L-BAR

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

N. 4601 Monroe, Suite 202 • Spokane, Washington 99205-1295 • (509) 456-2926

In the Matter of Remedial Action at the: L-Bar Site	)	Emergency Enforcement Order
	)	
	)	No. DE 94TC-E102
	)	

To: Northwest Alloys, Inc.
L-Bar Products, Inc.
Reserve Industries Corporation

I.

Jurisdiction

This Order is issued pursuant to the authority of RCW 70.105D .050(1).

II.

Statement of Facts

1. The L-Bar Site is located approximately two miles south of Chewelah, Washington on the west side of U. S. Highway 395 in the eastern half of the SE¼ of Section 23, Township 32 North, Range 40 E.W.M. in Stevens County. The location of the site is shown in Exhibit A of this Order.

2. This Site was a magnesium recovery facility and is owned by L-Bar Products, Inc., a wholly owned subsidiary of Reserve Industries Corporation. The facility was operated by L-Bar Products, Inc., from approximately March 1986 to December 1991. L-Bar Products, Inc., is now undergoing reorganization under Chapter 11 in the United States Bankruptcy Court.

3. The major operation at the plant was to recover magnesium trapped in granular form within sludge bars. The sludge bars, a waste product of magnesium reduction facilities consisting mainly of spent flux of magnesium and potassium chloride, were mostly supplied by Northwest Alloys, Inc., from the magnesium metal plant in Addy, Washington.

4. Recovery was made by crushing and grinding the sludge bars to a powder and screening out the magnesium granules. The remaining ground material was called sludge bar residue.

5. The sludge bar and sludge bar residue are classified as state dangerous waste, based on toxicity to fish. The sludge bar and sludge bar residue contain a high amount of chloride, and are very reactive with water. The reactions with water have led to ammonia being released into the air and water. Several fires have occurred at the site due to the heat generated during hydration of the sludge bar and sludge bar residue.

6. Past operating practices and inadequate storage of the sludge bars and sludge bar residues have resulted in known contamination of ground water, soil and air. Past data collected for ground water show a maximum value of 60,000 mg/L chloride and 122,000 mg/L total dissolved solids concentrations in the local shallow water table aquifer. These concentrations greatly exceed EPA's secondary maximum contaminant levels (MCLs) of 250 mg/L for chloride and 500 mg/L for total dissolved solids.

7. The Department of Ecology (Ecology) has issued several Enforcement Orders and Penalties to L-Bar Products, Inc., during its operation from 1986 to 1991 for violations of air, water quality and dangerous waste regulations. In August 1988, Ecology filed a civil suit against L-Bar Products, Inc., Reserve Industries Corporation (parent company of L-Bar), Northwest Alloys, Inc., and Aluminum Company of America (parent Company of Northwest Alloys, Inc.) in the Superior Court for Stevens County for violation of environmental laws.

8. L-Bar closed down operations in 1991. Approximately 90,000 tons of materials, including sludge bars and sludge bar residues, are still stored on site. At the time of closure, L-Bar was doing some rehabilitation of the site as part of a proposed settlement of a civil suit filed by Ecology. Part of the rehabilitation was a water management system which was to collect surface runoff and ground water for treatment before discharging to the Colville River. This system was never completed, but, as a result of the work, two collection ponds are in place and waters have accumulated in these ponds. Water, primarily surface runoff and direct precipitation, in these two ponds overflows to a drainage ditch when full (see Exhibit B).

9. In the winter of 1992-93, damages to buildings where materials are being stored occurred which increased human health and environmental risks. In October 1993, under the authority of RCW 70.105D.030, Ecology conducted an emergency action at the L-Bar site to reduce those risks. This emergency action included: Retrieving, sampling, overpacking, labeling, and storing, in a locked and covered structurally sound storage, acid drums that were under collapsed or about to collapse buildings; patching a hole in the dangerous waste pile cover; repairing broken curbs and pavings of the storm water collection system; posting hazard signs; and limiting site access by installing gates across transportation routes.

