b. and OSHA 29 CFR 1910.151(c)
7.5 Potable water and refreshment for extreme temperature work (hot or cold) is available.					5(a)1 OSHA General Duty Clause
Notes					

8.0 CHECKS AND INSPECTIONS

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or

28.3 USACE FACILITY SAFETY INSPECTION CHECKLIST

Facility	Date:	Inspected by:

					OSHA reference
8.1 A monthly functional test of emergency lights is conducted for 30 seconds. Lights should be fully operational during the entire test.					NFPA Life Safety Code (101) OSHA 29 CFR 1910.37
8.2 Fire extinguishers are inspected monthly by HGL or building management and serviced annually by a service company.					09.F.01 a.
8.3 First aid kits/CPR equipment are inspected minimally every 3 months and consumed or out of date supplies replaced.					03.B.03
8.4 Eyewash and emergency shower stations inspected every 30 days.					OSHA 29 CFR 1910.151(c)
Notes					

9.0 PERSONAL PROTECTIVE EQUIPMENT

Workplace Conditions	Yes	No	N/A	Corrected	EM 385-1-1 or OSHA reference
9.1 Eye protection available					05.B
9.2 Head protection available					05.D
9.3 Hand protection available					05.H
9.4 Electrical/Arc Flash equipment available					05.I/11.B.02
9.5 Protective clothing available					05.A.06
9.6 Fall protection equipment available					05.A.09
9.7 Respiratory protection available					05.G
9.8 Lockout/Tagout equipment available					12.B.02
9.9 Insect repellent available					06. E. 01
9.10 Hearing protection available					05.C.04
9.11 Permit-required confined space entry equipment available					Section 34
Notes					

28.3 USACE FACILITY SAFETY INSPECTION CHECKLIST

Facility	Date:	Inspected by:

10.0 COVID-19

		Yes	No	N/A	Corrected
10.1	Controls comply with current client requirements.				
10.2	Controls comply with current CDC recommendations.				
10.3	Controls comply with local or project requirements.				
10.4	Personnel spaced at least 6 feet apart.				
10.5	Personnel wearing face covers over nose and mouth when near others.				
10.6	Handwashing facilities readily available and stocked with soap or hand sanitizer.				
10.7	Meetings are held outside or in well ventilated spaces that allow distancing.				
10.8	Commonly touched surfaces are disinfected regularly.				
10.9	Persons with signs of illness, such as coughing, are excluded.				
10.10	Personnel are reminded that they are to evaluate their health status every morning before coming to work and that they are not to come to work if ill.				
Notes					

This page intentionally left blank.

APPENDIX E

HOSPITAL ROUTE MAP

This page intentionally left blank.

St. Charles Hospital
200 Belle Terre Road
Port Jefferson, NY 11777
(631) 474-6000

Directions to St. Charles Hospital from the Old Mill Pond treament system (1.1 miles, 4 minutes):

1. Take a right turn out of the treatment system driveway onto Brook Road.
2. Turn right onto West Broadway.
3. Continue onto East Broadway.
4. Turn right onto Belle Terre Road.
5. Turn right at 200 Belle Terre Road to St. Charles Hospital.

\\Srv-gst-01\hglgis\Lawrence_Aviation_K13006_MSIW\APP_SSHP\(x)OMP_Hospital_Route.mxd
11/9/2020 JG
Source: HGL, HDR, ESRI ArcGIS Online Imagery

Legend

- St. Charles Hospital
- Hospital Route
- Site Boundary

Hosptial Route Map
Old Mill Pond Facility

This page intentionally left blank.

APPENDIX F

GROUNDWATER SAMPLING SUMMARY TABLE

This page intentionally left blank.

