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WETLAND DELINEATION REPORT

KEYWELL CORPORATION
VACAIR ALLOYS DIVISION
FREWSBURG, NEW YORK

MAY 1997

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1.0 INTRODUCTION

The Keywell Corporation, VacAir Alloys Division Site (Site) is an inactive hazardous waste site located in the Village of Frewsburg, Chautauqua County, New York. The location of the Site is shown on Figure 1. The Site is identified in New York State Department of Environmental Conservation (NYSDEC) "Registry of Inactive Hazardous Waste Sites" as Site Number 907016, a Class II site. Following a number of environmental investigations and interim remediation activities, the New York State Department of Environmental Conservation issued a Record of Decision which identified the selected remedy for the Site.

In addition to other activities, the selected remedy includes excavation and off-Site disposal of sediment from a low lying area located to the north of the Site. The low lying area is included as part of a mapped New York State Freshwater Wetland and also exhibits characteristics of areas regulated by the US Army Corps of Engineers. This report presents a description and wetland boundary delineation of the portion of the low lying area that is proposed to be impacted by remedial activities.

2.0 AREA DESCRIPTION

The land form of the Site region is described as the Cattaraugus Hills of the Appalachian Upland of Western New York. The Cattaraugus Hills are characterized by relatively flat topped uplands with deep intervening valleys. Topographic relief in the immediate vicinity of the Site is minimal to moderate ranging from 0 to 8 percent grade.

Soils of the area consist of alluvial soils deposited in valley bottoms. These deposits originated from glacial melt and from postglacial stream deposits during times of flood. These processes have resulted in creation of valleys with narrow but reltively level alluvial bottoms. Soils in the immediate vicinity of the Site are dominated by level to nearly level silt loam and loamy soils characteristic of these glacial till and alluvial origins.

The Site itself is located in the Conewango Creek valley. Conewango Creek is included in the Allegheny River drainage basin.

3.0 AGENCY RESOURCE INFORMATION

The US Fish and Wildlife Service, National Wetland Inventory Map showing the Site indicates a federally jurisdictional area coincident with Conewango Creek in the Site area. This mapped federally regulated area depicts the main channel of Conewango Creek and is described as; riverine, lower perennial, open water, area exhibiting a permanent water regime. The portion of the National Wetland Inventory map titled "Jamestown, NY" showing the Site area is included as Figure 2.

Review of the NYSDEC Freshwater Wetlands map titled "Jamestown, NY", included as Figure 3, indicates that a portion of New York State Freshwater Wetland JA-6 occurs in the low lying area adjacent to the Site. Wetland JA-6 is a Class II wetland.

A portion of the US Department of Agriculture Soil Conservation Service, Chautauqua County Soil Survey map showing the Site is presented as Figure 4. The soil mapped in the lowlying area is Wayland silt loam, a hydric soil. Soils mapped in the Site area include the following:

Soil Code	Soil Name/Description	Hydric Classification
6	Wayland Silt Loam, 0-3% slopes, very deep, nearly level, poorly and very poorly drained soil formed in an alluvium. The available water capacity is high, permeability is slow throughout, and the soil is subject to frequent flooding.	Hydric
64B	Chautauqua Silt Loam, 3-8% slopes, very deep, gently sloping, moderately well drained, medium to low lime, loamy soil formed in glacial till. Available water capacity is moderate; permeability is moderate in the subsoil and moderately slow in the substratum.	Non-hydric
04	Wakeville silt loam, 0-3% slopes, very deep, nearly level, somewhat poorly drained, medium lime, silty soil formed in neutral to mildly alkaline alluvium. Available water capacity is high; permeability is moderate throughout the soil; subject to periodic flooding.	Potential hydric inclusions
20A	Raynham silt loam, flooded phase, 0-3% slopes, very deep, nearly level, somewhat poorly drained, medium lime, silty soil formed in lake-laid deposits. Available water capacity is high; permeability is moderate to slow. Subject to periodic flooding.	Hydric

Conewango Creek is identified by NYSDEC as Waters Index Number PA-63. The portion of the Creek in the Site vicinity is designated as a Class C water. NYSDEC "Water Quality Regulations" (NYS, CRR Title 6, Chapter 10, Parts 700-705) describe Class C surface waters by suitability for use:

> "The best usage of Class C waters is fishing. These waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes."

4.0 METHODOLOGY

The methodology for the wetland delineation followed the routine on-site determination methodology as described in "Technical Report Y-87-1, Corps of Engineers Wetlands Delineation Manual" (1987) and the NYSDEC "Freshwater Wetlands Delineation Manual" (1995). On-site investigations were conducted by Fine Line Technical Services during May 1997.

Observation points corresponding to New York State and federal wetland boundary locations were identified in the field and flagged with labelled marking tape. Characterization of conditions at each boundary location included a qualitative assessment of plant species dominance, characterization of soil conditions, and observations of hydrologic conditions. Flagged wetland boundary locations were surveyed by Krull Land
Survey Company during May1997.

5.0 RESULTS

Conditions observed at delineated boundary locations were consistent with observations of vegetation, soils, and surface water hydrology patterns. No atypical conditions or problem areas were identified during the field delineation. Completed "Wetland Determination Data Sheets" (ACOE Data Form 1) for identified boundary locations are presented in Appendix A. Photographs showing representative conditions in the vicinity of selected wetland boundary locations are presented in Appendix B.

Delineated wetland boundary locations were inspected and confirmed by US Army Corps of Engineers, Buffalo District and NYSDEC Bureau of Wildlife staff. The boundary of the federally regulated area and New York State wetland JA-6 in the delineated area are considered to be coincident. It should be noted that the New York State wetland includes an additional 100 foot "adjacent area". This boundary delineation of Wetland JA-6 at this location is now considered to be the officially accepted New York boundary delineation of this area.

A map depicting the wetland boundary in the low-lying area is presented as Figure 5. This map was prepared from results of surveyed boundary point locations. A full-size plan view of this area including; the wetland boundary, NYSDEC adjacent area, and the area to be excavated within the regulated wetland is contained in Appendix C.

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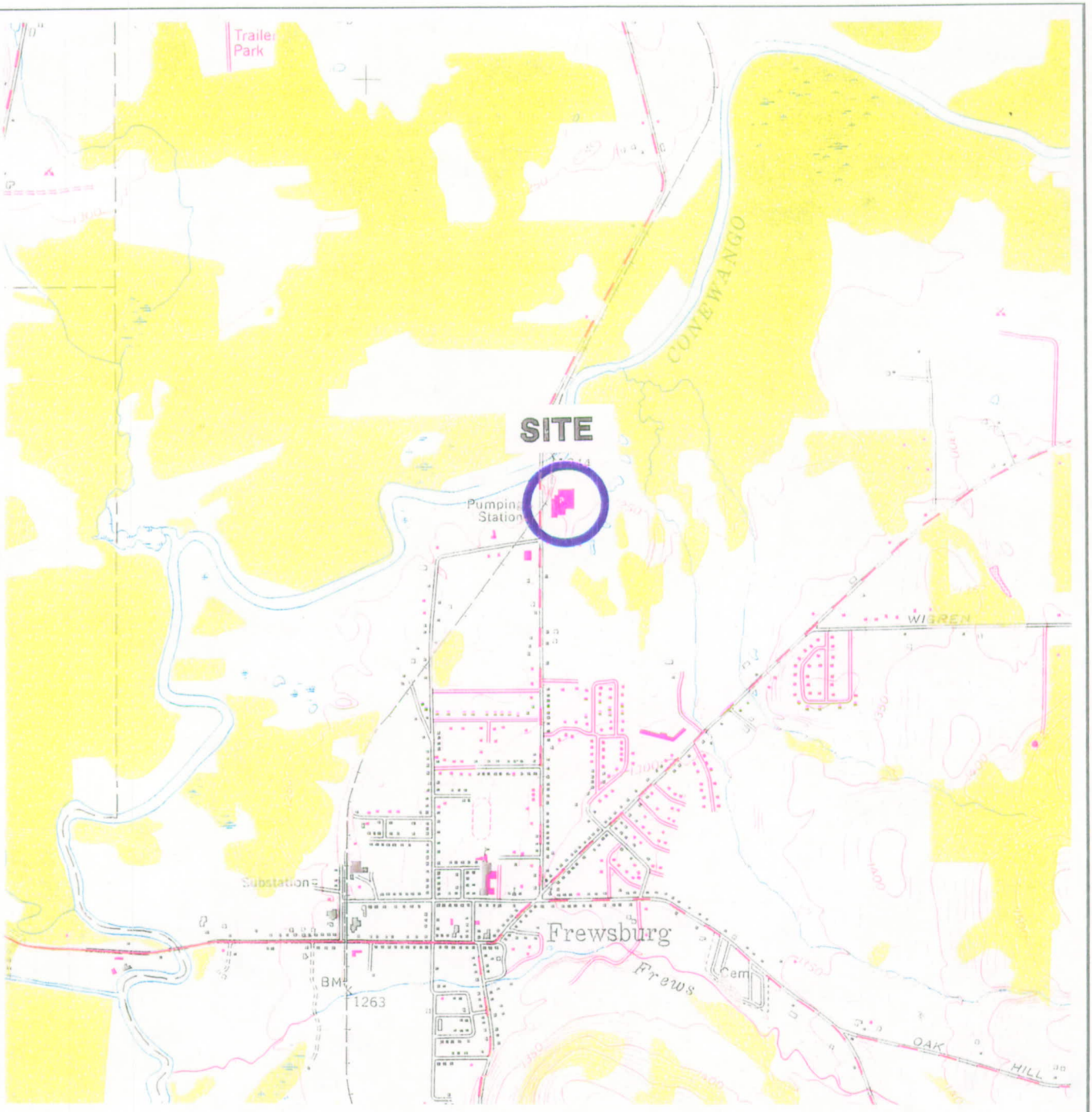
FIGURES

