INTER-OFFICE COMMUNICATION

TO Karen Heyob, DHMM DATE 1-21-83

FROM: Russ Stein, Mgr. RS, Ground Water Section, DPWS

SUBJECT: Lagoon Facility, US Steel-Lorain

EPA Region 5 Records Ctr.
320901

I have reviewed the additional hydrogeologic and ground water monitoring information which was submitted by US Steel in response to your request and forwarded to me on Dec. 20, 1982. The data provides a clearer understanding of ground water quality effects around this entity's hazardous waste lagoon and answers some of the questions in my memo to you dated Oct. 6, 1982.

It is apparent from the new data that the lagoon is impacting shallow ground water immediately down-gradient from the facility as indicated by quarterly analyses of samples from monitor wells DM-2 and DM-3. When compared to the up-gradient well quality, these two sampling stations reveal elevated levels of Barium, Fluoride, Lead, Specific Conductance, Dissolved Solids, Phenol, Sodium, Chloride, TOC, pH and Temperature. Based upon the permeability determinations, the shallow depths of the monitor well screens (3 to 10 feet), and their close proximity to the lagoon boundary, it is certainly not surprising that water quality is degraded. As stated in my previous memo, any contaminant plume is likely confined to the narrow strip of land between the lagoon and the Black River because ground water discharges to the stream.

There also appears to be a water quality effect on the up-gradient well DM-4 as revealed by the high concentrations of Sulfate and Conductance. The analyses suggest that a different source of contaminant is impacting this well which may be attributed to some older disposal activities on the plant property.

The consultant for US Steel-Lorain has included a section in their report describing a ground water quality assessment program which will involve additional drilling and water testing. The implementation of this assessment seems justified at this time.

I am including a copy of an old summary report of this facility which was prepared by our Northeast District Geologist in 1973 which may provide some useful background data.

RBS/bjp
cc: P. Flanigan
cc: M. Rinehart
cc: C. Khourey,NEDO

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N. E. D. O.

TABLE B-1

SUMMARY OF RECORDED PIEZOMETRIC LEVELS

Well No.	Elevation of Top of Standing Pipe (ft)	Elevation of Water in Well (ft)	Date of Measurement
DM-1	+587.70	+569.65	-
		+570.45	9/23/81
		+573.70	10/19/81
DM-2	+581.64	+578.60	-
		+579.80	-
		+579.20	9/23/81
		+578.20	10/19/81
DM-3	+583.91	+581.30	-
		+580.90	9/23/81
		+580.90	10/19/81
DM-4	+625.31	+617.40	9/24/81
		+618.70	10/19/81