Table 01800-3

Environmental Monitoring Schedule for Groundwater

Lawrence Aviation Industries Superfund Site, Port Jefferson Station, New York

Well Type	Well ID	Port	Annual Monitoring		Synoptic Water Levels	
			All other parameters	1,4-Dioxane only	Annually	Continuously
Extraction Well	EW-01	N/A	X	X		X
Extraction Well	EW-02	N/A	X	X		X
Injection Well	IW-01	N/A				X
Injection Well	IW-02	N/A				X
Injection Well	IW-03	N/A				X
Injection Well	IW-04	N/A				X
Injection Well	IW-05	N/A				X
Multiport Well	MPW-01	A	X		X	
		B	X		X	
		C	X		X	
Multiport Well	MPW-02	A	X		X	
		B	X		X	
		C	X		X	
		D	X		X	
Multiport Well	MPW-03	A	X		X	
		B	X		X	
		C	X		X	
		D	X		X	
Multiport Well	MPW-04	A	X		X	
		B	X		X	
		C	X		X	
		D	X		X	
		E	X		X	
Multiport Well	MPW-05	A	X		X	
		B	X		X	
		C	X		X	
		D	X		X	
Multiport Well	MPW-06	A	X		X	
		B	X		X	
		C	X		X	
		D	X		X	
Multiport Well	MPW-07	A	X		X	
		B	X		X	
		C	X		X	
Multiport Well	MPW-08	A	X		X	
		B	X		X	
		C	X		X	
		D	X		X	
		E	X		X	
Multiport Well	MPW-09	A	X	X	X	
		B	X	X	X	
		C	X	X	X	
		D	X	X	X	
		E	X	X	X	
Multiport Well	MPW-10	A	X		X	
		B	X		X	
		C	X		X	
		D	X		X	
Monitoring Well	MW-PD-11	N/A	X		X	
Monitoring Well	MW-PD-12	N/A	X	X	X	
Monitoring Well	MW-PD-13	N/A	X		X	
Monitoring Well	MW-PD-14	N/A	X		X	
Monitoring Well	MW-PD-15	N/A	X		X	
Monitoring Well	MW-PD-16	N/A	X	X	X	
Monitoring Well	MW-PD-17	N/A	X		X	
Monitoring Well	MW-1	N/A	X		X	
Monitoring Well	MW-05	N/A	X		X	

Table 01800-3

Environmental Monitoring Schedule for Groundwater

Lawrence Aviation Industries Superfund Site, Port Jefferson Station, New York

Well Type	Well ID	Port	Annual Monitoring		Synoptic Water Levels	
			All other parameters	1,4-Dioxane only	Annually	Continuously
Monitoring Well	FG-01	N/A	X		X	
Piezometer	PZ-01	N/A			X	
Piezometer	PZ-02	N/A			X	
Piezometer	PZ-03	N/A			X	
Piezometer	PZ-04	N/A			X	
Piezometer	PZ-05	N/A	X		X	
Piezometer	PZ-06	N/A	X		X	
Piezometer	PZ-07	N/A	X		X	
Monitoring Well	MW-ISCO-1	N/A				
Monitoring Well	MW-ISCO-2	N/A	X			
Monitoring Well	MW-ISCO-3	N/A				
Monitoring Well	MW-ISCO-4	N/A	X	X		
Monitoring Well	MW-ISCO-5	N/A	X			
ISCO-Injection Well	IW-ISCO-10	N/A	X			
Extraction Well	EW-1	N/A	X	X		X
Extraction Well	EW-2	N/A	X	X		X
Extraction Well	EW-3	N/A	X			X
Extraction Well	EW-4	N/A	X			X
Extraction Well *	EW-6	N/A	X	X		X
Monitoring Well	EW-5	N/A	X		X	
Monitoring Well	TB-01	N/A	X		X	
Monitoring Well	RB-01	N/A	X		X	
Monitoring Well	MW-1A	N/A	X		X	
Monitoring Well	MW-1B	N/A	X		X	
Monitoring Well	MW-2A	N/A	X		X	
Monitoring Well	MW-2B	N/A	X	X	X	
Monitoring Well	MW-3	N/A	X		X	
Monitoring Well	SDW-1	N/A	X		X	
Monitoring Well *	MW-2C	N/A	X		X	
Monitoring Well *	MW-2D	N/A	X		X	
Monitoring Well *	MW-4A	N/A	X		X	
Monitoring Well *	MW-4B	N/A	X		X	
Monitoring Well *	MW-5A	N/A	X		X	
Monitoring Well *	MW-5B	N/A	X		X	
Monitoring Well *	MW-6A	N/A	X		X	
Monitoring Well *	MW-6B	N/A	X		X	

Notes:

Samples will be collected for VOCs, metals, and wet chemistry parameters (alkalinity, sulfate, hardness, chloride, fluoride, TKN, TOC TSS, TDS, and ammonia.

Field measurements will be collected for water level, DO, temperature, conductivity, pH, turbidity, ferrous iron, and ORP.

Synoptic groundwater levels will be collected during annual groundwater sampling events.

Continuous water level measurements will be recorded using a pressure transducer installed in the well.

Sample will be collected from all ports at the multiport wells.

* Wells installed in July 2013 by ERT/USEPA.

APPENDIX G

GOVERNMENT PROPERTY LIST

This page intentionally left blank.