FIGURES



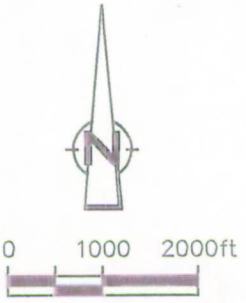


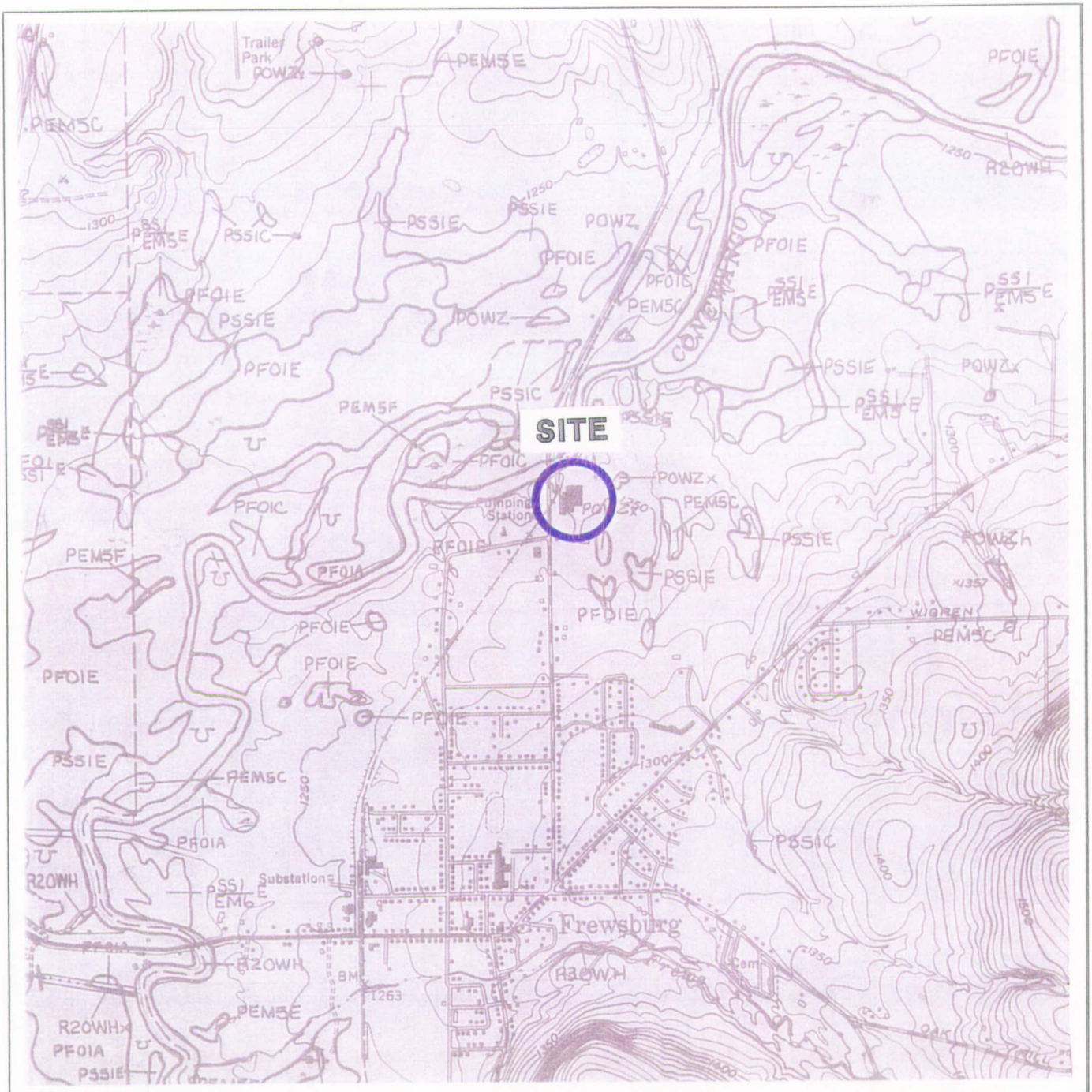
figure 1

SITE LOCATION MAP
VACAIR ALLOYS DIVISION
Frewsburg, New York

SOURCE: USGS JAMESTOWN, NEW YORK QUADRANGLE.

CRA

2326 (L) MAY 30/97(NF) REV.0 (M-06)



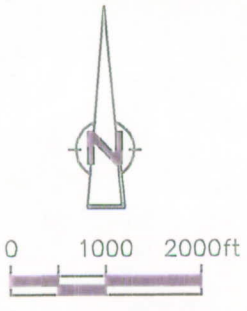


figure 2

NATIONAL WETLAND INVENTORY MAP
JAMESTOWN, NEW YORK
VACAIR ALLOYS DIVISION
Frewsburg, New York

SOURCE: US FISH AND WILDLIFE SERVICE.

CRA

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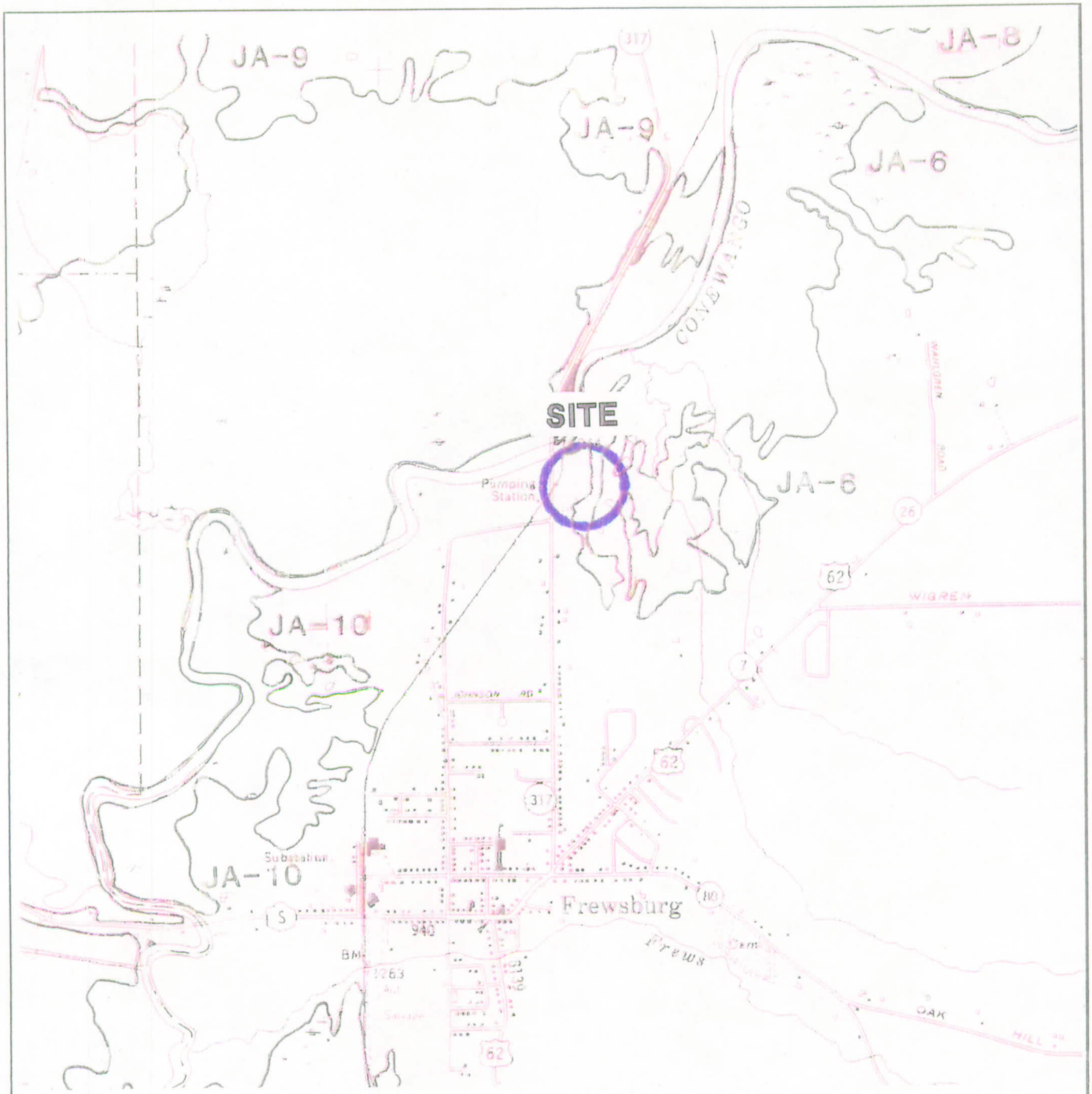