10. Beginning in January 1994, in good faith and in the interests of expediency, civic duty and legal obligation, Northwest Alloys, Inc., voluntarily initiated independent interim remedial action at the L-Bar site. The objective of the work was to perform further environmental and engineering stabilization activities at the site. The independent action work included: Relocation of hazardous substances from unsecured areas to protected on-site storage areas; dismantling of structurally unsound buildings; cleaning and repair of roofing and windows in buildings which would remain as interim storage facilities; increasing the capacities of the holding ponds; and, sweeping of paved areas to improve the quality of storm water leaving the facility.

11. The on-site ditch, which collects the storm water runoff from the facility, and serves as a natural discharge of contaminated ground water and the pond overflows, empties into the Colville River. Analytical samples from three locations along the ditch taken last October 1993 showed concentrations of ammonia as Nitrogen (NH_3-N) and chloride as follows:

Location	NH_3-N (mg/L)	Chloride (mg/L)
South	210	7200
Middle	190	7200
North (closest location to river)	160	6800

In December 1993, an analytical sample taken in the ditch near the river showed an NH_3-N concentration of 470 mg/L. Concentrations of NH_3 and chloride detected during sampling exceed state and federal surface water standards.

12. Water in the ditch is partially contained from entering the river by an earthen dam, drained by a culvert. The culvert in the dam is blocked by hay bales and erosion control fabric which limits the flow through the culvert. Approximately five gallons per minute presently leaks through the blocked culvert and discharges directly to the river.

13. Impounded surface water at the site is currently accumulated in three locations (see Exhibit B): The holding pond, the evaporation pond and the ditch. The ditch water, which is approaching an elevation that will result in overflow or cause erosion, poses the greatest risk of having a catastrophic release into the Colville River.

14. Ecology is ready to begin formal discussions, as per WAC 173-340-530, with Northwest Alloys, Inc., and other interested Potentially Liable Persons (PLPs) including L-Bar Products, Inc., and Reserve Industries Corporation to conduct a Remedial Investigation and Feasibility Study (RI/FS) at the Site. This Enforcement Order shall not in any way restrict these discussions or limit Ecology's right to issue additional orders for the Site, as authorized by law.

III.

Ecology Determinations

1. The substances found in surface water and ground water at the facility as described above are "hazardous substances" as defined at RCW 70.105D.020(5).

2. Based on the presence of these hazardous substances at the facility and all factors known to Ecology, there is a release or threatened release of hazardous substances from the facility, as defined at RCW 70.105D.020(10).

3. By letters pursuant to WAC 173-340-500(4), Ecology notified each of the parties listed below as a "potentially liable person" (the PLPs) under RCW 70.105D.040 after notice and opportunity for comment:

i. L-Bar Products, Inc., as owner/operator.
ii. Reserve Industries Corporation, as owner/operator.
iii. Northwest Alloys, Inc., as generator.

4. Pursuant to RCW 70.105D.030(1) and 70.105D.050, Ecology may require potentially liable persons to investigate or conduct remedial actions with respect to the release or threatened release of hazardous substances, whenever it believes such action to be in the public interest.

5. Based on the foregoing facts and its knowledge of the site, Ecology believes the remedial action required by this Order is in the public interest.

6. This Enforcement Order is an Emergency Enforcement Order. With the coming of Spring and the potential for increased surface runoff due to seasonal precipitation, emergency measures will have to be implemented in order to prevent a potential catastrophic release of water from the ditch to the Colville River.

IV.

Work to be Performed

Based on the foregoing Facts and Determinations, it is hereby ordered that L-Bar Products, Inc., Reserve Industries Corporation and Northwest Alloys, Inc., (the PLPs) take the following remedial actions and that these actions be conducted in accordance with Chapter 173-340 WAC unless otherwise specifically provided for herein.

1. Within six (6) months from the effective date of this Order, the PLPs must apply for a National Pollutant Discharge Elimination System (NPDES) permit, in accordance with Chapter 173-220 WAC, to discharge all water coming from the site to the Colville River. The permit will include control requirements for all surface waters impacted by the site which discharge to the Colville River.

