STATEMENT OF BASIS/FINAL DECISION AND RESPONSE TO COMMENTS SUMMARY

REGION III
ID# 9285

American Nickeloid Company

Walnutport, PA
(Signed June 30, 1992)

Facility/Unit Type:	**Metal plating facility**
Contaminants:	**Hexavalent Chromium (VI), Trivalent Chromium (III), Copper, Nickel, Zinc, Ethylbenzene, 4-Methyl-2-Pentanone, Carbon Tetrachloride, Naphtha**
Media:	**Soil, ground water, surface water**
Remedy:	**Pump and treat ground water recovery system; soil excavation and possible in-situ treatment; trench excavation with surface water skimming**

FACILITY DESCRIPTION

On May 25, 1989, EPA and American Nickeloid Company (ANC), entered into a consent agreement pursuant to Section 3008(h) of RCRA. The agreement required ANC to conduct an investigation to determine the nature and extent of contamination at its Walnutport, PA facility and to conduct a study evaluating various cleanup alternatives. ANC completed its investigation and submitted to EPA an RFI and CMS which evaluated a variety of corrective measure alternatives to address contamination in three areas: the Surface Impoundment Area, the Chrome-Plating Area, and the Former Naphtha Storage Tank Area. A fourth area, the Swale Area, may require additional information gathering and/or corrective measures.

ANC operates a specialty metals plating facility involving sheet coil coating and finishing. The facility has been in operation since 1923 and includes an active steel plating plant and several former surface impoundments (Surface Impoundment Area) separated by a swampy wooded area (the Swale Area). The facility is bordered on the west by the Lehigh Canal, adjacent to the Lehigh River; the southern portion of the plant is bordered by residential property; and the northern portion of the facility is bordered by meadows and woods. Residents in the vicinity of the facility use municipal water supplies. The Walnutport Authority operates a public drinking water supply well 900 feet south of the ANC facility which is used infrequently to supplement water supplies.

The facility is situated on what was a poorly drained swamp area until the property was drained for construction of the manufacturing facility in 1921. The facility is underlain by a shallow bedrock zone beneath the Surface Impoundment Area and a deeper bedrock aquifer beneath the plant. Regional ground-water flow is west toward the Lehigh River; however, in the shallow zone of the aquifer, ground-water flow is north toward the Swale Area. Both the Lehigh Canal and Lehigh River serve as ground-water discharge areas for the aquifers. The low-lying Swale Area contains water year-round and is probably typical of site conditions prior to development. The Swale is a likely discharge point for groundwater upgradient of the facility.

In 1985, a lined surface impoundment was taken out of service pursuant to a closure plan approved by the Pennsylvania Department of Environmental Resources (PADER) on July 12, 1985. A ground-water recovery and treatment system has been in operation at the Surface Impoundment Area since February 1985 under the supervision of PADER. In July 1987, chrome contamination was discovered beneath the floor of the plant in the Chrome-Plating Area.

Contamination was traced to historic spills and leaks from the chromium electroplating operations. During the RFI, contamination associated with the Former Naphtha Storage Tank Area was discovered. In January 1991, an additional contamination source was discovered when an underground fuel tank was removed. Two monitoring wells and one recovery well were installed pursuant to PADER requirements in conjunction with EPA activity at the facility.

EXPOSURE PATHWAYS

Contaminated ground water is a principal threat at the facility because of its migration to the Lehigh River and Canal and the potential for ingestion of contaminants via the consumption of ground water from public water-supply wells. Other exposure pathways include inhalation and dermal contact. The nearest potential receptors include workers, trespassers, and nearby residents.

PUBLIC PARTICIPATION

The public comment period on EPA's proposed remedy extended from May 11, 1992 to June 10, 1992. Approximately 30 people attended a public meeting on May 25, 1992. EPA received five comments from the public. The comments included questions about the extent of ground-water contamination, health and safety issues associated with drilling monitoring wells, and disruptions to the neighborhood during cleanup activities. EPA received seven comments from ANC which addressed expanding ground-water treatment, technical practicability of source removal, the points of compliance, media cleanup standards, and an RFI summary.

SELECTED REMEDY

See table 1.2

INNOVATIVE TECHNOLOGIES CONSIDERED

In-situ bioremediation was considered as a corrective action for the Former Naphtha Storage Area.

NEXT STEPS

The history and distribution of contamination at the ANC facility is complex. As a result, EPA will require a phased remediation approach commencing with the implementation of expanded groundwater recovery at the Surface Impoundment Area and the Chrome-Plating Area. The second phase will involve addressing residual contamination associated with the Chrome Plating Area and the Former Naphtha Storage Tank Area in an attempt to accelerate remediation of groundwater and residual soil contamination. An expanded assessment of the distribution of contamination in soils, surface water, and ground water and its ecological effects will be conducted at the Swale Area.