figure 3

NEW YORK STATE WETLAND MAP
JAMESTOWN, NEW YORK
VACAIR ALLOYS DIVISION
Frewsburg, New York

SOURCE: NYSDEC

CRA

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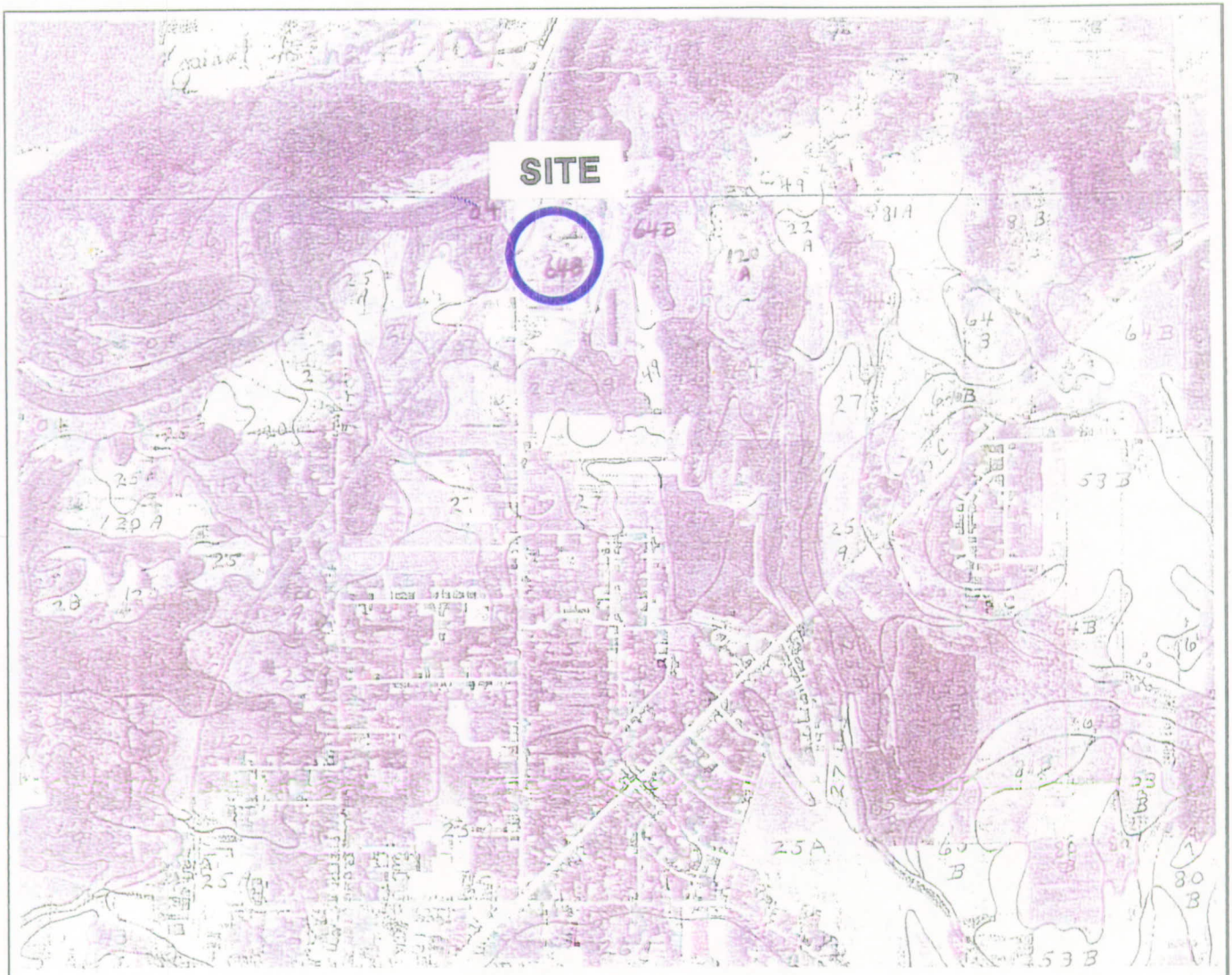

KEY TO SELECTED SOILS

6	WAYLAND SILT LOAM
64B	CHAUTAUQUA SILT LOAM
04	WAKEVILLE SILT LOAM
20A	RAYNHAM SILT LOAM

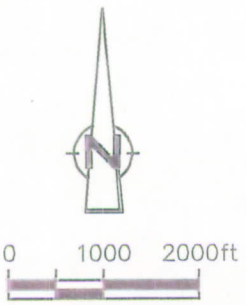

figure 4

CHAUTAUQUA COUNTY SOIL SURVEY MAP
VACAIR ALLOYS DIVISION
Frewsburg, New York

SOURCE: US DEPARTMENT OF AGRICULTURE – SOIL CONSERVATION SERVICE.

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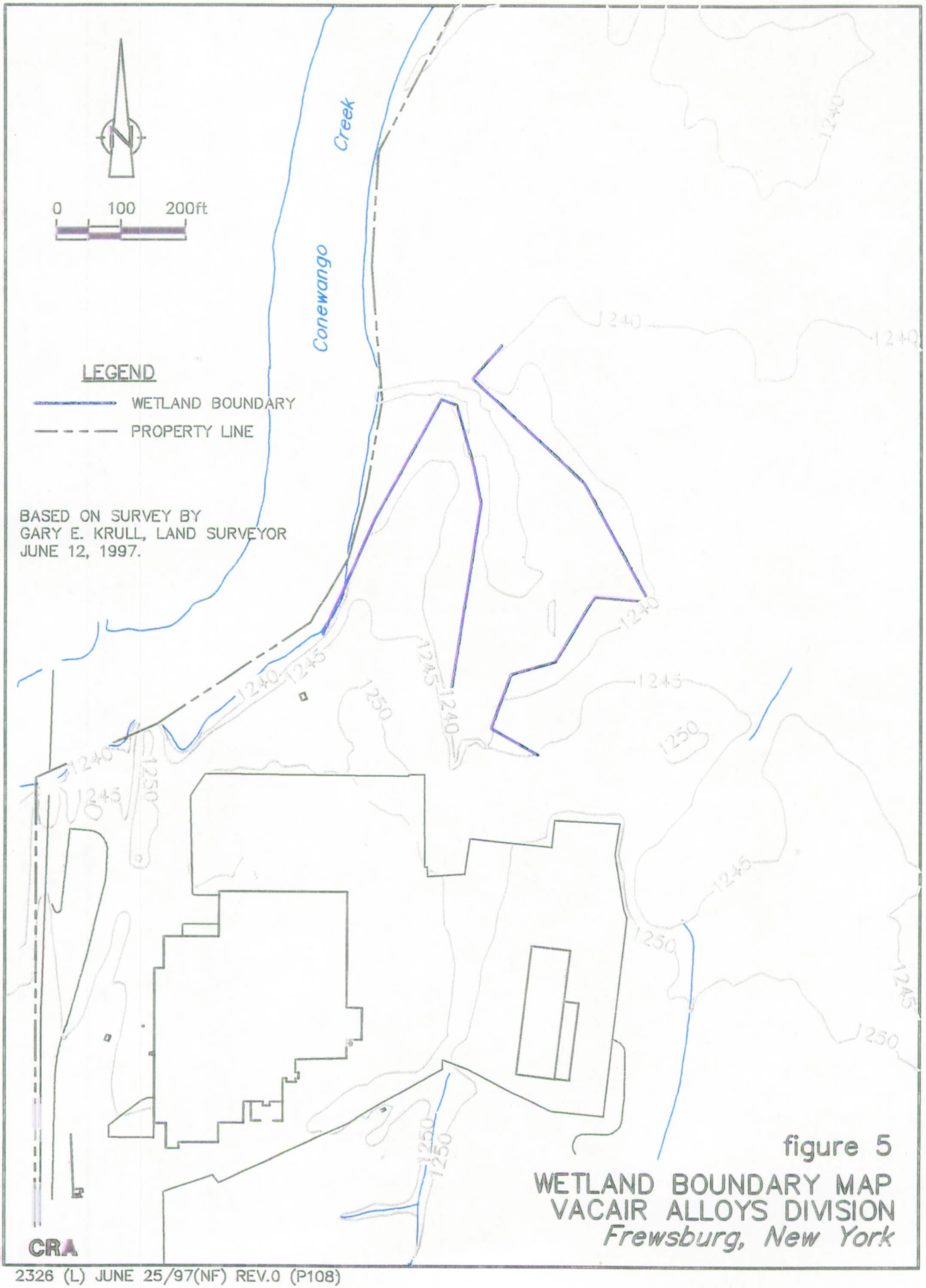


figure 5

WETLAND BOUNDARY MAP
VACAIR ALLOYS DIVISION
Frewsburg, New York

2326 (L) JUNE 25/97(NF) REV.0 (P108)

APPENDIX A

WETLAND DETERMINATION DATA SHEETS
(USACOE DATA FORM 1)

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-1 | Photo(s): 1028

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*ULMUS AMERICANA*	FACW-	7	*SYMPLOCARPUS FOETIDUS*	OBL
2	*FRAXINUS PENNSYLVANICA*	FACW	8	*IMPATIENS CAPENSIS*	FACW
3	*ACER RUBRUM*	FAC	9	*LYSIMACHIA NUMMULARIA*	OBL
				CAREX SPP.	FACW+
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5			11		
6			12		

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 7.5YR 5/8 Matrix color 10YR 5/1
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes X No Depth to saturated soil: 12 IN.
Other indicators: BUTTRESSING, DEBRIS DRIFT, SEDIMENT DEPOSITS
Wetland hydrology Yes X No Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-2 | Photo(s): 1036

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*ACER RUBRUM*	FAC	7		
2	*ULMUS AMERICANA*	FACW-	8		
3	*CARPINUS CAROLINIANA*	FAC	9		
Saplings / shrubs			Woody vines		
4			10		
5			11		
6			12		

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: > 50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 7.5YR 5/8 Matrix color 10YR 5/2
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes X No Depth to saturated soil: >18 IN.
Other indicators: SEDIMENT DEPOSITS, DEBRIS DRIFT, BUTRESSING
Wetland hydrology Yes X No Basis: INDIRECT EVIDENCE OF INUNDATION.
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:
BOUNDARY LOCATION-TOP OF BANK. BANK SLOPES STEEPLY TO OPEN WATER OF SWALE.

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-3 | Photo(s): 1011

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*CARPINUS CAROLINIANA*	FAC	7	*SPARGANIUM AMERICANUM*	OBL
2	*ACER RUBRUM*	FAC	8	*PHALARIS ARUNDINACEA*	FACW+
3	*FRAXINUS PENNSYLVANICA*	FACW	9	*EUTHANIA GRAMINIFOLIA*	FAC
Saplings / shrubs			Woody vines		
4	*FRAXINUS PENNSYLVANICA*	FACW	10		
5	*CORNUS AMOMUM*	FACW	11		
6	*CORNUS FOEMINA*	FAC	12		

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: > 50% HYDROPHYTIC SPECIES

Soil Wayland silt loam
Series and phase: Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 7.5YR 5/8 Matrix color 10YR 5/1
Gleyed: Yes No X Other indicators OXIDIZED ROOT ZONES
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIC CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes X No Depth to saturated soil: 4 IN.
Other indicators: DEBRIS DRIFT, STAINED LEAVES
Wetland hydrology Yes X No Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:
ADJACENT UPLAND IS SUCCESSIONAL OLD FIELD.