2. In the interim, to prevent a potential catastrophic release of the ditch water to the Colville River, the PLPs will immediately conduct controlled releases of the water from the ditch under the conditions specified in Exhibit C. In no event may state and federal surface water quality standards as defined under WAC 173-210A-100 and as published pursuant to Section 304 of the Clean Water Act be violated outside of a mixing zone in the river.

V.

Terms and Conditions of Order

1. Definitions

Unless otherwise specified, the definitions set forth in Chapters 70.105D RCW and 173-340 WAC shall control the meanings of the terms used in this Order.

2. Public Notice

RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that the Order is inadequate or improper in any respect. The interim measures as specified under Section IV - Work to be Performed (2) will be implemented immediately, because of the time-critical nature of the ordered action. Public notice will occur concurrent with the interim measures.

3. Remedial Action Costs.

The PLPs shall pay to Ecology costs incurred by Ecology pursuant to this Order. These costs shall include work performed by Ecology or its contractors for investigations, remedial actions, Order preparation, oversight, and administration. Ecology costs shall include costs of direct activities and support costs of direct activities as defined in WAC 173-340-550(2). The PLPs shall pay the required amount within ninety (90) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general description of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Failure to pay Ecology's costs within ninety (90) days of receipt of the itemized statement of costs may result in interest charges.

4. Designated Project Coordinators.

The Project Coordinator for Ecology is:

Teresita F. Bala
Toxics Cleanup Program
State of Washington
Department of Ecology
4601 N. Monroe, Suite 100
Spokane, WA 99205-1295

The PLPs shall designate one individual to act as a Project Coordinator for the PLPs, and shall inform Ecology of this individual's identity, telephone number and mailing address within fifteen (15) days of receipt of this Order.

The Project Coordinator(s) shall be responsible for overseeing the implementation of this Order. To the maximum extent possible, communications between Ecology and the PLPs and all documents, including reports, approvals and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order, shall be directed through the Project Coordinator(s). Should Ecology or the PLPs change Project Coordinator(s), written notification shall be provided to Ecology or the PLPs at least ten (10) calendar days prior to the change.

5. Performance.

All work performed pursuant to this Order shall be under the direction and supervision, as necessary, of a professional engineer or hydrogeologist, or similar expert, with appropriate training, experience and expertise in hazardous waste site investigation and cleanup. The PLPs shall notify Ecology of the identity of such engineer(s) or hydrogeologist(s), and of any contractors and subcontractors to be used in carrying out the terms of this Order, in advance of their involvement at the Site.

Except when necessary to abate an emergency situation, the PLPs shall not perform any remedial actions at the L-Bar Site outside that required by this Order unless Ecology concurs, in writing, with such proposed additional remedial actions.

6. Access.

Ecology or any Ecology authorized representative shall have the authority to enter and freely move about all property at the Site at all reasonable times for the purposes of, inter alia: Inspecting records, operation logs and contracts related to the work being performed pursuant to this Order; reviewing the progress in carrying out the terms of this Order; conducting such tests or collecting samples as Ecology or the project coordinator may deem necessary; using a camera, sound recording or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by the PLPs. Ecology shall provide reasonable notice before entering property unless an emergency prevents such notice. Ecology shall allow split or replicate samples to be taken by the PLPs during an inspection unless doing so would interfere with Ecology's sampling. The PLPs shall allow split or replicate samples to be taken by Ecology and shall provide Ecology seven (7) days notice before any sampling activity.

7. Retention of Records

The PLPs shall preserve in a readily retrievable fashion, during the pendency of this Order and for ten (10) years from the date of completion of the work performed pursuant to this Order, all records, reports, documents, and underlying data in its possession relevant to this Order. Should any portion of the work performed hereunder be undertaken through contractors or agents of the PLPs, a record retention requirement meeting the terms of this paragraph shall be required of such contractors and/or agents.