Old Mill Pond (OMP) Groundwater Treatment Plant

Site	Location	Sub Location	Asset Name	Asset Description	Barcode	Asset Category	Asset Usage	Manufacture	Model	Asset Serial No	Quantity On	Com
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	OMP Building used to house the treatment plant is a slab on grade wooden frame structure approximately 75'x30' with the outward appearance of a residential home.	Treatment System Building and Treatment System Equipment	V-003243	Equipment	In-Use	None	None		1	
Lawrence Aviation Industries			**Treatment System:**									
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Air Stripper Unit	Treatment System Equipment	G-002374	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Air Stripper Pump/Blower/Motor	Treatment System Equipment	G-002375	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Liquid Carbon Vessel 2000lbs	Treatment System Equipment	G-002376	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Liquid Carbon Vessel 2000 lbs	Treatment System Equipment	G-002377	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Vapor Carbon Vessel 2000 lbs	Treatment System Equipment	G-002378	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Vapor Carbon Vessel 2000 lbs	Treatment System Equipment	G-002379	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Vapor Carbon Vessel 2000 lbs	Treatment System Equipment	G-002380	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Dehumidifier	Treatment System Equipment	G-002381	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Sump Pump	Treatment System Equipment	G-002382	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Single Cell Bag Filter Unit	Treatment System Equipment	G-002383	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP System	Single Cell Bag Filter Unit	Treatment System Equipment	G-002384	Equipment	In-Use				1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Process Room	Leaf Blower		G-002744	Equipment	In-Use	Husqvarna	150BT	10301513	1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Process Room	Power Washer		G-002745	Equipment	In-Use	Ryobi	GCV160LA 1 G5B T 104	GJATA 2163368	1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Process Room	Snow Blower		G-002746	Equipment	In-Use	Craftsmen	247.883571	1L161B50276	1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Process Room	Weed Trimmer		G-002747	Equipment	In-Use	Ryobi	RY4CSS	EU17013D050825	1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Process Room	Hedge Trimmer		G-002748	Equipment	In-Use	Ryobi	RY 40601		1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Control Room	Control Box		G-002749	Equipment	In-Use	Solinst	WATERLOO 466-250	250 ECU 5572	1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Control Room	Control Box		G-002750	Equipment	In-Use	Solinst	WATERLOO 466-250	250 ECU 5577	1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Extra light for celing		V-003244	Building Supplies	Available	None	None		1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Fire Extinguishers w/ compressed nitrogen/ various sizes		V-003245	Building Supplies	Available	None	None		3	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Ear Plugs		V-003246	Consumables	Available	None	None		1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Overhead bench light (in box)		V-003247	Building Supplies	Available	None	None		1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Floor runners		V-003248	Building Supplies	Available	None	None		1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Box of ceiling tiles (extra)		V-003249	Building Supplies	Available	None	None		1	
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Air Stripper Blower Motor, 20 HP		V-003250	Spares	Available	None	None		1	On-Shelf Spare
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Discharge Pump Motor, 7.5 HP		V-003251	Spares	Available	None	None		1	On-Shelf Spare
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Discharge Pump & Motor, 15 HP		V-003252	Spares	Available	None	None		1	On-Shelf Spare
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Blower VFD/Motor Starter, 20 HP		V-003253	Spares	Available	None	None		1	On-Shelf Spare
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Discharge Pump VFD/Motor Starter, 15 HP		V-003254	Spares	Available	None	None		1	On-Shelf Spare
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Water Level Transducer, 80 ft		V-003255	Spares	Available	None	None		1	On-Shelf Spare
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Baldor, Blower Motor, 20 HP		V-003264	Excess Equipment	Available	None	None		2	Brought to the Site by EPA durir 2011. Never used as part of LAI/OMP . They were never tested and their
Lawrence Aviation Industries	Port Jefferson, NY	OMP Treatment Room	Baldor, Pump and Motor, 15 HP		V-003265	Excess Equipment	Available	None	None		2	Brought to the Site by EPA durir 2011. Never used as part of LAI/OMP . They were never tested and their
												Brought to the Site by EPA durir

This page intentionally left blank.

APPENDIX H

GOVERNMENT PROPERTY TRANSFER FORM

This page intentionally left blank.

Government-Furnished Property Transfer Form
LAI Superfund Site, Operable Unit 1
Old Mill Pond GWTP

Date: _____

Item Being Transferred: _____

Quantity:_____

Manufacturer's Name:_____

Model No: _____

Serial No: _____

Identification No: _____

Condition at time of transfer: ___ **Good** ___**Fair** ___**Poor**

Owner's Manuals Provided:___**Yes** __**No**

Maintenance Records Provided:___**Yes** __**No**
Other Information:

Transfer FROM contract: _____

HydroGeoLogic (HGL) _____
Sign-out: **Print Name/Signature**

USACE sign-out:_____
Print Name/Signature

Transfer TO contract: _____

HGL, Inc.
_____
sign-in: **Print Name/Signature**

USACE sign-in: _____
Print Name/Signature

Date Item removed from LAI OMP GWTP database: _____
Note: Copies of this Government-Furnished Property Transfer Form are to be kept as part of the project record for both contracts.