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-4 | Photo(s): 1046

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*QUERCUS BICOLOR*	FACW+	7	*SPARGANIUM AMERICANUM*	OBL
2	*CARYA OVATA*	FACU-	8	*EUTHANIA GRAMINIFOLIA*	FAC
3			9	*EUPATORIUM DUBIUM*	FACW-
				CAREX SPP.	FACW+
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5	*SALIX NIGRA*	FACW+	11		
6	*VIBURNUM DENTATUM*	FAC	12		
	SPIREA ALBA	FACW+			

% of species that are OBL, FACW, and / or FAC: 90 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDRPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 7.5YR 5/8 Matrix color 10YR 5/1
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/ LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes X No Depth to saturated soil: 8 IN.
Other indicators: DEBRIS DRIFT, SEDIMENT DEPOSITS
Wetland hydrology Yes X No Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:
ADJACENT UPLAND IS SUCCESSIONAL OLD FIELD.

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-5 | Photo(s): 1111

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1			7	*SPARGANIUM AMERICANUM*	OBL
2			8	*EUTHANIA GRAMINIFOLIA*	FAC
3			9	*EUPATORIUM DUBIUM*	FACW-
				IRIS VERSICOLOR	OBL
				CAREX SPP	FACW+
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5	*CORNUS FOEMINA*	FAC	11		
6	*SPIREA ALBA*	FACW+	12		
	ALNUS RUGOSA	FACW+			

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No | Mottle color 7.5YR 5/8 | Matrix color 10YR 5/1
Gleyed: Yes No X | Other indicators
Hydric soils: Yes X No | Basis: MOTTLED/ LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X | Depth of standing water:
Saturated soil: Yes X No | Depth to saturated soil: 10 IN.
Other indicators: SEDIMENT DEPOSITS
Wetland hydrology: Yes X No | Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances: Yes X No

Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-6 | Photo(s): 1156

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*QUERCUS BICOLOR*	FACW+	7	*EUTHANIA GRAMINIFOLIA*	FAC
2	*ULMUS AMERICANA*	FACW-	8	*ONOCLEA SENSIBILIS*	FACW
3	*CARYA OVATA*	FACU-	9	*CAREX SPP.*	FACW+
Saplings / shrubs			Woody vines		
4	*VIBURNUM DENTATUM*	FAC	10		
5	*CORNUS AMOMUM*	FACW	11		
6	*SPIREA ALBA*	FACW+	12		

% of species that are OBL, FACW, and / or FAC: 89 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 7.5YR 5/8 Matrix color 10YR 5/2
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes X No Depth to saturated soil: 10 IN.
Other indicators:
Wetland hydrology Yes X No Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-7 | Photo(s): 1202

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*ULMUS AMERICANA*	FACW-	7	*SYMPLOCARPUS FOETIDUS*	OBL
2	*ACER RUBRUM*	FAC	8	*EUPATORIUM DUBIUM*	FACW-
3	*FRAXINUS PENNSYLVANICA*	FACW	9	*ONOCLEA SENSIBILIS*	FACW
Saplings / shrubs			Woody vines		
4	*SALIX DISCOLOR*	FACW+	10		
5	*SPIREA ALBA*	FACW+	11		
6	*CARPINUS CAROLINIANA*	FAC	12		

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil Wayland silt loam
Series and phase: Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 7.5YR 5/6 Matrix color 10YR 5/2
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/ LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes X No Depth to saturated soil: 12 IN.
Other indicators: STAINED LEAVES, SEDIMENT DEPOSITS, DEBRIS DRIFT
Wetland hydrology Yes X No Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-8 | Photo(s): 1214

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*ULMUS AMERICANA*	FACW-	7	*ONOCLEA SENSIBILIS*	FACW
2			8	*SYMPLOCARPUS FOETIDUS*	OBL
3			9	*EUPATORIUM DUBIUM*	FACW-
				PHALARIS ARUNDINACEA	FACW+
				CAREX SPP.	FACW+
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5	*CORNUS FOEMINA*	FAC	11		
6	*SALIX DISCOLOR*	FACW+	12		
	VIBURNUM DENTATUM	FAC			
	CARPINUS CAROLINIANA	FAC			

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes No X Mottle color Matrix color 5YR 5/1
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes X No Depth to saturated soil: 3 IN.
Other indicators: STAINED LEAVES, SEDIMENT DEPOSITS, DEBRIS DRIFT
Wetland hydrology Yes X No Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-9 | Photo(s): 1222

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1			7	*SYMPLOCARPUS FOETIDUS*	OBL
2			8	*ONOCLEA SENSIBILIS*	FACW
3			9	*EUPATORIUM DUBIUM*	FACW-
				EUTHANIA GRAMINIFOLIUM	FAC
				CAREX SPP.	FACW+
Saplings / shrubs			Woody vines		
4	*ALNUS RUGOSA*	FACW+	10		
5	*CORNUS AMOMUM*	FACW	11		
6	*SALIX DISCOLOR*	FACW+	12		
	VIBURNUM DENTATUM	FAC			
	SPIREA ALBA	FACW+			

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes No X Mottle color Matrix color 5YR 5/1
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: LOW MATRIX CHROMA

Hydrology
Inundated: Yes X No Depth of standing water: 8 IN.
Saturated soil: Yes No Depth to saturated soil:
Other indicators:
Wetland hydrology Yes X No Basis: INUNDATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. A-10 | Photo(s): 1223

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1			7	*SYMPLOCARPUS FOETIDUS*	OBL
2			8	*ONOCLEA SENSIBILIS*	FACW
3			9	*EUPATORIUM DUBIUM*	FACW-
				EUTHANIA GRAMINIFOLIUM	FAC
				CAREX SPP.	FACW+
Saplings / shrubs			Woody vines		
4	*ALNUS RUGOSA*	FACW+	10		
5	*CORNUS AMOMUM*	FACW	11		
6	*SALIX DISCOLOR*	FACW+	12		
	VIBURNUM DENTATUM	FAC			
	SPIREA ALBA	FACW+			

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes No X Mottle color Matrix color 5YR 5/1
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water: 8 IN.
Saturated soil: Yes X No Depth to saturated soil: 0 IN.
Other indicators:
Wetland hydrology Yes X No Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:
LOCATED AT THE TOE OF THE FILL.
END OF SIDE (A).

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. B-1 | Photo(s): 1424

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*ACER RUBRUM*	FAC	7	*SYMPLOCARPUS FOETIDUS*	OBL
2	*ULMUS AMERICANA*	FACW-	8	*LYSIMACHIA NUMULARIA*	OBL
3	*CARPINUS CAROLINIANA*	FAC	9	*CAREX SPP.*	FACW+
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5	*VIBURNUM DENTATUM*	FAC	11		
6	*ACER RUBRUM*	FAC	12		

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 7.5YR 5/8 Matrix color 10YR 5/2
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes No X Depth to saturated soil: >18 IN.
Other indicators: DEBRIS DRIFT, STAINED LEAVES, SEDIMENT DEPOSITS
Wetland hydrology Yes X No Basis: INDIRECT EVIDENCE OF INUNDATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. B-2 | Photo(s): 1439

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		Herbs	
1		7	
2		8	
3		9	
Saplings / shrubs		Woody vines	
4		10	
5		11	
6		12	

% of species that are OBL, FACW, and / or FAC: _____ Other Indicators: _____
Hydrophytic vegetation: Yes _____ No _____ Basis: _____

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. | On hydric soils list? Yes X No _____
Mottled: Yes X No _____ | Mottle color 5YR 5/6 | Matrix color 10YR 5/2
Gleyed: Yes _____ No X | Other indicators _____
Hydric soils: Yes X No _____ | Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes _____ No X | Depth of standing water: _____
Saturated soil: Yes _____ No X | Depth to saturated soil: >18 IN.
Other indicators: WATER MARKS, DEBRIS DRIFT
Wetland hydrology: Yes X No _____ | Basis: INDIRECT EVIDENCE OF INUNDATION
Atypical situation: Yes _____ No X
Normal circumstances: Yes X No _____
Wetland Determination: Wetland: X | Nonwetland: _____

Comments:
LOCATION IS AT THE TOP OF BANK. BANK IS NOT VEGETATED AND SLOPES STEEPLY TO OPEN WATER.

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. B-3 | Photo(s): 1442

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

Species	Indicator Status	Species	Indicator Status
Trees		Herbs	
1		7	
2		8	
3		9	
Saplings / shrubs		Woody vines	
4		10	
5		11	
6		12	

% of species that are OBL, FACW, and / or FAC: _____ Other Indicators: _____
Hydrophytic vegetation: Yes _____ No _____ Basis: NO VEGETATION

Soil Wayland silt loam
Series and phase: Poorly & v. poorly dr. On hydric soils list? Yes X No _____
Mottled: Yes X No _____ Mottle color 5YR 5/6 Matrix color 10YR 5/2
Gleyed: Yes _____ No X Other indicators _____
Hydric soils: Yes X No _____ Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes _____ No X Depth of standing water: _____
Saturated soil: Yes _____ No X Depth to saturated soil: >18 IN.
Other indicators: WATER MARKS, DEBRIS DRIFT
Wetland hydrology Yes X No _____ Basis: INDIRECT EVIDENCE OF INUNDATION
Atypical situation: Yes _____ No X
Normal circumstances Yes X No _____
Wetland Determination: Wetland: X Nonwetland: _____
Comments:

LOCATION IS AT THE TOP OF BANK. BANK IS NOT VEGETATED AND SLOPES STEEPLY TO OPEN WATER.