8. Dispute Resolution.

The PLPs may request Ecology to resolve factual or technical disputes which may arise during the implementation of this Order. Such request shall be in writing and directed to the signatory of this Order. Ecology resolution of the dispute shall be binding and final. The PLPs are not relieved of any requirement of this Order during the pendency of the dispute and remain responsible for timely compliance with the terms of the Order unless otherwise provided by Ecology in writing.

9. Reservation of Rights.

Ecology reserves all rights to issue additional orders or take any action authorized by law in the event or upon the discovery of a release or threatened release of hazardous substances not addressed by this Order, upon discovery of any factors not known at the time of issuance of this Order, in order to abate an emergency, or under any other circumstances deemed appropriate by Ecology.

Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the release or threatened release of hazardous substances from the L-Bar Site.

In the event Ecology determines that conditions at the Site are creating or have the potential to create a danger to the health or welfare of the people on the Site or in the surrounding area or to the environment, Ecology may Order the PLPs to stop further implementation of this Order for such period of time as needed to abate the danger.

10. Transference of Property.

No voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by the PLPs without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to transfer of any legal or equitable interest the PLPs may have in the Site or any portions thereof, the PLPs shall serve a copy of this Order upon any prospective purchaser, lessee, transferee, assignee, or other successor in such interest. At least thirty (30) days prior to finalization of any transfer, the PLPs shall notify Ecology of the contemplated transfer.

11. Compliance With Other Applicable Laws.

All actions carried out by the PLPs pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements.

VI.

Satisfaction of this Order

The provisions of this Order shall be deemed satisfied upon the PLPs' receipt of written notification from Ecology that the PLPs have completed the remedial activity required by this Order, as amended by any modifications, and that all other provisions of this Agreed Order have been complied with.

VII.

Enforcement

1. Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

   A. The Attorney General may bring an action to enforce this Order in a state or federal court.

   B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and orders related to the Site.

   C. In the event the PLPs refuse, without sufficient cause, to comply with any term of this Order, the PLPs will be liable for:

      (1) up to three times the amount of any costs incurred by the state of Washington as a result of its refusal to comply; and

