



**2008
ROAD DUST MANAGEMENT
PRACTICES AND FUTURE
NEEDS CONFERENCE**

**PRESENTED BY
RON WRIGHT
CHEMIST SUPERVISOR
IDAHO TRANSPORTATION
DEPARTMENT**



CHEMICAL SELECTION

- **WHICH PRODUCT TO USE**
- **WHAT ARE THE PERFORMANCE REQUIREMENTS**



The value of an education...



PACIFIC NORTHWEST SNOWFIGHTERS



**SNOW AND ICE CONTROL
CHEMICAL PRODUCTS
CHEMICAL SPECIFICATIONS AND
TEST PROTOCOLS**



PNS ASSOCIATION

- **BRITISH COLUMBIA**
- **COLORADO**
- **IDAHO**
- **MONTANA**
- **OREGON**
- **WASHINGTON**
- **ASSOCIATE MEMBERS**
 - **OTHER STATES AND AGENCIES**
 - **MANUFACTURERS**



PNS ASSOCIATION

- **ENGINEERS**
- **CHEMISTS**
- **ENVIRONMENTALISTS**
- **PURCHASING**
- **RISK MANAGEMENT**
- **MAINTENANCE WORKERS**
- **MANUFACTURERS**
- **SUPPLIERS**

PNS PRODUCT GOALS

- **COMMON PRODUCT SPECIFICATIONS**
- **MANUFACTURES REDUCE THE NUMBER OF PRODUCTS THEY MAKE**
- **COST SAVINGS**
- **ENVIRONMENTAL STANDARDS**
- **PRODUCT CATEGORIES (QPL)**

SPECIFICATION OVERVIEW

- **GENERAL SPECIFICATIONS**
 - ENVIRONMENTAL
 - CORROSION
- **SAMPLE SUBMITTALS - QPL**
- **CHEMICAL PRODUCT CATEGORIES**
- **TEST METHODS**
- **ORDERS, DELIVERIES, INVOICING**
- **FIELD INSPECTION, UNLOADING, SAMPLING AND TESTING**

ENVIRONMENTAL IMPACT





GENERAL SPECIFICATIONS

ENVIRONMENTAL STANDARDS

- EPA Drinking Water
 - Primary and Secondary Standards
- Marine Water
- Ground Water
- Fresh Water
- WA Model Toxics Control Act (MTCA)
- Aquatic Life
- Dangerous/Hazardous Waste


DERIVATION OF LIMITS

- CHARTED ALL STANDARD LIMITS
- DERIVED A MATHEMATICAL DILUTION FACTOR OF 1:100
- INSTRUMENTATION CAPABILITIES TO DETERMINE THE MDL'S FOR CHEMICAL PARAMETERS

GENERAL SPECIFICATIONS


CHEMICAL LIMITS

- **MERCURY** 0.05 PPM
- **SELENIUM** 5.0 PPM
- **ZINC** 10.00 PPM
- **CYANIDE** 0.20 PPM
- **PHOSPHORUS** 2500. PPM



GENERAL INFORMATION (LIMITS UNDER REVIEW)

- **TOXICITY TESTING**
 - **RAINBOW TROUT OR FATHEAD MINNOW TOXICITY TEST**
 - **CERIODAPHNIA DUBIA REPRODUCTIVE AND SURVIVAL BIOASSAY**
 - **SELENASTRUM CAPRICORNUTUM ALGAL GROWTH**



GENERAL INFORMATION (LIMITS UNDER REVIEW)

- **AMMONIA – NITROGEN**
- **TOTAL KJELDAHL – NITROGEN**
- **NITRATE / NITRITE – NITROGEN**
- **BIOLOGICAL OXYGEN DEMAND**
- **CHEMICAL OXYGEN DEMAND**



QUANTIFY THE PRODUCTS

- **GENERATE COMMON CATEGORIES**
 - **BASED ON PRIMARY CHEMICAL CONSTITUENT**
 - **COMMON PERFORMANCE CHARACTERISTICS**



SAMPLE SUBMITTALS -QPL

PRODUCT CHECK LIST

- CATEGORY**
- MANUFACTURER**
- PERCENT CONCENTRATION**
- PH WAIVER (ORGANIC MATTER)**
- ANALYTICAL RESULTS**
 - CHEMICAL**
 - BIOLOGICAL**
 - TOXCICITY**

SAMPLE SUBMITTALS -QPL

- SPECIFIC GRAVITY TABLE**
- CORROSION TEST DATA**
- IDENTIFY THE CORROSION INHIBITOR**
- INHIBITOR TEST PROCEDURE**
- PROPRIETARY INFORMATION**
- FRICTIONAL TEST RESULTS**
- PRODUCT DATA SHEET**

SAMPLE SUBMITTALS -QPL

- MATERIAL SAFETY DATA SHEETS**
 - PRODUCT**
 - INHIBITORS**
- FIELD APPLICATION TESTING AND EFFECTIVENESS OF PRODUCT**
- DATA USED TO CONSTRUCT A FINGERPRINT OF THE PRODUCT**



PRODUCT APPROVAL

QUALIFIED PRODUCTS LIST

QPL



FIELD INSPECTION, UNLOADING, SAMPLING, AND TESTING

- **PRELIMINARY INSPECTION**
 - DOCUMENTATION
 - VISUALLY INSPECT THE PRODUCT
- **PRIOR TO UNLOADING**
 - RECORD VOLUME IN STORAGE
 - FIELD TEST A GRAB SAMPLE
 - ACCEPT OR REJECT



FIELD INSPECTION, UNLOADING, SAMPLING, AND TESTING

- **SAMPLING AND TESTING**
 - **COLLECT DURING UNLOADING**
 - **FIELD MEASUREMENTS**
 - **RECORD FIELD MEASUREMENTS**
 - **RECORD TRANSPORTER INFORMATION**
 - **SEND DOCUMENTATION AND SAMPLE TO CENTRAL LABORATORY**



PNS WEBSITE



<http://www.wsdot.wa.gov/partners/pns/>