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. B-4 | Photo(s): 1446

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*QUERCUS BICOLOR*	FACW+	7	*ONOCLEA SENSIBILIS*	FACW
2	*CARYA OVATA*	FACU-	8	*OSMUNDA CINNAMOMEA*	FACW
3	*FRAXINUS PENNSYLVANICA*	FACW	9	*CAREX SPP.*	FACW
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5	*VIBURNUM DENTATUM*	FAC	11		
6	*ALNUS RUGOSA*	FACW+	12		

% of species that are OBL, FACW, and / or FAC: 89 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: > 50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 5YR 5/6 Matrix color 10YR 5/2
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes X No Depth to saturated soil: 8 IN.
Other indicators: DEBRIS DRIFT, SEDIMENT DEPOSITS
Wetland hydrology Yes X No Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(O) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: Township: Frewsburg
Date: April 29, 1997 | Plot No. B-5 | Photo(s): 1455

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1			7	*ONOCLEA SENSIBILIS*	FACW
2			8	*EUPATORIUM DUBIUM*	FACW-
3			9	*OSMUNDA CINNAMOMEA*	FACW
				CAREX SPP.	FACW+
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5	*VIBURNUM DENTATUM*	FAC	11		
6	*SALIX DISCOLOR*	FACW	12		

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 5YR 5/6 Matrix color 10YR 5/2
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes X No Depth to saturated soil: 10 IN.
Other indicators: SEDIMENT DEPOSITS, DEBRIS DRIFT
Wetland hydrology Yes X No Basis: SATURATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. B-6 | Photo(s): 1501

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*FRAXINUS NIGRA*	FACW	7	*ONOCLEA SENSIBILIS*	FACW
2			8	*EUPATORIUM DUBIUM*	FACW-
3			9	*IRIS VERSICOLOR*	OBL
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5	*ALNUS RUGOSA*	FACW+	11		
6	*VIBURNUM DENTATUM*	FAC	12		

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil Wayland silt loam
Series and phase: Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 5YR 5/6 Matrix color 10YR 5/2
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes X No Depth of standing water: 4 IN.
Saturated soil: Yes No Depth to saturated soil:
Other indicators:
Wetland hydrology Yes X No Basis: INUNDATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

LOCATED AT THE TOE OF THE FILL.
END OF SIDE (B).

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. C-1 | Photo(s): 1424

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*ACER RUBRUM*	FAC	7	*SYMPLOCARPUS FOETIDUS*	OBL
2	*ULMUS AMERICANA*	FACW-	8	*LYSIMACHIA NUMULARIA*	OBL
3	*CARPINUS CAROLINIANA*	FAC	9	*CAREX SPP.*	FACW+
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5	*VIBURNUM DENTATUM*	FAC	11		
6	*ACER RUBRUM*	FAC	12		

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam, Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 7.5YR 5/6 Matrix color 10YR 5/2
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes No X Depth to saturated soil: >18 IN.
Other indicators: DEBRIS DRIFT, STAINED LEAVES, SEDIMENT DEPOSITS
Wetland hydrology Yes X No Basis: INDIRECT EVIDENCE OF INUNDATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

DATA FORM 1
WETLAND DETERMINATION

Applicant Name: Keywell Corp. | Application Number: 97-975-0031(0) | Project Name: Vacair Alloys
State: New York | County: Chautauqua | Legal Description: | Township: Frewsburg
Date: April 29, 1997 | Plot No. C-2 | Photo(s): 1430

Vegetation (list the three dominant species in each vegetation layer (5 if only 1 or 2 layers)). Indicate species with observed morphological or known physiological adaptations with an asterisk.

	Species	Indicator Status		Species	Indicator Status
Trees			Herbs		
1	*ACER RUBRUM*	FAC	7	*SYMPLOCARPUS FOETIDUS*	OBL
2	*ULMUS AMERICANA*	FACW-	8	*LYSIMACHIA NUMULARIA*	OBL
3	*CARPINUS CAROLINIANA*	FAC	9	*CAREX SPP.*	FACW+
Saplings / shrubs			Woody vines		
4	*CORNUS AMOMUM*	FACW	10		
5	*VIBURNUM DENTATUM*	FAC	11		
6	*ACER RUBRUM*	FAC	12		

% of species that are OBL, FACW, and / or FAC: 100 Other Indicators:
Hydrophytic vegetation: Yes X No Basis: >50% HYDROPHYTIC SPECIES

Soil
Series and phase: Wayland silt loam Poorly & v. poorly dr. On hydric soils list? Yes X No
Mottled: Yes X No Mottle color 7.5YR 5/6 Matrix color 10YR 5/2
Gleyed: Yes No X Other indicators
Hydric soils: Yes X No Basis: MOTTLED/LOW MATRIX CHROMA

Hydrology
Inundated: Yes No X Depth of standing water:
Saturated soil: Yes No X Depth to saturated soil: >18 IN.
Other indicators: DEBRIS DRIFT, STAINED LEAVES, SEDIMENT DEPOSITS
Wetland hydrology Yes X No Basis: INDIRECT EVIDENCE OF INUNDATION
Atypical situation: Yes No X
Normal circumstances Yes X No
Wetland Determination: Wetland: X Nonwetland:
Comments:

Determined by: Fine Line Technical Services

APPENDIX B

PHOTOGRAPHS

WETLAND BOUNDARY LOCATION A-1

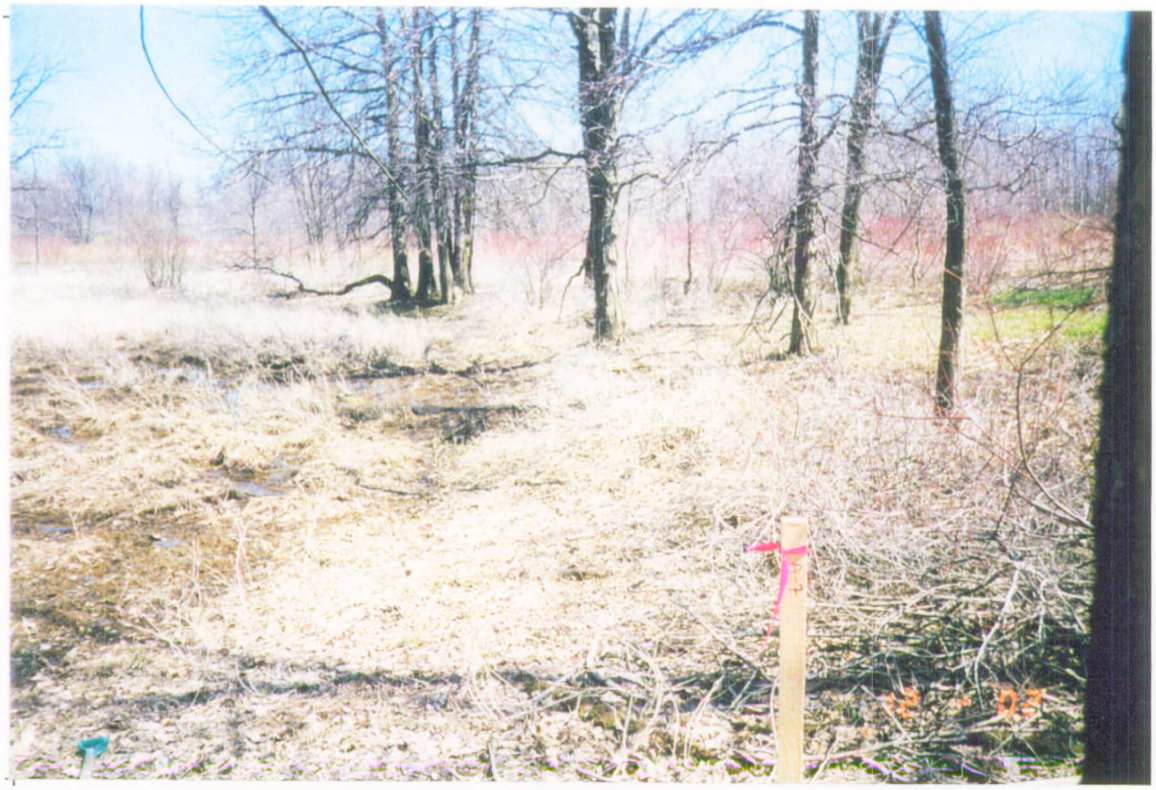
WETLAND BOUNDARY LOCATION A-2

WETLAND BOUNDARY LOCATION A-3

WETLAND BOUNDARY LOCATION A-4

WETLAND BOUNDARY LOCATION A-5

WETLAND BOUNDARY LOCATION A-6



WETLAND BOUNDARY LOCATION A-7

WETLAND BOUNDARY LOCATION A-8

WETLAND BOUNDARY LOCATION A-9

WETLAND BOUNDARY LOCATION A-10

WETLAND BOUNDARY LOCATION B-1

WETLAND BOUNDARY LOCATION B-2

WETLAND BOUNDARY LOCATION B-3

WETLAND BOUNDARY LOCATION B-4

WETLAND BOUNDARY LOCATION B-5

WETLAND BOUNDARY LOCATION B-6

WETLAND BOUNDARY LOCATION C-1

WETLAND BOUNDARY LOCATION C-2

APPENDIX C

FULL SIZE WETLAND BOUNDARY MAP

CONESTOGA-ROVERS & ASSOCIATES
2055 Niagara Falls Boulevard, Suite Three
Niagara Falls, New York 14304
(716) 297-6150 Fax: (716) 297-2265

June 25, 1997

Reference No. 2326

Mr. Gary McDannell
ARMY CORPS OF ENGINEERS
Attn: NCBCO-EN
1776 Niagara
Buffalo, NY 14207

Dear Mr. McDannell:

Re: Sediment Excavation
Keywell L.L.C. - VacAir Division
Frewsburg, New York

On behalf of Keywell L.L.C. (Keywell), we are pleased to submit the following documents relative to the proposed wetland sediment excavation project at the Keywell VacAir Alloys site (Site) in Frewsburg, new York for your review:

i) Wetlands Delineation Report, dated May 1997;
ii) Sediment Excavation Plan, dated May 1, 1997, prepared and submitted by Roy F. Weston, Inc. (Contractor);
iii) Figures 1, 2, and 3 detailing the excavation limits and details; and
iv) New York State Department of Environmental Conservation (NYSDEC) May 22, 1997 letter to Fine Line Technical Services approving the wetland boundary delineated at the Keywell Site.