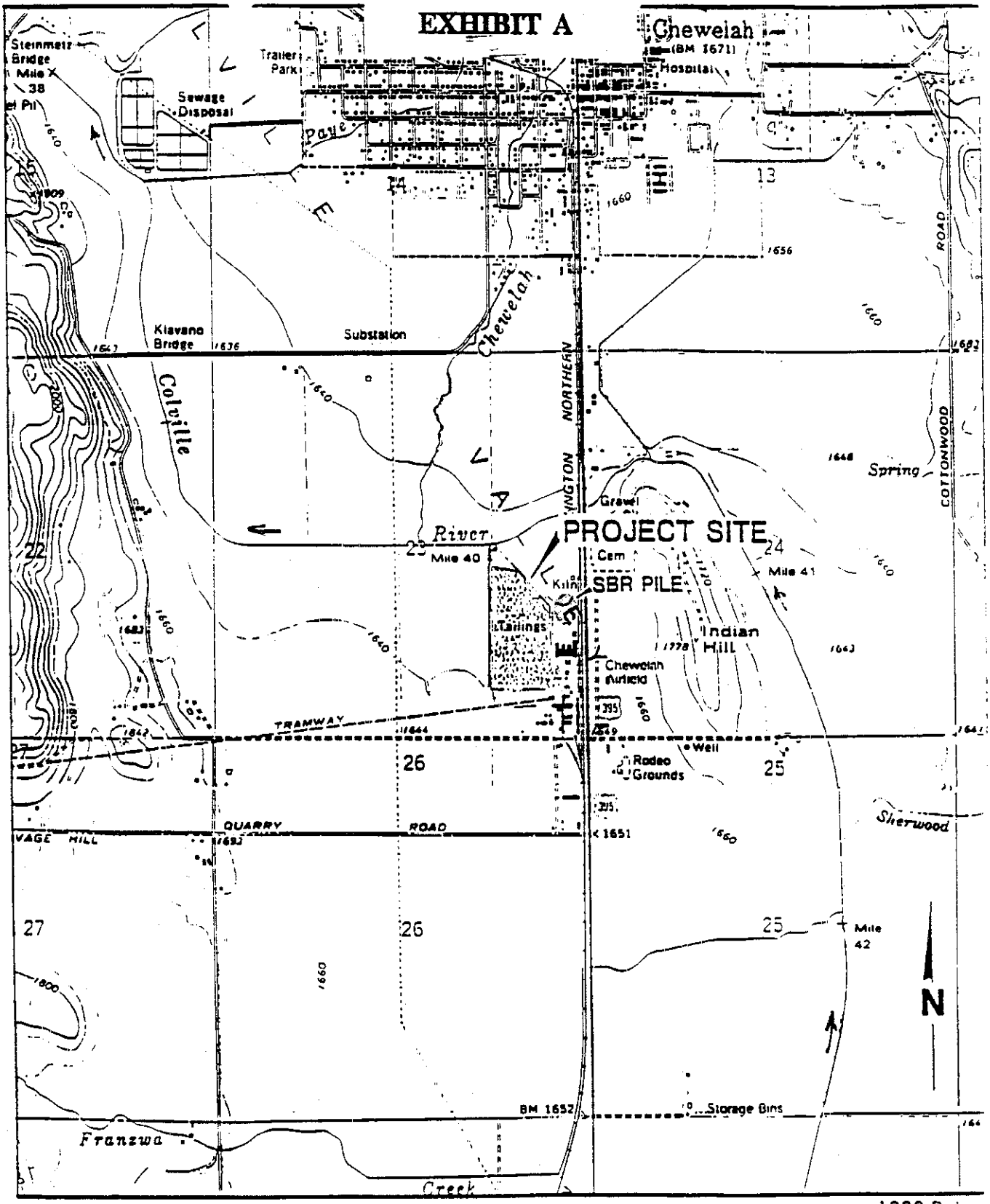
      (2) civil penalties of up to $25,000 per day for each day it refuses to comply.

D. This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under RCW 70.105D.060.

Effective date of this Order: March 17, 1994.

Flora J. Goldstein
Section Manager
Toxics Cleanup Program
State of Washington
Department of Ecology
Eastern Regional Office

EXHIBIT A



1990 D. Ler

Base map USGS "Chewelah, Wash." quadrangle, 7.5 min. series, 1964 P.R.1986, and "Valley, Wash." 1965 P.R. 1986

← River Flow Direction

Discharge Ditch

L-BAR PRODUCTS, INC.
Chewelah, Wash.

VICINITY MAP

MAR 1990 E-112

GIFFORD CONSULTANTS, INC.
GEOTECHNICAL ENGINEERING

FIG. 1

Drawn By TPB Drwg. Date 3-16-90 Checked By ECL Field Rep.