The final selected remedy will be implemented either through a Corrective Measure Implementation Consent Order or Unilateral Order.

KEY WORDS
ground water, soil, surface water; ingestion, inhalation, dermal contact; heavy metals; excavation, in-situ treatment, institutional controls, off-site disposal

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CONTAMINATION DETECTED AND CLEANUP GOALS

Facility Area	Media	Est. Vol.	Contaminant	Max. Conc.	Action Level	Cleanup Goal	Point of Compliance***
Surface Impoundment Area	ground water	>.6 gpm	Total Chromium	2200 ppb	100 ppb*	100 ppb*	MW-B-2, 3, 6, 7D
			Copper	<1.3 ppm	1400 ppb**	1400 ppb**	MW-B-3, 6
			Nickel	<0.7 ppm	730 ppb**	730 ppb**	MW-B-3, 6
			Zinc	<7.0 ppm	7.0 ppm**	7.0 ppm**	
	soil	un-known	Total Chromium	2045 ppm	not given	not given	
			Copper			2900mg/kg**	
			Nickel			1600 mg/kg**	
Chrome-Plating Area	ground water	>5 gpm	Total Chromium	11.1 ppm	100 ppb*	100 ppb*	MW-5D, PPW, P-1, 13
			Chromium VI	3690 ppm	180 ppb**	180 ppb**	MW-5D, PPW
			Copper	16.5 ppm	1400 ppb**	1400 ppb**	MW-5D, PPW
			Nickel	25.3 ppm	730 ppb**	730 ppb**	
			Zinc	0.048 ppm	7.0 ppm**	7.0 ppm**	
	soil	un-known	Total Chromium	not given	not given	not given	
			Chromium VI	"	390 mg/kg**	390 mg/kg**	
			Copper	"	2900 mg/kg**	2900 mg/kg**	
			Nickel	"	1600 mg/kg**	1600 mg/kg**	
Former Naphtha StorageTank Area	ground water	un-known	Ethylbenzene	1.6 ppm	700 ppb*	700 ppb*	MW6-S, MW6-D
			4-Methyl-2-Pentanone	6.2 ppm	1800 ppb**	1800 ppb**	MW6-S, MW6-D
			Carbon Tetrachloride	0.31 ppm	5 ppb*	5 ppb*	MW6-S, MW6-D
	soil	un-known	Ethylbenzene	not given	7800 mg/kg**	7800 mg/kg**	
			Carbon Tetrachloride	"	13 mg/kg**	13 mg/kg**	
Swale Area		un-known	Total Chromium	0.15 ppm	100 ppb*	100 ppb*	
			Copper	<1.3 ppm	1400 ppb**	1400 ppb**	
			Nickel		730 ppb **	730 ppb **	
			Zinc	<7.0 ppm	7.0 ppm*	7.0 ppm*	

* Cleanup goal is a Maximum Contaminant Level that is federally enforceable under the Safe Drinking Water Act.

** Risk-based screening level provided by Region III.

*** MW- Monitoring Well
P- Piezometer
PPW- Plant Production Well

SELECTED REMEDY

The remedies selected were assembled into a variety of Corrective Measure Alternatives to address soil/unsaturated surfical materials and groundwater. The table below summarizes the selected remedies for each area of concern at the facility.

TABLE 1.2

Facility Area	Media	Remedy Description	Cost	
			Capital	O&M
Surface Impoundment Area	ground water	Continued recovery of groundwater from existing wells. Recovered groundwater will be treated by chemical reduction, precipation and polishing and/or non-chemical reduction and ion-exchange in a waste water treatment system.	*$1,400,000	419,000
	soils	Do not require additional Corrective Measures other than limiting access. EPA will defer to PADER regarding RCRA closure requirements.	$25,000	none
Chrome-Plating Area	ground water	Will be recovered in a phased manner from both shallow and deep bedrock aquifer zones. Recovery rates will be adjusted depending on system data collected during implementation. Treated water will be reused on-site and discharged to the Lehigh River via NPDES outfall. Treatment residues will be managed in compliance with waste management standards.	*$1,052,000	304,000
	soils	Will be excavated and disposed of off-site unless technically impracticable. In such case, chemical treatment and/or source stabilization would likely be required. Area will be covered with concrete and floor will be coated with chromium resistant material after soil remediation.	$818,330 to $1,034,310	undefined
Former Naphtha Storage Tank Area	ground water	Will be treated by excavating a trench and skimming contaminants off standing water. Ground water recovery system will be installed and will use granular activated carbon to treat ground water.	$160,000	$34,000
	soils	Do not require additional Corrective Measures other than institutional controls (monitoring existing wells, etc.).	$25,000	none
Swale Area		An expanded ecological assessment will be performed to determine the effectiveness of the Swale Area to retain contaminants and to further assess the potential impact of such contaminants.	N/A	N/A

* These cost estimates include the construction of a complete new wastewater treatment plant.