Also included is a full size drawing (Drawing No. C12) of the Sediment Excavation Plan and details for your use.

The work is tentatively scheduled to commence during the first week of August 1997 and is expected to be completed within six weeks of the start. It would be appreciated if the review and approval of these documents could be expedited so that the proposed work could be done in the dry weather.

Should you have any questions regarding this information, please do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Wai Chin Lachell

WCL/ms/2
Encl.
c.c. G. Sutton, NYSDEC
J. Baker, Keywell
D. Trostle, Keywell
B. White, Karaganis & White (w/o encl.)
K. Sullivan, CRA (w/o encl.)
R. Snyder, CRA (w/o encl.)

Sediment Excavation Plan

VacAir Alloys

Frewsburg, New York

Prepared for:
Keywell Corporation

Prepared by:

Roy F. Weston, Inc.
Three Hawthorn Parkway, Suite 400
Vernon Hills, Illinois 60061-1450
(847) 918-4000

May 1, 1997

Purpose

The purpose of this Sediment Excavation Plan is to summarize the preparation and procedures required to perform sediment excavation at the VacAir Alloy Site located in Frewsburg, New York. The intent is to demonstrate compliance with specified requirements of Article 3.5 of Section 02220 and Section 02755 and to assist ENGINEER with scheduling of testing and measurement activities.

Preparation

Preparation of the excavation area will begin with diverting the influent flow into the sediment excavation area. This will be accomplished by installing an in-line pump within the existing 36" storm drain. The pump will convey the influent water around the excavation work area and into Conewango Creek. Further preparation activity will consist of construction of an earth embankment/dam at the outlet of the sediment excavation area into Conewango Creek to prevent backflow. This will sufficiently isolate the area so that work may commence. Any standing water in the excavation area will be pumped into an on-site frac tank to be treated by the on-site water treatment facility.

The boundary of the sediment excavation area will be located by a professional land surveyor (PLS) registered in the state of New York. This perimeter boundary will be staked out per the contract drawings or as otherwise directed by the ENGINEER, and a pre-excavation topographic survey of the surface will be performed. Survey stakes will be driven to provide grade control for the proposed 6 inch deep excavation. Excavation will proceed deeper than 6 inches and beyond the proposed perimeter only at the direction of the ENGINEER. A four foot high security (snow) fence will be erected around the open perimeter of the excavation area and sediment stockpile to control access of equipment and personnel. Caution tape will be placed through wooded areas around the perimeter. The proposed locationt of the perimeter fence and caution tape as well as the excavation area are shown on Figure 1-1. Trees that interfere with access or work performance in the excavation area will be cleared and staged on site prior to excavation activities. Clearing of trees, required for access roads or working area, will be minimized, and locations of access roads will be selected in the field with the ENGINEER's concurrence.

Excavation Method

After preliminary survey work is completed, excavation of the sediments will commence utilizing an excavator and two off-road dump trucks. The excavator will be positioned on clean soil immediately adjacent to the excavation perimeter and will pull back sediment. Sediment will be loaded into off-road dump trucks which will also be operating on clean soil. Care will be taken when loading the dump trucks to prevent loose sediments from falling onto the ground around the trucks. Truck loads will be kept to approximately 75% capacity as further effort to prevent spillage. Applying this method will result in only the excavator bucket (and potentially the boom) to physically contact the sediments.

Sequencing and Scheduling of Excavation and Backfilling

In general, sediment excavation will commence at the south end of the excavation area and proceed toward the outlet to Conewango Creek at the north. Excavated areas will be stripped of 6 inches of sediment, or deeper as directed by the ENGINEER. Clean areas will be identified as those areas where the underlying clay is exposed or otherwise deemed "clean" by the ENGINEER. WESTON anticipates that the ENGINEER will perform visual observation in order to make real-time identification of clean areas. Once an area is deemed clean, the excavation and loading operation will move onto the stripped area adjacent to the interface of clean and dirty soil. This process will continue until the entire area has successfully been excavated.

After the sediments have been excavated, the new contours will be surveyed. Comparison of the topography before and after the excavation will result in the quantity of sediment excavated. After receiving notification from the ENGINEER that backfilling may commence, off-site topsoil will be imported with dump trucks and placed to grade with a bulldozer to achieve the original elevations. Elevation control will be provided by grade stakes set during the pre-backfill survey. Since the sediment excavation area will be deemed clean at this phase, no decontamination of vehicles and equipment entering and leaving the area will be required.

After backfilling is complete, a final verification survey will be taken of the excavation area to provide in-place measurement of imported topsoil. The perimeter security fence will be removed and seeding of the area will be the final phase in restoring the area.

WESTON anticipates the use of one excavator and two off-road dump trucks for the excavation activity. Dump trucks and one bulldozer will perform the backfilling activity. Additional laborers will be utilized as necessary to aid with grade control and to perform decontamination procedures. A professional land surveyor will perform the noted surveys before and after excavation and after backfilling is completed. Given this crew size, WESTON anticipates an excavation duration of approximately five days and a backfilling and grade verification duration of one to two days.

Stockpiling Operations

Excavated sediments will be transported to a constructed stockpile area on site. Location of the stockpile area is shown on Figure 1-1. WESTON will submit its design for the stockpile basin for ENGINEER approval prior to construction. The constructed stockpile basin will be inspected by the ENGINEER prior to excavation activities in order to verify that it meets the approved design. Only after approval of the construction of the stockpile area will the excavation and stockpiling activity commence.

The stockpile basin will be prepared with a bulldozer grading the existing ground into a rectangular area approximately 30 ft x 100 ft with a perimeter berm. This basin will be lined with a 40-mil polyethylene plastic liner with sealed seams to prevent migration of water or soil from

the stockpile to the surrounding area. The basin will be sloped toward one end with a sump to collect stormwater runoff.

Stockpiling activities will be performed concurrently with the sediment excavation. Off-road dump trucks will drive onto the lined stockpile basin and dump sediments, beginning at the end farthest from the stockpile basin entrance. Dump trucks will back up to the stockpile and dump while pulling toward the entrance. Care will be taken to avoid driving on previously stockpiled material. This method allows the dump trucks to be driven on clean plastic liner, and thus prevents contamination of the tires and haul routes. At the close of daily operations, the stockpile will be covered with a minimum 6-mil polyethylene plastic cover to protect it from detrimental weather conditions.

During the stockpiling activities, stormwater collected in the stockpile basin sump will be pumped into the on-site frac tank for treatment in the on-site treatment facility. Sediments collected in the sump, as well as the daily cover plastic and the basin liner, will be disposed with the main stockpile in accordance with applicable State and Federal Regulations.

Access Roads

Access roads will be established between the sediment excavation and the stockpile basin for transportation of the sediments. As can be seen on Figure 1-1, these routes will be limited to those areas immediately adjacent to the excavation and stockpile entrance or as otherwise required by site conditions. Since the off-road dump trucks will be operating on clean soil near the excavation and will not drive through the stockpiled sediments, these access routes will remain clean throughout the duration of the excavation.

Access roads delinated on Figure 1-1 will be constructed from the native soils. Aggregate, geotextiles or other materials will not be utilized to upgrade the access roads, due to WESTON's utilization of off road dump trucks for material transport. All access roads along with other disturbed areas will be restored to their preconstruction conditions.

Decontamination Facilities

A personnel decontamination area will be prepared at the entrance to the exclusion zone. WESTON will also construct an equipment decontamination pad near the entrance to the stockpile area as shown on Figure 1-1. Construction of the equipment decontamination pad will be similar to that of the stockpile basin, consisting of a perimeter berm with a polyethylene plastic liner. The pad will be sloped to one end with a collection sump. Collected water will be handled by the on-site water treatment facility, and sediments will be collected for disposal with the sediment stockpile.

WESTON will perform personnel decontamination on a daily basis and/or whenever personnel exit the exclusion zone. Equipment that comes in contact with the contaminated sediments will

remain in the exclusion zone during the duration of the excavation activity. Upon completion of sediment excavation and stockpiling, dump trucks will be decontaminated by utilizing a shovel to clean residual sediments from the beds. A pressure washer will be utilized for a final rinse. Decontamination of the excavator will be performed by positioning the equipment on the decontamination pad for a thorough scrubbing and pressure washing of the bucket and boom. Any sediments accumulated on the excavator tracks will be removed prior to deconing the excavator. These sediments will considered non-contaminated and will not be staged for disposal. To prevent puncturing the plastic liner, boards will be placed under the excavator tracks. These boards, the plastic liner, and sediments removed from equipment will be placed with the sediment stockpile for disposal

Methods to Prevent Cross-Contamination

Minimizing contaminant exposure, limiting dispersion of sediments, and preventing cross-contamination of clean areas are crucial to minimizing the volume of off-site hazardous waste disposal and overall impact of the sediment excavation and stockpiling activity. Personnel will be kept abreast of these issues through safety meetings and good communication in order to ensure understanding of the concepts and goals of this activity.

Steps will be taken to avoid truck traffic through contaminated areas and to limit contact of trucks and sediments to truck beds only. No unnecessary deviation from the established haul route will be permitted. Location of the excavator will be confined to clean areas (reaching with the boom and bucket into dirty areas) to avoid tracking contaminated sediments around the site. Additional care will be taken when loading trucks so as not to spill contaminated sediments on the surrounding ground. Trucks will not be loaded to full capacity in order to prevent spillage during transport to the stockpile area.

Safety Features and Personal Protection

Due to the nature of the VOC contaminated sediments, personnel who are in direct contact with the sediments, such as laborers and surveyors, will be in Level C PPE. The excavator operator, drivers of the off-road dump trucks, and those who do not directly contact the sediments will work in Level D PPE. Requirements for personal protective equipment may be modified based on monitored site conditions and as defined in the Health and Safety Plan.