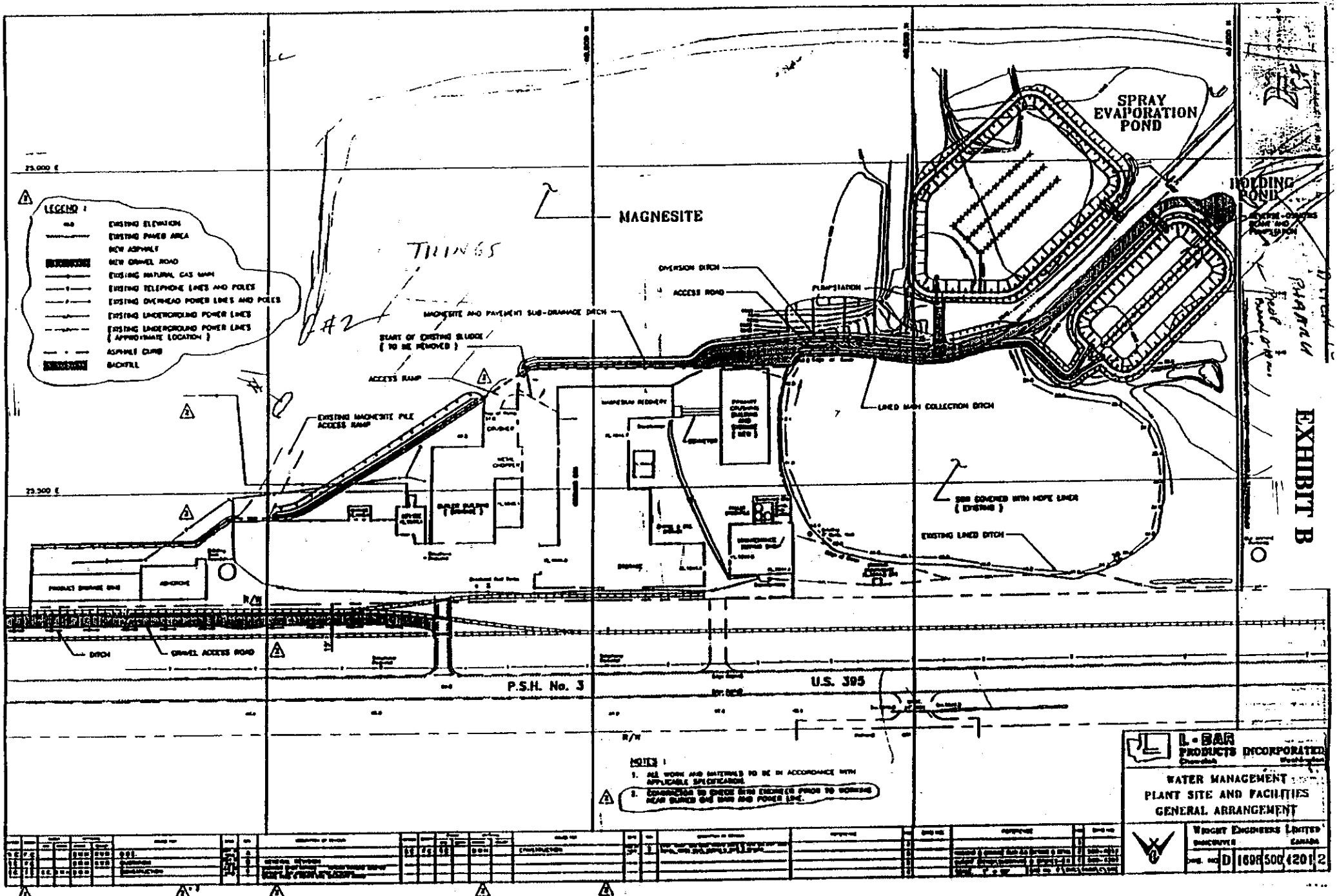

SPRAY EVAPORATION POND
HOLDING POND
MAGNESITE
DIVERSION DITCH
ACCESS ROAD
MAGNESITE AND PAVEMENT SUB-DRAINAGE DITCH
START OF EXISTING SLUDGE (TO BE REMOVED)
ACCESS RAMP
EXISTING MAGNESITE PILE ACCESS RAMP
LINED MAIN COLLECTION DITCH
EXISTING LINED DITCH
DITCH
GRAVEL ACCESS ROAD
P.S.H. No. 3
U.S. 395
R/W
LEGEND :
EXISTING ELEVATION
EXISTING PAVED AREA
NEW ASPHALT
NEW GRAVEL ROAD
EXISTING NATURAL GAS MAIN
EXISTING TELEPHONE LINES AND POLES
EXISTING OVERHEAD POWER LINES AND POLES
EXISTING UNDERGROUND POWER LINES
EXISTING UNDERGROUND POWER LINES (APPROXIMATE LOCATION)
ASPHALT CURB
BACKFILL
NOTES :
1. ALL WORK AND MATERIALS TO BE IN ACCORDANCE WITH APPLICABLE SPECIFICATIONS.
2. CONNECTION TO EXISTING SYSTEM TO BE CHECKED PRIOR TO WORKING NEAR BURIED GAS MAIN AND POWER LINE.
EXHIBIT B
L-BAR PRODUCTS INCORPORATED
WATER MANAGEMENT
PLANT SITE AND FACILITIES
GENERAL ARRANGEMENT
WRIGHT ENGINEERS LIMITED
D 1698 500 4201 2