WESTON will incorporate dust control measures, as necessary, to prevent windblown transport of contaminated sediments and nuisance dust. Truck traffic will be kept to an acceptable speed to minimize dust generation. In the event that excessive dust is generated, water will be applied at a sufficient rate to maintain adequate conditions in the excavation area, haul routes, and stockpile area. Water usage will be monitored to prevent excessive application that may result in ponding or muddy conditions.

Site safety issues will be a primary concern of all personnel performing excavation activities. The site supervisor will ensure that all activities are performed with an awareness of potential safety concerns such as vehicle traffic, equipment operation, and contaminant awareness. Due to the shallow depth of the excavation, shoring will not be required. Other safety issues will be addressed as noted in the Health and Safety Plan.

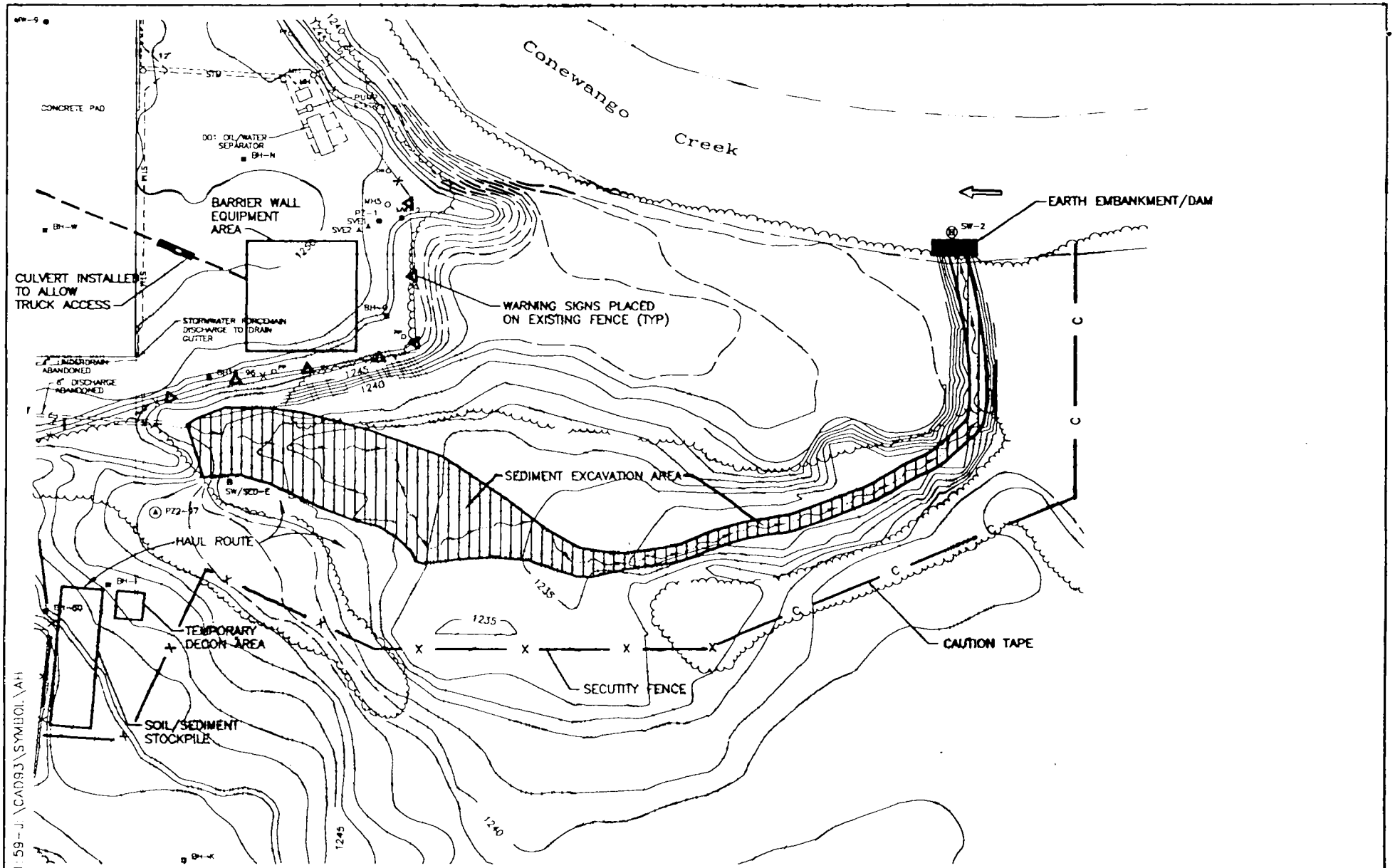
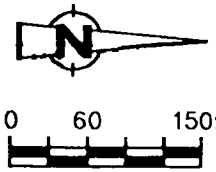


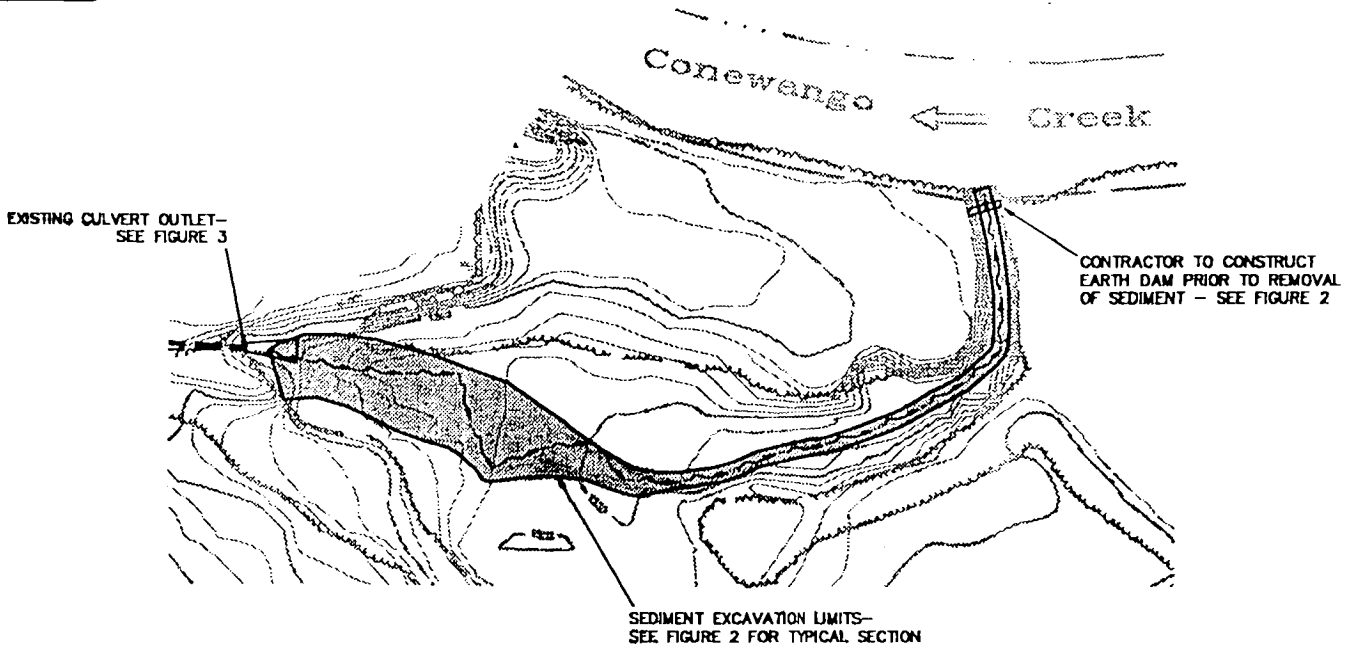
FIGURE 1-1

SITE LOCATION MAP
VACAIR ALLOYS DIVISION
REMEDIAL DESIGN PROGRAM
Frewsburg, New York

WESTON MANAGERS DESIGNERS/CONSULTANTS
Three Hawthorn Parkway
Vernon Hills, Illinois
60061

RON-04/29/97-11:59-J:\CAD93\SYMBOL\AH





LEGEND

- PROPERTY LINE
- FENCE LINE
- 1240 EXISTING CONTOUR
- DITCH
- TREELINE
- PP G POWER POLE
- STM STORM SEWER
- LIMITS OF SEDIMENT EXCAVATION FOR OFF-SITE DISPOSAL

NOTES:

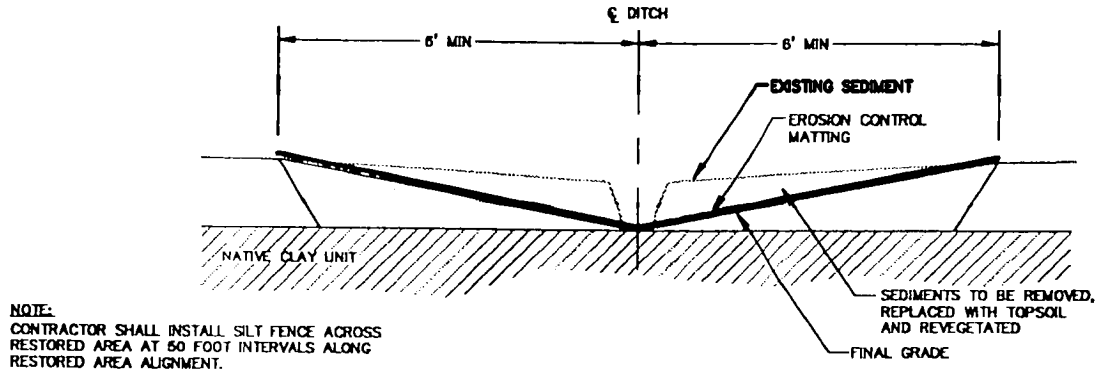
1. SEDIMENT REMOVAL SHALL PROCEED FROM CULVERT OUTLET TOWARD CONEWANGO CREEK.
2. CONTRACTOR'S TRAFFIC SHALL REMAIN WITHIN THE SEDIMENT REMOVAL LIMITS WHEN POSSIBLE. TRAFFIC OUTSIDE OF THE SEDIMENT REMOVAL AREA WILL ONLY BE ALLOWED AT THE ENGINEERS DISCRETION.

figure 1

SEDIMENT EXCAVATION PLAN
VACAIR ALLOYS DIVISION
Frewsburg, New York

CRA

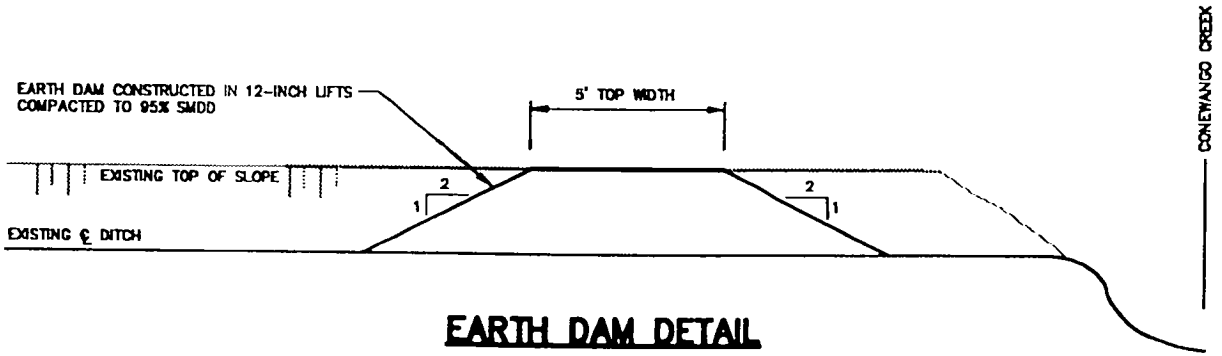
2326 (L) MAY 30/97(NF) REV.0 (P107)



NOTE:
CONTRACTOR SHALL INSTALL SILT FENCE ACROSS RESTORED AREA AT 50 FOOT INTERVALS ALONG RESTORED AREA ALIGNMENT.

TYPICAL SEDIMENT EXCAVATION SECTION

N.T.S.



EARTH DAM DETAIL

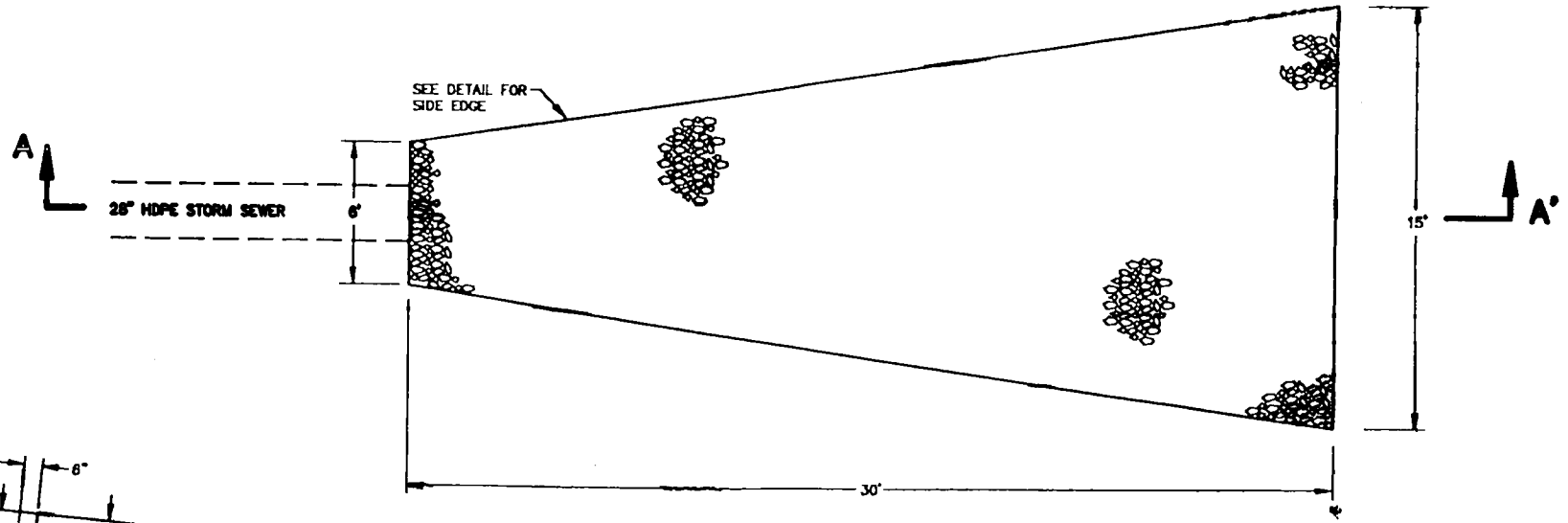
N.T.S.

figure 2

SEDIMENT EXCAVATION DETAILS
VACAIR ALLOYS DIVISION
Frewsburg, New York

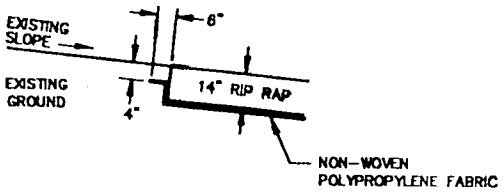
CRA

2326 (L) MAY 30/97(NF) REV.0 (D-21)

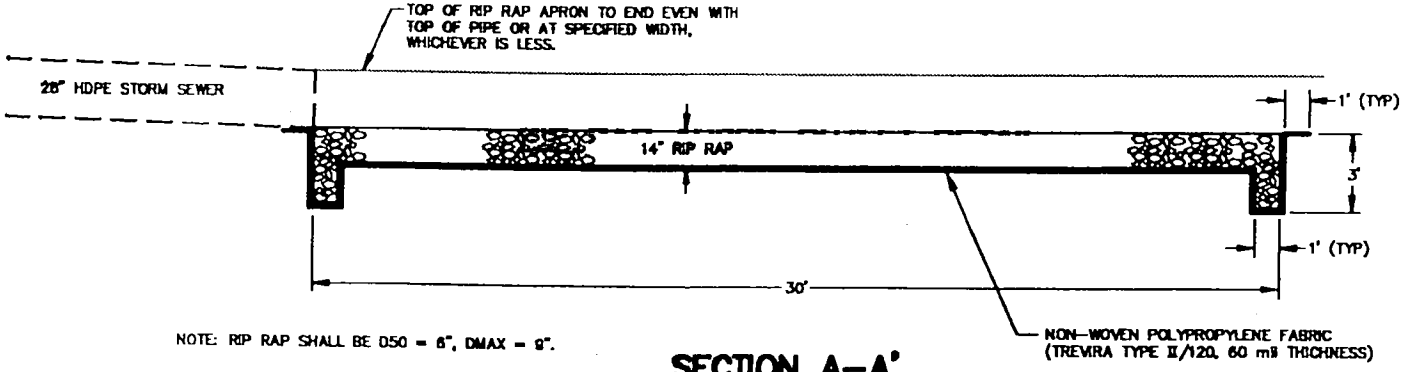


PLAN

RIP RAP APRON OUTLET DETAIL



SIDE EDGE DETAIL



NOTE: RIP RAP SHALL BE D50 = 6", DMAX = 9".

SECTION A-A'

N.T.S.

figure 3

SEDIMENT EXCAVATION DETAILS
VACAIR ALLOYS DIVISION
Frewsburg, New York

CRA

2326 (L) MAY 30/97(NF) REV.0 (D-22)

New York State Department of Environmental Conservation
Natural Resources Office - Region 9
128 South Street
Olean, New York 14760-3632
(716) 372-0645

John P. Cahill
Acting Commissioner

May 22, 1997

Fine Line Technical Services
12492 Smith Road
Medina, New York 14103

Dear Mr. Lindberg:

This letter serves as notification that on May 9, 1997, I met with you to confirm the boundary delineation of NYS Regulated Wetland JA-6 adjacent to the Keywell Corporation, Vacair alloys Site in the Town of Carroll, Chautauqua County.

The wetland boundary which was delineated by you with orange plastic flagging numbered A-1-10; B-1-6; and C-1-3 was inspected and accepted by this Department.

The wetland boundary should be surveyed to determine its location relative to the property boundary of Keywell Corporation and drawn on any remediation plans for this site. A copy of Requirements for Wetland Survey and Mapping is enclosed. Please provide these to your surveyor.

If you have any questions on this wetland boundary confirmation, please contact my office.

Sincerely,

Thomas Jurczak

Thomas Jurczak
Sr. Wildlife Biologist
Region 9 - Olean

TJ/rm

Enclosure

Requirements For Professional Surveys of Wetland Boundaries

The Department of Environmental Conservation presently allows State regulated wetland boundaries, delineated by Department staff, to be fixed for a period of three years, providing the boundary has been professionally surveyed. Delineated boundaries that are not professionally surveyed are subject to possible change in following years if wetland conditions change. The following are the requirements for an acceptable professional survey:

1. The survey map must be signed and certified by a licensed land surveyor registered in the State of New York.

2. The map must contain a description of the metes and bounds of the wetland boundary (either coordinates of flagged points or bearing and distance between points) sufficient to allow another surveyor to reproduce this boundary at a future time.

3. At least two tie-ins by bearing and distance to property lines and/or corners are to be made to the wetland boundary.

4. This description of the flagged points of the boundary may either be placed on the map or referenced to attachments.

5. The map must include a warrant of accuracy that the surveyed boundary reflects the boundary flagged by the Department. The surveyor must apply his/her seal over the signed warranty.

6. At least two copies of the survey map shall be provided to:

   Mr. Steven J. Doleski
   Regional Permit Administrator
   N.Y.S. Department of Environmental Conservation
   270 Michigan Avenue
   Buffalo, NY 14203-2999

7. The Department Biologist or Technician who delineated the wetland boundary will then verify the accuracy of the map to the best of her or his abilities.

8. If determined to be accurate, the map will be signed and dated by the delineator. The signed map will be placed in the Department's Wetlands File. A signed copy will also be returned to the landowner or person otherwise providing the survey.