EXHIBIT C

INTERIM DISCHARGE LIMITATIONS

Water from Ditch 1 shown in Figure 1 shall be discharged into the Colville River using controlled rates such that the water quality criteria for chloride (Cl), ammonia (NH_3), and pH will not be violated outside of a mixing zone as described in WAC 173-201A (Water Quality Standards for Surface Waters of the State of Washington) and as published pursuant to section 304 of the Clean Water Act.

Chapter 173-210A WAC defines a mixing zone as the "portion of a water body adjacent to an effluent outfall where mixing results in the dilution of the effluent with the receiving water".

This interim discharge from Ditch 1 to the Colville River as shown in Figure 1 shall take place after installation of a controlled device, such as a siphon valve. The discharge rate shall be regulated by adjusting the valve to reflect the conditions in the river. Monitoring and sampling stations shall be located as specified in Figure 1.

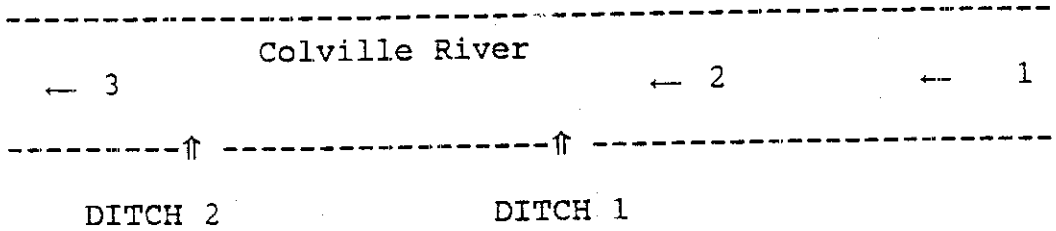


FIGURE 1

Station 1 - Immediately east of HWY 395 bridge (upstream).

Station 2 - Approximately 500 ft upstream of ditch 1 discharge point.

Station 3 - Approximately 300 ft downstream of discharge point of ditch 2.

THE DISCHARGE SHALL BE ACCOMPLISHED IN THE FOLLOWING MANNER:

I. OBTAIN INITIAL CONDITIONS OF RIVER AND DITCH 1.

1. Measure or sample for the following at the specified sampling locations:

Sampling Station	Parameters
1	River Flow (i.e. ft^3/sec) pH, temperature, conductivity Cl, NH_3 concentrations
2	pH, temperature, conductivity Cl, NH_3 concentrations
3	pH, temperature, conductivity Cl, NH_3 concentrations
Ditch 1	pH, temperature, conductivity Cl, NH_3 concentrations

The river flow at sampling station 1 shall provide the volume into which discharges will be permitted. The river acidity (pH) and temperature at sampling station 1 must be measured because these will determine the surface water criteria for ammonia.

II. DETERMINE SURFACE WATER STANDARDS.

1. Based on the pH and the temperature at Station 1, compute the ammonia-nitrogen (NH3-N) criteria by using the equations given in WAC 173-201A or by obtaining directly or interpolating from the table given in the USEPA Quality Criteria for Water, 1986 (Gold Book).

The NH_3 concentration in mg/L shall not exceed the numerical value given by:

Acute conditions (1-hour average concentration not to be exceeded more often than once every three years on the average):

$$0.52/[(FT)(FPH)(2)]$$

where $FT = 10^{0.03(20-TCAP)}$; $\quad TCAP \leq T \leq 30$

$= 10^{0.03(20-T)}$; $\quad 0 \leq T \leq TCAP$

$$FPH = 1; \qquad 8 \leq pH \leq 9$$

$$= (1 + 10^{7.4-pH})/1.25; \qquad 6.5 \leq pH \leq 7.7$$

TCAP = 20°C; Salmonids present.

Chronic Conditions (4-day average concentration not to be exceeded more than once every three years on the average):

$$0.80/[[(FT)(FPH)(RATIO)]$$

where FT and FPH are as given above

$$RATIO = 16; \qquad 7.7 \leq pH \leq 9$$

$$= 24[(10^{7.7-pH})/(1 + 10^{7.4pH})]; \qquad 6.5 \leq pH \leq 7.7$$

TCAP = 15°C; Salmonids present.

2. The surface water standards for Cl in mg/L are as follows:

   Acute: 860 mg/L

   Chronic: 230 mg/L.

3. The pH shall be within 6.5 to 8.5 for fresh water.

III. CALCULATE RIVER FLOW IN THE MIXING ZONE.

The mixing zones shall utilize the following flow rates:

25.0% of the river flow for chronic criteria.

2.5% of the river flow for acute criteria.

IV. CALCULATE DISCHARGE RATES.

Calculate the rates of discharge based on NH_3 and Cl mass balance equations around the mixing zone for both chronic (maximum size mixing zone) and acute criteria, using appropriate mixing zone flow rates and surface water standards.

The mass balance equation is given by:

$$Q_r X_r + Q_d X_d = (Q_r + Q_d) X_s$$

or $$Q_d = Q_r [(X_s - X_r)/(X_d - X_s)]$$

where Q_d = discharge flow rate

Q_r = river flow rate in mixing zone (chronic or acute)

X_r = upstream ammonia or chloride concentration measured at station 1.

X_d = ammonia or chloride concentration measured in Ditch 1.

X_s = ammonia or chloride surface water quality criteria

The more stringent of the discharge rates calculated shall be used.

V. DISCHARGE AT MOST STRINGENT CALCULATED RATE.

Adjust discharge device to the most stringent rate as calculated. Discharge shall occur after notification and approval from the Department of Ecology.

VI. MONITOR RIVER FLOW AND DITCH CONCENTRATIONS. RECALCULATE AND READJUST DISCHARGE RATE.

After the start of discharge the following parameters in the river shall be monitored:

Sampling Station	Parameter	Frequency
1	river flow pH, temperature, conductivity	Every 2 weeks
	Cl, NH_3 concentrations	Every Month
2	pH, temperature, conductivity, Cl, NH_3 concentrations	Every Month

Ditch 1	pH, temperature, conductivity, Cl, NH_3 concentrations	Every 2 weeks

After every 2 weeks, the discharge rates shall be immediately recalculated based on these results, pursuant to items II to IV, and readjusted accordingly pursuant to item V.

VII. MONITOR COMPLIANCE OF SURFACE WATER STANDARDS.

To assure that surface water standards are not being violated outside the mixing zone, the following parameters shall be monitored:

Sampling Station	Parameter	Frequency
3	pH, temperature, conductivity, Cl, NH_3 concentrations	Immediately after initial discharge and every two weeks (immediately following readjustment of discharge rate).

If standards for NH_3, chloride and pH are being violated at Station 3, the Department of Ecology shall be immediately notified and discharge shall be stopped immediately until compliance can be obtained.

VIII. OTHER CONDITIONS.

1. The crest of the existing earthern dam shall be protected from erosion by providing for emergency overflow through the installation of a lined depression which is not to exceed six inches in depth.

2. Methods for the analysis of NH_3 and Cl shall comply with Test Methods for Evaluating Solid Waste or Methods for Chemical Analysis of Water and Wastes, as revised.

3. Results of all monitoring and sampling activities, and discharge rates shall be reported to the Department of Ecology on a monthly basis, or more frequently if requested.

4. Ecology shall review data as received and will revise above conditions if warranted. The operator(s) may propose modifications to the discharge conditions at anytime, but revisions will be within the sole discretion of Ecology.

5. The discharge is an interim measure and will be accepted for a maximum of twelve (12) months. After twelve (12) months, either discharges must stop, or the PLPs must have a valid NPDES permit.